Amazon Elastic Compute Cloud

API Reference

API Version 2015-04-15

Amazon Elastic Compute Cloud: API Reference

Copyright © 2015 Amazon Web Services, Inc. and/or its affiliates. All rights reserved.

The following are trademarks of Amazon Web Services, Inc.: Amazon, Amazon Web Services Design, AWS, Amazon CloudFront, AWS CloudTrail, AWS CodeDeploy, Amazon Cognito, Amazon DevPay, DynamoDB, ElastiCache, Amazon EC2, Amazon Elastic Compute Cloud, Amazon Glacier, Amazon Kinesis, Kindle, Kindle Fire, AWS Marketplace Design, Mechanical Turk, Amazon Redshift, Amazon Route 53, Amazon S3, Amazon VPC, and Amazon WorkDocs. In addition, Amazon.com graphics, logos, page headers, button icons, scripts, and service names are trademarks, or trade dress of Amazon in the U.S. and/or other countries. Amazon's trademarks and trade dress may not be used in connection with any product or service that is not Amazon's, in any manner that is likely to cause confusion among customers, or in any manner that disparages or discredits Amazon.

All other trademarks not owned by Amazon are the property of their respective owners, who may or may not be affiliated with, connected to, or sponsored by Amazon.

Table of Contents

Welcome 1
List of Actions by Function 2
Actions 9
AcceptVpcPeeringConnection 14
Request Parameters 14
Response Elements 14
Errors 14
Examples 14
AllocateAddress 16
Request Parameters 16
Response Elements 16
Errors 17
Examples 17
AssignPrivateIpAddresses 18
Request Parameters 18
Response Elements 18
Errors 19
Examples 19
AssociateAddress 20
Request Parameters 20
Response Elements 21
Errors 21
Examples 21
AssociateDhcpOptions 23
Request Parameters 23
Response Elements 23
Errors 23
Examples 24
AssociateRouteTable 25
Request Parameters 25
Response Elements 25
Errors 25
Examples 26
AttachClassicLinkVpc 27
Request Parameters 27
Response Elements 27
Errors 28
Examples 28
AttachInternetGateway 29
Request Parameters 29
Response Elements 29
Errors 29
Examples 30
AttachNetworkInterface 31
Request Parameters 31
Response Elements 31
Errors 31
Examples 32
AttachVolume 33
Request Parameters 33
Response Elements 34
Errors 34
Examples 34
AttachVpnGateway 35
Request Parameters 35

Response Elements ... 35
Errors ... 35
Examples ... 36
AuthorizeSecurityGroupEgress ... 37
Request Parameters ... 37
Response Elements ... 38
Errors ... 38
Examples ... 38
AuthorizeSecurityGroupIngress ... 40
Request Parameters ... 40
Response Elements ... 41
Errors ... 41
Examples ... 42
BundleInstance ... 44
Request Parameters ... 44
Response Elements ... 44
Errors ... 45
Examples ... 45
CancelBundleTask ... 46
Request Parameters ... 46
Response Elements ... 46
Errors ... 46
Examples ... 46
CancelConversionTask ... 48
Request Parameters ... 48
Response Elements ... 48
Errors ... 48
Examples ... 49
CancelExportTask ... 50
Request Parameters ... 50
Response Elements ... 50
Errors ... 50
Examples ... 50
CancelImportTask ... 52
Request Parameters ... 52
Response Elements ... 52
Errors ... 52
CancelReservedInstancesListing ... 53
Request Parameters ... 53
Response Elements ... 53
Errors ... 53
Examples ... 53
CancelSpotFleetRequests ... 56
Request Parameters ... 56
Response Elements ... 56
Errors ... 57
Examples ... 57
CancelSpotInstanceRequests ... 58
Request Parameters ... 58
Response Elements ... 58
Errors ... 58
Examples ... 58
ConfirmProductInstance ... 60
Request Parameters ... 60
Response Elements ... 60
Errors ... 60
Examples ... 61
CopyImage ... 62

Request Parameters ... 62
Response Elements ... 62
Errors ... 63
Examples ... 63
CopySnapshot ... 64
Request Parameters ... 64
Response Elements ... 65
Errors ... 66
Examples ... 66
CreateCustomerGateway ... 67
Request Parameters ... 67
Response Elements ... 68
Errors ... 68
Examples ... 68
CreateDhcpOptions ... 69
Request Parameters ... 69
Response Elements ... 69
Errors ... 70
Examples ... 70
CreateFlowLogs ... 72
Request Parameters ... 72
Response Elements ... 73
Errors ... 73
Examples ... 73
CreateImage ... 75
Request Parameters ... 75
Response Elements ... 76
Errors ... 76
Examples ... 76
CreateInstanceExportTask ... 77
Request Parameters ... 77
Response Elements ... 77
Errors ... 78
Examples ... 78
CreateInternetGateway ... 79
Request Parameters ... 79
Response Elements ... 79
Errors ... 79
Examples ... 79
CreateKeyPair ... 81
Request Parameters ... 81
Response Elements ... 81
Errors ... 81
Examples ... 82
CreateNetworkAcl ... 83
Request Parameters ... 83
Response Elements ... 83
Errors ... 83
Examples ... 83
CreateNetworkAclEntry ... 85
Request Parameters ... 85
Response Elements ... 86
Errors ... 86
Examples ... 86
CreateNetworkInterface ... 88
Request Parameters ... 88
Response Elements ... 89
Errors ... 89

Examples ... 89
CreatePlacementGroup ... 93
Request Parameters ... 93
Response Elements ... 93
Errors ... 93
Examples ... 94
CreateReservedInstancesListing ... 95
Request Parameters ... 95
Response Elements ... 95
Errors ... 96
Examples ... 96
CreateRoute ... 99
Request Parameters ... 99
Response Elements ... 100
Errors ... 100
Examples ... 100
CreateRouteTable ... 102
Request Parameters ... 102
Response Elements ... 102
Errors ... 102
Examples ... 102
CreateSecurityGroup ... 104
Request Parameters ... 104
Response Elements ... 105
Errors ... 105
Examples ... 105
CreateSnapshot ... 107
Request Parameters ... 107
Response Elements ... 107
Errors ... 108
Examples ... 108
CreateSpotDatafeedSubscription ... 109
Request Parameters ... 109
Response Elements ... 109
Errors ... 109
Examples ... 110
CreateSubnet ... 111
Request Parameters ... 111
Response Elements ... 112
Errors ... 112
Examples ... 112
CreateTags ... 113
Request Parameters ... 113
Response Elements ... 113
Errors ... 113
Examples ... 114
CreateVolume ... 115
Request Parameters ... 115
Response Elements ... 116
Errors ... 117
Examples ... 117
CreateVpc ... 118
Request Parameters ... 118
Response Elements ... 118
Errors ... 119
Examples ... 119
CreateVpcEndpoint ... 121
Request Parameters ... 121

Response Elements ... 122
Errors ... 122
Examples ... 122
CreateVpcPeeringConnection ... 124
Request Parameters ... 124
Response Elements ... 124
Errors ... 125
Examples ... 125
CreateVpnConnection ... 127
Request Parameters ... 127
Response Elements ... 128
Errors ... 128
Examples ... 128
CreateVpnConnectionRoute ... 130
Request Parameters ... 130
Response Elements ... 130
Errors ... 130
Examples ... 130
CreateVpnGateway ... 132
Request Parameters ... 132
Response Elements ... 132
Errors ... 132
Examples ... 133
DeleteCustomerGateway ... 134
Request Parameters ... 134
Response Elements ... 134
Errors ... 134
Examples ... 134
DeleteDhcpOptions ... 136
Request Parameters ... 136
Response Elements ... 136
Errors ... 136
Examples ... 136
DeleteFlowLogs ... 138
Request Parameters ... 138
Response Elements ... 138
Errors ... 138
Examples ... 138
DeleteInternetGateway ... 139
Request Parameters ... 139
Response Elements ... 139
Errors ... 139
Examples ... 139
DeleteKeyPair ... 141
Request Parameters ... 141
Response Elements ... 141
Errors ... 141
Examples ... 141
DeleteNetworkAcl ... 143
Request Parameters ... 143
Response Elements ... 143
Errors ... 143
Examples ... 143
DeleteNetworkAclEntry ... 145
Request Parameters ... 145
Response Elements ... 145
Errors ... 145
Examples ... 146

DeleteNetworkInterface 147
Request Parameters 147
Response Elements 147
Errors 147
Examples 147
DeletePlacementGroup 149
Request Parameters 149
Response Elements 149
Errors 149
Examples 149
DeleteRoute 151
Request Parameters 151
Response Elements 151
Errors 151
Examples 151
DeleteRouteTable 153
Request Parameters 153
Response Elements 153
Errors 153
Examples 153
DeleteSecurityGroup 155
Request Parameters 155
Response Elements 155
Errors 155
Examples 156
DeleteSnapshot 157
Request Parameters 157
Response Elements 157
Errors 157
Examples 158
DeleteSpotDatafeedSubscription 159
Request Parameters 159
Response Elements 159
Errors 159
Examples 159
DeleteSubnet 161
Request Parameters 161
Response Elements 161
Errors 161
Examples 161
DeleteTags 163
Request Parameters 163
Response Elements 163
Errors 163
Examples 164
DeleteVolume 166
Request Parameters 166
Response Elements 166
Errors 166
Examples 166
DeleteVpc 168
Request Parameters 168
Response Elements 168
Errors 168
Examples 168
DeleteVpcEndpoints 170
Request Parameters 170
Response Elements 170

Errors ... 170
Examples ... 170
DeleteVpcPeeringConnection ... 172
Request Parameters ... 172
Response Elements ... 172
Errors ... 172
Examples ... 172
DeleteVpnConnection ... 174
Request Parameters ... 174
Response Elements ... 174
Errors ... 174
Examples ... 174
DeleteVpnConnectionRoute ... 176
Request Parameters ... 176
Response Elements ... 176
Errors ... 176
Examples ... 176
DeleteVpnGateway ... 178
Request Parameters ... 178
Response Elements ... 178
Errors ... 178
Examples ... 178
DeregisterImage ... 180
Request Parameters ... 180
Response Elements ... 180
Errors ... 180
Examples ... 180
DescribeAccountAttributes ... 182
Request Parameters ... 182
Response Elements ... 182
Errors ... 182
Examples ... 183
DescribeAddresses ... 186
Request Parameters ... 186
Response Elements ... 186
Errors ... 187
Examples ... 187
DescribeAvailabilityZones ... 189
Request Parameters ... 189
Response Elements ... 189
Errors ... 190
Examples ... 190
DescribeBundleTasks ... 191
Request Parameters ... 191
Response Elements ... 191
Errors ... 192
Examples ... 192
DescribeClassicLinkInstances ... 194
Request Parameters ... 194
Response Elements ... 195
Errors ... 195
Examples ... 195
DescribeConversionTasks ... 197
Request Parameters ... 197
Response Elements ... 197
Errors ... 197
Examples ... 197
DescribeCustomerGateways ... 199

Request Parameters ... 199
Response Elements ... 199
Errors ... 200
Examples ... 200
DescribeDhcpOptions ... 202
Request Parameters ... 202
Response Elements ... 202
Errors ... 203
Examples ... 203
DescribeExportTasks ... 205
Request Parameters ... 205
Response Elements ... 205
Errors ... 205
Examples ... 205
DescribeFlowLogs ... 207
Request Parameters ... 207
Response Elements ... 207
Errors ... 208
Examples ... 208
DescribeImageAttribute ... 209
Request Parameters ... 209
Response Elements ... 209
Errors ... 209
Examples ... 210
DescribeImages ... 212
Request Parameters ... 212
Response Elements ... 213
Errors ... 213
Examples ... 214
DescribeImportImageTasks ... 217
Request Parameters ... 217
Response Elements ... 217
Errors ... 218
DescribeImportSnapshotTasks ... 219
Request Parameters ... 219
Response Elements ... 219
Errors ... 220
DescribeInstanceAttribute ... 221
Request Parameters ... 221
Response Elements ... 221
Errors ... 221
Examples ... 222
DescribeInstances ... 224
Request Parameters ... 224
Response Elements ... 227
Errors ... 227
Examples ... 228
DescribeInstanceStatus ... 232
Request Parameters ... 232
Response Elements ... 233
Errors ... 234
Examples ... 234
DescribeInternetGateways ... 238
Request Parameters ... 238
Response Elements ... 238
Errors ... 239
Examples ... 239
DescribeKeyPairs ... 240

Request Parameters ... 240
Response Elements ... 240
Errors ... 240
Examples ... 241
DescribeMovingAddresses ... 242
Request Parameters ... 242
Response Elements ... 242
Errors ... 243
Examples ... 243
DescribeNetworkAcls ... 244
Request Parameters ... 244
Response Elements ... 245
Errors ... 245
Examples ... 245
DescribeNetworkInterfaceAttribute ... 248
Request Parameters ... 248
Response Elements ... 248
Errors ... 249
Examples ... 249
DescribeNetworkInterfaces ... 250
Request Parameters ... 250
Response Elements ... 251
Errors ... 251
Examples ... 252
DescribePlacementGroups ... 254
Request Parameters ... 254
Response Elements ... 254
Errors ... 254
Examples ... 255
DescribePrefixLists ... 256
Request Parameters ... 256
Response Elements ... 256
Errors ... 257
Examples ... 257
DescribeRegions ... 258
Request Parameters ... 258
Response Elements ... 258
Errors ... 258
Examples ... 259
DescribeReservedInstances ... 260
Request Parameters ... 260
Response Elements ... 261
Errors ... 261
Examples ... 261
DescribeReservedInstancesListings ... 263
Request Parameters ... 263
Response Elements ... 263
Errors ... 264
Examples ... 264
DescribeReservedInstancesModifications ... 266
Request Parameters ... 266
Response Elements ... 267
Errors ... 267
Examples ... 267
DescribeReservedInstancesOfferings ... 268
Request Parameters ... 268
Response Elements ... 270
Errors ... 271

Examples ... 271
DescribeRouteTables ... 275
Request Parameters ... 275
Response Elements ... 276
Errors ... 276
Examples ... 276
DescribeSecurityGroups ... 278
Request Parameters ... 278
Response Elements ... 279
Errors ... 279
Examples ... 279
DescribeSnapshotAttribute ... 282
Request Parameters ... 282
Response Elements ... 282
Errors ... 283
Examples ... 283
DescribeSnapshots ... 284
Request Parameters ... 284
Response Elements ... 286
Errors ... 286
Examples ... 286
DescribeSpotDatafeedSubscription ... 288
Request Parameters ... 288
Response Elements ... 288
Errors ... 288
Examples ... 288
DescribeSpotFleetInstances ... 290
Request Parameters ... 290
Response Elements ... 290
Errors ... 291
Examples ... 291
DescribeSpotFleetRequestHistory ... 293
Request Parameters ... 293
Response Elements ... 294
Errors ... 294
Examples ... 294
DescribeSpotFleetRequests ... 297
Request Parameters ... 297
Response Elements ... 297
Errors ... 298
Examples ... 298
DescribeSpotInstanceRequests ... 300
Request Parameters ... 300
Response Elements ... 301
Errors ... 302
Examples ... 302
DescribeSpotPriceHistory ... 304
Request Parameters ... 304
Response Elements ... 305
Errors ... 306
Examples ... 306
DescribeSubnets ... 308
Request Parameters ... 308
Response Elements ... 309
Errors ... 309
Examples ... 309
DescribeTags ... 311
Request Parameters ... 311

Response Elements ... 311
Errors ... 312
Examples ... 312
DescribeVolumeAttribute ... 317
Request Parameters ... 317
Response Elements ... 317
Errors ... 318
Examples ... 318
DescribeVolumes ... 320
Request Parameters ... 320
Response Elements ... 321
Errors ... 321
Examples ... 322
DescribeVolumeStatus ... 323
Request Parameters ... 323
Response Elements ... 324
Errors ... 325
Examples ... 325
DescribeVpcAttribute ... 327
Request Parameters ... 327
Response Elements ... 327
Errors ... 328
Examples ... 328
DescribeVpcClassicLink ... 329
Request Parameters ... 329
Response Elements ... 329
Errors ... 330
Examples ... 330
DescribeVpcEndpoints ... 331
Request Parameters ... 331
Response Elements ... 331
Errors ... 332
Examples ... 332
DescribeVpcEndpointServices ... 333
Request Parameters ... 333
Response Elements ... 333
Errors ... 333
Examples ... 334
DescribeVpcPeeringConnections ... 335
Request Parameters ... 335
Response Elements ... 336
Errors ... 336
Examples ... 336
DescribeVpcs ... 338
Request Parameters ... 338
Response Elements ... 338
Errors ... 339
Examples ... 339
DescribeVpnConnections ... 341
Request Parameters ... 341
Response Elements ... 342
Errors ... 342
Examples ... 342
DescribeVpnGateways ... 344
Request Parameters ... 344
Response Elements ... 344
Errors ... 345
Examples ... 345

DetachClassicLinkVpc 347
Request Parameters 347
Response Elements 347
Errors 347
Examples 348
DetachInternetGateway 349
Request Parameters 349
Response Elements 349
Errors 349
Examples 349
DetachNetworkInterface 351
Request Parameters 351
Response Elements 351
Errors 351
Examples 351
DetachVolume 353
Request Parameters 353
Response Elements 354
Errors 354
Examples 354
DetachVpnGateway 355
Request Parameters 355
Response Elements 355
Errors 355
Examples 356
DisableVgwRoutePropagation 357
Request Parameters 357
Response Elements 357
Errors 357
Examples 357
DisableVpcClassicLink 359
Request Parameters 359
Response Elements 359
Errors 359
Examples 359
DisassociateAddress 361
Request Parameters 361
Response Elements 361
Errors 361
Examples 362
DisassociateRouteTable 363
Request Parameters 363
Response Elements 363
Errors 363
Examples 363
EnableVgwRoutePropagation 365
Request Parameters 365
Response Elements 365
Errors 365
Examples 365
EnableVolumeIO 367
Request Parameters 367
Response Elements 367
Errors 367
Examples 367
EnableVpcClassicLink 369
Request Parameters 369
Response Elements 369

Errors ... 369
Examples ... 369
GetConsoleOutput ... 371
Request Parameters ... 371
Response Elements ... 371
Errors ... 372
Examples ... 372
GetPasswordData ... 373
Request Parameters ... 373
Response Elements ... 373
Errors ... 374
Examples ... 374
ImportImage ... 375
Request Parameters ... 375
Response Elements ... 376
Errors ... 377
ImportInstance ... 378
Request Parameters ... 378
Response Elements ... 378
Errors ... 379
Examples ... 379
ImportKeyPair ... 381
Request Parameters ... 381
Response Elements ... 381
Errors ... 381
Examples ... 382
ImportSnapshot ... 383
Request Parameters ... 383
Response Elements ... 383
Errors ... 384
ImportVolume ... 385
Request Parameters ... 385
Response Elements ... 385
Errors ... 386
Examples ... 386
ModifyImageAttribute ... 388
Request Parameters ... 388
Response Elements ... 389
Errors ... 389
Examples ... 389
ModifyInstanceAttribute ... 391
Request Parameters ... 391
Response Elements ... 393
Errors ... 393
Examples ... 393
ModifyNetworkInterfaceAttribute ... 395
Request Parameters ... 395
Response Elements ... 395
Errors ... 396
Examples ... 396
ModifyReservedInstances ... 397
Request Parameters ... 397
Response Elements ... 397
Errors ... 397
Examples ... 398
ModifySnapshotAttribute ... 399
Request Parameters ... 399
Response Elements ... 400

Errors ... 400
Examples ... 400
ModifySubnetAttribute ... 402
Request Parameters ... 402
Response Elements ... 402
Errors ... 402
Examples ... 402
ModifyVolumeAttribute ... 404
Request Parameters ... 404
Response Elements ... 404
Errors ... 404
Examples ... 405
ModifyVpcAttribute ... 406
Request Parameters ... 406
Response Elements ... 406
Errors ... 406
Examples ... 407
ModifyVpcEndpoint ... 408
Request Parameters ... 408
Response Elements ... 408
Errors ... 409
Examples ... 409
MonitorInstances ... 410
Request Parameters ... 410
Response Elements ... 410
Errors ... 410
Examples ... 410
MoveAddressToVpc ... 412
Request Parameters ... 412
Response Elements ... 412
Errors ... 412
Examples ... 413
PurchaseReservedInstancesOffering ... 414
Request Parameters ... 414
Response Elements ... 414
Errors ... 415
Examples ... 415
RebootInstances ... 416
Request Parameters ... 416
Response Elements ... 416
Errors ... 416
Examples ... 417
RegisterImage ... 418
Request Parameters ... 418
Response Elements ... 420
Errors ... 420
Examples ... 420
RejectVpcPeeringConnection ... 422
Request Parameters ... 422
Response Elements ... 422
Errors ... 422
Examples ... 422
ReleaseAddress ... 424
Request Parameters ... 424
Response Elements ... 424
Errors ... 425
Examples ... 425
ReplaceNetworkAclAssociation ... 426

Request Parameters 426
Response Elements 426
Errors 426
Examples 427
ReplaceNetworkAclEntry 428
Request Parameters 428
Response Elements 429
Errors 429
Examples 429
ReplaceRoute 431
Request Parameters 431
Response Elements 432
Errors 432
Examples 432
ReplaceRouteTableAssociation 433
Request Parameters 433
Response Elements 433
Errors 433
Examples 434
ReportInstanceStatus 435
Request Parameters 435
Response Elements 436
Errors 436
Examples 436
RequestSpotFleet 438
Request Parameters 438
Response Elements 438
Errors 438
Examples 439
RequestSpotInstances 440
Request Parameters 440
Response Elements 441
Errors 442
Examples 442
ResetImageAttribute 444
Request Parameters 444
Response Elements 444
Errors 444
Examples 445
ResetInstanceAttribute 446
Request Parameters 446
Response Elements 446
Errors 447
Examples 447
ResetNetworkInterfaceAttribute 448
Request Parameters 448
Response Elements 448
Errors 448
Examples 448
ResetSnapshotAttribute 450
Request Parameters 450
Response Elements 450
Errors 450
Examples 451
RestoreAddressToClassic 452
Request Parameters 452
Response Elements 452
Errors 452

Examples ... 452
RevokeSecurityGroupEgress ... 454
Request Parameters ... 454
Response Elements ... 455
Errors ... 455
Examples ... 455
RevokeSecurityGroupIngress ... 457
Request Parameters ... 457
Response Elements ... 458
Errors ... 458
Examples ... 459
RunInstances ... 460
Request Parameters ... 460
Response Elements ... 464
Errors ... 464
Examples ... 464
StartInstances ... 467
Request Parameters ... 467
Response Elements ... 467
Errors ... 468
Examples ... 468
StopInstances ... 469
Request Parameters ... 469
Response Elements ... 470
Errors ... 470
Examples ... 470
TerminateInstances ... 471
Request Parameters ... 471
Response Elements ... 471
Errors ... 472
Examples ... 472
UnassignPrivateIpAddresses ... 473
Request Parameters ... 473
Response Elements ... 473
Errors ... 473
Examples ... 473
UnmonitorInstances ... 475
Request Parameters ... 475
Response Elements ... 475
Errors ... 475
Examples ... 475
Data Types ... 477
AccountAttribute ... 481
Description ... 481
Contents ... 481
AccountAttributeValue ... 481
Description ... 481
Contents ... 481
ActiveInstance ... 481
Description ... 481
Contents ... 481
Address ... 482
Description ... 482
Contents ... 482
AttributeBooleanValue ... 483
Description ... 483
Contents ... 483
AttributeValue ... 483

Description ... 483
Contents ... 483
AvailabilityZone ... 484
Description ... 484
Contents ... 484
AvailabilityZoneMessage ... 484
Description ... 484
Contents ... 484
BlockDeviceMapping ... 485
Description ... 485
Contents ... 485
BundleTask ... 485
Description ... 485
Contents ... 485
BundleTaskError ... 486
Description ... 486
Contents ... 487
CancelledSpotInstanceRequest ... 487
Description ... 487
Contents ... 487
CancelSpotFleetRequestsError ... 487
Description ... 487
Contents ... 487
CancelSpotFleetRequestsErrorItem ... 488
Description ... 488
Contents ... 488
CancelSpotFleetRequestsSuccessItem ... 488
Description ... 488
Contents ... 488
ClassicLinkInstance ... 489
Description ... 489
Contents ... 489
ClientData ... 489
Description ... 489
Contents ... 490
ConversionTask ... 490
Description ... 490
Contents ... 490
CreateVolumePermission ... 491
Description ... 491
Contents ... 491
CreateVolumePermissionModifications ... 492
Description ... 492
Contents ... 492
CustomerGateway ... 492
Description ... 492
Contents ... 492
DhcpConfiguration ... 493
Description ... 493
Contents ... 493
DhcpOptions ... 493
Description ... 493
Contents ... 493
DiskImage ... 494
Description ... 494
Contents ... 494
DiskImageDescription ... 494
Description ... 494

Contents 494
DiskImageDetail 495
Description 495
Contents 495
DiskImageVolumeDescription 496
Description 496
Contents 496
EbsBlockDevice 496
Description 496
Contents 496
EbsInstanceBlockDevice 497
Description 497
Contents 497
EbsInstanceBlockDeviceSpecification 498
Description 498
Contents 498
EventInformation 498
Description 498
Contents 498
ExportTask 499
Description 499
Contents 499
ExportToS3Task 500
Description 500
Contents 500
ExportToS3TaskSpecification 501
Description 501
Contents 501
Filter 502
Description 502
Contents 502
FlowLog 502
Description 502
Contents 502
GroupIdentifier 503
Description 503
Contents 503
HistoryRecord 504
Description 504
Contents 504
IamInstanceProfile 504
Description 504
Contents 504
IamInstanceProfileSpecification 505
Description 505
Contents 505
IcmpTypeCode 505
Description 505
Contents 505
Image 506
Description 506
Contents 506
ImageAttribute 508
Description 508
Contents 509
ImageDiskContainer 510
Description 510
Contents 510

ImportImageTask 510
Description 510
Contents 511
ImportInstanceLaunchSpecification 512
Description 512
Contents 512
ImportInstanceTaskDetails 513
Description 513
Contents 514
ImportInstanceVolumeDetailItem 514
Description 514
Contents 514
ImportSnapshotTask 515
Description 515
Contents 515
ImportVolumeTaskDetails 516
Description 516
Contents 516
Instance 516
Description 516
Contents 516
InstanceAttribute 521
Description 521
Contents 521
InstanceBlockDeviceMapping 523
Description 523
Contents 523
InstanceBlockDeviceMappingSpecification 523
Description 523
Contents 523
InstanceCount 524
Description 524
Contents 524
InstanceExportDetails 524
Description 524
Contents 524
InstanceMonitoring 525
Description 525
Contents 525
InstanceNetworkInterface 525
Description 525
Contents 525
InstanceNetworkInterfaceAssociation 527
Description 527
Contents 527
InstanceNetworkInterfaceAttachment 527
Description 527
Contents 527
InstanceNetworkInterfaceSpecification 528
Description 528
Contents 528
InstancePrivateIpAddress 529
Description 529
Contents 529
InstanceState 530
Description 530
Contents 530
InstanceStateChange 531

Description ... 531
Contents ... 531
InstanceStatus ... 531
Description ... 531
Contents ... 531
InstanceStatusDetails ... 532
Description ... 532
Contents ... 532
InstanceStatusEvent ... 533
Description ... 533
Contents ... 533
InstanceStatusSummary ... 533
Description ... 533
Contents ... 533
InternetGateway ... 534
Description ... 534
Contents ... 534
InternetGatewayAttachment ... 534
Description ... 534
Contents ... 534
IpPermission ... 535
Description ... 535
Contents ... 535
IpRange ... 536
Description ... 536
Contents ... 536
KeyPair ... 536
Description ... 536
Contents ... 536
KeyPairInfo ... 537
Description ... 537
Contents ... 537
LaunchPermission ... 537
Description ... 537
Contents ... 537
LaunchPermissionModifications ... 538
Description ... 538
Contents ... 538
LaunchSpecification ... 538
Description ... 538
Contents ... 538
Monitoring ... 540
Description ... 540
Contents ... 540
MovingAddressStatus ... 540
Description ... 540
Contents ... 541
NetworkAcl ... 541
Description ... 541
Contents ... 541
NetworkAclAssociation ... 542
Description ... 542
Contents ... 542
NetworkAclEntry ... 542
Description ... 542
Contents ... 542
NetworkInterface ... 543
Description ... 543

Contents 543
NetworkInterfaceAssociation 545
Description 545
Contents 545
NetworkInterfaceAttachment 546
Description 546
Contents 546
NetworkInterfaceAttachmentChanges 547
Description 547
Contents 547
NetworkInterfacePrivateIpAddress 547
Description 547
Contents 548
Placement 548
Description 548
Contents 548
PlacementGroup 549
Description 549
Contents 549
PortRange 549
Description 549
Contents 549
PrefixList 550
Description 550
Contents 550
PrefixListId 550
Description 550
Contents 550
PriceSchedule 550
Description 550
Contents 551
PriceScheduleSpecification 551
Description 551
Contents 551
PricingDetail 552
Description 552
Contents 552
PrivateIpAddressSpecification 552
Description 552
Contents 552
ProductCode 553
Description 553
Contents 553
PropagatingVgw 553
Description 553
Contents 553
RecurringCharge 553
Description 553
Contents 554
Region 554
Description 554
Contents 554
Reservation 554
Description 554
Contents 554
ReservedInstanceLimitPrice 555
Description 555
Contents 555

ReservedInstances 556
Description 556
Contents 556
ReservedInstancesConfiguration 558
Description 558
Contents 558
ReservedInstancesId 559
Description 559
Contents 559
ReservedInstancesListing 559
Description 559
Contents 559
ReservedInstancesModification 560
Description 560
Contents 560
ReservedInstancesModificationResult 562
Description 562
Contents 562
ReservedInstancesOffering 562
Description 562
Contents 562
Route 564
Description 564
Contents 564
RouteTable 565
Description 565
Contents 565
RouteTableAssociation 566
Description 566
Contents 566
RunInstancesMonitoringEnabled 567
Description 567
Contents 567
S3Storage 567
Description 567
Contents 567
SecurityGroup 568
Description 568
Contents 568
Snapshot 569
Description 569
Contents 569
SnapshotDetail 571
Description 571
Contents 571
SnapshotDiskContainer 572
Description 572
Contents 572
SnapshotTaskDetail 573
Description 573
Contents 573
SpotDatafeedSubscription 574
Description 574
Contents 574
SpotFleetLaunchSpecification 575
Description 575
Contents 575
SpotFleetMonitoring 577

Description ... 577
Contents ... 577
SpotFleetRequestConfig ... 577
Description ... 577
Contents ... 577
SpotFleetRequestConfigData ... 578
Description ... 578
Contents ... 578
SpotInstanceRequest ... 579
Description ... 579
Contents ... 579
SpotInstanceStateFault ... 581
Description ... 581
Contents ... 581
SpotInstanceStatus ... 582
Description ... 582
Contents ... 582
SpotPlacement ... 582
Description ... 582
Contents ... 582
SpotPrice ... 583
Description ... 583
Contents ... 583
StateReason ... 584
Description ... 584
Contents ... 584
Storage ... 584
Description ... 584
Contents ... 584
Subnet ... 585
Description ... 585
Contents ... 585
Tag ... 586
Description ... 586
Contents ... 586
TagDescription ... 586
Description ... 586
Contents ... 586
UnsuccessfulItem ... 587
Description ... 587
Contents ... 587
UnsuccessfulItemError ... 587
Description ... 587
Contents ... 587
UserBucket ... 588
Description ... 588
Contents ... 588
UserBucketDetails ... 588
Description ... 588
Contents ... 588
UserData ... 589
Description ... 589
Contents ... 589
UserIdGroupPair ... 589
Description ... 589
Contents ... 589
VgwTelemetry ... 589
Description ... 589

Contents ... 590
Volume ... 590
Description ... 590
Contents ... 590
VolumeAttachment ... 592
Description ... 592
Contents ... 592
VolumeDetail ... 593
Description ... 593
Contents ... 593
VolumeStatusAction ... 593
Description ... 593
Contents ... 593
VolumeStatusDetails ... 594
Description ... 594
Contents ... 594
VolumeStatusEvent ... 594
Description ... 594
Contents ... 594
VolumeStatusInfo ... 595
Description ... 595
Contents ... 595
VolumeStatusItem ... 595
Description ... 595
Contents ... 595
Vpc ... 596
Description ... 596
Contents ... 596
VpcAttachment ... 597
Description ... 597
Contents ... 597
VpcClassicLink ... 598
Description ... 598
Contents ... 598
VpcEndpoint ... 598
Description ... 598
Contents ... 598
VpcPeeringConnection ... 599
Description ... 599
Contents ... 599
VpcPeeringConnectionStateReason ... 600
Description ... 600
Contents ... 600
VpcPeeringConnectionVpcInfo ... 600
Description ... 600
Contents ... 600
VpnConnection ... 601
Description ... 601
Contents ... 601
VpnConnectionOptions ... 602
Description ... 602
Contents ... 602
VpnConnectionOptionsSpecification ... 603
Description ... 603
Contents ... 603
VpnGateway ... 603
Description ... 603
Contents ... 603

VpnStaticRoute ... 604
Description ... 604
Contents ... 604
Making API Requests ... 605
Required Knowledge ... 605
Available APIs for Amazon EC2 ... 605
Query Requests ... 606
Structure of a GET Request ... 607
Endpoints ... 608
Query Parameters ... 608
Query API Authentication ... 609
Query Response Structures ... 609
Troubleshooting API Request Errors ... 610
Query API Request Rate ... 610
Eventual Consistency ... 611
Unauthorized Operation ... 612
Ensuring Idempotency ... 612
Client Tokens ... 613
Idempotency Support ... 613
Example Idempotent Command ... 614
Example Idempotent Query ... 615
SOAP Requests ... 615
CORS Support ... 615
Simple/Actual Requests ... 616
Preflight Requests ... 616
Logging API Calls ... 617
Amazon EC2, Amazon EBS, and Amazon VPC Information in CloudTrail ... 617
Understanding Amazon EC2, Amazon EBS, and Amazon VPC Log File Entries ... 618
Common Query Parameters ... 620
Common Query Parameters for Signature Version 2 ... 620
Common Query Parameters for Signature Version 4 ... 621
Permissions ... 623
Supported Resource-Level Permissions ... 624
Customer Gateways ... 624
DHCP Options Sets ... 624
Instances ... 624
Internet Gateways ... 628
Network ACLs ... 628
Route Tables ... 628
Security Groups ... 629
Volumes ... 630
VPCs ... 631
VPC Peering Connections ... 631
Unsupported Resource-Level Permissions ... 632
Error Codes ... 637
Common Client Errors ... 637
Client Errors For Specific Actions ... 639
Common Causes of Client Errors ... 654
Server Errors ... 655
Example Error Response ... 656
Eventual Consistency ... 656

Welcome

This is the *Amazon EC2 API Reference*. It provides descriptions, syntax, and usage examples for each of the actions and data types for Amazon EC2 and Amazon Virtual Private Cloud (Amazon VPC).

The topic for each action shows the Query API request parameters and the XML response. You can also view the XML request elements in the WSDL.

Alternatively, you can use one of the AWS SDKs to access an API that's tailored to the programming language or platform that you're using. For more information, see AWS SDKs.

How Do I?	Relevant Topics
Learn about using the Query API	Making API Requests (p. 605)
Get the list of API actions by function	List of Actions by Function (p. 2)
Get the alphabetical list of API actions	Actions (p. 9)
Get the alphabetical list of data types	Data Types (p. 477)
Get a list of common query parameters	Common Query Parameters (p. 620)
Get descriptions of the error codes	Common Client Errors (p. 637)

Note
We have deprecated the SOAP API for Amazon EC2. We will continue to support SOAP requests for API versions up to and including version 2014-02-01, until the end of December 2014. For more information, see SOAP Requests (p. 615). We no longer publish the latest version of the Amazon EC2 WSDL, but you can download the last version that supports SOAP from the Amazon EC2 Developer Resources page.

To learn more about Amazon EC2 and Amazon VPC, see the following resources:

- Amazon EC2 product page
- Amazon EC2 User Guide for Linux Instances
- Amazon VPC User Guide
- Amazon EC2 Command Line Reference

List of Actions by Function

Account Attributes

- DescribeAccountAttributes (p. 182)

AMIs

- CopyImage (p. 62)
- CreateImage (p. 75)
- DeregisterImage (p. 180)
- DescribeImageAttribute (p. 209)
- DescribeImages (p. 212)
- ModifyImageAttribute (p. 388)
- RegisterImage (p. 418)
- ResetImageAttribute (p. 444)

AWS Marketplace

- ConfirmProductInstance (p. 60)

Bundle Tasks

- BundleInstance (p. 44)
- CancelBundleTask (p. 46)
- DescribeBundleTasks (p. 191)

ClassicLink

- AttachClassicLinkVpc (p. 27)
- DescribeClassicLinkInstances (p. 194)
- DescribeVpcClassicLink (p. 329)
- DetachClassicLinkVpc (p. 347)
- DisableVpcClassicLink (p. 359)
- EnableVpcClassicLink (p. 369)

Customer Gateways (Amazon VPC)

- CreateCustomerGateway (p. 67)
- DeleteCustomerGateway (p. 134)
- DescribeCustomerGateways (p. 199)

DHCP Options (Amazon VPC)

- AssociateDhcpOptions (p. 23)
- CreateDhcpOptions (p. 69)
- DeleteDhcpOptions (p. 136)
- DescribeDhcpOptions (p. 202)

Elastic Block Store

- AttachVolume (p. 33)
- CopySnapshot (p. 64)
- CreateSnapshot (p. 107)
- CreateVolume (p. 115)
- DeleteSnapshot (p. 157)
- DeleteVolume (p. 166)
- DescribeSnapshotAttribute (p. 282)
- DescribeSnapshots (p. 284)
- DescribeVolumeAttribute (p. 317)
- DescribeVolumes (p. 320)
- DescribeVolumeStatus (p. 323)
- DetachVolume (p. 353)
- EnableVolumeIO (p. 367)
- ModifySnapshotAttribute (p. 399)
- ModifyVolumeAttribute (p. 404)
- ResetSnapshotAttribute (p. 450)

Elastic IP Addresses

- AllocateAddress (p. 16)
- AssociateAddress (p. 20)
- DescribeAddresses (p. 186)
- DescribeMovingAddresses (p. 242)
- DisassociateAddress (p. 361)
- MoveAddressToVpc (p. 412)
- ReleaseAddress (p. 424)
- RestoreAddressToClassic (p. 452)

Elastic Network Interfaces (Amazon VPC)

- AssignPrivateIpAddresses (p. 18)
- AttachNetworkInterface (p. 31)
- CreateNetworkInterface (p. 88)

- DeleteNetworkInterface (p. 147)
- DescribeNetworkInterfaceAttribute (p. 248)
- DescribeNetworkInterfaces (p. 250)
- DetachNetworkInterface (p. 351)
- ModifyNetworkInterfaceAttribute (p. 395)
- ResetNetworkInterfaceAttribute (p. 448)
- UnassignPrivateIpAddresses (p. 473)

Instances

- DescribeInstanceAttribute (p. 221)
- DescribeInstances (p. 224)
- DescribeInstanceStatus (p. 232)
- GetConsoleOutput (p. 371)
- GetPasswordData (p. 373)
- ModifyInstanceAttribute (p. 391)
- MonitorInstances (p. 410)
- RebootInstances (p. 416)
- ReportInstanceStatus (p. 435)
- ResetInstanceAttribute (p. 446)
- RunInstances (p. 460)
- StartInstances (p. 467)
- StopInstances (p. 469)
- TerminateInstances (p. 471)
- UnmonitorInstances (p. 475)

Internet Gateways (Amazon VPC)

- AttachInternetGateway (p. 29)
- CreateInternetGateway (p. 79)
- DeleteInternetGateway (p. 139)
- DescribeInternetGateways (p. 238)
- DetachInternetGateway (p. 349)

Key Pairs

- CreateKeyPair (p. 81)
- DeleteKeyPair (p. 141)
- DescribeKeyPairs (p. 240)
- ImportKeyPair (p. 381)

Network ACLs (Amazon VPC)

- CreateNetworkAcl (p. 83)
- CreateNetworkAclEntry (p. 85)
- DeleteNetworkAcl (p. 143)
- DeleteNetworkAclEntry (p. 145)

- DescribeNetworkAcls (p. 244)
- ReplaceNetworkAclAssociation (p. 426)
- ReplaceNetworkAclEntry (p. 428)

Placement Groups

- CreatePlacementGroup (p. 93)
- DeletePlacementGroup (p. 149)
- DescribePlacementGroups (p. 254)

Regions and Availability Zones

- DescribeAvailabilityZones (p. 189)
- DescribeRegions (p. 258)

Reserved Instances

- CancelReservedInstancesListing (p. 53)
- CreateReservedInstancesListing (p. 95)
- DescribeReservedInstances (p. 260)
- DescribeReservedInstancesListings (p. 263)
- DescribeReservedInstancesModifications (p. 266)
- DescribeReservedInstancesOfferings (p. 268)
- ModifyReservedInstances (p. 397)
- PurchaseReservedInstancesOffering (p. 414)

Route Tables (Amazon VPC)

- AssociateRouteTable (p. 25)
- CreateRoute (p. 99)
- CreateRouteTable (p. 102)
- DeleteRoute (p. 151)
- DeleteRouteTable (p. 153)
- DescribeRouteTables (p. 275)
- DisableVgwRoutePropagation (p. 357)
- DisassociateRouteTable (p. 363)
- EnableVgwRoutePropagation (p. 365)
- ReplaceRoute (p. 431)
- ReplaceRouteTableAssociation (p. 433)

Security Groups

- AuthorizeSecurityGroupEgress (p. 37) (EC2-VPC only)
- AuthorizeSecurityGroupIngress (p. 40)
- CreateSecurityGroup (p. 104)
- DeleteSecurityGroup (p. 155)
- DescribeSecurityGroups (p. 278)
- RevokeSecurityGroupEgress (p. 454) (EC2-VPC only)

- RevokeSecurityGroupIngress (p. 457)

Spot Instances

- CancelSpotInstanceRequests (p. 58)
- CreateSpotDatafeedSubscription (p. 109)
- DeleteSpotDatafeedSubscription (p. 159)
- DescribeSpotDatafeedSubscription (p. 288)
- DescribeSpotInstanceRequests (p. 300)
- DescribeSpotPriceHistory (p. 304)
- RequestSpotInstances (p. 440)

Spot Fleets

- CancelSpotFleetRequests (p. 56)
- DescribeSpotFleetInstances (p. 290)
- DescribeSpotFleetRequestHistory (p. 293)
- DescribeSpotFleetRequests (p. 297)
- RequestSpotFleet (p. 438)

Subnets (Amazon VPC)

- CreateSubnet (p. 111)
- DeleteSubnet (p. 161)
- DescribeSubnets (p. 308)
- ModifySubnetAttribute (p. 402)

Tags

- CreateTags (p. 113)
- DeleteTags (p. 163)
- DescribeTags (p. 311)

VM Import

- CancelConversionTask (p. 48)
- CancelImportTask (p. 52)
- DescribeConversionTasks (p. 197)
- DescribeImportImageTasks (p. 217)
- DescribeImportSnapshotTasks (p. 219)
- ImportInstance (p. 378)
- ImportImage (p. 375)
- ImportSnapshot (p. 383)
- ImportVolume (p. 385)

VM Export

- CancelExportTask (p. 50)

- CreateInstanceExportTask (p. 77)
- DescribeExportTasks (p. 205)

VPCs (Amazon VPC)

- CreateVpc (p. 118)
- DeleteVpc (p. 168)
- DescribeVpcAttribute (p. 327)
- DescribeVpcs (p. 338)
- ModifyVpcAttribute (p. 406)

VPC Flow Logs

- CreateFlowLogs (p. 72)
- DeleteFlowLogs (p. 138)
- DescribeFlowLogs (p. 207)

VPC Endpoints (Amazon VPC)

- CreateVpcEndpoint (p. 121)
- DeleteVpcEndpoints (p. 170)
- DescribePrefixLists (p. 256)
- DescribeVpcEndpoints (p. 331)
- DescribeVpcEndpointServices (p. 333)
- ModifyVpcEndpoint (p. 408)

VPC Peering Connections (Amazon VPC)

- AcceptVpcPeeringConnection (p. 14)
- CreateVpcPeeringConnection (p. 124)
- DeleteVpcPeeringConnection (p. 172)
- DescribeVpcPeeringConnections (p. 335)
- RejectVpcPeeringConnection (p. 422)

VPN Connections (Amazon VPC)

- CreateVpnConnection (p. 127)
- CreateVpnConnectionRoute (p. 130)
- DeleteVpnConnection (p. 174)
- DeleteVpnConnectionRoute (p. 176)
- DescribeVpnConnections (p. 341)

Virtual Private Gateways (Amazon VPC)

- AttachVpnGateway (p. 35)
- CreateVpnGateway (p. 132)
- DeleteVpnGateway (p. 178)
- DescribeVpnGateways (p. 344)

- DetachVpnGateway (p. 355)

Actions

The following actions are supported:

- AcceptVpcPeeringConnection (p. 14)
- AllocateAddress (p. 16)
- AssignPrivateIpAddresses (p. 18)
- AssociateAddress (p. 20)
- AssociateDhcpOptions (p. 23)
- AssociateRouteTable (p. 25)
- AttachClassicLinkVpc (p. 27)
- AttachInternetGateway (p. 29)
- AttachNetworkInterface (p. 31)
- AttachVolume (p. 33)
- AttachVpnGateway (p. 35)
- AuthorizeSecurityGroupEgress (p. 37)
- AuthorizeSecurityGroupIngress (p. 40)
- BundleInstance (p. 44)
- CancelBundleTask (p. 46)
- CancelConversionTask (p. 48)
- CancelExportTask (p. 50)
- CancelImportTask (p. 52)
- CancelReservedInstancesListing (p. 53)
- CancelSpotFleetRequests (p. 56)
- CancelSpotInstanceRequests (p. 58)
- ConfirmProductInstance (p. 60)
- CopyImage (p. 62)
- CopySnapshot (p. 64)
- CreateCustomerGateway (p. 67)
- CreateDhcpOptions (p. 69)
- CreateFlowLogs (p. 72)
- CreateImage (p. 75)
- CreateInstanceExportTask (p. 77)
- CreateInternetGateway (p. 79)

- CreateKeyPair (p. 81)
- CreateNetworkAcl (p. 83)
- CreateNetworkAclEntry (p. 85)
- CreateNetworkInterface (p. 88)
- CreatePlacementGroup (p. 93)
- CreateReservedInstancesListing (p. 95)
- CreateRoute (p. 99)
- CreateRouteTable (p. 102)
- CreateSecurityGroup (p. 104)
- CreateSnapshot (p. 107)
- CreateSpotDatafeedSubscription (p. 109)
- CreateSubnet (p. 111)
- CreateTags (p. 113)
- CreateVolume (p. 115)
- CreateVpc (p. 118)
- CreateVpcEndpoint (p. 121)
- CreateVpcPeeringConnection (p. 124)
- CreateVpnConnection (p. 127)
- CreateVpnConnectionRoute (p. 130)
- CreateVpnGateway (p. 132)
- DeleteCustomerGateway (p. 134)
- DeleteDhcpOptions (p. 136)
- DeleteFlowLogs (p. 138)
- DeleteInternetGateway (p. 139)
- DeleteKeyPair (p. 141)
- DeleteNetworkAcl (p. 143)
- DeleteNetworkAclEntry (p. 145)
- DeleteNetworkInterface (p. 147)
- DeletePlacementGroup (p. 149)
- DeleteRoute (p. 151)
- DeleteRouteTable (p. 153)
- DeleteSecurityGroup (p. 155)
- DeleteSnapshot (p. 157)
- DeleteSpotDatafeedSubscription (p. 159)
- DeleteSubnet (p. 161)
- DeleteTags (p. 163)
- DeleteVolume (p. 166)
- DeleteVpc (p. 168)
- DeleteVpcEndpoints (p. 170)
- DeleteVpcPeeringConnection (p. 172)
- DeleteVpnConnection (p. 174)
- DeleteVpnConnectionRoute (p. 176)
- DeleteVpnGateway (p. 178)
- DeregisterImage (p. 180)
- DescribeAccountAttributes (p. 182)
- DescribeAddresses (p. 186)

- DescribeAvailabilityZones (p. 189)
- DescribeBundleTasks (p. 191)
- DescribeClassicLinkInstances (p. 194)
- DescribeConversionTasks (p. 197)
- DescribeCustomerGateways (p. 199)
- DescribeDhcpOptions (p. 202)
- DescribeExportTasks (p. 205)
- DescribeFlowLogs (p. 207)
- DescribeImageAttribute (p. 209)
- DescribeImages (p. 212)
- DescribeImportImageTasks (p. 217)
- DescribeImportSnapshotTasks (p. 219)
- DescribeInstanceAttribute (p. 221)
- DescribeInstances (p. 224)
- DescribeInstanceStatus (p. 232)
- DescribeInternetGateways (p. 238)
- DescribeKeyPairs (p. 240)
- DescribeMovingAddresses (p. 242)
- DescribeNetworkAcls (p. 244)
- DescribeNetworkInterfaceAttribute (p. 248)
- DescribeNetworkInterfaces (p. 250)
- DescribePlacementGroups (p. 254)
- DescribePrefixLists (p. 256)
- DescribeRegions (p. 258)
- DescribeReservedInstances (p. 260)
- DescribeReservedInstancesListings (p. 263)
- DescribeReservedInstancesModifications (p. 266)
- DescribeReservedInstancesOfferings (p. 268)
- DescribeRouteTables (p. 275)
- DescribeSecurityGroups (p. 278)
- DescribeSnapshotAttribute (p. 282)
- DescribeSnapshots (p. 284)
- DescribeSpotDatafeedSubscription (p. 288)
- DescribeSpotFleetInstances (p. 290)
- DescribeSpotFleetRequestHistory (p. 293)
- DescribeSpotFleetRequests (p. 297)
- DescribeSpotInstanceRequests (p. 300)
- DescribeSpotPriceHistory (p. 304)
- DescribeSubnets (p. 308)
- DescribeTags (p. 311)
- DescribeVolumeAttribute (p. 317)
- DescribeVolumes (p. 320)
- DescribeVolumeStatus (p. 323)
- DescribeVpcAttribute (p. 327)
- DescribeVpcClassicLink (p. 329)
- DescribeVpcEndpoints (p. 331)

- DescribeVpcEndpointServices (p. 333)
- DescribeVpcPeeringConnections (p. 335)
- DescribeVpcs (p. 338)
- DescribeVpnConnections (p. 341)
- DescribeVpnGateways (p. 344)
- DetachClassicLinkVpc (p. 347)
- DetachInternetGateway (p. 349)
- DetachNetworkInterface (p. 351)
- DetachVolume (p. 353)
- DetachVpnGateway (p. 355)
- DisableVgwRoutePropagation (p. 357)
- DisableVpcClassicLink (p. 359)
- DisassociateAddress (p. 361)
- DisassociateRouteTable (p. 363)
- EnableVgwRoutePropagation (p. 365)
- EnableVolumeIO (p. 367)
- EnableVpcClassicLink (p. 369)
- GetConsoleOutput (p. 371)
- GetPasswordData (p. 373)
- ImportImage (p. 375)
- ImportInstance (p. 378)
- ImportKeyPair (p. 381)
- ImportSnapshot (p. 383)
- ImportVolume (p. 385)
- ModifyImageAttribute (p. 388)
- ModifyInstanceAttribute (p. 391)
- ModifyNetworkInterfaceAttribute (p. 395)
- ModifyReservedInstances (p. 397)
- ModifySnapshotAttribute (p. 399)
- ModifySubnetAttribute (p. 402)
- ModifyVolumeAttribute (p. 404)
- ModifyVpcAttribute (p. 406)
- ModifyVpcEndpoint (p. 408)
- MonitorInstances (p. 410)
- MoveAddressToVpc (p. 412)
- PurchaseReservedInstancesOffering (p. 414)
- RebootInstances (p. 416)
- RegisterImage (p. 418)
- RejectVpcPeeringConnection (p. 422)
- ReleaseAddress (p. 424)
- ReplaceNetworkAclAssociation (p. 426)
- ReplaceNetworkAclEntry (p. 428)
- ReplaceRoute (p. 431)
- ReplaceRouteTableAssociation (p. 433)
- ReportInstanceStatus (p. 435)
- RequestSpotFleet (p. 438)

- RequestSpotInstances (p. 440)
- ResetImageAttribute (p. 444)
- ResetInstanceAttribute (p. 446)
- ResetNetworkInterfaceAttribute (p. 448)
- ResetSnapshotAttribute (p. 450)
- RestoreAddressToClassic (p. 452)
- RevokeSecurityGroupEgress (p. 454)
- RevokeSecurityGroupIngress (p. 457)
- RunInstances (p. 460)
- StartInstances (p. 467)
- StopInstances (p. 469)
- TerminateInstances (p. 471)
- UnassignPrivateIpAddresses (p. 473)
- UnmonitorInstances (p. 475)

AcceptVpcPeeringConnection

Accept a VPC peering connection request. To accept a request, the VPC peering connection must be in the `pending-acceptance` state, and you must be the owner of the peer VPC. Use the `DescribeVpcPeeringConnections` request to view your outstanding VPC peering connection requests.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcPeeringConnectionId
The ID of the VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpcPeeringConnection
Information about the VPC peering connection.

Type: VpcPeeringConnection (p. 599)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example accepts the specified VPC peering connection request.

Sample Request

```
 https://ec2.amazonaws.com/?Action=AcceptVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <vpcPeeringConnection>
   <vpcPeeringConnectionId>pcx-1a2b3c4d</vpcPeeringConnectionId>
   <requesterVpcInfo>
     <ownerId>123456789012</ownerId>
     <vpcId>vpc-1a2b3c4d</vpcId>
     <cidrBlock>10.0.0.0/28</cidrBlock>
   </requesterVpcInfo>
   <accepterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-111aaa22</vpcId>
     <cidrBlock>10.0.1.0/28</cidrBlock>
   </accepterVpcInfo>
   <status>
     <code>active</code>
     <message>Active</message>
    </status>
   <tagSet/>
  </vpcPeeringConnection>
 </AcceptVpcPeeringConnectionResponse>"
```

AllocateAddress

Acquires an Elastic IP address.

An Elastic IP address is for use either in the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Domain
Set to `vpc` to allocate the address for use with instances in a VPC.

Default: The address is for use with instances in EC2-Classic.

Type: String

Valid Values: `vpc | standard`

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

allocationId
[EC2-VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with instances in a VPC.

Type: String

domain
Indicates whether this Elastic IP address is for use with instances in EC2-Classic (`standard`) or instances in a VPC (`vpc`).

Type: String

publicIp
The Elastic IP address.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example request allocates an Elastic IP address for use with instances in EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&AUTHPARAMS
```

Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <publicIp>192.0.2.1</publicIp>
   <domain>standard</domain>
</AllocateAddressResponse>
```

Example for EC2-VPC

This example request allocates an Elastic IP address for use with instances in a VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
Domain=vpc
&AUTHPARAMS
```

Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <publicIp>198.51.100.1</publicIp>
   <domain>vpc</domain>
   <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

AssignPrivateIpAddresses

Assigns one or more secondary private IP addresses to the specified network interface. You can specify one or more specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned within the subnet's CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For information about instance types, see Instance Types in the *Amazon Elastic Compute Cloud User Guide*. For more information about Elastic IP addresses, see Elastic IP Addresses in the *Amazon Elastic Compute Cloud User Guide*.

AssignPrivateIpAddresses is available only in EC2-VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AllowReassignment
Indicates whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.

Type: Boolean

Required: No

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

PrivateIpAddress.N
One or more IP addresses to be assigned as a secondary private IP address to the network interface. You can't specify this parameter when also specifying a number of secondary IP addresses.

If you don't specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.

Type: String list

Required: No

SecondaryPrivateIpAddressCount
The number of secondary IP addresses to assign to the network interface. You can't specify this parameter when also specifying private IP addresses.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example assigns two secondary private IP addresses (10.0.2.1 and 10.0.2.11) to the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.1=10.0.2.1
&PrivateIpAddress.2=10.0.2.11
&AUTHPARAMS
```

Sample Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AssignPrivateIpAddresses>
```

Example 2

This example assigns two secondary private IP addresses to the specified network interface. Amazon EC2 automatically assigns these IP addresses from the available IP addresses within the subnet's CIDR block range.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&SecondaryPrivateIpAddressCount=2
&AUTHPARAMS
```

Sample Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AssignPrivateIpAddresses>
```

AssociateAddress

Associates an Elastic IP address with an instance or a network interface.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the *Amazon Elastic Compute Cloud User Guide*.

[EC2-Classic, VPC in an EC2-VPC-only account] If the Elastic IP address is already associated with a different instance, it is disassociated from that instance and associated with the specified instance.

[VPC in an EC2-Classic account] If you don't specify a private IP address, the Elastic IP address is associated with the primary IP address. If the Elastic IP address is already associated with a different instance or a network interface, you get an error unless you allow reassociation.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AllocationId
[EC2-VPC] The allocation ID. This is required for EC2-VPC.

Type: String

Required: No

AllowReassociation
[EC2-VPC] Allows an Elastic IP address that is already associated with an instance or network interface to be re-associated with the specified instance or network interface. Otherwise, the operation fails.

Default: `false`

Type: Boolean

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance. This is required for EC2-Classic. For EC2-VPC, you can specify either the instance ID or the network interface ID, but not both. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Required: Yes

NetworkInterfaceId
[EC2-VPC] The ID of the network interface. If the instance has more than one network interface, you must specify a network interface ID.

Type: String

Required: No

PrivateIpAddress
[EC2-VPC] The primary or secondary private IP address to associate with the Elastic IP address. If no private IP address is specified, the Elastic IP address is associated with the primary private IP address.

Type: String

Required: No

PublicIp
The Elastic IP address. This is required for EC2-Classic.

Type: String

Required: Yes

Response Elements

The following elements are returned.

associationId
[EC2-VPC] The ID that represents the association of the Elastic IP address with an instance.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example request associates an Elastic IP address with an instance in EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-2ea64347
&PublicIp=192.0.2.1
&AUTHPARAMS
```

Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

Example for EC2-VPC

This example request associates a Elastic IP address with an instance in a VPC. The AllowReassignment parameter allows the Elastic IP address to be associated with the specified instance even if it's already associated with a different instance or a network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-4fd2431a
&AllocationId=eipalloc-5723d13e
&AllowReassignment=true
&AUTHPARAMS
```

Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
   <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

AssociateDhcpOptions

Associates a set of DHCP options (that you've previously created) with the specified VPC, or associates no DHCP options with the VPC.

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don't need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. You can explicitly renew the lease using the operating system on the instance.

For more information, see DHCP Options Sets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DhcpOptionsId
The ID of the DHCP options set, or `default` to associate no DHCP options with the VPC.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example associates the DHCP options with the ID dopt-7a8b9c2d with the VPC with the ID vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</AssociateDhcpOptionsResponse>
```

Example 2

This example changes the VPC with the ID vpc-1a2b3c4d to have no associated DHCP options set.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=default
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</AssociateDhcpOptionsResponse>
```

AssociateRouteTable

Associates a subnet with a route table. The subnet and route table must be in the same VPC. This association causes traffic originating from the subnet to be routed according to the routes in the route table. The action returns an association ID, which you need in order to disassociate the route table from the subnet later. A route table can be associated with multiple subnets.

For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

RouteTableId
The ID of the route table.

Type: String

Required: Yes

SubnetId
The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

associationId
The route table association ID (needed to disassociate the route table).

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example associates a route table with the ID rtb-e4ad488d with a subnet with the ID subnet-15ad487c.

Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-e4ad488d
&SubnetId=subnet-15ad487c
```

Sample Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```

AttachClassicLinkVpc

Links an EC2-Classic instance to a ClassicLink-enabled VPC through one or more of the VPC's security groups. You cannot link an EC2-Classic instance to more than one VPC at a time. You can only link an instance that's in the `running` state. An instance is automatically unlinked from a VPC when it's stopped - you can link it to the VPC again when you restart it.

After you've linked an instance, you cannot change the VPC security groups that are associated with it. To change the security groups, you must first unlink the instance, and then link it again.

Linking your instance to a VPC is sometimes referred to as *attaching* your instance.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SecurityGroupId.N
The ID of one or more of the VPC's security groups. You cannot specify security groups from a different VPC.

Type: String list

Required: Yes

InstanceId
The ID of an EC2-Classic instance to link to the ClassicLink-enabled VPC.

Type: String

Required: Yes

VpcId
The ID of a ClassicLink-enabled VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example links instance i-1a2b3c4d to VPC vpc-88888888 through the VPC's security group sg-12312312.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&GroupId.1=sg-12312312
&AUTHPARAMS
```

Sample Response

```
<AttachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AttachClassicLinkVpcResponse>
```

Example

This example links instance i-1a2b3c4d to VPC vpc-88888888 through the VPC's security groups sg-12312312 and sg-44455566.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&GroupId.1=sg-12312312
&GroupId.2=sg-44455566
&AUTHPARAMS
```

AttachInternetGateway

Attaches an Internet gateway to a VPC, enabling connectivity between the Internet and the VPC. For more information about your VPC and Internet gateway, see the Amazon Virtual Private Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InternetGatewayId
The ID of the Internet gateway.

Type: String

Required: Yes

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example attaches the Internet gateway with the ID igw-eaad4883 to the VPC with the ID vpc-11ad4878.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

Sample Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AttachInternetGatewayResponse>
```

AttachNetworkInterface

Attaches a network interface to an instance.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DeviceIndex
The index of the device for the network interface attachment.

Type: Integer

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachmentId
The ID of the network interface attachment.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example attaches the specified network interface to the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachNetworkInterface
&DeviceIndex=1
&InstanceId=i-9cc316fe
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

Sample Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
    <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

AttachVolume

Attaches an EBS volume to a running or stopped instance and exposes it to the instance with the specified device name.

Encrypted EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

For a list of supported device names, see Attaching an EBS Volume to an Instance. Any device names that aren't reserved for instance store volumes can be used for EBS volumes. For more information, see Amazon EC2 Instance Store in the *Amazon Elastic Compute Cloud User Guide*.

If a volume has an AWS Marketplace product code:

- The volume can be attached only to a stopped instance.
- AWS Marketplace product codes are copied from the volume to the instance.
- You must be subscribed to the product.
- The instance type and operating system of the instance must support the product. For example, you can't detach a volume from a Windows instance and attach it to a Linux instance.

For an overview of the AWS Marketplace, see Introducing AWS Marketplace.

For more information about EBS volumes, see Attaching Amazon EBS Volumes in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Device
The device name to expose to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

VolumeId
The ID of the EBS volume. The volume and instance must be within the same Availability Zone.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachment
Information about the volume attachment.

Type: VolumeAttachment (p. 592)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example request attaches the volume with the ID vol-1a2b3c4d to the instance with the ID i-1a2b3c4d and exposes it as /dev/sdh.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1a2b3c4d
&InstanceId=i-1a2b3c4d
&Device=/dev/sdh
&AUTHPARAMS
```

Sample Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

AttachVpnGateway

Attaches a virtual private gateway to a VPC. For more information, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

VpnGatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachment
Information about the attachment.

Type: VpcAttachment (p. 597)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example attaches the virtual private gateway with the ID vgw-8db04f81 to the VPC with the ID vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <attachment>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>attaching</state>
   </attachment>
</AttachVpnGatewayResponse>
```

AuthorizeSecurityGroupEgress

Adds one or more egress rules to a security group for use with a VPC. Specifically, this action permits instances to send traffic to one or more destination CIDR IP address ranges, or to one or more destination security groups for the same VPC.

Important
You can have up to 50 rules per security group (covering both ingress and egress rules).

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. This action doesn't apply to security groups for use in EC2-Classic. For more information, see Security Groups for Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Each rule consists of the protocol (for example, TCP), plus either a CIDR range or a source group. For the TCP and UDP protocols, you must also specify the destination port or port range. For the ICMP protocol, you must also specify the ICMP type and code. You can use -1 for the type or code to mean all types or all codes.

Rule changes are propagated to affected instances as quickly as possible. However, a small delay might occur.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrIp
The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use `-1` to specify all ICMP types.

Type: Integer

Required: No

GroupId
The ID of the security group.

Type: String

Required: Yes

IpPermissions.N
A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.

Type: IpPermission (p. 535) list

Required: No

IpProtocol
The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName
The name of a destination security group. To authorize outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

SourceSecurityGroupOwnerId
The AWS account number for a destination security group. To authorize outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

ToPort
The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use `-1` to specify all ICMP codes for the ICMP type.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example request grants your security group with the ID sg-1a2b3c4d access to the 192.0.2.0/24 and 198.51.100.0/24 address ranges on TCP port 80.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

Example 2

This example request grants egress access from the security group with the ID sg-1a2b3c4d to the security group with the ID sg-9a8d7f5c on TCP port 1433.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

AuthorizeSecurityGroupIngress

Adds one or more ingress rules to a security group.

> **Important**
> EC2-Classic: You can have up to 100 rules per group. EC2-VPC: You can have up to 50 rules per group (covering both ingress and egress rules).

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

[EC2-Classic] This action gives one or more CIDR IP address ranges permission to access a security group in your account, or gives one or more security groups (called the *source groups*) permission to access a security group for your account. A source group can be for your own AWS account, or another.

[EC2-VPC] This action gives one or more CIDR IP address ranges permission to access a security group in your VPC, or gives one or more other security groups (called the *source groups*) permission to access a security group for your VPC. The security groups must all be for the same VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrIp
The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use `-1` to specify all ICMP types.

Type: Integer

Required: No

GroupId
The ID of the security group. Required for a nondefault VPC.

Type: String

Required: No

GroupName
[EC2-Classic, default VPC] The name of the security group.

Type: String

Required: No

IpPermissions.N
A set of IP permissions. Can be used to specify multiple rules in a single command.

Type: IpPermission (p. 535) list

Required: No

IpProtocol
The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). (VPC only) Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName
[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. For EC2-VPC, the source security group must be in the same VPC.

Type: String

Required: No

SourceSecurityGroupOwnerId
[EC2-Classic, default VPC] The AWS account number for the source security group. For EC2-VPC, the source security group must be in the same VPC. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. Creates rules that grant full ICMP, UDP, and TCP access. To create a rule with a specific IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

ToPort
The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use `-1` to specify all ICMP codes for the ICMP type.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

[EC2-Classic] This example request grants TCP port 80 access from the 192.0.2.0/24 and 198.51.100.0/24 address ranges to the security group in EC2-Classic named websrv.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

Example 2

[EC2-Classic, default VPC] This example request grants full ICMP, UDP, and TCP access from a source group called webserver1 (in AWS account 123456789012) to a security group with the ID sg-1a2b3c4d. For EC2-VPC, the security groups must be in the same VPC. For an example of granting access to specific protocols and ports, see example 3.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&SourceSecurityGroupOwnerId=123456789012
&SourceSecurityGroupName=webserver1
&AUTHPARAMS
```

Example 3

[EC2-Classic, default VPC] This example request grants TCP port 80 access from the source group named OtherAccountGroup (in AWS account 123456789012) to the security group named websrv. For EC2-VPC, the security groups must be in the same VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupName=OtherAccountGroup
&IpPermissions.1.Groups.1.UserId=123456789012
&AUTHPARAMS
```

Example 4

[EC2-VPC] This example request grants TCP port 80 access from the source group named OtherGroupInMyVPC (with the ID sg-2a2b3c4d) to the security group named VpcWebServers (with the ID sg-1a2b3c4d). In EC2-VPC, you must use the security group IDs in a request, not the security group names. In this example, your AWS account ID is 123456789012.

Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&IpPermissions.1.Groups.1.UserId=123456789012
&AUTHPARAMS
```

Example 5

[EC2-Classic, default VPC] This example request grants your local system the ability to use SSH (port 22) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

Sample Request

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
&AUTHPARAMS
```

Example 6

[EC2-Classic, default VPC] This example request grants your local system the ability to use Remote Desktop (port 3389) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

Sample Request

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
```

BundleInstance

Bundles an Amazon instance store-backed Windows instance.

During bundling, only the root device volume (C:\) is bundled. Data on other instance store volumes is not preserved.

> **Note**
> This action is not applicable for Linux/Unix instances or Windows instances that are backed by Amazon EBS.

For more information, see Creating an Instance Store-Backed Windows AMI.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

Type: String

Required: Yes

Storage
The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: Storage (p. 584)

Required: Yes

Response Elements

The following elements are returned.

bundleInstanceTask
Information about the bundle task.

Type: BundleTask (p. 485)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request bundles the specified instance. Before you specify a value for your access key ID, review and follow the guidance in Best Practices for Managing AWS Access Keys.

Sample Request

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
laIiwiY29uZGl0aW9ucyI6IFt7ImJ1Y2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgI
iRrZXkiLCAibXktbmV3LWltYWdlIl0seyJhY2wiOiAiZWMyLWJ1bmRsZS1yZWFkIn1dfEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlGNEXAMPLE
&AUTHPARAMS
```

Sample Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
      <instanceId>i-12345678</instanceId>
      <bundleId>bun-c1a540a8</bundleId>
      <state>bundling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <progress>70%</progress>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

CancelBundleTask

Cancels a bundling operation for an instance store-backed Windows instance.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

BundleId
The ID of the bundle task.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

bundleInstanceTask
Information about the bundle task.

Type: BundleTask (p. 485)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request cancels the specified bundle task.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelBundleTask
&BundleId=bun-cla322b9
&AUTHPARAMS
```

Sample Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
      <instanceId>i-12345678</instanceId>
      <bundleId>bun-cla322b9</bundleId>
      <state>canceling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <progress>20%</progress>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>my-new-image</prefix>
        </S3>
      </storage>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```

CancelConversionTask

Cancels an active conversion task. The task can be the import of an instance or volume. The action removes all artifacts of the conversion, including a partially uploaded volume or instance. If the conversion is complete or is in the process of transferring the final disk image, the command fails and returns an exception.

For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ConversionTaskId
The ID of the conversion task.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ReasonMessage
The reason for canceling the conversion task.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request cancels the conversion task with the ID import-i-fh95npoc.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelConversionTask
&ConversionTaskId=import-i-fh95npoc
&AUTHPARAMS
```

Sample Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</CancelConversionTaskResponse>
```

CancelExportTask

Cancels an active export task. The request removes all artifacts of the export, including any partially-created Amazon S3 objects. If the export task is complete or is in the process of transferring the final disk image, the command fails and returns an error.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ExportTaskId
The ID of the export task. This is the ID returned by `CreateInstanceExportTask`.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request cancels the export task with the ID export-i-1234wxyz.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelExportTask
&exportTaskId=export-i-1234wxyz
&AUTHPARAMS
```

Sample Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>
</CancelExportTask>
```

CancelImportTask

Cancels an in-process import virtual machine or import snapshot task.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CancelReason
The reason for canceling the task.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImportTaskId
The ID of the import image or import snapshot task to be canceled.

Type: String

Required: No

Response Elements

The following elements are returned.

importTaskId
The ID of the task being canceled.

Type: String

previousState
The current state of the task being canceled.

Type: String

requestId
The ID of the request.

Type: String

state
The current state of the task being canceled.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

CancelReservedInstancesListing

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace.

For more information, see Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ReservedInstancesListingId
The ID of the Reserved Instance listing.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesListingsSet
The Reserved Instance listing.

Type: ReservedInstancesListing (p. 559) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace. The response shows that the status is cancelled.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing
&ReservedInstancesListingId=3ebe97b5-f273-43b6-a204-7a18cEXAMPLE
&AUTHPARAMS
```

Sample Response

```
<CancelReservedInstancesListingResponse>
    <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-
7a18cEXAMPLE</reservedInstancesListingId>
          <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
            <createDate>2012-07-12T16:55:28.000Z</createDate>
            <updateDate>2012-07-12T16:55:28.000Z</updateDate>
            <status>cancelled</status>
            <statusMessage>CANCELLED</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>1</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
                </item>
            </instanceCounts>
            <priceSchedules>
                <item>
                    <term>5</term>
                    <price>166.64</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>133.32</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>99.99</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>66.66</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
```

```
                <item>
                    <term>1</term>
                    <price>33.33</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>XqJIt1342112125076</clientToken>
        </item>
    </reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

CancelSpotFleetRequests

Cancels the specified Spot fleet requests.

After you cancel a Spot fleet request, the Spot fleet launches no new Spot instances. You must specify whether the Spot fleet should also terminate its Spot instances. If you terminate the instances, the Spot fleet request enters the `cancelled_terminating` state. Otherwise, the Spot fleet request enters the `cancelled_running` state and the instances continue to run until they are interrupted or you terminate them manually.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SpotFleetRequestId.N
The IDs of the Spot fleet requests.

Type: String list

Required: Yes

TerminateInstances
Indicates whether to terminate instances for a Spot fleet request if it is canceled successfully.

Type: Boolean

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

successfulFleetRequestSet
Information about the Spot fleet requests that are successfully canceled.

Type: CancelSpotFleetRequestsSuccessItem (p. 488) list

unsuccessfulFleetRequestSet
Information about the Spot fleet requests that are not successfully canceled.

Type: CancelSpotFleetRequestsErrorItem (p. 488) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example cancels Spot fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 and terminates all instances that were launched by the request.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotFleetRequests
&SpotFleetRequestId.1=sfr-123f8fc2-cb31-425e-abcd-example2710
&TerminateInstances=true
&AUTHPARAMS
```

Sample Response

```
<CancelSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>e12d2fe5-6503-4b4b-911c-example</requestId>
    <unsuccessfulFleetRequestSet/>
    <successfulFleetRequestSet>
        <item>
            <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spot
FleetRequestId>
            <currentSpotFleetRequestState>cancelled_terminating</currentSpot
FleetRequestState>
          <previousSpotFleetRequestState>active</previousSpotFleetRequestState>

        </item>
    </successfulFleetRequestSet>
</CancelSpotFleetRequestsResponse>
```

CancelSpotInstanceRequests

Cancels one or more Spot instance requests. Spot instances are instances that Amazon EC2 starts on your behalf when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the *Amazon Elastic Compute Cloud User Guide*.

Important
Canceling a Spot instance request does not terminate running Spot instances associated with the request.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SpotInstanceRequestId.N
One or more Spot instance request IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotInstanceRequestSet
One or more Spot instance requests.

Type: CancelledSpotInstanceRequest (p. 487) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example cancels the specified Spot instance request.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

ConfirmProductInstance

Determines whether a product code is associated with an instance. This action can only be used by the owner of the product code. It is useful when a product code owner needs to verify whether another user's instance is eligible for support.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

ProductCode
The product code. This must be a product code that you own.

Type: String

Required: Yes

Response Elements

The following elements are returned.

ownerId
The AWS account ID of the instance owner. This is only present if the product code is attached to the instance.

Type: String

requestId
The ID of the request.

Type: String

return
The return value of the request. Returns `true` if the specified product code is owned by the requester and associated with the specified instance.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example determines whether the specified product code is associated with the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

CopyImage

Initiates the copy of an AMI from the specified source region to the current region. You specify the destination region by using its endpoint when making the request. AMIs that use encrypted EBS snapshots cannot be copied with this method.

For more information, see Copying AMIs in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientToken
Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

Description
A description for the new AMI in the destination region.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Name
The name of the new AMI in the destination region.

Type: String

Required: Yes

SourceImageId
The ID of the AMI to copy.

Type: String

Required: Yes

SourceRegion
The name of the region that contains the AMI to copy.

Type: String

Required: Yes

Response Elements

The following elements are returned.

imageId
The ID of the new AMI.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request copies the AMI in us-west-2 with the ID ami-1a2b3c4d, naming the new AMI My-Standard-AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=CopyImage
&SourceRegion=us-west-2
&SourceImageId=ami-1a2b3c4d
&Name=My-Standard-AMI
&Description=This%20is%20the%20new%20version%20of%20My-Standard-AMI
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

Sample Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
   <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

CopySnapshot

Copies a point-in-time snapshot of an EBS volume and stores it in Amazon S3. You can copy the snapshot within the same region or from one region to another. You can use the snapshot to create EBS volumes or Amazon Machine Images (AMIs). The snapshot is copied to the regional endpoint that you send the HTTP request to.

Copies of encrypted EBS snapshots remain encrypted. Copies of unencrypted snapshots remain unencrypted, unless the `Encrypted` flag is specified during the snapshot copy operation. By default, encrypted snapshot copies use the default AWS Key Management Service (AWS KMS) customer master key (CMK); however, you can specify a non-default CMK with the `KmsKeyId` parameter.

For more information, see Copying an Amazon EBS Snapshot in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
A description for the EBS snapshot.

Type: String

Required: No

DestinationRegion
The destination region to use in the `PresignedUrl` parameter of a snapshot copy operation. This parameter is only valid for specifying the destination region in a `PresignedUrl` parameter, where it is required.

> **Note**
> CopySnapshot sends the snapshot copy to the regional endpoint that you send the HTTP request to, such as ec2.us-east-1.amazonaws.com (in the AWS CLI, this is specified with the --region parameter or the default region in your AWS configuration file).

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Encrypted
Specifies whether the destination snapshot should be encrypted. There is no way to create an unencrypted snapshot copy from an encrypted snapshot; however, you can encrypt a copy of an unencrypted snapshot with this flag. The default CMK for EBS is used unless a non-default AWS Key Management Service (AWS KMS) CMK is specified with `KmsKeyId`. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

KmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) CMK to use when creating the snapshot copy. This parameter is only required if you want to use a non-default CMK; if this parameter is not specified, the default CMK for EBS is used. The ARN contains the `arn:aws:kms` namespace, followed by the region of the CMK, the AWS account ID of the CMK owner, the `key` namespace, and then the CMK ID. For example, arn:aws:kms:*us-east-1*:*012345678910*:key/*abcd1234-a123-456a-a12b-a123b4cd56ef*. The specified CMK must exist in the region that the snapshot is being copied to. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

Type: String

Required: No

PresignedUrl
The pre-signed URL that facilitates copying an encrypted snapshot. This parameter is only required when copying an encrypted snapshot with the Amazon EC2 Query API; it is available as an optional parameter in all other cases. The `PresignedUrl` should use the snapshot source endpoint, the `CopySnapshot` action, and include the `SourceRegion`, `SourceSnapshotId`, and `DestinationRegion` parameters. The `PresignedUrl` must be signed using AWS Signature Version 4. Because EBS snapshots are stored in Amazon S3, the signing algorithm for this parameter uses the same logic that is described in Authenticating Requests by Using Query Parameters (AWS Signature Version 4) in the *Amazon Simple Storage Service API Reference*. An invalid or improperly signed `PresignedUrl` will cause the copy operation to fail asynchronously, and the snapshot will move to an `error` state.

Type: String

Required: No

SourceRegion
The ID of the region that contains the snapshot to be copied.

Type: String

Required: Yes

SourceSnapshotId
The ID of the EBS snapshot to copy.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

snapshotId
The ID of the new snapshot.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request copies the snapshot in the us-west-1 region with the ID snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1a2b3c4d
&Description=My_snapshot
&AUTHPARAMS
```

Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

CreateCustomerGateway

Provides information to AWS about your VPN customer gateway device. The customer gateway is the appliance at your end of the VPN connection. (The device on the AWS side of the VPN connection is the virtual private gateway.) You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and can't be behind a device performing network address translation (NAT).

For devices that use Border Gateway Protocol (BGP), you can also provide the device's BGP Autonomous System Number (ASN). You can use an existing ASN assigned to your network. If you don't have an ASN already, you can use a private ASN (in the 64512 - 65534 range).

> **Note**
> Amazon EC2 supports all 2-byte ASN numbers in the range of 1 - 65534, with the exception of 7224, which is reserved in the us-east-1 region, and 9059, which is reserved in the eu-west-1 region.

For more information about VPN customer gateways, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

> **Important**
> You cannot create more than one customer gateway with the same VPN type, IP address, and BGP ASN parameter values. If you run an identical request more than one time, the first request creates the customer gateway, and subsequent requests return information about the existing customer gateway. The subsequent requests do not create new customer gateway resources.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

BgpAsn
For devices that support BGP, the customer gateway's BGP ASN.

Default: 65000

Type: Integer

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

IpAddress
The Internet-routable IP address for the customer gateway's outside interface. The address must be static.

Type: String

Required: Yes

Type
The type of VPN connection that this customer gateway supports (`ipsec.1`).

Type: String

Valid Values: `ipsec.1`

Required: Yes

Response Elements

The following elements are returned.

customerGateway
Information about the customer gateway.

Type: CustomerGateway (p. 492)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example passes information to AWS about the customer gateway with the IP address 12.1.2.3 and BGP ASN 65534.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateCustomerGateway
&Type=ipsec.1
&IpAddress=12.1.2.3
&BgpAsn=65534
&AUTHPARAMS
```

Sample Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <customerGateway>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <state>pending</state>
      <type>ipsec.1</type>
      <ipAddress>12.1.2.3</ipAddress>
      <bgpAsn>65534</bgpAsn>
      <tagSet/>
   </customerGateway>
</CreateCustomerGatewayResponse>
```

CreateDhcpOptions

Creates a set of DHCP options for your VPC. After creating the set, you must associate it with the VPC, causing all existing and new instances that you launch in the VPC to use this set of DHCP options. The following are the individual DHCP options you can specify. For more information about the options, see RFC 2132.

- `domain-name-servers` - The IP addresses of up to four domain name servers, or `AmazonProvidedDNS`. The default DHCP option set specifies `AmazonProvidedDNS`. If specifying more than one domain name server, specify the IP addresses in a single parameter, separated by commas.
- `domain-name` - If you're using AmazonProvidedDNS in `us-east-1`, specify `ec2.internal`. If you're using AmazonProvidedDNS in another region, specify `region.compute.internal` (for example, `ap-northeast-1.compute.internal`). Otherwise, specify a domain name (for example, `MyCompany.com`). **Important**: Some Linux operating systems accept multiple domain names separated by spaces. However, Windows and other Linux operating systems treat the value as a single domain, which results in unexpected behavior. If your DHCP options set is associated with a VPC that has instances with multiple operating systems, specify only one domain name.
- `ntp-servers` - The IP addresses of up to four Network Time Protocol (NTP) servers.
- `netbios-name-servers` - The IP addresses of up to four NetBIOS name servers.
- `netbios-node-type` - The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see RFC 2132.

Your VPC automatically starts out with a set of DHCP options that includes only a DNS server that we provide (AmazonProvidedDNS). If you create a set of options, and if your VPC has an Internet gateway, make sure to set the `domain-name-servers` option either to `AmazonProvidedDNS` or to a domain name server of your choice. For more information about DHCP options, see DHCP Options Sets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DhcpConfiguration.N
A DHCP configuration option.

Type: DhcpConfiguration (p. 493) list

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

dhcpOptions
A set of DHCP options.

Type: DhcpOptions (p. 493)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a set of DHCP options with a domain name example.com and two DNS servers (10.2.5.1 and 10.2.5.2). The DNS servers' IP addresses are specified in a single parameter, separated by commas, to preserve the order in which they are specified.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateDhcpOptions
&DhcpConfiguration.1.Key=domain-name
&DhcpConfiguration.1.Value.1=example.com
&DhcpConfiguration.2.Key=domain-name-servers
&DhcpConfiguration.2.Value.1=10.2.5.1,10.2.5.2
&AUTHPARAMS
```

Sample Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
            <item>
              <value>10.2.5.2</value>
```

```
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
      <tagSet/>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```

CreateFlowLogs

Creates one or more flow logs to capture IP traffic for a specific network interface, subnet, or VPC. Flow logs are delivered to a specified log group in Amazon CloudWatch Logs. If you specify a VPC or subnet in the request, a log stream is created in CloudWatch Logs for each network interface in the subnet or VPC. Log streams can include information about accepted and rejected traffic to a network interface. You can view the data in your log streams using Amazon CloudWatch Logs.

In your request, you must also specify an IAM role that has permission to publish logs to CloudWatch Logs.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientToken
Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency.

Type: String

Required: No

DeliverLogsPermissionArn
The ARN for the IAM role that's used to post flow logs to a CloudWatch Logs log group.

Type: String

Required: Yes

LogGroupName
The name of the CloudWatch log group.

Type: String

Required: Yes

ResourceId.N
One or more subnet, network interface, or VPC IDs.

Type: String list

Required: Yes

ResourceType
The type of resource on which to create the flow log.

Type: String

Valid Values: `VPC | Subnet | NetworkInterface`

Required: Yes

TrafficType
The type of traffic to log.

Type: String

Valid Values: `ACCEPT | REJECT | ALL`

Required: Yes

Response Elements

The following elements are returned.

clientToken
Unique, case-sensitive identifier you provide to ensure the idempotency of the request.

Type: String

flowLogIdSet
The IDs of the flow logs.

Type: String list

requestId
The ID of the request.

Type: String

unsuccessful
Information about the flow logs that could not be created successfully.

Type: UnsuccessfulItem (p. 587) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a flow log that captures all rejected traffic for network interface eni-aa22bb33. The flow logs are delivered to a log group in CloudWatch Logs called my-flow-logs in account 123456789101, using the IAM role publishFlowLogs.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=REJECT
&ResourceId.1=eni-aa22bb33
&DeliverLogsPermissionArn=arn:aws:iam::123456789101:role/publishFlowLogs
&LogGroupName=my-flow-logs
&AUTHPARAMS
```

Sample Response

```
<CreateFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>2d96dae3-504b-4fc4-bf50-266EXAMPLE</requestId>
    <unsuccessful/>
    <flowLogIdSet>
```

```
        <item>fl-1a2b3c4d</item>
    </flowLogIdSet>
</CreateFlowLogsResponse>
```

CreateImage

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped.

If you customized your instance with instance store volumes or EBS volumes in addition to the root device volume, the new AMI contains block device mapping information for those volumes. When you launch an instance from this new AMI, the instance automatically launches with those additional volumes.

For more information, see Creating Amazon EBS-Backed Linux AMIs in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

BlockDeviceMapping.N
Information about one or more block device mappings.

Type: BlockDeviceMapping (p. 485) list

Required: No

Description
A description for the new image.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

Name
A name for the new image.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(_)

Type: String

Required: Yes

NoReboot
By default, this parameter is set to `false`, which means Amazon EC2 attempts to shut down the instance cleanly before image creation and then reboots the instance. When the parameter is set to `true`, Amazon EC2 doesn't shut down the instance before creating the image. When this option is used, file system integrity on the created image can't be guaranteed.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

imageId
The ID of the new AMI.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request creates an AMI from the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-10a64379
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

CreateInstanceExportTask

Exports a running or stopped instance to an S3 bucket.

For information about the supported operating systems, image formats, and known limitations for the types of instances you can export, see Exporting EC2 Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
A description for the conversion task or the resource being exported. The maximum length is 255 bytes.

Type: String

Required: No

ExportToS3
The format and location for an instance export task.

Type: ExportToS3TaskSpecification (p. 501)

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

TargetEnvironment
The target virtualization environment.

Type: String

Valid Values: `citrix | vmware | microsoft`

Required: No

Response Elements

The following elements are returned.

exportTask
Information about the instance export task.

Type: ExportTask (p. 499)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request creates an Export VM task that makes a Windows instance available as an OVA.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-12345678
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=my-bucket-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS
```

Sample Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
       <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
       <exportTask>
       <exportTaskId>export-i-1234wxyz</exportTaskId>
       <description>Example for docs</description>
       <state>active</state>
       <statusMessage>Running</statusMessage>
       <instanceExport>
       <instanceId>i-12345678</instanceId>
       <targetEnvironment>VMWare</targetEnvironment>
       </instanceExport>
       <exportToS3>
       <diskImageFormat>VMDK</diskImageFormat>
       <containerFormat>OVA</containerFormat>
       <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
       <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
       </exportToS3>
       </exportTask>
       </CreateInstanceExportTaskResponse>
```

CreateInternetGateway

Creates an Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using AttachInternetGateway (p. 29).

For more information about your VPC and Internet gateway, see the Amazon Virtual Private Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

internetGateway
Information about the Internet gateway.

Type: InternetGateway (p. 534)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates an Internet gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInternetGateway
&AUTHPARAMS
```

Sample Response

```
<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <internetGateway>
      <internetGatewayId>igw-eaad4883</internetGatewayId>
      <attachmentSet/>
      <tagSet/>
   </internetGateway>
</CreateInternetGatewayResponse>
```

CreateKeyPair

Creates a 2048-bit RSA key pair with the specified name. Amazon EC2 stores the public key and displays the private key for you to save to a file. The private key is returned as an unencrypted PEM encoded PKCS#8 private key. If a key with the specified name already exists, Amazon EC2 returns an error.

You can have up to five thousand key pairs per region.

The key pair returned to you is available only in the region in which you create it. To create a key pair that is available in all regions, use ImportKeyPair (p. 381).

For more information about key pairs, see Key Pairs in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

KeyName
A unique name for the key pair.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

Response Elements

The following elements are returned.

keyPair
Information about the key pair.

Type: KeyPair (p. 536)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request creates a key pair named my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

Sample Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <keyName>my-key-pair</keyName>
  <keyFingerprint>
     1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f
  </keyFingerprint>
  <keyMaterial>---- BEGIN RSA PRIVATE KEY ----
MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAgTAldBMRAwDgYDVQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAd
BgkqhkiG9w0BCQEWEG5vb25lQGFtYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRAwDgYD
VQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAdBgkqhkiG9w0BCQEWEG5vb25lQGFt
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcvQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJIlJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvjx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
</CreateKeyPairResponse>
```

Saving the File

Create a file named my-key-pair.pem and paste the entire key from the response into this file. Keep this file in a safe place; it is required to decrypt login information when you connect to an instance that you launched using this key pair. If you're using an SSH client on a Linux computer to connect to your instance, use the following command to set the permissions of your private key file so that only you can read it.

Sample Request

```
chmod 400 my-key-pair.pem
```

CreateNetworkAcl

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (in addition to security groups) for the instances in your VPC.

For more information about network ACLs, see Network ACLs in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

networkAcl
Information about the network ACL.

Type: NetworkAcl (p. 541)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a network ACL in the specified VPC. The response includes a default entry for egress, and another for ingress, each with a very high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAcl
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <networkAcl>
      <networkAclId>acl-5fb85d36</networkAclId>
      <vpcId>vpc-11ad4878</vpcId>
      <default>false</default>
      <entrySet>
         <item>
            <ruleNumber>32767</ruleNumber>
            <protocol>all</protocol>
            <ruleAction>deny</ruleAction>
            <egress>true</egress>
            <cidrBlock>0.0.0.0/0</cidrBlock>
         </item>
         <item>
            <ruleNumber>32767</ruleNumber>
            <protocol>all</protocol>
            <ruleAction>deny</ruleAction>
            <egress>false</egress>
            <cidrBlock>0.0.0.0/0</cidrBlock>
         </item>
      </entrySet>
      <associationSet/>
      <tagSet/>
   </networkAcl>
</CreateNetworkAclResponse>
```

CreateNetworkAclEntry

Creates an entry (a rule) in a network ACL with the specified rule number. Each network ACL has a set of numbered ingress rules and a separate set of numbered egress rules. When determining whether a packet should be allowed in or out of a subnet associated with the ACL, we process the entries in the ACL according to the rule numbers, in ascending order. Each network ACL has a set of ingress rules and a separate set of egress rules.

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a rule between existing ones without having to renumber the rules.

After you add an entry, you can't modify it; you must either replace it, or create an entry and delete the old one.

For more information about network ACLs, see Network ACLs in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrBlock
The network range to allow or deny, in CIDR notation (for example `172.16.0.0/24`).

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Egress
Indicates whether this is an egress rule (rule is applied to traffic leaving the subnet).

Type: Boolean

Required: Yes

Icmp
ICMP protocol: The ICMP type and code. Required if specifying ICMP for the protocol.

Type: IcmpTypeCode (p. 505)

Required: No

NetworkAclId
The ID of the network ACL.

Type: String

Required: Yes

PortRange
TCP or UDP protocols: The range of ports the rule applies to.

Type: PortRange (p. 549)

Required: No

Protocol
The protocol. A value of -1 means all protocols.

Type: String

Required: Yes

RuleAction
Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: Yes

RuleNumber
The rule number for the entry (for example, 100). ACL entries are processed in ascending order by rule number.

Constraints: Positive integer from 1 to 32766

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates an entry with rule number 110 in the network ACL with the ID acl-2cb85d45. The rule allows ingress traffic from anywhere (0.0.0.0/0) on UDP port 53 into any associated subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=udp
&RuleAction=allow
&Egress=false
&CidrBlock=0.0.0.0/0
&PortRange.From=53
&PortRange.To=53
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</CreateNetworkAclEntryResponse>
```

CreateNetworkInterface

Creates a network interface in the specified subnet.

For more information about network interfaces, see Elastic Network Interfaces in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
A description for the network interface.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SecurityGroupId.N
The IDs of one or more security groups.

Type: String list

Required: No

PrivateIpAddress
The primary private IP address of the network interface. If you don't specify an IP address, Amazon EC2 selects one for you from the subnet range. If you specify an IP address, you cannot indicate any IP addresses specified in `privateIpAddresses` as primary (only one IP address can be designated as primary).

Type: String

Required: No

PrivateIpAddresses.N
One or more private IP addresses.

Type: PrivateIpAddressSpecification (p. 552) list

Required: No

SecondaryPrivateIpAddressCount
The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, Amazon EC2 selects these IP addresses within the subnet range. You can't specify this option and specify more than one private IP address using `privateIpAddresses`.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see Private IP Addresses Per ENI Per Instance Type in the *Amazon Elastic Compute Cloud User Guide*.

Type: Integer

Required: No

SubnetId
The ID of the subnet to associate with the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

networkInterface
Information about the network interface.

Type: NetworkInterface (p. 543)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example creates a network interface in the specified subnet with a primary IP address that is automatically selected by Amazon EC2.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
 <requestId>8dbe591e-5a22-48cb-b948-dd0aadd55adf</requestId>
    <networkInterface>
        <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
        <subnetId>subnet-b2a249da</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description/>
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
```

```
        <status>available</status>
        <macAddress>02:74:b0:72:79:61</macAddress>
        <privateIpAddress>10.0.2.157</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-1a2b3c4d</groupId>
                <groupName>default</groupName>
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.157</privateIpAddress>
                <primary>true</primary>
            </item>
        </privateIpAddressesSet>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

Example 2

This example creates a network interface in the specified subnet with a primary IP address of 10.0.2.140 and four secondary private IP addresses that are automatically selected by Amazon EC2.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
 <requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
    <networkInterface>
        <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
        <subnetId>subnet-a61dafcf</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description/>
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>pending</status>
        <macAddress>02:74:b0:70:7f:1a</macAddress>
        <privateIpAddress>10.0.2.140</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-1a2b3c4d</groupId>
                <groupName>default</groupName>
```

```
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.140</privateIpAddress>
                <primary>true</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.172</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.169</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.170</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.171</privateIpAddress>
                <primary>false</primary>
            </item>
        </privateIpAddressesSet>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

Example 3

This example creates a network interface with a primary private IP address of 10.0.2.130 and two secondary IP addresses of 10.0.2.132 and 10.0.2.133.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.3.Primary=false
&PrivateIpAddresses.3.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
<requestId>a9565f4c-f928-4113-859b-905886d11658</requestId>
    <networkInterface>
        <networkInterfaceId>eni-41c47828</networkInterfaceId>
        <subnetId>subnet-a61dafcf</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
```

```
        <description/>
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>pending</status>
        <macAddress>02:74:b0:78:bf:ab</macAddress>
        <privateIpAddress>10.0.2.130</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-188d9f74</groupId>
                <groupName>default</groupName>
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.130</privateIpAddress>
                <primary>true</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.133</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.132</privateIpAddress>
                <primary>false</primary>
            </item>
        </privateIpAddressesSet>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

CreatePlacementGroup

Creates a placement group that you launch cluster instances into. You must give the group a name that's unique within the scope of your account.

For more information about placement groups and cluster instances, see Cluster Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GroupName
A name for the placement group.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

Strategy
The placement strategy.

Type: String

Valid Values: `cluster`

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a placement group named XYZ-cluster.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=XYZ-cluster
&Strategy=cluster
&AUTHPARAMS
```

Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
   <return>true</return>
</CreatePlacementGroupResponse>
```

CreateReservedInstancesListing

Creates a listing for Amazon EC2 Reserved Instances to be sold in the Reserved Instance Marketplace. You can submit one Reserved Instance listing at a time. To get a list of your Reserved Instances, you can use the DescribeReservedInstances (p. 260) operation.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

To sell your Reserved Instances, you must first register as a seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Reserved Instances, and specify the upfront price to receive for them. Your Reserved Instance listings then become available for purchase. To view the details of your Reserved Instance listing, you can use the DescribeReservedInstancesListings (p. 263) operation.

For more information, see Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientToken
Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see Ensuring Idempotency.

Type: String

Required: Yes

InstanceCount
The number of instances that are a part of a Reserved Instance account to be listed in the Reserved Instance Marketplace. This number should be less than or equal to the instance count associated with the Reserved Instance ID specified in this call.

Type: Integer

Required: Yes

PriceSchedules.N
A list specifying the price of the Reserved Instance for each month remaining in the Reserved Instance term.

Type: PriceScheduleSpecification (p. 551) list

Required: Yes

ReservedInstancesId
The ID of the active Reserved Instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesListingsSet
Information about the Reserved Instances listing.

Type: ReservedInstancesListing (p. 559) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a Reserved Instance Marketplace listing from the specified Reserved Instance, which has 11 months remaining in its term. In this example, we set the upfront price at $2.50, and the price drops over the course of the 11-month term if the instance is still not sold.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.1.Price=2.5
&PriceSchedules.1.Term=11
&PriceSchedules.2.Price=2.0
&PriceSchedules.2.Term=8
&PriceSchedules.3.Price=1.5
&PriceSchedules.3.Term=5
&PriceSchedules.4.Price=0.7
&PriceSchedules.4.Term=3
&PriceSchedules.5.Price=0.1
&PriceSchedules.5.Term=1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&AUTHPARAMS
```

Sample Response

```
<CreateReservedInstancesListingResponse>
    <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dEXAMPLE</reservedInstancesListingId>
          <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
            <createDate>2012-07-17T17:11:09.449Z</createDate>
            <updateDate>2012-07-17T17:11:09.468Z</updateDate>
            <status>active</status>
            <statusMessage>ACTIVE</statusMessage>
```

```
<instanceCounts>
    <item>
        <state>Available</state>
        <instanceCount>1</instanceCount>
    </item>
    <item>
        <state>Sold</state>
        <instanceCount>0</instanceCount>
    </item>
    <item>
        <state>Cancelled</state>
        <instanceCount>0</instanceCount>
    </item>
    <item>
        <state>Pending</state>
        <instanceCount>0</instanceCount>
    </item>
</instanceCounts>
<priceSchedules>
    <item>
        <term>11</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>true</active>
    </item>
    <item>
        <term>10</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>9</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>8</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>7</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>6</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>5</term>
        <price>1.5</price>
```

```
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>1.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>0.7</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>0.7</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>1</term>
                    <price>0.1</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>myIdempToken1</clientToken>
        </item>
    </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

CreateRoute

Creates a route in a route table within a VPC.

You must specify one of the following targets: Internet gateway or virtual private gateway, NAT instance, VPC peering connection, or network interface.

When determining how to route traffic, we use the route with the most specific match. For example, let's say the traffic is destined for `192.0.2.3`, and the route table includes the following two routes:

- `192.0.2.0/24` (goes to some target A)
- `192.0.2.0/28` (goes to some target B)

Both routes apply to the traffic destined for `192.0.2.3`. However, the second route in the list covers a smaller number of IP addresses and is therefore more specific, so we use that route to determine where to target the traffic.

For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DestinationCidrBlock
The CIDR address block used for the destination match. Routing decisions are based on the most specific match.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GatewayId
The ID of an Internet gateway or virtual private gateway attached to your VPC.

Type: String

Required: No

InstanceId
The ID of a NAT instance in your VPC. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Required: No

NetworkInterfaceId
The ID of a network interface.

Type: String

Required: No

RouteTableId
The ID of the route table for the route.

Type: String

Required: Yes

VpcPeeringConnectionId
The ID of a VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example creates a route in the route table with the ID rtb-e4ad488d. The route matches all traffic (0.0.0.0/0) and routes it to the Internet gateway with the ID igw-eaad4883.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=0.0.0.0/0
&GatewayId=igw-eaad4883
&AUTHPARAMS
```

Example 2

This example creates a route in the route table with the ID rtb-g8ff4ea2. The route sends all traffic (0.0.0.0/0) to the NAT instance with the ID i-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1a2b3c4d
&AUTHPARAMS
```

Example 3

This example command creates a route in route table rtb-g8ff4ea2. The route matches traffic for the CIDR block 10.0.0.0/16 and routes it to VPC peering connection, pcx-111aaa22. This route enables traffic to be directed to the other peered VPC in the VPC peering connection.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=10.0.0.0/16
&vpcPeeringConnectionId=pcx-111aaa22
&AUTHPARAMS
```

CreateRouteTable

Creates a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

routeTable
Information about the route table.

Type: RouteTable (p. 565)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a route table for the VPC with the ID vpc-11ad4878. By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <routeTable>
      <routeTableId>rtb-f9ad4890</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
         <item>
            <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
            <gatewayId>local</gatewayId>
            <state>active</state>
         </item>
      </routeSet>
      <associationSet/>
      <tagSet/>
   </routeTable>
</CreateRouteTableResponse>
```

CreateSecurityGroup

Creates a security group.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see Amazon EC2 Security Groups in the *Amazon Elastic Compute Cloud User Guide* and Security Groups for Your VPC in the *Amazon Virtual Private Cloud User Guide*.

> **Important**
> EC2-Classic: You can have up to 500 security groups. EC2-VPC: You can create up to 100 security groups per VPC.

When you create a security group, you specify a friendly name of your choice. You can have a security group for use in EC2-Classic with the same name as a security group for use in a VPC. However, you can't have two security groups for use in EC2-Classic with the same name or two security groups for use in a VPC with the same name.

You have a default security group for use in EC2-Classic and a default security group for use in your VPC. If you don't specify a security group when you launch an instance, the instance is launched into the appropriate default security group. A default security group includes a default rule that grants instances unrestricted network access to each other.

You can add or remove rules from your security groups using AuthorizeSecurityGroupIngress (p. 40), AuthorizeSecurityGroupEgress (p. 37), RevokeSecurityGroupIngress (p. 457), and RevokeSecurityGroupEgress (p. 454).

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

GroupDescription
A description for the security group. This is informational only.

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GroupName
The name of the security group.

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: Yes

VpcId
[EC2-VPC] The ID of the VPC. Required for EC2-VPC.

Type: String

Required: No

Response Elements

The following elements are returned.

groupId
The ID of the security group.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example creates a security group named websrv for EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=websrv
&GroupDescription=Web Servers
&AUTHPARAMS
```

Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
   <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

Example for EC2-VPC

This example creates a security group named WebServerSG for the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=WebServerSG
&GroupDescription=Web Servers
&VpcId=vpc-3325caf2
&AUTHPARAMS
```

Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
   <groupId>sg-0a42d66a</groupId>
</CreateSecurityGroupResponse>
```

CreateSnapshot

Creates a snapshot of an EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of EBS volumes, and to save data before shutting down an instance.

When a snapshot is created, any AWS Marketplace product codes that are associated with the source volume are propagated to the snapshot.

You can take a snapshot of an attached volume that is in use. However, snapshots only capture data that has been written to your EBS volume at the time the snapshot command is issued; this may exclude any data that has been cached by any applications or the operating system. If you can pause any file systems on the volume long enough to take a snapshot, your snapshot should be complete. However, if you cannot pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You may remount and use your volume while the snapshot status is `pending`.

To create a snapshot for EBS volumes that serve as root devices, you should stop the instance before taking the snapshot.

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected.

For more information, see Amazon Elastic Block Store and Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
A description for the snapshot.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VolumeId
The ID of the EBS volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

snapshot
Information about the snapshot.

Type: Snapshot (p. 569)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a snapshot of the volume with the ID vol-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1a2b3c4d
&Description=Daily+Backup
&AUTHPARAMS
```

Sample Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <status>pending</status>
  <startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>
  <progress>60%</progress>
  <ownerId>111122223333</ownerId>
  <volumeSize>30</volumeSize>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

CreateSpotDatafeedSubscription

Creates a data feed for Spot instances, enabling you to view Spot instance usage logs. You can create one data feed per AWS account. For more information, see Spot Instance Data Feed in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Bucket
The Amazon S3 bucket in which to store the Spot instance data feed.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Prefix
A prefix for the data feed file names.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotDatafeedSubscription
The Spot instance data feed subscription.

Type: SpotDatafeedSubscription (p. 574)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a Spot instance data feed for the account.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=my-s3-bucket
&AUTHPARAMS
```

Sample Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>my-s3-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

CreateSubnet

Creates a subnet in an existing VPC.

When you create each subnet, you provide the VPC ID and the CIDR block you want for the subnet. After you create a subnet, you can't change its CIDR block. The subnet's CIDR block can be the same as the VPC's CIDR block (assuming you want only a single subnet in the VPC), or a subset of the VPC's CIDR block. If you create more than one subnet in a VPC, the subnets' CIDR blocks must not overlap. The smallest subnet (and VPC) you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses).

Important
AWS reserves both the first four and the last IP address in each subnet's CIDR block. They're not available for use.

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle.

If you launch an instance in a VPC using an Amazon EBS-backed AMI, the IP address doesn't change if you stop and restart the instance (unlike a similar instance launched outside a VPC, which gets a new IP address when restarted). It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available.

For more information about subnets, see Your VPC and Subnets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
The Availability Zone for the subnet.

Default: Amazon EC2 selects one for you (recommended).

Type: String

Required: No

CidrBlock
The network range for the subnet, in CIDR notation. For example, `10.0.0.0/24`.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

subnet
Information about the subnet.

Type: Subnet (p. 585)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a subnet with CIDR block 10.0.1.0/24 in the VPC with the ID vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-1a2b3c4d
&CidrBlock=10.0.1.0/24
&AUTHPARAMS
```

Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-9d4a7b6c</subnetId>
    <state>pending</state>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.1.0/24</cidrBlock>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

CreateTags

Adds or overwrites one or more tags for the specified Amazon EC2 resource or resources. Each resource can have a maximum of 10 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ResourceId.N
The IDs of one or more resources to tag. For example, ami-1a2b3c4d.

Type: String list

Required: Yes

Tag.N
One or more tags. The `value` parameter is required, but if you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: Tag (p. 586) list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request adds (or overwrites) two tags for an AMI and an instance. One of the tags is just a key (webserver), with no value (we set the value to an empty string). The other tag consists of a key (stack) and value (Production).

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-7f4d3a2b
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
&AUTHPARAMS
```

Sample Response

```
<CreateTagsResponse
xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
```

CreateVolume

Creates an EBS volume that can be attached to an instance in the same Availability Zone. The volume is created in the regional endpoint that you send the HTTP request to. For more information see Regions and Endpoints.

You can create a new empty volume or restore a volume from an EBS snapshot. Any AWS Marketplace product codes from the snapshot are propagated to the volume.

You can create encrypted volumes with the `Encrypted` parameter. Encrypted volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are also automatically encrypted. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see Creating or Restoring an Amazon EBS Volume in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
The Availability Zone in which to create the volume. Use DescribeAvailabilityZones (p. 189) to list the Availability Zones that are currently available to you.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Encrypted
Specifies whether the volume should be encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. If your AMI uses encrypted volumes, you can only launch it on supported instance types. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

Iops
Only valid for Provisioned IOPS (SSD) volumes. The number of I/O operations per second (IOPS) to provision for the volume, with a maximum ratio of 30 IOPS/GiB.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes

Type: Integer

Required: No

KmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) to use when creating the encrypted volume. This parameter is only required if you want to use a non-default CMK; if this parameter is not specified, the default CMK for EBS is used. The ARN contains the `arn:aws:kms` namespace, followed by the region of the CMK, the AWS account ID of the CMK owner, the `key` namespace, and then the CMK ID. For example, arn:aws:kms:*us-east-1*:*012345678910*:key/*abcd1234-a123-456a-a12b-a123b4cd56ef*. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

Type: String

Required: No

Size
The size of the volume, in GiBs.

Constraints: `1-1024` for `standard` volumes, `1-16384` for `gp2` volumes, and `4-16384` for `io1` volumes. If you specify a snapshot, the volume size must be equal to or larger than the snapshot size.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Type: Integer

Required: No

SnapshotId
The snapshot from which to create the volume.

Type: String

Required: No

VolumeType
The volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Default: `standard`

Type: String

Valid Values: `standard | io1 | gp2`

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

volume
Information about the volume.

Type: Volume (p. 590)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request creates an 80 GiB encrypted volume in the Availability Zone us-east-1a.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&Encrypted=1
&AUTHPARAMS
```

Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <size>80</size>
  <snapshotId/>
  <availabilityZone>us-east-1a</availabilityZone>
  <status>creating</status>
  <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
  <volumeType>standard</volumeType>
  <encrypted>true</encrypted>
</CreateVolumeResponse>
```

CreateVpc

Creates a VPC with the specified CIDR block.

The smallest VPC you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses). To help you decide how big to make your VPC, see Your VPC and Subnets in the *Amazon Virtual Private Cloud User Guide*.

By default, each instance you launch in the VPC has the default DHCP options, which includes only a default DNS server that we provide (AmazonProvidedDNS). For more information about DHCP options, see DHCP Options Sets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrBlock
The network range for the VPC, in CIDR notation. For example, `10.0.0.0/16`.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceTenancy
The supported tenancy options for instances launched into the VPC. A value of `default` means that instances can be launched with any tenancy; a value of `dedicated` means all instances launched into the VPC are launched as dedicated tenancy instances regardless of the tenancy assigned to the instance at launch. Dedicated tenancy instances run on single-tenant hardware.

Default: `default`

Type: String

Valid Values: `default | dedicated`

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpc
Information about the VPC.

Type: Vpc (p. 596)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example creates a VPC with the CIDR block 10.0.0.0/16.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AUTHPARAMS
```

Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <vpc>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>pending</state>
      <cidrBlock>10.0.0.0/16</cidrBlock>
      <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <tagSet/>
   </vpc>
</CreateVpcResponse>
```

Example 2

This example creates a VPC with the dedicated tenancy option.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.32.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS
```

Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
    <vpc>
        <vpcId>vpc-11a63c78</vpcId>
        <state>pending</state>
        <cidrBlock>10.32.0.0/16</cidrBlock>
        <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
        <instanceTenancy>dedicated</instanceTenancy>
```

```
    </vpc>
</CreateVpcResponse>
```

CreateVpcEndpoint

Creates a VPC endpoint for a specified AWS service. An endpoint enables you to create a private connection between your VPC and another AWS service in your account. You can specify an endpoint policy to attach to the endpoint that will control access to the service from your VPC. You can also specify the VPC route tables that use the endpoint.

Currently, only endpoints to Amazon S3 are supported.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientToken
Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PolicyDocument
A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format. If this parameter is not specified, we attach a default policy that allows full access to the service.

Type: String

Required: No

RouteTableId.N
One or more route table IDs.

Type: String list

Required: No

ServiceName
The AWS service name, in the form `com.amazonaws.region.service` . To get a list of available services, use the DescribeVpcEndpointServices (p. 333) request.

Type: String

Required: Yes

VpcId
The ID of the VPC in which the endpoint will be used.

Type: String

Required: Yes

Response Elements

The following elements are returned.

clientToken
Unique, case-sensitive identifier you provide to ensure the idempotency of the request.

Type: String

requestId
The ID of the request.

Type: String

vpcEndpoint
Information about the endpoint.

Type: VpcEndpoint (p. 598)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

The example creates an endpoint between vpc-1a2b3c4d and Amazon S3 in us-east-1, and associates route table rtb-11aa22bb with the endpoint.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.s3
&RouteTableId.1=rtb-11aa22bb
&AUTHPARAMS
```

Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <vpcEndpoint>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <state>available</state>
        <routeTableIdSet>
            <item>rtb-11aa22bb</item>
        </routeTableIdSet>
       <vpcEndpointId>vpce-abc12345</vpcEndpointId>
        <creationTimestamp>2015-02-20T16:46:40Z</creationTimestamp>
        <policyDocument>{"Version":"2008-10-17","Statement":[{"Sid":"","Ef
fect":"Allow","Principal":"*","Action":"*","Resource":"*"}]}</policyDocument>
```

```
        <serviceName>com.amazonaws.us-west-1.s3</serviceName>
    </vpcEndpoint>
    <requestId>4b373100-473a-46a0-9006-example</requestId>
</CreateVpcEndpointResponse>
```

CreateVpcPeeringConnection

Requests a VPC peering connection between two VPCs: a requester VPC that you own and a peer VPC with which to create the connection. The peer VPC can belong to another AWS account. The requester VPC and peer VPC cannot have overlapping CIDR blocks.

The owner of the peer VPC must accept the peering request to activate the peering connection. The VPC peering connection request expires after 7 days, after which it cannot be accepted or rejected.

A `CreateVpcPeeringConnection` request between VPCs with overlapping CIDR blocks results in the VPC peering connection having a status of `failed`.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PeerOwnerId
The AWS account ID of the owner of the peer VPC.

Default: Your AWS account ID

Type: String

Required: No

PeerVpcId
The ID of the VPC with which you are creating the VPC peering connection.

Type: String

Required: No

VpcId
The ID of the requester VPC.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpcPeeringConnection
Information about the VPC peering connection.

Type: VpcPeeringConnection (p. 599)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example requests a peering connection between your VPC (vpc-1a2b3c4d), and a VPC (vpc-a1b2c3d4) that belongs to AWS account 123456789012.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerOwnerId=123456789012
&AUTHPARAMS
```

Sample Response

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
 <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <vpcPeeringConnection>
  <vpcPeeringConnectionId>pcx-73a5401a</vpcPeeringConnectionId>
    <requesterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-vpc-1a2b3c4d</vpcId>
     <cidrBlock>10.0.0.0/28</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-a1b2c3d4</vpcId>
    </accepterVpcInfo>
    <status>
     <code>initiating-request</code>
     <message>Initiating Request to 123456789012</message>
    </status>
    <expirationTime>2014-02-18T14:37:25.000Z</expirationTime>
    <tagSet/>
 </vpcPeeringConnection>
</CreateVpcPeeringConnectionResponse>
```

Example 2

This example requests a peering connection between your VPCs vpc-1a2b3c4d and vpc-11122233.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-11122233
&AUTHPARAMS
```

CreateVpnConnection

Creates a VPN connection between an existing virtual private gateway and a VPN customer gateway. The only supported connection type is `ipsec.1`.

The response includes information that you need to give to your network administrator to configure your customer gateway.

> **Important**
> We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CustomerGatewayId
The ID of the customer gateway.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Options
Indicates whether the VPN connection requires static routes. If you are creating a VPN connection for a device that does not support BGP, you must specify `true`.

Default: `false`

Type: VpnConnectionOptionsSpecification (p. 603)

Required: No

Type
The type of VPN connection (`ipsec.1`).

Type: String

Required: Yes

VpnGatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpnConnection
Information about the VPN connection.

Type: VpnConnection (p. 601)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example creates a VPN connection between the virtual private gateway with the ID vgw-8db04f81 and the customer gateway with the ID cgw-b4dc3961. The response includes configuration information for the customer gateway. Because it's a long set of information, we haven't included the complete response here. To see an example of the configuration information, see the Amazon Virtual Private Cloud Network Administrator Guide.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
       ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <type>ipsec.1</type>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
```

```
    <tagSet/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

Example 2

This example creates a VPN connection with the static routes option between the virtual private gateway with the ID vgw-8db04f81, and the customer gateway with the ID cgw-b4dc3961, for a device that does not support the Border Gateway Protocol (BGP). The response includes configuration information for the VPN connection's customer gateway. Because it's a long set of information, we haven't included the complete response here.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
       ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
    <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
    <options>
      <staticRoutesOnly>true</staticRoutesOnly>
    </options>
    <routes/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

CreateVpnConnectionRoute

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DestinationCidrBlock
The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

VpnConnectionId
The ID of the VPN connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a static route to the VPN connection for the VPN connection with the ID vpn-83ad48ea to the destination CIDR block 11.12.0.0/16. Note that when using the Query API the "/" is denoted as "%2F".

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

Sample Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</CreateVpnConnectionRouteResponse>
```

CreateVpnGateway

Creates a virtual private gateway. A virtual private gateway is the endpoint on the VPC side of your VPN connection. You can create a virtual private gateway before creating the VPC itself.

For more information about virtual private gateways, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
The Availability Zone for the virtual private gateway.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Type
The type of VPN connection this virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpnGateway
Information about the virtual private gateway.

Type: VpnGateway (p. 603)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AUTHPARAMS
```

Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGateway>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <availabilityZone>us-east-1a</availabilityZone>
    <attachments/>
    <tagSet/>
  </vpnGateway>
</CreateVpnGatewayResponse>
```

DeleteCustomerGateway

Deletes the specified customer gateway. You must delete the VPN connection before you can delete the customer gateway.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CustomerGatewayId
The ID of the customer gateway.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified customer gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS
```

Sample Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteCustomerGatewayResponse>
```

DeleteDhcpOptions

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DhcpOptionsId
The ID of the DHCP options set.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified set of DHCP options.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&AUTHPARAMS
```

Sample Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteDhcpOptionsResponse>
```

DeleteFlowLogs

Deletes one or more flow logs.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

FlowLogId.N
One or more flow log IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

unsuccessful
Information about the flow logs that could not be deleted successfully.

Type: UnsuccessfulItem (p. 587) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This examples deletes flow log fl-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteFlowLogs
&FlowLogId.1=fl-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>c5c4f51f-f4e9-42bc-8700-EXAMPLE</requestId>
    <unsuccessful/>
</DeleteFlowLogsResponse>
```

DeleteInternetGateway

Deletes the specified Internet gateway. You must detach the Internet gateway from the VPC before you can delete it.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InternetGatewayId
The ID of the Internet gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified Internet gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS
```

Sample Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

DeleteKeyPair

Deletes the specified key pair, by removing the public key from Amazon EC2.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

KeyName
The name of the key pair.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request deletes the key pair named my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

DeleteNetworkAcl

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

NetworkAclId
The ID of the network ACL.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified network ACL.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=acl-2cb85d45
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteNetworkAclResponse>
```

DeleteNetworkAclEntry

Deletes the specified ingress or egress entry (rule) from the specified network ACL.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Egress
Indicates whether the rule is an egress rule.

Type: Boolean

Required: Yes

NetworkAclId
The ID of the network ACL.

Type: String

Required: Yes

RuleNumber
The rule number of the entry to delete.

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes ingress rule number 100 from the specified network ACL.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteNetworkAclEntryResponse>
```

DeleteNetworkInterface

Deletes the specified network interface. You must detach the network interface before you can delete it.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

Sample Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
    <return>true</return>
</DeleteNetworkInterfaceResponse>
```

DeletePlacementGroup

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information about placement groups and cluster instances, see Cluster Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GroupName
The name of the placement group.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the placement group named XYZ-cluster.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeletePlacementGroup
&GroupName=XYZ-cluster
&AUTHPARAMS
```

Sample Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
   <return>true</return>
</DeletePlacementGroupResponse>
```

DeleteRoute

Deletes the specified route from the specified route table.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DestinationCidrBlock
The CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

RouteTableId
The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the route with destination CIDR 172.16.1.0/24 from the specified route table.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=172.16.1.0/24
&AUTHPARMS
```

Sample Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteRouteResponse>
```

DeleteRouteTable

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

RouteTableId
The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified route table.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-e4ad488d
&AUTHPARAMS
```

Sample Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteRouteTableResponse>
```

DeleteSecurityGroup

Deletes a security group.

If you attempt to delete a security group that is associated with an instance, or is referenced by another security group, the operation fails with `InvalidGroup.InUse` in EC2-Classic or `DependencyViolation` in EC2-VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GroupId
The ID of the security group. Required for a nondefault VPC.

Type: String

Required: No

GroupName
[EC2-Classic, default VPC] The name of the security group. You can specify either the security group name or the security group ID.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example deletes the specified security group for EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=websrv
&AUTHPARAMS
```

Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

Example for EC2-VPC

his example deletes the specified security group for EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

DeleteSnapshot

Deletes the specified snapshot.

When you make periodic snapshots of a volume, the snapshots are incremental, and only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. When you delete a snapshot, only the data not needed for any other snapshot is removed. So regardless of which prior snapshots have been deleted, all active snapshots will have access to all the information needed to restore the volume.

You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot.

For more information, see Deleting an Amazon EBS Snapshot in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SnapshotId
The ID of the EBS snapshot.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request deletes the snapshot with the ID snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot

&SnapshotId.1=snap-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSnapshotResponse>
```

DeleteSpotDatafeedSubscription

Deletes the data feed for Spot instances.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request deletes the data feed for the AWS account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSpotDatafeedSubscription
&AUTHPARAMS
```

Sample Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

DeleteSubnet

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SubnetId
The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS
```

Sample Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteSubnetResponse>
```

DeleteTags

Deletes the specified set of tags from the specified set of resources. This call is designed to follow a `DescribeTags` request.

For more information about tags, see Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ResourceId.N
The ID of the resource. For example, ami-1a2b3c4d. You can specify more than one resource ID.

Type: String list

Required: Yes

Tag.N
One or more tags to delete. If you omit the `value` parameter, we delete the tag regardless of its value. If you specify this parameter with an empty string as the value, we delete the key only if its value is an empty string.

Type: Tag (p. 586) list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the tags for the AMI with the ID ami-1a2b3c4d. First, get a list of the tags by using the DescribeTags request, then delete them.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=ami-1a2b3c4d
&Tag.1.Key=webserver
&Tag.2.Key=stack
&AUTHPARAMS
```

Sample Response

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteTagsResponse>
```

Example

This example deletes the stack and webserver tags for two particular instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&ResourceId.2=i-5f4e3d2a
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```

Example

You can specify a tag key without a corresponding tag value to delete the tag regardless of its value. This example request deletes all tags that have a key of Purpose, regardless of the tag value.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=Purpose
&AUTHPARAMS
```

Example

When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is Purpose and the tag value is the empty string.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=Purpose
&Tag.2.Value=
&AUTHPARAMS
```

DeleteVolume

Deletes the specified EBS volume. The volume must be in the `available` state (not attached to an instance).

Note
The volume may remain in the deleting state for several minutes.

For more information, see Deleting an Amazon EBS Volume in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VolumeId
The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request deletes the volume with the ID vol-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
```

DeleteVpc

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpc
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpcResponse>
```

DeleteVpcEndpoints

Deletes one or more specified VPC endpoints. Deleting the endpoint also deletes the endpoint routes in the route tables that were associated with the endpoint.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcEndpointId.N
One or more endpoint IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

unsuccessful
Information about the endpoints that were not successfully deleted.

Type: UnsuccessfulItem (p. 587) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes endpoint vpce-aa22bb33.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpoints
&VpcEndpointId.1=vpce-aa22bb33
&AUTHPARAMS
```

Sample Response

```
<DeleteVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <unsuccessful/>
    <requestId>b59c2643-789a-4bf7-aac4-example</requestId>
</DeleteVpcEndpointsResponse>
```

DeleteVpcPeeringConnection

Deletes a VPC peering connection. Either the owner of the requester VPC or the owner of the peer VPC can delete the VPC peering connection if it's in the `active` state. The owner of the requester VPC can delete a VPC peering connection in the `pending-acceptance` state.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcPeeringConnectionId
The ID of the VPC peering connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified VPC peering connection.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcPeeringConnection
 &vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcPeeringConnectionResponse>
```

DeleteVpnConnection

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection. If you believe that the tunnel credentials for your VPN connection have been compromised, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway using the new configuration information returned with the new VPN connection ID.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpnConnectionId
The ID of the VPN connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified VPN connection.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpnConnectionResponse>
```

DeleteVpnConnectionRoute

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DestinationCidrBlock
The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

VpnConnectionId
The ID of the VPN connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes a static route to the destination CIDR block 11.12.0.0/16 associated with the VPN connection with the ID vpn-83ad48ea. Note that when using the Query API, the "/" is denoted as "%2F".

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
```

```
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

DeleteVpnGateway

Deletes the specified virtual private gateway. We recommend that before you delete a virtual private gateway, you detach it from the VPC and delete the VPN connection. Note that you don't need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpnGatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example deletes the specified virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpnGatewayResponse>
```

DeregisterImage

Deregisters the specified AMI. After you deregister an AMI, it can't be used to launch new instances.

This command does not delete the AMI.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImageId
The ID of the AMI.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request deregisters the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterImage
&ImageId=ami-4fa54026
&AUTHPARAMS
```

Sample Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

DescribeAccountAttributes

Describes attributes of your AWS account. The following are the supported account attributes:

- `supported-platforms`: Indicates whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC.
- `default-vpc`: The ID of the default VPC for your account, or `none`.
- `max-instances`: The maximum number of On-Demand instances that you can run.
- `vpc-max-security-groups-per-interface`: The maximum number of security groups that you can assign to a network interface.
- `max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate for use with EC2-Classic.
- `vpc-max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate for use with EC2-VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AttributeName.N
One or more account attribute names.

Type: String list

Valid Values: `supported-platforms | default-vpc`

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

accountAttributeSet
Information about one or more account attributes.

Type: AccountAttribute (p. 481) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes your account attributes. The response is for an account that supports EC2-Classic and EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AUTHPARAMS
```

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
        <item>
          <attributeName>vpc-max-security-groups-per-interface</attributeName>

            <attributeValueSet>
                <item>
                    <attributeValue>5</attributeValue>
                </item>
            </attributeValueSet>
        </item>
        <item>
            <attributeName>max-instances</attributeName>
            <attributeValueSet>
                <item>
                    <attributeValue>20</attributeValue>
                </item>
            </attributeValueSet>
        </item>
        <item>
            <attributeName>supported-platforms</attributeName>
            <attributeValueSet>
                <item>
                    <attributeValue>EC2</attributeValue>
                </item>
                <item>
                    <attributeValue>VPC</attributeValue>
                </item>
            </attributeValueSet>
        </item>
        <item>
            <attributeName>default-vpc</attributeName>
            <attributeValueSet>
                <item>
                    <attributeValue>none</attributeValue>
                </item>
            </attributeValueSet>
        </item>
        <item>
```

```
            <attributeName>max-elastic-ips</attributeName>
            <attributeValueSet>
                <item>
                    <attributeValue>5</attributeValue>
                </item>
            </attributeValueSet>
        </item>
        <item>
            <attributeName>vpc-max-elastic-ips</attributeName>
            <attributeValueSet>
                <item>
                    <attributeValue>5</attributeValue>
                </item>
            </attributeValueSet>
        </item>
    </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

Example 2

This example describes the ID of your default VPC. The first response is for an account that supports only EC2-VPC. The second response if for an account that supports both EC2-Classic and EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=default-vpc
&AUTHPARAMS
```

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>vpc-xxxxxxxx</attributeValue>??????
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse> <DescribeAccountAttributesResponse xmlns="ht
tp://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>??????
        </item>
      </attributeValueSet>
```

```
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

DescribeAddresses

Describes one or more of your Elastic IP addresses.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AllocationId.N
[EC2-VPC] One or more allocation IDs.

Default: Describes all your Elastic IP addresses.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters. Filter names and values are case-sensitive.

- `allocation-id` - [EC2-VPC] The allocation ID for the address.
- `association-id` - [EC2-VPC] The association ID for the address.
- `domain` - Indicates whether the address is for use in EC2-Classic (`standard`) or in a VPC (`vpc`).
- `instance-id` - The ID of the instance the address is associated with, if any.
- `network-interface-id` - [EC2-VPC] The ID of the network interface that the address is associated with, if any.
- `network-interface-owner-id` - The AWS account ID of the owner.
- `private-ip-address` - [EC2-VPC] The private IP address associated with the Elastic IP address.
- `public-ip` - The Elastic IP address.

Type: Filter (p. 502) list

Required: No

PublicIp.N
[EC2-Classic] One or more Elastic IP addresses.

Default: Describes all your Elastic IP addresses.

Type: String list

Required: No

Response Elements

The following elements are returned.

addressesSet
Information about one or more Elastic IP addresses.

Type: Address (p. 482) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example request describes two specific Elastic IP addresses allocated to your account. Both addresses were created for instances in EC2-Classic, so you must specify them using their IP addresses. The address 192.0.2.1 is assigned to instance i-f15ebb98, and 198.51.100.2 isn't assigned to an instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS
```

Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <addressesSet>
      <item>
         <publicIp>192.0.2.1</publicIp>
         <domain>standard</domain>
         <instanceId>i-f15ebb98</instanceId>
      </item>
      <item>
         <publicIp>198.51.100.2</publicIp>
         <domain>standard</domain>
         <instanceId/>
      </item>
   </addressesSet>
</DescribeAddressesResponse>
```

Example 1 for EC2-VPC

This example request describes a specific Elastic IP address allocated to your account. This address was created for instances in EC2-VPC, so you must use the allocation ID to specify the address.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1= eipalloc-08229861
&AUTHPARAMS
```

Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
   <addressesSet>
     <item>
       <publicIp>203.0.113.41</publicIp>
       <allocationId>eipalloc-08229861</allocationId>
       <domain>vpc</domain>
       <instanceId>i-64600030</instanceId>
       <associationId>eipassoc-f0229899</associationId>
       <networkInterfaceId>eni-ef229886</networkInterfaceId>
       <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
       <privateIpAddress>10.0.0.228</privateIpAddress>
     </item>
   </addressesSet>
</DescribeAddressesResponse>
```

Example 2 for EC2-VPC

This example describes your Elastic IP addresses for EC2-VPC only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=domain
&Filter.1.Value.1=vpc
&AUTHPARAMS
```

DescribeAvailabilityZones

Describes one or more of the Availability Zones that are available to you. The results include zones only for the region you're currently using. If there is an event impacting an Availability Zone, you can use this request to view the state and any provided message for that Availability Zone.

For more information, see Regions and Availability Zones in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `message` - Information about the Availability Zone.
- `region-name` - The name of the region for the Availability Zone (for example, `us-east-1`).
- `state` - The state of the Availability Zone (`available` | `impaired` | `unavailable`).
- `zone-name` - The name of the Availability Zone (for example, `us-east-1a`).

Type: Filter (p. 502) list

Required: No

ZoneName.N
The names of one or more Availability Zones.

Type: String list

Required: No

Response Elements

The following elements are returned.

availabilityZoneInfo
Information about one or more Availability Zones.

Type: AvailabilityZone (p. 484) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example request describes the Availability Zones that are available to you. The response includes Availability Zones only for the current region.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAvailabilityZones
&AUTHPARAMS
```

Sample Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <availabilityZoneInfo>
   <item>
      <zoneName>us-east-1a</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
   </item>
   <item>
      <zoneName>us-east-1b</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
   </item>
   <item>
      <zoneName>us-east-1c</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
   </item>
   <item>
      <zoneName>us-east-1d</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
   </item>
   </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

DescribeBundleTasks

Describes one or more of your bundling tasks.

Note
Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use RegisterImage with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

BundleId.N
One or more bundle task IDs.

Default: Describes all your bundle tasks.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `bundle-id` - The ID of the bundle task.
- `error-code` - If the task failed, the error code returned.
- `error-message` - If the task failed, the error message returned.
- `instance-id` - The ID of the instance.
- `progress` - The level of task completion, as a percentage (for example, 20%).
- `s3-bucket` - The Amazon S3 bucket to store the AMI.
- `s3-prefix` - The beginning of the AMI name.
- `start-time` - The time the task started (for example, 2013-09-15T17:15:20.000Z).
- `state` - The state of the task (`pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`).
- `update-time` - The time of the most recent update for the task.

Type: Filter (p. 502) list

Required: No

Response Elements

The following elements are returned.

bundleInstanceTasksSet
Information about one or more bundle tasks.

Type: BundleTask (p. 485) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the status of the specified bundle task.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-c1a540a8
&AUTHPARAMS
```

Sample Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <bundleInstanceTasksSet>
      <item>
         <instanceId>i-12345678</instanceId>
         <bundleId>bun-c1a540a8</bundleId>
         <state>cancelling</state>
         <startTime>2008-10-07T11:41:50.000Z</startTime>
         <updateTime>2008-10-07T11:51:50.000Z</updateTime>
         <storage>
            <S3>
               <bucket>myawsbucket</bucket>
               <prefix>winami</prefix>
            </S3>
         </storage>
         <progress>20%</progress>
      </item>
   <bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

Example 2

This example filters the response to include only bundle tasks whose state is either complete or failed, and in addition are targeted for the Amazon S3 bucket named myawsbucket.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

DescribeClassicLinkInstances

Describes one or more of your linked EC2-Classic instances. This request only returns information about EC2-Classic instances linked to a VPC through ClassicLink; you cannot use this request to return information about other instances.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `group-id` - The ID of a VPC security group that's associated with the instance.
- `instance-id` - The ID of the instance.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC that the instance is linked to.

Type: Filter (p. 502) list

Required: No

InstanceId.N
One or more instance IDs. Must be instances linked to a VPC through ClassicLink.

Type: String list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the instance IDs parameter in the same request.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NextToken
The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

instancesSet
Information about one or more linked EC2-Classic instances.

Type: ClassicLinkInstance (p. 489) list

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example lists all of your linked EC2-Classic instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances
&AUTHPARAMS
```

Sample Response

```
<DescribeClassicLinkInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <instancesSet>
        <item>
            <instanceId>i-12345678</instanceId>
            <vpcId>vpc-1a2b3c4d</vpcId>
            <groupSet>
                <item>
                    <groupId>sg-a1a1a1a1</groupId>
                </item>
            </groupSet>
```

```
            <tagSet/>
        </item>
    </instancesSet>
</DescribeClassicLinkInstancesResponse>
```

Example

This example lists all linked EC2-Classic instances, and filters the response to include only instances that are linked to VPC vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&AUTHPARAMS
```

DescribeConversionTasks

Describes one or more of your conversion tasks. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ConversionTaskId.N
One or more conversion task IDs.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

Type: Filter (p. 502) list

Required: No

Response Elements

The following elements are returned.

conversionTasks
Information about the conversion tasks.

Type: ConversionTask (p. 490) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your conversion tasks.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeConversionTasks
&AUTHPARAMS
```

Sample Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <conversionTasks>
     <item>
        <conversionTask>
           <conversionTaskId>import-i-fh95npoc</conversionTaskId>
           <expirationTime>2010-12-22T12:01Z</expirationTime>
           <importVolume>
              <bytesConverted>1000</bytesConverted>
              <availabilityZone>us-east-1a</availabilityZone>
              <description/>
              <image>
                 <format>VDMK</format>
                 <size>128696320</size>
                 <importManifestUrl>
                  https://s3.amazonaws.com/myawsbucket/?a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/?Win_2008_Server_Data_Center_SP2_32-bit.?vmdkmanifest.xml?AWSAc
cessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
                 </importManifestUrl>
              </image>
              <volume>
                 <size>8</size>
                 <id>vol-34d8a2ff</id>
              </volume>
           </importVolume>
           <state>active</state>
           <statusMessage/>
        </conversionTask>
     </item>
  </conversionTasks>
</DescribeConversionTasksResponse>
```

DescribeCustomerGateways

Describes one or more of your VPN customer gateways.

For more information about VPN customer gateways, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CustomerGatewayId.N
One or more customer gateway IDs.

Default: Describes all your customer gateways.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `bgp-asn` - The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).
- `customer-gateway-id` - The ID of the customer gateway.
- `ip-address` - The IP address of the customer gateway's Internet-routable external interface.
- `state` - The state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).
- `type` - The type of customer gateway. Currently, the only supported type is `ipsec.1`.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: Filter (p. 502) list

Required: No

Response Elements

The following elements are returned.

customerGatewaySet
Information about one or more customer gateways.

Type: CustomerGateway (p. 492) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example request describes the specified customer gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

Sample Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGatewaySet>
    <item>
       <customerGatewayId>cgw-b4dc3961</customerGatewayId>
       <state>available</state>
       <type>ipsec.1</type>
       <ipAddress>12.1.2.3</ipAddress>
       <bgpAsn>65534</bgpasn>
       <tagSet/>
    </item>
  </customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

Example 2

This example request uses filters to describe any customer gateway you own whose IP address is 12.1.2.3, and whose state is either pending or available.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
```

```
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

DescribeDhcpOptions

Describes one or more of your DHCP options sets.

For more information about DHCP options sets, see DHCP Options Sets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DhcpOptionsId.N
The IDs of one or more DHCP options sets.

Default: Describes all your DHCP options sets.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `dhcp-options-id` - The ID of a set of DHCP options.
- `key` - The key for one of the options (for example, `domain-name`).
- `value` - The value for one of the options.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: Filter (p. 502) list

Required: No

Response Elements

The following elements are returned.

dhcpOptionsSet
Information about one or more DHCP options sets.

Type: DhcpOptions (p. 493) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the specified DHCP options set.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&DhcpOptionsId.1=dopt-7a8b9c2d
&AUTHPARAMS
```

Sample Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
        </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.2</value>
              </item>
          </valueSet>
```

```
        </item>
      </dhcpConfigurationSet>
      <tagSet/>
    </item>
  </dhcpOptionsSet>
</DescribeDhcpOptionsResponse>
```

Example 2

This example uses filters to describe any DHCP options set that includes a domain-name option whose value includes the string example.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
```

DescribeExportTasks

Describes one or more of your export tasks.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ExportTaskId.N
One or more export task IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

exportTaskSet
Information about the export tasks.

Type: ExportTask (p. 499) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes a single export task.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeExportTasks
&exportTaskId.1=export-i-1234wxyz
&AUTHPARAMS
```

Sample Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

       <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
       <exportTaskSet>
```

```
<item>
<exportTaskId>export-i-1234wxyz</exportTaskId>
<description>Example for docs</description>
<state>active</state>
<statusMessage>Running</statusMessage>
<instanceExport>
<instanceId>i-12345678</instanceId>
<targetEnvironment>VMWare</targetEnvironment>
</instanceExport>
<exportToS3>
<diskImageFormat>VMDK</diskImageFormat>
<containerFormat>OVA</containerFormat>
<s3Bucket>my-bucket-for-exported-vm</s3Bucket>
<s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
</exportToS3>
</item>
</exportTaskSet>
</ DescribeExportTasksResponse>
```

DescribeFlowLogs

Describes one or more flow logs. To view the information in your flow logs (the log streams for the network interfaces), you must use the CloudWatch Logs console or the CloudWatch Logs API.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Filter.N
One or more filters.

- `deliver-log-status` - The status of the logs delivery (`SUCCESS` | `FAILED`).
- `flow-log-id` - The ID of the flow log.
- `log-group-name` - The name of the log group.
- `resource-id` - The ID of the VPC, subnet, or network interface.
- `traffic-type` - The type of traffic (`ACCEPT` | `REJECT` | `ALL`)

Type: Filter (p. 502) list

Required: No

FlowLogId.N
One or more flow log IDs.

Type: String list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the flow log IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

flowLogSet
Information about the flow logs.

Type: FlowLog (p. 502) list

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all of your flow logs.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFlowLogs
&AUTHPARAMS
```

Sample Response

```
<DescribeFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>3cb46f23-099e-4bf0-891c-EXAMPLE</requestId>
    <flowLogSet>
        <item>
            <deliverLogsErrorMessage>Access error</deliverLogsErrorMessage>
            <resourceId>vpc-1a2b3c4d</resourceId>
            <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogs
role</deliverLogsPermissionArn>
            <flowLogStatus>ACTIVE</flowLogStatus>
            <creationTime>2015-05-19T08:48:59Z</creationTime>
            <logGroupName>FlowLogsForSubnetA</logGroupName>
            <trafficType>ALL</trafficType>
            <flowLogId>fl-ab12cd34</flowLogId>
        </item>
        <item>
            <resourceId>vpc-1122bbcc</resourceId>
            <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogs
role</deliverLogsPermissionArn>
            <flowLogStatus>ACTIVE</flowLogStatus>
            <creationTime>2015-05-19T10:42:32Z</creationTime>
            <logGroupName>FlowLogsForSubnetB</logGroupName>
            <trafficType>ALL</trafficType>
            <flowLogId>fl-123abc45</flowLogId>
        </item>
    </flowLogSet>
</DescribeFlowLogsResponse>
```

DescribeImageAttribute

Describes the specified attribute of the specified AMI. You can specify only one attribute at a time.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The AMI attribute.

Note: Depending on your account privileges, the `blockDeviceMapping` attribute may return a `Client.AuthFailure` error. If this happens, use DescribeImages (p. 212) to get information about the block device mapping for the AMI.

Type: String

Valid Values: `description | kernel | ramdisk | launchPermission | productCodes | blockDeviceMapping | sriovNetSupport`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImageId
The ID of the AMI.

Type: String

Required: Yes

Response Elements

The following elements are returned.

imageAttribute
Information about the image attribute.

Type: ImageAttribute (p. 508)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example lists the launch permissions for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-61a54008</imageId>
   <launchPermission>
      <item>
         <group>all</group>
      </item>
      <item>
         <userId>495219933132</userId>
      </item>
   </launchPermission>
</DescribeImageAttributeResponse>
```

Example 2

This example lists the product codes for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
```

Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/>
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-2bb65342</imageId>
   <productCodes>
      <item>
        <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
        <type>marketplace</type>
      </item>
```

```
   </productCodes>
</DescribeImageAttributeResponse>
```

DescribeImages

Describes one or more of the images (AMIs, AKIs, and ARIs) available to you. Images available to you include public images, private images that you own, and private images owned by other AWS accounts but for which you have explicit launch permissions.

Note
Deregistered images are included in the returned results for an unspecified interval after deregistration.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ExecutableBy.N
Scopes the images by users with explicit launch permissions. Specify an AWS account ID, `self` (the sender of the request), or `all` (public AMIs).

Type: String list

Required: No

Filter.N
One or more filters.

- `architecture` - The image architecture (`i386` | `x86_64`).
- `block-device-mapping.delete-on-termination` - A Boolean value that indicates whether the Amazon EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name for the EBS volume (for example, `/dev/sdh`).
- `block-device-mapping.snapshot-id` - The ID of the snapshot used for the EBS volume.
- `block-device-mapping.volume-size` - The volume size of the EBS volume, in GiB.
- `block-device-mapping.volume-type` - The volume type of the EBS volume (`gp2` | `standard` | `io1`).
- `description` - The description of the image (provided during image creation).
- `hypervisor` - The hypervisor type (`ovm` | `xen`).
- `image-id` - The ID of the image.
- `image-type` - The image type (`machine` | `kernel` | `ramdisk`).
- `is-public` - A Boolean that indicates whether the image is public.
- `kernel-id` - The kernel ID.
- `manifest-location` - The location of the image manifest.
- `name` - The name of the AMI (provided during image creation).
- `owner-alias` - The AWS account alias (for example, `amazon`).
- `owner-id` - The AWS account ID of the image owner.
- `platform` - The platform. To only list Windows-based AMIs, use `windows`.
- `product-code` - The product code.

- `product-code.type` - The type of the product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `root-device-name` - The name of the root device volume (for example, `/dev/sda1`).
- `root-device-type` - The type of the root device volume (`ebs` | `instance-store`).
- `state` - The state of the image (`available` | `pending` | `failed`).
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - The message for the state change.
- `tag:`*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:`*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `virtualization-type` - The virtualization type (`paravirtual` | `hvm`).

Type: Filter (p. 502) list

Required: No

ImageId.N
One or more image IDs.

Default: Describes all images available to you.

Type: String list

Required: No

Owner.N
Filters the images by the owner. Specify an AWS account ID, `amazon` (owner is Amazon), `aws-marketplace` (owner is AWS Marketplace), `self` (owner is the sender of the request). Omitting this option returns all images for which you have launch permissions, regardless of ownership.

Type: String list

Required: No

Response Elements

The following elements are returned.

imagesSet
Information about one or more images.

Type: Image (p. 506) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&ImageId.1=ami-be3adfd7
&AUTHPARAMS
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <name>getting-started</name>
      <description>Image Description</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1a2b3c4d</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

Example 2

This example filters the response to include only public Windows images with an x86_64 architecture.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imagesSet>
      <item>
         <imageId>ami-1a2b3c4d</imageId>
         <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
         <imageState>available</imageState>
         <imageOwnerId>123456789012</imageOwnerId>
         <isPublic>true</isPublic>
         <architecture>x86_64</architecture>
         <imageType>machine</imageType>
         <platform>windows</platform>
         <imageOwnerAlias>amazon</imageOwnerAlias>
         <rootDeviceType>instance-store</rootDeviceType>
         <blockDeviceMapping/>
         <virtualizationType>hvm</virtualizationType>
         <tagSet/>
         <hypervisor>xen</hypervisor>
      </item>
      ...
   </imagesSet>
</DescribeImagesResponse>
```

Example 3

This example returns the results to display images where the owner is aws-marketplace.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.1=aws-marketplace
&AUTHPARAMS
```

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
         <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
    <imagesSet>
        <item>
```

```
            <imageId>ami-1a2b3c4d</imageId>
            <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</im
ageLocation>
            <imageState>available</imageState>
            <imageOwnerId>123456789012</imageOwnerId>
            <isPublic>true</isPublic>
            <productCodes>
                <item>
                    <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
                    <type>marketplace</type>
                </item>
            </productCodes>
            <architecture>i386</architecture>
            <imageType>machine</imageType>
            <kernelId>aki-1a2b3c4d</kernelId>
            <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
            <name>example-marketplace-amzn-ami.1</name>
            <description>Amazon Linux AMI i386 EBS</description>
            <rootDeviceType>ebs</rootDeviceType>
            <rootDeviceName>/dev/sda1</rootDeviceName>
            <blockDeviceMapping>
                <item>
                    <deviceName>/dev/sda1</deviceName>
                    <ebs>
                        <snapshotId>snap-1a2b3c4d</snapshotId>
                        <volumeSize>8</volumeSize>
                        <deleteOnTermination>true</deleteOnTermination>
                    </ebs>
                </item>
            </blockDeviceMapping>
            <virtualizationType>paravirtual</virtualizationType>
            <hypervisor>xen</hypervisor>
        </item>
        ...
    </imagesSet>
</DescribeImagesResponse>
```

DescribeImportImageTasks

Displays details about an import virtual machine or import snapshot tasks that are already created.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filters.N
One or more filters.

Type: Filter (p. 502) list

Required: No

ImportTaskId.N
A list of import image task IDs.

Type: String list

Required: No

MaxResults
The maximum number of results to return in a single request.

Type: Integer

Required: No

NextToken
A token that indicates the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

importImageTaskSet
A list of zero or more import image tasks that are currently active or were completed or canceled in the previous 7 days.

Type: ImportImageTask (p. 510) list

nextToken
The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

DescribeImportSnapshotTasks

Describes your import snapshot tasks.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filters.N
One or more filters.

Type: Filter (p. 502) list

Required: No

ImportTaskId.N
A list of import snapshot task IDs.

Type: String list

Required: No

MaxResults
The maximum number of results to return in a single request.

Type: Integer

Required: No

NextToken
A token that indicates the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

importSnapshotTaskSet
A list of zero or more import snapshot tasks that are currently active or were completed or canceled in the previous 7 days.

Type: ImportSnapshotTask (p. 515) list

nextToken
The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

DescribeInstanceAttribute

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. Valid attribute values are: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The instance attribute.

Type: String

Valid Values: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

instanceAttribute
Information about the instance attribute.

Type: InstanceAttribute (p. 521)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example lists the instance type of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=instanceType
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceType>
    <value>t1.micro</value>
  </instanceType>
</DescribeInstanceAttributeResponse>
```

Example 2

This example lists the current value of the InstanceInitiatedShutdownBehavior attribute for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=instanceInitiatedShutdownBehavior
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <instanceInitiatedShutdownBehavior>
    <value>stop</value>
  </instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>
```

Example 3

This example lists the current value of the DisableApiTermination attribute for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=disableApiTermination
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <disableApiTermination>
    <value>false</value>
  </disableApiTermination>
</DescribeInstanceAttributeResponse>
```

DescribeInstances

Describes one or more of your instances.

If you specify one or more instance IDs, Amazon EC2 returns information for those instances. If you do not specify instance IDs, Amazon EC2 returns information for all relevant instances. If you specify an instance ID that is not valid, an error is returned. If you specify an instance that you do not own, it is not included in the returned results.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `architecture` - The instance architecture (`i386` | `x86_64`).
- `availability-zone` - The Availability Zone of the instance.
- `block-device-mapping.attach-time` - The attach time for an EBS volume mapped to the instance, for example, `2010-09-15T17:15:20.000Z`.
- `block-device-mapping.delete-on-termination` - A Boolean that indicates whether the EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name for the EBS volume (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.status` - The status for the EBS volume (`attaching` | `attached` | `detaching` | `detached`).
- `block-device-mapping.volume-id` - The volume ID of the EBS volume.
- `client-token` - The idempotency token you provided when you launched the instance.
- `dns-name` - The public DNS name of the instance.
- `group-id` - The ID of the security group for the instance. EC2-Classic only.
- `group-name` - The name of the security group for the instance. EC2-Classic only.
- `hypervisor` - The hypervisor type of the instance (`ovm` | `xen`).
- `iam-instance-profile.arn` - The instance profile associated with the instance. Specified as an ARN.
- `image-id` - The ID of the image used to launch the instance.
- `instance-id` - The ID of the instance.
- `instance-lifecycle` - Indicates whether this is a Spot Instance (`spot`).
- `instance-state-code` - The state of the instance, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are: 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).

- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-type` - The type of instance (for example, `t2.micro`).
- `instance.group-id` - The ID of the security group for the instance.
- `instance.group-name` - The name of the security group for the instance.
- `ip-address` - The public IP address of the instance.
- `kernel-id` - The kernel ID.
- `key-name` - The name of the key pair used when the instance was launched.
- `launch-index` - When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).
- `launch-time` - The time when the instance was launched.
- `monitoring-state` - Indicates whether monitoring is enabled for the instance (`disabled` | `enabled`).
- `owner-id` - The AWS account ID of the instance owner.
- `placement-group-name` - The name of the placement group for the instance.
- `platform` - The platform. Use `windows` if you have Windows instances; otherwise, leave blank.
- `private-dns-name` - The private DNS name of the instance.
- `private-ip-address` - The private IP address of the instance.
- `product-code` - The product code associated with the AMI used to launch the instance.
- `product-code.type` - The type of product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `reason` - The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter.
- `requester-id` - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- `reservation-id` - The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you'll get one reservation ID. If you launch ten instances using the same launch request, you'll also get one reservation ID.
- `root-device-name` - The name of the root device for the instance (for example, `/dev/sda1` or `/dev/xvda`).
- `root-device-type` - The type of root device that the instance uses (`ebs` | `instance-store`).
- `source-dest-check` - Indicates whether the instance performs source/destination checking. A value of `true` means that checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform network address translation (NAT) in your VPC.
- `spot-instance-request-id` - The ID of the Spot Instance request.
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - A message that describes the state change.
- `subnet-id` - The ID of the subnet for the instance.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource, where `tag`:*key* is the tag's key.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

- `tenancy` - The tenancy of an instance (`dedicated` | `default`).
- `virtualization-type` - The virtualization type of the instance (`paravirtual` | `hvm`).
- `vpc-id` - The ID of the VPC that the instance is running in.
- `network-interface.description` - The description of the network interface.
- `network-interface.subnet-id` - The ID of the subnet for the network interface.
- `network-interface.vpc-id` - The ID of the VPC for the network interface.
- `network-interface.network-interface.id` - The ID of the network interface.
- `network-interface.owner-id` - The ID of the owner of the network interface.
- `network-interface.availability-zone` - The Availability Zone for the network interface.
- `network-interface.requester-id` - The requester ID for the network interface.
- `network-interface.requester-managed` - Indicates whether the network interface is being managed by AWS.
- `network-interface.status` - The status of the network interface (`available`) | `in-use`).
- `network-interface.mac-address` - The MAC address of the network interface.
- `network-interface-private-dns-name` - The private DNS name of the network interface.
- `network-interface.source-dest-check` - Whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.
- `network-interface.group-id` - The ID of a security group associated with the network interface.
- `network-interface.group-name` - The name of a security group associated with the network interface.
- `network-interface.attachment.attachment-id` - The ID of the interface attachment.
- `network-interface.attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `network-interface.attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `network-interface.addresses.private-ip-address` - The private IP address associated with the network interface.
- `network-interface.attachment.device-index` - The device index to which the network interface is attached.
- `network-interface.attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `network-interface.attachment.attach-time` - The time that the network interface was attached to an instance.
- `network-interface.attachment.delete-on-termination` - Specifies whether the attachment is deleted when an instance is terminated.
- `network-interface.addresses.primary` - Specifies whether the IP address of the network interface is the primary private IP address.
- `network-interface.addresses.association.public-ip` - The ID of the association of an Elastic IP address with a network interface.
- `network-interface.addresses.association.ip-owner-id` - The owner ID of the private IP address associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address bound to the network interface.
- `association.ip-owner-id` - The owner of the Elastic IP address associated with the network interface.
- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address for your network interface.

- `association.association-id` - The association ID returned when the network interface was associated with an IP address.

Type: Filter (p. 502) list

Required: No

InstanceId.N
One or more instance IDs.

Default: Describes all your instances.

Type: String list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The token to request the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

reservationSet
One or more reservations.

Type: Reservation (p. 554) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes all instances owned by your AWS account. The example response shows information for one instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&AUTHPARAMS
```

Sample Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
    <reservationSet>
      <item>
        <reservationId>r-1a2b3c4d</reservationId>
        <ownerId>123456789012</ownerId>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>my-security-group</groupName>
          </item>
        </groupSet>
        <instancesSet>
          <item>
            <instanceId>i-1a2b3c4d</instanceId>
            <imageId>ami-1a2b3c4d</imageId>
            <instanceState>
              <code>16</code>
              <name>running</name>
            </instanceState>
            <privateDnsName/>
            <dnsName/>
            <reason/>
            <keyName>my-key-pair</keyName>
            <amiLaunchIndex>0</amiLaunchIndex>
            <productCodes/>
            <instanceType>c1.medium</instanceType>
            <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
            <placement>
              <availabilityZone>us-west-2a</availabilityZone>
              <groupName/>
              <tenancy>default</tenancy>
            </placement>
            <platform>windows</platform>
            <monitoring>
              <state>disabled</state>
            </monitoring>
            <subnetId>subnet-1a2b3c4d</subnetId>
            <vpcId>vpc-1a2b3c4d</vpcId>
            <privateIpAddress>10.0.0.12</privateIpAddress>
```

```
<ipAddress>46.51.219.63</ipAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>123456789012</ownerId>
    <status>in-use</status>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-1a2b3c4d</attachmentId>
      <deviceIndex>0</deviceIndex>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
    <association>
      <publicIp>198.51.100.63</publicIp>
      <ipOwnerId>123456789012</ipOwnerId>
```

```
              </association>
              <privateIpAddressesSet>
                <item>
                  <privateIpAddress>10.0.0.12</privateIpAddress>
                  <primary>true</primary>
                  <association>
                    <publicIp>198.51.100.63</publicIp>
                    <ipOwnerId>123456789012</ipOwnerId>
                  </association>
                </item>
                <item>
                  <privateIpAddress>10.0.0.14</privateIpAddress>
                  <primary>false</primary>
                  <association>
                    <publicIp>198.51.100.177</publicIp>
                    <ipOwnerId>123456789012</ipOwnerId>
                  </association>
                </item>
              </privateIpAddressesSet>
            </item>
          </networkInterfaceSet>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
  </DescribeInstancesResponse>
```

Example 2

This example describes only the instances that have the m1.small or m1.large instance type and an attached Amazon EBS volume that will be deleted on termination.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

Example 3

This example describes all instances that are running in a VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

Example 4

This example describes any instances that have a tag with the key Owner, regardless of the value of the tag.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag-key
&Filter.1.Value.1=Owner
&AUTHPARAMS
```

Example

This example lists only the instances that have a tag with the key Owner and the value DbAdmin.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag:Owner
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
```

DescribeInstanceStatus

Describes the status of one or more instances.

Instance status includes the following components:

- **Status checks** - Amazon EC2 performs status checks on running EC2 instances to identify hardware and software issues. For more information, see Status Checks for Your Instances and Troubleshooting Instances with Failed Status Checks in the *Amazon Elastic Compute Cloud User Guide*.
- **Scheduled events** - Amazon EC2 can schedule events (such as reboot, stop, or terminate) for your instances related to hardware issues, software updates, or system maintenance. For more information, see Scheduled Events for Your Instances in the *Amazon Elastic Compute Cloud User Guide*.
- **Instance state** - You can manage your instances from the moment you launch them through their termination. For more information, see Instance Lifecycle in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `availability-zone` - The Availability Zone of the instance.
- `event.code` - The code for the scheduled event (`instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`).
- `event.description` - A description of the event.
- `event.not-after` - The latest end time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `event.not-before` - The earliest start time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `instance-state-code` - The code for the instance state, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-status.reachability` - Filters on instance status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).
- `instance-status.status` - The status of the instance (`ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).
- `system-status.reachability` - Filters on system status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).
- `system-status.status` - The system status of the instance (`ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).

Type: Filter (p. 502) list

Required: No

IncludeAllInstances
When `true`, includes the health status for all instances. When `false`, includes the health status for running instances only.

Default: `false`

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Type: String list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

instanceStatusSet
One or more instance status descriptions.

Type: InstanceStatus (p. 531) list

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example returns instance status descriptions for all instances.

Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&AUTHPARAMS
```

Example 2

This example returns instance status descriptions for the specified instances.

Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-2a2b3c4d
&AUTHPARAMS
```

Example 3

This example returns instance status descriptions for all instances specified by supported DescribeInstanceStatus filters.

Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.1.Name=system-status.reachability
&Filter.1.Value.failed
&AUTHPARAMS
```

Sample Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
    <instanceStatusSet>
        <item>
            <instanceId>i-1a2b3c4d</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
```

```
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
                <status>impaired</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>failed</status>
                       <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>

                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>impaired</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>failed</status>
                       <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>

                    </item>
                </details>
            </instanceStatus>
            <eventsSet>
              <item>
                <code>instance-retirement</code>
                <description>The instance is running on degraded hardware</de
scription>
                <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
                <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
              </item>
            </eventsSet>
        </item>
        <item>
            <instanceId>i-2a2b3c4d</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
```

```
            </item>
          </details>
        </instanceStatus>
        <eventsSet>
          <item>
            <code>instance-reboot</code>
           <description>The instance is scheduled for a reboot</description>

            <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
            <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
          </item>
        </eventsSet>
      </item>
      <item>
        <instanceId>i-3a2b3c4d</instanceId>
        <availabilityZone>us-east-1d</availabilityZone>
        <instanceState>
            <code>16</code>
            <name>running</name>
        </instanceState>
        <systemStatus>
            <status>ok</status>
            <details>
                <item>
                    <name>reachability</name>
                    <status>passed</status>
                </item>
            </details>
        </systemStatus>
        <instanceStatus>
            <status>ok</status>
            <details>
                <item>
                    <name>reachability</name>
                    <status>passed</status>
                </item>
            </details>
        </instanceStatus>
      </item>
      <item>
        <instanceId>i-4a2b3c4d</instanceId>
        <availabilityZone>us-east-1d</availabilityZone>
        <instanceState>
            <code>16</code>
            <name>running</name>
        </instanceState>
        <systemStatus>
            <status>ok</status>
            <details>
                <item>
                    <name>reachability</name>
                    <status>passed</status>
                </item>
            </details>
        </systemStatus>
        <instanceStatus>
            <status>insufficient-data</status>
            <details>
```

```
                    <item>
                        <name>reachability</name>
                        <status>insufficient-data</status>
                    </item>
                </details>
            </instanceStatus>
        </item>
    </instanceStatusSet>
</DescribeInstanceStatusResponse>
```

DescribeInternetGateways

Describes one or more of your Internet gateways.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`available`). Present only if a VPC is attached.
- `attachment.vpc-id` - The ID of an attached VPC.
- `internet-gateway-id` - The ID of the Internet gateway.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: Filter (p. 502) list

Required: No

InternetGatewayId.N
One or more Internet gateway IDs.

Default: Describes all your Internet gateways.

Type: String list

Required: No

Response Elements

The following elements are returned.

internetGatewaySet
Information about one or more Internet gateways.

Type: InternetGateway (p. 534) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your Internet gateways.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInternetGateways
&AUTHPARAMS
```

Sample Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <internetGatewaySet>
      <item>
         <internetGatewayId>igw-eaad4883EXAMPLE</internetGatewayId>
         <attachmentSet>
            <item>
               <vpcId>vpc-11ad4878</vpcId>
               <state>available</state>
            </item>
         </attachmentSet>
         <tagSet/>
      </item>
   </internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

DescribeKeyPairs

Describes one or more of your key pairs.

For more information about key pairs, see Key Pairs in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `fingerprint` - The fingerprint of the key pair.
- `key-name` - The name of the key pair.

Type: Filter (p. 502) list

Required: No

KeyName.N
One or more key pair names.

Default: Describes all your key pairs.

Type: String list

Required: No

Response Elements

The following elements are returned.

keySet
Information about one or more key pairs.

Type: KeyPairInfo (p. 537) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the keypair with name my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

Sample Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <keySet>
      <item>
         <keyName>my-key-pair</keyName>
         <keyFinger
print>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFinger
print>
      </item>
   </keySet>
</DescribeKeyPairsResponse>
```

Example

This example filters the response to include only key pairs whose names include the string Dave.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```

DescribeMovingAddresses

Describes your Elastic IP addresses that are being moved to the EC2-VPC platform, or that are being restored to the EC2-Classic platform. This request does not return information about any other Elastic IP addresses in your account.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `moving-status` - The status of the Elastic IP address (`MovingToVpc` | `RestoringToClassic`).

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value outside of this range, an error is returned.

Default: If no value is provided, the default is 1000.

Type: Integer

Required: No

NextToken
The token to use to retrieve the next page of results.

Type: String

Required: No

PublicIp.N
One or more Elastic IP addresses.

Type: String list

Required: No

Response Elements

The following elements are returned.

movingAddressStatusSet
The status for each Elastic IP address.

Type: MovingAddressStatus (p. 540) list

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your moving Elastic IP addresses.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeMovingAddresses
&AUTHPARAMS
```

Sample Response

```
<DescribeMovingAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>127c36e6-6781-469f-89c1-EXAMPLE</requestId>
    <movingAddressStatusSet>
        <item>
            <publicIp>198.18.125.129</publicIp>
            <moveStatus>MovingToVpc</moveStatus>
        </item>
    </movingAddressStatusSet>
</DescribeMovingAddressesResponse>
```

DescribeNetworkAcls

Describes one or more of your network ACLs.

For more information about network ACLs, see Network ACLs in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `association.association-id` - The ID of an association ID for the ACL.
- `association.network-acl-id` - The ID of the network ACL involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `default` - Indicates whether the ACL is the default network ACL for the VPC.
- `entry.cidr` - The CIDR range specified in the entry.
- `entry.egress` - Indicates whether the entry applies to egress traffic.
- `entry.icmp.code` - The ICMP code specified in the entry, if any.
- `entry.icmp.type` - The ICMP type specified in the entry, if any.
- `entry.port-range.from` - The start of the port range specified in the entry.
- `entry.port-range.to` - The end of the port range specified in the entry.
- `entry.protocol` - The protocol specified in the entry (`tcp` | `udp` | `icmp` or a protocol number).
- `entry.rule-action` - Allows or denies the matching traffic (`allow` | `deny`).
- `entry.rule-number` - The number of an entry (in other words, rule) in the ACL's set of entries.
- `network-acl-id` - The ID of the network ACL.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the network ACL.

Type: Filter (p. 502) list

Required: No

NetworkAclId.N
One or more network ACL IDs.

Default: Describes all your network ACLs.

Type: String list

Required: No

Response Elements

The following elements are returned.

networkAclSet
Information about one or more network ACLs.

Type: NetworkAcl (p. 541) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your network ACLs.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkAcls
&AUTHPARAMS
```

Sample Response

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <networkAclSet>
   <item>
     <networkAclId>acl-5566953c</networkAclId>
     <vpcId>vpc-5266953b</vpcId>
     <default>true</default>
     <entrySet>
       <item>
         <ruleNumber>100</ruleNumber>
         <protocol>all</protocol>
         <ruleAction>allow</ruleAction>
         <egress>true</egress>
         <cidrBlock>0.0.0.0/0</cidrBlock>
       </item>
       <item>
```

```
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>100</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>allow</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
    </entrySet>
    <associationSet/>
    <tagSet/>
  </item>
  <item>
    <networkAclId>acl-5d659634</networkAclId>
    <vpcId>vpc-5266953b</vpcId>
    <default>false</default>
    <entrySet>
      <item>
        <ruleNumber>110</ruleNumber>
        <protocol>6</protocol>
        <ruleAction>allow</ruleAction>
        <egress>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
        <portRange>
          <from>49152</from>
          <to>65535</to>
        </portRange>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>110</ruleNumber>
        <protocol>6</protocol>
        <ruleAction>allow</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
        <portRange>
          <from>80</from>
          <to>80</to>
        </portRange>
      </item>
```

```
      <item>
        <ruleNumber>120</ruleNumber>
        <protocol>6</protocol>
        <ruleAction>allow</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
        <portRange>
          <from>443</from>
          <to>443</to>
        </portRange>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
    </entrySet>
    <associationSet>
      <item>
        <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
        <networkAclId>acl-5d659634</networkAclId>
        <subnetId>subnet-ff669596</subnetId>
      </item>
      <item>
        <networkAclAssociationId>aclassoc-c26596ab</networkAclAssociationId>
        <networkAclId>acl-5d659634</networkAclId>
        <subnetId>subnet-f0669599</subnetId>
      </item>
    </associationSet>
    <tagSet/>
  </item>
 </networkAclSet>
</DescribeNetworkAclsResponse>
```

DescribeNetworkInterfaceAttribute

Describes a network interface attribute. You can specify only one attribute at a time.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The attribute of the network interface.

Type: String

Valid Values: `description | groupSet | sourceDestCheck | attachment`

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachment
The attachment (if any) of the network interface.

Type: NetworkInterfaceAttachment (p. 546)

description
The description of the network interface.

Type: AttributeValue (p. 483)

groupSet
The security groups associated with the network interface.

Type: GroupIdentifier (p. 503) list

networkInterfaceId
The ID of the network interface.

Type: String

requestId
The ID of the request.

Type: String

sourceDestCheck
Indicates whether source/destination checking is enabled.

Type: AttributeBooleanValue (p. 483)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the sourceDestCheck attribute of the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

DescribeNetworkInterfaces

Describes one or more of your network interfaces.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `addresses.private-ip-address` - The private IP addresses associated with the network interface.
- `addresses.primary` - Whether the private IP address is the primary IP address associated with the network interface.
- `addresses.association.public-ip` - The association ID returned when the network interface was associated with the Elastic IP address.
- `addresses.association.owner-id` - The owner ID of the addresses associated with the network interface.
- `association.association-id` - The association ID returned when the network interface was associated with an IP address.
- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address for your network interface.
- `association.ip-owner-id` - The owner of the Elastic IP address associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address bound to the network interface.
- `association.public-dns-name` - The public DNS name for the network interface.
- `attachment.attachment-id` - The ID of the interface attachment.
- `attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `attachment.device-index` - The device index to which the network interface is attached.
- `attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.attach.time` - The time that the network interface was attached to an instance.
- `attachment.delete-on-termination` - Indicates whether the attachment is deleted when an instance is terminated.
- `availability-zone` - The Availability Zone of the network interface.
- `description` - The description of the network interface.
- `group-id` - The ID of a security group associated with the network interface.
- `group-name` - The name of a security group associated with the network interface.
- `mac-address` - The MAC address of the network interface.
- `network-interface-id` - The ID of the network interface.

- `owner-id` - The AWS account ID of the network interface owner.
- `private-ip-address` - The private IP address or addresses of the network interface.
- `private-dns-name` - The private DNS name of the network interface.
- `requester-id` - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- `requester-managed` - Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).
- `source-desk-check` - Indicates whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform Network Address Translation (NAT) in your VPC.
- `status` - The status of the network interface. If the network interface is not attached to an instance, the status is `available`; if a network interface is attached to an instance the status is `in-use`.
- `subnet-id` - The ID of the subnet for the network interface.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the network interface.

Type: Filter (p. 502) list

Required: No

NetworkInterfaceId.N
One or more network interface IDs.

Default: Describes all your network interfaces.

Type: String list

Required: No

Response Elements

The following elements are returned.

networkInterfaceSet
Information about one or more network interfaces.

Type: NetworkInterface (p. 543) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your network interfaces.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces
&AUTHPARAMS
```

Sample Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
     <networkInterfaceSet>
       <item>
         <networkInterfaceId>eni-0f62d866</networkInterfaceId>
         <subnetId>subnet-c53c87ac</subnetId>
         <vpcId>vpc-cc3c87a5</vpcId>
         <availabilityZone>api-southeast-1b</availabilityZone>
         <description/>
         <ownerId>053230519467</ownerId>
         <requesterManaged>false</requesterManaged>
         <status>in-use</status>
         <macAddress>02:81:60:cb:27:37</macAddress>
         <privateIpAddress>10.0.0.146</privateIpAddress>
         <sourceDestCheck>true</sourceDestCheck>
         <groupSet>
           <item>
             <groupId>sg-3f4b5653</groupId>
             <groupName>default</groupName>
           </item>
         </groupSet>
         <attachment>
           <attachmentId>eni-attach-6537fc0c</attachmentId>
           <instanceId>i-22197876</instanceId>
           <instanceOwnerId>053230519467</instanceOwnerId>
           <deviceIndex>0</deviceIndex>
           <status>attached</status>
           <attachTime>2012-07-01T21:45:27.000Z</attachTime>
           <deleteOnTermination>true</deleteOnTermination>
         </attachment>
         <tagSet/>
         <privateIpAddressesSet>
           <item>
             <privateIpAddress>10.0.0.146</privateIpAddress>
             <primary>true</primary>
           </item>
           <item>
             <privateIpAddress>10.0.0.148</privateIpAddress>
             <primary>false</primary>
           </item>
           <item>
```

```
            <privateIpAddress>10.0.0.150</privateIpAddress>
            <primary>false</primary>
          </item>
        </privateIpAddressesSet>
      </item>
      <item>
        <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
        <subnetId>subnet-cd8a35a4</subnetId>
        <vpcId>vpc-f28a359b</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description>Primary network interface</description>
        <ownerId>053230519467</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>in-use</status>
        <macAddress>02:78:d7:00:8a:1e</macAddress>
        <privateIpAddress>10.0.1.233</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
          <item>
            <groupId>sg-a2a0b2ce</groupId>
            <groupName>quick-start-1</groupName>
          </item>
        </groupSet>
        <attachment>
          <attachmentId>eni-attach-a99c57c0</attachmentId>
          <instanceId>i-886401dc</instanceId>
          <instanceOwnerId>053230519467</instanceOwnerId>
          <deviceIndex>0</deviceIndex>
          <status>attached</status>
          <attachTime>2012-06-27T20:08:44.000Z</attachTime>
          <deleteOnTermination>true</deleteOnTermination>
        </attachment>
        <tagSet/>
        <privateIpAddressesSet>
          <item>
            <privateIpAddress>10.0.1.233</privateIpAddress>
            <primary>true</primary>
          </item>
          <item>
            <privateIpAddress>10.0.1.20</privateIpAddress>
            <primary>false</primary>
          </item>
        </privateIpAddressesSet>
      </item>
    </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

DescribePlacementGroups

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see Cluster Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `group-name` - The name of the placement group.
- `state` - The state of the placement group (`pending` | `available` | `deleting` | `deleted`).
- `strategy` - The strategy of the placement group (`cluster`).

Type: Filter (p. 502) list

Required: No

GroupName.N
One or more placement group names.

Default: Describes all your placement groups, or only those otherwise specified.

Type: String list

Required: No

Response Elements

The following elements are returned.

placementGroupSet
One or more placement groups.

Type: PlacementGroup (p. 549) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the placement group named XYZ-cluster.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=XYZ-cluster
&AUTHPARAMS
```

Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
   <placementGroupSet>
      <item>
         <groupName>XYZ-cluster</groupName>
         <strategy>cluster</strategy>
         <state>available</state>
      </item>
   </placementGroupSet>
</DescribePlacementGroupsResponse>
```

Example

This example filters the response to include only placement groups that include the string Project in the name.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
   <placementGroupSet>
      <item>
         <groupName>Project-cluster</groupName>
         <strategy>cluster</strategy>
         <state>available</state>
      </item>
   </placementGroupSet>
</DescribePlacementGroupsResponse>
```

DescribePrefixLists

Describes available AWS services in a prefix list format, which includes the prefix list name and prefix list ID of the service and the IP address range for the service. A prefix list ID is required for creating an outbound security group rule that allows traffic from a VPC to access an AWS service through a VPC endpoint.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `prefix-list-id`: The ID of a prefix list.
- `prefix-list-name`: The name of a prefix list.

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value specified is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

PrefixListId.N
One or more prefix list IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

prefixListSet
All available prefix lists.

Type: PrefixList (p. 550) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example lists all available AWS prefix lists.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePrefixLists
&AUTHPARAMS
```

Sample Response

```
<DescribePrefixListsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <prefixListSet>
        <item>
            <prefixListName>com.amazonaws.us-west-2.s3</prefixListName>
            <prefixListId>pl-12345678</prefixListId>
            <cidrSet>
              <item>54.123.456.7/19</item>
            </cidrSet>
        </item>
    </prefixListSet>
    <requestId>614db4d4-ac7b-4cb6-853e-example</requestId>
</DescribePrefixListsResponse>
```

DescribeRegions

Describes one or more regions that are currently available to you.

For a list of the regions supported by Amazon EC2, see Regions and Endpoints.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `endpoint` - The endpoint of the region (for example, `ec2.us-east-1.amazonaws.com`).
- `region-name` - The name of the region (for example, `us-east-1`).

Type: Filter (p. 502) list

Required: No

RegionName.N
The names of one or more regions.

Type: String list

Required: No

Response Elements

The following elements are returned.

regionInfo
Information about one or more regions.

Type: Region (p. 554) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example displays information about all regions.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&AUTHPARAMS
```

Example 2

This example displays information about the specified regions only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS
```

Sample Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <regionInfo>
      <item>
         <regionName>us-east-1</regionName>
         <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
      </item>
      <item>
         <regionName>eu-west-1</regionName>
         <regionEndpoint>ec2.eu-west-1amazonaws.com</regionEndpoint>
      </item>
   </regionInfo>
</DescribeRegionsResponse>
```

DescribeReservedInstances

Describes one or more of the Reserved Instances that you purchased.

For more information about Reserved Instances, see Reserved Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (one year or three years), in seconds (`31536000` | `94608000`).
- `end` - The time when the Reserved Instance expires (for example, 2015-08-07T11:54:42.000Z).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type on which the Reserved Instance can be used.
- `product-description` - The Reserved Instance product platform description. Instances that include `(Amazon VPC)` in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC. (`Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux` | `SUSE Linux (Amazon VPC)` | `Red Hat Enterprise Linux` | `Red Hat Enterprise Linux (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)` | `Windows with SQL Server Standard` | `Windows with SQL Server Standard (Amazon VPC)` | `Windows with SQL Server Web` | `Windows with SQL Server Web (Amazon VPC)` | `Windows with SQL Server Enterprise` | `Windows with SQL Server Enterprise (Amazon VPC)`).
- `reserved-instances-id` - The ID of the Reserved Instance.
- `start` - The time at which the Reserved Instance purchase request was placed (for example, 2014-08-07T11:54:42.000Z).
- `state` - The state of the Reserved Instance (`payment-pending` | `active` | `payment-failed` | `retired`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Filter (p. 502) list

Required: No

OfferingType
The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

ReservedInstancesId.N
One or more Reserved Instance IDs.

Default: Describes all your Reserved Instances, or only those otherwise specified.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesSet
A list of Reserved Instances.

Type: ReservedInstances (p. 556) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes Reserved Instances owned by your account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&AUTHPARAMS
```

Sample Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
   <reservedInstancesSet>
   ...
      <item>
        <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedIn
stancesId>
         <instanceType>m1.xlarge</instanceType>
         <availabilityZone>us-east-1b</availabilityZone>
         <duration>31536000</duration>
         <fixedPrice>61.0</fixedPrice>
         <usagePrice>0.034</usagePrice>
         <instanceCount>3</instanceCount>
         <productDescription>Linux/UNIX</productDescription>
         <state>active</state>
         <instanceTenancy>default</instanceTenancy>
         <currencyCode>USD</currencyCode>
         <offeringType>Light Utilization</offeringType>
         <recurringCharges/>
      </item>
   ...
   </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

Example

This example filters the response to include only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

DescribeReservedInstancesListings

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance to purchase, and the Marketplace matches what you're searching for with what's available. The Marketplace first sells the lowest priced Reserved Instances to you, and continues to sell available Reserved Instance listings to you until your demand is met. You are charged based on the total price of all of the listings that you purchase.

For more information, see Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Filters.N
One or more filters.

- `reserved-instances-id` - The ID of the Reserved Instances.
- `reserved-instances-listing-id` - The ID of the Reserved Instances listing.
- `status` - The status of the Reserved Instance listing (`pending` | `active` | `cancelled` | `closed`).
- `status-message` - The reason for the status.

Type: Filter (p. 502) list

Required: No

ReservedInstancesId
One or more Reserved Instance IDs.

Type: String

Required: No

ReservedInstancesListingId
One or more Reserved Instance Listing IDs.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesListingsSet
Information about the Reserved Instance listing.

Type: ReservedInstancesListing (p. 559) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example shows all the listings associated with your account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings
&AUTHPARAMS
```

Sample Response

```
<DescribeReservedInstancesListingsResponse>
    <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
          <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
            <createDate>2012-07-06T19:35:29.000Z</createDate>
            <updateDate>2012-07-06T19:35:30.000Z</updateDate>
            <status>active</status>
            <statusMessage>ACTIVE</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>20</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
                </item>
            </instanceCounts>
            <priceSchedules>
```

```
                <item>
                    <term>8</term>
                    <price>480.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>7</term>
                    <price>420.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>6</term>
                    <price>360.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>active</active>
                </item>
                <item>
                    <term>5</term>
                    <price>300.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>240.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>180.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>120.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>1</term>
                    <price>60.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>myclienttoken1</clientToken>
        </item>
    </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

DescribeReservedInstancesModifications

Describes the modifications made to your Reserved Instances. If no parameter is specified, information about all your Reserved Instances modification requests is returned. If a modification ID is specified, only information about the specific modification is returned.

For more information, see Modifying Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Filter.N

One or more filters.

- `client-token` - The idempotency token for the modification request.
- `create-date` - The time when the modification request was created.
- `effective-date` - The time when the modification becomes effective.
- `modification-result.reserved-instances-id` - The ID for the Reserved Instances created as part of the modification request. This ID is only available when the status of the modification is `fulfilled`.
- `modification-result.target-configuration.availability-zone` - The Availability Zone for the new Reserved Instances.
- `modification-result.target-configuration.instance-count` - The number of new Reserved Instances.
- `modification-result.target-configuration.instance-type` - The instance type of the new Reserved Instances.
- `modification-result.target-configuration.platform` - The network platform of the new Reserved Instances (`EC2-Classic` | `EC2-VPC`).
- `reserved-instances-id` - The ID of the Reserved Instances modified.
- `reserved-instances-modification-id` - The ID of the modification request.
- `status` - The status of the Reserved Instances modification request (`processing` | `fulfilled` | `failed`).
- `status-message` - The reason for the status.
- `update-date` - The time when the modification request was last updated.

Type: Filter (p. 502) list

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

ReservedInstancesModificationId.N

IDs for the submitted modification request.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

reservedInstancesModificationsSet
The Reserved Instance modification information.

Type: ReservedInstancesModification (p. 560) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&AUTHPARAMS
```

Example 2

This example filters the response to include only Reserved Instances modification requests with status processing.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&Filter.1.Name=status
&Filter.1.Value.1=processing
&AUTHPARAMS
```

DescribeReservedInstancesOfferings

Describes Reserved Instance offerings that are available for purchase. With Reserved Instances, you purchase the right to launch instances for a period of time. During that time period, you do not receive insufficient capacity errors, and you pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

For more information, see Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (for example, one year or three years), in seconds (`31536000` | `94608000`).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type on which the Reserved Instance can be used.
- `marketplace` - Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from AWS and Reserved Instance Marketplace are listed.
- `product-description` - The Reserved Instance product platform description. Instances that include `(Amazon VPC)` in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC. (`Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux` | `SUSE Linux (Amazon VPC)` | `Red Hat Enterprise Linux` | `Red Hat Enterprise Linux (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)` | `Windows with SQL Server Standard` | `Windows with SQL Server Standard (Amazon VPC)` | `Windows with SQL Server Web` | `Windows with SQL Server Web (Amazon VPC)` | `Windows with SQL Server Enterprise` | `Windows with SQL Server Enterprise (Amazon VPC)`)
- `reserved-instances-offering-id` - The Reserved Instances offering ID.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Filter (p. 502) list

Required: No

IncludeMarketplace
Include Marketplace offerings in the response.

Type: Boolean

Required: No

InstanceTenancy
The tenancy of the Reserved Instance offering. A Reserved Instance with `dedicated` tenancy runs on single-tenant hardware and can only be launched within a VPC.

Default: `default`

Type: String

Valid Values: `default | dedicated`

Required: No

InstanceType
The instance type on which the Reserved Instance can be used. For more information, see Instance Types in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

MaxDuration
The maximum duration (in seconds) to filter when searching for offerings.

Default: 94608000 (3 years)

Type: Long

Required: No

MaxInstanceCount
The maximum number of instances to filter when searching for offerings.

Default: 20

Type: Integer

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. The maximum is 100.

Default: 100

Type: Integer

Required: No

MinDuration
The minimum duration (in seconds) to filter when searching for offerings.

Default: 2592000 (1 month)

Type: Long

Required: No

NextToken
The token to retrieve the next page of results.

Type: String

Required: No

OfferingType
The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

ProductDescription
The Reserved Instance product platform description. Instances that include `(Amazon VPC)` in the description are for use with Amazon VPC.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

ReservedInstancesOfferingId.N
One or more Reserved Instances offering IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

reservedInstancesOfferingsSet
A list of Reserved Instances offerings.

Type: ReservedInstancesOffering (p. 562) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/Unix, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only. When using the Query API, all strings must be URL-encoded.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=marketplace
&Filter.1.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2015-04-15
&AUTHPARAMS
```

Sample Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>90720000</duration>
      <fixedPrice>96.03</fixedPrice>
      <usagePrice>0.027</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>96.03</price>
          <count>1</count>
        </item>
      </pricingDetailsSet>
    </item>
    <item>
      <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</re
servedInstancesOfferingId>
```

```
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>28512000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.29</amount>
        </item>
      </recurringCharges>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>61.0</price>
          <count>2</count>
        </item>
      </pricingDetailsSet>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

Example Describing AWS Offerings Only

This example lists AWS offerings only.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&AUTHPARAMS
```

Example Using Tokens to Manage Results

You can use pagination support to query the results sequentially and in parts. Specify the maximum number of results that are returned in the response. Then, each paginated response contains a token that can be provided as input to a subsequent DescribeReservedInstancesOfferings call to fetch the next page. (Make sure that you use URL encoding for the token value.)

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&AUTHPARAMS

<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
  ...
    <item>
```

```
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>1200.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.052</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd00EXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>1000.0</fixedPrice>
      <usagePrice>0.076</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Medium Utilization</offeringType>
      <recurringCharges/>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
    </item>
  ...
  </reservedInstancesOfferingsSet>
  <nextToken>h/C8YKPQBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h%2FC8YKPQBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&AUTHPARAMS
```

Example Using Filters

This example filters the response to include only one-year, m1.small or m1.large Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
```

```
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

DescribeRouteTables

Describes one or more of your route tables.

Each subnet in your VPC must be associated with a route table. If a subnet is not explicitly associated with any route table, it is implicitly associated with the main route table. This command does not return the subnet ID for implicit associations.

For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `association.route-table-association-id` - The ID of an association ID for the route table.
- `association.route-table-id` - The ID of the route table involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `association.main` - Indicates whether the route table is the main route table for the VPC.
- `route-table-id` - The ID of the route table.
- `route.destination-cidr-block` - The CIDR range specified in a route in the table.
- `route.destination-prefix-list-id` - The ID (prefix) of the AWS service specified in a route in the table.
- `route.gateway-id` - The ID of a gateway specified in a route in the table.
- `route.instance-id` - The ID of an instance specified in a route in the table.
- `route.origin` - Describes how the route was created. `CreateRouteTable` indicates that the route was automatically created when the route table was created; `CreateRoute` indicates that the route was manually added to the route table; `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.
- `route.state` - The state of a route in the route table (`active` | `blackhole`). The blackhole state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).
- `route.vpc-peering-connection-id` - The ID of a VPC peering connection specified in a route in the table.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

- `vpc-id` - The ID of the VPC for the route table.

Type: Filter (p. 502) list

Required: No

RouteTableId.N
One or more route table IDs.

Default: Describes all your route tables.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

routeTableSet
Information about one or more route tables.

Type: RouteTable (p. 565) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all your route tables. The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables
&AUTHPARAMS
```

Sample Response

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>6f570b0b-9c18-4b07-bdec-73740dcf861a</requestId>
   <routeTableSet>
      <item>
         <routeTableId>rtb-13ad487a</routeTableId>
```

```
         <vpcId>vpc-11ad4878</vpcId>
         <routeSet>
            <item>
               <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
               <gatewayId>local</gatewayId>
               <state>active</state>
               <origin>CreateRouteTable</origin>
            </item>
         </routeSet>
         <associationSet>
             <item>
                <routeTableAssociationId>rtbassoc-12ad487b</routeTableAssoci
ationId>
                <routeTableId>rtb-13ad487a</routeTableId>
                <main>true</main>
             </item>
         </associationSet>
        <tagSet/>
      </item>
      <item>
         <routeTableId>rtb-f9ad4890</routeTableId>
         <vpcId>vpc-11ad4878</vpcId>
         <routeSet>
            <item>
               <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
               <gatewayId>local</gatewayId>
               <state>active</state>
               <origin>CreateRouteTable</origin>
            </item>
            <item>
               <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
               <gatewayId>igw-eaad4883</gatewayId>
               <state>active</state>
            </item>
         </routeSet>
         <associationSet>
            <item>
                <routeTableAssociationId>rtbassoc-faad4893</routeTableAssoci
ationId>
                <routeTableId>rtb-f9ad4890</routeTableId>
                <subnetId>subnet-15ad487c</subnetId>
            </item>
         </associationSet>
         <tagSet/>
      </item>
   </routeTableSet>
</DescribeRouteTablesResponse>
```

DescribeSecurityGroups

Describes one or more of your security groups.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see Amazon EC2 Security Groups in the *Amazon Elastic Compute Cloud User Guide* and Security Groups for Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters. If using multiple filters for rules, the results include security groups for which any combination of rules - not necessarily a single rule - match all filters.

- `description` - The description of the security group.
- `egress.ip-permission.prefix-list-id` - The ID (prefix) of the AWS service to which the security group allows access.
- `group-id` - The ID of the security group.
- `group-name` - The name of the security group.
- `ip-permission.cidr` - A CIDR range that has been granted permission.
- `ip-permission.from-port` - The start of port range for the TCP and UDP protocols, or an ICMP type number.
- `ip-permission.group-id` - The ID of a security group that has been granted permission.
- `ip-permission.group-name` - The name of a security group that has been granted permission.
- `ip-permission.protocol` - The IP protocol for the permission (`tcp` | `udp` | `icmp` or a protocol number).
- `ip-permission.to-port` - The end of port range for the TCP and UDP protocols, or an ICMP code.
- `ip-permission.user-id` - The ID of an AWS account that has been granted permission.
- `owner-id` - The AWS account ID of the owner of the security group.
- `tag-key` - The key of a tag assigned to the security group.
- `tag-value` - The value of a tag assigned to the security group.
- `vpc-id` - The ID of the VPC specified when the security group was created.

Type: Filter (p. 502) list

Required: No

GroupId.N
One or more security group IDs. Required for security groups in a nondefault VPC.

Default: Describes all your security groups.

Type: String list

Required: No

GroupName.N

[EC2-Classic and default VPC only] One or more security group names. You can specify either the security group name or the security group ID. For security groups in a nondefault VPC, use the `group-name` filter to describe security groups by name.

Default: Describes all your security groups.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId

The ID of the request.

Type: String

securityGroupInfo

Information about one or more security groups.

Type: SecurityGroup (p. 568) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example returns information about two security groups named WebServers and RangedPortsBySource. Note that the GroupName parameter returns information about security groups in EC2-Classic or a default VPC only. If no security groups are found in either platform, an exception is returned, regardless of whether you have a security group with the specified name in a nondefault VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupName.1=WebServers
&GroupName.2=RangedPortsBySource
&AUTHPARAMS
```

Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <securityGroupInfo>
```

```
      <item>
         <ownerId>123456789012</ownerId>
         <groupId>sg-1a2b3c4d</groupId>
         <groupName>WebServers</groupName>
         <groupDescription>Web Servers</groupDescription>
         <vpcId/>
         <ipPermissions>
            <item>
               <ipProtocol>tcp</ipProtocol>
               <fromPort>80</fromPort>
               <toPort>80</toPort>
               <groups/>
               <ipRanges>
                  <item>
                     <cidrIp>0.0.0.0/0</cidrIp>
                  </item>
               </ipRanges>
            </item>
         </ipPermissions>
         <ipPermissionsEgress/>
      </item>
      <item>
         <ownerId>123456789012</ownerId>
         <groupId>sg-2a2b3c4d</groupId>
         <groupName>RangedPortsBySource</groupName>
         <groupDescription>Group A</groupDescription>
         <ipPermissions>
            <item>
               <ipProtocol>tcp</ipProtocol>
               <fromPort>6000</fromPort>
               <toPort>7000</toPort>
               <groups>
                  <item>
                     <userId>123456789012</userId>
                     <groupId>sg-3a2b3c4d</groupId>
                     <groupName>Group B</groupName>
                  </item>
               </groups>
               <ipRanges/>
            </item>
         </ipPermissions>
         <ipPermissionsEgress/>
      </item>
   </securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

Example 2

This example describes all security groups that grant access over port 22 and that grant access from instances associated with app_server_group or database_group.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
```

```
&Filter.2.Name=ip-permission.from-port
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
```

DescribeSnapshotAttribute

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time.

For more information about EBS snapshots, see Amazon EBS Snapshots in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The snapshot attribute you would like to view.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SnapshotId
The ID of the EBS snapshot.

Type: String

Required: Yes

Response Elements

The following elements are returned.

createVolumePermission
A list of permissions for creating volumes from the snapshot.

Type: CreateVolumePermission (p. 491) list

productCodes
A list of product codes.

Type: ProductCode (p. 553) list

requestId
The ID of the request.

Type: String

snapshotId
The ID of the EBS snapshot.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes permissions for a snapshot with the ID of snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute

&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

Sample Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <snapshotId>snap-1a2b3c4d</snapshotId>
   <createVolumePermission>
      <item>
         <group>all</group>
      </item>
   </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

DescribeSnapshots

Describes one or more of the EBS snapshots available to you. Available snapshots include public snapshots available for any AWS account to launch, private snapshots that you own, and private snapshots owned by another AWS account but for which you've been given explicit create volume permissions.

The create volume permissions fall into the following categories:

- *public*: The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.
- *explicit*: The owner of the snapshot granted create volume permissions to a specific AWS account.
- *implicit*: An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be modified by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it is not included in the returned results.

If you specify one or more snapshot owners, only snapshots from the specified owners and for which you have access are returned. The results can include the AWS account IDs of the specified owners, `amazon` for snapshots owned by Amazon, or `self` for snapshots that you own.

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshots), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

If you are describing a long list of snapshots, you can paginate the output to make the list more manageable. The `MaxResults` parameter sets the maximum number of results returned in a single page. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeSnapshots` request to retrieve the remaining results.

For more information about EBS snapshots, see Amazon EBS Snapshots in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `description` - A description of the snapshot.
- `owner-alias` - The AWS account alias (for example, `amazon`) that owns the snapshot.
- `owner-id` - The ID of the AWS account that owns the snapshot.

- `progress` - The progress of the snapshot, as a percentage (for example, 80%).
- `snapshot-id` - The snapshot ID.
- `start-time` - The time stamp when the snapshot was initiated.
- `status` - The status of the snapshot (`pending` | `completed` | `error`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `volume-id` - The ID of the volume the snapshot is for.
- `volume-size` - The size of the volume, in GiB.

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of snapshot results returned by `DescribeSnapshots` in paginated output. When this parameter is used, `DescribeSnapshots` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `DescribeSnapshots` request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then `DescribeSnapshots` returns all results. You cannot specify this parameter and the snapshot IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The `NextToken` value returned from a previous paginated `DescribeSnapshots` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is `null` when there are no more results to return.

Type: String

Required: No

Owner.N
Returns the snapshots owned by the specified owner. Multiple owners can be specified.

Type: String list

Required: No

RestorableBy.N
One or more AWS accounts IDs that can create volumes from the snapshot.

Type: String list

Required: No

SnapshotId.N
One or more snapshot IDs.

Default: Describes snapshots for which you have launch permissions.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The `NextToken` value to include in a future `DescribeSnapshots` request. When the results of a `DescribeSnapshots` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

snapshotSet
Information about the snapshots.

Type: Snapshot (p. 569) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes a snapshot with an ID of snap-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <snapshotSet>
      <item>
         <snapshotId>snap-1a2b3c4d</snapshotId>
         <volumeId>vol-1a2b3c4d</volumeId>
         <status>pending</status>
         <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
         <progress>80%</progress>
         <ownerId>111122223333</ownerId>
```

```
         <volumeSize>15</volumeSize>
         <description>Daily Backup</description>
         <encrypted>true</encrypted>
         <tagSet/>
      </item>
   </snapshotSet>
</DescribeSnapshotsResponse>
```

Example

This example filters the response to include only snapshots with the pending status, and that are also tagged with a value that includes the string db_.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag-value
&Filter.2.Value.1=*db_*
&AUTHPARAMS
```

Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <snapshotSet>
      <item>
         <snapshotId>snap-1a2b3c4d</snapshotId>
         <volumeId>vol-1a2b3c4d</volumeId>
         <status>pending</status>
         <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
         <progress>30%</progress>
         <ownerId>111122223333</ownerId>
         <volumeSize>15</volumeSize>
         <description>Daily Backup</description>
         <tagSet>
            <item>
               <key>Purpose</key>
               <value>demo_db_14_backup</value>
            </item>
         </tagSet>
         <encrypted>true</encrypted>
      </item>
   </snapshotSet>
</DescribeSnapshotsResponse>
```

DescribeSpotDatafeedSubscription

Describes the data feed for Spot instances. For more information, see Spot Instance Data Feed in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotDatafeedSubscription
The Spot instance data feed subscription.

Type: SpotDatafeedSubscription (p. 574)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the data feed for the account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotDatafeedSubscription
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
```

```
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <spotDatafeedSubscription>
      <ownerId>123456789012</ownerId>
      <bucket>my-s3-bucket</bucket>
      <prefix>spotdata_</prefix>
      <state>Active</state>
   </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

DescribeSpotFleetInstances

Describes the running instances for the specified Spot fleet.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

NextToken
The token for the next set of results.

Type: String

Required: No

SpotFleetRequestId
The ID of the Spot fleet request.

Type: String

Required: Yes

Response Elements

The following elements are returned.

activeInstanceSet
The running instances. Note that this list is refreshed periodically and might be out of date.

Type: ActiveInstance (p. 481) list

nextToken
The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the running instances for Spot fleet request sfr-123f8fc2-cb31-425e-abcd-example2710.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetInstances
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotFleetInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
    <requestId>cfb09950-45e2-472d-a6a9-example</requestId>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRe
questId>
    <activeInstanceSet>
        <item>
            <instanceId>i-1a1a1a1a</instanceId>
            <spotInstanceRequestId>sir-1a1a1a1a</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-2b2b2b2b</instanceId>
            <spotInstanceRequestId>sir-2b2b2b2b</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-3c3c3c3c</instanceId>
            <spotInstanceRequestId>sir-3c3c3c3c</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-4d4d4d4d</instanceId>
            <spotInstanceRequestId>sir-4d4d4d4d</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-5e5e5e5e</instanceId>
            <spotInstanceRequestId>sir-5e5e5e5e</spotInstanceRequestId>
```

```
            <instanceType>m3.medium</instanceType>
        </item>
    </activeInstanceSet>
</DescribeSpotFleetInstancesResponse>
```

DescribeSpotFleetRequestHistory

Describes the events for the specified Spot fleet request during the specified time.

Spot fleet events are delayed by up to 30 seconds before they can be described. This ensures that you can query by the last evaluated time and not miss a recorded event.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

EventType
The type of events to describe. By default, all events are described.

Type: String

Valid Values: `instanceChange | fleetRequestChange | error`

Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

NextToken
The token for the next set of results.

Type: String

Required: No

SpotFleetRequestId
The ID of the Spot fleet request.

Type: String

Required: Yes

StartTime
The starting date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: String

Required: Yes

Response Elements

The following elements are returned.

historyRecordSet
Information about the events in the history of the Spot fleet request.

Type: HistoryRecord (p. 504) list

lastEvaluatedTime
The last date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). All records up to this time were retrieved.

If `nextToken` indicates that there are more results, this value is not present.

Type: String

nextToken
The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

startTime
The starting date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the events for Spot fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 from the specified start time.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequestHistory
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&StartTime=2015-07-01T12:00:00Z
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotFleetRequestHistoryResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
    <requestId>30be3aaf-afd2-408c-b62b-example</requestId>
    <lastEvaluatedTime>2015-07-01T13:29:40+0000</lastEvaluatedTime>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRe
questId>
    <startTime>2015-07-01T12:00:00Z</startTime>
    <historyRecordSet>
        <item>
            <eventInformation>
                <eventSubType>submitted</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:10.219Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <eventSubType>active</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:11.624Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <eventDescription>m3.medium, ami-1ecae776, Linux/UNIX (Amazon
VPC); old price: 0.0153, new price: 0.0153</eventDescription>
                <eventSubType>price_update</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:13.365Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1a1a1a1a</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:19:53.795Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-2b2b2b2b</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:20:39.777Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-3c3c3c3c</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:20:57.773Z</timestamp>
        </item>
```

```
        <item>
            <eventInformation>
                <instanceId>i-4d4d4d4d</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:22:05.696Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-5e5e5e5e</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:23:58.927Z</timestamp>
        </item>
    </historyRecordSet>
</DescribeSpotFleetRequestHistoryResponse>
```

DescribeSpotFleetRequests

Describes your Spot fleet requests.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

NextToken
The token for the next set of results.

Type: String

Required: No

SpotFleetRequestId.N
The IDs of the Spot fleet requests.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

spotFleetRequestConfigSet
Information about the configuration of your Spot fleet.

Type: SpotFleetRequestConfig (p. 577) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all of your Spot fleet requests.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequests
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>4d68a6cc-8f2e-4be1-b425-example</requestId>
    <spotFleetRequestConfigSet>
        <item>
            <spotFleetRequestId>sfr-12345678-cb31-425e-8c23-example2710</spot
FleetRequestId>
            <spotFleetRequestState>cancelled</spotFleetRequestState>
            <spotFleetRequestConfig>
                <spotPrice>0.0153</spotPrice>
                <targetCapacity>20</targetCapacity>
                <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-
role</iamFleetRole>
                <launchSpecifications>
                    <item>
                        <subnetId>subnet-1a2b3c4d</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m4.xlarge</instanceType>
                    </item>
                    <item>
                        <subnetId>subnet-1a2b3c4d</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m3.medium</instanceType>
                    </item>
                </launchSpecifications>
            </spotFleetRequestConfig>
        </item>
        <item>
            <spotFleetRequestId>sfr-abcdefgh-e71f-450d-880d-examplec127</spot
FleetRequestId>
            <spotFleetRequestState>active</spotFleetRequestState>
            <spotFleetRequestConfig>
                <spotPrice>0.0153</spotPrice>
                <targetCapacity>5</targetCapacity>
```

```
                <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-
role</iamFleetRole>
                <launchSpecifications>
                    <item>
                        <subnetId>subnet-abc123ab</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m4.large</instanceType>
                    </item>
                    <item>
                        <subnetId>subnet-abc123ab</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m3.medium</instanceType>
                    </item>
                </launchSpecifications>
            </spotFleetRequestConfig>
        </item>
    </spotFleetRequestConfigSet>
</DescribeSpotFleetRequestsResponse>
```

DescribeSpotInstanceRequests

Describes the Spot instance requests that belong to your account. Spot instances are instances that Amazon EC2 launches when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the *Amazon Elastic Compute Cloud User Guide*.

You can use `DescribeSpotInstanceRequests` to find a running Spot instance by examining the response. If the status of the Spot instance is `fulfilled`, the instance ID appears in the response and contains the identifier of the instance. Alternatively, you can use DescribeInstances (p. 224) with a filter to look for instances where the instance lifecycle is `spot`.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N

One or more filters.

- `availability-zone-group` - The Availability Zone group.
- `create-time` - The time stamp when the Spot instance request was created.
- `fault-code` - The fault code related to the request.
- `fault-message` - The fault message related to the request.
- `instance-id` - The ID of the instance that fulfilled the request.
- `launch-group` - The Spot instance launch group.
- `launch.block-device-mapping.delete-on-termination` - Indicates whether the Amazon EBS volume is deleted on instance termination.
- `launch.block-device-mapping.device-name` - The device name for the Amazon EBS volume (for example, `/dev/sdh`).
- `launch.block-device-mapping.snapshot-id` - The ID of the snapshot used for the Amazon EBS volume.
- `launch.block-device-mapping.volume-size` - The size of the Amazon EBS volume, in GiB.
- `launch.block-device-mapping.volume-type` - The type of the Amazon EBS volume (`gp2` | `standard` | `io1`).
- `launch.group-id` - The security group for the instance.
- `launch.image-id` - The ID of the AMI.
- `launch.instance-type` - The type of instance (for example, `m1.small`).
- `launch.kernel-id` - The kernel ID.
- `launch.key-name` - The name of the key pair the instance launched with.
- `launch.monitoring-enabled` - Whether monitoring is enabled for the Spot instance.
- `launch.ramdisk-id` - The RAM disk ID.
- `network-interface.network-interface-id` - The ID of the network interface.

- `network-interface.device-index` - The index of the device for the network interface attachment on the instance.
- `network-interface.subnet-id` - The ID of the subnet for the instance.
- `network-interface.description` - A description of the network interface.
- `network-interface.private-ip-address` - The primary private IP address of the network interface.
- `network-interface.delete-on-termination` - Indicates whether the network interface is deleted when the instance is terminated.
- `network-interface.group-id` - The ID of the security group associated with the network interface.
- `network-interface.group-name` - The name of the security group associated with the network interface.
- `network-interface.addresses.primary` - Indicates whether the IP address is the primary private IP address.
- `product-description` - The product description associated with the instance (`Linux/UNIX` | `Windows`).
- `spot-instance-request-id` - The Spot instance request ID.
- `spot-price` - The maximum hourly price for any Spot instance launched to fulfill the request.
- `state` - The state of the Spot instance request (`open` | `active` | `closed` | `cancelled` | `failed`). Spot bid status information can help you track your Amazon EC2 Spot instance requests. For more information, see Spot Bid Status in the Amazon Elastic Compute Cloud User Guide.
- `status-code` - The short code describing the most recent evaluation of your Spot instance request.
- `status-message` - The message explaining the status of the Spot instance request.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of Spot instance request (`one-time` | `persistent`).
- `launched-availability-zone` - The Availability Zone in which the bid is launched.
- `valid-from` - The start date of the request.
- `valid-until` - The end date of the request.

Type: Filter (p. 502) list

Required: No

SpotInstanceRequestId.N
One or more Spot instance request IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotInstanceRequestSet
One or more Spot instance requests.

Type: SpotInstanceRequest (p. 579) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for DescribeSpotInstanceRequests

This example returns information about current Spot instance requests. In the response, if the status of the Spot instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-key-pair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <monitoring>
```

```
          <enabled>false</enabled>
        </monitoring>
        <ebsOptimized>false</ebsOptimized>
      </launchSpecification>
      <instanceId>i-1a2b3c4d</instanceId>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
      <launchedAvailabilityZone>us-east-1a</launchedAvailabilityZone>
    </item>
  <spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

Example for DescribeSpotInstanceRequests

This example describes all persistent Spot instance requests that have resulted in the launch of at least one m1.small instance, that has been fulfilled in the us-east-1a Availability Zone, and that also has monitoring enabled.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-east-1a
&AUTHPARAMS
```

Example for DescribeInstances

Alternatively, you can use DescribeInstances and use a filter to look for instances where instance lifecycle contains spot.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

DescribeSpotPriceHistory

Describes the Spot price history. The prices returned are listed in chronological order, from the oldest to the most recent, for up to the past 90 days. For more information, see Spot Instance Pricing History in the *Amazon Elastic Compute Cloud User Guide*.

When you specify a start and end time, this operation returns the prices of the instance types within the time range that you specified and the time when the price changed. The price is valid within the time period that you specified; the response merely indicates the last time that the price changed.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
Filters the results by the specified Availability Zone.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

EndTime
The date and time, up to the current date, from which to stop retrieving the price history data, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: No

Filter.N
One or more filters.

- `availability-zone` - The Availability Zone for which prices should be returned.
- `instance-type` - The type of instance (for example, `m1.small`).
- `product-description` - The product description for the Spot price (`Linux/UNIX` | `SUSE Linux` | `Windows` | `Linux/UNIX (Amazon VPC)` | `SUSE Linux (Amazon VPC)` | `Windows (Amazon VPC)`).
- `spot-price` - The Spot price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).
- `timestamp` - The timestamp of the Spot price history, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). You can use wildcards (* and ?). Greater than or less than comparison is not supported.

Type: Filter (p. 502) list

Required: No

InstanceType.N
Filters the results by the specified instance types.

Type: String list

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

NextToken
The token for the next set of results.

Type: String

Required: No

ProductDescription.N
Filters the results by the specified basic product descriptions.

Type: String list

Required: No

StartTime
The date and time, up to the past 90 days, from which to start retrieving the price history data, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: No

Response Elements

The following elements are returned.

nextToken
The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

spotPriceHistorySet
The historical Spot prices.

Type: SpotPrice (p. 583) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example gets Spot price history for the first day in December 2014 for the specified Availability Zone.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2014-12-01T00:00:00.000Z
&EndTime=2014-12-01T23:59:59.000Z
&AvailabilityZone=us-east-1a
&AUTHPARAMS
```

Sample Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotPriceHistorySet>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Linux/UNIX</productDescription>
      <spotPrice>0.287</spotPrice>
      <timestamp>2014-12-04T20:56:05.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Windows</productDescription>
      <spotPrice>0.033</spotPrice>
      <timestamp>2014-12-04T22:33:47.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
  </spotPriceHistorySet>
  <nextToken/>
</DescribeSpotPriceHistoryResponse>
```

Example with Filters

This example uses filters to get the same results as the previous example.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2014-12-01*
&Filter.2.Name=availability-zone
```

```
&Filter.2.Value.1=us-east-1a
&AUTHPARAMS
```

DescribeSubnets

Describes one or more of your subnets.

For more information about subnets, see Your VPC and Subnets in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `availabilityZone` - The Availability Zone for the subnet. You can also use `availability-zone` as the filter name.
- `available-ip-address-count` - The number of IP addresses in the subnet that are available.
- `cidrBlock` - The CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet. You can also use `cidr` or `cidr-block` as the filter names.
- `defaultForAz` - Indicates whether this is the default subnet for the Availability Zone. You can also use `default-for-az` as the filter name.
- `state` - The state of the subnet (`pending` | `available`).
- `subnet-id` - The ID of the subnet.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC for the subnet.

Type: Filter (p. 502) list

Required: No

SubnetId.N
One or more subnet IDs.

Default: Describes all your subnets.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

subnetSet
Information about one or more subnets.

Type: Subnet (p. 585) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the subnets with the IDs subnet-9d4a7b6c and subnet-6e7f829e.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e
&AUTHPARAMS
```

Sample Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnetSet>
    <item>
      <subnetId>subnet-9d4a7b6c</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.1.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
    <item>
      <subnetId>subnet-6e7f829e</subnetId>
      <state>available</state>
```

```
      <vpcId>vpc-1a2b3c4d>/vpcId>
      <cidrBlock>10.0.0.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
  <subnetSet/>
</DescribeSubnetsResponse>
```

Example 2

This example uses filters to describe any subnet you own that is in the VPC with the ID vpc-1a2b3c4d or vpc-6e7f8a92, and whose state is available.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&Filter.1.Value.2=vpc-6e7f8a92
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

DescribeTags

Describes one or more of the tags for your EC2 resources.

For more information about tags, see Tagging Your Resources in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `key` - The tag key.
- `resource-id` - The resource ID.
- `resource-type` - The resource type (`customer-gateway` | `dhcp-options` | `image` | `instance` | `internet-gateway` | `network-acl` | `network-interface` | `reserved-instances` | `route-table` | `security-group` | `snapshot` | `spot-instances-request` | `subnet` | `volume` | `vpc` | `vpn-connection` | `vpn-gateway`).
- `value` - The tag value.

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned.

Type: Integer

Required: No

NextToken
The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return..

Type: String

requestId
The ID of the request.

Type: String

tagSet
A list of tags.

Type: TagDescription (p. 586) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all the tags in your account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>webserver</key>
         <value/>
      </item>
       <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
         <value/>
      </item>
```

```
       <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-12345678</resourceId>
         <resourceType>instance</resourceType>
         <key>database_server</key>
         <value/>
      </item>
       <item>
         <resourceId>i-12345678</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Test</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

Example

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>webserver</key>
         <value/>
      </item>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
         <value/>
      </item>
       <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-12345678</resourceId>
         <resourceType>instance</resourceType>
         <key>database_server</key>
         <value/>
      </item>
       <item>
         <resourceId>i-12345678</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Test</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances tagged with the key webserver. Note that you can use wildcards with filters, so you could specify the value as ?ebserver to find tags with the key webserver or Webserver.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
```

```
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
         <value/>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances tagged with either stack=Test or stack=Production.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-5f4e3d2a</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
       <item>
         <resourceId>i-12345678</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Test</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances tagged with Purpose=[empty string].

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1=
&AUTHPARAMS
```

DescribeVolumeAttribute

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

For more information about EBS volumes, see Amazon EBS Volumes in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The instance attribute.

Type: String

Valid Values: `autoEnableIO | productCodes`

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VolumeId
The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

autoEnableIO
The state of `autoEnableIO` attribute.

Type: AttributeBooleanValue (p. 483)

productCodes
A list of product codes.

Type: ProductCode (p. 553) list

requestId
The ID of the request.

Type: String

volumeId
The ID of the volume.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the autoEnableIO attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-12345678
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <autoEnableIO>
    <value>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

Example

This example describes the productCodes attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-12345678
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
      <item>
          <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
```

```
  </productCodes>
</DescribeVolumeAttributeResponse>
```

DescribeVolumes

Describes the specified EBS volumes.

If you are describing a long list of volumes, you can paginate the output to make the list more manageable. The `MaxResults` parameter sets the maximum number of results returned in a single page. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeVolumes` request to retrieve the remaining results.

For more information about EBS volumes, see Amazon EBS Volumes in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `attachment.attach-time` - The time stamp when the attachment initiated.
- `attachment.delete-on-termination` - Whether the volume is deleted on instance termination.
- `attachment.device` - The device name that is exposed to the instance (for example, `/dev/sda1`).
- `attachment.instance-id` - The ID of the instance the volume is attached to.
- `attachment.status` - The attachment state (`attaching` | `attached` | `detaching` | `detached`).
- `availability-zone` - The Availability Zone in which the volume was created.
- `create-time` - The time stamp when the volume was created.
- `encrypted` - The encryption status of the volume.
- `size` - The size of the volume, in GiB.
- `snapshot-id` - The snapshot from which the volume was created.
- `status` - The status of the volume (`creating` | `available` | `in-use` | `deleting` | `deleted` | `error`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `volume-id` - The volume ID.
- `volume-type` - The Amazon EBS volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of volume results returned by `DescribeVolumes` in paginated output. When this parameter is used, `DescribeVolumes` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `DescribeVolumes` request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then `DescribeVolumes` returns all results. You cannot specify this parameter and the volume IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The `NextToken` value returned from a previous paginated `DescribeVolumes` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is `null` when there are no more results to return.

Type: String

Required: No

VolumeId.N
One or more volume IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The `NextToken` value to include in a future `DescribeVolumes` request. When the results of a `DescribeVolumes` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

volumeSet
Information about the volumes.

Type: Volume (p. 590) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all volumes associated with your account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2014-06-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <volumeSet>
      <item>
         <volumeId>vol-1a2b3c4d</volumeId>
         <size>80</size>
         <snapshotId/>
         <availabilityZone>us-east-1a</availabilityZone>
         <status>in-use</status>
         <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>
         <attachmentSet>
            <item>
               <volumeId>vol-1a2b3c4d</volumeId>
               <instanceId>i-1a2b3c4d</instanceId>
               <device>/dev/sdh</device>
               <status>attached</status>
               <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
               <deleteOnTermination>false</deleteOnTermination>
            </item>
         </attachmentSet>
         <volumeType>standard</volumeType>
         <encrypted>true</encrypted>
      </item>
   </volumeSet>
</DescribeVolumesResponse>
```

DescribeVolumeStatus

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, after the system is restored, there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

Status: Reflects the current status of the volume. The possible values are `ok`, `impaired` , `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is `ok`. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks may still be taking place on your volume at the time. We recommend that you retry the request. For more information on volume status, see Monitoring the Status of Your Volumes.

Events: Reflect the cause of a volume status and may require you to take action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and may have inconsistent data.

Actions: Reflect the actions you may have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action shows `enable-volume-io`. This means that you may want to enable the I/O operations for the volume by calling the EnableVolumeIO (p. 367) action and then check the volume for data consistency.

> **Note**
> Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the error state (for example, when a volume is incapable of accepting I/O.)

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N

One or more filters.

- `action.code` - The action code for the event (for example, `enable-volume-io`).
- `action.description` - A description of the action.
- `action.event-id` - The event ID associated with the action.
- `availability-zone` - The Availability Zone of the instance.
- `event.description` - A description of the event.
- `event.event-id` - The event ID.
- `event.event-type` - The event type (for `io-enabled`: `passed` | `failed`; for `io-performance`: `io-performance:degraded` | `io-performance:severely-degraded` | `io-performance:stalled`).

- `event.not-after` - The latest end time for the event.
- `event.not-before` - The earliest start time for the event.
- `volume-status.details-name` - The cause for `volume-status.status` (`io-enabled` | `io-performance`).
- `volume-status.details-status` - The status of `volume-status.details-name` (for `io-enabled`: `passed` | `failed`; for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`).
- `volume-status.status` - The status of the volume (`ok` | `impaired` | `warning` | `insufficient-data`).

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of volume results returned by `DescribeVolumeStatus` in paginated output. When this parameter is used, the request only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then `DescribeVolumeStatus` returns all results. You cannot specify this parameter and the volume IDs parameter in the same request.

Type: Integer

Required: No

NextToken
The `NextToken` value to include in a future `DescribeVolumeStatus` request. When the results of the request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

Required: No

VolumeId.N
One or more volume IDs.

Default: Describes all your volumes.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String

volumeStatusSet
A list of volumes.

Type: VolumeStatusItem (p. 595) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes the status of all the volumes associated with your account.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&AUTHPARAMS
```

Sample Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
      <VolumeId>vol-11111111</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>ok</status>
        <details>
          <item>
            <name>io-enabled</name>
            <status>passed</status>
          </item>
        </details>
      </volumeStatus>
      </item>
    <item>
      <volumeId>vol-22222222</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>io-enabled</name>
            <status>failed</status>
          </item>
        </details>
      </volumeStatus>
      <eventsSet>
             <item>
               <eventId>evol-61a54008</eventId>
```

```
              <eventType>potential-data-inconsistency</eventType>
              <description>THIS IS AN EXAMPLE</description>
              <notBefore>2011-12-01T14:00:00.000Z</notBefore>
              <notAfter>2011-12-01T15:00:00.000Z</notAfter>
            </item>
          </eventsSet>
      <actionsSet>
        <item>
          <code>enable-volume-io</code>
          <eventId> evol-61a54008</eventId>
          <eventType>potential-data-inconsistency</eventType>
          <description>THIS IS AN EXAMPLE</description>
        </item>
      </actionsSet>
    </item>
    </volumeStatusSet>
</DescribeVolumesStatusResponse>
```

Example

This example describes all the volumes in the us-east-1d Availability Zone with failed io-enabled status.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
&Filter.3.Value.1=failed
&AUTHPARAMS
```

DescribeVpcAttribute

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The VPC attribute.

Type: String

Valid Values: `enableDnsSupport | enableDnsHostnames`

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

enableDnsHostnames
Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is `true`, instances in the VPC get DNS hostnames; otherwise, they do not.

Type: AttributeBooleanValue (p. 483)

enableDnsSupport
Indicates whether DNS resolution is enabled for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: AttributeBooleanValue (p. 483)

requestId
The ID of the request.

Type: String

vpcId
The ID of the VPC.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the enableDnsSupport attribute of the specified VPC. The sample response indicates that DNS resolution is supported.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
?? <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

Example 2

This request describes the enableDnsHostnames attribute of the specified VPC. The sample response indicates that DNS hostnames are supported.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
?? <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

DescribeVpcClassicLink

Describes the ClassicLink status of one or more VPCs.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `is-classic-link-enabled` - Whether the VPC is enabled for ClassicLink (`true` | `false`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: Filter (p. 502) list

Required: No

VpcId.N
One or more VPCs for which you want to describe the ClassicLink status.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpcSet
The ClassicLink status of one or more VPCs.

Type: VpcClassicLink (p. 598) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example lists the ClassicLink status of vpc-88888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcClassicLink
&VpcId.1=vpc-88888888
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <vpcSet>
        <item>
            <vpcId>vpc-0441b461</vpcId>
            <classicLinkEnabled>true</classicLinkEnabled>
            <tagSet/>
        </item>
    </vpcSet>
</DescribeVpcClassicLinkResponse>
```

DescribeVpcEndpoints

Describes one or more of your VPC endpoints.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `service-name`: The name of the AWS service.
- `vpc-id`: The ID of the VPC in which the endpoint resides.
- `vpc-endpoint-id`: The ID of the endpoint.
- `vpc-endpoint-state`: The state of the endpoint. (`pending` | `available` | `deleting` | `deleted`)

Type: Filter (p. 502) list

Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

VpcEndpointId.N
One or more endpoint IDs.

Type: String list

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

requestId
The ID of the request.

Type: String

vpcEndpointSet
Information about the endpoints.

Type: VpcEndpoint (p. 598) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all of your endpoints.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpoints
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

    <vpcEndpointSet>
        <item>
            <vpcId>vpc-1a2b3c4d</vpcId>
            <state>available</state>
            <routeTableIdSet>
                <item>rtb-123abc12</item>
                <item>rtb-abc123ab</item>
            </routeTableIdSet>
            <vpcEndpointId>vpce-abc12345</vpcEndpointId>
            <creationTimestamp>2015-02-20T15:30:56Z</creationTimestamp>
           <policyDocument>{"Version":"2012-10-17","Statement":[{"Sid":"","Ef
fect":"Deny","Principal":"*","Action":"*","Resource":"*"}]}</policyDocument>
            <serviceName>com.amazonaws.us-west-1.s3</serviceName>
        </item>
    </vpcEndpointSet>
    <requestId>176371a7-3307-4516-95eb-example</requestId>
</DescribeVpcEndpointsResponse>
```

DescribeVpcEndpointServices

Describes all supported AWS services that can be specified when creating a VPC endpoint.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

Response Elements

The following elements are returned.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

requestId
The ID of the request.

Type: String

serviceNameSet
A list of supported AWS services.

Type: String list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example describes all available endpoint services.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServices
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcEndpointServicesResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
    <serviceNameSet>
        <item>com.amazonaws.us-west-2.s3</item>
    </serviceNameSet>
    <requestId>8f7c135a-ceab-4106-b6d5-example</requestId>
</DescribeVpcEndpointServicesResponse>
```

DescribeVpcPeeringConnections

Describes one or more of your VPC peering connections.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `accepter-vpc-info.cidr-block` - The CIDR block of the peer VPC.
- `accepter-vpc-info.owner-id` - The AWS account ID of the owner of the peer VPC.
- `accepter-vpc-info.vpc-id` - The ID of the peer VPC.
- `expiration-time` - The expiration date and time for the VPC peering connection.
- `requester-vpc-info.cidr-block` - The CIDR block of the requester's VPC.
- `requester-vpc-info.owner-id` - The AWS account ID of the owner of the requester VPC.
- `requester-vpc-info.vpc-id` - The ID of the requester VPC.
- `status-code` - The status of the VPC peering connection (`pending-acceptance` | `failed` | `expired` | `provisioning` | `active` | `deleted` | `rejected`).
- `status-message` - A message that provides more information about the status of the VPC peering connection, if applicable.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-peering-connection-id` - The ID of the VPC peering connection.

Type: Filter (p. 502) list

Required: No

VpcPeeringConnectionId.N
One or more VPC peering connection IDs.

Default: Describes all your VPC peering connections.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpcPeeringConnectionSet
Information about the VPC peering connections.

Type: VpcPeeringConnection (p. 599) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes all of your VPC peering connections.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcPeeringConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <vpcPeeringConnectionSet>
 <item>
  <vpcPeeringConnectionId>pcx-111aaa22</vpcPeeringConnectionId>
    <requesterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-1a2b3c4d</vpcId>
     <cidrBlock>172.31.0.0/16</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
     <ownerId>123456789012</ownerId>
     <vpcId>vpc-aa22cc33</vpcId>
     </accepterVpcInfo>"
     <status>
      <code>pending-acceptance</code>
      <message>Pending Acceptance by 123456789012</message>
     </status>
```

```
     <expirationTime>2014-02-17T16:00:50.000Z</expirationTime>
     <tagSet/>
     </item>
   </vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

Example 2

This example describes all of your VPC peering connections that are in the pending-acceptance state.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance
&AUTHPARAMS
```

Example 3

This example describes all of your VPC peering connections that have the tag Name=Finance or Name=Accounts.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts
&AUTHPARAMS
```

Example 4

This example describes all of the VPC peering connections for your specified VPC, vpc-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d
&AUTHPARAMS
```

DescribeVpcs

Describes one or more of your VPCs.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `cidr` - The CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC. Must contain the slash followed by one or two digits (for example, `/28`).
- `dhcp-options-id` - The ID of a set of DHCP options.
- `isDefault` - Indicates whether the VPC is the default VPC.
- `state` - The state of the VPC (`pending` | `available`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `vpc-id` - The ID of the VPC.

Type: Filter (p. 502) list

Required: No

VpcId.N
One or more VPC IDs.

Default: Describes all your VPCs.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpcSet
Information about one or more VPCs.

Type: Vpc (p. 596) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&VpcId.1=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>false</isDefault>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>
```

Example 2

This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
```

```
&Filter.2.Value.1=available
&AUTHPARAMS
```

DescribeVpnConnections

Describes one or more of your VPN connections.

For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `customer-gateway-configuration` - The configuration information for the customer gateway.
- `customer-gateway-id` - The ID of a customer gateway associated with the VPN connection.
- `state` - The state of the VPN connection (`pending` | `available` | `deleting` | `deleted`).
- `option.static-routes-only` - Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).
- `route.destination-cidr-block` - The destination CIDR block. This corresponds to the subnet used in a customer data center.
- `bgp-asn` - The BGP Autonomous System Number (ASN) associated with a BGP device.
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of VPN connection. Currently the only supported type is `ipsec.1`.
- `vpn-connection-id` - The ID of the VPN connection.
- `vpn-gateway-id` - The ID of a virtual private gateway associated with the VPN connection.

Type: Filter (p. 502) list

Required: No

VpnConnectionId.N
One or more VPN connection IDs.

Default: Describes your VPN connections.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpnConnectionSet
Information about one or more VPN connections.

Type: VpnConnection (p. 601) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the specified VPN connection. The response includes the customer gateway configuration information. Because it's a long set of information, we haven't displayed it here. To see an example of the configuration information, see the Amazon Virtual Private Cloud Network Administrator Guide.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS
```

Sample Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
      <state>available</state>
      <customerGatewayConfiguration>
          ...Customer gateway configuration data in escaped XML format...
      </customerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <tagSet/>
    </item>
```

```
  </vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

Example 2

This example describes any VPN connection you own that is associated with the customer gateway with ID cgw-b4dc3961, and whose state is either pending or available.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

DescribeVpnGateways

Describes one or more of your virtual private gateways.

For more information about virtual private gateways, see Adding an IPsec Hardware VPN to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Filter.N
One or more filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.vpc-id` - The ID of an attached VPC.
- `availability-zone` - The Availability Zone for the virtual private gateway.
- `state` - The state of the virtual private gateway (`pending` | `available` | `deleting` | `deleted`).
- `tag`:*key*=*value* - The key/value combination of a tag assigned to the resource.
- `tag-key` - The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag`:*key*=*value* filter.
- `tag-value` - The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.
- `type` - The type of virtual private gateway. Currently the only supported type is `ipsec.1`.
- `vpn-gateway-id` - The ID of the virtual private gateway.

Type: Filter (p. 502) list

Required: No

VpnGatewayId.N
One or more virtual private gateway IDs.

Default: Describes all your virtual private gateways.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

vpnGatewaySet
Information about one or more virtual private gateways.

Type: VpnGateway (p. 603) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example describes the specified virtual private gateway.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

Sample Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGatewaySet>
    <item>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <availabilityZone>us-east-1a</availabilityZone>
      <attachments>
        <item>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <state>attached</state>
        </item>
      </attachments>
      <tagSet/>
    </item>
  </vpnGatewaySet>
</DescribeVpnGatewaysResponse>
```

Example 2

This example uses filters to describe any virtual private gateway you own that is in the us-east-1a Availability Zone, and whose state is either pending or available.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1a
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

DetachClassicLinkVpc

Unlinks (detaches) a linked EC2-Classic instance from a VPC. After the instance has been unlinked, the VPC security groups are no longer associated with it. An instance is automatically unlinked from a VPC when it's stopped.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance to unlink from the VPC.

Type: String

Required: Yes

VpcId
The ID of the VPC to which the instance is linked.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example unlinks instance i-1a2b3c4d from VPC vpc-88888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DetachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DetachClassicLinkVpcResponse>
```

DetachInternetGateway

Detaches an Internet gateway from a VPC, disabling connectivity between the Internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InternetGatewayId
The ID of the Internet gateway.

Type: String

Required: Yes

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

The example detaches the specified Internet gateway from the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

Sample Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DetachInternetGatewayResponse>
```

DetachNetworkInterface

Detaches a network interface from an instance.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AttachmentId
The ID of the attachment.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Force
Specifies whether to force a detachment.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example detaches the specified elastic network interface (ENI).

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

Sample Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
    <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
    <return>true</return>
</DetachNetworkInterfaceResponse>
```

DetachVolume

Detaches an EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so results in the volume being stuck in a busy state while detaching.

If an Amazon EBS volume is the root device of an instance, it can't be detached while the instance is running. To detach the root volume, stop the instance first.

When a volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

For more information, see Detaching an Amazon EBS Volume in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Device
The device name.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Force
Forces detachment if the previous detachment attempt did not occur cleanly (for example, logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: No

VolumeId
The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

attachment
Information about the volume attachment.

Type: VolumeAttachment (p. 592)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example detaches volume vol-1a2b3c4d.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <volumeId>vol-1a2b3c4d</volumeId>
   <instanceId>i-1a2b3c4d</instanceId>
   <device>/dev/sdh</device>
   <status>detaching</status>
   <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

DetachVpnGateway

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to `detached` before you can delete the VPC or attach a different VPC to the virtual private gateway.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

VpnGatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example detaches the specified virtual private gateway from the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DetachVpnGatewayResponse>
```

DisableVgwRoutePropagation

Disables a virtual private gateway (VGW) from propagating routes to a specified route table of a VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

GatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

RouteTableId
The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example disables the virtual private gateway vgw-d8e09e8a from automatically propagating routes to the route table with ID rtb-c98a35a0.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

Sample Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</DisableVgwRoutePropagationResponse>
```

DisableVpcClassicLink

Disables ClassicLink for a VPC. You cannot disable ClassicLink for a VPC that has EC2-Classic instances linked to it.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example disables ClassicLink for vpc-8888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
```

Sample Response

```
<DisableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DisableVpcClassicLinkResponse>
```

DisassociateAddress

Disassociates an Elastic IP address from the instance or network interface it's associated with.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the *Amazon Elastic Compute Cloud User Guide*.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AssociationId
[EC2-VPC] The association ID. Required for EC2-VPC.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PublicIp
[EC2-Classic] The Elastic IP address. Required for EC2-Classic.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example disassociates the specified Elastic IP address from the instance in EC2-Classic to which it is associated.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

Example for EC2-VPC

This example disassociates the specified Elastic IP address from the instance in a VPC to which it is associated.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationId=eipassoc-aa7486c3
&AUTHPARAMS
```

DisassociateRouteTable

Disassociates a subnet from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AssociationId
The association ID representing the current association between the route table and subnet.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example disassociates the specified route table from the subnet it's associated to.

Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-fdad4894
&AUTHPARAMS
```

Sample Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DisassociateRouteTableResponse>
```

EnableVgwRoutePropagation

Enables a virtual private gateway (VGW) to propagate routes to the specified route table of a VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

GatewayId
The ID of the virtual private gateway.

Type: String

Required: Yes

RouteTableId
The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example enables the specified virtual private gateway to propagate routes automatically to the route table with the ID rtb-c98a35a0.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

Sample Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</EnableVgwRoutePropagation>
```

EnableVolumeIO

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VolumeId
The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example enables the I/O operations of the volume vol-8888888.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

Sample Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</EnableVolumeIOResponse>
```

EnableVpcClassicLink

Enables a VPC for ClassicLink. You can then link EC2-Classic instances to your ClassicLink-enabled VPC to allow communication over private IP addresses. You cannot enable your VPC for ClassicLink if any of your VPC's route tables have existing routes for address ranges within the `10.0.0.0/8` IP address range, excluding local routes for VPCs in the `10.0.0.0/16` and `10.1.0.0/16` IP address ranges. For more information, see ClassicLink in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example enables vpc-8888888 for ClassicLink.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
```

Sample Response

```
<EnableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</EnableVpcClassicLinkResponse>
```

GetConsoleOutput

Gets the console output for the specified instance.

Instances do not have a physical monitor through which you can view their console output. They also lack physical controls that allow you to power up, reboot, or shut them down. To allow these actions, we provide them through the Amazon EC2 API and command line interface.

Instance console output is buffered and posted shortly after instance boot, reboot, and termination. Amazon EC2 preserves the most recent 64 KB output which is available for at least one hour after the most recent post.

For Linux instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a computer. This output is buffered because the instance produces it and then posts it to a store where the instance's owner can retrieve it.

For Windows instances, the instance console output includes output from the EC2Config service.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

instanceId
The ID of the instance.

Type: String

output
The console output, Base64 encoded.

Type: String

requestId
The ID of the request.

Type: String

timestamp
The time the output was last updated.

Type: DateTime

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example retrieves the console output for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDIwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFwOgpY
ZW46IDAwMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhNDAwMDAwICh1c2FibGUpCjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxlLgo3MjdNQiBMT1dNRU0gYXZhaWxhYmxlLgpOWCAoRXhlY3V0ZSBEaXNh
YmxlKSBwcm90ZWN0aW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRlY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbGlzdHMKS2VybmVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCByZXN0b3JlLi4uIGRvbmUuCg==</output>
</GetConsoleOutputResponse>
```

GetPasswordData

Retrieves the encrypted administrator password for an instance running Windows.

The Windows password is generated at boot if the `EC2Config` service plugin, `Ec2SetPassword`, is enabled. This usually only happens the first time an AMI is launched, and then `Ec2SetPassword` is automatically disabled. The password is not generated for rebundled AMIs unless `Ec2SetPassword` is enabled before bundling.

The password is encrypted using the key pair that you specified when you launched the instance. You must provide the corresponding key pair file.

Password generation and encryption takes a few moments. We recommend that you wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the Windows instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

instanceId
The ID of the Windows instance.

Type: String

passwordData
The password of the instance.

Type: String

requestId
The ID of the request.

Type: String

timestamp
The time the data was last updated.

Type: DateTime

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example returns the encrypted version of the administrator password for the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

ImportImage

Import single or multi-volume disk images or EBS snapshots into an Amazon Machine Image (AMI).

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Architecture
The architecture of the virtual machine.

Valid values: `i386` | `x86_64`

Type: String

Required: No

ClientData
The client-specific data.

Type: ClientData (p. 489)

Required: No

ClientToken
The token to enable idempotency for VM import requests.

Type: String

Required: No

Description
A description string for the import image task.

Type: String

Required: No

DiskContainer.N
Information about the disk containers.

Type: ImageDiskContainer (p. 510) list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Hypervisor
The target hypervisor platform.

Valid values: `xen`

Type: String

Required: No

LicenseType
The license type to be used for the Amazon Machine Image (AMI) after importing.

Note: You may only use BYOL if you have existing licenses with rights to use these licenses in a third party cloud like AWS. For more information, see VM Import/Export Prerequisites in the *Amazon Elastic Compute Cloud User Guide*.

Valid values: `AWS` | `BYOL`

Type: String

Required: No

Platform
The operating system of the virtual machine.

Valid values: `Windows` | `Linux`

Type: String

Required: No

RoleName
The name of the role to use when not using the default role, 'vmimport'.

Type: String

Required: No

Response Elements

The following elements are returned.

architecture
The architecture of the virtual machine.

Type: String

description
A description of the import task.

Type: String

hypervisor
The target hypervisor of the import task.

Type: String

imageId
The ID of the Amazon Machine Image (AMI) created by the import task.

Type: String

importTaskId
The task ID of the import image task.

Type: String

licenseType
The license type of the virtual machine.

Type: String

platform
The operating system of the virtual machine.

Type: String

progress
The progress of the task.

Type: String

requestId
The ID of the request.

Type: String

snapshotDetailSet
Information about the snapshots.

Type: SnapshotDetail (p. 571) list

status
A brief status of the task.

Type: String

statusMessage
A detailed status message of the import task.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

ImportInstance

Creates an import instance task using metadata from the specified disk image. `ImportInstance` only supports single-volume VMs. To import multi-volume VMs, use ImportImage (p. 375). After importing the image, you then upload it using the `ec2-import-volume` command in the EC2 command line tools. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
A description for the instance being imported.

Type: String

Required: No

DiskImage.N
The disk image.

Type: DiskImage (p. 494) list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

LaunchSpecification
The launch specification.

Type: ImportInstanceLaunchSpecification (p. 512)

Required: No

Platform
The instance operating system.

Type: String

Valid Values: `Windows`

Required: Yes

Response Elements

The following elements are returned.

conversionTask
Information about the conversion task.

Type: ConversionTask (p. 490)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

Sample Request

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbuck
et/?a3a5e1b6-590d-43cc-97c1-15c7325d3f41/?Win_2008_Server_Data_Center_SP2_32-
bit.?vmdkmanifest.xml?AWSAccessKeyId=?AKIAIOSFODNN7EXAMPLE&?Ex
pires=1294855591&?Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

Sample Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <conversionTask>
    <conversionTaskId>import-i-ffvko9js</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importInstance>
       <volumes>
          <item>
             <bytesConverted>0</bytesConverted>
             <availabilityZone>us-east-1a</availabilityZone>
             <image>
                <format>VMDK</format>
                <size>1179593728</size>
                <importManifestUrl>
                https://s3.amazonaws.com/myawsbucket/?a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/?Win_2008_Server_Data_Center_SP2_32-bit.?vmdkmanifest.xml?AWSAc
cessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
                </importManifestUrl>
             </image>
             <description/>
```

```
            <volume>
               <size>12</size>
               <id>vol-1a2b3c4d</id>
            </volume>
            <status>active</status>
            <statusMessage/>
         </item>
      </volumes>
      <instanceId>i-12655a7f</instanceId>
      <description/>
   </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

ImportKeyPair

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with CreateKeyPair (p. 81), in which AWS creates the key pair and gives the keys to you (AWS keeps a copy of the public key). With ImportKeyPair, you create the key pair and give AWS just the public key. The private key is never transferred between you and AWS.

For more information about key pairs, see Key Pairs in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

KeyName
A unique name for the key pair.

Type: String

Required: Yes

PublicKeyMaterial
The public key. You must base64 encode the public key material before sending it to AWS.

Type: String

Required: Yes

Response Elements

The following elements are returned.

keyFingerprint
The MD5 public key fingerprint as specified in section 4 of RFC 4716.

Type: String

keyName
The key pair name you provided.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example imports the public key named my-key-pair.

Sample Request

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBh
MC
VVMxCzAJBgNVBAgTAldBMRAwDgYDVQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAd
BgkqhkiG9w0BCQEWEG5vb25lQGFtYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRAwDgYD
VQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAdBgkqhkiG9w0BCQEWEG5vb25lQGFt
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcvQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJIlJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvjx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&AUTHPARAMS
```

Sample Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <keyName>my-key-pair</keyName>
 <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</key
Fingerprint>
</ImportKeyPairResponse>
```

ImportSnapshot

Imports a disk into an EBS snapshot.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientData
The client-specific data.

Type: ClientData (p. 489)

Required: No

ClientToken
Token to enable idempotency for VM import requests.

Type: String

Required: No

Description
The description string for the import snapshot task.

Type: String

Required: No

DiskContainer
Information about the disk container.

Type: SnapshotDiskContainer (p. 572)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

RoleName
The name of the role to use when not using the default role, 'vmimport'.

Type: String

Required: No

Response Elements

The following elements are returned.

description
A description of the import snapshot task.

Type: String

importTaskId
The ID of the import snapshot task.

Type: String

requestId
The ID of the request.

Type: String

snapshotTaskDetail
Information about the import snapshot task.

Type: SnapshotTaskDetail (p. 573)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

ImportVolume

Creates an import volume task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-import-volume` command in the Amazon EC2 command-line interface (CLI) tools. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZone
The Availability Zone for the resulting EBS volume.

Type: String

Required: Yes

Description
A description of the volume.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Image
The disk image.

Type: DiskImageDetail (p. 495)

Required: Yes

Volume
The volume size.

Type: VolumeDetail (p. 593)

Required: Yes

Response Elements

The following elements are returned.

conversionTask
Information about the conversion task.

Type: ConversionTask (p. 490)

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

Sample Request

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/?a3a5e1b6-590d-
43cc-97c1-15c7325d3f41/?Win_2008_Server_Data_Center_SP2_32-bit.?vmdkmani
fest.xml?AWSAccessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

Sample Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <conversionTask>
     <conversionTaskId>import-i-fh95npoc</conversionTaskId>
     <expirationTime>2010-12-22T12:01Z</expirationTime>
     <importVolume>
        <bytesConverted>0</bytesConverted>
        <availabilityZone>us-east-1c</availabilityZone>
        <description/>
        <image>
            <format>VDMK</format>
            <size>128696320</size>
            <importManifestUrl>
               https://s3.amazonaws.com/myawsbucket/?a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/?Win_2008_Server_Data_Center_SP2_32-bit.?vmdkmanifest.xml?AWSAc
cessKeyId=?AKIAIOSFODNN7EXAMPLE&?Expires=1294855591&?Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
            </importManifestUrl>
            <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
        </image>
        <volume>
           <size>8</size>
           <id>vol-34d8a2ff</id>
        </volume>
     </importVolume>
     <state>active</state>
```

```
    <statusMessage/>
  </conversionTask>
</ImportVolumeResponse>
```

ModifyImageAttribute

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time.

Note
AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The name of the attribute to modify.

Type: String

Required: No

Description
A description for the AMI.

Type: AttributeValue (p. 483)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImageId
The ID of the AMI.

Type: String

Required: Yes

LaunchPermission
A launch permission modification.

Type: LaunchPermissionModifications (p. 538)

Required: No

OperationType
The operation type.

Type: String

Valid Values: `add | remove`

Required: No

ProductCode.N
One or more product codes. After you add a product code to an AMI, it can't be removed. This is only valid when modifying the `productCodes` attribute.

Type: String list

Required: No

UserGroup.N
One or more user groups. This is only valid when modifying the `launchPermission` attribute.

Type: String list

Required: No

UserId.N
One or more AWS account IDs. This is only valid when modifying the `launchPermission` attribute.

Type: String list

Required: No

Value
The value of the attribute being modified. This is only valid when modifying the `description` attribute.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example makes the AMI public (for example, so any AWS account can use it).

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyImageAttributeResponse>
```

Example 2

This example makes the AMI private (for example, so that only you as the owner can use it).

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

Example 3

This example grants launch permission to the AWS account with ID 111122223333.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

Example 4

This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ProductCode.1=774F4FF8
&AUTHPARAMS
```

Example 5

This example changes the description of the AMI to New Description.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value=New Description
&AUTHPARAMS
```

ModifyInstanceAttribute

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

To modify some attributes, the instance must be stopped. For more information, see Modifying Attributes of a Stopped Instance in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The name of the attribute.

Type: String

Valid Values: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport`

Required: No

BlockDeviceMapping.N
Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the default is `true` and the volume is deleted when the instance is terminated.

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see Updating the Block Device Mapping when Launching an Instance in the *Amazon Elastic Compute Cloud User Guide*.

Type: InstanceBlockDeviceMappingSpecification (p. 523) list

Required: No

DisableApiTermination
If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. You cannot use this paramater for Spot Instances.

Type: AttributeBooleanValue (p. 483)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

EbsOptimized
Specifies whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: AttributeBooleanValue (p. 483)

Required: No

GroupId.N
[EC2-VPC] Changes the security groups of the instance. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.

Type: String list

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

InstanceInitiatedShutdownBehavior
Specifies whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: AttributeValue (p. 483)

Required: No

InstanceType
Changes the instance type to the specified value. For more information, see Instance Types. If the instance type is not valid, the error returned is `InvalidInstanceAttributeValue`.

Type: AttributeValue (p. 483)

Required: No

Kernel
Changes the instance's kernel to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.

Type: AttributeValue (p. 483)

Required: No

Ramdisk
Changes the instance's RAM disk to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.

Type: AttributeValue (p. 483)

Required: No

SourceDestCheck
Specifies whether source/destination checking is enabled. A value of `true` means that checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: AttributeBooleanValue (p. 483)

Required: No

SriovNetSupport
Set to `simple` to enable enhanced networking for the instance.

There is no way to disable enhanced networking at this time.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: AttributeValue (p. 483)

Required: No

UserData
Changes the instance's user data to the specified value.

Type: AttributeValue (p. 483)

Required: No

Value
A new value for the attribute. Use only with the `kernel`, `ramdisk`, `userData`, `disableApiTermination`, or `instanceInitiatedShutdownBehavior` attribute.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example changes the instance type of the specified instance. The instance must be in the stopped state.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceType.Value=m1.small
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Example 2

This example changes the InstanceInitiatedShutdownBehavior attribute of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&InstanceInitiatedShutdownBehavior.Value=terminate
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Example 3

This example changes the DisableApiTermination attribute of the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-10a64379
&DisableApiTermination.Value=true
&AUTHPARAMS
```

Sample Response

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

ModifyNetworkInterfaceAttribute

Modifies the specified network interface attribute. You can specify only one attribute at a time.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attachment
Information about the interface attachment. If modifying the 'delete on termination' attribute, you must specify the ID of the interface attachment.

Type: NetworkInterfaceAttachmentChanges (p. 547)

Required: No

Description
A description for the network interface.

Type: AttributeValue (p. 483)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SecurityGroupId.N
Changes the security groups for the network interface. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

Type: String list

Required: No

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

SourceDestCheck
Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT. For more information, see NAT Instances in the *Amazon Virtual Private Cloud User Guide*.

Type: AttributeBooleanValue (p. 483)

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example sets source/destination checking to false for the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

Sample Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
    <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
    <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

ModifyReservedInstances

Modifies the Availability Zone, instance count, instance type, or network platform (EC2-Classic or EC2-VPC) of your Reserved Instances. The Reserved Instances to be modified must be identical, except for Availability Zone, network platform, and instance type.

For more information, see Modifying Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

ClientToken
A unique, case-sensitive token you provide to ensure idempotency of your modification request. For more information, see Ensuring Idempotency.

Type: String

Required: No

ReservedInstancesId.N
The IDs of the Reserved Instances to modify.

Type: String list

Required: Yes

ReservedInstancesConfigurationSetItemType.N
The configuration settings for the Reserved Instances to modify.

Type: ReservedInstancesConfiguration (p. 558) list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesModificationId
The ID for the modification.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.1.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.1.InstanceCount=1
&ReservedInstancesConfigurationSetItemType.1.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.1.InstanceType=m1.small
&ReservedInstancesId.0=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS
```

Sample Response

```
<ModifyReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
<requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
<reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</re
servedInstancesModificationId>
</ModifyReservedInstancesResponse>
```

ModifySnapshotAttribute

Adds or removes permission settings for the specified snapshot. You may add or remove specified AWS account IDs from a snapshot's list of create volume permissions, but you cannot do both in a single API call. If you need to both add and remove account IDs for a snapshot, you must use multiple API calls.

For more information on modifying snapshot permissions, see Sharing Snapshots in the *Amazon Elastic Compute Cloud User Guide*.

Note
Snapshots with AWS Marketplace product codes cannot be made public.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The snapshot attribute to modify.

Note
Only volume creation permissions may be modified at the customer level.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: No

CreateVolumePermission
A JSON representation of the snapshot attribute modification.

Type: CreateVolumePermissionModifications (p. 492)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

UserGroup.N
The group to modify for the snapshot.

Type: String list

Required: No

OperationType
The type of operation to perform to the attribute.

Type: String

Valid Values: `add | remove`

Required: No

SnapshotId
The ID of the snapshot.

Type: String

Required: Yes

UserId.N
The account ID to modify for the snapshot.

Type: String list

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example makes the snap-1a2b3c4d snapshot public, and gives the account with ID 111122223333 permission to create volumes from the snapshot.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ModifySnapshotAttributeResponse>
```

Example

This example makes the snap-1a2b3c4d snapshot public, and removes the account with ID 111122223333 from the list of users with permission to create volumes from the snapshot.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ModifySnapshotAttributeResponse>
```

ModifySubnetAttribute

Modifies a subnet attribute.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

MapPublicIpOnLaunch
Specify `true` to indicate that instances launched into the specified subnet should be assigned public IP address.

Type: AttributeBooleanValue (p. 483)

Required: No

SubnetId
The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example modifies the attribute for subnet-1a2b3c4d to specify that all instances launched into this subnet are assigned a public IP address.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
```

```
&MapPublicIpOnLaunch.Value=true
&AUTHPARAMS
```

ModifyVolumeAttribute

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first enabling I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations. We recommend that you change this only for boot volumes or for volumes that are stateless or disposable.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AutoEnableIO
Indicates whether the volume should be auto-enabled for I/O operations.

Type: AttributeBooleanValue (p. 483)

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VolumeId
The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example modifies the attribute of the volume vol-12345678.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-12345678
&AutoEnableIO.Value=true
&AUTHPARAMS
```

Sample Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

   <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
   <return>true</return>
</ModifyVolumeAttributeResponse>
```

ModifyVpcAttribute

Modifies the specified attribute of the specified VPC.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

EnableDnsHostnames
Indicates whether the instances launched in the VPC get DNS hostnames. If enabled, instances in the VPC get DNS hostnames; otherwise, they do not.

You can only enable DNS hostnames if you also enable DNS support.

Type: AttributeBooleanValue (p. 483)

Required: No

EnableDnsSupport
Indicates whether the DNS resolution is supported for the VPC. If enabled, queries to the Amazon provided DNS server at the 169.254.169.253 IP address, or the reserved IP address at the base of the VPC network range "plus two" will succeed. If disabled, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled.

Type: AttributeBooleanValue (p. 483)

Required: No

VpcId
The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example disables support for DNS hostnames in the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
```

ModifyVpcEndpoint

Modifies attributes of a specified VPC endpoint. You can modify the policy associated with the endpoint, and you can add and remove route tables associated with the endpoint.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AddRouteTableId.N
One or more route tables IDs to associate with the endpoint.

Type: String list

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PolicyDocument
A policy document to attach to the endpoint. The policy must be in valid JSON format.

Type: String

Required: No

RemoveRouteTableId.N
One or more route table IDs to disassociate from the endpoint.

Type: String list

Required: No

ResetPolicy
Specify `true` to reset the policy document to the default policy. The default policy allows access to the service.

Type: Boolean

Required: No

VpcEndpointId
The ID of the endpoint.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example modifies vpce-1a2b3c4d by associating route table rtb-aaa222bb with the endpoint, and resetting the policy document.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-1a2b3c4d
&ResetPolicy=true
&AddRouteTableId.1=rtb-aaa222bb
&AUTHPARAMS
```

Sample Response

```
<ModifyVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <return>true</return>
    <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
</ModifyVpcEndpointResponse>
```

MonitorInstances

Enables monitoring for a running instance. For more information about monitoring instances, see Monitoring Your Instances and Volumes in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

instancesSet
Monitoring information for one or more instances.

Type: InstanceMonitoring (p. 525) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example enables monitoring for two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-43a4412a
```

```
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

Sample Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <instancesSet>
      <item>
        <instanceId>i-43a4412a</instanceId>
        <monitoring>
          <state>pending</state>
        </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
        <monitoring>
          <state>pending</state>
        </monitoring>
      </item>
    </instancesSet>
</MonitorInstancesResponse>
```

MoveAddressToVpc

Moves an Elastic IP address from the EC2-Classic platform to the EC2-VPC platform. The Elastic IP address must be allocated to your account, and it must not be associated with an instance. After the Elastic IP address is moved, it is no longer available for use in the EC2-Classic platform, unless you move it back using the RestoreAddressToClassic (p. 452) request. You cannot move an Elastic IP address that's allocated for use in the EC2-VPC platform to the EC2-Classic platform.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PublicIp
The Elastic IP address.

Type: String

Required: Yes

Response Elements

The following elements are returned.

allocationId
The allocation ID for the Elastic IP address.

Type: String

requestId
The ID of the request.

Type: String

status
The status of the move of the IP address.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example moves Elastic IP address 54.123.4.56 to the EC2-VPC platform.

Sample Request

```
https://ec2.amazonaws.com/?Action=MoveAddressToVpc
&publicIp=54.123.4.56
&AUTHPARAMS
```

Sample Response

```
<MoveAddressToVpcResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
     <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
     <allocationId>eipalloc-1cfe1879</allocationId>
     <status>InVpc</status>
</MoveAddressToVpcResponse>
```

PurchaseReservedInstancesOffering

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you obtain a capacity reservation for a certain instance configuration over a specified period of time and pay a lower hourly rate compared to on-Demand Instance pricing.

Use DescribeReservedInstancesOfferings (p. 268) to get a list of Reserved Instance offerings that match your specifications. After you've purchased a Reserved Instance, you can check for your new Reserved Instance with DescribeReservedInstances (p. 260).

For more information, see Reserved Instances and Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceCount
The number of Reserved Instances to purchase.

Type: Integer

Required: Yes

LimitPrice
Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: ReservedInstanceLimitPrice (p. 555)

Required: No

ReservedInstancesOfferingId
The ID of the Reserved Instance offering to purchase.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservedInstancesId
The IDs of the purchased Reserved Instances.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example uses a limit price to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>

</PurchaseReservedInstancesOfferingResponse>
```

Example 2

This example illustrates a purchase of a Reserved Instances offering.

Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>

</PurchaseReservedInstancesOfferingResponse>
```

RebootInstances

Requests a reboot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

If a Linux/Unix instance does not cleanly shut down within four minutes, Amazon EC2 performs a hard reboot.

For more information about troubleshooting, see Getting Console Output and Rebooting Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example reboots two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-4d3acf62
&AUTHPARAMS
```

Sample Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
```

RegisterImage

Registers an AMI. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see Creating Your Own AMIs in the *Amazon Elastic Compute Cloud User Guide*.

> **Note**
> For Amazon EBS-backed instances, CreateImage creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use `RegisterImage` to create an Amazon EBS-backed Linux AMI from a snapshot of a root device volume. For more information, see Launching an Instance from a Snapshot in the *Amazon Elastic Compute Cloud User Guide*.

> **Important**
> Some Linux distributions, such as Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES), use the EC2 billingProduct code associated with an AMI to verify subscription status for package updates. Creating an AMI from an EBS snapshot does not maintain this billing code, and subsequent instances launched from such an AMI will not be able to connect to package update infrastructure. Similarly, although you can create a Windows AMI from a snapshot, you can't successfully launch an instance from the AMI. To create Windows AMIs or to create AMIs for Linux operating systems that must retain AMI billing codes to work properly, see CreateImage.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by an instance store volume invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

> **Note**
> You can't register an image where a secondary (non-root) snapshot has AWS Marketplace product codes.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Architecture
The architecture of the AMI.

Default: For Amazon EBS-backed AMIs, `i386`. For instance store-backed AMIs, the architecture specified in the manifest file.

Type: String

Valid Values: `i386` | `x86_64`

Required: No

BlockDeviceMapping.N
One or more block device mapping entries.

Type: BlockDeviceMapping (p. 485) list

Required: No

Description
A description for your AMI.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImageLocation
The full path to your AMI manifest in Amazon S3 storage.

Type: String

Required: No

KernelId
The ID of the kernel.

Type: String

Required: No

Name
A name for your AMI.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(_)

Type: String

Required: Yes

RamdiskId
The ID of the RAM disk.

Type: String

Required: No

RootDeviceName
The name of the root device (for example, `/dev/sda1`, or `/dev/xvda`).

Type: String

Required: No

SriovNetSupport
Set to `simple` to enable enhanced networking for the AMI and any instances that you launch from the AMI.

There is no way to disable enhanced networking at this time.

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: String

Required: No

VirtualizationType
The type of virtualization.

Default: `paravirtual`

Type: String

Required: No

Response Elements

The following elements are returned.

imageId
The ID of the newly registered AMI.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example registers the AMI specified in the my-new-image.manifest.xml manifest file, located in the bucket called myawsbucket.

Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

Example 2

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
```

```
&Name=MyImage
&AUTHPARAMS
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

Example 3

This example registers an AMI with a block device mapping for three Amazon EBS volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The second volume is based on another snapshot. The third volume is an empty 100 GiB Amazon EBS volume.

Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-2a2b3c4d
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

RejectVpcPeeringConnection

Rejects a VPC peering connection request. The VPC peering connection must be in the `pending-acceptance` state. Use the DescribeVpcPeeringConnections (p. 335) request to view your outstanding VPC peering connection requests. To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use DeleteVpcPeeringConnection (p. 172).

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

VpcPeeringConnectionId
The ID of the VPC peering connection.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example rejects the specified VPC peering connection request.

Sample Request

```
https://ec2.amazonaws.com/?Action=RejectVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<RejectVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</RejectVpcPeeringConnectionResponse>
```

ReleaseAddress

Releases the specified Elastic IP address.

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to you. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

[EC2-Classic, default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. To disassociate an Elastic IP address without releasing it, use DisassociateAddress (p. 361).

[Nondefault VPC] You must use DisassociateAddress (p. 361) to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AllocationId
[EC2-VPC] The allocation ID. Required for EC2-VPC.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PublicIp
[EC2-Classic] The Elastic IP address. Required for EC2-Classic.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example for EC2-Classic

This example releases the specified Elastic IP address for EC2-Classic.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

Example for EC2-VPC

This example releases the specified Elastic IP address for EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

ReplaceNetworkAclAssociation

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information about network ACLs, see Network ACLs in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AssociationId
The ID of the current association between the original network ACL and the subnet.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

NetworkAclId
The ID of the new network ACL to associate with the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

newAssociationId
The ID of the new association.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example starts with a network ACL associated with a subnet, and a corresponding association ID aclassoc-e5b95c8c. You want to associate a different network ACL (acl-5fb85d36) with the subnet. The result is a new association ID representing the new association.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

Sample Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

ReplaceNetworkAclEntry

Replaces an entry (rule) in a network ACL. For more information about network ACLs, see Network ACLs in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrBlock
The network range to allow or deny, in CIDR notation.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Egress
Indicates whether to replace the egress rule.

Default: If no value is specified, we replace the ingress rule.

Type: Boolean

Required: Yes

Icmp
ICMP protocol: The ICMP type and code. Required if specifying 1 (ICMP) for the protocol.

Type: IcmpTypeCode (p. 505)

Required: No

NetworkAclId
The ID of the ACL.

Type: String

Required: Yes

PortRange
TCP or UDP protocols: The range of ports the rule applies to. Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

Type: PortRange (p. 549)

Required: No

Protocol
The IP protocol. You can specify `all` or `-1` to mean all protocols.

Type: String

Required: Yes

RuleAction
Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: Yes

RuleNumber
The rule number of the entry to replace.

Type: Integer

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example replaces the egress entry numbered 110 in the network ACL with ID acl-2cb85d45. The new rule denies egress traffic destined for anywhere (0.0.0.0/0) on TCP port 139.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=tcp
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS
```

Sample Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

ReplaceRoute

Replaces an existing route within a route table in a VPC. You must provide only one of the following: Internet gateway or virtual private gateway, NAT instance, VPC peering connection, or network interface.

For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DestinationCidrBlock
The CIDR address block used for the destination match. The value you provide must match the CIDR of an existing route in the table.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

GatewayId
The ID of an Internet gateway or virtual private gateway.

Type: String

Required: No

InstanceId
The ID of a NAT instance in your VPC.

Type: String

Required: No

NetworkInterfaceId
The ID of a network interface.

Type: String

Required: No

RouteTableId
The ID of the route table.

Type: String

Required: Yes

VpcPeeringConnectionId
The ID of a VPC peering connection.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example replaces a route in the specified route table. The new route matches the CIDR 10.0.0.0/8 and sends the traffic to the virtual private gateway with the ID vgw-1d00376e.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

Sample Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ReplaceRouteResponse>
```

ReplaceRouteTableAssociation

Changes the route table associated with a given subnet in a VPC. After the operation completes, the subnet uses the routes in the new route table it's associated with. For more information about route tables, see Route Tables in the *Amazon Virtual Private Cloud User Guide*.

You can also use ReplaceRouteTableAssociation to change which table is the main route table in the VPC. You just specify the main route table's association ID and the route table to be the new main route table.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AssociationId
The association ID.

Type: String

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

RouteTableId
The ID of the new route table to associate with the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned.

newAssociationId
The ID of the new association.

Type: String

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example starts with a route table associated with a subnet, and a corresponding association ID rtbassoc-f8ad4891. You want to associate a different route table (table rtb-f9ad4890) to the subnet. The result is a new association ID representing the new association.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS
```

Sample Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

ReportInstanceStatus

Submits feedback about the status of an instance. The instance must be in the `running` state. If your experience with the instance differs from the instance status returned by DescribeInstanceStatus (p. 232), use ReportInstanceStatus (p. 435) to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

Use of this action does not change the value returned by DescribeInstanceStatus (p. 232).

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Description
Descriptive text about the health state of your instance.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

EndTime
The time at which the reported instance health state ended.

Type: DateTime

Required: No

InstanceId.N
One or more instances.

Type: String list

Required: Yes

ReasonCode.N
One or more reason codes that describes the health state of your instance.

- `instance-stuck-in-state`: My instance is stuck in a state.
- `unresponsive`: My instance is unresponsive.
- `not-accepting-credentials`: My instance is not accepting my credentials.
- `password-not-available`: A password is not available for my instance.
- `performance-network`: My instance is experiencing performance problems which I believe are network related.
- `performance-instance-store`: My instance is experiencing performance problems which I believe are related to the instance stores.
- `performance-ebs-volume`: My instance is experiencing performance problems which I believe are related to an EBS volume.
- `performance-other`: My instance is experiencing performance problems.
- `other`: [explain using the description parameter]

Type: String list

Valid Values: `instance-stuck-in-state | unresponsive | not-accepting-credentials | password-not-available | performance-network | performance-instance-store | performance-ebs-volume | performance-other | other`

Required: Yes

StartTime
The time at which the reported instance health state began.

Type: DateTime

Required: No

Status
The status of all instances listed.

Type: String

Valid Values: `ok | impaired`

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example reports instance health state for two instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.1=i-9440effb
&InstanceId.2=i-0cf27c63
&AUTHPARAMS
```

Example 2

This example reports instance health state for two instances with reason codes.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.1=i-9440effb
&InstanceId.2=i-0cf27c63
&ReasonCode.1=instance-performance-network
&ReasonCode.2=instance-performance-disk
&AUTHPARAMS
```

RequestSpotFleet

Creates a Spot fleet request.

You can submit a single request that includes multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.

By default, the Spot fleet requests Spot instances in the Spot pool where the price per unit is the lowest. Each launch specification can include its own instance weighting that reflects the value of the instance type to your application workload.

Alternatively, you can specify that the Spot fleet distribute the target capacity across the Spot pools included in its launch specifications. By ensuring that the Spot instances in your Spot fleet are in different Spot pools, you can improve the availability of your fleet.

For more information, see Spot Fleet Requests in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SpotFleetRequestConfig
The configuration for the Spot fleet request.

Type: SpotFleetRequestConfigData (p. 578)

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a Spot fleet request with 2 launch specifications.

Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotFleet
&SpotFleetRequestConfig.IamFleetRole=arn:aws:iam::123456789011:role/spot-fleet-
role
&SpotFleetRequestConfig.SpotPrice=0.0153
&SpotFleetRequestConfig.TargetCapacity=5
&SpotFleetRequestConfig.LaunchSpecifications.1.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.1.InstanceType=m4.large
&SpotFleetRequestConfig.LaunchSpecifications.1.SubnetId=subnet-1a2b3c4d
&SpotFleetRequestConfig.LaunchSpecifications.2.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.2.InstanceType=m3.medium
&SpotFleetRequestConfig.LaunchSpecifications.2.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<RequestSpotFleetResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
    <requestId>60262cc5-2bd4-4c8d-98ed-example</requestId>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRe
questId>
</RequestSpotFleetResponse>
```

RequestSpotInstances

Creates a Spot instance request. Spot instances are instances that Amazon EC2 launches when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot Instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AvailabilityZoneGroup
The user-specified name for a logical grouping of bids.

When you specify an Availability Zone group in a Spot Instance request, all Spot instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but the choice of Availability Zone is not. The group applies only to bids for Spot Instances of the same instance type. Any additional Spot instance requests that are specified with the same Availability Zone group name are launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot instance request (all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 launches the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot instances could be placed in a different zone from the original request, even if you specified the same Availability Zone group.

Default: Instances are launched in any available Availability Zone.

Type: String

Required: No

ClientToken
Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceCount
The maximum number of Spot instances to launch.

Default: 1

Type: Integer

Required: No

LaunchGroup
The instance launch group. Launch groups are Spot instances that launch together and terminate together.

Default: Instances are launched and terminated individually

Type: String

Required: No

LaunchSpecification
The launch specification.

Type: LaunchSpecification (p. 538)

Required: No

SpotPrice
The maximum hourly price (bid) for any Spot instance launched to fulfill the request.

Type: String

Required: Yes

Type
The Spot instance request type.

Default: `one-time`

Type: String

Valid Values: `one-time | persistent`

Required: No

ValidFrom
The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Default: The request is effective indefinitely.

Type: DateTime

Required: No

ValidUntil
The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Default: The request is effective indefinitely.

Type: DateTime

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

spotInstanceRequestSet
One or more Spot instance requests.

Type: SpotInstanceRequest (p. 579) list

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example creates a Spot instance request for two m1.small instances and associates an IAM instance profile called s3access with them.

Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroup.1=websrv
&LaunchSpecification.InstanceType=m1.small
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

Sample Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.5</spotPrice>
      <type>one-time</type>
      <state>open</state>
      <status>
        <code>pending-evaluation</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
       <message>Your Spot request has been submitted for review, and is pending
 evaluation.</message>
      </status>
      <availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>
      <launchSpecification>
```

```
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-key-pair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <blockDeviceMapping/>
        <monitoring>
          <enabled>false</enabled>
        </monitoring>
        <ebsOptimized>false</ebsOptimized>
      </launchSpecification>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
    </item>
 </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

ResetImageAttribute

Resets an attribute of an AMI to its default value.

Note
The productCodes attribute can't be reset.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Valid Values: `launchPermission`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

ImageId
The ID of the AMI.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example resets the launchPermission attribute for the specified AMI.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

Sample Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

ResetInstanceAttribute

Resets an attribute of an instance to its default value. To reset the `kernel` or `ramdisk`, the instance must be in a stopped state. To reset the `SourceDestCheck`, the instance can be either running or stopped.

The `SourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see NAT Instances in the *Amazon Virtual Private Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The attribute to reset.

Type: String

Valid Values: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId
The ID of the instance.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example resets the sourceDestCheck attribute.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1a2b3c4d
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

ResetNetworkInterfaceAttribute

Resets a network interface attribute. You can specify only one attribute at a time.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

SourceDestCheck
The source/destination checking attribute. Resets the value to `true`.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example resets the sourceDestCheck attribute for the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<ResetNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
    <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
    <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```

ResetSnapshotAttribute

Resets permission settings for the specified snapshot.

For more information on modifying snapshot permissions, see Sharing Snapshots in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

Attribute
The attribute to reset. Currently, only the attribute for permission to create volumes can be reset.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

SnapshotId
The ID of the snapshot.

Type: String

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example resets the permissions for snap-1a2b3c4d, making it a private snapshot that can only be used by the account that created it.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

Sample Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

RestoreAddressToClassic

Restores an Elastic IP address that was previously moved to the EC2-VPC platform back to the EC2-Classic platform. You cannot move an Elastic IP address that was originally allocated for use in EC2-VPC. The Elastic IP address must not be associated with an instance or network interface.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

PublicIp
The Elastic IP address.

Type: String

Required: Yes

Response Elements

The following elements are returned.

publicIp
The Elastic IP address.

Type: String

requestId
The ID of the request.

Type: String

status
The move status for the IP address.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example restores Elastic IP address 54.123.45.67 to the EC2-Classic platform.

Sample Request

```
https://ec2.amazonaws.com/?Action=RestoreAddressToClassic
&publicIp=54.123.45.67
&AUTHPARAMS
```

Sample Response

```
<RestoreAddressToClassicResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-
15/">
     <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
     <publicIp>54.123.45.67</publicIp>
     <status>MoveInProgress</status>
</RestoreAddressToClassicResponse>
```

RevokeSecurityGroupEgress

Removes one or more egress rules from a security group for EC2-VPC. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be revoked.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrIp
The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use `-1` to specify all ICMP types.

Type: Integer

Required: No

GroupId
The ID of the security group.

Type: String

Required: Yes

IpPermissions.N
A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.

Type: IpPermission (p. 535) list

Required: No

IpProtocol
The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName
The name of a destination security group. To revoke outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

SourceSecurityGroupOwnerId
The AWS account number for a destination security group. To revoke outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

ToPort
The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use `-1` to specify all ICMP codes for the ICMP type.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example 1

This example revokes the access that the specified security group has to the 205.192.0.0/16 and 205.159.0.0/16 address ranges on TCP port 80.

Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
```

```
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

Example 2

This example revokes the access that the specified security group has to the security group with the ID sg-9a8d7f5c on TCP port 1433.

Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

RevokeSecurityGroupIngress

Removes one or more ingress rules from a security group. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be removed.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

CidrIp
The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use `-1` to specify all ICMP types.

Type: Integer

Required: No

GroupId
The ID of the security group. Required for a security group in a nondefault VPC.

Type: String

Required: No

GroupName
[EC2-Classic, default VPC] The name of the security group.

Type: String

Required: No

IpPermissions.N
A set of IP permissions. You can't specify a source security group and a CIDR IP address range.

Type: IpPermission (p. 535) list

Required: No

IpProtocol
The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). Use `-1` to specify all.

Type: String

Required: No

SourceSecurityGroupName
[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. For EC2-VPC, the source security group must be in the same VPC.

Type: String

Required: No

SourceSecurityGroupOwnerId
[EC2-Classic, default VPC] The AWS account ID of the source security group. For EC2-VPC, the source security group must be in the same VPC. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

ToPort
The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use `-1` to specify all ICMP codes for the ICMP type.

Type: Integer

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example revokes TCP port 80 access from the 205.192.0.0/16 address range for the security group named websrv. If the security group is for a VPC, specify the ID of the security group instead of the name.

Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&AUTHPARAMS
```

Sample Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2015-
04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

RunInstances

Launches the specified number of instances using an AMI for which you have permissions.

When you launch an instance, it enters the `pending` state. After the instance is ready for you, it enters the `running` state. To check the state of your instance, call DescribeInstances (p. 224).

If you don't specify a security group when launching an instance, Amazon EC2 uses the default security group. For more information, see Security Groups in the *Amazon Elastic Compute Cloud User Guide*.

[EC2-VPC only accounts] If you don't specify a subnet in the request, we choose a default subnet from your default VPC for you.

[EC2-Classic accounts] If you're launching into EC2-Classic and you don't specify an Availability Zone, we choose one for you.

Linux instances have access to the public key of the key pair at boot. You can use this key to provide secure access to the instance. Amazon EC2 public images use this feature to provide secure access without passwords. For more information, see Key Pairs in the *Amazon Elastic Compute Cloud User Guide*.

You can provide optional user data when launching an instance. For more information, see Instance Metadata in the *Amazon Elastic Compute Cloud User Guide*.

If any of the AMIs have a product code attached for which the user has not subscribed, `RunInstances` fails.

T2 instance types can only be launched into a VPC. If you do not have a default VPC, or if you do not specify a subnet ID in the request, `RunInstances` fails.

For more information about troubleshooting, see What To Do If An Instance Immediately Terminates, and Troubleshooting Connecting to Your Instance in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AdditionalInfo
Reserved.

Type: String

Required: No

BlockDeviceMapping.N
The block device mapping.

Type: BlockDeviceMapping (p. 485) list

Required: No

ClientToken
Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Constraints: Maximum 64 ASCII characters

Type: String

Required: No

DisableApiTermination
If you set this parameter to `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. If you set this parameter to `true` and then later want to be able to terminate the instance, you must first change the value of the `disableApiTermination` attribute to `false` using ModifyInstanceAttribute (p. 391). Alternatively, if you set `InstanceInitiatedShutdownBehavior` to `terminate`, you can terminate the instance by running the shutdown command from the instance.

Default: `false`

Type: Boolean

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

EbsOptimized
Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Default: `false`

Type: Boolean

Required: No

IamInstanceProfile
The IAM instance profile.

Type: IamInstanceProfileSpecification (p. 505)

Required: No

ImageId
The ID of the AMI, which you can get by calling DescribeImages (p. 212).

Type: String

Required: Yes

InstanceInitiatedShutdownBehavior
Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Default: `stop`

Type: String

Valid Values: `stop | terminate`

Required: No

InstanceType
The instance type. For more information, see Instance Types in the *Amazon Elastic Compute Cloud User Guide*.

Default: `m1.small`

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

KernelId

The ID of the kernel.

> **Important**
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the Amazon Elastic Compute Cloud User Guide.

Type: String

Required: No

KeyName

The name of the key pair. You can create a key pair using CreateKeyPair (p. 81) or ImportKeyPair (p. 381).

> **Important**
> If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String

Required: No

MaxCount

The maximum number of instances to launch. If you specify more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above `MinCount`.

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see How many instances can I run in Amazon EC2 in the Amazon EC2 General FAQ.

Type: Integer

Required: Yes

MinCount

The minimum number of instances to launch. If you specify a minimum that is more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches no instances.

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see How many instances can I run in Amazon EC2 in the Amazon EC2 General FAQ.

Type: Integer

Required: Yes

Monitoring
The monitoring for the instance.

Type: RunInstancesMonitoringEnabled (p. 567)

Required: No

NetworkInterface.N
One or more network interfaces.

Type: InstanceNetworkInterfaceSpecification (p. 528) list

Required: No

Placement
The placement for the instance.

Type: Placement (p. 548)

Required: No

PrivateIpAddress
[EC2-VPC] The primary IP address. You must specify a value from the IP address range of the subnet.

Only one private IP address can be designated as primary. Therefore, you can't specify this parameter if `PrivateIpAddresses.n.Primary` is set to `true` and `PrivateIpAddresses.n.PrivateIpAddress` is set to an IP address.

Default: We select an IP address from the IP address range of the subnet.

Type: String

Required: No

RamdiskId
The ID of the RAM disk.

> **Important**
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the Amazon Elastic Compute Cloud User Guide.

Type: String

Required: No

SecurityGroupId.N
One or more security group IDs. You can create a security group using CreateSecurityGroup (p. 104).

Default: Amazon EC2 uses the default security group.

Type: String list

Required: No

SecurityGroup.N
[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use security group IDs instead.

Default: Amazon EC2 uses the default security group.

Type: String list

Required: No

SubnetId
[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Required: No

UserData
The Base64-encoded MIME user data for the instances.

Type: String

Required: No

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

reservation
One or more reservations.

Type: Reservation (p. 554)

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example launches three instances using the AMI with the ID ami-60a54009.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

Example

This example launches an m1.small instance into a subnet. Because no network interface is specified, the default network interface is used.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

Example

This example launches an m1.large instance into a subnet. The network interface specifies a primary private IP address of 10.0.2.106 and two secondary private IP addresses (10.0.2.107 and 10.0.2.108).

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.PrivateIpAddresses.1.Primary=true
&NetworkInterface.1.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.106
&NetworkInterface.1.PrivateIpAddresses.2.Primary=false
&NetworkInterface.1.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.107
&NetworkInterface.1.PrivateIpAddresses.3.Primary=false
&NetworkInterface.1.PrivateIpAddresses.3.PrivateIpAddress=10.0.2.108
&NetworkInterface.1.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

Example

This example launches a Dedicated Instance into the specified subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

Example

This request launches an instance into a nondefault subnet, and requests a public IP address for a new network interface with the device index of 0.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.AssociatePublicIpAddress=true
&NetworkInterface.1.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

Example

This request launches an m1.large instance with a block device mapping. There are two instance store volumes mapped to /dev/sdc and /dev/sdd, and a 100 GB EBS volume mapped to /dev/sdf.

Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m1.large
&BlockDeviceMapping.1.DeviceName=%2Fdev%2Fsdc
&BlockDeviceMapping.1.VirtualName=ephemeral0
&BlockDeviceMapping.2.DeviceName=%2Fdev%2Fsdd
&BlockDeviceMapping.2.VirtualName=ephemeral1
&BlockDeviceMapping.3.DeviceName=%2Fdev%2Fsdf
&BlockDeviceMapping.3.Ebs.DeleteOnTermination=false
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&EbsOptimized=false
&MinCount=1
&MaxCount=1
&DisableApiTermination=false
&Monitoring.Enabled=false
&AUTHPARAMS
```

StartInstances

Starts an Amazon EBS-backed AMI that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

For more information, see Stopping Instances in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

AdditionalInfo
Reserved.

Type: String

Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

instancesSet
Information about one or more started instances.

Type: InstanceStateChange (p. 531) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example starts the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
          <code>0</code>
          <name>pending</name>
      </currentState>
      <previousState>
          <code>80</code>
          <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
```

StopInstances

Stops an Amazon EBS-backed instance. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.

You can't start or stop Spot Instances.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

You can stop, start, and terminate EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop it or terminate it. For example, when you stop an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, the root device and any other devices attached during the instance launch are automatically deleted. For more information about the differences between stopping and terminating instances, see Instance Lifecycle in the *Amazon Elastic Compute Cloud User Guide*.

For more information about troubleshooting, see Troubleshooting Stopping Your Instance in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

Force
Forces the instances to stop. The instances do not have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances.

Default: `false`

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

instancesSet
Information about one or more stopped instances.

Type: InstanceStateChange (p. 531) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example stops the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

Sample Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
          <code>64</code>
          <name>stopping</name>
      </currentState>
      <previousState>
          <code>16</code>
          <name>running</name>
      </previousState>
  </instancesSet>
</StopInstancesResponse>
```

TerminateInstances

Shuts down one or more instances. This operation is idempotent; if you terminate an instance more than once, each call succeeds.

Terminated instances remain visible after termination (for approximately one hour).

By default, Amazon EC2 deletes all EBS volumes that were attached when the instance launched. Volumes attached after instance launch continue running.

You can stop, start, and terminate EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop it or terminate it. For example, when you stop an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, any attached EBS volumes with the `DeleteOnTermination` block device mapping parameter set to `true` are automatically deleted. For more information about the differences between stopping and terminating instances, see Instance Lifecycle in the *Amazon Elastic Compute Cloud User Guide*.

For more information about troubleshooting, see Troubleshooting Terminating Your Instance in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

instancesSet
Information about one or more terminated instances.

Type: InstanceStateChange (p. 531) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example terminates the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

Sample Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-3ea74257</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```

UnassignPrivateIpAddresses

Unassigns one or more secondary private IP addresses from a network interface.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

NetworkInterfaceId
The ID of the network interface.

Type: String

Required: Yes

PrivateIpAddress.N
The secondary private IP addresses to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

requestId
The ID of the request.

Type: String

return
Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

The following example unassigns two secondary private IP addresses from the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.1=10.0.2.60
```

```
&PrivateIpAddress.2=10.0.2.65
&AUTHPARAMS
```

Sample Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</UnassignPrivateIpAddresses>
```

UnmonitorInstances

Disables monitoring for a running instance. For more information about monitoring instances, see Monitoring Your Instances and Volumes in the *Amazon Elastic Compute Cloud User Guide*.

Request Parameters

For information about the common parameters that all actions use, see Common Query Parameters (p. 620).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

InstanceId.N
One or more instance IDs.

Type: String list

Required: Yes

Response Elements

The following elements are returned.

instancesSet
Monitoring information for one or more instances.

Type: InstanceMonitoring (p. 525) list

requestId
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 637).

Examples

Example

This example disables monitoring for the specified instances.

Sample Request

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-43a4412a
```

```
&InstanceId.2=i-23a3397d
&AUTHPARAMS
```

Sample Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <instancesSet>
      <item>
         <instanceId>i-43a4412a</instanceId>
         <monitoring>
            <state>disabled</state>
         </monitoring>
      </item>
      <item>
         <instanceId>i-23a3397d</instanceId>
         <monitoring>
            <state>disabled</state>
         </monitoring>
      </item>
   </instancesSet>
</UnmonitorInstancesResponse>
```

Data Types

The Amazon Elastic Compute Cloud API contains several data types that various actions use. This section describes each data type in detail.

Note
The order of each element in the response is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AccountAttribute (p. 481)
- AccountAttributeValue (p. 481)
- ActiveInstance (p. 481)
- Address (p. 482)
- AttributeBooleanValue (p. 483)
- AttributeValue (p. 483)
- AvailabilityZone (p. 484)
- AvailabilityZoneMessage (p. 484)
- BlockDeviceMapping (p. 485)
- BundleTask (p. 485)
- BundleTaskError (p. 486)
- CancelledSpotInstanceRequest (p. 487)
- CancelSpotFleetRequestsError (p. 487)
- CancelSpotFleetRequestsErrorItem (p. 488)
- CancelSpotFleetRequestsSuccessItem (p. 488)
- ClassicLinkInstance (p. 489)
- ClientData (p. 489)
- ConversionTask (p. 490)
- CreateVolumePermission (p. 491)
- CreateVolumePermissionModifications (p. 492)
- CustomerGateway (p. 492)
- DhcpConfiguration (p. 493)
- DhcpOptions (p. 493)
- DiskImage (p. 494)

- DiskImageDescription (p. 494)
- DiskImageDetail (p. 495)
- DiskImageVolumeDescription (p. 496)
- EbsBlockDevice (p. 496)
- EbsInstanceBlockDevice (p. 497)
- EbsInstanceBlockDeviceSpecification (p. 498)
- EventInformation (p. 498)
- ExportTask (p. 499)
- ExportToS3Task (p. 500)
- ExportToS3TaskSpecification (p. 501)
- Filter (p. 502)
- FlowLog (p. 502)
- GroupIdentifier (p. 503)
- HistoryRecord (p. 504)
- IamInstanceProfile (p. 504)
- IamInstanceProfileSpecification (p. 505)
- IcmpTypeCode (p. 505)
- Image (p. 506)
- ImageAttribute (p. 508)
- ImageDiskContainer (p. 510)
- ImportImageTask (p. 510)
- ImportInstanceLaunchSpecification (p. 512)
- ImportInstanceTaskDetails (p. 513)
- ImportInstanceVolumeDetailItem (p. 514)
- ImportSnapshotTask (p. 515)
- ImportVolumeTaskDetails (p. 516)
- Instance (p. 516)
- InstanceAttribute (p. 521)
- InstanceBlockDeviceMapping (p. 523)
- InstanceBlockDeviceMappingSpecification (p. 523)
- InstanceCount (p. 524)
- InstanceExportDetails (p. 524)
- InstanceMonitoring (p. 525)
- InstanceNetworkInterface (p. 525)
- InstanceNetworkInterfaceAssociation (p. 527)
- InstanceNetworkInterfaceAttachment (p. 527)
- InstanceNetworkInterfaceSpecification (p. 528)
- InstancePrivateIpAddress (p. 529)
- InstanceState (p. 530)
- InstanceStateChange (p. 531)
- InstanceStatus (p. 531)
- InstanceStatusDetails (p. 532)
- InstanceStatusEvent (p. 533)
- InstanceStatusSummary (p. 533)
- InternetGateway (p. 534)
- InternetGatewayAttachment (p. 534)

- IpPermission (p. 535)
- IpRange (p. 536)
- KeyPair (p. 536)
- KeyPairInfo (p. 537)
- LaunchPermission (p. 537)
- LaunchPermissionModifications (p. 538)
- LaunchSpecification (p. 538)
- Monitoring (p. 540)
- MovingAddressStatus (p. 540)
- NetworkAcl (p. 541)
- NetworkAclAssociation (p. 542)
- NetworkAclEntry (p. 542)
- NetworkInterface (p. 543)
- NetworkInterfaceAssociation (p. 545)
- NetworkInterfaceAttachment (p. 546)
- NetworkInterfaceAttachmentChanges (p. 547)
- NetworkInterfacePrivateIpAddress (p. 547)
- Placement (p. 548)
- PlacementGroup (p. 549)
- PortRange (p. 549)
- PrefixList (p. 550)
- PrefixListId (p. 550)
- PriceSchedule (p. 550)
- PriceScheduleSpecification (p. 551)
- PricingDetail (p. 552)
- PrivateIpAddressSpecification (p. 552)
- ProductCode (p. 553)
- PropagatingVgw (p. 553)
- RecurringCharge (p. 553)
- Region (p. 554)
- Reservation (p. 554)
- ReservedInstanceLimitPrice (p. 555)
- ReservedInstances (p. 556)
- ReservedInstancesConfiguration (p. 558)
- ReservedInstancesId (p. 559)
- ReservedInstancesListing (p. 559)
- ReservedInstancesModification (p. 560)
- ReservedInstancesModificationResult (p. 562)
- ReservedInstancesOffering (p. 562)
- Route (p. 564)
- RouteTable (p. 565)
- RouteTableAssociation (p. 566)
- RunInstancesMonitoringEnabled (p. 567)
- S3Storage (p. 567)
- SecurityGroup (p. 568)
- Snapshot (p. 569)

- SnapshotDetail (p. 571)
- SnapshotDiskContainer (p. 572)
- SnapshotTaskDetail (p. 573)
- SpotDatafeedSubscription (p. 574)
- SpotFleetLaunchSpecification (p. 575)
- SpotFleetMonitoring (p. 577)
- SpotFleetRequestConfig (p. 577)
- SpotFleetRequestConfigData (p. 578)
- SpotInstanceRequest (p. 579)
- SpotInstanceStateFault (p. 581)
- SpotInstanceStatus (p. 582)
- SpotPlacement (p. 582)
- SpotPrice (p. 583)
- StateReason (p. 584)
- Storage (p. 584)
- Subnet (p. 585)
- Tag (p. 586)
- TagDescription (p. 586)
- UnsuccessfulItem (p. 587)
- UnsuccessfulItemError (p. 587)
- UserBucket (p. 588)
- UserBucketDetails (p. 588)
- UserData (p. 589)
- UserIdGroupPair (p. 589)
- VgwTelemetry (p. 589)
- Volume (p. 590)
- VolumeAttachment (p. 592)
- VolumeDetail (p. 593)
- VolumeStatusAction (p. 593)
- VolumeStatusDetails (p. 594)
- VolumeStatusEvent (p. 594)
- VolumeStatusInfo (p. 595)
- VolumeStatusItem (p. 595)
- Vpc (p. 596)
- VpcAttachment (p. 597)
- VpcClassicLink (p. 598)
- VpcEndpoint (p. 598)
- VpcPeeringConnection (p. 599)
- VpcPeeringConnectionStateReason (p. 600)
- VpcPeeringConnectionVpcInfo (p. 600)
- VpnConnection (p. 601)
- VpnConnectionOptions (p. 602)
- VpnConnectionOptionsSpecification (p. 603)
- VpnGateway (p. 603)
- VpnStaticRoute (p. 604)

AccountAttribute

Description

Describes an account attribute.

Contents

attributeName
The name of the account attribute.

Type: String

Required: No

attributeValues
One or more values for the account attribute.

Type: AccountAttributeValue (p. 481) list

Required: No

AccountAttributeValue

Description

Describes a value of an account attribute.

Contents

attributeValue
The value of the attribute.

Type: String

Required: No

ActiveInstance

Description

Describes a running instance in a Spot fleet.

Contents

instanceId
The ID of the instance.

Type: String

Required: No

instanceType
The instance type.

Type: String

Required: No

spotInstanceRequestId
The ID of the Spot instance request.

Type: String

Required: No

Address

Description

Describes an Elastic IP address.

Contents

allocationId
The ID representing the allocation of the address for use with EC2-VPC.

Type: String

Required: No

associationId
The ID representing the association of the address with an instance in a VPC.

Type: String

Required: No

domain
Indicates whether this Elastic IP address is for use with instances in EC2-Classic (`standard`) or instances in a VPC (`vpc`).

Type: String

Valid Values: `vpc | standard`

Required: No

instanceId
The ID of the instance that the address is associated with (if any).

Type: String

Required: No

networkInterfaceId
The ID of the network interface.

Type: String

Required: No

networkInterfaceOwnerId
The ID of the AWS account that owns the network interface.

Type: String

Required: No

privateIpAddress
The private IP address associated with the Elastic IP address.

Type: String

Required: No

publicIp
The Elastic IP address.

Type: String

Required: No

AttributeBooleanValue

Description

The value to use when a resource attribute accepts a Boolean value.

Contents

Value (request), **value** (response)
Valid values are `true` or `false`.

Type: Boolean

Required: No

AttributeValue

Description

The value to use for a resource attribute.

Contents

Value (request), **value** (response)
Valid values are case-sensitive and vary by action.

Type: String

Required: No

AvailabilityZone

Description

Describes an Availability Zone.

Contents

messages
Any messages about the Availability Zone.

Type: AvailabilityZoneMessage (p. 484) list

Required: No

regionName
The name of the region.

Type: String

Required: No

state
The state of the Availability Zone (`available` | `impaired` | `unavailable`).

Type: String

Valid Values: `available`

Required: No

zoneName
The name of the Availability Zone.

Type: String

Required: No

AvailabilityZoneMessage

Description

Describes a message about an Availability Zone.

Contents

message
The message about the Availability Zone.

Type: String

Required: No

BlockDeviceMapping

Description

Describes a block device mapping.

Contents

DeviceName (request), **deviceName** (response)
The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

Ebs (request), **ebs** (response)
Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsBlockDevice (p. 496)

Required: No

NoDevice (request), **noDevice** (response)
Suppresses the specified device included in the block device mapping of the AMI.

Type: String

Required: No

VirtualName (request), **virtualName** (response)
The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`.The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

BundleTask

Description

Describes a bundle task.

Contents

bundleId
The ID of the bundle task.

Type: String

Required: No

bundleTaskError
If the task fails, a description of the error.

Type: BundleTaskError (p. 486)

Required: No

instanceId
The ID of the instance associated with this bundle task.

Type: String

Required: No

progress
The level of task completion, as a percent (for example, 20%).

Type: String

Required: No

startTime
The time this task started.

Type: DateTime

Required: No

state
The state of the task.

Type: String

Valid Values: `pending | waiting-for-shutdown | bundling | storing | cancelling | complete | failed`

Required: No

storage
The Amazon S3 storage locations.

Type: Storage (p. 584)

Required: No

updateTime
The time of the most recent update for the task.

Type: DateTime

Required: No

BundleTaskError

Description

Describes an error for BundleInstance (p. 44).

Contents

code
The error code.

Type: String

Required: No

message
The error message.

Type: String

Required: No

CancelledSpotInstanceRequest

Description

Describes a request to cancel a Spot instance.

Contents

spotInstanceRequestId
The ID of the Spot instance request.

Type: String

Required: No

state
The state of the Spot instance request.

Type: String

Valid Values: `active | open | closed | cancelled | completed`

Required: No

CancelSpotFleetRequestsError

Description

Describes a Spot fleet error.

Contents

code
The error code.

Type: String

Valid Values: `fleetRequestIdDoesNotExist | fleetRequestIdMalformed | fleetRequestNotInCancellableState | unexpectedError`

Required: Yes

message
The description for the error code.

Type: String

Required: Yes

CancelSpotFleetRequestsErrorItem

Description

Describes a Spot fleet request that was not successfully canceled.

Contents

error
The error.

Type: CancelSpotFleetRequestsError (p. 487)

Required: Yes

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

Required: Yes

CancelSpotFleetRequestsSuccessItem

Description

Describes a Spot fleet request that was successfully canceled.

Contents

currentSpotFleetRequestState
The current state of the Spot fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating`

Required: Yes

previousSpotFleetRequestState
The previous state of the Spot fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating`

Required: Yes

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

Required: Yes

ClassicLinkInstance

Description

Describes a linked EC2-Classic instance.

Contents

groups
A list of security groups.

Type: GroupIdentifier (p. 503) list

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

tags
Any tags assigned to the instance.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

ClientData

Description

Describes the client-specific data.

Contents

Comment
A user-defined comment about the disk upload.

Type: String

Required: No

UploadEnd
The time that the disk upload ends.

Type: DateTime

Required: No

UploadSize
The size of the uploaded disk image, in GiB.

Type: Double

Required: No

UploadStart
The time that the disk upload starts.

Type: DateTime

Required: No

ConversionTask

Description

Describes a conversion task.

Contents

conversionTaskId
The ID of the conversion task.

Type: String

Required: Yes

expirationTime
The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

Required: No

importInstance
If the task is for importing an instance, this contains information about the import instance task.

Type: ImportInstanceTaskDetails (p. 513)

Required: No

importVolume
If the task is for importing a volume, this contains information about the import volume task.

Type: ImportVolumeTaskDetails (p. 516)

Required: No

state
The state of the conversion task.

Type: String

Valid Values: `active | cancelling | cancelled | completed`

Required: Yes

statusMessage
The status message related to the conversion task.

Type: String

Required: No

tags
Any tags assigned to the task.

Type: Tag (p. 586) list

Required: No

CreateVolumePermission

Description

Describes the user or group to be added or removed from the permissions for a volume.

Contents

Group (request), **group** (response)
The specific group that is to be added or removed from a volume's list of create volume permissions.

Type: String

Valid Values: `all`

Required: No

UserId (request), **userId** (response)
The specific AWS account ID that is to be added or removed from a volume's list of create volume permissions.

Type: String

Required: No

CreateVolumePermissionModifications

Description

Describes modifications to the permissions for a volume.

Contents

Add
Adds a specific AWS account ID or group to a volume's list of create volume permissions.

Type: CreateVolumePermission (p. 491) list

Required: No

Remove
Removes a specific AWS account ID or group from a volume's list of create volume permissions.

Type: CreateVolumePermission (p. 491) list

Required: No

CustomerGateway

Description

Describes a customer gateway.

Contents

bgpAsn
The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

Required: No

customerGatewayId
The ID of the customer gateway.

Type: String

Required: No

ipAddress
The Internet-routable IP address of the customer gateway's outside interface.

Type: String

Required: No

state
The current state of the customer gateway (`pending | available | deleting | deleted`).

Type: String

Required: No

tags
Any tags assigned to the customer gateway.

Type: Tag (p. 586) list

Required: No

type
The type of VPN connection the customer gateway supports (`ipsec.1`).

Type: String

Required: No

DhcpConfiguration

Description

Describes a DHCP configuration option.

Contents

Key (request), **key** (response)
The name of a DHCP option.

Type: String

Required: No

Values (request), **values** (response)
One or more values for the DHCP option.

Type: String list

Required: No

DhcpOptions

Description

Describes a set of DHCP options.

Contents

dhcpConfigurations
One or more DHCP options in the set.

Type: DhcpConfiguration (p. 493) list

Required: No

dhcpOptionsId
The ID of the set of DHCP options.

Type: String

Required: No

tags
Any tags assigned to the DHCP options set.

Type: Tag (p. 586) list

Required: No

DiskImage

Description

Describes a disk image.

Contents

Description
A description of the disk image.

Type: String

Required: No

Image
Information about the disk image.

Type: DiskImageDetail (p. 495)

Required: No

Volume
Information about the volume.

Type: VolumeDetail (p. 593)

Required: No

DiskImageDescription

Description

Describes a disk image.

Contents

checksum
The checksum computed for the disk image.

Type: String

Required: No

format
The disk image format.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: Yes

importManifestUrl
A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Required: Yes

size
The size of the disk image, in GiB.

Type: Long

Required: Yes

DiskImageDetail

Description

Describes a disk image.

Contents

Bytes
The size of the disk image, in GiB.

Type: Long

Required: Yes

Format
The disk image format.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: Yes

ImportManifestUrl
A presigned URL for the import manifest stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Required: Yes

DiskImageVolumeDescription

Description

Describes a disk image volume.

Contents

id
The volume identifier.

Type: String

Required: Yes

size
The size of the volume, in GiB.

Type: Long

Required: No

EbsBlockDevice

Description

Describes a block device for an EBS volume.

Contents

DeleteOnTermination (request), **deleteOnTermination** (response)
Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

Encrypted (request), **encrypted** (response)
Indicates whether the EBS volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption.

Type: Boolean

Required: No

Iops (request), **iops** (response)
The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS (SSD) volumes, this represents the number of IOPS that are provisioned for the volume. For General Purpose (SSD) volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose (SSD) baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the *Amazon Elastic Compute Cloud User Guide*.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes and 3 to 10000 for General Purpose (SSD) volumes.

Condition: This parameter is required for requests to create `io1` volumes; it is not used in requests to create `standard` or `gp2` volumes.

Type: Integer

Required: No

SnapshotId (request), **snapshotId** (response)
The ID of the snapshot.

Type: String

Required: No

VolumeSize (request), **volumeSize** (response)
The size of the volume, in GiB.

Constraints: `1-1024` for `standard` volumes, `1-16384` for `gp2` volumes, and `4-16384` for `io1` volumes. If you specify a snapshot, the volume size must be equal to or larger than the snapshot size.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Type: Integer

Required: No

VolumeType (request), **volumeType** (response)
The volume type. `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, and `standard` for Magnetic volumes.

Default: `standard`

Type: String

Valid Values: `standard | io1 | gp2`

Required: No

EbsInstanceBlockDevice

Description

Describes a parameter used to set up an EBS volume in a block device mapping.

Contents

attachTime
The time stamp when the attachment initiated.

Type: DateTime

Required: No

deleteOnTermination
Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

status
The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

volumeId
The ID of the EBS volume.

Type: String

Required: No

EbsInstanceBlockDeviceSpecification

Description

Contents

DeleteOnTermination
Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

VolumeId
The ID of the EBS volume.

Type: String

Required: No

EventInformation

Description

Describes a Spot fleet event.

Contents

eventDescription
The description of the event.

Type: String

Required: No

eventSubType
The event.

The following are the `error` events.

- `iamFleetRoleInvalid` - The Spot fleet did not have the required permissions either to launch or terminate an instance.
- `launchSpecTemporarilyBlacklisted` - The configuration is not valid and several attempts to launch instances have failed. For more information, see the description of the event.
- `spotFleetRequestConfigurationInvalid` - The configuration is not valid. For more information, see the description of the event.
- `spotInstanceCountLimitExceeded` - You've reached the limit on the number of Spot instances that you can launch.

The following are the `fleetRequestChange` events.

- `active` - The Spot fleet has been validated and Amazon EC2 is attempting to maintain the target number of running Spot instances.
- `cancelled` - The Spot fleet is canceled and has no running Spot instances. The Spot fleet will be deleted two days after its instances were terminated.
- `cancelled_running` - The Spot fleet is canceled and will not launch additional Spot instances, but its existing Spot instances continue to run until they are interrupted or terminated.
- `cancelled_terminating` - The Spot fleet is canceled and its Spot instances are terminating.
- `expired` - The Spot fleet request has expired. A subsequent event indicates that the instances were terminated, if the request was created with `TerminateInstancesWithExpiration` set.
- `price_update` - The bid price for a launch configuration was adjusted because it was too high. This change is permanent.
- `submitted` - The Spot fleet request is being evaluated and Amazon EC2 is preparing to launch the target number of Spot instances.

The following are the `instanceChange` events.

- `launched` - A bid was fulfilled and a new instance was launched.
- `terminated` - An instance was terminated by the user.

Type: String

Required: No

instanceId

The ID of the instance. This information is available only for `instanceChange` events.

Type: String

Required: No

ExportTask

Description

Describes an instance export task.

Contents

description

A description of the resource being exported.

Type: String

Required: No

exportTaskId
The ID of the export task.

Type: String

Required: No

exportToS3Task
Information about the export task.

Type: ExportToS3Task (p. 500)

Required: No

instanceExportDetails
Information about the instance to export.

Type: InstanceExportDetails (p. 524)

Required: No

state
The state of the export task.

Type: String

Valid Values: `active | cancelling | cancelled | completed`

Required: No

statusMessage
The status message related to the export task.

Type: String

Required: No

ExportToS3Task

Description

Describes the format and location for an instance export task.

Contents

containerFormat
The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: `ova`

Required: No

diskImageFormat
The format for the exported image.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: No

s3Bucket
The S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ_ACP permissions to the AWS account `vm-import-export@amazon.com`.

Type: String

Required: No

s3Key
The encryption key for your S3 bucket.

Type: String

Required: No

ExportToS3TaskSpecification

Description

Describes an instance export task.

Contents

ContainerFormat
The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: `ova`

Required: No

DiskImageFormat
The format for the exported image.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

Required: No

S3Bucket
The S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ_ACP permissions to the AWS account `vm-import-export@amazon.com`.

Type: String

Required: No

S3Prefix
The image is written to a single object in the S3 bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

Required: No

Filter

Description

A filter name and value pair that is used to return a more specific list of results. Filters can be used to match a set of resources by various criteria, such as tags, attributes, or IDs.

Contents

Name
The name of the filter. Filter names are case-sensitive.

Type: String

Required: No

Values
One or more filter values. Filter values are case-sensitive.

Type: String list

Required: No

FlowLog

Description

Describes a flow log.

Contents

creationTime
The date and time the flow log was created.

Type: DateTime

Required: No

deliverLogsErrorMessage
Information about the error that occurred. `Rate limited` indicates that CloudWatch logs throttling has been applied for one or more network interfaces. `Access error` indicates that the IAM role associated with the flow log does not have sufficient permissions to publish to CloudWatch Logs. `Unknown error` indicates an internal error.

Type: String

Required: No

deliverLogsPermissionArn
The ARN of the IAM role that posts logs to CloudWatch Logs.

Type: String

Required: No

deliverLogsStatus
The status of the logs delivery (`SUCCESS` | `FAILED`).

Type: String

Required: No

flowLogId
The flow log ID.

Type: String

Required: No

flowLogStatus
The status of the flow log (`ACTIVE`).

Type: String

Required: No

logGroupName
The name of the flow log group.

Type: String

Required: No

resourceId
The ID of the resource on which the flow log was created.

Type: String

Required: No

trafficType
The type of traffic captured for the flow log.

Type: String

Valid Values: `ACCEPT` | `REJECT` | `ALL`

Required: No

GroupIdentifier

Description

Describes a security group.

Contents

GroupId (request), **groupId** (response)
The ID of the security group.

Type: String

Required: No

GroupName (request), **groupName** (response)
The name of the security group.

Type: String

Required: No

HistoryRecord

Description

Describes an event in the history of the Spot fleet request.

Contents

eventInformation
Information about the event.

Type: EventInformation (p. 498)

Required: Yes

eventType
The event type.

- `error` - Indicates an error with the Spot fleet request.
- `fleetRequestChange` - Indicates a change in the status or configuration of the Spot fleet request.
- `instanceChange` - Indicates that an instance was launched or terminated.

Type: String

Valid Values: `instanceChange | fleetRequestChange | error`

Required: Yes

timestamp
The date and time of the event, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: Yes

IamInstanceProfile

Description

Describes an IAM instance profile.

Contents

arn
The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

id
The ID of the instance profile.

Type: String

Required: No

IamInstanceProfileSpecification

Description

Describes an IAM instance profile.

Contents

Arn (request), **arn** (response)
The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

Name (request), **name** (response)
The name of the instance profile.

Type: String

Required: No

IcmpTypeCode

Description

Describes the ICMP type and code.

Contents

Code (request), **code** (response)
The ICMP type. A value of -1 means all types.

Type: Integer

Required: No

Type (request), **type** (response)
The ICMP code. A value of -1 means all codes for the specified ICMP type.

Type: Integer

Required: No

Image

Description

Describes an image.

Contents

architecture
The architecture of the image.

Type: String

Valid Values: `i386` | `x86_64`

Required: No

blockDeviceMappings
Any block device mapping entries.

Type: BlockDeviceMapping (p. 485) list

Required: No

creationDate
The date and time the image was created.

Type: String

Required: No

description
The description of the AMI that was provided during image creation.

Type: String

Required: No

hypervisor
The hypervisor type of the image.

Type: String

Valid Values: `ovm` | `xen`

Required: No

imageId
The ID of the AMI.

Type: String

Required: No

imageLocation
The location of the AMI.

Type: String

Required: No

imageOwnerAlias
The AWS account alias (for example, `amazon`, `self`) or the AWS account ID of the AMI owner.

Type: String

Required: No

imageType
The type of image.

Type: String

Valid Values: `machine | kernel | ramdisk`

Required: No

kernelId
The kernel associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

name
The name of the AMI that was provided during image creation.

Type: String

Required: No

ownerId
The AWS account ID of the image owner.

Type: String

Required: No

platform
The value is `Windows` for Windows AMIs; otherwise blank.

Type: String

Valid Values: `Windows`

Required: No

productCodes
Any product codes associated with the AMI.

Type: ProductCode (p. 553) list

Required: No

public
Indicates whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

Required: No

ramdiskId
The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

rootDeviceName
The device name of the root device (for example, `/dev/sda1` or `/dev/xvda`).

Type: String

Required: No

rootDeviceType
The type of root device used by the AMI. The AMI can use an EBS volume or an instance store volume.

Type: String

Valid Values: `ebs | instance-store`

Required: No

sriovNetSupport
Specifies whether enhanced networking is enabled.

Type: String

Required: No

state
The current state of the AMI. If the state is `available`, the image is successfully registered and can be used to launch an instance.

Type: String

Valid Values: `pending | available | invalid | deregistered | transient | failed | error`

Required: No

stateReason
The reason for the state change.

Type: StateReason (p. 584)

Required: No

tags
Any tags assigned to the image.

Type: Tag (p. 586) list

Required: No

virtualizationType
The type of virtualization of the AMI.

Type: String

Valid Values: `hvm | paravirtual`

Required: No

ImageAttribute

Description

Describes an image attribute.

Contents

blockDeviceMappings
One or more block device mapping entries.

Type: BlockDeviceMapping (p. 485) list

Required: No

description
A description for the AMI.

Type: AttributeValue (p. 483)

Required: No

imageId
The ID of the AMI.

Type: String

Required: No

kernelId
The kernel ID.

Type: AttributeValue (p. 483)

Required: No

launchPermissions
One or more launch permissions.

Type: LaunchPermission (p. 537) list

Required: No

productCodes
One or more product codes.

Type: ProductCode (p. 553) list

Required: No

ramdiskId
The RAM disk ID.

Type: AttributeValue (p. 483)

Required: No

sriovNetSupport
The value to use for a resource attribute.

Type: AttributeValue (p. 483)

Required: No

ImageDiskContainer

Description

Describes the disk container object for an import image task.

Contents

Description
The description of the disk image.

Type: String

Required: No

DeviceName
The block device mapping for the disk.

Type: String

Required: No

Format
The format of the disk image being imported.

Valid values: `RAW` | `VHD` | `VMDK` | `OVA`

Type: String

Required: No

SnapshotId
The ID of the EBS snapshot to be used for importing the snapshot.

Type: String

Required: No

Url
The URL to the Amazon S3-based disk image being imported. The URL can either be a https URL (https://..) or an Amazon S3 URL (s3://..)

Type: String

Required: No

UserBucket
The S3 bucket for the disk image.

Type: UserBucket (p. 588)

Required: No

ImportImageTask

Description

Describes an import image task.

Contents

architecture
The architecture of the virtual machine.

Valid values: `i386` | `x86_64`

Type: String

Required: No

description
A description of the import task.

Type: String

Required: No

hypervisor
The target hypervisor for the import task.

Valid values: `xen`

Type: String

Required: No

imageId
The ID of the Amazon Machine Image (AMI) of the imported virtual machine.

Type: String

Required: No

importTaskId
The ID of the import image task.

Type: String

Required: No

licenseType
The license type of the virtual machine.

Type: String

Required: No

platform
The description string for the import image task.

Type: String

Required: No

progress
The percentage of progress of the import image task.

Type: String

Required: No

snapshotDetails
Information about the snapshots.

Type: SnapshotDetail (p. 571) list

Required: No

status
A brief status for the import image task.

Type: String

Required: No

statusMessage
A descriptive status message for the import image task.

Type: String

Required: No

ImportInstanceLaunchSpecification

Description

Describes the launch specification for VM import.

Contents

AdditionalInfo
Reserved.

Type: String

Required: No

Architecture
The architecture of the instance.

Type: String

Valid Values: `i386 | x86_64`

Required: No

GroupIds
One or more security group IDs.

Type: String list

Required: No

GroupNames
One or more security group names.

Type: String list

Required: No

InstanceInitiatedShutdownBehavior
Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid Values: `stop | terminate`

Required: No

InstanceType
The instance type. For more information about the instance types that you can import, see Before You Get Started in the Amazon Elastic Compute Cloud User Guide.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

Monitoring
Indicates whether monitoring is enabled.

Type: Boolean

Required: No

Placement
The placement information for the instance.

Type: Placement (p. 548)

Required: No

PrivateIpAddress
[EC2-VPC] An available IP address from the IP address range of the subnet.

Type: String

Required: No

SubnetId
[EC2-VPC] The ID of the subnet in which to launch the instance.

Type: String

Required: No

UserData
The Base64-encoded MIME user data to be made available to the instance.

Type: UserData (p. 589)

Required: No

ImportInstanceTaskDetails

Description

Describes an import instance task.

Contents

description
A description of the task.

Type: String

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

platform
The instance operating system.

Type: String

Valid Values: `Windows`

Required: No

volumes
One or more volumes.

Type: ImportInstanceVolumeDetailItem (p. 514) list

Required: Yes

ImportInstanceVolumeDetailItem

Description

Describes an import volume task.

Contents

availabilityZone
The Availability Zone where the resulting instance will reside.

Type: String

Required: Yes

bytesConverted
The number of bytes converted so far.

Type: Long

Required: Yes

description
A description of the task.

Type: String

Required: No

image
The image.

Type: DiskImageDescription (p. 494)

Required: Yes

status
The status of the import of this particular disk image.

Type: String

Required: Yes

statusMessage
The status information or errors related to the disk image.

Type: String

Required: No

volume
The volume.

Type: DiskImageVolumeDescription (p. 496)

Required: Yes

ImportSnapshotTask

Description

Describes an import snapshot task.

Contents

description
A description of the import snapshot task.

Type: String

Required: No

importTaskId
The ID of the import snapshot task.

Type: String

Required: No

snapshotTaskDetail
Describes an import snapshot task.

Type: SnapshotTaskDetail (p. 573)

Required: No

ImportVolumeTaskDetails

Description

Describes an import volume task.

Contents

availabilityZone
The Availability Zone where the resulting volume will reside.

Type: String

Required: Yes

bytesConverted
The number of bytes converted so far.

Type: Long

Required: Yes

description
The description you provided when starting the import volume task.

Type: String

Required: No

image
The image.

Type: DiskImageDescription (p. 494)

Required: Yes

volume
The volume.

Type: DiskImageVolumeDescription (p. 496)

Required: Yes

Instance

Description

Describes an instance.

Contents

amiLaunchIndex
The AMI launch index, which can be used to find this instance in the launch group.

Type: Integer

Required: No

architecture
The architecture of the image.

Type: String

Valid Values: `i386 | x86_64`

Required: No

blockDeviceMappings
Any block device mapping entries for the instance.

Type: InstanceBlockDeviceMapping (p. 523) list

Required: No

clientToken
The idempotency token you provided when you launched the instance.

Type: String

Required: No

ebsOptimized
Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Required: No

hypervisor
The hypervisor type of the instance.

Type: String

Valid Values: `ovm | xen`

Required: No

iamInstanceProfile
The IAM instance profile associated with the instance.

Type: IamInstanceProfile (p. 504)

Required: No

imageId
The ID of the AMI used to launch the instance.

Type: String

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

instanceLifecycle
Indicates whether this is a Spot Instance.

Type: String

Valid Values: `spot`

Required: No

instanceType
The instance type.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

kernelId
The kernel associated with this instance.

Type: String

Required: No

keyName
The name of the key pair, if this instance was launched with an associated key pair.

Type: String

Required: No

launchTime
The time the instance was launched.

Type: DateTime

Required: No

monitoring
The monitoring information for the instance.

Type: Monitoring (p. 540)

Required: No

networkInterfaces
[EC2-VPC] One or more network interfaces for the instance.

Type: InstanceNetworkInterface (p. 525) list

Required: No

placement
The location where the instance launched.

Type: Placement (p. 548)

Required: No

platform
The value is `Windows` for Windows instances; otherwise blank.

Type: String

Valid Values: `Windows`

Required: No

privateDnsName
The private DNS name assigned to the instance. This DNS name can only be used inside the Amazon EC2 network. This name is not available until the instance enters the `running` state.

Type: String

Required: No

privateIpAddress
The private IP address assigned to the instance.

Type: String

Required: No

productCodes
The product codes attached to this instance.

Type: ProductCode (p. 553) list

Required: No

publicDnsName
The public DNS name assigned to the instance. This name is not available until the instance enters the `running` state.

Type: String

Required: No

publicIpAddress
The public IP address assigned to the instance.

Type: String

Required: No

ramdiskId
The RAM disk associated with this instance.

Type: String

Required: No

rootDeviceName
The root device name (for example, `/dev/sda1` or `/dev/xvda`).

Type: String

Required: No

rootDeviceType
The root device type used by the AMI. The AMI can use an EBS volume or an instance store volume.

Type: String

Valid Values: `ebs | instance-store`

Required: No

securityGroups
One or more security groups for the instance.

Type: GroupIdentifier (p. 503) list

Required: No

sourceDestCheck
Specifies whether to enable an instance launched in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, see NAT Instances in the *Amazon Virtual Private Cloud User Guide*.

Type: Boolean

Required: No

spotInstanceRequestId
The ID of the Spot Instance request.

Type: String

Required: No

sriovNetSupport
Specifies whether enhanced networking is enabled.

Type: String

Required: No

state
The current state of the instance.

Type: InstanceState (p. 530)

Required: No

stateReason
The reason for the most recent state transition.

Type: StateReason (p. 584)

Required: No

stateTransitionReason
The reason for the most recent state transition. This might be an empty string.

Type: String

Required: No

subnetId
The ID of the subnet in which the instance is running.

Type: String

Required: No

tags
Any tags assigned to the instance.

Type: Tag (p. 586) list

Required: No

virtualizationType
The virtualization type of the instance.

Type: String

Valid Values: `hvm | paravirtual`

Required: No

vpcId
The ID of the VPC in which the instance is running.

Type: String

Required: No

InstanceAttribute

Description

Describes an instance attribute.

Contents

blockDeviceMappings
The block device mapping of the instance.

Type: InstanceBlockDeviceMapping (p. 523) list

Required: No

disableApiTermination
If the value is `true`, you can't terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: AttributeBooleanValue (p. 483)

Required: No

ebsOptimized
Indicates whether the instance is optimized for EBS I/O.

Type: AttributeBooleanValue (p. 483)

Required: No

groups
The security groups associated with the instance.

Type: GroupIdentifier (p. 503) list

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

instanceInitiatedShutdownBehavior
Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: AttributeValue (p. 483)

Required: No

instanceType
The instance type.

Type: AttributeValue (p. 483)

Required: No

kernelId
The kernel ID.

Type: AttributeValue (p. 483)

Required: No

productCodes
A list of product codes.

Type: ProductCode (p. 553) list

Required: No

ramdiskId
The RAM disk ID.

Type: AttributeValue (p. 483)

Required: No

rootDeviceName
The name of the root device (for example, `/dev/sda1` or `/dev/xvda`).

Type: AttributeValue (p. 483)

Required: No

sourceDestCheck
Indicates whether source/destination checking is enabled. A value of `true` means checking is enabled, and `false` means checking is disabled. This value must be `false` for a NAT instance to perform NAT.

Type: AttributeBooleanValue (p. 483)

Required: No

sriovNetSupport
The value to use for a resource attribute.

Type: AttributeValue (p. 483)

Required: No

userData
The Base64-encoded MIME user data.

Type: AttributeValue (p. 483)

Required: No

InstanceBlockDeviceMapping

Description

Describes a block device mapping.

Contents

deviceName
The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

ebs
Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsInstanceBlockDevice (p. 497)

Required: No

InstanceBlockDeviceMappingSpecification

Description

Describes a block device mapping entry.

Contents

DeviceName
The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

Ebs
Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsInstanceBlockDeviceSpecification (p. 498)

Required: No

NoDevice
suppress the specified device included in the block device mapping.

Type: String

Required: No

VirtualName
The virtual device name.

Type: String

Required: No

InstanceCount

Description

Describes a Reserved Instance listing state.

Contents

instanceCount
The number of listed Reserved Instances in the state specified by the `state`.

Type: Integer

Required: No

state
The states of the listed Reserved Instances.

Type: String

Valid Values: `available | sold | cancelled | pending`

Required: No

InstanceExportDetails

Description

Describes an instance to export.

Contents

instanceId
The ID of the resource being exported.

Type: String

Required: No

targetEnvironment
The target virtualization environment.

Type: String

Valid Values: `citrix | vmware | microsoft`

Required: No

InstanceMonitoring

Description

Describes the monitoring information of the instance.

Contents

instanceId
The ID of the instance.

Type: String

Required: No

monitoring
The monitoring information.

Type: Monitoring (p. 540)

Required: No

InstanceNetworkInterface

Description

Describes a network interface.

Contents

association
The association information for an Elastic IP associated with the network interface.

Type: InstanceNetworkInterfaceAssociation (p. 527)

Required: No

attachment
The network interface attachment.

Type: InstanceNetworkInterfaceAttachment (p. 527)

Required: No

description
The description.

Type: String

Required: No

groups
One or more security groups.

Type: GroupIdentifier (p. 503) list

Required: No

macAddress
The MAC address.

Type: String

Required: No

networkInterfaceId
The ID of the network interface.

Type: String

Required: No

ownerId
The ID of the AWS account that created the network interface.

Type: String

Required: No

privateDnsName
The private DNS name.

Type: String

Required: No

privateIpAddress
The IP address of the network interface within the subnet.

Type: String

Required: No

privateIpAddresses
The private IP addresses associated with the network interface.

Type: InstancePrivateIpAddress (p. 529) list

Required: No

sourceDestCheck
Indicates whether to validate network traffic to or from this network interface.

Type: Boolean

Required: No

status
The status of the network interface.

Type: String

Valid Values: `available | attaching | in-use | detaching`

Required: No

subnetId
The ID of the subnet.

Type: String

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

InstanceNetworkInterfaceAssociation

Description

Describes association information for an Elastic IP address.

Contents

ipOwnerId
The ID of the owner of the Elastic IP address.

Type: String

Required: No

publicDnsName
The public DNS name.

Type: String

Required: No

publicIp
The public IP address or Elastic IP address bound to the network interface.

Type: String

Required: No

InstanceNetworkInterfaceAttachment

Description

Describes a network interface attachment.

Contents

attachmentId
The ID of the network interface attachment.

Type: String

Required: No

attachTime
The time stamp when the attachment initiated.

Type: DateTime

Required: No

deleteOnTermination
Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

deviceIndex
The index of the device on the instance for the network interface attachment.

Type: Integer

Required: No

status
The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

InstanceNetworkInterfaceSpecification

Description

Describes a network interface.

Contents

AssociatePublicIpAddress (request), **associatePublicIpAddress** (response)
Indicates whether to assign a public IP address to an instance you launch in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

Type: Boolean

Required: No

DeleteOnTermination (request), **deleteOnTermination** (response)
If set to `true`, the interface is deleted when the instance is terminated. You can specify `true` only if creating a new network interface when launching an instance.

Type: Boolean

Required: No

Description (request), **description** (response)
The description of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

DeviceIndex (request), **deviceIndex** (response)
The index of the device on the instance for the network interface attachment. If you are specifying a network interface in a RunInstances (p. 460) request, you must provide the device index.

Type: Integer

Required: No

Groups (request), **groups** (response)
The IDs of the security groups for the network interface. Applies only if creating a network interface when launching an instance.

Type: String list

Required: No

NetworkInterfaceId (request), **networkInterfaceId** (response)
The ID of the network interface.

Type: String

Required: No

PrivateIpAddress (request), **privateIpAddress** (response)
The private IP address of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

PrivateIpAddresses (request), **privateIpAddresses** (response)
One or more private IP addresses to assign to the network interface. Only one private IP address can be designated as primary.

Type: PrivateIpAddressSpecification (p. 552) list

Required: No

SecondaryPrivateIpAddressCount (request), **secondaryPrivateIpAddressCount** (response)
The number of secondary private IP addresses. You can't specify this option and specify more than one private IP address using the private IP addresses option.

Type: Integer

Required: No

SubnetId (request), **subnetId** (response)
The ID of the subnet associated with the network string. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

InstancePrivateIpAddress

Description

Describes a private IP address.

Contents

association
The association information for an Elastic IP address for the network interface.

Type: InstanceNetworkInterfaceAssociation (p. 527)

Required: No

primary
Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

Required: No

privateDnsName
The private DNS name.

Type: String

Required: No

privateIpAddress
The private IP address of the network interface.

Type: String

Required: No

InstanceState

Description

Describes the current state of the instance.

Contents

code
The low byte represents the state. The high byte is an opaque internal value and should be ignored.

- `0` : `pending`
- `16` : `running`
- `32` : `shutting-down`
- `48` : `terminated`
- `64` : `stopping`
- `80` : `stopped`

Type: Integer

Required: No

name
The current state of the instance.

Type: String

Valid Values: `pending | running | shutting-down | terminated | stopping | stopped`

Required: No

InstanceStateChange

Description

Describes an instance state change.

Contents

currentState
The current state of the instance.

Type: InstanceState (p. 530)

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

previousState
The previous state of the instance.

Type: InstanceState (p. 530)

Required: No

InstanceStatus

Description

Describes the status of an instance.

Contents

availabilityZone
The Availability Zone of the instance.

Type: String

Required: No

events
Any scheduled events associated with the instance.

Type: InstanceStatusEvent (p. 533) list

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

instanceState
The intended state of the instance. DescribeInstanceStatus (p. 232) requires that an instance be in the `running` state.

Type: InstanceState (p. 530)

Required: No

instanceStatus
Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.

Type: InstanceStatusSummary (p. 533)

Required: No

systemStatus
Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.

Type: InstanceStatusSummary (p. 533)

Required: No

InstanceStatusDetails

Description

Describes the instance status.

Contents

impairedSince
The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: DateTime

Required: No

name
The type of instance status.

Type: String

Valid Values: `reachability`

Required: No

status
The status.

Type: String

Valid Values: `passed | failed | insufficient-data | initializing`

Required: No

InstanceStatusEvent

Description

Describes a scheduled event for an instance.

Contents

code
The event code.

Type: String

Valid Values: `instance-reboot | system-reboot | system-maintenance | instance-retirement | instance-stop`

Required: No

description
A description of the event.

After a scheduled event is completed, it can still be described for up to a week. If the event has been completed, this description starts with the following text: [Completed].

Type: String

Required: No

notAfter
The latest scheduled end time for the event.

Type: DateTime

Required: No

notBefore
The earliest scheduled start time for the event.

Type: DateTime

Required: No

InstanceStatusSummary

Description

Describes the status of an instance.

Contents

details
The system instance health or application instance health.

Type: InstanceStatusDetails (p. 532) list

Required: No

status
The status.

Type: String

Valid Values: `ok | impaired | insufficient-data | not-applicable | initializing`

Required: No

InternetGateway

Description

Describes an Internet gateway.

Contents

attachments
Any VPCs attached to the Internet gateway.

Type: InternetGatewayAttachment (p. 534) list

Required: No

internetGatewayId
The ID of the Internet gateway.

Type: String

Required: No

tags
Any tags assigned to the Internet gateway.

Type: Tag (p. 586) list

Required: No

InternetGatewayAttachment

Description

Describes the attachment of a VPC to an Internet gateway.

Contents

state
The current state of the attachment.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

IpPermission

Description

Describes a security group rule.

Contents

FromPort (request), **fromPort** (response)
The start of port range for the TCP and UDP protocols, or an ICMP type number. A value of `-1` indicates all ICMP types.

Type: Integer

Required: No

IpProtocol (request), **ipProtocol** (response)
The protocol.

When you call DescribeSecurityGroups (p. 278), the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`). For a list of protocol numbers, see Protocol Numbers. (VPC only) When you call AuthorizeSecurityGroupIngress (p. 40), you can use `-1` to specify all.

Type: String

Required: No

IpRanges (request), **ipRanges** (response)
One or more IP ranges.

Type: IpRange (p. 536) list

Required: No

PrefixListIds (request), **prefixListIds** (response)
(Valid for AuthorizeSecurityGroupEgress (p. 37), RevokeSecurityGroupEgress (p. 454) and DescribeSecurityGroups (p. 278) only) One or more prefix list IDs for an AWS service. In an AuthorizeSecurityGroupEgress (p. 37) request, this is the AWS service that you want to access through a VPC endpoint from instances associated with the security group.

Type: PrefixListId (p. 550) list

Required: No

ToPort (request), **toPort** (response)
The end of port range for the TCP and UDP protocols, or an ICMP code. A value of `-1` indicates all ICMP codes for the specified ICMP type.

Type: Integer

Required: No

UserIdGroupPairs (request), **userIdGroupPairs** (response)
One or more security group and AWS account ID pairs.

Type: UserIdGroupPair (p. 589) list

Required: No

IpRange

Description

Describes an IP range.

Contents

CidrIp (request), **cidrIp** (response)
The CIDR range. You can either specify a CIDR range or a source security group, not both.

Type: String

Required: No

KeyPair

Description

Describes a key pair.

Contents

keyFingerprint
The SHA-1 digest of the DER encoded private key.

Type: String

Required: No

keyMaterial
An unencrypted PEM encoded RSA private key.

Type: String

Required: No

keyName
The name of the key pair.

Type: String

Required: No

KeyPairInfo

Description

Describes a key pair.

Contents

keyFingerprint
If you used CreateKeyPair (p. 81) to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used ImportKeyPair (p. 381) to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of RFC4716.

Type: String

Required: No

keyName
The name of the key pair.

Type: String

Required: No

LaunchPermission

Description

Describes a launch permission.

Contents

Group (request), **group** (response)
The name of the group.

Type: String

Valid Values: `all`

Required: No

UserId (request), **userId** (response)
The AWS account ID.

Type: String

Required: No

LaunchPermissionModifications

Description

Describes a launch permission modification.

Contents

Add
The AWS account ID to add to the list of launch permissions for the AMI.

Type: LaunchPermission (p. 537) list

Required: No

Remove
The AWS account ID to remove from the list of launch permissions for the AMI.

Type: LaunchPermission (p. 537) list

Required: No

LaunchSpecification

Description

Describes the launch specification for an instance.

Contents

AddressingType (request), **addressingType** (response)
Deprecated.

Type: String

Required: No

BlockDeviceMappings (request), **blockDeviceMappings** (response)
One or more block device mapping entries.

Type: BlockDeviceMapping (p. 485) list

Required: No

EbsOptimized (request), **ebsOptimized** (response)
Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

IamInstanceProfile (request), **iamInstanceProfile** (response)
The IAM instance profile.

Type: IamInstanceProfileSpecification (p. 505)

Required: No

ImageId (request), **imageId** (response)
The ID of the AMI.

Type: String

Required: No

InstanceType (request), **instanceType** (response)
The instance type.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

KernelId (request), **kernelId** (response)
The ID of the kernel.

Type: String

Required: No

KeyName (request), **keyName** (response)
The name of the key pair.

Type: String

Required: No

MonitoringEnabled (request), **monitoringEnabled** (response)
Enables monitoring for the instance.

Default: Disabled

Type: Boolean

Required: No

NetworkInterfaces (request), **networkInterfaces** (response)
One or more network interfaces.

Type: InstanceNetworkInterfaceSpecification (p. 528) list

Required: No

Placement (request), **placement** (response)
The placement information for the instance.

Type: SpotPlacement (p. 582)

Required: No

RamdiskId (request), **ramdiskId** (response)
The ID of the RAM disk.

Type: String

Required: No

SecurityGroups (request), **securityGroups** (response)
One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.

Type: GroupIdentifier (p. 503) list

Required: No

SubnetId (request), **subnetId** (response)
The ID of the subnet in which to launch the instance.

Type: String

Required: No

UserData (request), **userData** (response)
The Base64-encoded MIME user data to make available to the instances.

Type: String

Required: No

Monitoring

Description

Describes the monitoring for the instance.

Contents

state
Indicates whether monitoring is enabled for the instance.

Type: String

Valid Values: `disabled | disabling | enabled | pending`

Required: No

MovingAddressStatus

Description

Describes the status of a moving Elastic IP address.

Contents

moveStatus
The status of the Elastic IP address that's being moved to the EC2-VPC platform, or restored to the EC2-Classic platform.

Type: String

Valid Values: `movingToVpc | restoringToClassic`

Required: No

publicIp
The Elastic IP address.

Type: String

Required: No

NetworkAcl

Description

Describes a network ACL.

Contents

associations
Any associations between the network ACL and one or more subnets

Type: NetworkAclAssociation (p. 542) list

Required: No

entries
One or more entries (rules) in the network ACL.

Type: NetworkAclEntry (p. 542) list

Required: No

isDefault
Indicates whether this is the default network ACL for the VPC.

Type: Boolean

Required: No

networkAclId
The ID of the network ACL.

Type: String

Required: No

tags
Any tags assigned to the network ACL.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC for the network ACL.

Type: String

Required: No

NetworkAclAssociation

Description

Describes an association between a network ACL and a subnet.

Contents

networkAclAssociationId
The ID of the association between a network ACL and a subnet.

Type: String

Required: No

networkAclId
The ID of the network ACL.

Type: String

Required: No

subnetId
The ID of the subnet.

Type: String

Required: No

NetworkAclEntry

Description

Describes an entry in a network ACL.

Contents

cidrBlock
The network range to allow or deny, in CIDR notation.

Type: String

Required: No

egress
Indicates whether the rule is an egress rule (applied to traffic leaving the subnet).

Type: Boolean

Required: No

icmpTypeCode
ICMP protocol: The ICMP type and code.

Type: IcmpTypeCode (p. 505)

Required: No

portRange
TCP or UDP protocols: The range of ports the rule applies to.

Type: PortRange (p. 549)

Required: No

protocol
The protocol. A value of `-1` means all protocols.

Type: String

Required: No

ruleAction
Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: No

ruleNumber
The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

Required: No

NetworkInterface

Description

Describes a network interface.

Contents

association
The association information for an Elastic IP associated with the network interface.

Type: NetworkInterfaceAssociation (p. 545)

Required: No

attachment
The network interface attachment.

Type: NetworkInterfaceAttachment (p. 546)

Required: No

availabilityZone
The Availability Zone.

Type: String

Required: No

description
A description.

Type: String

Required: No

groups
Any security groups for the network interface.

Type: GroupIdentifier (p. 503) list

Required: No

macAddress
The MAC address.

Type: String

Required: No

networkInterfaceId
The ID of the network interface.

Type: String

Required: No

ownerId
The AWS account ID of the owner of the network interface.

Type: String

Required: No

privateDnsName
The private DNS name.

Type: String

Required: No

privateIpAddress
The IP address of the network interface within the subnet.

Type: String

Required: No

privateIpAddresses
The private IP addresses associated with the network interface.

Type: NetworkInterfacePrivateIpAddress (p. 547) list

Required: No

requesterId
The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

requesterManaged
Indicates whether the network interface is being managed by AWS.

Type: Boolean

Required: No

sourceDestCheck
Indicates whether traffic to or from the instance is validated.

Type: Boolean

Required: No

status
The status of the network interface.

Type: String

Valid Values: `available | attaching | in-use | detaching`

Required: No

subnetId
The ID of the subnet.

Type: String

Required: No

tagSet
Any tags assigned to the network interface.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

NetworkInterfaceAssociation

Description

Describes association information for an Elastic IP address.

Contents

allocationId
The allocation ID.

Type: String

Required: No

associationId
The association ID.

Type: String

Required: No

ipOwnerId
The ID of the Elastic IP address owner.

Type: String

Required: No

publicDnsName
The public DNS name.

Type: String

Required: No

publicIp
The address of the Elastic IP address bound to the network interface.

Type: String

Required: No

NetworkInterfaceAttachment

Description

Describes a network interface attachment.

Contents

attachmentId
The ID of the network interface attachment.

Type: String

Required: No

attachTime
The timestamp indicating when the attachment initiated.

Type: DateTime

Required: No

deleteOnTermination
Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

deviceIndex
The device index of the network interface attachment on the instance.

Type: Integer

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

instanceOwnerId
The AWS account ID of the owner of the instance.

Type: String

Required: No

status
The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

NetworkInterfaceAttachmentChanges

Description

Describes an attachment change.

Contents

AttachmentId
The ID of the network interface attachment.

Type: String

Required: No

DeleteOnTermination
Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

NetworkInterfacePrivateIpAddress

Description

Describes the private IP address of a network interface.

Contents

association
The association information for an Elastic IP address associated with the network interface.

Type: NetworkInterfaceAssociation (p. 545)

Required: No

primary
Indicates whether this IP address is the primary private IP address of the network interface.

Type: Boolean

Required: No

privateDnsName
The private DNS name.

Type: String

Required: No

privateIpAddress
The private IP address.

Type: String

Required: No

Placement

Description

Describes the placement for the instance.

Contents

AvailabilityZone (request), **availabilityZone** (response)
The Availability Zone of the instance.

Type: String

Required: No

GroupName (request), **groupName** (response)
The name of the placement group the instance is in (for cluster compute instances).

Type: String

Required: No

Tenancy (request), **tenancy** (response)
The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of `dedicated` runs on single-tenant hardware.

Type: String

Valid Values: `default | dedicated`

Required: No

PlacementGroup

Description

Describes a placement group.

Contents

groupName
The name of the placement group.

Type: String

Required: No

state
The state of the placement group.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

strategy
The placement strategy.

Type: String

Valid Values: `cluster`

Required: No

PortRange

Description

Describes a range of ports.

Contents

From (request), **from** (response)
The first port in the range.

Type: Integer

Required: No

To (request), **to** (response)
The last port in the range.

Type: Integer

Required: No

PrefixList

Description

Describes prefixes for AWS services.

Contents

cidrs
The IP address range of the AWS service.

Type: String list

Required: No

prefixListId
The ID of the prefix.

Type: String

Required: No

prefixListName
The name of the prefix.

Type: String

Required: No

PrefixListId

Description

The ID of the prefix.

Contents

PrefixListId (request), **prefixListId** (response)
The ID of the prefix.

Type: String

Required: No

PriceSchedule

Description

Describes the price for a Reserved Instance.

Contents

active
The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

Required: No

currencyCode
The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

price
The fixed price for the term.

Type: Double

Required: No

term
The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

PriceScheduleSpecification

Description

Describes the price for a Reserved Instance.

Contents

CurrencyCode
The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

Price
The fixed price for the term.

Type: Double

Required: No

Term
The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

PricingDetail

Description

Describes a Reserved Instance offering.

Contents

count
The number of instances available for the price.

Type: Integer

Required: No

price
The price per instance.

Type: Double

Required: No

PrivateIpAddressSpecification

Description

Describes a secondary private IP address for a network interface.

Contents

Primary (request), **primary** (response)
Indicates whether the private IP address is the primary private IP address. Only one IP address can be designated as primary.

Type: Boolean

Required: No

PrivateIpAddress (request), **privateIpAddress** (response)
The private IP addresses.

Type: String

Required: Yes

ProductCode

Description

Describes a product code.

Contents

productCodeId
The product code.

Type: String

Required: No

productCodeType
The type of product code.

Type: String

Valid Values: `devpay | marketplace`

Required: No

PropagatingVgw

Description

Describes a virtual private gateway propagating route.

Contents

gatewayId
The ID of the virtual private gateway (VGW).

Type: String

Required: No

RecurringCharge

Description

Describes a recurring charge.

Contents

amount
The amount of the recurring charge.

Type: Double

Required: No

frequency
The frequency of the recurring charge.

Type: String

Valid Values: `Hourly`

Required: No

Region

Description

Describes a region.

Contents

endpoint
The region service endpoint.

Type: String

Required: No

regionName
The name of the region.

Type: String

Required: No

Reservation

Description

Describes a reservation.

Contents

groups
One or more security groups.

Type: GroupIdentifier (p. 503) list

Required: No

instances
One or more instances.

Type: Instance (p. 516) list

Required: No

ownerId
The ID of the AWS account that owns the reservation.

Type: String

Required: No

requesterId
The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

reservationId
The ID of the reservation.

Type: String

Required: No

ReservedInstanceLimitPrice

Description

Describes the limit price of a Reserved Instance offering.

Contents

Amount
Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount * price).

Type: Double

Required: No

CurrencyCode
The currency in which the `limitPrice` amount is specified. At this time, the only supported currency is `USD`.

Type: String

Valid Values: `USD`

Required: No

ReservedInstances

Description

Describes a Reserved Instance.

Contents

availabilityZone
The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

currencyCode
The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is `USD`.

Type: String

Valid Values: `USD`

Required: No

duration
The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

end
The time when the Reserved Instance expires.

Type: DateTime

Required: No

fixedPrice
The purchase price of the Reserved Instance.

Type: Float

Required: No

instanceCount
The number of Reserved Instances purchased.

Type: Integer

Required: No

instanceTenancy
The tenancy of the reserved instance.

Type: String

Valid Values: `default | dedicated`

Required: No

instanceType
The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

offeringType
The Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

productDescription
The Reserved Instance product platform description.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

recurringCharges
The recurring charge tag assigned to the resource.

Type: RecurringCharge (p. 553) list

Required: No

reservedInstancesId
The ID of the Reserved Instance.

Type: String

Required: No

start
The date and time the Reserved Instance started.

Type: DateTime

Required: No

state
The state of the Reserved Instance purchase.

Type: String

Valid Values: `payment-pending | active | payment-failed | retired`

Required: No

tags
Any tags assigned to the resource.

Type: Tag (p. 586) list

Required: No

usagePrice
The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

ReservedInstancesConfiguration

Description

Describes the configuration settings for the modified Reserved Instances.

Contents

AvailabilityZone (request), **availabilityZone** (response)
The Availability Zone for the modified Reserved Instances.

Type: String

Required: No

InstanceCount (request), **instanceCount** (response)
The number of modified Reserved Instances.

Type: Integer

Required: No

InstanceType (request), **instanceType** (response)
The instance type for the modified Reserved Instances.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

Platform (request), **platform** (response)
The network platform of the modified Reserved Instances, which is either EC2-Classic or EC2-VPC.

Type: String

Required: No

ReservedInstancesId

Description

Describes the ID of a Reserved Instance.

Contents

reservedInstancesId
The ID of the Reserved Instance.

Type: String

Required: No

ReservedInstancesListing

Description

Describes a Reserved Instance listing.

Contents

clientToken
A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.

Type: String

Required: No

createDate
The time the listing was created.

Type: DateTime

Required: No

instanceCounts
The number of instances in this state.

Type: InstanceCount (p. 524) list

Required: No

priceSchedules
The price of the Reserved Instance listing.

Type: PriceSchedule (p. 550) list

Required: No

reservedInstancesId
The ID of the Reserved Instance.

Type: String

Required: No

reservedInstancesListingId
The ID of the Reserved Instance listing.

Type: String

Required: No

status
The status of the Reserved Instance listing.

Type: String

Valid Values: `active | pending | cancelled | closed`

Required: No

statusMessage
The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

Required: No

tags
Any tags assigned to the resource.

Type: Tag (p. 586) list

Required: No

updateDate
The last modified timestamp of the listing.

Type: DateTime

Required: No

ReservedInstancesModification

Description

Describes a Reserved Instance modification.

Contents

clientToken
A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.

Type: String

Required: No

createDate
The time when the modification request was created.

Type: DateTime

Required: No

effectiveDate
The time for the modification to become effective.

Type: DateTime

Required: No

modificationResults
Contains target configurations along with their corresponding new Reserved Instance IDs.

Type: ReservedInstancesModificationResult (p. 562) list

Required: No

reservedInstancesIds
The IDs of one or more Reserved Instances.

Type: ReservedInstancesId (p. 559) list

Required: No

reservedInstancesModificationId
A unique ID for the Reserved Instance modification.

Type: String

Required: No

status
The status of the Reserved Instances modification request.

Type: String

Required: No

statusMessage
The reason for the status.

Type: String

Required: No

updateDate
The time when the modification request was last updated.

Type: DateTime

Required: No

ReservedInstancesModificationResult

Description

Contents

reservedInstancesId
The ID for the Reserved Instances that were created as part of the modification request. This field is only available when the modification is fulfilled.

Type: String

Required: No

targetConfiguration
The target Reserved Instances configurations supplied as part of the modification request.

Type: ReservedInstancesConfiguration (p. 558)

Required: No

ReservedInstancesOffering

Description

Describes a Reserved Instance offering.

Contents

availabilityZone
The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

currencyCode
The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

duration
The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

fixedPrice
The purchase price of the Reserved Instance.

Type: Float

Required: No

instanceTenancy
The tenancy of the reserved instance.

Type: String

Valid Values: `default | dedicated`

Required: No

instanceType
The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

marketplace
Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. If it's a Reserved Instance Marketplace offering, this is `true`.

Type: Boolean

Required: No

offeringType
The Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

pricingDetails
The pricing details of the Reserved Instance offering.

Type: PricingDetail (p. 552) list

Required: No

productDescription
The Reserved Instance product platform description.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

recurringCharges
The recurring charge tag assigned to the resource.

Type: RecurringCharge (p. 553) list

Required: No

reservedInstancesOfferingId
The ID of the Reserved Instance offering.

Type: String

Required: No

usagePrice
The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

Route

Description

Describes a route in a route table.

Contents

destinationCidrBlock
The CIDR block used for the destination match.

Type: String

Required: No

destinationPrefixListId
The prefix of the AWS service.

Type: String

Required: No

gatewayId
The ID of a gateway attached to your VPC.

Type: String

Required: No

instanceId
The ID of a NAT instance in your VPC.

Type: String

Required: No

instanceOwnerId
The AWS account ID of the owner of the instance.

Type: String

Required: No

networkInterfaceId
The ID of the network interface.

Type: String

Required: No

origin
Describes how the route was created.

- `CreateRouteTable` indicates that route was automatically created when the route table was created.
- `CreateRoute` indicates that the route was manually added to the route table.
- `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

Type: String

Valid Values: `CreateRouteTable | CreateRoute | EnableVgwRoutePropagation`

Required: No

state
The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid Values: `active | blackhole`

Required: No

vpcPeeringConnectionId
The ID of the VPC peering connection.

Type: String

Required: No

RouteTable

Description

Describes a route table.

Contents

associations
The associations between the route table and one or more subnets.

Type: RouteTableAssociation (p. 566) list

Required: No

propagatingVgws
Any virtual private gateway (VGW) propagating routes.

Type: PropagatingVgw (p. 553) list

Required: No

routes
The routes in the route table.

Type: Route (p. 564) list

Required: No

routeTableId
The ID of the route table.

Type: String

Required: No

tags
Any tags assigned to the route table.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

RouteTableAssociation

Description

Describes an association between a route table and a subnet.

Contents

main
Indicates whether this is the main route table.

Type: Boolean

Required: No

routeTableAssociationId
The ID of the association between a route table and a subnet.

Type: String

Required: No

routeTableId
The ID of the route table.

Type: String

Required: No

subnetId
The ID of the subnet. A subnet ID is not returned for an implicit association.

Type: String

Required: No

RunInstancesMonitoringEnabled

Description

Describes the monitoring for the instance.

Contents

Enabled
Indicates whether monitoring is enabled for the instance.

Type: Boolean

Required: Yes

S3Storage

Description

Describes the storage parameters for S3 and S3 buckets for an instance store-backed AMI.

Contents

AWSAccessKeyId (request), **aWSAccessKeyId** (response)
The access key ID of the owner of the bucket. Before you specify a value for your access key ID, review and follow the guidance in Best Practices for Managing AWS Access Keys.

Type: String

Required: No

Bucket (request), **bucket** (response)
The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: String

Required: No

Prefix (request), **prefix** (response)
The beginning of the file name of the AMI.

Type: String

Required: No

UploadPolicy (request), **uploadPolicy** (response)
A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf.

Type: String

Required: No

UploadPolicySignature (request), **uploadPolicySignature** (response)
The signature of the Base64 encoded JSON document.

Type: String

Required: No

SecurityGroup

Description

Describes a security group

Contents

description
A description of the security group.

Type: String

Required: No

groupId
The ID of the security group.

Type: String

Required: No

groupName
The name of the security group.

Type: String

Required: No

ipPermissions
One or more inbound rules associated with the security group.

Type: IpPermission (p. 535) list

Required: No

ipPermissionsEgress
[EC2-VPC] One or more outbound rules associated with the security group.

Type: IpPermission (p. 535) list

Required: No

ownerId
The AWS account ID of the owner of the security group.

Type: String

Required: No

tags
Any tags assigned to the security group.

Type: Tag (p. 586) list

Required: No

vpcId
[EC2-VPC] The ID of the VPC for the security group.

Type: String

Required: No

Snapshot

Description

Describes a snapshot.

Contents

dataEncryptionKeyId
The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by the DescribeSnapshots (p. 284) API operation.

Type: String

Required: No

description
The description for the snapshot.

Type: String

Required: No

encrypted
Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

kmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that was used to protect the volume encryption key for the parent volume.

Type: String

Required: No

ownerAlias
The AWS account alias (for example, `amazon`, `self`) or AWS account ID that owns the snapshot.

Type: String

Required: No

ownerId
The AWS account ID of the EBS snapshot owner.

Type: String

Required: No

progress
The progress of the snapshot, as a percentage.

Type: String

Required: No

snapshotId
The ID of the snapshot. Each snapshot receives a unique identifier when it is created.

Type: String

Required: No

startTime
The time stamp when the snapshot was initiated.

Type: DateTime

Required: No

state
The snapshot state.

Type: String

Valid Values: `pending | completed | error`

Required: No

stateMessage
Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation fails (for example, if the proper AWS Key Management Service (AWS KMS) permissions are not obtained) this field displays error state details to help you diagnose why the error occurred. This parameter is only returned by the DescribeSnapshots (p. 284) API operation.

Type: String

Required: No

tags
Any tags assigned to the snapshot.

Type: Tag (p. 586) list

Required: No

volumeId
The ID of the volume that was used to create the snapshot.

Type: String

Required: No

volumeSize
The size of the volume, in GiB.

Type: Integer

Required: No

SnapshotDetail

Description

Describes the snapshot created from the imported disk.

Contents

description
A description for the snapshot.

Type: String

Required: No

deviceName
The block device mapping for the snapshot.

Type: String

Required: No

diskImageSize
The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

format
The format of the disk image from which the snapshot is created.

Type: String

Required: No

progress
The percentage of progress for the task.

Type: String

Required: No

snapshotId
The snapshot ID of the disk being imported.

Type: String

Required: No

status
A brief status of the snapshot creation.

Type: String

Required: No

statusMessage
A detailed status message for the snapshot creation.

Type: String

Required: No

url
The URL used to access the disk image.

Type: String

Required: No

userBucket
Type: UserBucketDetails (p. 588)

Required: No

SnapshotDiskContainer

Description

The disk container object for the import snapshot request.

Contents

Description
The description of the disk image being imported.

Type: String

Required: No

Format
The format of the disk image being imported.

Valid values: `RAW` | `VHD` | `VMDK` | `OVA`

Type: String

Required: No

Url
The URL to the Amazon S3-based disk image being imported. It can either be a https URL (https://..) or an Amazon S3 URL (s3://..).

Type: String

Required: No

UserBucket
Type: UserBucket (p. 588)

Required: No

SnapshotTaskDetail

Description

Details about the import snapshot task.

Contents

description
The description of the snapshot.

Type: String

Required: No

diskImageSize
The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

format
The format of the disk image from which the snapshot is created.

Type: String

Required: No

progress
The percentage of completion for the import snapshot task.

Type: String

Required: No

snapshotId
The snapshot ID of the disk being imported.

Type: String

Required: No

status
A brief status for the import snapshot task.

Type: String

Required: No

statusMessage
A detailed status message for the import snapshot task.

Type: String

Required: No

url
The URL of the disk image from which the snapshot is created.

Type: String

Required: No

userBucket
The S3 bucket for the disk image.

Type: UserBucketDetails (p. 588)

Required: No

SpotDatafeedSubscription

Description

Describes the data feed for a Spot instance.

Contents

bucket
The Amazon S3 bucket where the Spot instance data feed is located.

Type: String

Required: No

fault
The fault codes for the Spot instance request, if any.

Type: SpotInstanceStateFault (p. 581)

Required: No

ownerId
The AWS account ID of the account.

Type: String

Required: No

prefix
The prefix that is prepended to data feed files.

Type: String

Required: No

state
The state of the Spot instance data feed subscription.

Type: String

Valid Values: `Active | Inactive`

Required: No

SpotFleetLaunchSpecification

Description

Describes the launch specification for one or more Spot instances.

Contents

AddressingType (request), **addressingType** (response)
Deprecated.

Type: String

Required: No

BlockDeviceMappings (request), **blockDeviceMappings** (response)
One or more block device mapping entries.

Type: BlockDeviceMapping (p. 485) list

Required: No

EbsOptimized (request), **ebsOptimized** (response)
Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

IamInstanceProfile (request), **iamInstanceProfile** (response)
The IAM instance profile.

Type: IamInstanceProfileSpecification (p. 505)

Required: No

ImageId (request), **imageId** (response)
The ID of the AMI.

Type: String

Required: No

InstanceType (request), **instanceType** (response)
The instance type.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge`

`| g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

KernelId (request), **kernelId** (response)
The ID of the kernel.

Type: String

Required: No

KeyName (request), **keyName** (response)
The name of the key pair.

Type: String

Required: No

Monitoring (request), **monitoring** (response)
Enable or disable monitoring for the instances.

Type: SpotFleetMonitoring (p. 577)

Required: No

NetworkInterfaces (request), **networkInterfaces** (response)
One or more network interfaces.

Type: InstanceNetworkInterfaceSpecification (p. 528) list

Required: No

Placement (request), **placement** (response)
The placement information.

Type: SpotPlacement (p. 582)

Required: No

RamdiskId (request), **ramdiskId** (response)
The ID of the RAM disk.

Type: String

Required: No

SecurityGroups (request), **securityGroups** (response)
One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.

Type: GroupIdentifier (p. 503) list

Required: No

SpotPrice (request), **spotPrice** (response)
The bid price per unit hour for the specified instance type. If this value is not specified, the default is the Spot bid price specified for the fleet. To determine the bid price per unit hour, divide the Spot bid price by the value of `WeightedCapacity`.

Type: String

Required: No

SubnetId (request), **subnetId** (response)
The ID of the subnet in which to launch the instances.

Type: String

Required: No

UserData (request), **userData** (response)
The Base64-encoded MIME user data to make available to the instances.

Type: String

Required: No

WeightedCapacity (request), **weightedCapacity** (response)
The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms (instances or a performance characteristic such as vCPUs, memory, or I/O).

If the target capacity divided by this value is not a whole number, we round the number of instances to the next whole number. If this value is not specified, the default is 1.

Type: Double

Required: No

SpotFleetMonitoring

Description

Describes whether monitoring is enabled.

Contents

Enabled (request), **enabled** (response)
Enables monitoring for the instance.

Default: `false`

Type: Boolean

Required: No

SpotFleetRequestConfig

Description

Describes a Spot fleet request.

Contents

spotFleetRequestConfig
Information about the configuration of the Spot fleet request.

Type: SpotFleetRequestConfigData (p. 578)

Required: Yes

spotFleetRequestId
The ID of the Spot fleet request.

Type: String

Required: Yes

spotFleetRequestState
The state of the Spot fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating`

Required: Yes

SpotFleetRequestConfigData

Description

Describes the configuration of a Spot fleet request.

Contents

AllocationStrategy (request), **allocationStrategy** (response)
Determines how to allocate the target capacity across the Spot pools specified by the Spot fleet request. The default is `lowestPrice`.

Type: String

Valid Values: `lowestPrice | diversified`

Required: No

ClientToken (request), **clientToken** (response)
A unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see Ensuring Idempotency.

Type: String

Required: No

IamFleetRole (request), **iamFleetRole** (response)
Grants the Spot fleet permission to terminate Spot instances on your behalf when you cancel its Spot fleet request using CancelSpotFleetRequests (p. 56) or when the Spot fleet request expires, if you set `terminateInstancesWithExpiration`.

Type: String

Required: Yes

LaunchSpecifications (request), **launchSpecifications** (response)
Information about the launch specifications for the Spot fleet request.

Type: SpotFleetLaunchSpecification (p. 575) list

Length constraints: Minimum of 1 item(s) in the list.

Required: Yes

SpotPrice (request), **spotPrice** (response)
The bid price per unit hour.

Type: String

Required: Yes

TargetCapacity (request), **targetCapacity** (response)
The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O.

Type: Integer

Required: Yes

TerminateInstancesWithExpiration (request), **terminateInstancesWithExpiration** (response)
Indicates whether running Spot instances should be terminated when the Spot fleet request expires.

Type: Boolean

Required: No

ValidFrom (request), **validFrom** (response)
The start date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). The default is to start fulfilling the request immediately.

Type: String

Required: No

ValidUntil (request), **validUntil** (response)
The end date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). At this point, no new Spot instance requests are placed or enabled to fulfill the request.

Type: String

Required: No

SpotInstanceRequest

Description

Describe a Spot instance request.

Contents

availabilityZoneGroup
The Availability Zone group. If you specify the same Availability Zone group for all Spot instance requests, all Spot instances are launched in the same Availability Zone.

Type: String

Required: No

createTime
The date and time when the Spot instance request was created, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: No

fault
The fault codes for the Spot instance request, if any.

Type: SpotInstanceStateFault (p. 581)

Required: No

instanceId
The instance ID, if an instance has been launched to fulfill the Spot instance request.

Type: String

Required: No

launchedAvailabilityZone
The Availability Zone in which the bid is launched.

Type: String

Required: No

launchGroup
The instance launch group. Launch groups are Spot instances that launch together and terminate together.

Type: String

Required: No

launchSpecification
Additional information for launching instances.

Type: LaunchSpecification (p. 538)

Required: No

productDescription
The product description associated with the Spot instance.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

spotInstanceRequestId
The ID of the Spot instance request.

Type: String

Required: No

spotPrice
The maximum hourly price (bid) for any Spot instance launched to fulfill the request.

Type: String

Required: No

state
The state of the Spot instance request. Spot bid status information can help you track your Spot instance requests. For more information, see Spot Bid Status in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid Values: `open | active | closed | cancelled | failed`

Required: No

status
The status code and status message describing the Spot instance request.

Type: SpotInstanceStatus (p. 582)

Required: No

tags
Any tags assigned to the resource.

Type: Tag (p. 586) list

Required: No

type
The Spot instance request type.

Type: String

Valid Values: `one-time | persistent`

Required: No

validFrom
The start date of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: DateTime

Required: No

validUntil
The end date of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date is reached.

Type: DateTime

Required: No

SpotInstanceStateFault

Description

Describes a Spot instance state change.

Contents

code
The reason code for the Spot instance state change.

Type: String

Required: No

message
The message for the Spot instance state change.

Type: String

Required: No

SpotInstanceStatus

Description

Describes the status of a Spot instance request.

Contents

code
The status code.

Type: String

Required: No

message
The description for the status code.

Type: String

Required: No

updateTime
The date and time of the most recent status update, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: No

SpotPlacement

Description

Describes Spot instance placement.

Contents

AvailabilityZone (request), **availabilityZone** (response)
The Availability Zone.

Type: String

Required: No

GroupName (request), **groupName** (response)
The name of the placement group (for cluster instances).

Type: String

Required: No

SpotPrice

Description

Describes the maximum hourly price (bid) for any Spot instance launched to fulfill the request.

Contents

availabilityZone
The Availability Zone.

Type: String

Required: No

instanceType
The instance type.

Type: String

Valid Values: `t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | t2.micro | t2.small | t2.medium | t2.large | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | cg1.4xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge`

Required: No

productDescription
A general description of the AMI.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

spotPrice
The maximum price (bid) that you are willing to pay for a Spot instance.

Type: String

Required: No

timestamp
The date and time the request was created, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: DateTime

Required: No

StateReason

Description

Describes a state change.

Contents

code
The reason code for the state change.

Type: String

Required: No

message
The message for the state change.

- `Server.SpotInstanceTermination`: A Spot Instance was terminated due to an increase in the market price.
- `Server.InternalError`: An internal error occurred during instance launch, resulting in termination.
- `Server.InsufficientInstanceCapacity`: There was insufficient instance capacity to satisfy the launch request.
- `Client.InternalError`: A client error caused the instance to terminate on launch.
- `Client.InstanceInitiatedShutdown`: The instance was shut down using the `shutdown -h` command from the instance.
- `Client.UserInitiatedShutdown`: The instance was shut down using the Amazon EC2 API.
- `Client.VolumeLimitExceeded`: The volume limit was exceeded.
- `Client.InvalidSnapshot.NotFound`: The specified snapshot was not found.

Type: String

Required: No

Storage

Description

Describes the storage location for an instance store-backed AMI.

Contents

S3 (request), **s3** (response)
An Amazon S3 storage location.

Type: S3Storage (p. 567)

Required: No

Subnet

Description

Describes a subnet.

Contents

availabilityZone
The Availability Zone of the subnet.

Type: String

Required: No

availableIpAddressCount
The number of unused IP addresses in the subnet. Note that the IP addresses for any stopped instances are considered unavailable.

Type: Integer

Required: No

cidrBlock
The CIDR block assigned to the subnet.

Type: String

Required: No

defaultForAz
Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

Required: No

mapPublicIpOnLaunch
Indicates whether instances launched in this subnet receive a public IP address.

Type: Boolean

Required: No

state
The current state of the subnet.

Type: String

Valid Values: `pending | available`

Required: No

subnetId
The ID of the subnet.

Type: String

Required: No

tags
Any tags assigned to the subnet.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC the subnet is in.

Type: String

Required: No

Tag

Description

Describes a tag.

Contents

Key (request), **key** (response)
The key of the tag.

Constraints: Tag keys are case-sensitive and accept a maximum of 127 Unicode characters. May not begin with `aws:`

Type: String

Required: No

Value (request), **value** (response)
The value of the tag.

Constraints: Tag values are case-sensitive and accept a maximum of 255 Unicode characters.

Type: String

Required: No

TagDescription

Description

Describes a tag.

Contents

key
The tag key.

Type: String

Required: No

resourceId
The ID of the resource. For example, `ami-1a2b3c4d`.

Type: String

Required: No

resourceType
The resource type.

Type: String

Valid Values: `customer-gateway | dhcp-options | image | instance | internet-gateway | network-acl | network-interface | reserved-instances | route-table | snapshot | spot-instances-request | subnet | security-group | volume | vpc | vpn-connection | vpn-gateway`

Required: No

value
The tag value.

Type: String

Required: No

UnsuccessfulItem

Description

Information about items that were not successfully processed in a batch call.

Contents

error
Information about the error.

Type: UnsuccessfulItemError (p. 587)

Required: Yes

resourceId
The ID of the resource.

Type: String

Required: No

UnsuccessfulItemError

Description

Information about the error that occurred. For more information about errors, see Error Codes.

Contents

code
The error code.

Type: String

Required: Yes

message
The error message accompanying the error code.

Type: String

Required: Yes

UserBucket

Description

Describes the S3 bucket for the disk image.

Contents

S3Bucket
The name of the S3 bucket where the disk image is located.

Type: String

Required: No

S3Key
The key for the disk image.

Type: String

Required: No

UserBucketDetails

Description

Describes the S3 bucket for the disk image.

Contents

s3Bucket
The S3 bucket from which the disk image was created.

Type: String

Required: No

s3Key
The key from which the disk image was created.

Type: String

Required: No

UserData

Description

Describes the user data to be made available to an instance.

Contents

Data
The Base64-encoded MIME user data for the instance.

Type: String

Required: No

UserIdGroupPair

Description

Describes a security group and AWS account ID pair.

Contents

GroupId (request), **groupId** (response)
The ID of the security group.

Type: String

Required: No

GroupName (request), **groupName** (response)
The name of the security group. In a request, use this parameter for a security group in EC2-Classic or a default VPC only. For a security group in a nondefault VPC, use `GroupId`.

Type: String

Required: No

UserId (request), **userId** (response)
The ID of an AWS account. EC2-Classic only.

Type: String

Required: No

VgwTelemetry

Description

Describes telemetry for a VPN tunnel.

Contents

acceptedRouteCount
The number of accepted routes.

Type: Integer

Required: No

lastStatusChange
The date and time of the last change in status.

Type: DateTime

Required: No

outsideIpAddress
The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

Required: No

status
The status of the VPN tunnel.

Type: String

Valid Values: `UP` | `DOWN`

Required: No

statusMessage
If an error occurs, a description of the error.

Type: String

Required: No

Volume

Description

Describes a volume.

Contents

attachments
Information about the volume attachments.

Type: VolumeAttachment (p. 592) list

Required: No

availabilityZone
The Availability Zone for the volume.

Type: String

Required: No

createTime
The time stamp when volume creation was initiated.

Type: DateTime

Required: No

encrypted
Indicates whether the volume will be encrypted.

Type: Boolean

Required: No

iops
The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS (SSD) volumes, this represents the number of IOPS that are provisioned for the volume. For General Purpose (SSD) volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose (SSD) baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the *Amazon Elastic Compute Cloud User Guide*.

Constraint: Range is 100 to 20000 for Provisioned IOPS (SSD) volumes and 3 to 10000 for General Purpose (SSD) volumes.

Condition: This parameter is required for requests to create `io1` volumes; it is not used in requests to create `standard` or `gp2` volumes.

Type: Integer

Required: No

kmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that was used to protect the volume encryption key for the volume.

Type: String

Required: No

size
The size of the volume, in GiBs.

Type: Integer

Required: No

snapshotId
The snapshot from which the volume was created, if applicable.

Type: String

Required: No

state
The volume state.

Type: String

Valid Values: `creating | available | in-use | deleting | deleted | error`

Required: No

tags
Any tags assigned to the volume.

Type: Tag (p. 586) list

Required: No

volumeId
The ID of the volume.

Type: String

Required: No

volumeType
The volume type. This can be `gp2` for General Purpose (SSD) volumes, `io1` for Provisioned IOPS (SSD) volumes, or `standard` for Magnetic volumes.

Type: String

Valid Values: `standard | io1 | gp2`

Required: No

VolumeAttachment

Description

Describes volume attachment details.

Contents

attachTime
The time stamp when the attachment initiated.

Type: DateTime

Required: No

deleteOnTermination
Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

device
The device name.

Type: String

Required: No

instanceId
The ID of the instance.

Type: String

Required: No

state
The attachment state of the volume.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

volumeId
The ID of the volume.

Type: String

Required: No

VolumeDetail

Description

Describes an EBS volume.

Contents

Size
The size of the volume, in GiB.

Type: Long

Required: Yes

VolumeStatusAction

Description

Describes a volume status operation code.

Contents

code
The code identifying the operation, for example, `enable-volume-io`.

Type: String

Required: No

description
A description of the operation.

Type: String

Required: No

eventId
The ID of the event associated with this operation.

Type: String

Required: No

eventType
The event type associated with this operation.

Type: String

Required: No

VolumeStatusDetails

Description

Describes a volume status.

Contents

name
The name of the volume status.

Type: String

Valid Values: `io-enabled | io-performance`

Required: No

status
The intended status of the volume status.

Type: String

Required: No

VolumeStatusEvent

Description

Describes a volume status event.

Contents

description
A description of the event.

Type: String

Required: No

eventId
The ID of this event.

Type: String

Required: No

eventType
The type of this event.

Type: String

Required: No

notAfter
The latest end time of the event.

Type: DateTime

Required: No

notBefore
The earliest start time of the event.

Type: DateTime

Required: No

VolumeStatusInfo

Description

Describes the status of a volume.

Contents

details
The details of the volume status.

Type: VolumeStatusDetails (p. 594) list

Required: No

status
The status of the volume.

Type: String

Valid Values: `ok | impaired | insufficient-data`

Required: No

VolumeStatusItem

Description

Describes the volume status.

Contents

actions
The details of the operation.

Type: VolumeStatusAction (p. 593) list

Required: No

availabilityZone
The Availability Zone of the volume.

Type: String

Required: No

events
A list of events associated with the volume.

Type: VolumeStatusEvent (p. 594) list

Required: No

volumeId
The volume ID.

Type: String

Required: No

volumeStatus
The volume status.

Type: VolumeStatusInfo (p. 595)

Required: No

Vpc

Description

Describes a VPC.

Contents

cidrBlock
The CIDR block for the VPC.

Type: String

Required: No

dhcpOptionsId
The ID of the set of DHCP options you've associated with the VPC (or `default` if the default options are associated with the VPC).

Type: String

Required: No

instanceTenancy
The allowed tenancy of instances launched into the VPC.

Type: String

Valid Values: `default | dedicated`

Required: No

isDefault
Indicates whether the VPC is the default VPC.

Type: Boolean

Required: No

state
The current state of the VPC.

Type: String

Valid Values: `pending | available`

Required: No

tags
Any tags assigned to the VPC.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

VpcAttachment

Description

Describes an attachment between a virtual private gateway and a VPC.

Contents

state
The current state of the attachment.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

VpcClassicLink

Description

Describes whether a VPC is enabled for ClassicLink.

Contents

classicLinkEnabled
Indicates whether the VPC is enabled for ClassicLink.

Type: Boolean

Required: No

tags
Any tags assigned to the VPC.

Type: Tag (p. 586) list

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

VpcEndpoint

Description

Describes a VPC endpoint.

Contents

creationTimestamp
The date and time the VPC endpoint was created.

Type: DateTime

Required: No

policyDocument
The policy document associated with the endpoint.

Type: String

Required: No

routeTableIds
One or more route tables associated with the endpoint.

Type: String list

Required: No

serviceName
The name of the AWS service to which the endpoint is associated.

Type: String

Required: No

state
The state of the VPC endpoint.

Type: String

Valid Values: `Pending | Available | Deleting | Deleted`

Required: No

vpcEndpointId
The ID of the VPC endpoint.

Type: String

Required: No

vpcId
The ID of the VPC to which the endpoint is associated.

Type: String

Required: No

VpcPeeringConnection

Description

Describes a VPC peering connection.

Contents

accepterVpcInfo
The information of the peer VPC.

Type: VpcPeeringConnectionVpcInfo (p. 600)

Required: No

expirationTime
The time that an unaccepted VPC peering connection will expire.

Type: DateTime

Required: No

requesterVpcInfo
The information of the requester VPC.

Type: VpcPeeringConnectionVpcInfo (p. 600)

Required: No

status
The status of the VPC peering connection.

Type: VpcPeeringConnectionStateReason (p. 600)

Required: No

tags
Any tags assigned to the resource.

Type: Tag (p. 586) list

Required: No

vpcPeeringConnectionId
The ID of the VPC peering connection.

Type: String

Required: No

VpcPeeringConnectionStateReason

Description

Describes the status of a VPC peering connection.

Contents

code
The status of the VPC peering connection.

Type: String

Valid Values: `initiating-request | pending-acceptance | active | deleted | rejected | failed | expired | provisioning | deleting`

Required: No

message
A message that provides more information about the status, if applicable.

Type: String

Required: No

VpcPeeringConnectionVpcInfo

Description

Describes a VPC in a VPC peering connection.

Contents

cidrBlock
The CIDR block for the VPC.

Type: String

Required: No

ownerId
The AWS account ID of the VPC owner.

Type: String

Required: No

vpcId
The ID of the VPC.

Type: String

Required: No

VpnConnection

Description

Describes a VPN connection.

Contents

customerGatewayConfiguration
The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the CreateVpnConnection (p. 127) response; however, it's present in the DescribeVpnConnections (p. 341) response only if the VPN connection is in the `pending` or `available` state.

Type: String

Required: No

customerGatewayId
The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

options
The VPN connection options.

Type: VpnConnectionOptions (p. 602)

Required: No

routes
The static routes associated with the VPN connection.

Type: VpnStaticRoute (p. 604) list

Required: No

state
The current state of the VPN connection.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

tags
Any tags assigned to the VPN connection.

Type: Tag (p. 586) list

Required: No

type
The type of VPN connection.

Type: String

Valid Values: `ipsec.1`

Required: No

vgwTelemetry
Information about the VPN tunnel.

Type: VgwTelemetry (p. 589) list

Required: No

vpnConnectionId
The ID of the VPN connection.

Type: String

Required: No

vpnGatewayId
The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

VpnConnectionOptions

Description

Describes VPN connection options.

Contents

staticRoutesOnly
Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

Required: No

VpnConnectionOptionsSpecification

Description

Describes VPN connection options.

Contents

StaticRoutesOnly
Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

Required: No

VpnGateway

Description

Describes a virtual private gateway.

Contents

availabilityZone
The Availability Zone where the virtual private gateway was created.

Type: String

Required: No

state
The current state of the virtual private gateway.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

tags
Any tags assigned to the virtual private gateway.

Type: Tag (p. 586) list

Required: No

type
The type of VPN connection the virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: No

vpcAttachments
Any VPCs attached to the virtual private gateway.

Type: VpcAttachment (p. 597) list

Required: No

vpnGatewayId
The ID of the virtual private gateway.

Type: String

Required: No

VpnStaticRoute

Description

Describes a static route for a VPN connection.

Contents

destinationCidrBlock
The CIDR block associated with the local subnet of the customer data center.

Type: String

Required: No

source
Indicates how the routes were provided.

Type: String

Valid Values: `Static`

Required: No

state
The current state of the static route.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

Making API Requests

We provide the Query API for Amazon EC2, as well as software development kits (SDK) for Amazon Web Services (AWS) that enable you to access Amazon EC2 from your preferred programming language.

To monitor the calls made to the Amazon EC2 API for your account, including calls made by the AWS Management Console, command line tools, and other services, use AWS CloudTrail. For more information, see the AWS CloudTrail User Guide.

Topics

- Required Knowledge (p. 605)
- Available APIs for Amazon EC2 (p. 605)
- Query Requests (p. 606)
- Troubleshooting API Request Errors (p. 610)
- Ensuring Idempotency (p. 612)
- SOAP Requests (p. 615)
- Cross-Origin Resource Sharing Support (p. 615)
- Logging API Calls Using AWS CloudTrail (p. 617)

Required Knowledge

If you plan to access Amazon EC2 through an API, you should be familiar with the following:

- XML
- Web services
- HTTP requests
- One or more programming languages, such as Java, PHP, Perl, Python, Ruby, C#, or C++.

Available APIs for Amazon EC2

The Amazon EC2 Query API provides HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`.

AWS provides libraries, sample code, tutorials, and other resources for software developers who prefer to build applications using language-specific APIs instead of submitting a request over HTTP or HTTPS.

These libraries provide basic functions that automatically take care of tasks such as cryptographically signing your requests, retrying requests, and handling error responses, so that it is easier for you to get started.

For more information about downloading the AWS SDKs, see AWS SDKs and Tools. For more information about the language-specific APIs for Amazon EC2, see the following documentation.

AWS SDK for .NET

- Amazon.EC2
- Amazon.EC2.Model
- Amazon.EC2.Util

AWS SDK for Java

- com.amazonaws.services.ec2
- com.amazonaws.services.ec2.model
- com.amazonaws.services.ec2.util

AWS SDK for JavaScript

- AWS.EC2

AWS SDK for Python

- boto.ec2

AWS SDK for Ruby

- AWS::EC2

AWS SDK for PHP

- Ec2Client

AWS SDK for IOS

- AWSEC2

AWS SDK for Android

- com.amazonaws.services.ec2
- com.amazonaws.services.ec2.model
- com.amazonaws.services.ec2.util

Query Requests

Query requests are HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`. For a list of Amazon EC2 API actions, see Actions.

Topics

- Structure of a GET Request (p. 607)
- Endpoints (p. 608)
- Query Parameters (p. 608)
- Query API Authentication (p. 609)
- Query Response Structures (p. 609)

Structure of a GET Request

The Amazon EC2 documentation presents the GET requests as URLs, which can be used directly in a browser.

> **Tip**
> Because the GET requests are URLs, you must URL encode the parameter values. In the Amazon EC2 documentation, we leave the example GET requests unencoded to make them easier to read.

The request consists of the following:

- **Endpoint**: The URL that serves as the entry point for the web service.
- **Action**: The action that you want to perform; for example, use `RunInstances` to launch an instance.
- **Parameters**: Any parameters for the action; each parameter is separated by an ampersand (&).
- **Version**: The API version to use; for example, `2015-04-15`.
- **Authorization parameters**: The authorization parameters that AWS uses to ensure the validity and authenticity of the request. Amazon EC2 supports Signature Version 2 and Signature Version 4; for more information, see Signature Version 2 Signing Process and Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

The following optional parameters can be included in your request:

- **DryRun**: Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.
- **SecurityToken**: The temporary security token obtained through a call to AWS Security Token Service.

For more information about common parameters for API requests, see Common Query Parameters (p. 620).

The following is an example request that launches instances:

```
https://ec2.amazonaws.com/?Action=RunInstances&ImageId=ami-2bb65342&Max
Count=3&MinCount=1&Placement.AvailabilityZone=us-east-1a&Monitoring.En
abled=true&Version=2015-04-15&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Creden
tial=AKIDEXAMPLE%2F20130813%2Fus-east-1%2Fec2%2Faws4_request&X-Amz-
Date=20130813T150206Z&X-Amz-SignedHeaders=content-type%3host%3x-amz-date&X-Amz-
Signature=525d1a96c69b5549dd78dbbec8efe264102288b83ba87b7d58d4b76b71f59fd2
Content-type: application/json
host:ec2.amazonaws.com
```

To make these example requests even easier to read, the Amazon EC2 documentation presents them in the following format:

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2bb65342
&MaxCount=3
&MinCount=1
&Placement.AvailabilityZone=us-east-1a
&Monitoring.Enabled=true
&Version=2015-04-15
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLEus-east-1%2Fec2%2Faws4_request
&X-Amz-Date=20130813T150206Z
&X-Amz-SignedHeaders=content-type%3host%3x-amz-date
&X-Amz-Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84ex
ample54174deb456c
Content-type: application/json
host:ec2.amazonaws.com
```

The first line specifies the endpoint of the request. After the endpoint is a question mark (?), which separates the endpoint from the parameters.

The `Action` parameter indicates the action to perform. For a complete list of actions, see Actions.

The remaining lines specify additional parameters for the request.

Important
Before you specify your access key ID for the `AWSAccessKeyId` or `Credential` parameter, review and follow the guidance in Best Practices for Managing AWS Access Keys.

Endpoints

An endpoint is a URL that serves as an entry point for a web service. You can select a regional endpoint for Amazon EC2 when you make your requests to reduce latency. For more information about regions, see Regions and Availability Zones in the *Amazon EC2 User Guide for Linux Instances*. For information about the endpoints for Amazon EC2, see Regions and Endpoints in the *Amazon Web Services General Reference*.

If you specify the general endpoint, `ec2.amazonaws.com`, we use the endpoint for `us-east-1`. To use a different region, specify its associated endpoint. For example, if you specify `ec2.us-west-2.amazonaws.com` as the endpoint, we direct your request to the `us-west-2` endpoint.

Query Parameters

Each Query request must include required common parameters to handle authentication and selection of an action.

Some operations take lists of parameters. These lists are specified using the *param.n* notation, where *n* is an integer starting from 1.

The following example adds multiple devices to a block device mapping using a list of `BlockDeviceMapping` parameters.

```
http://ec2.amazonaws.com/?Action=RunInstances
&ImageId.1=ami-72aa081b
...
&BlockDeviceMapping.1.DeviceName=/dev/sdj
&BlockDeviceMapping.1.Ebs.NoDevice=true
&BlockDeviceMapping.2.DeviceName=/dev/sdh
```

```
&BlockDeviceMapping.2.Ebs.VolumeSize=300
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.VirtualName=ephemeral1
&AUTHPARAMS
```

Query API Authentication

You can send Query requests over either the HTTP or HTTPS protocol.

Regardless of which protocol you use, you must include a signature in every Query request. Amazon EC2 supports Signature Version 2 and Signature Version 4. For more information, see Signature Version 2 Signing Process and Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

Signature Version 4 requests allow you specify all the authorization parameters in a single header, for example:

```
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Amz-Date: 20130813T150211Z
Host: ec2.amazonaws.com
Authorization: AWS4-HMAC-SHA256 Credential=AKIDEXAMPLE/20130813/us-east-
1/ec2/aws4_request, SignedHeaders=content-type;host;x-amz-date, Signa
ture=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84example54174deb456c

http://ec2.amazonaws.com/?Action=RunInstances
ImageId=ami-2bb65342
&MaxCount=3
&MinCount=1
&Monitoring.Enabled=true
&Placement.AvailabilityZone=us-east-1a
&Version=2015-04-15
```

In the example Query requests we present in the Amazon EC2 documentation, we omit headers and the parameters related to authentication to make it easier for you to focus on the parameters for the action. We replace them with the following literal string to remind you that you must include these parameters in your request: `&AUTHPARAMS`.

Query Response Structures

In response to a Query request, the service returns an XML data structure that conforms to an XML schema defined for Amazon EC2. The structure of an XML response is specific to the associated request. In general, the response data types are named according to the operation performed and whether the data type is a container (can have children). Examples of containers include `groupSet` for security groups and `keySet` for key pairs (see the example that follows). Item elements are children of containers, and their contents vary according to the container's role.

Every successful response includes a request ID in a `requestId` element, and every unsuccessful response includes a request ID in a `RequestID` element. The value is a unique string that AWS assigns. If you ever have issues with a particular request, AWS will ask for the request ID to help troubleshoot the issue. The following shows an example response.

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2015-04-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <keySet>
```

```
    <item>
      <keyName>gsg-keypair</keyName>
      <keyFingerprint>
         00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
      </keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

Troubleshooting API Request Errors

In the Amazon EC2 Query API, errors codes are indicated as being either client or server. Client errors usually occur because there is a problem with the structure, content, or validity of the request. Server errors usually indicate a server-side issue.

For more information about API error codes, see Error Codes.

Topics

- Query API Request Rate (p. 610)
- Eventual Consistency (p. 611)
- Unauthorized Operation (p. 612)

Query API Request Rate

We throttle Amazon EC2 API requests for each AWS account to help the performance of the service. We ensure that all calls to the Amazon EC2 API (whether they originate from an application, calls to the Amazon EC2 command line interface, or the Amazon EC2 console) don't exceed the maximum allowed API request rate. Note that API requests made by IAM users are attributed to the underlying AWS account.

The Amazon EC2 API actions are divided into the following categories:

- Describe actions, such as `DescribeInstances` and `DescribeVolumes`. These requests simply retrieve cached data, so they have the highest request limit.
- Modify actions, such as `RunInstances` and `CreateVolumes`. These requests create or modify resources, so they have a lower request limit than describe calls.
- The `CreateKeyPair`, `GetConsoleOutput` `AuthorizeSecurityGroupIngress`, and `RevokeSecurityGroupIngress` actions. These requests take the most time and resource to complete, so they have the lowest request limit.

If an API request exceeds the API request rate for its category, the request returns the `RequestLimitExceeded` error code. To prevent this error, ensure that your application doesn't retry API requests at a high rate. You can do this by using care when polling and by using exponential back-off retries.

Polling

Your application might need to call an API repeatedly to check for an update in status. Before you start polling, give the request time to potentially complete. When you begin polling, use an appropriate sleep interval between successive requests. For best results, use an increasing sleep interval.

Retries or batch processing

Your application might need to retry an API request after it fails, or to process multiple resources (for example, all your volumes). To lower the rate of API requests, use an appropriate sleep interval between successive requests. For best results, use an increasing or variable sleep interval.

Calculating the sleep interval

When you have to poll or retry an API request, we recommend using an exponential backoff algorithm to calculate the sleep interval between API calls. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. For more information, and implementation examples of this algorithm, see Error Retries and Exponential Backoff in AWS.

Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that the result of an API command you run that affects your Amazon EC2 resources might not be immediately visible to all subsequent commands you run. You should keep this in mind when you carry out an API command that immediately follows a previous API command.

Eventual consistency can affect the way you manage your resources. For example, if you run a command to create a resource, it will eventually be visible to other commands. This means that if you run a command to modify or describe the resource that you just created, its ID might not have propagated throughout the system, and you will get an error responding that the resource does not exist.

To manage eventual consistency, you can do the following:

- Confirm the state of the resource before you run a command to modify it. Run the appropriate `Describe` command using an exponential backoff algorithm to ensure that you allow enough time for the previous command to propagate through the system. To do this, run the `Describe` command repeatedly, starting with a couple of seconds of wait time, and increasing gradually up to five minutes of wait time.
- Add wait time between subsequent commands, even if a `Describe` command returns an accurate response. Apply an exponential backoff algorithm starting with a couple of seconds of wait time, and increase gradually up to about five minutes of wait time.

Eventual Consistency Error Examples

The following are examples of error codes you may encounter as a result of eventual consistency.

- `InvalidInstanceID.NotFound`

  If you successfully run the `RunInstances` command, and then immediately run another command using the instance ID that was provided in the response of `RunInstances`, it may return an `InvalidInstanceID.NotFound` error. This does not mean the instance does not exist.

  Some specific commands that may be affected are:

  - `DescribeInstances`: To confirm the actual state of the instance, run this command using an exponential back-off algorithm.
  - `TerminateInstances`: To confirm the state of the instance, first run the `DescribeInstances` command using an exponential back-off algorithm.

    Important
    If you get an `InvalidInstanceID.NotFound` error after running `TerminateInstances`, this does not mean that the instance is or will be terminated. Your instance could still be running. This is why it is important to first confirm the instance's state using `DescribeInstances`.

- `InvalidGroup.NotFound`

  If you successfully run the `CreateSecurityGroup` command, and then immediately run another command using the instance ID that was provided in the response of `CreateSecurityGroup`, it may return an `InvalidGroup.NotFound` error. To confirm the state of the security group, run the `DescribeSecurityGroups` command using an exponential back-off algorithm.

Unauthorized Operation

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API, unless they've been explicitly granted permission through IAM policies. If an IAM user attempts to perform an action for which permission has not been granted, the request returns the following error: `Client.UnauthorizedOperation`.

This error may occur when a policy is unintentionally restrictive. For example, to allow an IAM user to launch instances into a specific subnet, you need to grant permissions for the following resources by specifying their ARNs in your IAM policy: instances, volumes, AMIs, the specific subnet, network interfaces, key pairs, and security groups. If you omit the permission for volumes, for example, the user is only able to launch an instance from an instance store-backed AMI, as they do not have permission to create the root EBS volume for an EBS-backed instance.

For more information about creating IAM policies for Amazon EC2, see IAM Policies for Amazon EC2 in the *Amazon EC2 User Guide for Linux Instances*.

Currently, not all API actions support resource-level permissions; we'll add support for more in the future. For more information about which ARNs you can use with which Amazon EC2 API actions, see Granting IAM Users Required Permissions for Amazon EC2 Resources.

Ensuring Idempotency

An *idempotent* operation completes no more than one time.

When you launch an instance, the request typically returns before the operation has completed. You determine whether the operation was successful by monitoring the state of the instance (it goes from `pending` to `running`). If the operation times out or there are connection issues, you might need to retry the request. However, if the original request and a retry are both successful, you'll end up with more instances than you intended to launch.

If you launch your instance using run-instances (AWS CLI), ec2-run-instances (Amazon EC2 CLI), or RunInstances, you can optionally provide a client token to ensure that the request is idempotent. If you repeat a request, the same response is returned for each repeated request. The only information that might vary in the response is the state of the instance.

Contents

- Client Tokens (p. 613)
- Idempotency Support (p. 613)
- Example Idempotent Command (p. 614)
- Example Idempotent Query (p. 615)

Client Tokens

A client token is a unique, case-sensitive string of up to 64 ASCII characters. It is included in the response when you describe the instance. A client token is valid for at least 24 hours after the termination of the instance. You should not reuse a client token in another call later on.

If you repeat a request with the same client token, but change another request parameter, Amazon EC2 returns an `IdempotentParameterMismatch` error.

You can use the same client token for the same request across different regions. For example, if you send an idempotent request to launch an instance in the `us-east-1` region, and then use the same client token in a request in other regions, we'll launch instances in each of those regions.

The following table shows common response codes and the recommended course of action.

Code	Retry	Comments
200 (OK)	No effect	The request has succeeded and any further retries have no effect.
400 (Client Error)	Not recommended	The request will never succeed (for example, a specified parameter value is not valid). If the request involves a resource that is in the process of changing states, repeating the request could possibly succeed (for example, launching an instance using an Amazon EBS volume that is about to become `available`).
500 (Server Internal Error)	Recommended	The error is generally transient. Repeat the request with an appropriate back-off strategy.
503 (Server Unavailable)	Recommended	The error can occur when there is extreme load. Repeat the request with an appropriate back-off strategy.

Idempotency Support

The following commands and actions are idempotent:

Idempotent Commands

- associate-address (AWS CLI)
- disassociate-address (AWS CLI)
- terminate-instances (AWS CLI)
- ec2-associate-address (Amazon EC2 CLI)
- ec2-disassociate-address (Amazon EC2 CLI)
- ec2-terminate-instances (Amazon EC2 CLI)

Idempotent Actions

- AssociateAddress
- DisassociateAddress
- TerminateInstances

The following commands and actions support idempotent operations using a client token:

Commands with a --client-token Option

- copy-image (AWS CLI)
- create-reserved-instances-listing (AWS CLI)
- create-route (AWS CLI)
- create-vpc-endpoint (AWS CLI)
- import-image (AWS CLI)
- import-snapshot (AWS CLI)
- modify-reserved-instances (AWS CLI)
- request-spot-instances (AWS CLI)
- run-instances (AWS CLI)
- ec2-copy-image (Amazon EC2 CLI)
- ec2-create-reserved-instances-listing (Amazon EC2 CLI)
- ec2-modify-reserved-instances (Amazon EC2 CLI)
- ec2-run-instances (Amazon EC2 CLI)

Actions with a ClientToken Parameter

- CopyImage
- CreateReservedInstancesListing
- CreateRoute
- CreateVpcEndpoint
- ImportImage
- ImportSnapshot
- ModifyReservedInstances
- RequestSpotInstances
- RunInstances

Example Idempotent Command

To make a command an idempotent request, add the `--client-token` option. The client token is a unique, case-sensitive string of up to 64 ASCII characters.

AWS CLI

Use the run-instances command as follows to make an idempotent request:

```
aws ec2 run-instances --image-id ami-b232d0db --count 1 --key-name my-key-pair
 --client-token 550e8400-e29b-41d4-a716-446655440000
```

Amazon EC2 CLI

Use the ec2-run-instances command as follows to make an idempotent request:

```
ec2-run-instances ami-b232d0db -k my-key-pair --client-token 550e8400-e29b-41d4-
a716-446655440000
```

Example Idempotent Query

Use the RunInstances action as follows to make an idempotent request:

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-3ac33653
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

The `ClientToken` parameter requires a unique, case-sensitive string of up to 64 ASCII characters.

SOAP Requests

We have deprecated the SOAP API for Amazon EC2. We will continue to support SOAP requests for API versions up to and including version 2014-02-01, until the end of December 2014. If you use a SOAP request against a later API version, or after December 2014, you will receive the following response:

```
Client.UnsupportedProtocol: SOAP is no longer supported.
```

Similarly, the AWS software development kits (SDKs) will continue to support SOAP requests for Amazon EC2 API versions up to and including version 2014-02-01, until the end of December 2014.

If you are using the Amazon EC2 CLI tools, you will be able to use the `EC2_PRIVATE_KEY` and `EC2_CERT` environment variables for versions up to and including version 1.6.13.0. Thereafter, you must use the `AWS_ACCESS_KEY` and `AWS_SECRET_KEY` variables instead. For more information, see Setting Up the Amazon EC2 CLI and AMI Tools.

We recommend that you use the Query API for Amazon EC2, or the SDKs for AWS. For more information, see Making API Requests (p. 605).

Cross-Origin Resource Sharing Support

The Amazon EC2 API supports cross-origin resource sharing (CORS). CORS defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. For more information, go to the Cross-Origin Resource Sharing W3C Recommendation. With CORS support for Amazon EC2, you can build rich client-side web applications that leverage the Amazon EC2 API. For example, suppose you are hosting a web site, `mywebsite.example.com`, and you want to use JavaScript on your web pages to make requests to the Amazon EC2 API. Normally, a browser blocks JavaScript from allowing these requests, but with CORS, you are able to make cross-origin Amazon EC2 API calls from `mywebsite.example.com`.

CORS is already enabled for the Amazon EC2 API, and is ready for you to use. You do not need to perform any additional configuration steps to start using this feature. There is no change to the way that you make calls to the Amazon EC2 API; they must still be signed with valid AWS credentials to ensure that AWS can authenticate the requestor. For more information, see Signing AWS API Requests in the *Amazon Web Services General Reference*.

The implementation of CORS in the Amazon EC2 API is standardized. Your application can send a simple request to the Amazon EC2 API, or, depending on the content of the request, a preflight request followed by an actual request. Amazon EC2 allows the request from any origin

For more information about CORS and examples of how it works, go to the following article on the Mozilla Developer Network: HTTP access control (CORS).

Simple/Actual Requests

The following are the criteria that define a simple request:

- Requests only use the `GET` or `POST` HTTP methods. If the `POST` method is used, then `Content-Type` can only be one of the following: `application/x-www-form-urlencoded`, `multipart/form-data`, or `text/plain`.
- Requests do not set custom headers, such as `X-Other-Header`.

Amazon EC2 allows the request from any origin. Any `GET` or `POST` request that attempts to use browser credentials by setting the `Access-Control-Allow-Credentials` value to `true` (where `XMLHttpRequest.withCredentials = true`) will fail.

The following information describes the request headers to Amazon EC2:

Simple/Actual Request Header Values

- `Origin`: Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.

The following information describes the response headers that Amazon EC2 returns (or does not return) after a simple or actual request:

Simple/Actual Response Header Values

- `Access-Control-Allow-Origin`: Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a * value; therefore, Amazon EC2 will allow any cross-domain origin, and will never allow browser credentials, such as cookies.
- `Access-Control-Allow-Credentials`: Indicates whether browser credentials can be used to make the actual request. This is never returned; therefore, the browser should interpret the value as `Access-Control-Allow-Credentials: false`.

Preflight Requests

If the content of your request meets the criteria below, then your request is preflighted to check whether the actual request should be sent. A preflight request first sends an HTTP request to the resource (in this case, Amazon EC2) using the `OPTIONS` method.

The following are the criteria that define a preflight request:

- Requests use HTTP methods other than `GET` or `POST`; however, if the `POST` method is used, then the `Content-Type` is not one of the following: `application/x-www-form-urlencoded`, `multipart/form-data`, or `text/plain`.
- Requests set custom headers; for example, `X-Other-Header`.

The Amazon EC2 CORS implementation will allow any headers, and will allow any origin in the actual request.

The following information describes the request headers for a preflight request to Amazon EC2:

Preflight Request Header Values

- `Origin`: Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.
- `Access-Control-Request-Method`: The HTTP method that will be used in the actual request from the browser.
- `Access-Control-Request-Headers`: The custom headers that will be sent in the actual cross-origin request.

The following information is about the response headers that Amazon EC2 returns (or does not return) after a preflight request:

Preflight Response Header Values

- `Access-Control-Allow-Origin`: Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a * value; therefore, Amazon EC2 will allow any cross-domain origin, and will never allow browser credentials, such as cookies.
- `Access-Control-Allow-Credentials`: Indicates whether browser credentials can be used to make the actual request. This is never returned by Amazon EC2; therefore, the browser should interpret the value as `Access-Control-Allow-Credentials: false`.
- `Access-Control-Expose-Headers`: Allows headers to be exposed to the browser. This is never returned by Amazon EC2; therefore, no return headers from Amazon EC2 can be read by the requesting domain.
- `Access-Control-Max-Age`: Specifies how long preflight request results can be cached. The value is set to 1800 seconds (30 minutes).
- `Access-Control-Allow-Methods`: Indicates which methods are allowed when making an actual request. The following methods are allowed: `GET`, `POST`, `OPTIONS`, `DELETE`, and `PUT`. This also depends on how you are calling the Amazon EC2 API; for example, by using the Query API, or by using REST.
- `Access-Control-Allow-Headers`: Indicates which headers can be used in the actual request. Amazon EC2 accepts any headers in preflight requests. If the HTTP headers are not relevant in the actual request, they are ignored.

Logging API Calls Using AWS CloudTrail

Amazon EC2, Amazon EBS, and Amazon VPC are integrated with AWS CloudTrail, a service that captures API calls and delivers the log files to an Amazon S3 bucket that you specify. The API calls can be made indirectly by using the console, or directly by using a client such as the Amazon EC2 CLI, the AWS CLI, or the AWS SDKs. Using the information collected by CloudTrail, you can determine what request was made, the source IP address from which the request was made, who made the request, when it was made, and so on. To learn more about CloudTrail, including how to configure and enable it, see the AWS CloudTrail User Guide.

Amazon EC2, Amazon EBS, and Amazon VPC Information in CloudTrail

When CloudTrail logging is enabled, calls made to Amazon EC2, Amazon EBS, and Amazon VPC actions are tracked in log files, along with any other AWS service records. CloudTrail determines when to create and write to a new file based on a specified time period and file size.

All of the Amazon EC2, Amazon EBS, and Amazon VPC actions are logged. For example, calls to the RunInstances, DescribeInstances, or CreateImage API actions generate entries in the CloudTrail log files.

Every log entry contains information about who generated the request. The user identity information in the log helps you determine whether the request was made with root or IAM user credentials, with temporary security credentials for a role or federated user, or by another AWS service. For more information, see the **userIdentity** element topic in the CloudTrail Event Reference.

You can store your log files in your bucket for as long as you want, but you can also define Amazon S3 lifecycle rules to archive or delete log files automatically. By default, your log files are encrypted by using Amazon S3 server-side encryption (SSE).

You can choose to have CloudTrail publish Amazon SNS notifications when new log files are delivered if you want to take quick action upon log file delivery. For more information, see Configuring Amazon SNS Notifications.

You can also aggregate Amazon EC2, Amazon EBS, and Amazon VPC log files from multiple AWS regions and multiple AWS accounts into a single Amazon S3 bucket. For more information, see Aggregating CloudTrail Log Files to a Single Amazon S3 Bucket.

Understanding Amazon EC2, Amazon EBS, and Amazon VPC Log File Entries

CloudTrail log files can contain one or more log entries where each entry is made up of multiple JSON-formatted events. A log entry represents a single request from any source and includes information about the requested action, any input parameters, the date and time of the action, and so on. The log entries are not in any particular order; that is, they are not an ordered stack trace of the public API calls.

The following log file record shows that a user terminated two instances.

```
{
   "Records":[
      {
         "eventVersion":"1.01",
         "userIdentity":{
            "type":"Root",
            "principalId":"111122223333",
            "arn":"arn:aws:iam::111122223333:user/testuser",
            "accountId":"111122223333",
            "accessKeyId":"AKIAIOSFODNN7EXAMPLE",
            "sessionContext":{
               "attributes":{
                  "mfaAuthenticated":"false",
                  "creationDate":"2014-05-02T08:27:22Z"
               }
            }
         },
         "eventTime":"2014-05-02T08:27:45Z",
         "eventSource":"ec2.amazonaws.com",
         "eventName":"TerminateInstances",
         "awsRegion":"us-east-1",
         "sourceIPAddress":"192.0.2.64",
         "userAgent":"EC2ConsoleBackend, aws-sdk-java/unknown-version
Linux/2.6.18-308.24.1.1123.6.fleetxen Java_HotSpot(TM)_64-Bit_Server_VM/24.51-
b03",
```

```
         "requestParameters":{
            "instancesSet":{
               "items":[
                  {
                     "instanceId":"i-1a2b3c4d"
                  },
                  {
                     "instanceId":"i-111bbb33"
                  }
               ]
            }
         },
         "responseElements":{
            "instancesSet":{
               "items":[
                  {
                     "instanceId":"i-1a2b3c4d",
                     "currentState":{
                        "code":48,
                        "name":"terminated"
                     },
                     "previousState":{
                        "code":48,
                        "name":"terminated"
                     }
                  },
                  {
                     "instanceId":"i-111bbb33",
                     "currentState":{
                        "code":48,
                        "name":"terminated"
                     },
                     "previousState":{
                        "code":48,
                        "name":"terminated"
                     }
                  }
               ]
            }
         },
         "requestID":"be112233-1ba5-4ae0-8e2b-1c302example",
         "eventID":"6e12345-2a4e-417c-aa78-7594fexample"
      }
   ]
}
```

Common Query Parameters

Most Amazon EC2 API actions support the parameters described in the following tables. The common parameters vary depending on whether you're using Signature Version 2 or Signature Version 4 to sign your requests.

For more information about using the Query API for Amazon EC2, see Making API Requests (p. 605).

Topics

- Common Query Parameters for Signature Version 2 (p. 620)
- Common Query Parameters for Signature Version 4 (p. 621)

Common Query Parameters for Signature Version 2

For more information about Signature Version 2, see Signature Version 2 Signing Process in the *Amazon Web Services General Reference*.

Name	Description	Required
Action	The action to perform. Example: `RunInstances`	Yes
Version	The API version to use. Example: `2015-04-15`	Yes
AWSAccessKeyId	The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted. Example: `AKIAIOSFODNN7EXAMPLE`	Yes

Name	Description	Required
Expires	The date and time at which the signature included in the request expires, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see ISO 8601. Example: `2006-07-07T15:04:56Z`	Conditional. Requests must include either *Timestamp* or *Expires*, but cannot contain both.
Timestamp	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see ISO 8601. Example: `2006-07-07T15:04:56Z`	Conditional. Requests must include either *Timestamp* or *Expires*, but cannot contain both.
Signature	The request signature. Example: `Qnpl4Qk/7tINHzfXCiT7VEXAMPLE`	Yes
SignatureMethod	The hash algorithm you use to create the request signature. Valid values: `HmacSHA256` | `HmacSHA1`. Example: `HmacSHA256`	Yes
SignatureVersion	The signature version you use to sign the request. Set this value to `2`. Example: `2`	Yes
DryRun	Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.	No
SecurityToken	The temporary security token obtained through a call to AWS Security Token Service. Example: `AQoEXAMPLEH4aoAH0gNCAPyJxz4BlCFFxWNE1OPTgk5TthT+FvwqnKwRcOIfrRh3c/L`	No

Parameter values must be URL-encoded. This is true for any Query parameter passed to Amazon EC2 and is typically necessary in the *Signature* parameter. Some clients do this automatically, but this is not the norm.

Common Query Parameters for Signature Version 4

For more information about Signature Version 4, see Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

Name	Description	Required
Action	The action to perform. Example: `RunInstances`	Yes
Version	The API version to use. Example: `2015-04-15`	Yes
X-Amz-Algorithm	The hash algorithm you use to create the request signature. Example: `AWS4-HMAC-SHA256`	Yes
X-Amz-Credential	The credential scope for the request, in the format *access-key-ID*/*YYYYMMDD*/*region*/*service*/`aws4_request` Example: `AKIDEXAMPLE/20140707/us-east-1/ec2/aws4_request`	Yes
X-Amz-Date	The date and time at which the request is signed, in the format YYYYMMDDThhmmssZ. The date must match the date that's included in the credential scope for the `X-Amz-Credential` parameter, or the date used in an `Authorization` header (see the note below the table). Example: `20140707T150456Z`	Yes
X-Amz-SignedHeaders	The headers you are including as part of the request. At a minimum, you must include the `host` header. If you include an `x-amz-date` header in your request, you must include it in the list of signed headers. Example: `content-type;host;user-agent`	Yes
X-Amz-Signature	A signature derived from your secret access key. Example: `ced6826de92d2bdeed8f846f0bf508e8559example`	Yes
X-Amz-Security-Token	The temporary security token obtained through a call to AWS Security Token Service. Example: `AQoEXAMPLEH4aoAH0gNCAPyJxz4BlCFFxWNE1OPTgk5TthT+FvwqnKwRcOIfrRh3c/L`	No
DryRun	Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.	No

Note
The `X-Amz-Algorithm`, `X-Amz-Credential`, `X-Amz-SignedHeaders`, and `X-Amz-Signature` parameters can either be specified as separate parameters in the query string, or their values can be included in a single `Authorization` header. For more information, see Adding Signing Information to the Authorization Header in the *Amazon Web Services General Reference*.

Granting IAM Users Required Permissions for Amazon EC2 Resources

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API. To allow IAM users to create or modify resources and perform tasks, you must create IAM policies that grant IAM users permissions for the specific resources and API actions they'll need to use, and then attach those policies to the IAM users or groups that require those permissions.

For more information and for example policies, see IAM Policies for Amazon EC2 in the *Amazon EC2 User Guide*.

When you make an API request, the parameters that you specify in the request determine which resources an IAM user must have permission to use. If the user doesn't have the required permissions, the request fails. For example, if you use `RunInstances` to launch an instance in a subnet (by specifying the *`SubnetId`* parameter), an IAM user must have permission to use the VPC.

If an action creates a resource, an IAM user must have permission to create the resource or the request fails. Many Amazon EC2 resources receive an identifier when they are created. Because you can't know what that identifier is in advance, you must use a wildcard in the ARN for a resource when it is to be created by the request, as shown in the following sections. Note that because you can't tag a resource when you create it, you can't use any of the tag condition keys with a resource that's created by an action. (We'll add support for tagging a resource at creation later.)

Resource-level permissions refers to the ability to specify which resources users are allowed to perform actions on. Amazon EC2 has partial support for resource-level permissions. This means that for certain Amazon EC2 actions, you can control when users are allowed to use those actions based on conditions that have to be fulfilled, or specific resources that users are allowed to use. For example, you can grant users permission to launch instances, but only of a specific type, and only using a specific AMI.

Topics

- Supported Resource-Level Permissions (p. 624)
- Unsupported Resource-Level Permissions (p. 632)

Supported Resource-Level Permissions

The following sections describe the resources that are created or modified by the Amazon EC2 actions, and the ARNs and Amazon EC2 condition keys that you can use in an IAM policy statement to grant users permission to create or modify particular Amazon EC2 resources. (We'll add support for additional actions, ARNs, and condition keys later.)

Topics

- Customer Gateways (p. 624)
- DHCP Options Sets (p. 624)
- Instances (p. 624)
- Internet Gateways (p. 628)
- Network ACLs (p. 628)
- Route Tables (p. 628)
- Security Groups (p. 629)
- Volumes (p. 630)
- VPCs (p. 631)
- VPC Peering Connections (p. 631)

Customer Gateways

Resource	ARN Format	Condition Keys
Action: DeleteCustomerGateway (p. 134)		
Customer gateway	arn:aws:ec2:*region*:*account*:customer-gateway/*cgw-id*	ec2:Region ec2:ResourceTag/*tag-key*

DHCP Options Sets

Resource	ARN Format	Condition Keys
Action: DeleteDhcpOptions (p. 136)		
DHCP options set	arn:aws:ec2:*region*:*account*:dhcp-options/*dhcp-options-id*	ec2:Region ec2:ResourceTag/*tag-key*

Instances

Resource	ARN Format	Condition Keys
Action: AttachClassicLinkVpc (p. 27)		

Resource	ARN Format	Condition Keys
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:InstanceType ec2:PlacementGroup ec2:ProductCode ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Subnet ec2:Tenancy ec2:Vpc
Security Group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy
Action: DetachClassicLinkVpc (p. 347)		
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:InstanceType ec2:PlacementGroup ec2:ProductCode ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Subnet ec2:Tenancy ec2:Vpc
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy
Action: RebootInstances (p. 416)		

Resource	ARN Format	Condition Keys
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy
Action: RunInstances (p. 460)		
Image	arn:aws:ec2:*region*::image/*image-id*	ec2:ImageType ec2:Owner ec2:Public ec2:Region ec2:RootDeviceType ec2:ResourceTag/*tag-key*
Instance	arn:aws:ec2:*region*:*account*:instance/*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:RootDeviceType ec2:Tenancy
Key pair	arn:aws:ec2:*region*:*account*:key-pair/*key-pair-name*	ec2:Region
Network interface	arn:aws:ec2:*region*:*account*:network-interface/* (if launching into a VPC, for creating a network interface) arn:aws:ec2:*region*:*account*:network-interface/*eni-id* (if specifying an existing network interface)	ec2:AvailabilityZone ec2:Region ec2:Subnet ec2:ResourceTag/*tag-key* ec2:Vpc
Placement group	arn:aws:ec2:*region*:*account*:placement-group/*placement-group-name*	ec2:Region ec2:PlacementGroup-Strategy
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc

Resource	ARN Format	Condition Keys
Snapshot	arn:aws:ec2:*region*::snapshot/*snapshot-id*	ec2:Owner ec2:ParentVolume ec2:Region ec2:SnapshotTime ec2:ResourceTag/*tag-key* ec2:VolumeSize
Subnet	arn:aws:ec2:*region*:*account*:subnet/*subnet-id*	ec2:AvailabilityZone ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Volume	arn:aws:ec2:*region*:*account*:volume/* (if launching from an EBS-backed image)	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:VolumeIops ec2:VolumeSize ec2:VolumeType
Action: StartInstances (p. 467)		
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy
Action: StopInstances (p. 469)		
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy
Action: TerminateInstances (p. 471)		

Resource	ARN Format	Condition Keys
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy

Internet Gateways

Resource	ARN Format	Condition Keys
Action: DeleteInternetGateway (p. 139)		
Internet gateway	arn:aws:ec2:*region*:*account*:internet-gateway/*igw-id*	ec2:Region ec2:ResourceTag/*tag-key*

Network ACLs

Resource	ARN Format	Condition Keys
Action: DeleteNetworkAcl (p. 143)		
Network ACL	arn:aws:ec2:*region*:*account*:network-acl/*nacl-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: DeleteNetworkAclEntry (p. 145)		
Network ACL	arn:aws:ec2:*region*:*account*:network-acl/*nacl-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc

Route Tables

Resource	ARN Format	Condition Keys
Action: DeleteRoute (p. 151)		

Resource	ARN Format	Condition Keys
Route table	arn:aws:ec2:*region*:*account*:route-table/*route-table-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: DeleteRouteTable (p. 153)		
Route table	arn:aws:ec2:*region*:*account*:route-table/*route-table-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc

Security Groups

Resource	ARN Format	Condition Keys
Action: AuthorizeSecurityGroupEgress (p. 37)		
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: AuthorizeSecurityGroupIngress (p. 40)		
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: DeleteSecurityGroup (p. 155)		
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: RevokeSecurityGroupEgress (p. 454)		
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc
Action: RevokeSecurityGroupIngress (p. 457)		
Security group	arn:aws:ec2:*region*:*account*:security-group/*security-group-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Vpc

Volumes

Resource	ARN Format	Condition Keys
Action: AttachVolume (p. 33)		
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy
Volume	arn:aws:ec2:*region*:*account*:volume/*volume-id*	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/*tag-key* ec2:VolumeIops ec2:VolumeSize ec2:VolumeType
Action: DeleteVolume (p. 166)		
Volume	arn:aws:ec2:*region*:*account*:volume/*volume-id*	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/*tag-key* ec2:VolumeIops ec2:VolumeSize ec2:VolumeType
Action: DetachVolume (p. 353)		
Instance	arn:aws:ec2:*region*:*account*:instance/*instance-id*	ec2:AvailabilityZone ec2:EbsOptimized ec2:InstanceProfile ec2:InstanceType ec2:PlacementGroup ec2:Region ec2:ResourceTag/*tag-key* ec2:RootDeviceType ec2:Tenancy

Resource	ARN Format	Condition Keys
Volume	arn:aws:ec2:*region*:*account*:volume/*volume-id*	ec2:AvailabilityZone ec2:ParentSnapshot ec2:Region ec2:ResourceTag/*tag-key* ec2:VolumeIops ec2:VolumeSize ec2:VolumeType

VPCs

Resource	ARN Format	Condition Keys
Action: DisableVpcClassicLink (p. 359)		
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy
Action: EnableVpcClassicLink (p. 369)		
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy

VPC Peering Connections

Resource	ARN Format	Condition Keys
Action: AcceptVpcPeeringConnection (p. 14)		
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy
VPC peering connection	arn:aws:ec2:*region*:*account*:vpc-peering-connection/*vpc-peering-connection-id*	ec2:AccepterVpc ec2:Region ec2:ResourceTag/*tag-key* ec2:RequesterVpc
Action: CreateVpcPeeringConnection (p. 124)		

Resource	ARN Format	Condition Keys
VPC	arn:aws:ec2:*region*:*account*:vpc/*vpc-id*	ec2:Region ec2:ResourceTag/*tag-key* ec2:Tenancy
VPC peering connection	arn:aws:ec2:*region*:*account*:vpc-peering-connection/*	ec2:AccepterVpc ec2:Region ec2:RequesterVpc
Action: DeleteVpcPeeringConnection (p. 172)		
VPC peering connection	arn:aws:ec2:*region*:*account*:vpc-peering-connection/*vpc-peering-connection-id*	ec2:AccepterVpc ec2:Region ec2:ResourceTag/*tag-key* ec2:RequesterVpc
Action: RejectVpcPeeringConnection (p. 422)		
VPC peering connection	arn:aws:ec2:*region*:*account*:vpc-peering-connection/*vpc-peering-connection-id*	ec2:AccepterVpc ec2:Region ec2:ResourceTag/*tag-key* ec2:RequesterVpc

Unsupported Resource-Level Permissions

The following Amazon EC2 API actions currently do not support resource-level permissions. To use these actions in an IAM policy, you must grant users permission to use all resources for the action by using a * wildcard for the `Resource` element in your statement. For examples, see Example Policies for CLI or SDK.

- AllocateAddress
- AssignPrivateIpAddresses
- AssociateAddress
- AssociateDhcpOptions
- AssociateRouteTable
- AttachInternetGateway
- AttachNetworkInterface
- AttachVpnGateway
- BundleInstance
- CancelBundleTask
- CancelConversionTask
- CancelExportTask

- CancelImportTask
- CancelReservedInstancesListing
- CancelSpotFleetRequests
- CancelSpotInstanceRequests
- ConfirmProductInstance
- CopyImage
- CopySnapshot
- CreateCustomerGateway
- CreateDhcpOptions
- CreateFlowLogs
- CreateImage
- CreateInstanceExportTask
- CreateInternetGateway
- CreateKeyPair
- CreateNetworkAcl
- CreateNetworkAclEntry
- CreateNetworkInterface
- CreatePlacementGroup
- CreateReservedInstancesListing
- CreateRoute
- CreateRouteTable
- CreateSecurityGroup
- CreateSnapshot
- CreateSpotDatafeedSubscription
- CreateSubnet
- CreateTags
- CreateVolume
- CreateVpc
- CreateVpcEndpoint
- CreateVpnConnection
- CreateVpnConnectionRoute
- CreateVpnGateway
- DeleteFlowLogs
- DeleteKeyPair
- DeleteNetworkInterface
- DeletePlacementGroup
- DeleteSnapshot
- DeleteSpotDatafeedSubscription
- DeleteSubnet
- DeleteTags
- DeleteVpc
- DeleteVpcEndpoints
- DeleteVpnConnection
- DeleteVpnConnectionRoute
- DeleteVpnGateway
- DeregisterImage

- DescribeAccountAttributes
- DescribeAddresses
- DescribeAvailabilityZones
- DescribeBundleTasks
- DescribeClassicLinkInstances
- DescribeConversionTasks
- DescribeCustomerGateways
- DescribeDhcpOptions
- DescribeExportTasks
- DescribeImageAttribute
- DescribeImages
- DescribeImportImageTasks
- DescribeImportSnapshotTasks
- DescribeInstanceAttribute
- DescribeInstances
- DescribeInstanceStatus
- DescribeInternetGateways
- DescribeFlowLogs
- DescribeKeyPairs
- DescribeMovingAddresses
- DescribeNetworkAcls
- DescribeNetworkInterfaceAttribute
- DescribeNetworkInterfaces
- DescribePlacementGroups
- DescribePrefixLists
- DescribeRegions
- DescribeReservedInstances
- DescribeReservedInstancesListings
- DescribeReservedInstancesModifications
- DescribeReservedInstancesOfferings
- DescribeRouteTables
- DescribeSecurityGroups
- DescribeSnapshotAttribute
- DescribeSnapshots
- DescribeSpotDatafeedSubscription
- DescribeSpotFleetInstances
- DescribeSpotFleetRequestHistory
- DescribeSpotFleetRequests
- DescribeSpotInstanceRequests
- DescribeSpotPriceHistory
- DescribeSubnets
- DescribeTags
- DescribeVolumeAttribute
- DescribeVolumes
- DescribeVolumeStatus
- DescribeVpcAttribute

- DescribeVpcClassicLink
- DescribeVpcEndpoints
- DescribeVpcEndpointServices
- DescribeVpcPeeringConnections
- DescribeVpcs
- DescribeVpnConnections
- DescribeVpnGateways
- DetachInternetGateway
- DetachNetworkInterface
- DetachVpnGateway
- DisableVgwRoutePropagation
- DisassociateAddress
- DisassociateRouteTable
- EnableVgwRoutePropagation
- EnableVolumeIO
- GetConsoleOutput
- GetPasswordData
- ImportImage
- ImportInstance
- ImportKeyPair
- ImportSnapshot
- ImportVolume
- ModifyImageAttribute
- ModifyInstanceAttribute
- ModifyNetworkInterfaceAttribute
- ModifyReservedInstances
- ModifySnapshotAttribute
- ModifySubnetAttribute
- ModifyVolumeAttribute
- ModifyVpcAttribute
- ModifyVpcEndpoint
- MonitorInstances
- MoveAddressToVpc
- PurchaseReservedInstancesOffering
- RegisterImage
- ReleaseAddress
- ReplaceNetworkAclAssociation
- ReplaceNetworkAclEntry
- ReplaceRoute
- ReplaceRouteTableAssociation
- ReportInstanceStatus
- RequestSpotFleet
- RequestSpotInstances
- ResetImageAttribute
- ResetInstanceAttribute
- ResetNetworkInterfaceAttribute

- ResetSnapshotAttribute
- RestoreAddressToClassic
- UnassignPrivateIpAddresses
- UnmonitorInstances

Error Codes

Amazon EC2 has two types of error codes:

- **Client errors**. These errors are usually caused by something the client did, such as use an action or resource on behalf of a user that doesn't have permission to use the action or resource, or specify an identifier that is not valid. These errors are accompanied by a 400-series HTTP response code.
- **Server errors**. These errors are usually caused by a server-side issue. These errors are accompanied by a 500-series HTTP response code.

Topics

- Common Client Errors (p. 637)
- Client Errors For Specific Actions (p. 639)
- Server Errors (p. 655)
- Example Error Response (p. 656)
- Eventual Consistency (p. 656)

Common Client Errors

This section lists the common client errors that all actions can return.

Error Code	Description
`AuthFailure`	The provided credentials could not be validated. You may not be authorized to carry out the request; for example, associating an Elastic IP address that is not yours, or trying to use an AMI for which you do not have permissions. Ensure that your account is authorized to use the Amazon EC2 service, that your credit card details are correct, and that you are using the correct access keys.
`Blocked`	Your account is currently blocked. Contact aws-verification@amazon.com if you have questions.

Error Code	Description
DryRunOperation	The user has the required permissions, so the request would have succeeded, but the DryRun parameter was used.
IdempotentParameterMismatch	The request uses the same client token as a previous, but non-identical request. Do not reuse a client token with different requests, unless the requests are identical.
IncompleteSignature	The request signature does not conform to AWS standards.
InvalidAction	The action or operation requested is invalid. Verify that the action is typed correctly.
InvalidClientTokenId	The X.509 certificate or AWS access key ID provided does not exist in our records.
InvalidParameter	A parameter specified in a request is not valid, is unsupported, or cannot be used. The returned message provides an explanation of the error value. For example, if you are launching an instance, you can't specify a security group and subnet that are in different VPCs.
InvalidParameterCombination	Indicates an incorrect combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.
InvalidParameterValue	A value specified in a parameter is not valid, is unsupported, or cannot be used. Ensure that you specify a resource by using its full ID. The returned message provides an explanation of the error value.
InvalidQueryParameter	The AWS query string is malformed or does not adhere to AWS standards.
MalformedQueryString	The query string contains a syntax error.
MissingAction	The request is missing an action or a required parameter.
MissingAuthenticationToken	The request must contain either a valid (registered) AWS access key ID or X.509 certificate.
MissingParameter	The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.
OptInRequired	You are not authorized to use the requested service. Ensure that you have subscribed to the service you are trying to use. If you are new to AWS, your account might take some time to be activated while your credit card details are being verified.
PendingVerification	Your account is pending verification. Until the verification process is complete, you may not be able to carry out requests with this account. If you have questions, contact AWS Support.

Error Code	Description
`RequestExpired`	The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.
`RequestLimitExceeded`	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account. For best results, use an increasing or variable sleep interval between requests. For more information, see Query API Request Rate (p. 610).
`Throttling`	The request was denied due to request throttling.
`UnauthorizedOperation`	You are not authorized to perform this operation. Check your IAM policies, and ensure that you are using the correct access keys. For more information, see Controlling Access. If the returned message is encoded, you can decode it using the `DecodeAuthorizationMessage` action. For more information, see DecodeAuthorizationMessage in the *AWS Security Token Service API Reference*.
`UnknownParameter`	An unknown or unrecognized parameter was supplied. Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.
`UnsupportedProtocol`	SOAP has been deprecated and is not supported for the API version you're using. For more information, see SOAP Requests.
`ValidationError`	The input fails to satisfy the constraints specified by an AWS service.

Client Errors For Specific Actions

This section lists client errors that are specific to certain Amazon EC2 API actions.

Error Code	Description
`ActiveVpcPeeringConnectionPerVpcLimitExceeded`	You've reached the limit on the number of active VPC peering connections you can have for the specified VPC.
`AddressLimitExceeded`	You've reached the limit on the number of Elastic IP addresses that you can allocate. For more information, see Elastic IP Address Limit. If you need additional Elastic IP addresses, complete the Amazon EC2 Elastic IP Address Request Form. If you need additional Elastic IP addresses for your VPCs, complete the Amazon VPC Limits form.

Error Code	Description
`AttachmentLimitExceeded`	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.
`BundlingInProgress`	The specified instance already has a bundling task in progress.
`CannotDelete`	You cannot delete the 'default' security group in your VPC, but you can change its rules. For more information, see Amazon EC2 Security Groups.
`ConcurrentSnapshotLimitExceeded`	You've reached the limit on the number of concurrent snapshots you can create on the specified volume. Wait until the 'pending' requests have completed, and check that you do not have snapshots that are in a incomplete state, such as 'error', which count against your concurrent snapshot limit.
`ConcurrentTagAccess`	You can't run simultaneous commands to modify a tag for a specific resource. Allow sufficient wait time for the previous request to complete, then retry your request. For more information, see Error Retries and Exponential Backoff in AWS.
`CustomerGatewayLimitExceeded`	You've reached the limit on the number of customer gateways you can create for the region. For more information, see Amazon VPC Limits. To request an increase on your customer gateway limit, complete the Amazon VPC Limits form.
`DependencyViolation`	The specified object has dependent resources. A number of resources in a VPC may have dependent resources, which prevent you from deleting or detaching them. Remove the dependencies first, then retry your request. For example, this error occurs if you try to delete a security group in a VPC that is in use by another security group.
`DiskImageSizeTooLarge`	The disk image exceeds the allowed limit (for instance or volume import).
`EncryptedVolumesNotSupported`	Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see Amazon EBS encryption in the *Amazon EC2 User Guide for Linux Instances*.
`FlowLogAlreadyExists`	A flow log with the specified configuration already exists.
`FlowLogsLimitExceeded`	You've reached the limit on the number of flow logs you can create. For more information, see Amazon VPC Limits.
`FilterLimitExceeded`	The request uses too many filters or too many filter values.

Error Code	Description
`Gateway.NotAttached`	An Internet gateway is not attached to a VPC. If you are trying to detach an Internet gateway, ensure that you specify the correct VPC. If you are trying to associate an Elastic IP address with a network interface or an instance, ensure that an Internet gateway is attached to the relevant VPC.
`IncorrectInstanceState`	The instance is in an incorrect state, so the requested action can't be completed. For example, some instance attributes, such as user data, can only be modified if the instance is in a 'stopped' state. If you are associating an Elastic IP address with a network interface, ensure that the instance that the interface is attached to is not in the 'pending' state.
`IncorrectState`	The resource is in an incorrect state for the request. This error can occur if you are trying to attach a volume that is still being created. Ensure that the volume is in the 'available' state. If you are creating a snapshot, ensure that the previous request to create a snapshot on the same volume has completed. If you are deleting a virtual private gateway, ensure that it's detached from the VPC.
`InstanceAlreadyLinked`	The EC2-Classic instance you are trying to link is already linked to another VPC. You cannot link an EC2-Classic instance to more than one VPC at a time.
`InstanceLimitExceeded`	You've reached the limit on the number of instances you can run concurrently. The limit depends on the instance type. For more information, see How many instances can I run in Amazon EC2. If you need additional instances, complete the Amazon EC2 Instance Request Form.
`InsufficientFreeAddressesInSubnet`	The specified subnet does not contain enough free IP addresses to fulfill your request. Use the DescribeSubnets request to view how many IP addresses are available (unused) in your subnet. IP addresses associated with stopped instances are considered unavailable.
`InsufficientReservedInstancesCapacity`	There is insufficient capacity for the requested Reserved Instances.
`InternetGatewayLimitExceeded`	You've reached the limit on the number of Internet gateways that you can create. For more information, see Amazon VPC Limits. To request an increase on the Internet gateway limit, complete the Amazon VPC Limits form.
`InvalidAddress.Malformed`	The specified IP address is invalid. Ensure that you provide the address in the form `xx.xx.xx.xx`; for example, `55.123.45.67`

Error Code	Description
`InvalidAddress.NotFound`	The specified Elastic IP address that you are describing cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.
`InvalidAddressID.NotFound`	The specified allocation ID for the Elastic IP address you are trying to release cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.
`InvalidAllocationID.NotFound`	The specified allocation ID you are trying to describe or associate does not exist. Ensure that you specify the region in which the IP address is located, if it's not in the default region.
`InvalidAMIAttributeItemValue`	The value of an item added to, or removed from, an image attribute is not valid. If you are specifying a `userId`, check that it is in the form of an AWS account ID, without hyphens.
`InvalidAMIID.Malformed`	The specified AMI ID is not valid. Ensure that you provide the full AMI ID, in the form *ami-xxxxxx*.
`InvalidAMIID.NotFound`	The specified AMI does not exist. Check the AMI ID, and ensure that you specify the region in which the AMI is located, if it's not in the default region. This error may also occur if you specified an incorrect kernel ID when launching an instance.
`InvalidAMIID.Unavailable`	The specified AMI has been deregistered and is no longer available, or is not in a state from which you can launch an instance.
`InvalidAMIName.Duplicate`	The specified AMI name is already in use by another AMI. If you have recently deregistered an AMI with the same name, allow enough time for the change to propagate through the system, and retry your request.
`InvalidAMIName.Malformed`	AMI names must be between 3 and 128 characters long, and may contain letters, numbers, and only the following characters: ( ) . - / _
`InvalidAssociationID.NotFound`	The specified association ID (for an Elastic IP address, a route table, or network ACL) does not exist. Ensure that you specify the region in which the association ID is located, if it's not in the default region.
`InvalidAttachment.NotFound`	Indicates an attempt to detach a volume from an instance to which it is not attached.
`InvalidAttachmentID.NotFound`	The specified network interface attachment does not exist.
`InvalidBlockDeviceMapping`	A block device mapping parameter is not valid. The returned message indicates the incorrect value.

Error Code	Description
`InvalidBundleID.NotFound`	The specified bundle task ID cannot be found. Ensure that you specify the region in which the bundle task is located, if it's not in the default region.
`InvalidConversionTaskId`	The specified conversion task ID (for instance or volume import) is not valid.
`InvalidCustomerGateway.DuplicateIpAddress`	There is a conflict among the specified gateway IP addresses. Each VPN connection in a region must be created with a unique customer gateway IP address (across all AWS accounts). For more information, see Your Customer Gateway in the *Amazon VPC Network Administrator Guide*.
`InvalidCustomerGatewayId.Malformed`	The specified customer gateway ID is malformed, or cannot be found. Specify the ID in the form *cgw-xxxxxxxx*, and ensure that you specify the region in which the customer gateway is located, if it's not in the default region.
`InvalidCustomerGatewayID.NotFound`	The specified customer gateway ID cannot be found. Ensure that you specify the region in which the customer gateway is located, if it's not in the default region.
`InvalidDevice.InUse`	The device to which you are trying to attach (for example, `/dev/sdh`) is already in use on the instance.
`InvalidDhcpOptionID.NotFound`	The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.
`InvalidDhcpOptionsID.NotFound`	The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.
`InvalidDhcpOptionsId.Malformed`	The specified DHCP options set ID is not valid. Ensure that you provide the full DHCP options set ID in the request, in the form *dopt-xxxxxx*.
`InvalidExportTaskID.NotFound`	The specified export task ID cannot be found.
`InvalidFilter`	The specified filter is not valid.
`InvalidFlowLogId.NotFound`	The specified flow log does not exist. Ensure that you have indicated the region in which the flow log is located, if it's not in the default region.
`InvalidFormat`	The specified disk format (for the instance or volume import) is not valid.
`InvalidGatewayID.NotFound`	The specified gateway does not exist.
`InvalidGroup.Duplicate`	You cannot create a security group with the same name as an existing security group in the same VPC, or the same region (EC2-Classic).

Error Code	Description
`InvalidGroupId.Malformed`	The specified security group ID is not valid. Ensure that you provide the full security group ID in the request, in the form *sg-xxxxxxx*.
`InvalidGroup.InUse`	The specified security group can't be deleted because it's in use by another security group. You can remove dependencies by modifying or deleting rules in the affected security groups.
`InvalidGroup.NotFound`	The specified security group does not exist. Ensure that you provide the full security group ID in the request, in the form *sg-xxxxxxx*. This error may occur because the ID of a recently created security group has not propagated through the system. For more information, see Eventual Consistency (p. 611). You cannot specify a security group that is in a different region or VPC to the request. For example, if you are creating a network interface, you cannot specify a security group that is associated with a different VPC to the subnet you've specified in your request.
`InvalidGroup.Reserved`	The name 'default' is reserved, and cannot be used to create a new security group. You also cannot delete the default EC2-Classic security group, but you can change its rules. For more information, see Amazon EC2 Security Groups.
`InvalidID`	The specified ID for the resource you are trying to tag is not valid. Ensure that you provide the full resource ID; for example, ami-2bb65342 for an AMI. If you're using the command line tools on a Windows system, you might need to use quotation marks for the key-value pair; for example, `"Name=TestTag"`.
`InvalidInput`	An input parameter in the request is invalid; for example, if you specified an incorrect Reserved Instance listing ID in the request.
`InvalidInstanceAttributeValue`	The specified instance attribute value is not valid. This error is most commonly encountered when trying to set the `InstanceType`/`--instance-type` attribute to an unrecognized value.

Error Code	Description
`InvalidInstanceID`	This error commonly occurs when trying to associate an IP address with an instance that is not in the 'running' state. This error can also occur when trying to perform an operation on an instance that has multiple network interfaces. A network interface can have individual attributes; therefore, you may need to specify the network interface ID as part of the request, or use a different request. For example, each network interface in an instance can have a source/destination check flag. If you want to modify this attribute, you need to modify the network interface attribute, and not the instance attribute. If you want to create a route in a route table, you need to provide a specific network interface ID as part of the request.
`InvalidInstanceID.Malformed`	The specified instance ID is not valid. Ensure that you provide the full instance ID in the request, in the form *i-xxxxxx*.
`InvalidInstanceID.NotFound`	The specified instance does not exist. Ensure that you have indicated the region in which the instance is located, if it's not in the default region. This error may occur because the ID of a recently created instance has not propagated through the system. For more information, see Eventual Consistency (p. 611).
`InvalidInstanceID.NotLinkable`	The specified instance cannot be linked to the specified VPC. Ensure that the instance is an EC2-Classic instance. This error may also occur if the instance was recently launched, and its ID has not yet propagated through the system. Wait a few minutes, or wait until the instance is in the `running` state, and then try again.
`InvalidInstanceType`	The specified instance does not support bundling. You can only bundle instance store-backed Windows instances.
`InvalidInterface.IpAddressLimitExceeded`	The number of private IP addresses for a specified network interface exceeds the limit for the type of instance you are trying to launch. For more information about the maximum number of private IP addresses per ENI, see Private IP addresses per ENI.
`InvalidInternetGatewayID.NotFound`	The specified Internet gateway does not exist. Ensure that you specify the region in which the Internet gateway is located, if it's not in the default region.
`InvalidIPAddress.InUse`	The specified IP address is already in use. If you are trying to release an address, you must first disassociate it from the instance.

Error Code	Description
`InvalidKey.Format`	The key pair is not specified in a valid OpenSSH public key format.
`InvalidKeyPair.Duplicate`	The key pair name already exists in that region. If you are creating or importing a key pair, ensure that you use a unique name.
`InvalidKeyPair.Format`	The format of the public key you are attempting to import is not valid.
`InvalidKeyPair.NotFound`	The specified key pair name does not exist. Ensure that you specify the region in which the key pair is located, if it's not in the default region.
`InvalidManifest`	The specified AMI has an unparsable manifest, or you may not have access to the location of the manifest file in Amazon S3.
`InvalidNetworkAclEntry.NotFound`	The specified network ACL entry does not exist.
`InvalidNetworkAclID.NotFound`	The specified network ACL does not exist. Ensure that you specify the region in which the network ACL is located, if it's not in the default region.
`InvalidNetworkInterfaceAttachment-ID.Malformed`	The ID for the network interface attachment is not valid. Ensure that you use the attachment ID rather than the network interface ID, in the form *eni-attach-xxxxxx*.
`InvalidNetworkInterfaceId.Malformed`	The specified network interface ID is invalid. Ensure that you specify the network interface ID in the form *eni-xxxxxxxx*.
`InvalidNetworkInterfaceID.NotFound`	The specified network interface does not exist. Ensure that you have provided the full ID for the network interface, in the form *eni-xxxxxx*. Ensure that you specify the region in which the network interface is located, if it's not in the default region.
`InvalidOption.Conflict`	A VPN connection between the virtual private gateway and the customer gateway already exists.
`InvalidPermission.Duplicate`	The specified inbound or outbound rule already exists for that security group.
`InvalidPermission.Malformed`	The specified security group rule is malformed. If you are specifying an IP address range, ensure that you use CIDR notation; for example, 203.0.113.0/24.
`InvalidPermission.NotFound`	The specified rule does not exist in this security group.
`InvalidPlacementGroup.Duplicate`	The specified placement group already exists in that region.
`InvalidPlacementGroup.InUse`	The specified placement group is in use. If you are trying to delete a placement group, ensure that its instances have been terminated.

Error Code	Description
`InvalidPlacementGroup.Unknown`	The specified placement group cannot be found. Ensure that you specify the region in which the placement group is located, if it's not in the default region.
`InvalidPolicyDocument`	The specified policy document is not a valid JSON policy document.
`InvalidPrefixListId.Malformed`	The specified prefix list ID is malformed. Ensure that you provide the ID in the form *pl-xxxxxxxx*.
`InvalidPrefixListId.NotFound`	The specified prefix list ID does not exist. Ensure that you have indicated the region for the service, if it's not in the default region.
`InvalidRequest`	The request is invalid. The returned message provides details about the nature of the error.
`InvalidReservationID.Malformed`	The specified reservation ID is not valid.
`InvalidReservationID.NotFound`	The specified reservation does not exist.
`InvalidReservedInstancesId`	The specified Reserved Instance does not exist.
`InvalidReservedInstancesOfferingId`	The specified Reserved Instances offering does not exist.
`InvalidRoute.Malformed`	The specified route is not valid. If you are deleting a route in a VPN connection, ensure that you've entered the value for the CIDR block correctly.
`InvalidRoute.NotFound`	The specified route does not exist in the specified route table. Ensure that you indicate the exact CIDR range for the route in the request. This error can also occur if you've specified a route table ID in the request that does not exist.
`InvalidRouteTableId.Malformed`	The specified route table ID is malformed. Ensure that you specify the route table ID in the form *rtb-xxxxxxxx*.
`InvalidRouteTableID.NotFound`	The specified route table does not exist. Ensure that you specify the route table ID in the form *rtb-xxxxxxxx*, and that you specify the region in which the route table is located, if it's not in the default region.
`InvalidSecurityGroupID.NotFound`	The specified security group does not exist. If you are creating a network interface, ensure that you specify a VPC security group, and not an EC2-Classic security group. Ensure that you specify the full security group ID, in the form *sg-xxxxxx*.
`InvalidSecurity.RequestHasExpired`	The difference between the request timestamp and the AWS server time is greater than 5 minutes. Ensure that your system clock is accurate and configured to use the correct time zone.
`InvalidServiceName`	The name of the AWS service is invalid. Ensure that you provide the name of the service in the form `com.amazonaws.<region>.<service_name>`; for example `com.amazonaws.us-east-1.s3`.

Error Code	Description
`InvalidSnapshotID.Malformed`	The snapshot ID is not valid.
`InvalidSnapshot.InUse`	The snapshot that you are trying to delete is in use by one or more AMIs.
`InvalidSnapshot.NotFound`	The specified snapshot does not exist. Ensure that you specify the region in which the snapshot is located, if it's not in the default region.
`InvalidSpotDatafeed.NotFound`	You have no data feed for Spot Instances.
`InvalidSpotFleetRequestConfig`	The Spot fleet request configuration is invalid. Ensure that you provide valid values for all of the configuration parameters; for example, a valid AMI ID. Limits apply on the target capacity and the number of launch specifications per Spot fleet request. For more information, see Spot Fleet Limits.
`InvalidSpotFleetRequestId.Malformed`	The specified Spot fleet request ID is not valid. Ensure that you specify the Spot fleet request ID in the form *sfr-* followed by 36 characters, including hyphens; for example, `sfr-123f8fc2-11aa-22bb-33cc-example12710`.
`InvalidSpotFleetRequestId.NotFound`	The specified Spot fleet request ID does not exist. Ensure that you specify the region in which the Spot fleet request is located, if it's not in the default region.
`InvalidSpotInstanceRequestID.Malformed`	The specified Spot Instance request ID is not valid. Ensure that you specify the Spot Instance request ID in the form *sir-xxxxxxxx*.
`InvalidSpotInstanceRequestID.NotFound`	The specified Spot Instance request ID does not exist. Ensure that you specify the region in which the Spot Instance request is located, if it's not in the default region.
`InvalidState`	The specified resource is not in the correct state for the request; for example, if you are trying to enable monitoring on a recently terminated instance, or if you are trying to create a snapshot when a previous identical request has not yet completed.
`InvalidStateTransition`	The specified VPC peering connection is not in the correct state for the request. For example, you may be trying to accept a VPC peering request that has failed, or that was rejected.
`InvalidSubnet.Conflict`	The specified CIDR block conflicts with that of another subnet in your VPC.
`InvalidSubnetID.NotFound`	The specified subnet does not exist. Ensure that you have indicated the region in which the subnet is located, if it's not in the default region.

Error Code	Description
`InvalidUserID.Malformed`	The specified user or owner is not valid. If you are performing a DescribeImages request, you must specify a valid value for the `owner` or `executableBy` parameters, such as an AWS account ID. If you are performing a DescribeSnapshots request, you must specify a valid value for the `owner` or `restorableBy` parameters.
`InvalidVolumeID.Duplicate`	The Amazon EBS volume already exists.
`InvalidVolumeID.Malformed`	The specified volume ID is not valid. Check the letter-number combination carefully; this error occurs if you have specified more than eights digits after the 'vol-' prefix.
`InvalidVolumeID.ZoneMismatch`	The specified volume and instance are in different Availability Zones.
`InvalidVolume.NotFound`	The specified volume does not exist. Ensure that you have indicated the region in which the volume is located, if it's not in the default region. Ensure that you are using the correct access credentials.
`InvalidVolume.ZoneMismatch`	The specified volume is not in the same Availability Zone as the specified instance. You can only attach an Amazon EBS volume to an instance if they are in the same Availability Zone.
`InvalidVpcEndpointId.Malformed`	The specified VPC endpoint ID is malformed. Use the full VPC endpoint ID in the request, in the form *vpce-xxxxxxxx*.
`InvalidVpcEndpointId.NotFound`	The specified VPC endpoint does not exist. Ensure that you have indicated the region in which the endpoint is located, if it's not in the default region.
`InvalidVpcID.NotFound`	The specified VPC does not exist. Use the full VPC ID in the request, in the form *vpc-xxxxxxxx*. Ensure that you have indicated the region in which the VPC is located, if it's not in the default region.
`InvalidVpcPeeringConnectionId.Malformed`	The specified VPC peering connection ID is malformed. Ensure that you provide the ID in the form *pcx-xxxxxxxx*.
`InvalidVpcPeeringConnectionID.NotFound`	The specified VPC peering connection ID does not exist. Ensure that you have indicated the region in which the VPC peering connection is located, if it's not in the default region.
`InvalidVpcRange`	The specified CIDR block range is not valid. The block range must be between a /28 netmask and /16 netmask. For more information, see Your VPC and Subnets.
`InvalidVpcState`	The specified VPC already has a virtual private gateway attached to it.

Error Code	Description
`InvalidVpnConnectionID`	The specified VPN connection ID cannot be found. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.
`InvalidVpnConnectionID.NotFound`	The specified VPN connection ID does not exist. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.
`InvalidVpnGatewayAttachment.NotFound`	An attachment between the specified virtual private gateway and specified VPC does not exist. This error can also occur if you've specified an incorrect VPC ID in the request.
`InvalidVpnGatewayID.NotFound`	The specified virtual private gateway does not exist. Ensure that you have indicated the region in which the virtual private gateway is located, if it's not in the default region.
`InvalidZone.NotFound`	The specified Availability Zone does not exist, or is not available for you to use. Use the DescribeAvailabilityZones request to list the Availability Zones that are currently available to you. Ensure that you have indicated the region for the Availability Zone in the request, if it's not in the default region. Specify the full name of the Availability Zone: for example, us-east-1a.
`LegacySecurityGroup`	Any VPC created using an API version older than 2011-01-01 may have the 2009-07-15-default security group. You must delete this security group before you can attach an Internet gateway to the VPC.
`MaxIOPSLimitExceeded`	You've reached the limit on your IOPS usage for that region. If you need to increase your volume limit, complete the Amazon EC2 EBS Volume Limit Form.
`MaxSpotFleetRequestCountExceeded`	You've reached one or both of these limits: the total number of Spot fleet requests that you can make, or the total number of instances in all Spot fleets for the region (the target capacity). For more information, see Spot Fleet Limits.
`MaxSpotInstanceCountExceeded`	You've reached the limit on the number of Spot Instances that you can launch. The limit depends on the instance type. For more information, see How many instances can I run in Amazon EC2. If you need additional instances, complete the Amazon EC2 Instance Request Form.
`NetworkAclEntryAlreadyExists`	The specified rule number already exists in this network ACL.
`NetworkAclEntryLimitExceeded`	You've reached the limit on the number of rules that you can add to the network ACL. For more information, see Amazon VPC Limits.

Error Code	Description
NetworkAclLimitExceeded	You've reached the limit on the number of network ACLs that you can create for the specified VPC. For more information, see Amazon VPC Limits. To request an increase on your network ACL limit, complete the Amazon VPC Limits form.
NonEBSInstance	The specified instance does not support Amazon EBS. Restart the instance and try again, to ensure that the code is run on an instance with updated code.
NotExportable	The specified instance cannot be exported. You can only export instances that were previously imported into Amazon EC2. For more information, see Exporting EC2 Instances
OperationNotPermitted	The specified operation is not allowed. This error can occur for a number of reasons; for example, you might be trying to terminate an instance that has termination protection enabled, or trying to detach the primary network interface (eth0) from an instance.
OutstandingVpcPeeringConnectionLimitExceeded	You've reached the limit on the number of VPC peering connection requests that you can create for the specified VPC.
PendingSnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots that you can have in the pending state.
PrivateIpAddressLimitExceeded	You've reached the limit on the number of private IP addresses that you can assign to the specified network interface for that type of instance. For more information about the maximum number of private IP addresses per ENI, see Private IP addresses per ENI.
RequestResourceCountExceeded	Details in your Spot request exceed the numbers allowed by the Spot service in one of the following ways, depending on the action that generated the error: —If you get this error when you submitted a bid for Spot Instances, check the number of Spot Instances specified in your request. The number shouldn't exceed the 3,000 maximum allowed per request. Resend your Spot Instance request and specify a number less than 3,000. If your account's regional Spot request limit is greater than 3,000 instances, you can access these instances by submitting multiple smaller requests. —If you get this error when you sent Describe Spot Instance requests, check the number of requests for Spot Instance data, the amount of data you requested, and how often you sent the request. The frequency with which you requested the data combined with the amount of data exceeds the levels allowed by the Spot service. Try again and submit fewer large Describe requests over longer intervals.

Error Code	Description
ReservedInstancesLimitExceeded	Your current quota does not allow you to purchase the required number of Reserved Instances.
Resource.AlreadyAssociated	The specified resource is already in use. For example, in EC2-VPC, you cannot associate an Elastic IP address with an instance if it's already associated with another instance. You also cannot attach an Internet gateway to more than one VPC at a time.
ResourceCountExceeded	You have exceeded the number of resources allowed for this request; for example, if you try to launch more instances than AWS allows in a single request. This limit is separate from your individual resource limit. If you get this error, break up your request into smaller requests; for example, if you are launching 15 instances, try launching 5 instances in 3 separate requests.
ResourceLimitExceeded	You have exceeded an Amazon EC2 resource limit. For example, you might have too many snapshot copies in progress.
RouteAlreadyExists	A route for the specified CIDR block already exists in this route table.
RouteLimitExceeded	You've reached the limit on the number of routes that you can add to a route table.
RouteTableLimitExceeded	You've reached the limit on the number of route tables that you can create for the specified VPC. For more information about route table limits, see Amazon VPC Limits.
RulesPerSecurityGroupLimitExceeded	You've reached the limit on the number of rules that you can add to a security group. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Security Group Rules.
SecurityGroupLimitExceeded	You've reached the limit on the number of security groups that you can create, or that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Creating Your Own Security Groups.
SecurityGroupsPerInstanceLimitExceeded	You've reached the limit on the number of security groups that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Amazon EC2 Security Groups.
SecurityGroupsPerInterfaceLimitExceeded	You've reached the limit on the number of security groups you can associate with the specified network interface. You are limited to five security groups per network interface.
SignatureDoesNotMatch	The request signature that Amazon has does not match the signature that you provided. Check your AWS access keys and signing method.

Error Code	Description
`SnapshotLimitExceeded`	You've reached the limit on the number of Amazon EBS snapshots that you can create. To request an increase on your snapshot limit, complete the Amazon EC2 EBS Volume Limit Form.
`SubnetLimitExceeded`	You've reached the limit on the number of subnets that you can create for the specified VPC. For more information about subnet limits, see Amazon VPC Limits. To request an increase on your subnet limit, complete the Amazon VPC Limits form.
`TagLimitExceeded`	You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see Tag Restrictions.
`UnknownVolumeType`	The specified volume type is unsupported. The supported volume types are `gp2`, `io1`, and `standard`.
`Unsupported`	The specified request is unsupported. For example, you might be trying to launch an instance in an Availability Zone that currently has constraints on that instance type. The returned message provides details of the unsupported request.
`UnsupportedOperation`	The specified request includes an unsupported operation. For example, you can't stop an instance that's instance store-backed. Or you might be trying to launch an instance type that is not supported by the specified AMI. The returned message provides details of the unsupported operation.
`VolumeInUse`	The specified Amazon EBS volume is attached to an instance. Ensure that the specified volume is in an 'available' state.
`VolumeLimitExceeded`	You've reached the limit on your Amazon EBS volume storage. To request an increase, complete the Amazon EC2 EBS Volume Limit Form.
`VolumeTypeNotAvailableInZone`	The specified Availability Zone does not support Provisioned IOPS (SSD) volumes. Try launching your instance in a different Availability Zone, or don't specify a zone in the request. If you're creating a volume, try specifying a different Availability Zone in the request.
`VpcCidrConflict`	You cannot enable a VPC for ClassicLink if the VPC has routing that conflicts with the EC2-Classic private IP address range of `10/8`; for example, if your VPC's route table points to `10.0.0.0/16` for a VPC peering connection. This excludes local routes for VPCs in the `10.0.0.0/16` and `10.1.0.0/16` IP address ranges. For more information, see Routing for ClassicLink.

Error Code	Description
`VPCIdNotSpecified`	You have no default VPC in which to carry out the request. Specify a VPC ID or subnet ID, or in the case of security groups, specify the ID, and not the security group name. You can contact AWS Support to create a new default VPC.
`VpcEndpointLimitExceeded`	You've reached the limit on the number of VPC endpoints that you can create in the region. For more information about VPC limits, see Amazon VPC Limits. To request an increase on your VPC limit, complete the Amazon VPC Limits form.
`VpcLimitExceeded`	You've reached the limit on the number of VPCs that you can create in the region. For more information about VPC limits, see Amazon VPC Limits. To request an increase on your VPC limit, complete the Amazon VPC Limits form.
`VpcPeeringConnectionAlreadyExists`	A VPC peering connection between the VPCs already exists.
`VPCResourceNotSpecified`	The specified resource can be used only in a VPC. If you are launching a T2 instance type, ensure that you have a VPC in your account, and then specify a subnet ID or network interface ID in the request.
`VpnConnectionLimitExceeded`	You've reached the limit on the number of VPN connections that you can create. For more information about limits, see Amazon VPC Limits. To request an increase on your VPN connection limit, complete the Amazon VPC Limits form.
`VpnGatewayAttachmentLimitExceeded`	You've reached the limit on the number of VPCs that can be attached to the specified virtual private gateway.
`VpnGatewayLimitExceeded`	You've reached the limit on the number of virtual private gateways that you can create. For more information about limits, see Amazon VPC Limits. To request an increase on your virtual private gateway limit, complete the Amazon VPC Limits form.

Common Causes of Client Errors

There are a number of reasons that you might encounter an error while performing a request. Some errors can be prevented or easily solved by following these guidelines:

- **Specify the region**: Some resources can't be shared between regions. If you are specifying a resource that's located in a region other than the default region (us-east-1), you need to specify its region in the request. If the resource cannot be found, you'll get the following kind of error: `Client.Invalid`*Resource*`.NotFound`; for example, `Client.InvalidInstanceID.NotFound`.
- **Allow for eventual consistency**: Some errors are caused because a previous request has not yet propagated thorough the system. For more information, see Eventual Consistency (p. 611).

- **Use a sleep interval between request rates**: Amazon EC2 API requests are throttled to help maintain the performance of the service. If your requests have been throttled, you'll get the following error: `Client.RequestLimitExceeded`. For more information, see Query API Request Rate (p. 610).
- **Use the full ID of the resource**: When specifying a resource, ensure that you use its full ID, and not its user-supplied name or description. For example, when specifying a security group in a request, use its ID in the form *sg-xxxxxx*.
- **Check your services**: Ensure that you have signed up for all the services you are attempting to use. You can check which services you're signed up for by going to the **My Account** section of the AWS home page.
- **Check your permissions**: Ensure that you have the required permissions to carry out the request. If you are not authorized, you'll get the following error: `Client.UnauthorizedOperation`. For more information, see Controlling Access in the *Amazon EC2 User Guide for Linux Instances*.
- **Check your VPC**: Some resources cannot be shared between VPCs; for example, security groups.
- **Check your credentials**: Ensure that you provide your access keys when you are making requests; that you have entered the credentials correctly; and, if you have more than one account, that you are using the correct credentials for a particular account. If the provided credentials are incorrect, you may get the following error: `Client.AuthFailure`.

Server Errors

This section lists all the server errors that can be returned.

Error Code	Description
`InsufficientAddressCapacity`	Not enough available addresses to satisfy your minimum request. Reduce the number of addresses you are requesting or wait for additional capacity to become available.
`InsufficientInstanceCapacity`	There is not enough capacity to fulfill your instance request. Reduce the number of instances in your request, or wait for additional capacity to become available. You can also try launching an instance by selecting different instance types (which you can resize at a later stage). The returned message might also give specific guidance about how to solve the problem.
`InsufficientReservedInstanceCapacity`	Not enough available Reserved Instances to satisfy your minimum request. Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.
`InternalError`	An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a message on the AWS forums.
`InternalFailure`	The request processing has failed because of an unknown error, exception or failure.
`ServiceUnavailable`	The request has failed due to a temporary failure of the server.
`Unavailable`	The server is overloaded and can't handle the request.

Example Error Response

The following shows the structure of a request error response.

```
<Response>
    <Errors>
         <Error>
           <Code>Error code text</Code>
           <Message>Error message</Message>
         </Error>
    </Errors>
    <RequestID>request ID</RequestID>
</Response>
```

The following shows an example of an error response.

```
<Response>
    <Errors>
         <Error>
           <Code>InvalidInstanceID.NotFound</Code>
           <Message>The instance ID 'i-1a2b3c4d' does not exist</Message>
         </Error>
    </Errors>
    <RequestID>ea966190-f9aa-478e-9ede-example</RequestID>
</Response>
```

Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see Eventual Consistency (p. 611).