Amazon Route 53

API Reference

API Version 2010-10-01

Amazon Route 53: API Reference

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Table of Contents

Welcome

This is the Amazon Route 53 API Reference. Amazon Route 53 is a web service that enables you to manage your DNS service.

This API Reference contains descriptions of the following actions and elements.

For a guide to using Amazon Route 53, see the *Amazon Route 53 Developer Guide*.

Actions on Hosted Zones

Topics

This section describes actions you can perform on hosted zones.

For more information, see About Hosted Zones in the *Amazon Route 53 Developer Guide*.

POST CreateHostedZone

Description

This action creates a new hosted zone.

To create a new hosted zone, send a `POST` request to the `2010-10-01/hostedzone` resource. The request body must include an XML document with a `CreateHostedZoneRequest` element. The response returns the `CreateHostedZoneResponse` element that contains metadata about the hosted zone.

Important

You cannot create a hosted zone for a top-level domain (TLD).

Amazon Route 53 automatically creates a default SOA record and four NS records for the zone. The NS records in the hosted zone are the name servers you give your registrar to delegate your domain to. For more information about SOA and NS records, see Appendix A: Domain Name and Resource Record Formats in the *Amazon Route 53 Developer Guide*.

When you create a zone, its initial status is `PENDING`. This means that it is not yet available on all DNS servers. The status of the zone changes to `INSYNC` when the NS and SOA records are available on all Amazon Route 53 DNS servers. For more information on creating hosted zones, see Creating a New Virtual DNS Service in the *Amazon Route 53 Developer Guide*.

Requests

Syntax

```
POST /2010-10-01/hostedzone HTTP/1.1
<?xml version="1.0" encoding="UTF-8"?>
<CreateHostedZoneRequest xmlns="https://route53.amazonaws.com/doc/
2010-10-01/">
   <Name>example.com.</Name>
   <CallerReference>myUniqueIdentifier</CallerReference>
   <HostedZoneConfig>
      <Comment>This is my first hosted zone.</Comment>
   </HostedZoneConfig>
</CreateHostedZoneRequest>
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Elements

Name	Description	Required
`CreateHostedZoneRequest`	A complex type containing the hosted zone request information. Type: Complex Default: None Children: `Name`, `CallerReference`, `HostedZoneConfig`	Yes
`Name`	The name of the domain. This must be a fully-specified domain that ends with a period as the last label indication. If you omit the final period, Amazon Route 53 assumes the domain is relative to the root. This is the name you have registered with your DNS registrar. You should ask your registrar to set the authoritative name servers for your domain so they are the same as the set of `NameServers` returned in `DelegationSet`. Type: String Default: None	Yes
`CallerReference`	A unique string that identifies the request and that allows failed `CreateHostedZone` requests to be retried without the risk of executing the operation twice. You must use a unique `CallerReference` string every time you create a hosted zone. CallerReference can be any unique string; you might choose to use a string that identifies your project, such as `MyDNSMigration_01`. Type: String Default: None Constraints: Allowable characters are any Unicode code points that are legal in an XML 1.0 document. The UTF-8 encoding of the value must be less than 128 bytes.	Yes
`HostedZoneConfig`	A complex type that contains configuration information for your hosted zone. Type: Complex Default: None Children: `Comment`	No
`Comment`	Any comments you want to include about the hosted zone. Type: String Default: None Constraints: Maximum 256 characters Parent: `HostedZoneConfig`	No

Responses

Syntax

```
HTTP/1.1 201 Created
<?xml version="1.0" encoding="UTF-8"?>
<CreateHostedZoneResponse xmlns="https://route53.amazonaws.com/
doc/2010-10-01/">
   <HostedZone>
      <Id>/hostedzone/Z1PA6795UKMFR9</Id>
      <Name>example.com.</Name>
      <CallerReference>myUniqueIdentifier</CallerReference>
      <Config>
         <Comment>This is my first hosted zone.</Comment>
      </Config>
   </HostedZone>
   <ChangeInfo>
      <Id>/change/C1PA6795UKMFR9</Id>
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
   <DelegationSet>
      <NameServers>
         <NameServer>ns-01.awsdns-00.com</NameServer>
         <NameServer>ns-500.awsdns-11.net</NameServer>
         <NameServer>ns-1112.awsdns-31.org</NameServer>
         <NameServer>ns-1600.awsdns-27.co.uk</NameServer>
      </NameServers>
   </DelegationSet>
</CreateHostedZoneResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`CreateHostedZoneResponse`	A complex type containing the response information for the hosted zone. Type: Complex Children: `HostedZone`, `ChangeInfo`, `DelegationSet`
`HostedZone`	A complex type containing the specific identifying information about the hosted zone. Type: Complex Children: `Id`, `Name`, `CallerReference`, `Config`
`Id`	The ID of the hosted zone. Type: String Parent: `HostedZone`

Name	Description
Name	The name of the domain. This must be a fully-specified domain, ending with a period as the last label indication. If you omit the final period, Amazon Route 53 assumes the domain is relative to the root. This is the name you have registered with your DNS registrar. It is also the name you delegate from your registrar to the Amazon Route 53 delegation servers returned in response to this request. Type: String Parent: HostedZone
CallerReference	A unique string that identifies the request to create the hosted zone. Type: String Parent: HostedZone
Config	A complex type that includes the Comment element. Type: Complex Parent: HostedZone Children: Comment
Comment	The comment included in the CreateHostedZoneRequest element. Type: String Constraints: Maximum 256 characters Parent: Config
ChangeInfo	A complex type that describes change information about changes made to your hosted zone. This element contains an ID that you use when performing a GetChange action to get detailed information about the change. Type: Complex Children: Id, Status, SubmittedAt
Id	The ID of the request. Use this ID to track when the change has completed across all Amazon Route 53 DNS servers. Type: String Parent: ChangeInfo
Status	The current state of the hosted zone. PENDING indicates that this request has not yet been applied to all Amazon Route 53 DNS servers. Type: String Valid Values: PENDING | INSYNC Parent: ChangeInfo
SubmittedAt	The date and time the change was made. Type: String with date in the format YYYY-MM-DDThh:mm:ssZ, as specified in the ISO 8601 standard (for example, 2009-11-19T19:37:58Z) Parent: ChangeInfo
DelegationSet	A complex type that describes name server information. Type: Complex Children: NameServers

Name	Description
`NameServers`	A complex type that identifies the authoritative name servers for the hosted zone. You ask your registrar to add an NS record to your domain for each NameServer assigned to your hosted zone. Type: Complex Parent: `DelegationSet` Children: `NameServer`
`NameServer`	Identifies a name server that is authoritative for your domain. Type: String Parent: `NameServers`

Note

In the context of `CreateHostedZone`, the `ChangeInfo` element indicates the creation of the SOA records and records for the `NameServer` names.

Errors

The following table lists the errors returned for this action.

Name	Description
`DelegationSetNotAvailable`	Amazon Route 53 allows some duplication, but Amazon Route 53 has a maximum threshold of duplicated domains. This error is generated when you reach that threshold. In this case, the error indicates that too many hosted zones with the given domain name exist. If you want to create a hosted zone and Amazon Route 53 generates this error, contact Customer Support.
`InvalidDomainName`	The specified domain name is not valid.
`HostedZoneAlreadyExists`	The hosted zone you are attempting to create already exists. Amazon Route 53 returns this error when a hosted zone has already been created with the supplied CallerReference.
`TooManyHostedZones`	This hosted zone cannot be created. The hosted zone limit has been exceeded. To request a limit increase, contact Customer Support.
`InvalidInput`	The input is not valid.

Examples

Example Request

```
POST /2010-10-01/hostedzone HTTP/1.1
<?xml version="1.0" encoding="UTF-8"?>
<CreateHostedZoneRequest xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
```

```
   <Name>example.com.</Name>
   <CallerReference>myUniqueIdentifier</CallerReference>
   <HostedZoneConfig>
      <Comment>This is my first hosted zone.</Comment>
   </HostedZoneConfig>
</CreateHostedZoneRequest>
```

Example Response

```
HTTP/1.1 201 Created
<?xml version="1.0" encoding="UTF-8"?>
<CreateHostedZoneResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">

   <HostedZone>
      <Id>/hostedzone/Z1PA6795UKMFR9</Id>
      <Name>example.com.</Name>
      <CallerReference>myUniqueIdentifier</CallerReference>
      <Config>
         <Comment>This is my first hosted zone.</Comment>
      </Config>
   </HostedZone>
   <ChangeInfo>
      <Id>/change/C1PA6795UKMFR9</Id>
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
   <DelegationSet>
      <NameServers>
         <NameServer>ns-01.awsdns-00.com</NameServer>
         <NameServer>ns-500.awsdns-11.net</NameServer>
         <NameServer>ns-1112.awsdns-31.org</NameServer>
         <NameServer>ns-1600.awsdns-27.co.uk</NameServer>
      </NameServers>
   </DelegationSet>
</CreateHostedZoneResponse>
```

GET GetHostedZone

Description

To retrieve information about a hosted zone, send a GET request to the `2010-10-01/hostedzone/<hosted zone ID>` resource.

For more information about using this action to get name server information, see Retrieving Your Name Servers in the *Amazon Route 53 Developer Guide*.

Requests

Syntax

```
GET /2010-10-01/hostedzone/Z1PA6795UKMFR9
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

The request must contain the hosted zone ID. Amazon Route 53 returns the hosted zone ID in the `HostedZone` element as part of the `CreateHostedZoneResponse` or `ListHostedZonesResponse`. For more information, see POST CreateHostedZone (p. 3) or GET ListHostedZones (p. 16).

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<GetHostedZoneResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <HostedZone>
      <Id>/hostedzone/Z1PA6795UKMFR9</Id>
      <Name>example.com.</Name>
      <CallerReference>myUniqueIdentifier</CallerReference>
      <Config>
         <Comment>This is my first hosted zone.</Comment>
      </Config>
   </HostedZone>
   <DelegationSet>
      <NameServers>
         <NameServer>ns-01.awsdns-00.com</NameServer>
         <NameServer>ns-500.awsdns-11.net</NameServer>
         <NameServer>ns-1112.awsdns-31.org</NameServer>
         <NameServer>ns-1600.awsdns-27.co.uk</NameServer>
      </NameServers>
   </DelegationSet>
</GetHostedZoneResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`GetHostedZoneResponse`	A complex type containing information about a hosted zone. Type: Complex Children: `HostedZone`, `DelegationSet`
`HostedZone`	A complex type containing the specific identifying information about the hosted zone. Type: Complex Children: `Id`, `Name`, `CallerReference`, `Config`
`Id`	The ID of the hosted zone. Type: String Parent: `HostedZone`
`Name`	The name of the domain. This must be a fully-specified domain, ending with a period as the last label indication. If you omit the final period, Amazon Route 53 assumes the domain is relative to the root. This is the name you have registered with your DNS registrar. It is also the name you delegate from your registrar to the Amazon Route 53 delegation servers returned in response to this request. Type: String Parent: `HostedZone`
`CallerReference`	A unique string that identifies the request to create the hosted zone. Type: String Parent: `HostedZone`
`Config`	A complex type that includes the `Comment` element. Type: Complex Parent: `HostedZone` Children: `Comment`
`Comment`	The comment included in the `CreateHostedZoneRequest` element. Type: String Constraints: Maximum 256 characters Parent: `Config`
`DelegationSet`	A complex type that describes name server information. Type: Complex Children: `NameServers`

Name	Description
NameServers	A complex type that identifies the authoritative name servers for the hosted zone. You ask your registrar to add an NS record to your domain for each NameServer assigned to your hosted zone. Type: Complex Parent: DelegationSet Children: NameServer
NameServer	Identifies a name server that is authoritative for your domain. Type: String Parent: NameServers

Errors

This action returns the following error.

Name	Description
InvalidInput	The input is not valid.

Examples

Example Request

The following shows a GET request for information about a hosted zone with an ID of Z1PA6795UKMFR9.

```
GET /2010-10-01/hostedzone/Z1PA6795UKMFR9
```

Example Response

The following shows the response to the GET request.

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<GetHostedZoneResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <HostedZone>
      <Id>/hostedzone/Z1PA6795UKMFR9</Id>
      <Name>example.com.</Name>
      <CallerReference>myUniqueIdentifier</CallerReference>
      <Config>
         <Comment>This is my first hosted zone.</Comment>
      </Config>
      </HostedZone>
      <DelegationSet>
         <NameServers>
            <NameServer>ns-01.awsdns-00.com</NameServer>
            <NameServer>ns-500.awsdns-11.net</NameServer>
            <NameServer>ns-1112.awsdns-31.org</NameServer>
            <NameServer>ns-1600.awsdns-27.co.uk</NameServer>
```

```
      </NameServers>
   </DelegationSet>
   </GetHostedZoneResponse>
```

DELETE DeleteHostedZone

Description

This action deletes a hosted zone. To delete a hosted zone, send a `DELETE` request to the `2010-10-01/hostedzone/<hosted zone ID>` resource.

For more information about deleting a hosted zone, see Deleting a Hosted Zone in the *Amazon Route 53 Developer Guide*.

Important

You can delete a hosted zone only if there is no resource record set other than the default SOA record and NS records. If your hosted zone contains resource records other than the default SOA record and NS records, you must delete those resource records before you can delete your hosted zone. Any records you added to the hosted zone must be deleted first. If you try to delete a hosted zone that contains resource records other than the default records, Amazon Route 53 will deny your request with a `HostedZoneNotEmpty` error. For information about deleting records from your hosted zone, see POST ChangeResourceRecordSets (p. 22).

Requests

Syntax

```
DELETE /2010-10-01/hostedzone/Z1PA6795UKMFR9
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

The request must contain the hosted zone ID. Amazon Route 53 returns the hosted zone ID in the `HostedZone` element as part of the `CreateHostedZoneResponse` or `ListHostedZonesResponse`. For more information, see POST CreateHostedZone (p. 3) or GET ListHostedZones (p. 16).

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<DeleteHostedZoneResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">

   <ChangeInfo>
      <Id>/change/C1PA6795UKMFR9</Id>
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
```

```
   </ChangeInfo>
</DeleteHostedZoneResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`DeleteHostedZoneResponse`	A complex type containing the response information for the request. Type: Complex Children: `ChangeInfo`
`ChangeInfo`	A complex type that describes change information about changes made to your hosted zone. This element contains an ID that you use when performing a `GetChange` action to get detailed information about the change. Type: Complex Children: `Id`, `Status`, `SubmittedAt`
`Id`	The ID of the request. Use this ID to track when the change has completed across all Amazon Route 53 DNS servers. Type: String Parent: `ChangeInfo`
`Status`	The current state of the hosted zone. `PENDING` indicates that this request has not yet been applied to all Amazon Route 53 DNS servers. Type: String Valid Values: `PENDING` | `INSYNC` Parent: `ChangeInfo`
`SubmittedAt`	The date and time the change was made. Type: String with date in the format YYYY-MM-DDThh:mm:ssZ, as specified in the ISO 8601 standard (for example, 2009-11-19T19:37:58Z) Parent: `ChangeInfo`

Errors

The server might respond to this action with any of the following errors.

Name	Description
`HostedZoneNotEmpty`	The hosted zone contains resource records that are not SOA or NS records.
`InvalidInput`	The input is not valid.

Examples

Example Request

The following example shows the `DELETE` request with the hosted zone ID (beginning with the letter Z).

```
DELETE /2010-10-01/hostedzone/Z1PA6795UKMFR9
```

Example Response

When the status of this change becomes `INSYNC`, your hosted zone has been removed from all Amazon Route 53 DNS servers.

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<DeleteHostedZoneResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">

   <ChangeInfo>
      <Id>/change/C1PA6795UKMFR9</Id>
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
</DeleteHostedZoneResponse>
```

GET ListHostedZones

Description

To retrieve a list of your hosted zones, send a `GET` request to the `2010-10-01/hostedzone` resource. The response to this request includes a `HostedZones` element with zero, one, or multiple `HostedZone` child elements. By default, the list of hosted zones is displayed on a single page. You can control the length of the page that is displayed by using the `MaxItems` parameter. You can use the `Marker` parameter to control the hosted zone that the list begins with. For more information about listing hosted zones, see Listing Your Hosted Zones in the *Amazon Route 53 Developer Guide*.

Note

Amazon Route 53 returns a maximum of 100 items. If you set `MaxItems` to a value greater than 100, Amazon Route 53 returns only the first 100.

Requests

Syntax

```
GET /2010-10-01/hostedzone?marker=Z2EUQ1WTGCTBG2&maxitems=10
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

Name	Description	Required
`Marker`	Indicates where to begin in your list of hosted zones. The results include hosted zones in the list that occur after the marker. Type: String Default: All your hosted zones are listed from the beginning.	No
`MaxItems`	The maximum number of hosted zones to be included in the response body. Type: String Default: 100 Constraint: maximum value is 100	No

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ListHostedZonesResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">

   <HostedZones>
      <HostedZone>
         <Id>/hostedzone/Z2EUQ1WTGCTBG2</Id>
         <Name>example2.com.</Name>
         <CallerReference>mySecondZone</CallerReference>
         <Config>
            <Comment>This is my second hosted zone.</Comment>
         </Config>
      </HostedZone>
   </HostedZones>
   <MaxItems>1</MaxItems>
   <IsTruncated>true</IsTruncated>
   <NextMarker>Z2EUQ1WTGCTBG2</NextMarker>
   </ListHostedZonesResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`ListHostedZoneResponse`	A complex type containing the response information for the request. Type: Complex Children: `Marker`, `HostedZones`, `MaxItems`, `IsTruncated`, `NextMarker`
`Marker`	Indicates the marker used when generating this list of hosted zones. The results include hosted zones in the list that occur after the marker. Type: String
`HostedZones`	The parent element to `HostedZone`, this element can contain zero, one, or more `HostedZone` elements. Type: Complex Children: `HostedZone`
`HostedZone`	A complex type containing the specific identifying information about the hosted zone. Type: Complex Children: `Id`, `Name`, `CallerReference`, `Config`

Name	Description
`Id`	The ID of the hosted zone. Type: String Parent: `HostedZone`
`Name`	The name of the domain. This must be a fully-specified domain, ending with a period as the last label indication. If you omit the final period, Amazon Route 53 assumes the domain is relative to the root. This is the name you have registered with your DNS registrar. It is also the name you delegate from your registrar to the Amazon Route 53 delegation servers returned in response to this request. Type: String Parent: `HostedZone`
`CallerReference`	A unique string that identifies the request to create the hosted zone. Type: String Parent: `HostedZone`
`Config`	A complex type that includes the `Comment` element. Type: Complex Parent: `HostedZone` Children: `Comment`
`Comment`	The comment included in the `CreateHostedZoneRequest` element. Type: String Constraints: Maximum 256 characters Parent: `Config`
`MaxItems`	The maximum number of hosted zones you requested. Type: String
`IsTruncated`	A flag indicating whether there are more hosted zones to be listed. If your results were truncated, you can make a follow-up pagination request by using the `Marker` request. Type: String Valid Values: `true` | `false`
`NextMarker`	Indicates the location from which to continue listing hosted zones. If you make a subsequent request to `ListHostedZones` and supply the `NextMarker` value as the marker parameter, the results will include hosted zones in the list that occur after `NextMarker`. This provides a way to list all hosted zones associated with your account. This element is present only if `IsTruncated` is true. Type: String

Errors

This action returns the following error.

Name	Description
InvalidInput	The input is not valid.

Examples

Example Request

The following example shows the request with the MaxItems element specified as 1.

```
GET /2010-10-01/hostedzone?maxitems=1
```

Example Response

This example shows the response for the previous example in which MaxItems is specified as 1.

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ListHostedZonesResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">

   <HostedZones>
      <HostedZone>
         <Id>/hostedzone/Z2EUQ1WTGCTBG2</Id>
         <Name>example2.com.</Name>
         <CallerReference>MyUniqueIdentifier2</CallerReference>
         <Config>
            <Comment>This is my second hosted zone.</Comment>
         </Config>
      </HostedZone>
   </HostedZones>
   <MaxItems>1</MaxItems>
   <IsTruncated>true</IsTruncated>
   <NextMarker>Z2EUQ1WTGCTBG2</NextMarker>
</ListHostedZonesResponse>
```

Example Follow-up Request

This example shows the follow-up request to the previous request with the MaxItems element specified as 10 and the list starting with the marker set to Z2EUQ1WTGCTBG2.

```
GET /2010-10-01/hostedzone?marker=Z2EUQ1WTGCTBG2&maxitems=10
```

Example Follow-up Response

This example shows the response for the previous example.

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
   <ListHostedZonesResponse xmlns="https://route53.amazonaws.com/doc/2010-10-
01/">
      <Marker>Z2EUQ1WTGCTBG2</Marker>
```

```
   <HostedZones>
      <HostedZone>
         <Id>/hostedzone/Z3AEGXETSR30VB</Id>
         <Name>example3.com.</Name>
         <CallerReference>MyUniqueIdentifier3</CallerReference>
         <Config>
            <Comment>This is my third hosted zone.</Comment>
         </Config>
      </HostedZone>
      <HostedZone>
         <Id>/hostedzone/Z2682N5HXP0BZ4</Id>
         <Name>example.com.</Name>
         <CallerReference>MyUniqueIdentifier4</CallerReference>
         <Config>
            <Comment>This is my fourth hosted zone.</Comment>
         </Config>
      </HostedZone>
   </HostedZones>
   <MaxItems>10</MaxItems>
   <IsTruncated>false</IsTruncated>
</ListHostedZonesResponse>
```

Actions on Resource Records Sets

Topics

This section describes actions you can perform on resource record sets.

For more information, see Working with Resource Record Sets in the *Amazon Route 53 Developer Guide*.

POST ChangeResourceRecordSets

Description

Use this action to create or change your authoritative DNS information. To use this action, send a `POST` request to the `2010-10-01/hostedzone/<hosted Zone ID>/rrset` resource. The request body must include an XML document with a `ChangeResourceRecordSetsRequest` element.

Changes are a list of change items and are considered transactional. For more information on transactional changes, see Making Changes to Your Resource Record Sets in the *Amazon Route 53 Developer Guide*.

Important

Due to the nature of transactional changes, you cannot delete the same resource record set more than once in a single change batch. If you attempt to delete the same change batch more than once, Amazon Route 53 returns an `InvalidChangeBatch` error.

In response to a `ChangeResourceRecordSets` request, your DNS data is changed on all Amazon Route 53 DNS servers. Initially, the status of a change is `PENDING`. This means the change has not yet propagated to all the authoritative Amazon Route 53 DNS servers. When the change is propagated to all hosts, the change returns a status of `INSYNC`.

A `ChangeResourceRecordSets` request cannot reference more than 1000 `ResourceRecord` elements. Additionally, the count of characters contained in all `RDATA` fields in the `ResourceRecord` elements of a `ChangeResourceRecordSets` request cannot exceed 32000. This limit is calculated across all the `ResourceRecord` elements over all referenced `ResourceRecordSets` and applies to both `CREATE` and `DELETE` actions.

For more information about making changes to resource record sets, see Making Changes to Your Resource Record Sets in the *Amazon Route 53 Developer Guide*.

Requests

Syntax

```
POST /2010-10-01/hostedzone/Z1PA6795UKMFR9/rrset HTTP/1.1
<?xml version="1.0" encoding="UTF-8"?>
<ChangeResourceRecordSetsRequest xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ChangeBatch>
      <Comment>
      This change batch creates an A record for www.example.com. and changes
the A record for foo.example.com. from 192.0.2.3 to 192.0.2.1.
      </Comment>
      <Changes>
         <Change>
            <Action>CREATE</Action>
            <ResourceRecordSet>
               <Name>www.example.com.</Name>
               <Type>A</Type>
               <TTL>300</TTL>
               <ResourceRecords>
                  <ResourceRecord>
```

```
                  <Value>192.0.2.1</Value>
               </ResourceRecord>
            </ResourceRecords>
         </ResourceRecordSet>
      </Change>
      <Change>
         <Action>DELETE</Action>
         <ResourceRecordSet>
            <Name>foo.example.com.</Name>
            <Type>A</Type>
            <TTL>600</TTL>
            <ResourceRecords>
               <ResourceRecord>
                  <Value>192.0.2.3</Value>
               </ResourceRecord>
            </ResourceRecords>
         </ResourceRecordSet>
      </Change>
      <Change>
         <Action>CREATE</Action>
         <ResourceRecordSet>
            <Name>foo.example.com.</Name>
            <Type>A</Type>
            <TTL>600</TTL>
            <ResourceRecords>
               <ResourceRecord>
                  <Value>192.0.2.1</Value>
               </ResourceRecord>
            </ResourceRecords>
         </ResourceRecordSet>
      </Change>
   </Changes>
</ChangeBatch>
</ChangeResourceRecordSetsRequest>
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

The request must contain the hosted zone ID. Amazon Route 53 returns the hosted zone ID in the `HostedZone` element as part of the `CreateHostedZoneResponse` or `ListHostedZonesResponse`. For more information, see POST CreateHostedZone (p. 3) or GET ListHostedZones (p. 16).

Elements

Name	Description	Required
`ChangeResourceRecordSetsRequest`	A complex type that contains change information for the resource record set. Type: Complex Default: None Children: ChangeBatch	Yes

Name	Description	Required
`ChangeBatch`	The information for a change request. Type: Complex Default: None Children: `Comment`, `Changes`	Yes
`Comment`	Any comments you want to include about the change. Type: String Default: None Constraints: Maximum 256 characters Parent: `ChangeBatch`	Optional
`Changes`	Information about the changes to make to the record sets. Type: Complex Default: None Parent: ChangeBatch Children: Change	Yes
`Change`	The information for each individual change. Type: Complex Default: None Parent: Changes Children: Action, ResourceRecordSet	Yes
`Action`	The action to perform. Type: String Default: None Valid Values: `CREATE` | `DELETE` Parent: member	Yes
`ResourceRecordSet`	Information about the resource record set to create or delete. Type: Complex Default: None Parent: member Children: `Name`, `Type`, `TTL`, `ResourceRecords`	Yes
`Name`	The name you wish to perform the action on. This must be a fully-specified name, ending with a final period as the last label indication. If you omit the final period, Amazon Route 53 assumes the name is relative to the root. Type: String Default: None Parent: `ResourceRecordSet`	Yes

Name	Description	Required
`Type`	The DNS record type. For information about different record types and how data is encoded for them, see Appendix A: Domain Name and Resource Record Formats in the *Amazon Route 53 Developer Guide*. Type: String Default: None Valid Values: A | AAAA | CNAME | MX | NS | PTR | SOA | SPF | SRV | TXT Parent: `ResourceRecordSet`	Yes
`TTL`	The resource record cache time to live (TTL), in seconds. Type: Integer Default: None Parent: `ResourceRecordSet`	Yes
`ResourceRecords`	Information about the resource records to act upon. Type: Complex Default: None Parent: `ResourceRecordSet` Children: `ResourceRecord`	Yes
`ResourceRecord`	Information specific to the resource record. Type: Complex Default: None Parent: `ResourceRecords` Children: `Value`	Yes
`Value`	The current or new DNS record value, not to exceed 4,000 characters. In the case of a `DELETE` action, if the current value does not match the actual value, an error is returned. For descriptions about how to format `Value` for different record types, see Appendix A: Domain Name and Resource Record Formats in the *Amazon Route 53 Developer Guide*. Type: String Default: None Parent: `ResourceRecord`	Yes

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ChangeResourceRecordSetsResponse xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ChangeInfo>
      <Id>/change/C1PA6795UKMFR9</Id>
```

```
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
</ChangeResourceRecordSetsResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`ChangeResourceRecordSetsResponse`	A complex type containing the response information for the request. This element contains the hosted zone ID parameter. Type: Complex Children: `ChangeInfo`
`ChangeInfo`	A complex type that describes change information about changes made to your hosted zone. This element contains an ID that you use when performing a `GetChange` action to get detailed information about the change. Type: Complex Children: `Id`, `Status`, `SubmittedAt`
`Id`	The ID of the request. Use this ID to track when the change has completed across all Amazon Route 53 DNS servers. Type: String Parent: `ChangeInfo`
`Status`	The current state of the hosted zone. `PENDING` indicates that this request has not yet been applied to all Amazon Route 53 DNS servers. Type: String Valid Values: `PENDING` | `INSYNC` Parent: `ChangeInfo`
`SubmittedAt`	The date and time the change was made. Type: String with date in the format YYYY-MM-DDThh:mm:ssZ, as specified in the ISO 8601 standard (for example, 2009-11-19T19:37:58Z) Parent: `ChangeInfo`

Errors

The following table lists the errors returned for this action.

Name	Description
`InvalidInput`	The input is not valid.

Name	Description
InvalidChangeBatch	This exception contains a list of messages that might contain one or more error messages. Each error message indicates one error in the change batch. For more information, see Example InvalidChangeBatch Errors (p. 28).

Examples

Example Request

This example creates an *A* record for `www.example.com` and changes the *A* record for `foo.example.com` from `192.0.2.3` to `192.0.2.1`.

```
POST /2010-10-01/hostedzone/Z1PA6795UKMFR9/rrset HTTP/1.1
<?xml version="1.0" encoding="UTF-8"?>
<ChangeResourceRecordSetsRequest xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ChangeBatch>
      <Comment>
      This change batch creates a TXT record for www.example.com.,
     and changes the A record for foo.example.com. from 192.0.2.3 to 192.0.2.1.

      </Comment>
      <Changes>
         <Change>
            <Action>CREATE</Action>
            <ResourceRecordSet>
               <Name>www.example.com.</Name>
               <Type>TXT</Type>
               <TTL>600</TTL>
               <ResourceRecords>
                  <ResourceRecord>
                     <Value>"item 1" "item 2" "item 3"</Value>
                  </ResourceRecord>
               </ResourceRecords>
            </ResourceRecordSet>
         </Change>
         <Change>
            <Action>DELETE</Action>
            <ResourceRecordSet>
               <Name>foo.example.com.</Name>
               <Type>A</Type>
               <TTL>600</TTL>
               <ResourceRecords>
                  <ResourceRecord>
                     <Value>192.0.2.3</Value>
                  </ResourceRecord>
               </ResourceRecords>
            </ResourceRecordSet>
         </Change>
         <Change>
            <Action>CREATE</Action>
            <ResourceRecordSet>
               <Name>foo.example.com.</Name>
```

```
               <Type>A</Type>
               <TTL>600</TTL>
               <ResourceRecords>
                  <ResourceRecord>
                     <Value>192.0.2.1</Value>
                  </ResourceRecord>
               </ResourceRecords>
            </ResourceRecordSet>
         </Change>
      </Changes>
   </ChangeBatch>
</ChangeResourceRecordSetsRequest>
```

Example Response

This is an example response to the request in the previous example.

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ChangeResourceRecordSetsResponse xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ChangeInfo>
      <Id>/change/C2682N5HXP0BZ4</Id>
      <Status>PENDING</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
</ChangeResourceRecordSetsResponse>
```

Example InvalidChangeBatch Errors

The `InvalidChangeBatch` error contains a list of messages that contain zero, one or more error messages. This section describes `InvalidChangeBatch` and some of the errors it might return.

Note

Amazon Route 53 locates as many errors as possible, but some errors can only be detected after other errors are fixed. As a result, you might need to repeat your request to locate all the errors.

Example 1

If you already have a resource record set called `duplicate.example.com.` with type *A* records, and you try to create the same resource record set again, you receive the following `InvalidChangeBatch` exception.

```
HTTP/1.1 400 Bad Request
<?xml version="1.0"?>
<InvalidChangeBatch xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <Messages>
      <Message>
      Tried to create resource record set duplicate.example.com. type A,
      but it already exists
      </Message>
   </Messages>
</InvalidChangeBatch>
```

Example 2

If you don't have the resource record set `noexist.example.com.` with type *A* records, but you try to delete it, you will get the following `InvalidChangeBatch` error.

```
HTTP/1.1 400 Bad Request
<?xml version="1.0"?>
<InvalidChangeBatch xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <Messages>
      <Message>
      Tried to delete resource record set noexist.example.com. type A,
      but it was not found
      </Message>
   </Messages>
</InvalidChangeBatch>
```

Example 3

If you put the above two changes into a single change batch and you call `ChangeResourceRecordSets`, you receive this error.

```
HTTP/1.1 400 Bad Request
<?xml version="1.0"?>
<InvalidChangeBatch xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <Messages>
      <Message>
      Tried to create resource record set duplicate.example.com. type A,
      but it already exists
      </Message>
      <Message>
      Tried to delete resource record set noexist.example.com. type A,
      but it was not found
      </Message>
   </Messages>
</InvalidChangeBatch>
```

GET ListResourceRecordSets

Description

To list your resource record sets, send a GET request to the `2010-10-01/hostedzone/<hosted zone ID>/rrset` resource.

The action retrieves a specified number of resource record sets in order, beginning at a position specified by the `Name` and `Type` elements. The action sorts results first by DNS name (with the labels reversed, for example `com.amazon.www`), and second by the record type.

You can use the `Name` and `Type` elements to adjust the beginning position of the list of resource record sets returned. For more information on using this action to retrieve information about your resource record sets, see Listing Your Resource Record Sets in the *Amazon Route 53 Developer Guide*.

Note

This action returns the most current version of the records. This includes records that are `PENDING`, and that are not yet available on all Amazon Route 53 DNS servers.

Requests

Syntax

```
GET /2010-10-01/hostedzone/<hosted zone ID>/rrset?type=NS&name=example.com&max
items=10
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

Name	Description	Required
<Hosted Zone ID>	The ID of the hosted zone containing the resource records sets to be retrieved. Type: String Default: None	Yes

Name	Description	Required
`Type`	The type of resource record set to begin the record listing from. For information about different record types and how data is encoded for them, see Appendix A: Domain Name and Resource Record Formats in the *Amazon Route 53 Developer Guide*. Type: String Default: None Valid Values: A | AAAA | CNAME | MX | NS | PTR | SOA | SPF | SRV | TXT Constraint: Specifying `Type` without specifying `Name` returns an `InvalidInput` error.	No
`Name`	The first name in the lexicographic ordering of domain names to be retrieved in the response to the `ListResourceRecordSets` request. Type: String Default: None	No.
`maxitems`	The maximum number of records you want in the response body. Type: String Default: 100 Constraint: maximum value is 100	No

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ListResourceRecordSetsResponse xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ResourceRecordSets>
      <ResourceRecordSet>
         <Name>example.com.</Name>
         <Type>SOA</Type>
         <TTL>900</TTL>
         <ResourceRecords>
            <ResourceRecord>
               <Value>ns-500.awsdns-11.net. hostmaster.awsdns.com. 1 7200 900
1209600 86400</Value>
            </ResourceRecord>
         </ResourceRecords>
      </ResourceRecordSet>
   </ResourceRecordSets>
   <IsTruncated>true</IsTruncated>
   <MaxItems>1</MaxItems>
   <NextRecordName>testdoc2.example.com</NextRecordName>
   <NextRecordType>NS</NextRecordType>
<ListResourceRecordSetsResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Elements

Name	Description
`ListResourceRecordSetsResponse`	A complex type that contains list information for the resource record set. Type: Complex Children: `ResourceRecordSets`, `IsTruncated`, `MaxItems`, `NextRecordName`, `NextRecordType`
`ResourceRecordSets`	Information about multiple resource record sets. Type: Complex Parent: `ListResourceRecordSetsResponse` Children: `ResourceRecordSet`
`ResourceRecordSet`	Information about multiple resource records. Type: Complex Parent: `ResourceRecordSets` Children: `Name`, `Type`, `TTL`, `ResourceRecords`
`Name`	The name of the domain. This is a fully-specified domain, ending with a period as the last label indication. If you omit the final period, Amazon Route 53 assumes the domain is relative to the root. Type: String Parent: `ResourceRecordSet`
`Type`	The resource record set type the record listing begins from. For information about different record types and how data is encoded for them, see Appendix A: Domain Name and Resource Record Formats in the *Amazon Route 53 Developer Guide*. Type: String Valid Values: A | AAAA | CNAME | MX | NS | PTR | SOA | SPF | SRV | TXT Parent: `ResourceRecordSet`
`TTL`	The resource record cache time to live (TTL), in seconds. Type: Integer Parent: `ResourceRecordSet`
`ResourceRecords`	Information about the resource records. Type: Complex Parent: `ResourceRecordSet` Children: `ResourceRecord`
`ResourceRecord`	Information about the resource record. Type: Complex Parent: `ResourceRecords` Children: `Value`

Name	Description
`Value`	Content for the resource record. Type: String Parent: ResourceRecord
`IsTruncated`	A flag that indicates whether more resource record sets remain to be listed. If your results were truncated, you can make a follow-up pagination request by using the `NextRecordName` request. Type: String Valid Values: `true` | `false` Parent: ListResourceRecordSetsResponse
`MaxItems`	The maximum number of records you requested. Type: String representation of a number, not to exceed 100 Parent: `ListResourceRecordSetsResponse`
`NextRecordName`	If the results were truncated, the name of the next record in the list. This element is present only if `IsTruncated` is true. Type: String Parent: `ListResourceRecordSetsResponse`
`NextRecordType`	If the results were truncated, the type of the next record in the list. This element is present only if `IsTruncated` is true. Type: String Parent: `ListResourceRecordSetsResponse`

Errors

The following table lists the error returned for this action.

Name	Description
`InvalidInput`	The input is not valid.

Example 1

This example returns a single known record set by setting `MaxItems` to 1.

Example Request

```
GET /2010-10-01/hostedzone/Z1PA6795UKMFR9/rrset?maxitems=1
```

Example Response

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ListResourceRecordSetsResponse xmlns="https://route53.amazonaws.com/doc/2010-
```

```
10-01/">
   <ResourceRecordSets>
      <ResourceRecordSet>
         <Name>example.com.</Name>
         <Type>SOA</Type>
         <TTL>900</TTL>
         <ResourceRecords>
            <ResourceRecord>
               <Value>ns-500.awsdns-11.net. hostmaster.awsdns.com. 1 7200 900
1209600 86400</Value>
            </ResourceRecord>
         </ResourceRecords>
      </ResourceRecordSet>
   </ResourceRecordSets>
   <IsTruncated>true</IsTruncated>
   <MaxItems>1</MaxItems>
   <NextRecordName>testdoc2.example.com</NextRecordName>
   <NextRecordType>NS</NextRecordType>
</ListResourceRecordSetsResponse>
```

Example 2

This example returns a list of record sets by specifying `Name` and `Type`, and setting `MaxItems` to 10.

Example Request

```
GET /2010-10-01/hostedzone/Z1PA6795UKMFR9/rrset?type=NS&name=example.com&max
items=10
```

Example Response

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<ListResourceRecordSetsResponse xmlns="https://route53.amazonaws.com/doc/2010-
10-01/">
   <ResourceRecordSets>
      <ResourceRecordSet>
         <Name>example.com.</Name>
         <Type>NS</Type>
         <TTL>172800</TTL>
         <ResourceRecords>
            <ResourceRecord>
               <Value>ns-01.awsdns-00.com.</Value>
            </ResourceRecord>
            <ResourceRecord>
               <Value>ns-500.awsdns-11.net.</Value>
            </ResourceRecord>
            <ResourceRecord>
               <Value>ns-1112.awsdns-31.org.</Value>
            </ResourceRecord>
            <ResourceRecord>
               <Value>ns-1600.awsdns-27.co.uk.</Value>
            </ResourceRecord>
         </ResourceRecords>
```

```
      </ResourceRecordSet>
   </ResourceRecordSets>
   <IsTruncated>false</IsTruncated>
   <MaxItems>10</MaxItems>
</ListResourceRecordSetsResponse>
```

GET GetChange

Description

This action returns the current state of a change request. The state of a change is either `PENDING` or `INSYNC`. A status of `PENDING` means the change is not yet propagated over the authoritative Amazon Route 53 DNS servers. A status of `INSYNC` means the change is propagated. The initial value of a change request is `PENDING`. For more information about getting the status of a change request see Checking the Status of Your Change in the *Amazon Route 53 Developer Guide*.

To retrieve status information about a change, send a GET request to the `2010-10-01/change/<change ID>` resource.

Requests

Syntax

```
GET /2010-10-01/change/C2682N5HXP0BZ4
```

Headers

The request must include the headers required in all Amazon Route 53 requests. For more information, see Common Headers (p. 38).

Parameters

The request must contain the change ID. The change ID is found in the `ChangeInfo` element of any response that creates or modifies a hosted zone.

Responses

Syntax

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<GetChangeResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
  <ChangeInfo>
     <Id>/change/C2682N5HXP0BZ4</Id>
     <Status>INSYNC</Status>
     <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
</GetChangeResponse>
```

Headers

The response will include the headers in all Amazon Route 53 responses. For more information, see Common Headers (p. 38).

Errors

This action returns the following error.

Name	Description
InvalidInput	The input is not valid.

Examples

Request

GET /2010-10-01/change/C2682N5HXP0BZ4

Response

```
HTTP/1.1 200 OK
<?xml version="1.0" encoding="UTF-8"?>
<GetChangeResponse xmlns="https://route53.amazonaws.com/doc/2010-10-01/">
   <ChangeInfo>
      <Id>/change/C2682N5HXP0BZ4</Id>
      <Status>INSYNC</Status>
      <SubmittedAt>2010-09-10T01:36:41.958Z</SubmittedAt>
   </ChangeInfo>
</GetChangeResponse>
```

Common Headers

This section lists the common HTTP headers that Amazon Route 53 uses in REST requests.

Request Headers

Header Name	Description	Required
`X-Amzn-Authorization`	The information required for request authentication. For more information, go to Authenticating REST Requests in the *Amazon Route 53 Developer Guide*.	Yes
`Content-Length`	Length of the message (without the headers) according to the RFC 2616 specification. Condition: Required if the request body itself contains information (most toolkits add this header automatically).	Conditional
`Content-Type`	The content type of the resource. Example: `text/plain`. Condition: Required for POST and PUT requests.	Conditional
`Date`	The date used to create the signature contained in the `X-Amzn-Authorization` header. Condition: Required unless you provide the `x-amz-date` header. For more information about the request time stamp, and for information on formatting dates, go to REST Requests in the *Amazon Route 53 Developer Guide*).	Conditional
`Host`	The host being requested. The value must be `route53.amazonaws.com`. Condition: Required for HTTP 1.1 (most toolkits add this header automatically)	Conditional

Header Name	Description	Required
`x-amz-date`	The date used to create the signature contained in the `X-Amzn-Authorization` header. Condition: Required if you do not provide the `Date` header. If both this header and the `Date` header are present, the `Date` header is ignored. For more information about the request time stamp, and for information on formatting date, go to REST Requests in the *Amazon Route 53 Developer Guide*).	Conditional

Request ID Response Header

Each response contains a request ID that you can use if you need to troubleshoot a request with Amazon Route 53. The ID is contained in an HTTP header called `x-amz-request-id`. An example of a request ID is `647cd254-e0d1-44a9-af61-1d6d86ea6b77`.

Common Errors

The following table lists the errors that all Amazon Route 53 actions return. Errors specific to a particular action are listed in the topic for that action. For information about the format of error responses, go to REST Responses in the *Amazon Route 53 Developer Guide*.

Error	Description	HTTP Status Code
`AccessDenied`	Access denied.	403
`InappropriateXML`	The XML document you provided was well-formed and valid, but not appropriate for this operation.	400
`InternalError`	We encountered an internal error. Please try again.	500
`InvalidAction`	The action specified is not valid.	400
`InvalidArgument`	*<Parameter name and problem>*	400
`InvalidHTTPRequest`	There was an error in the body of your HTTP request.	400
`InvalidSignature`	The request signature Amazon Route 53 calculated does not match the signature you provided. Check your AWS Secret Access Key and signing method. Consult the service documentation for details.	403
`InvalidURI`	Could not parse the specified URI.	400
`MalformedXML`	The XML you provided was not well-formed or did not validate against our published schema.	400

Error	Description	HTTP Status Code
MissingAuthenticationToken	The HTTP authorization header is bad, use the format: `AWS3-HTTPS AWSAccessKeyId=AccessKey, Algorithm=ALGORITHM,Signature=Base64( Algorithm((ValueOfDateHeader), SigningKey) )`	403
MissingRequiredParameter	Authorized request must have a date or x-amz-date header.	400
NotImplemented	Not implemented.	501
OptInRequired	The AWS Access Key ID needs a subscription for the service.	403
RequestExpired	Request has expired. Time stamp date is *<the value of the Date or x-amz-date header you submitted in the request>*.	400
UnrecognizedClient	The security token included in the request is invalid.	403

Document Conventions

This section lists the common typographical and symbol use conventions for AWS technical publications.

Typographical Conventions

This section describes common typographical use conventions.

Convention	Description/Example
Call-outs	A call-out is a number in the body text to give you a visual reference. The reference point is for further discussion elsewhere. You can use this resource regularly. 
Code in text	Inline code samples (including XML) and commands are identified with a special font. You can use the command `java -version`.

Code blocks	Blocks of sample code are set apart from the body and marked accordingly.
	`# ls -l /var/www/html/index.html`
	`-rw-rw-r--  1 root root 1872 Jun 21 09:33 /var/www/html/index.html`
	`# date`
	`Wed Jun 21 09:33:42 EDT 2006`

Emphasis	Unusual or important words and phrases are marked with a special font. You *must* sign up for an account before you can use the service.
Internal cross references	References to a section in the same document are marked. See Document Conventions (p. 42).

Convention	Description/Example
Logical values, constants, and regular expressions, abstracta	A special font is used for expressions that are important to identify, but are not code. If the value is `null`, the returned response will be `false`.
Product and feature names	Named AWS products and features are identified on first use. Create an *Amazon Machine Image* (AMI).
Operations	In-text references to operations. Use the `GetHITResponse` operation.
Parameters	In-text references to parameters. The operation accepts the parameter *`AccountID`*.
Response elements	In-text references to responses. A container for one `CollectionParent` and one or more `CollectionItems`.
Technical publication references	References to other AWS publications. If the reference is hyperlinked, it is also underscored. For detailed conceptual information, see the *Amazon Mechanical Turk Developer Guide*.
User entered values	A special font marks text that the user types. At the password prompt, type **`MyPassword`**.
User interface controls and labels	Denotes named items on the UI for easy identification. On the **File** menu, click **Properties**.
Variables	When you see this style, you must change the value of the content when you copy the text of a syntax sample to a command line. % ec2-register *<your-s3-bucket>*/image.manifest See also the following symbol convention.

Symbol Conventions

This section describes the common use of symbols.

Convention	Symbol	Description/Example
Mutually exclusive parameters	(Parentheses | and | vertical | bars)	Within a code description, bar separators denote options from which one must be chosen. `% data = hdfread (start | stride | edge)`

Optional parameters
XML variable text
	[square brackets]	Within a code description, square brackets denote completely optional commands or parameters.
		`% sed [-n, -quiet]`
		Use square brackets in XML examples to differentiate them from tags.
		`<CustomerId>[ID]</CustomerId>`

Variables	<arrow brackets>	Within a code sample, arrow brackets denote a variable that must be replaced with a valid value. `% ec2-register <your-s3-bucket>/image.manifest`