WEB SERVICES API

Specification for the Enstratius Web Services API.

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OVERVIEW

Enstratius strives to enable customers to integrate with the widest variety of internal systems. Our web services API provides a way for customers to make authenticated calls against Enstratius from existing applications or third-party tools.

As a 1.x release, the API does not yet cover all Enstratius functionality. Over the next few updates, we intend to expose more parts of Enstratius functionality via the Enstratius API and in the future launch API support for new features along with their production roll out.

In crafting this API, we thought about whether to adopt a de facto standard, leverage OCCI, or take another approach. Though we had a heavy bias to leveraging other API work, none of them currently fit our requirements. As a result, we have developed our own API.

REST Model

Clients make standard HTTP requests over an SSL channel and should always validate the certificate of the Enstratius endpoint with which the client is communicating. The communication endpoint is *https://api.enstratius.com/api/enstratus*.

Resources

Clients make requests against Enstratius resources, either in aggregate or a specific resource. The format of the URL is:

- *endpoint/version/namespace/resource[?query_parameters]*
- *endpoint/version/namespace/resource/resource_id*

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For example, when getting a list of servers, you simply execute an HTTP GET against *https://api.enstratius.com/api/enstratus/2011-02-24/infrastructure/Server*. To lookup the specific server with the ID 1234, you perform the HTTP GET against *https://api.enstratius.com/api/enstratus/2011-02-24/infrastructure/Server/1234*. The former URI operates on all servers with a query parameter including filter terms. Some resources may require at least one query term. The Enstratius API does not use HTTP query parameters for any purpose other than filtering results. Any other kinds of directives are handled through HTTP headers.

Operations

Your API requests are standard HTTP requests against Enstratius resources. In general:

- GET queries for a list of a class of resources or the details of a specific resource.
- POST creates a new resource instance and will provide either a job or a resource instance in the response body.
- PUT updates an existing resource with the specified parameters.
- DELETE removes or terminates or deactivates a resource. In general, there is no such thing as permanent deletion of anything in Enstratius. Resources are instead "deactivated" via the DELETE call.
- HEAD provides response headers, including a count of matching resources.

Request Headers

When making a request, there are three authentication headers you must specify plus an optional authentication header for preventing replay attacks. These headers are described more fully in the section on authentication.

In addition, Enstratius supports the following optional request headers:

- Accept

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- x-es-details
- x-es-with-perms

You may specify an “Accept” header to define whether you wish to receive responses as XML or JSON. The default response is XML. The values you may specify for “Accept” are:

- application/xml
- application/json

The x-es-details header specifies the level of response detail you would like. It can have the values “none”, “basic”, or “extended”. The default is “none”. When “none”, only resource IDs are provided in the response. When basic, all basic fields are included in the response, but relationships are specified only through IDs. For example, the relationship of a region to a cloud would be provided by a `<cloud cloudId="1"/>` entry in the `<region></region>` body. Extended, on the other hand, indicates that relationships should have the basic resource details embedded in their bodies. Clients should request an extended response only when absolutely necessary is it impacts performance both for your application and Enstratius servers.

Finally, the x-es-with-perms (currently unimplemented) header is a boolean header that identifies whether the permissions associated with your keys should be attached to the response. When “true”, you will receive the full set of authorizations for the current user against each resource in the resource body. It can be true regardless of what level of details you are seeking for the resources.

Response Codes

Enstratius responds with standard HTTP response codes appropriate to the result of the request. While the exact meaning of the code varies depending on the request, the general rules are:

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200

A response code of 200 means the request was successful and details about the response can be found in the body of the response.

201

The requested POST operation was successful and an object was created in the system.

202

The requested operation has been accepted and the body contains information about an asynchronous job you can query to check on the progress of the request.

TIP: Don't know whether a POST or PUT is asynchronous? Check the HTTP response code. Asynchronous operations always return a 202 with a Job object in the body. Synchronous operations return either a 201 (POST) with the new object in the body or a 204 (PUT) acknowledging the change occurred successfully. We reserve the right to change any given API between releases from synchronous to asynchronous (and vice versa), so use the return code and do not hard code any particular API request as synchronous or asynchronous.

204

The requested operation was successful and there is no response body.

307

Please repeat the request using the provided URI. Subsequent requests can use the old URI.

400

Your request was improperly formatted. You should verify that your request conforms to this specification and re-issue the request in a properly formatted manner.

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403

The request was not allowed because the request did not pass authentication or you do not have the proper access rights to the target.

404

The requested resource does not exist.

409

An operational error occurred. The most common reason is an error with the cloud provider itself, but it can also result from any number of cloud state issues.

418

A request was made to create a resource, but the resource was not created and no job was returned.

500

Enstratius failed to process the request because of an error inside the Enstratius system. These responses should be reported to Enstratius as they always represent a bug in Enstratius.

501

You requested an action against a resource in a cloud that does not support that action.

503

Enstratius undergoing maintenance or is otherwise temporarily unavailable for API queries.

Response Entities

All GET methods respond with the JSON or XML of the resource(s) being requested.

HEAD methods have no response entity.

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POST methods may respond with a 201 CREATED or 202 ACCEPTED response code depending on whether the creation completed immediately or is an asynchronous operation. If the resource was created immediately, Enstratius will provide a JSON or XML entity that includes the new resource's unique ID. If the creation operation takes time, however, the response body will include a Job resource that can be tracked to completion.

PUT and DELETE methods generally respond with 204 NO CONTENT unless the operation is a long-lived operation. In those scenarios, the PUT will respond with a 202 ACCEPTED response code and include a Job resource in the response entity.

Raw Data Types

boolean
A true or false value represented by the text "true" or "false".

currency
A three-letter ISO code representing a currency.

datetime
A date and time in the format `yyyy-MM-dd'T'HH:mm:ss.SSSZ`. For example, 2010-09-14T13:18:27.947-0400.

decimal
A number that may have a decimal point.

encrypted string
An encrypted string is a string encrypted using AES encryption based on the first 16 characters secret key for the API key used in the API call (note: all strings in Enstratius are UTF-8, so you need to use that character encoding when converting between strings and bytes arrays). The formula for the encrypted string is:

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```
Base64(AES(apiSecretKey.substring(0,16), rawString))
```

latin

The latin type represents a string limited to the latin-1 character set. Everything in Enstratius actually uses the UTF-8 encoding. However, most clouds will not accept UTF-8 values for all meta-data. In those cases, Enstratius limits input to the latin character set.

money

Money is a monetary value consisting of a 3-digit ISO currency code followed by a decimal value: USD123.45.

number

Any kind of raw number without a decimal place. Represented by a short, int, or long in most programming languages.

string

A string is any text across the full unicode spectrum.

Sample Request and Response

Here's a sample request to list the details of the Amazon cloud:

```
GET /api/enstratus/2011-02-24/geography/Cloud/1 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: bevTcioRr/r2+lOtHnp2N6wL4kNfpHxe/kI1DGrZjO0=
x-esauth-timestamp: 1285971821959
x-es-details: basic
x-es-with-perms: false
```

The response would look like this:

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 22:24:22 GMT
Server: Apache
x-es-version: 2011-02-24
```

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```
Content-Type: application/xml;charset=UTF-8

<clouds>
  <cloud cloudId="1" status="ACTIVE">
    <name>Amazon Web Services</name>
    <supportsAddresses>true</supportsAddresses>
    <supportsAutoScaling>true</supportsAutoScaling>
    <supportsAutomation>true</supportsAutomation>
    <supportsDistributions>true</supportsDistributions>
    <supportsFiles>true</supportsFiles>
    <supportsFirewalls>true</supportsFirewalls>
    <supportsImages>true</supportsImages>
    <supportsKeyValueDatabases>true</supportsKeyValueDatabases>
    <supportsLoadBalancers>true</supportsLoadBalancers>
    <supportsNotifications>true</supportsNotifications>
    <supportsRelationalDatabases>true</supportsRelationalDatabases>
    <supportsServers>true</supportsServers>
    <supportsSnapshots>true</supportsSnapshots>
    <supportsVolumes>true</supportsVolumes>
  </cloud>
</clouds>
```

Authentication

Enstratius authenticates each client request individually. The client signs the request with a SHA256 signature using the secret API access key. The client then provides the public API access ID, the signature, and a timestamp as part of the request. enStratus uses this information to determine who is making the request.

The authentication values are provided as HTTP headers:

- x-esauth-access (required)
- x-esauth-signature (required)
- x-esauth-timestamp (required)
- x-esauth-noreplay (optional)

The x-esauth-access header is the API Access ID that you provision in Enstratius for the application being represented. Each unique system you wish to have interact with

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Enstratius should have its own API keys. By assigning multiple keys, you can more easily track activity on a system-by-system basis as well as remove a single system's access to Enstratius without having to roll out new API keys across your entire infrastructure.

The x-esauth-signature header is an SHA256 signature created from the concatenation of your access ID, the request method used for the request, the URI used for the request, and the Unix timestamp in milliseconds when the request was made. You use your API access key to sign this string to create the x-esauth-signature value.

The x-esauth-timestamp value is the Unix timestamp in milliseconds that you included in your signature calculation. Enstratius will not allow an operation if the timestamp is beyond +/- 10 minutes off the Enstratius server time. Enstratius server time is coordinated with the NIST timeservers and included in the Enstratius response headers.

The timestamp header serves as a primary defense against replay attacks. A replay attack is an attack in which someone intercepts your request and re-submits that request. While the encryption and authentication used by Enstratius ensure that they cannot alter that request, it does not prevent them from re-issuing the request within 10 minutes of the original request. For most (if not all) operations in the Enstratius environment, replay attacks are meaningless. We provide an added optional defense against replay attacks, however, in the form of the x-esauth-noreplay header. You may provide any value for this header, but it must be unique among your requests for the past 10 minutes. The simplest way to leverage this feature is to pass the current timestamp in milliseconds as the x-esauth-noreplay header. If you take that approach and you are working in a multi-threaded environment, you should be prepared to repeat your request if Enstratius responds with a 403 code.

Your API KEYS

You can generate two kinds of keys inside the Enstratius console:

• Account Keys (sometimes referred to as "system keys" in older documentation)

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• User Keys

User keys and account keys appear functionally similar. They both have an access and secret key component and they both enable access to the Enstratius APIs. The core difference is that the account keys are not (generally) associated with a specific user. The user keys, on the other hand, belong to a specific user and are revoked when that user loses access to the system. The user must have CONSOLE/API access or their keys will not work at all. Their keys are limited to whatever functions they can normally perform through the console. Account keys, on the other hand, can do anything within a specific account.

To generate account keys, go into the Enstratius console under Account Settings / API Keys. You can generate any number of keys to support any number of third-party systems integrating with Enstratius.

To generate user keys, go under your user preferences and generate API keys. This option is not available if you do not have CONSOLE/API access rights.

Account and/or user keys may be configured with one of two special kinds of permissions:

• Customer management

• System management

A key configured for customer management has full administrative access across all accounts belonging the customer associated with the keys (rather than being limited to only the account associated with the keys). This permission is useful for enabling external tools that should be able to see all of your accounts. Only existing customer management keys may enable another key to have customer management access through the API. Similarly, only a user belonging to the main customer admin group may enable customer management for a key through the Enstratius user interface.

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A key configured for system management has access to the Enstratius system management API. That API is not described in this document. Only a key configured for system management may enable another key for system management, and only for keys belonging to the system management customer.

The Enstratius API Signature

The formula using the API access key to generate the Enstratius signature is:

```
BASE64(SHA256(ACCESS_KEY:METHOD:URI:TIMESTAMP:USER_AGENT))
```

For example, let's assume we have the following scenario:

- Access Key = 123456789
- Secret Key = abcdefghi
- Method = GET
- URI = /api/enstratus/2011-02-24/geography/Cloud/1
- Timestamp = 1285971821959
- User-Agent = Test

The string to sign would then be:

```
123456789:GET:/api/enstratus/2011-02-24/geography/Cloud/1:1285971821959:Test
```

Any query parameters are NOT included in your signature. The resulting signature would therefore be:

```
bevTcioRr/r2+lOtHnp2N6wL4kNfpHxe/kI1DGrZjO0=
```

The Java code for calculating this signature is:

```
import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import javax.servlet.http.HttpServletResponse;
import org.apache.commons.codec.binary.Base64;
```

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```
static private String sign(byte[] key, String stringToSign) throws Exception {
    Mac mac = Mac.getInstance("HmacSHA256");

    mac.init(new SecretKeySpec(key, "HmacSHA256"));
    return new
      String(Base64.encodeBase64(mac.doFinal(stringToSign.getBytes("utf-8"))));
}
```

And in C#:

```
static String sign(String key, String stringToSign) {
    System.Text.ASCIIEncoding encoding = new System.Text.ASCIIEncoding();
    byte[] keyByte = encoding.GetBytes(key);
    HMACSHA256 hmacsha256 = new HMACSHA256(keyByte);

    return
Convert.ToBase64String(hmacsha256.ComputeHash(encoding.GetBytes(stringToSign)))
;
}
```

Authentication Responses

If authentication is successful, the request proceeds normally. If the authentication process fails for whatever reason, Enstratius will respond with a 403 HTTP status and an `error` body. The form of the error follows the error handling described in the next section. The following are reasons some of the causes of authentication errors:

Drift

Authentication failed because the client provided a x-esauth-timestamp header that is more than +/1 10 minutes outside the current time recognized by the Enstratius server. Enstratius therefore believes this to be a replay attack and denies access. Use the server timestamp provided by Enstratius to adjust your timestamp value and re-issue the query.

Replay

Authentication failed because the client provided a x-esauth-noreplay header that has been used in the last 10 minutes. Enstratius therefore believes this request to be a replay attack. Retry the request with a new x-esath-noreplay value.

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UnauthorizedAccess

To minimize the opportunity for brute force attacks, Enstratius is not terribly forthcoming with the reason behind authentication errors. This error code can mean the API access ID does not exist or that the signature does not match what Enstratius expects. The signature can fail to match either because you misinterpreted the authentication specification or you used the wrong API access key to sign the authentication string.

Sample Authentication Failure

Here's a sample authentication failure (assume the signature is bad):

```
GET /api/enstratus/2011-02-24/geography/Cloud/1 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: QXZWDOKKJXESUETFBMGS
x-esauth-signature: SOMEBADSIGNATURE
x-esauth-timestamp: 1285971861684
x-es-details: basic
x-es-with-perms: false
```

The Enstratius response is:

```
HTTP/1.1 403 Unauthorized access to requested resource.
Date: Fri, 01 Oct 2010 22:28:02 GMT
Server: Apache
Set-Cookie: JSESSIONID=EA84986A9C0D885C2B69FF902E79B1DF.worker1; Path=
Content-Type: application/xml;charset=UTF-8

<error code="403">Unauthorized access to requested resource.</error>
```

Pagination

As of the 2012-06-15 version of the API, clients are mandated to expect the pagination of results from a GET query. You may continue with a version number prior to 2012-06-15 in the old way, but if you switch your queries to 2012-06-15 queries, pagination may come into play.

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Pagination is the splitting of items resulting from a GET request into multiple GET calls. If, for example, you were getting all snapshots in a region with 1,000 snapshots, it likely makes sense to split the request into 10 different requests instead of one big one. By splitting it into 10 different requests, Enstratius can provide you with a response as soon as the first 100 snapshots are formatted into JSON or XML instead of waiting for the full result set. This approach can make your client applications feel more perfomant.

Recognizing Paginated Results

Prior to the 2012-06-15 version, there was no pagination. When you query Enstratius using an old version, Enstratius always returns all matching results. If you decide to use version 2012-06-15 or later, your client is expected to look for the following headers in any response:

- `x-es-pagination`
- `x-es-page`
- `x-es-last-page`

If `x-es-pagination` has a value and `x-es-last-page` is false, you are expected to query the server again to get the next set of results. You continue querying until `x-es-last-page` is true. If x-es-pagination has no value, Enstratius pagination is not in play and you can assume the list you are receiving is the full list.

Not all resources support pagination. In this document, GET requests that support pagination are noted for each resource under the “Supported Methods” section of that resource’s documentation. However, you should not concern yourself with which resources support it; you should always look for the `x-es-pagination` header and react accordingly.

Interacting with Paginated Results

You have some level of control over paginated results. You can always pass in the header `requestLimit` with a numeric value indicating the maximum number of results you want per page. The default value (and maximum value) is 500. The minimum value is 10.

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The basic flow of client query processing follows this basic logic:

- Query the resource with whatever query parameters you wish, optionally defining your own limit via a `requestLimit` query parameter.
- Look for `x-es-pagination` header. If none is present or if the header `x-es-last-page` is true, you already have the full results and don't have to worry about pagination.
- If the `x-es-pagination` and `x-es-last-page` headers are present and `x-es-last-page` is false, you will need to make repeated queries to the server to fetch more results until `x-es-last-page` is true.
- You fetch future pages by querying the same resource with `requestPaginationId` and `requestPage` parameters set.

Scenarios

Scenario #1: You query a list of clouds from an Enstratius instance configured with 20 clouds and pass in the query string "requestLimit=10". The API, however, does not support (at least as of 2012-06-15) the pagination of cloud objects. All 20 clouds come back, and there is no `x-es-pagination` header present.

Scenario #2: You have an older client written against the 2011-12-15 version of the Enstratius API and it queries for all snapshots in a region with 1,000 snapshots. It will therefore not have a `requestLimit` parameter. Enstratius will recognize the combination of no `requestLimit` query parameter and the old version and not paginate the results. Consequently, all 1,000 snapshots will come back and there will be no `x-es-pagination` header in the response.

Scenario #3: The same as #2, except the client is making requests using the 2012-06-15 version. No requestLimit is specified. Enstratius will recognize the combination of no `requestLimit` and the 2012-06-15 version and use a default request limit of 500. The first response will include 500 snapshots, the `x-es-pagination` header with a pagination ID value, the `x-es-page` header with a value of 1, and the `x-es-last-page`

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header with a value of false. You should therefore repeat the request with `requestPaginationId` set to the value you received in the first response and `requestPage`=2. Enstratius will then response with the last 500 snapshots, `x-es-pagination` set to the same ID, `x-es-page` set to 2, and `x-es-last-page` set to true.

Example

```
GET
/api/enstratus/2012-06-15/infrastructure/Snapshot?accountId=100&requestLimit=10
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 8Bezwak7ZV+6ONtvUQgLqAwnBkX2gCB+DSuFaMVMrRA=
x-esauth-timestamp: 1336801076691
x-es-details: basic
x-es-with-perms: false

HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x346e853
x-es-version: 2012-06-15
x-es-pagination: msp0x776005
x-es-page: 1
x-es-last-page: false
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 12 May 2012 05:38:09 GMT

{ results omitted }

GET
/api/enstratus/2012-06-15/infrastructure/Snapshot?accountId=100&requestPaginati
onId=msp0x776005&requestPage=2 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 8Bezwak7ZV+6ONtvUQgLqAwnBkX2gCB+DSuFaMVMrRA=
x-esauth-timestamp: 1336801076691
x-es-details: basic
x-es-with-perms: false

HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x346f142
x-es-version: 2012-06-15
```

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```
x-es-pagination: msp0x776005
x-es-page: 2
x-es-last-page: false
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 12 May 2012 05:38:09 GMT

{ results omitted }
```

Notes

- If you request a page that does not exist, you will get a 404.
- If you request a page using a stolen paginationId, you will get a 403.
- You may access pages in any order, any number of times.
- After an indefinite period of time, the pages will no longer be available.
- All pages and results are consistent with the state of the system at the time of the initial query. Other transactions will not alter your page content or result list.
- Enstratius does not know the total number of results until the last page has been built. There is thus no mechanism of knowing how many items or pages are in your results until you fetch the last page.
- Doing a HEAD/GET pair is one way around the problem, but they are not guaranteed to give consistent results.

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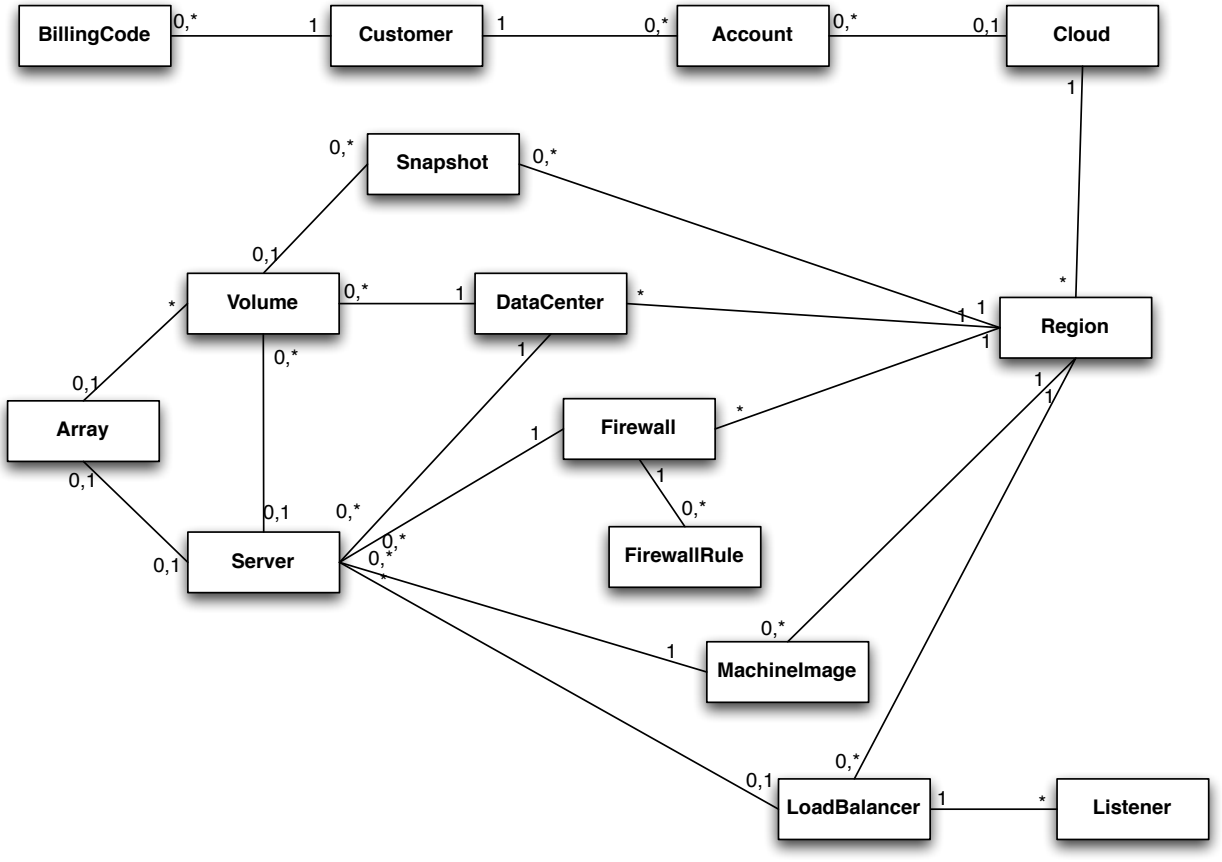
Object Model



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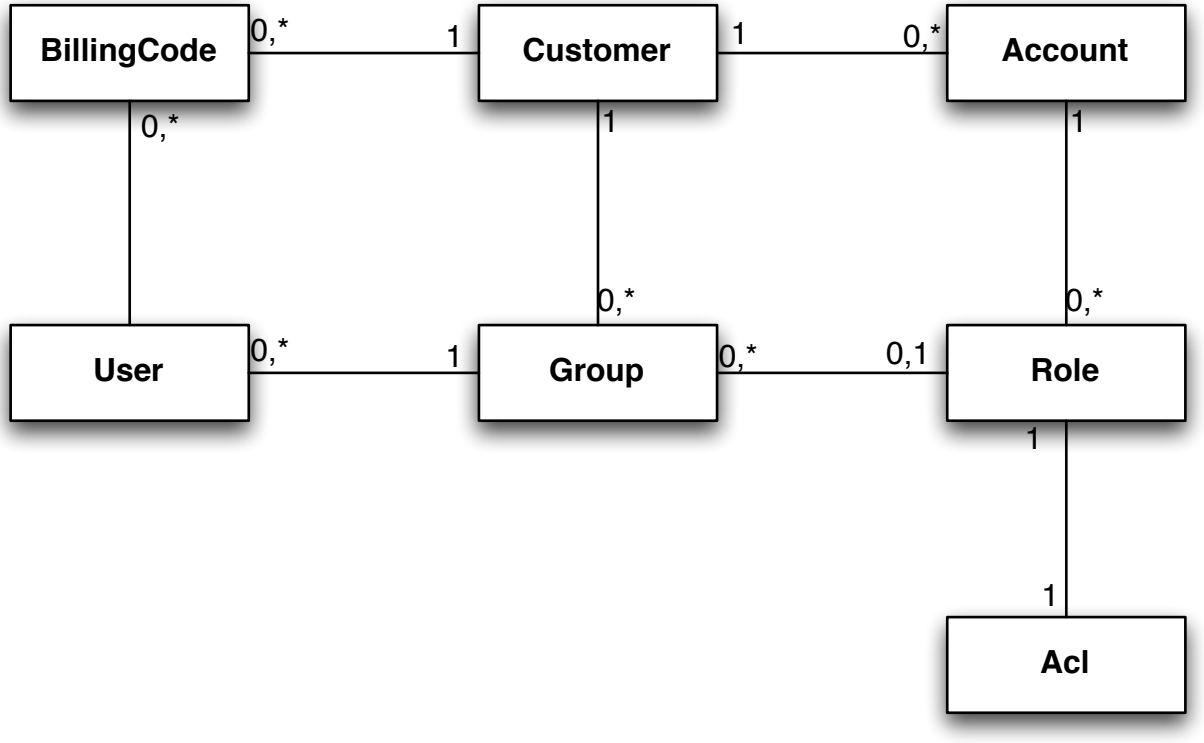

A Note about Examples

The examples in this document are generated from actual api queries against our development API servers with only a few manual edits:

- Any sensitive information (which is never part of the signature string) is masked
- The XML and JSON examples are indented in this document for readability whereas in practice there is rarely whitespace

XML and JSON

Going forward, we intend to provide both XML and JSON examples for GET requests and a mix on PUT and POST requests. Prior to 2011-07-15, however, all examples were exclusively in XML with sample JSON in an appendix. The irony is, however, that we use JSON for our own development.

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Test Keys

To help you better debug your tools, below is the list of API keys we have used in executing tests. As noted above, the output is straight from our unit tests. We therefore expire these API keys prior to the publication of this document and make those keys available to that you can compare signatures for different kinds of requests with the output of your own code. THESE KEYS WILL NOT WORK IF YOU TRY TO USE THEM AGAINST AN ENDPOINT.

Prior to 2011-07-15:

Shared: 123456789
Secret: abcdefghi

2011-07-15:

Shared: KNXSEBLDYUITQTQNVIGS
Secret: oL4PJ6QOYEagvOlJoWn8TNLvleiWm7IfNGBBe4Jx

2011-12-15:

Shared #1: XIJZOCUMPNYYZJHOSXYU
Secret #1: V66jQXW2qdxj9poOF2kNYUyQs1BCYTh+wKTnw7DP

Shared #2: LTODCYJPHYESNJLQCJER
Secret #2: 1nYMM+ZtnQcPr66ylogDjsU95uHuNDJjN2yoXWZo

2012-02-29:

Shared #1: FMKPVBVBCKUZJETXXRVP
Secret #1: C5eTeKuXtnibcfm+LNYsliMsSaaQ6xAFTpQtH0kW

Shared #2: LNCTPDQULZYWZCMSQFGR
Secret #2: mNEgbvtvVVWC4jv8OMOOva=1f=cwH3T4ty5XMltA

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2012-06-15:

Admin Account System Key:
Shared #1: ZIHAWGNOFRSCSDIDTPIS
Secret #1: iqWGEIN=PGbMy6ylmTWAOZkbY6qKHrTQCPdc75Rw

Admin Account User Key:
Shared #2: EKDMIJOMNDHQAGSOFYMV
Secret #2: WR9AilM=2n0Gdfedo4TgZxjkR8N9SOlrU9BbnTDv

Standard Account User Key:
Shared #3: AJJOUHEBDVYLQVHWYGXD
Secret #3: eTaWZB3kXxKexUYAI1vhY30tpZI4pmDsvfbc8yB6

Standard Account System Key:
Shared #3: WYDOCIAPUCJAFFVADEPA
Secret #3: 0BqzVv19lt+Y3dNPUBgQb4bXA4Pd+IIZ5WlrJ+sR

Change Log

Version 0.3

Released: 2010-09-15

- Internal testing beta 1
- Added user-agent to signature
- Documented many core resources
- Redid header structure for requests
- Modified HEAD request to provide only object counts

Version 0.4

Released: 2010-09-30

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- Internal testing beta 2
- Added extra namespace elements: admin, automation, geography, infrastructure, and platform

Version 0.5

Released: 2010-11-10 (still using 2011-02-24 version)

- External testing beta 1
- Added extended documentation
- Completed all infrastructure elements
- Still lack examples on a number of items

Version 0.6

Released: 2011-02-24

- Modified Cloud and Account objects significantly
- Added more documentation
- Still lack examples on a number of items

Version 1.0

Released: 2011-05-04

- Fixed a number of bugs in account registration
- Added support for cloud bursting
- Added encryption of sensitive fields
- Still lack examples on a number of items

Version 1.1

Released: 2011-07-15

- Added available and registered query parameters for images
- Added new network directory
- Moved DnsZone to network

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- Moved Firewall to network
- Moved FirewallRule to network
- Moved LoadBalancer to network
- Removed references to the unimplemented Vlan resource (now Network)
- Customer.created -> Customer.createdTimestamp
- Added catalogItem attribute to deployments created from catalog items
- FirewallRule cidr -> networkAddress
- FirewallRule firewallId -> firewall (supporting extended details)
- Created Subnet resource
- Created Network resource
- Created new finance API
- Created Prepayment resource
- Added the ability to specify immediate roll out of machine image changes to a launch configuration through the deployImmediately attribute
- Added the ability to specify configuration management options for a launch configuration
- Added the ability to specify networking options for a launch configuration
- Added ConfigurationManagementOption resource
- Added ConfigurationManagementSystem resource

Version 1.2

Released: 2011-12-15

- Altered the configuration management structure with the following impact:
  - ConfigurationManagementOption is now deprecated
  - New resources to replace options:
    - ConfigurationManagementService
    - ConfigurationManagementAccount
  - Updates to ConfigurationManagementSystem resource

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    - References to a configuration management system now use cmSystem and cmSystemId instead of the longer configurationManagementSystem and configurationManagementSystemId values
    - Similarly, cmService/cmServiceId and cmAccount/cmAccountId
    - Added Personality resource
    - Added Script resource
- Added support for personalities and scripts to LaunchConfiguration
- Added support for personalities and scripts to Server
- Add geography/Subscription for information about the capabilities of each region
- Added platform/RelationalDatabaseProduct
- Added enum for DatabaseEngine
- Added complex type for Money
- Fixed a bug that would cause invalid XML for a subset of customers for a variety of resources

Version 1.3

Released: 2012-02-29

- Added notifications targets to a User
- Added notifications settings to a User
- Added the ability to set notifications targets and settings
- Added the ability to fetch IAM data for a user
- Added the ability to grant IAM access to the cloud console and API
- Converted BillingCode monetary values to Money objects
- Added better documentation around ServerProduct

Version 2.0

Released: 2012-06-15

- Introduced pagination of GET listings
- Introduced API request IDs for debugging and audit purposes

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- Fixed a number of bugs associated with data sources and data source backups
- Introduced the ability to make a data source backup via API
- Added the ability to start a paused server
- Massive performance improvements on the Snapshot GET calls
- Added pagination to the Snapshot API
- Fixed a bug in which snapshot encryption information was not showing properly
- Added optimizations for machine image processing
- Fixed a number of bugs in different machine image operations
- Added support for bundling machine images
- Added pagination to machine images
- Added operations to change budget and group ownership for volumes
- Added pagination support for volumes
- Fixed a bug for volumes in which encryption data was not being provided
- Added support for server pagination
- Added support for changing server budget
- Fixed a bug in changing server group ownership
- API keys no longer have a separate numeric identifier; the access key is the identifier
- API keys now have customer and account attributes
- API keys may now be marked as having customer management capabilities across all accounts belonging to the same customer
- API keys may now be marked as having system management capabilities that enables access to the Enstratius system management API
- Refactored the cloud JSON and XML schemas to support the needs of the new system management API

Version 2.1

Released: 2013-01-29

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- Added network/StaticIpAddress
- Added network/ForwardingRule
- Added infrastructure/ServerAgent
- FirewallRules have the following new elements: sourceType, source (replaces networkAddress), destinationType, destination, permission, precedence
- Changed firewall rule POST & DELETE operations to return jobs
- Fixed a bug for networks in which a budget was not provided
- Added the following PUT operations to infrastructure/Server: reboot, provisionUser, deprovisionUser, alterServer, suspend, stop, unpause, resume
- Added support for userData attribute in infrastructure/Server POST operation
- Added support for volumeProductId and iops attributes in infrastructure/Volume POST operation
- Fixed bug when adding automation/DeploymentLoadBalancer using JSON
- Added ruleProviderId element to extended detail FirewallRule
- Added serverId query parameter to admin/User for listing users on a server
- Added updateRemoteCredentials PUT operation to User API
- Changed ScalingRules Enumeration
- Changed Server DELETE operation to return a job
- Replaced personalities and scripts elements of Server with runList.
- Added environment element to servers with Chef configuration management
- Added parameters element to servers with Puppet configurations management
- Fixed an error listing firewalls when no query parameters are provided.
- Fixed issue with billing code name length restriction.
- Fixed issue with Server POST with no product
- Improved speed of listing billing codes
- Added persistent & architecture elements to Server
- Added automation/Environment
- Added type, version, and providerId elements to Personality

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- Added support for Personalities that contain other Personalities.
- Added providerId element to Script
- Replaced personalities and scripts elements of LaunchConfiguration with runList element which contains personalities and scripts
- Added environment and parameters elements to LaunchConfiguration

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ADMIN API

The admin API covers general configuration resources and other administrative resources.

Account

An account object represents an Enstratius account held by an Enstratius customer. A given customer may have multiple accounts, and each account is tied to zero or one cloud via a subscription.

Supported Methods

- GET
- HEAD
- POST
- PUT

Attributes

`accountId [read-only, number]`
The unique ID of this account.

`defaultBudget [number]`
The unique ID of the billing code that serves as the default billing code against which "discovered" cloud resources are budgeted.

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status [read-only, enumeration(AccountStatus)]

The current account payment status.

Elements

alertConfiguration [extended(AlertConfiguration)]

The configuration of alert preferences for this account.

billingAddress [extended(PhysicalAddress)]

The billing address to which invoices are to be sent or which is associated with the payment for this account. Billing information is not provided in a query unless the detail level of the query is EXTENDED.

billingCreditCard [extended(CreditCard)]

The credit card billed for charges to this account. Billing information is not provided in a query unless the detail level of the query is EXTENDED.

billingEmail [string(100)]

The billing email address associated with the payment for this account. Billing information is not provided in a query unless the detail level of the query is EXTENDED.

billingPhone [string(100)]

The billing phone number associated with the payment for this account. Billing information is not provided in a query unless the detail level of the query is EXTENDED.

billingSystemId [read-only, string(50)]

The ID associated with this account that may appear on invoices.

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cloudSubscription [extended(CloudSubscription), nullable]
Once you have assigned this account to a cloud, it has a cloud subscription that includes all subscription information and access credentials.

configured [read-only, boolean]
True if this account has been tied to an account with a cloud provider; false otherwise.

customer [read-only, extended(Customer)]
The Enstratius customer record to which this account belongs. See the Customer resource for the extended definition.

dnsAutomation [extended(DnsAutomation), nullable]
Enstratius can automatically create DNS entries for new servers in this cloud when you have a DNS automation associated with it.

name [string(100)]
The user-friendly name you use to identify the account.

ownerId [number]
The user ID of the user who owns this account.

planId [number]
The ID for the pricing plan associated with this account.

provisioned [read-only, boolean]
True if this account is in good standing and being managed by Enstratius; false otherwise.

storage [extended(Region), nullable]
The region in which to store Enstratius-created backups. This value will be present only when the account is associated with a compute cloud and is using a different cloud for

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storing backups. The region is thus often in a different cloud, though it can also be a region in the same cloud. See the Region resource for the extended definition.

`subscribed [read-only, boolean]`
True if the account is configured and the target cloud account is working with Enstratius; false otherwise.

Query Parameters

By default, a GET or a HEAD on this resource will return all accounts that belong to your customer that you have access rights to view.

`cloudId [optional, number]`
If present, Enstratius will provide only the accounts tied to the specified cloud.

Updates

The following PUT operations are supported:

`assignCloud`
Requires: `accountId, cloudSubscription`
Optional: none
Success: 201
Associates this account with the cloud and supporting credentials specified. You must minimally provide the `cloudId`, `accountNumber`, `apiKeyId`, and `apiKeySecret`. This operation will fail if there is something wrong with the keys. Once it succeeds, you cannot change the `cloudId`, `accountNumber`, or `storageAccountNumber` associated with the subscription.

`changeAccountCredentials`
Requires: `cloudSubscription`
Optional: none

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Success: 204

Assigns your cloud credentials that enable Enstratius to talk to the cloud provider for this account. You may not change the `accountNumber` or `storageAccountNumber`.

`changeAlertConfiguration`

Requires: `alertConfiguration`

Optional: none

Success: 204

Sets the alert configuration for this account.

`changeBilling`

Requires: `billingAddress, billingCreditCard, billingEmail, billingPhone`

Optional: none

Success: 204

Changes payment options associated with this account.

`changeDefaultBudget`

Requires: `defaultBudget`

Optional: none

Success: 204

Changes the default budget against which resources in this account are billed.

`changeDnsAutomation`

Requires: `dnsAutomation`

Optional: none

Success: 204

Changes DNS automation settings for this account.

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`changePrimaryStorage`

Requires: `accountId, primaryStorage`

Optional: none

Success: 204

Changes the primary storage setting for this account.

Errors

There are no unique errors associated with accounts.

Examples

TBD

Acl

An Acl resource is not in itself directly manipulatable. Instead, it is referenced through Role operations. An Acl consists of a set of `<permission>` items.

Supported Methods

None.

Attributes (for the permission item)

The Acl resource has no attributes, but instead zero or more `<permission>` items. Each permission item has the following attributes:

`action [read-only, enumeration(Action)]`

The action being specified by the permission.

`qualifier [read-only, enumeration(Qualifier)]`

The qualifier limits the scope of the permission being specified.

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resourceType [read-only, enumeration(ResourceType)]
The resource governed by this permission.

ApiKey

An API key is an access key and secret key that provide API access into Enstratius. Enstratius supports both system keys (to enable access on a system basis for other software systems) and user keys (to enable access on a user-by-user basis for tools like iPhone applications).

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

accessKey [read-only, string(20)]
The API access key that identifies an API query with this key.

status [ACTIVE|INACTIVE]
The status of this key. Inactive keys may not be used in authentication.

Elements

accessKey [read-only, string(20)]
The API access key that identifies an API query with this key. This is the same value as the attribute by the same name.

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account [read-only, extended(Account)]
The account with which this API key is associated.

activationTimestamp [read-only, datetime]
The date and time when this key was activated.

cidrList [string(10000), nullable]
Limits queries against this key to addresses that match the specified CIDR list.

customer [read-only, extended(Customer)]
The customer to whom this API key belongs.

customerManagementKey [boolean]
Identifies whether or not this key can be used across all customer accounts.

description [string(255)]
A user-friendly description of this API key.

expirationTimestamp [datetime, nullable]
The date and time when this API key should automatically be made inactivate.

name [string(100)]
The user-friendly name you use to identify the account.

secretKey [read-only, encrypted string(40)]
The secret part of this API key. Best practice for user interfaces that need to display this value is to mask it until the user explicitly requests to view it.

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systemManagementKey [boolean]

Identifies whether or not this key can be used to access the Enstratius system management API.

user [write-once, extended(User), nullable]

The user associated with this API key. No user indicates that this key is a system key for the account.

Query Parameters

GET and HEAD operations without any query parameters return all keys visible to the API keys making the query.

`accountId [optional, number]`

Display all system keys belonging to the specified account.

`userId [optional, number]`

Display all user keys belonging to the specified user.

Updates

The following PUT operations are supported:

`describeApiKey`

Requires: `apiKeyId`

Optional: `description, name`

Success: 204

Changes the name and/or description of your API key.

`enableCustomerManagement`

Requires: `customerManagementKey`

Success: 204

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Makes this key a customer management key. Only an API key that is already a customer management key is able to make another key a customer management key.

`setApiAccess`
Requires: `accountId`
Optional: `cidrList`
Success: 204
Indicates which addresses are authorized to make API queries using this key. If none is specified, Enstratius will clear out the list and allow access from any IP address.

`setExpiration`
Requires: `apiKeyId`
Optional: `expirationTimestamp`
Success: 204
If the `expirationTimestamp` value is not specified, sets this key not to expire. If one is present, then this operation sets the key to expire at the specified time.

Errors

There are no unique errors associated with API keys.

Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/admin/ApiKey/JFQDJSXEJHZUNAKQQJWC HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 7lX+ePK0yhFBr9N+oJgAohvGkuCFaQHkv9WUCX7+iDM=
x-esauth-timestamp: 1337994689939
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0xd7be810
```

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```
x-es-version: 2012-06-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 26 May 2012 01:11:29 GMT

{
  "apiKeys":
  [
    {
      "accessKey":"JFQDJSXEJHZUNAKQQJWC",
"secretKey":"EIfeZsK6TqW7BDgUedlvtD9IPD/i0RLaKmCnfOHo/uzHdErhmQXP36wSmfM0RTGp",
      "description":"1",
      "name":"John",
      "state":"ACTIVE",
      "account":{"accountId":100},
      "customer":{"customerId":100},
      "activation":"2012-03-07T17:01:10.831+0000"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/admin/ApiKey/JFQDJSXEJHZUNAKQQJWC HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: okJZVeY6VRMCodFvb6JvOsOgeGRhO/qEI/74iVa3++U=
x-esauth-timestamp: 1337994690092
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0xd7bf078
x-es-version: 2012-06-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 26 May 2012 01:11:29 GMT

<apiKeys>
  <apiKey accessKey="JFQDJSXEJHZUNAKQQJWC"
          state="ACTIVE" activation="2012-03-07T17:01:10.831+0000">
    <name>John</name>
    <description>1</description>
    <accessKey>JFQDJSXEJHZUNAKQQJWC</accessKey>
    <secretKey>
      EIfeZsK6TqW7BDgUedlvtD9IPD/i0RLaKmCnfOHo/uzHdErhmQXP36wSmfM0RTGp
    </secretKey>
    <customer customerId="100" />
```

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```
    <account accountId="100" />
  </apiKey>
</apiKeys>
```

HEAD

```
HEAD /api/enstratus/2012-06-15/admin/ApiKey HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: FUoAV3zJTQRtRPMeoyUYUwJEOiO5CIS+r18k43ERaxE=
x-esauth-timestamp: 1337994689784
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-request: msp0xd7bd936
x-es-count: 51
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sat, 26 May 2012 01:11:29 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/admin/ApiKey HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 6MXkZUa7dAf8X7T9oFaOyI4gZhd8jNHF3vPXDQVrxbw=
x-esauth-timestamp: 1337994690245
x-es-details: basic
x-es-with-perms: false

{
  "generateApiKey":
  [
    {
      "expiration":"2012-05-25T21:11:30.238-0500",
      "description":"Unit test for Enstratius for 1337994690238",
      "name":"Unit Test 1337994690238"
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
x-es-request: msp0xd7c0646
Content-Type: application/json;charset=UTF-8
```

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```
Content-Length: 52
Date: Sat, 26 May 2012 01:11:29 GMT

{"apiKeys":[{"accessKey":"VHFSCEXVZGCVRKJMNZYP"}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/admin/ApiKey HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: xDk/aqoAm3IyufqyMwqd2So487VvX6SYEqoohMeICSc=
x-esauth-timestamp: 1337994690962
x-es-details: basic
x-es-with-perms: false

<generateApiKey>
  <apiKey>
    <expiration>2012-05-25T21:11:30.962-0500</expiration>
    <name>Unit Test 1337994690962</name>
    <description>Unit test for Enstratius for 1337994690962</description>
  </apiKey>
</generateApiKey>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
x-es-request: msp0xd7c3482
Content-Type: application/xml;charset=UTF-8
Content-Length: 68
Date: Sat, 26 May 2012 01:11:30 GMT

<apiKeys>
  <apiKey accessKey="WXEQHKLDBXFMAZGVLBVS" />
</apiKeys>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/admin/ApiKey/52103 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: jJc7r/UepaCOCJt3zesRmaCfwUHL6IK6KuZDVbkUdNs=
x-esauth-timestamp: 1330947408230
x-es-details: basic
x-es-with-perms: false

{
  "setExpiration":[
    {
      "apiKeyId":52103,
```

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```
      "expiration":"2012-03-05T17:36:48.230+0530"
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Mon, 05 Mar 2012 11:36:48 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/admin/ApiKey/52104 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: gdqgXxoUdxEmBJelcbpRXb4aNn2RVCmWOX3/UI85UvU=
x-esauth-timestamp: 1330947410022
x-es-details: basic
x-es-with-perms: false

<setExpiration>
  <apiKeys>
    <apiKey apiKeyId="52104">
      <expiration>2012-03-05T17:36:50.022+0530</expiration>
    </apiKey>
  </apiKeys>
</setExpiration>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Mon, 05 Mar 2012 11:36:49 GMT
```

DELETE

```
DELETE
/api/enstratus/2012-06-15/admin/ApiKey/ROUIEWUFUVSZJYCRHAIL?reason=Enstratius+U
nit+Test HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: Bs12bWxWdxB796jaavTo75UzVfBHW+zHMKy3eiwH4Ow=
x-esauth-timestamp: 1337994691875
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
x-es-request: msp0xd7c7617
Date: Sat, 26 May 2012 01:11:31 GMT
```

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BillingCode

A billing code is a budget item with optional hard and soft quotas against which cloud resources may be provisioned and tracked.

Version

Status: Active

Changes:

2012-02-29

Changed all monetary values from simple money types to complex Money types.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

billingCodeId [read-only, number]

The unique ID of this billing code.

status [ACTIVE|INACTIVE]

The status of this billing code. Nothing can bill to an inactive billing code.

Elements

budgetState [read-only, enumeration(BudgetState)]

The current state of user ability to provision against this budget.

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customer [read-only, extended(Customer)]
The customer to whom this billing code belongs.

currentUsage [read-only, complex(Money)]
The usage month-to-date across all clouds against this budget.

description [string(255)]
A user-friendly description of this billing code.

financeCode [latin(100)]
An alphanumeric code that associates this billing code with an entity in an external system. For example, this might be the unique ID of an account in a finance system or a project code from a project management system.

hardQuota [complex(Money), nullable]
The hard quota that will prevent any further resources from being billed to this billing code. Enstratius will ignore the currency part of the quota and use your accounting currency when you are submitting a quota during a POST/PUT.

name [string(100)]
The user-friendly name you use to identify the billing code.

projectedUsage [read-only, complex(Money)]
The estimated end-of-month total that will be charged against this budget across all clouds.

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softQuota [complex(Money), nullable]

The soft quota limit that will trigger budget alerts. Enstratius will ignore the currency part of the quota and use your accounting currency when you are submitting a quota during a POST/PUT.

Query Parameters

GET and HEAD operations without any query parameters return all billing codes for the customer.

`financeCode [optional, latin(100)]`

Return just the billing code matching the specified finance code.

Delete Parameters

When deactivating a billing code, you must provide a replacement code that will be mapped to all existing resources being billed to the deactivated resource.

`replacementCode [number]`

The billing code ID for the billing code that will replace the deactivated code.

Updates

The following PUT operations are supported:

`describeBillingCode`

Requires: none

Optional: `name, description`

Success: 204

Changes the basic meta-data for the billing code.

`setQuota`

Requires: none

Optional: `softQuota, hardQuota`

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Success: 204

Sets the quotas for this billing code. If you wish to clear a quota (make it unlimited), you should specify an empty tag for that quota.

Errors

You will receive a 400 error if you attempt to delete a billing code and provider an invalid billing code.

Examples

GET (JSON)

```
GET /api/enstratus/2012-02-29/admin/BillingCode/50420 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: 2c0ADyWIleVxWS0IwSJBlP115ZT5CNQ7V0DPkFBYn5o=
x-esauth-timestamp: 1333593276305
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 02:34:39 GMT

{
  "billingCodes":[
    {
      "financeCode":"111",
      "softQuota":{"value":1,"currency":"GBP"},
      "budgetState":"NORMAL",
      "status":"ACTIVE",
      "description":"1",
      "billingCodeId":50420,
      "name":"John",
      "hardQuota":{"value":1,"currency":"GBP"},
      "projectedUsage":{"value":0,"currency":"GBP"},
      "customer":{
        "businessName":"Enstratius, Inc.",
        "customerId":100,
        "createdTimestamp":"2008-12-27T15:55:18.454+0000",
        "status":"ACTIVE",
```

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```
        "accountingCurrency":"GBP",
        "created":"2008-12-27T15:55:18.454+0000",
        "timeZone":"UTC",
        "automatedExchangeRates":true
      },
      "currentUsage":{"value":0,"currency":"GBP"}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/admin/BillingCode/50420 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: JhMbcgykLVTmtoS8WLcQi/xJsXSBwDYQP97lH6Jdk8w=
x-esauth-timestamp: 1333593279732
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 02:34:39 GMT

<billingCodes>
  <billingCode billingCodeId="50420" status="ACTIVE">
    <financeCode>111</financeCode>
    <name>John</name>
    <description>1</description>
    <hardQuota currency="GBP">1.00</hardQuota>
    <softQuota currency="GBP">1.00</softQuota>
    <projectedUsage currency="GBP">0.00</projectedUsage>
    <currentUsage currency="GBP">0.00</currentUsage>
    <budgetState>NORMAL</budgetState>
    <customer customerId="100" />
  </billingCode>
</billingCodes>
```

HEAD

```
HEAD /api/enstratus/2012-02-29/admin/BillingCode HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: ohfPeWj87hNbPPMe7ypGARo5tSxsiN4Wr0QGqBD9a9k=
x-esauth-timestamp: 1333593274504
```

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```
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 15
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Thu, 05 Apr 2012 02:34:36 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-02-29/admin/BillingCode HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: VdupeRXRipCJFIYeRZ2OHWAzORxLIomvWZbk3Sysrdk=
x-esauth-timestamp: 1333597186736
x-es-details: basic
x-es-with-perms: false

{
  "addBillingCode":[
    {
      "softQuota":{"value":500,"currency":"USD"},
      "financeCode":"UT86",
      "status":"ACTIVE",
      "description":"Unit test billing code",
      "hardQuota":{"value":1000,"currency":"USD"},
      "name":"Unit Test Code: 1333597186"
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 44
Date: Thu, 05 Apr 2012 03:39:47 GMT

{"billingCodes":[{"billingCodeId":50504}]}
```

POST (XML)

```
POST /api/enstratus/2012-02-29/admin/BillingCode HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: bVuPW/c97M4n4SygWFPSN7GKk3I8VyOV29qR+fELRZY=
```

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```
x-esauth-timestamp: 1333597188271
x-es-details: basic
x-es-with-perms: false

<addBillingCode>
  <billingCodes>
    <billingCode status="ACTIVE">
      <name>Unit Test Code: 271</name>
      <description>Unit test billing code</description>
      <financeCode>UT71</financeCode>
      <hardQuota currency="USD">1000.00</hardQuota>
      <softQuota currency="USD">500.00</softQuota>
    </billingCode>
  </billingCodes>
</addBillingCode>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 74
Date: Thu, 05 Apr 2012 03:39:48 GMT

<billingCodes><billingCode billingCodeId="50505" /></billingCodes>
```

PUT (JSON)

```
PUT /api/enstratus/2012-02-29/admin/BillingCode/50530 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: I6OD5ItvSDIRYkAyh95IXpydEUoIe37K43qUpiA8S6w=
x-esauth-timestamp: 1333599500363
x-es-details: basic
x-es-with-perms: false

{"setQuota":[{"softQuota":{"value":200.5,"currency":"USD"}}]}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 04:18:23 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-02-29/admin/BillingCode/50531 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: XZwrqInP33DPBuG2rUv2uJ5xJBhZb1e+cZjKNchiffk=
x-esauth-timestamp: 1333599504519
x-es-details: basic
```

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```
x-es-with-perms: false

<setQuota>
  <billingCodes>
    <billingCode billingCodeId="50531">
      <softQuota currency="USD">200.75</softQuota>
    </billingCode>
  </billingCodes>
</setQuota>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 04:18:25 GMT
```

DELETE

```
DELETE
/api/enstratus/2012-02-29/admin/BillingCode/50506?reason=Enstratius+Unit+Test&r
eplacementCode=100 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: BkZzUKgvKekvWMdiPMkAdm2Dtf7/TghVJc7KDjt0nF0=
x-esauth-timestamp: 1333597192212
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 03:39:54 GMT
```

Customer

The customer resource represents the overarching Enstratius customer account. A customer may have any number of actual accounts associated with them. Each account is billed separately, but share customer-wide resources like users, billing codes, standard networks, standard ports, and more.

Your API keys can see only one customer record. So there is no difference between a query on the general Customer resource and a query on your customer ID.

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Supported Methods

- GET
- HEAD
- POST (system admin account only)
- PUT

Attributes

`customerId [read-only, number]`

The unique ID of the customer record.

`status [ACTIVE|INACTIVE]`

The current status of this customer record in Enstratius.

Elements

`adminEmail [write-once, string(100)]`

When initially creating a new customer account, you must provide the email address of the person who “owns” the account as well as the first name, last name, password, and time zone. A user record is automatically created for this person. This value is not provided when querying the system.

`adminFirstName [write-once, string(100)]`

When initially creating a new customer account, you must provide the email address of the person who “owns” the account as well as the first name, last name, password, and time zone. A user record is automatically created for this person. This value is not provided when querying the system.

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adminLastName [write-once, string(100), nullable]

When initially creating a new customer account, you must provide the email address of the person who "owns" the account as well as the first name, last name, password, and time zone. A user record is automatically created for this person. This value is not provided when querying the system.

adminPassword [write-once, string(100)]

When initially creating a new customer account, you must provide the email address of the person who "owns" the account as well as the first name, last name, password, and time zone. A user record is automatically created for this person. This value is not provided when querying the system.

adminTimeZone [write-once, string(100)]

When initially creating a new customer account, you must provide the email address of the person who "owns" the account as well as the first name, last name, password, and time zone. A user record is automatically created for this person. This value is not provided when querying the system.

accountingCurrency [currency]

The currency in which all accounting for your accounts is done. When you establish budgets and other monetary metrics, those metrics are managed in this currency. If external systems provide values in other currencies, those values get converted into your accounting currency.

accounts [write-once, list(Account), nullable]

When initially creating a customer in the system, you must specify the create information for at least one account (you may specify more than one). To add new accounts at a later point, you POST to the Account object. This value is never present in GET responses.

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automatedExchangeRates [boolean]

Indicates whether any exchange rates between the currency in which your clouds bill you and your accounting currency are established automatically or manually.

created [read-only, datetime]

The date and time when the customer established an account with Enstratius.

name [string(100)]

The name of the company or individual customer.

timeZone [string(50)]

Time zone code representing the time zone in which customer reports are done. Individual users can set their own, independent time zone preferences to enable display in their individual time zones.

Query Parameters

There are no query parameters for customer records.

Updates

The following PUT operations are supported:

`changeCurrency`

Requires: `accountingCurrency`

Optional: none

Success: 204

Changes your accounting currency. This action will result in all existing values for both current systems and historical systems to be converted into the new accounting currency.

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`setTimeZone`

Requires: `timeZone`

Optional: none

Success: 204

Changes the current time zone for the customer.

Errors

There are no unique errors associated with customers.

Examples

GET

```
GET /api/enstratus/2011-02-24/admin/Customer HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: 0GvSwfBYypNUKNxvrK99vmmAmwuttF5e7pkWI4cqh0A=
x-esauth-timestamp: 1285892719514
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 00:26:01 GMT
Server: Apache
x-es-version: 2011-02-24
Content-Type: application/xml;charset=UTF-8

<customers>
  <customer customerId="100" status="ACTIVE">
    <automatedExchangeRates>true<automatedExchangeRates>
    <accountingCurrency>USD</accountingCurrency>
    <created>2008-12-27T15:55:18.454+0000</created>
    <name>Enstratius</name>
    <timeZone>UTC</timeZone>
  </customer>
</customers>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/admin/Customer/100 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
```

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```
x-esauth-access: 123456789
x-esauth-signature: E+kO913FTmT00Mj0XeEzHQw87Ro7tGMHRikY9x3LUo4=
x-esauth-timestamp: 1285892925964
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 00:31:08 GMT
Server: Apache
x-es-version: 2011-02-24
x-es-count: 1
```

PUT

```
PUT /api/enstratus/2011-02-24/admin/Customer/100 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: QXZWDOKKJXESUETFBMGS
x-esauth-signature: Hy1C6N/9V7A6IIOMxkg3PgcyxgIkL1qIa83b8RBbp/M=
x-esauth-timestamp: 1285895865237
x-es-details: basic
x-es-with-perms: false
Content-length: 117

<setTimeZone>
  <customer customerId="100">
    <timeZone>GMT+3:30</timeZone>
  </customer>
</setTimeZone>
```

```
HTTP/1.1 204 No Content
Date: Fri, 01 Oct 2010 01:22:11 GMT
Server: Apache
Content-Length: 0
```

Group

A group is a collection of users. Groups map to roles that define what their access rights are for a specific account. Some operations may not be possible if your groups are being managed in LDAP or ActiveDirectory as Enstratius is not the authority for that data in those instances.

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There is some complexity about handling role assignments. Groups operate at the customer level and roles operate at the account level. That means a given group can have different role assignments for different accounts. Consider, for example, two cloud accounts under a customer in which one is for production and the other is development. You may have a group called “Developers” associated with your customer record. In the production account, the Developers group will have the “ReadOnly” role that naturally has read-only permissions. In the development account, however, the Developers group will be assigned to the “AccountAdmin” role with elevated permissions.

Because of this structure, querying the Group resource is a “customer-level” operation. No role information is therefore provided when you do a GET on Group. You can determine which groups have roles by passing in the `accountId` parameter to a GET. All groups are still available to that account for role mapping. That parameter simply filters the groups to just the ones with am active role assignment for that account.

See the Role resource for querying the roles for a group in an account.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`groupId [read-only, number]`
The unique ID of the group.

`status [ACTIVE|INACTIVE]`
The current status of this group in Enstratius. This is currently always ACTIVE.

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Elements

`customer [read-only, extended(Customer)]`
The customer to whom this group belongs.

`description [string(1000)]`
A user-friendly description of this group.

`name [string(100)]`
The name of the group. This is generally also the external identifier in other systems.

Query Parameters

GET and HEAD operations without any query parameters return all groups for the customer.

`accountId [optional, number]`
Provides only groups with roles mapped under this account ID.

Updates

The following PUT operations are supported:

`describeGroup`
Requires: none
Optional: `name, description`
Success: 204
Changes the basic meta-data around the group record. If you are integrating groups with external systems (and not via the native LDAP or ActiveDirectory integration), you should take care in changing names as those are often the unique identifiers of a group in many systems. This operation is NOT supported when using the native Enstratius integration with LDAP or ActiveDirectory.

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`setRole`

Requires: `role`

Optional: none

Success: 204

Establishes the Enstratius role associated with this group. If any role is currently set for this group in the role's account, the new value will replace the old. This is an unusual PUT in that role is not an attribute or element of a Group. The XML for this submission thus looks like (`accountId` is optional):

```
<setRole><group><role roleId="5678"/><account accountId="901"/
></group></setRole>
```

Errors

There are no unique errors associated with groups.

Examples

GET

```
GET /api/enstratus/2011-02-24/admin/Group/605 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: RQ4inNXjE0bwZ4DXs58Ak2PTw8IJnOsJJglpMjJ1/L8=
x-esauth-timestamp: 1285947932147
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 15:46:05 GMT
Server: Apache
x-es-version: 2011-02-24
Content-Type: application/xml;charset=UTF-8

<groups>
  <group groupId="605" status="ACTIVE">
    <name>Demo</name>
    <description>
      Demo Group
    </description>
    <customer customerId="100" />
```

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```
  </group>
</groups>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/admin/Group HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: obWPZPN+rUUQ5pdpQXhE96y5qL9CZZN0NJT9HdFg34o=
x-esauth-timestamp: 1285948062577
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 15:48:18 GMT
Server: Apache
x-es-version: 2011-02-24
x-es-count: 9
```

POST

```
POST /api/enstratus/2011-02-24/admin/Group HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: G2lQGFEXXvdFB3WR92gExAuAmzR2QpDnSFA8iHZJrSw=
x-esauth-timestamp: 1285964616264
x-es-details: basic
x-es-with-perms: false
Content-length: 72

<addGroup>
  <group><name>API Test</name></group>
</addGroup>
```

```
HTTP/1.1 201 Created
Date: Fri, 01 Oct 2010 21:11:22 GMT
Server: Apache
Content-Length: 64
Content-Type: application/xml;charset=ISO-8859-1

<groups>
  <group groupId="628" />
</groups>
```

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PUT

```
PUT /api/enstratus/2011-02-24/admin/Group/628 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: kQ/MEqkPU/9YYOkcWRrucGk7WYuEmVuw270q/1jpdb0=
x-esauth-timestamp: 1285971451075
x-es-details: basic
x-es-with-perms: false
Content-length: 113

<describeGroup>
  <group><description>API Test of group support</description></group>
</describeGroup>
```

```
HTTP/1.1 204 No Content
Date: Fri, 01 Oct 2010 22:17:41 GMT
Server: Apache
Content-Length: 0
```

DELETE

```
DELETE /api/enstratus/2011-02-24/admin/Group/628 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: IKEyeYYiO8eq3JnaVR5KVRLCpz6jUuYBSgsv4GoQfyE=
x-esauth-timestamp: 1285976289090
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Date: Fri, 01 Oct 2010 23:40:23 GMT
Server: Apache
Content-Length: 0
```

Job

A job is an asynchronous process resulting from a client request that resulted in a 202 ACCEPTED response. If the client cares about the ultimate result of the original request, it can query for the job returned in the initial response until the job completes.

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Supported Methods

- GET
- HEAD

Attributes

`jobId [read-only, number]`

The unique Enstratius ID for this job.

`status [read-only, enumeration(JobStatus)]`

The current status of the job.

Elements

`description [string(255)]`

A description of the running job. Useful in identifying what it is supposed to be doing.

`endDate [datetime, nullable]`

Indicates the time when the job completed. The field will obviously not be present if the job is still running.

`message [string(1000)]`

A message describing the current disposition of the operation. If the job is currently running, the message will contain information about the current state of the job. If it is complete, it will contain the ID of any newly created item. If the job errored out, this field will contain the error message.

Query Parameters

This resource has no query parameters.

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Errors

There are no unique errors associated with jobs.

Examples

GET

```
GET /api/enstratus/2011-02-24/admin/Job HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: zlWcI034N2pbBvRgHYN9CNhmJHXCKl/5g+r+CWqb6xc=
x-esauth-timestamp: 1285945465098
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 15:04:55 GMT
Server: Apache
x-es-version: 2011-02-24
Content-Type: application/xml;charset=UTF-8

<jobs>
  <job jobId="19510" status="COMPLETE" >
    <description>
      Stop Cluster 3689
    </description>
    <startDate>2010-10-01T13:56:55.664+0000</startDate>
    <endDate>2010-10-01T14:05:32.871+0000</edDate>
  </job>
  <job jobId="19513" status="COMPLETE" >
    <description>
      Launch Cluster 3689
    </description>
    <startDate>2010-10-01T14:08:46.994+0000</startDate>
    <endDate>2010-10-01T14:30:17.095+0000</edDate>
    <message>
      Success
    </message>
  </job>
  <job jobId="19514" status="COMPLETE" >
    <description>
      Create RDBMS Testing
    </description>
    <startDate>2010-10-01T14:29:25.193+0000</startDate>
    <endDate>2010-10-01T14:36:21.198+0000</edDate>
    <message>
```

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```
      1900
    </message>
  </job>
  <job jobId="19515" status="COMPLETE" >
    <description>
      Terminate RDBMS 1900
    </description>
    <startDate>2010-10-01T14:49:17.106+0000</startDate>
    <endDate>2010-10-01T14:49:53.400+0000</edDate>
    <message>

    </message>
  </job>
  <job jobId="19516" status="ERROR" >
    <description>
      Terminate RDBMS 1900
    </description>
    <startDate>2010-10-01T14:51:45.316+0000</startDate>
    <endDate>2010-10-01T14:52:13.502+0000</edDate>
    <message>
      Cannot delete database instance testing because it is not currently in
the available state.
    </message>
  </job>
  <job jobId="19517" status="COMPLETE" >
    <description>
      Terminate 22234
    </description>
    <startDate>2010-10-01T15:04:07.035+0000</startDate>
    <endDate>2010-10-01T15:04:21.862+0000</edDate>
  </job>
</jobs>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/admin/Job HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: mVPhpxlIcmnKtBOCj0VmYvGPJA1e9JUQl0XEKfl04Ac=
x-esauth-timestamp: 1285945621421
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Fri, 01 Oct 2010 15:07:36 GMT
Server: Apache
x-es-version: 2011-02-24
x-es-count: 5
```

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Role

A role defines a common set of permissions that govern access into a given account. Roles are defined at the customer level and then mapped to groups at the account level. Groups may consequently have different roles in different accounts.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`roleId [read-only, number]`
The unique ID of the role.

`status [ACTIVE|INACTIVE]`
The current status of this role in Enstratius. This is currently always ACTIVE.

Elements

`acl [extended(Acl)]`
The access permissions associated with this role.

`customer [read-only, extended(Customer)]`
The customer to whom this role belongs.

`description [string(1000)]`
A user-friendly description of this role.

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name [string(100)]

The name of the role.

Query Parameters

GET and HEAD operations without any query parameters return all roles for the customer.

`accountId [optional, number]`

Lists roles with mappings to groups in the specified account. If this parameter is specified with a groupId parameter, the query will return the role mapped to the specified group in the specified account.

`groupId [optional, number]`

Provides the role associated with the specified group. If you specify this parameter and do not specify an accountId parameter, it is assumed you want the mapping for the account to which the API keys behind this request belong.

Updates

The following PUT operations are supported:

`describeRole`

Requires: none

Optional: `name, description`

Success: 204

Changes the basic meta-data around the role.

`grant`

Requires: `permission`

Optional: none

Success: 204

Grants the specified permission to this role.

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`revoke`

Requires: `permission`

Optional: none

Success: 204

Revokes the specified permission from this role.

Errors

There are no unique errors associated with roles.

Examples

GET (JSON)

```
GET /api/enstratus/2012-02-29/admin/Role/1803 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: NN2SjZQSsfpI6z5o7ZzDgYKPkP3+VbGJrbBJsfwU/7s=
x-esauth-timestamp: 1333641757375
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 16:02:36 GMT

{
  "roles":[
    {
      "status":"ACTIVE",
      "acl":[
        {"action":"Access","qualifier":"ANY","resourceType":"CONSOLE"},
        {"action":"ANY","qualifier":"ANY","resourceType":"DNS"},
        {"action":"Configure","qualifier":"ANY","resourceType":"FILES"},
   {"action":"DefineServer","qualifier":"USER_GROUPS","resourceType":"IMAGE"},
        {"action":"ANY","qualifier":"ANY","resourceType":"SERVER"}
      ],
      "description":"Active Role",
      "name":"Active",
      "customer":{
        "businessName":"Enstratius, Inc.",
        "customerId":100,
```

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```
        "createdTimestamp":"2008-12-27T15:55:18.454+0000",
        "status":"ACTIVE",
        "accountingCurrency":"GBP",
        "created":"2008-12-27T15:55:18.454+0000",
        "timeZone":"UTC",
        "automatedExchangeRates":true},
      "roleId":1803
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/admin/Role/1803 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: IYjYv8GQ2JeWcdaYp9Xa3Sn11fhcM72BqIoESsRrYsM=
x-esauth-timestamp: 1333641757636
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 16:02:36 GMT

<roles>
  <role roleId="1803" status="ACTIVE">
    <name>Active</name>
    <description>Active Role</description>
    <acl>
      <permission action="Access" resourceType="CONSOLE" qualifier="ANY" />
      <permission action="ANY" resourceType="DNS" qualifier="ANY" />
      <permission action="Configure" resourceType="FILES" qualifier="ANY" />
      <permission action="DefineServer" resourceType="IMAGE"
                  qualifier="USER_GROUPS" />
      <permission action="ANY" resourceType="SERVER" qualifier="ANY" />
    </acl>
    <customer customerId="100" status="ACTIVE">
      <automatedExchangeRates>true</automatedExchangeRates>
      <accountingCurrency>GBP</accountingCurrency>
      <created>2008-12-27T15:55:18.454+0000</created>
      <businessName>Enstratius, Inc.</businessName>
      <timeZone>UTC</timeZone>
    </customer>
  </role>
</roles>
```

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HEAD

```
HEAD /api/enstratus/2012-02-29/admin/Role HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: HmtYlBYM44WiTuUQBqme1o5oaSkXCcKM3g5tJmtwq64=
x-esauth-timestamp: 1333641757042
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 38
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Thu, 05 Apr 2012 16:02:36 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-02-29/admin/Role HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: G4uuEg1U2wkP1rAYPTSjVM3Fs3qcZMHGawkKvZbVZz0=
x-esauth-timestamp: 1333641757923
x-es-details: basic
x-es-with-perms: false

{
  "addRole":[
    {
      "status":"ACTIVE",
      "description":"Unit Test Role from 1333641757",
      "name":"Unit Test 1333641757"
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 30
Date: Thu, 05 Apr 2012 16:02:36 GMT

{"roles":[{"roleId":56610}]}
```

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POST (XML)

```
POST /api/enstratus/2012-02-29/admin/Role HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: 3neG/XkabJ2onQvSbTZq7ya3ncCnIXv9grWELSUQZfw=
x-esauth-timestamp: 1333641758865
x-es-details: basic
x-es-with-perms: false

<addRole>
  <roles>
    <role status="ACTIVE">
      <name>Unit Test 865</name>
      <description>Unit Test Role from 865</description>
    </role>
  </roles>
</addRole>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 46
Date: Thu, 05 Apr 2012 16:02:38 GMT

<roles><role roleId="56611" /></roles>
```

PUT (JSON)

```
PUT /api/enstratus/2012-02-29/admin/Role/56615 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: FSrNG5F7TJH5MZB6Odk/YrfPG+XDxGWQojiRxG67stA=
x-esauth-timestamp: 1333641763577
x-es-details: basic
x-es-with-perms: false

{
  "grant":[
    {
      "acl":[
        {
          "action":"DefineServer",
          "qualifier":"MINE",
          "resourceType":"IMAGE"
        }
      ]
    }
```

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```
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 16:02:42 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-02-29/admin/Role/56616 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: kJJSTgUY9c3mc+y1IvGKhDjYQX337EqpB6sUN/OoBfU=
x-esauth-timestamp: 1333641765541
x-es-details: basic
x-es-with-perms: false

<grant>
  <roles>
    <role roleId="56616">
      <acl>
        <permission action="DefineServer" resourceType="IMAGE"
                    qualifier="MINE" />
      </acl>
    </role>
  </roles>
</grant>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 16:02:45 GMT
```

DELETE

```
DELETE /api/enstratus/2012-02-29/admin/Role/56612?reason=Enstratius+Unit+Test
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: nt2N5BrQIlNb+EhLL1/k6BYoy9h57KrcEMeeaCE6vNg=
x-esauth-timestamp: 1333641760550
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Thu, 05 Apr 2012 16:02:39 GMT
```

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User

A user within the Enstratius environment. User access to various parts of Enstratius is governed by the role associations with the groups to which they belong. A user belongs to a specific customer, but they may have access to accounts belonging to other customers. The ability to modify users may be limited for customers that tie Enstratius into an ActiveDirectory or LDAP server.

Version

Introduced: 2011-02-24
Status: Active

Changes:

2011-12-15

Changed the fields `firstName` and `lastName` to givenName and familyName, respectively.

2012-02-29

Added support for notifications targets and notifications settings, including the ability to set values for these fields.

Added support for cloud identity and access management integration.

2013-01-129

Added `serverId` query parameter for listing users on a server.

Supported Methods

- GET
- HEAD
- POST

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- PUT
- DELETE

Attributes

`userId [read-only, number]`
The unique ID of the user across all customer accounts.

`status [read-only, ACTIVE|INACTIVE]`
The current status of this role in Enstratius.

Elements

`accountUserId [read-only, number, nullable]`
A unique identifier to reference this user's access to a specific account. This value will not be present unless querying the user in the context of a specific account.

`alphaName [string(255)]`
The user's full name in the form of last name, first name.

`billingCodes [array(extended(BillingCode))]`
Only present when this user record is queried in the context of an `accountId`. This value identifies all billing codes against which the user has provisioning rights. This value is editable even when the user record is pulled from LDAP or ActiveDirectory.

`cloudAPIPublicKey [encrypted(255), read-only, optional]`
The encrypted public key that the user can make API calls to the underlying cloud API with.

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cloudAPISecretKey [encrypted(255), read-only, optional]
The encrypted secret key that the user can make API calls to the underlying cloud API with.

cloudConsolePassword [encrypted(255), read-only, optional]
The encrypted password that the user can login to the underlying cloud console with.

customer [read-only, extended(Customer)]
The customer record to which this user belongs. Only accounts belonging to this customer may edit anything about this user record except account access. In other words, if company A wants to give a user in company B access to one of their cloud accounts, admins of company A have the ability to add that access or revoke it, but they don't have any access to edit the actual user record or impact that user's access to company B accounts.

editable [read-only, boolean]
Indicates whether core values of this user account may be changed. Essentially, this value is false when the user is being pulled from a foreign system via Enstratius LDAP and ActiveDirectory integration.

email [string(100)]
Email is a unique identifier that enables a given user to identify themselves to Enstratius. The only time it is truly used for email is for security-related reasons (like password change notifications).

familyName [string(100)]
The family name of the user. In versions prior to 2011-12-15, this field was called `lastName`.

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givenName [string(100)]
The given name of the user. In versions prior to 2011-12-15, this field was called `firstName`.

hasCloudAPIAccess [boolean]
Indicates that the user has access to the underlying cloud API via the cloud's identity and access management system.

hasCloudConsoleAccess [boolean]
Indicates that the user has access to the underlying cloud console via the cloud's identity and access management system.

groups [array(extended(Group))]
The group membership of this user. The group membership is independent of any individual accounts.

notificationsSettings [array(complex(NotificationsSetting))]
All notifications settings configured for this user.

notificationsTargets [complex(NotificationsTargets)]
The various targets configured for delivery of notifications matching any notifications settings.

sshPublicKey [string(1000), nullable]
The public key used to provide the user with access to Unix virtual machines. This value is specific to each account.

timeZone [string(100), nullable]
The time zone ID for the time zone in which this user wishes dates to be displayed.

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vmLoginId [read-only, string(30)]

The ID that this user will use to login to virtual machines for shell or remote desktop access. This value starts with the letter 'p' and is assigned by Enstratius. It is unique across all customers to make it possible for users to have access to accounts of other customers.

Query Parameters

GET and HEAD operations without any query parameters return all users for the customer.

`accountId [optional, number]`

Lists users with access to the specified account and includes all of their account specific attributes.

`email [optional, string(100)]`

Provides the user who has the specified email address if you have visibility into that user.

`groupId [optional, number]`

Provides all users who belong to the specified account.

`serverId [optional, number]`

Provides all users who have been added by the agent to the specified server.

Updates

The following PUT operations are supported:

`grant`

Requires: `accountId`

Optional: none

Success: 204

Grants the user access to the specified account.

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`revoke`

Requires: `accountId`

Optional: none

Success: 204

Revokes the user's access to the specified account.

`saveCloudAccess`

Requires: `account`

Optional: `hasCloudAPIAccess, hasCloudConsoleAccess`

Success: 204

Grants/revokes access for the specified user to the cloud console and/or API. If you grant API access, this operation will result in the user being able to make API calls to the API of the underlying cloud. Similarly, if you grant console access, this operation will result in the user being able to login directly to the console of the underlying cloud. You will have to query for the user record to fetch the API keys and/or password that were generated.

`saveNotificationsSettings`

Requires: `account`

Optional: `notificationsSettings`

Success: 204

Changes the notifications settings for the specified user. If no settings are specified, all are wiped.

`saveNotificationsTargets`

Requires: `account`

Optional: `notificationsTargets`

Success: 204

Changes the notifications targets for the specified user. If no settings are specified, all are removed.

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`updateRemoteCredentials`

Requires: `userId, one or both of: sshPublicKey/windowsPassword`

Optional: none

Success: 204

Updates the credentials of an Enstratius user with an SSH Public Key and/or Windows account password.

Errors

There are no unique errors associated with users.

Examples

Note: The GET examples in this section request extended details because some attributes like the notifications settings and targets are visible only with extended details. As a result, these are particularly verbose examples. In some cases, long lists of data have been truncated.

GET (JSON)

```
GET /api/enstratus/2012-02-29/admin/User/10503?accountId=100 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: m7acBFDwwGNxGAoX8hvcQH2M3Sx8gP0+isjXl9aBSYk=
x-esauth-timestamp: 1333556880990
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 04 Apr 2012 16:28:01 GMT

{"users":
  [
    {
      "notificationsTargets":{"emailTarget":"george.reese@enstratius.com"},
      "hasCloudAPIAccess":true,
      "hasCloudConsoleAccess":true,
      "status":"ACTIVE",
```

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```
"cloudAPIPublicKey":"AKIAJ3764MCGGMRIEFEQ",
"familyName":"Reese",
"timeZone":"America/Chicago",
"givenName":"George",
"customer":{
  "businessName":"Enstratius, Inc.",
  "customerId":100,
  "createdTimestamp":"2008-12-27T15:55:18.454+0000",
  "status":"ACTIVE",
  "accountingCurrency":"GBP",
  "created":"2008-12-27T15:55:18.454+0000",
  "timeZone":"UTC",
  "automatedExchangeRates":true},
"editable":false,
"notificationsSettings":[
  {
    "targetResourceType":"ANY",
    "notifyViaEmail":false,
    "notifyViaScreen":true,
    "notifyViaCloudNotificationService":false,
    "targetProviderRegionId":"ANY",
    "targetCustomerId":100,
    "severity":11,
    "eventType":"ALARM.EVENT",
    "notifyViaSms":false,
    "targetResourceId":"ANY",
    "targetAccountId":"ANY",
    "targetCloudId":"ANY",
    "notifyViaApi":false
  },
],
"vmLoginId":"p8890",
"alphaName":"Reese, George",
"billingCodes":[
  {
    "financeCode":"DEV",
    "softQuota":"GBP200.12",
    "budgetState":"NORMAL",
    "status":"ACTIVE",
    "description":"Research and development budget.",
    "billingCodeId":111,
    "name":"R&D Budget",
    "hardQuota":"GBP2,001.18",
    "projectedUsage":"GBP183.47",
    "customer":{"customerId":100},
    "currentUsage":"GBP183.47"},
  }
],
"email":"george.reese@enstratius.com",
"userId":10503,
```


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```
      "accountUserId":400,
      "account":{"accountId":100},
      "cloudConsolePassword":"OMITTED",
      "groups":[
        {
          "groupId":1,
          "status":"ACTIVE",
          "description":"Has full access over the entire system.",
          "name":"Admin",
          "customer":{"customerId":100}
        }
      ],
      "cloudAPISecretKey":"OMITTED"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/admin/User/10503?accountId=100 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: oiv9mZ2AE2MXo8a4CLBEtayELuaXdiOyfhqTTcKeaak=
x-esauth-timestamp: 1333556882429
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 04 Apr 2012 16:28:02 GMT

<users>
  <user userId="10503" status="ACTIVE">
    <alphaName>Reese, George</alphaName>
    <givenName>George</givenName>
    <familyName>Reese</familyName>
    <timeZone>America/Chicago</timeZone>
    <email>george.reese@enstratius.com</email>
    <account accountId="100" />
    <accountUserId>400</accountUserId>
    <hasCloudConsoleAccess>true</hasCloudConsoleAccess>
    <hasCloudAPIAccess>true</hasCloudAPIAccess>
    <cloudConsolePassword>OMITTED</cloudConsolePassword>
    <cloudAPIPublicKey>AKIAJ3764MCGGMRIEFEQ</cloudAPIPublicKey>
    <cloudAPISecretKey>OMITTED</cloudAPISecretKey>
    <notificationsTargets>
```

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```
  <emailTarget>george.reese@enstratius.com</emailTarget>
</notificationsTargets>
<notificationsSettings>
  <notificationsSetting>
    <notifyViaApi>false</notifyViaApi>
    <notifyViaCloudNotificationService>
      false
    </notifyViaCloudNotificationService>
    <notifyViaEmail>false</notifyViaEmail>
    <notifyViaScreen>true</notifyViaScreen>
    <notifyViaSms>false</notifyViaSms>
    <eventType>ALARM.EVENT</eventType>
    <severity>11</severity>
    <targetCustomerId>100</targetCustomerId>
    <targetAccountId>ANY</targetAccountId>
    <targetCloudId>ANY</targetCloudId>
    <targetProviderRegionId>ANY</targetProviderRegionId>
    <targetResourceType>ANY</targetResourceType>
    <targetResourceId>ANY</targetResourceId>
  </notificationsSetting>
</notificationsSettings>
<vmLoginId>p8890</vmLoginId>
<editable>false</editable>
<customer customerId="100" status="ACTIVE">
  <automatedExchangeRates>true</automatedExchangeRates>
  <accountingCurrency>GBP</accountingCurrency>
  <created>2008-12-27T15:55:18.454+0000</created>
  <businessName>Enstratius, Inc.</businessName>
  <timeZone>UTC</timeZone>
</customer>
<billingCodes>
  <billingCode billingCodeId="111" status="ACTIVE">
  <financeCode>DEV</financeCode>
  <name>R&amp;amp;D Budget</name>
  <description>Research and development budget.</description>
  <hardQuota>GBP2,001.18</hardQuota>
  <softQuota>GBP200.12</softQuota>
  <projectedUsage>GBP183.47</projectedUsage>
  <currentUsage>GBP183.47</currentUsage>
  <budgetState>NORMAL</budgetState>
  <customer customerId="100" />
</billingCode>
<groups>
  <group groupId="1" status="ACTIVE">
    <name>Admin</name>
    <description>Has full access over the entire system.</description>
    <customer customerId="100" />
  </group>
</groups>
```

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```
  </user>
</users>
```

HEAD

```
HEAD /api/enstratus/2012-02-29/admin/User?accountId=100 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: eoRz7hoULCNIAvEBD2L0R/QWT65+NVIrhWwoRCe4tOw=
x-esauth-timestamp: 1333556876491
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 126
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Wed, 04 Apr 2012 16:28:00 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-02-29/admin/User HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: y8ZmeurkYKxW5oc/vtvqbzV4nQxFmxDZ304XtFVTgZQ=
x-esauth-timestamp: 1333556884400
x-es-details: basic
x-es-with-perms: false

{
  "addUser":
    [
      {
        "notificationsTargets":{"emailTarget":"test1333556883@simplicis.net"},
        "billingCodes":[{"billingCodeId":50420}],
        "email":"test1333556883@simplicis.net",
        "familyName":"User",
        "account":{"accountId":100},
        "givenName":"Test",
        "groups":[{"groupId":186}],
        "notificationsSettings":[
          {
            "notifyViaScreen":true,
            "notifyViaEmail":true,
            "severity":2,
            "eventType":"ALARM.ANY"
```

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```
          }
        ]
      }
    ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 30
Date: Wed, 04 Apr 2012 16:28:07 GMT

{"users":[{"userId":51822}]}
```

POST (XML)

```
POST /api/enstratus/2012-02-29/admin/User HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: Hf9t4RbUfnzJE5KXPVuKG9VF5eTkXkps3oibSvfVWlc=
x-esauth-timestamp: 1333556889238
x-es-details: basic
x-es-with-perms: false

<addUser>
  <users>
    <user>
      <account accountId="100" />
      <givenName>Test</givenName>
      <familyName>User</familyName>
      <email>test532@simplicis.net</email>
      <notificationsTargets>
        <emailTarget>test532@simplicis.net</emailTarget>
      </notificationsTargets>
      <notificationsSettings>
        <notificationsSetting>
          <notifyViaEmail>true</notifyViaEmail>
          <notifyViaScreen>true</notifyViaScreen>
          <eventType>ALARM.ANY</eventType>
          <severity>2</severity>
        </notificationsSetting>
      </notificationsSettings>
      <billingCodes><billingCode billingCodeId="50420" /></billingCodes>
      <groups><group groupId="186" /></groups>
    </user>
  </users>
</addUser>
```

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```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 46
Date: Wed, 04 Apr 2012 16:28:08 GMT

<users><user userId="51823" /></users>
```

PUT (JSON)

```
PUT /api/enstratus/2012-02-29/admin/User/51825 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: 0yNphrPi9BeGvPZudSze5FQV1Mn5J3BUEZ/B2J90KGY=
x-esauth-timestamp: 1333556894919
x-es-details: basic
x-es-with-perms: false
```

```
{"saveNotificationsTargets":
  [
    {
      "notificationsTargets":{"emailTarget":"revised@simplicis.net"},
      "userId":51825,
      "account":{"accountId":100}
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 04 Apr 2012 16:28:13 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-02-29/admin/User/51826 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: 0Hz5/UukjicxSmjTyVPYqq5CAwJY/XV5S1NbKonxKHo=
x-esauth-timestamp: 1333556897168
x-es-details: basic
x-es-with-perms: false

<saveNotificationsTargets>
  <users>
    <user userId="51826">
      <account accountId="100" />
      <notificationsTargets>
```

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```
        <emailTarget>revised@simplicis.net</emailTarget>
      </notificationsTargets>
    </user>
  </users>
</saveNotificationsTargets>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 04 Apr 2012 16:28:16 GMT
```

DELETE

```
DELETE /api/enstratus/2012-02-29/admin/User/51824?reason=Enstratius+Unit+Test
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: Sr/SrJF106t3HGOJGUI0lRzQ6BrMYgfxv40JHBv+0H0=
x-esauth-timestamp: 1333556892537
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 04 Apr 2012 16:28:12 GMT
```

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ANALYTICS API

The Enstratius analytics API enables you to fetch historic data about your cloud infrastructure. The basic structure of the analytics API breaks resources down into operations, analytics, and state changes. This current version of the API exposes just the analytics. In the next release, we will be supporting access to the operations and state changes.

The analytics APIs differ slightly from others in that there's no listing them. Instead, your GET requests must identify the specific resource for which you are fetching analytics.

ServerAnalytics

Server analytics represent the performance of an individual server over a specified period of time. A server analytics object defines a period start, end, and data capture interval and then provides data points in support for those parameters.

Version

Introduced: 2011-07-15
Status: Active

Supported Methods

- GET

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Attributes

serverId [read-only, number]
The unique Enstratius ID for the server represented by the analytics object.

Elements

dataPoints [read-only, list(ServerData)]
Data points representing a snapshot of the server's state at a given interval point.

intervalInMinutes [read-only, number]
The interval between data points in minutes delivered by this response. This value represents the default value, the value you requested, or a substitute value. Enstratius will substitute interval values if the specified interval would result in more than 1500 data points. The default value is 1.

periodEnd [read-only, datetime]
The date and time for the last data point in the response. This value represents either the default value, the value you requested, or a substitute value. Enstratius will substitute period endings when the requested period end makes no sense (for example, a period end before the start. The default value is now.

periodStart [read-only, datetime]
The actual date and time when the data set begins. This may differ from the value you requested for a number of reasons. The most common reason is that you requested a start prior to the first data point available.

Query Parameters

Unlike other parts of the Enstratius API, you cannot list analytics for multiple servers. You can, however, pass query parameters in when requesting the analytics for a specific server.

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`interval [number]`

The interval in minutes for the requested data points.

`periodEnd [number OR datetime]`

The end time in UNIX milliseconds or a datetime indicating the time for the last data point in the response.

`periodStart [number OR datetime]`

The start time in UNIX milliseconds or a datetime indicating the time for the first data point in the response.

Updates

No update operations are yet supported.

Errors

No special errors exist for analytics.

Examples

GET (JSON)

```
GET
/api/enstratus/2011-07-15/analytics/ServerAnalytics/62719?interval=1&periodStar
t=1311962700358&periodEnd=1311963300358 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: Wd+6szsQvUjaXgyTmQpF3mv0n5Z1KjRIlxDsLkp9cnU=
x-esauth-timestamp: 1311963300358
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 29 Jul 2011 18:15:00 GMT

{
```

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```
  "analytics":
  [
    {"periodStart":"2011-07-29T18:06:06.508+0000",
     "intervalInMinutes":5,
     "periodEnd":"2011-07-29T18:11:55.438+0000",
     "serverId":62719,
     "dataPoints":
     [
      {"timestamp":"2011-07-29T18:06:06.508+0000",
       "hypervisor":
       {"maximumNetworkInput":"3884",
        "averageDiskReadBytes":"0",
        "minimumDiskReadBytes":"0",
        "averageDiskWriteOps":"0",
        "minimumCpuUtilization":"1.19",
        "maximumDiskWriteBytes":"0",
        "maximumDiskWriteOps":"0",
        "maximumDiskReadBytes":"0",
        "averageDiskReadOps":"0",
        "minimumDiskReadOps":"0",
        "averageDiskWriteBytes":"0",
        "minimumDiskWriteOps":"0",
        "maximumDiskReadOps":"0",
        "minimumDiskWriteBytes":"0",
        "maximumCpuUtilization":"25.42",
        "minimumNetworkInput":"0",
        "averageCpuUtilization":"8.11",
        "averageNetworkInput":"676"
       },
       "icmpPingResponseTimeInMillis":"5",
       "operationalState":"NORMAL",
       "guest":
       {"cpuCount":"1",
        "responseTimeInMillis":"449",
        "totalRamInMb":"635",
        "processCount":"74",
        "cpuLoad":"0.02",
        "cpuUtilization":"0.02",
        "ramInUseInMb":"492"
       },
       "resourceState":"NORMAL"
      }
     ]
    }
  ]
}
```


GET (XML)

```
GET
/api/enstratus/2011-07-15/analytics/ServerAnalytics/62719?interval=1&periodStar
```

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```
t=1311962701492&periodEnd=1311963301492 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: LG2QOYb7+Pk7RTnGmJhN7yRI8LpiCpkkYYPlmexGvpc=
x-esauth-timestamp: 1311963301492
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 29 Jul 2011 18:15:01 GMT

<analytics>
  <serverAnalytics serverId="62719">
    <intervalInMinutes>5</intervalInMinutes>
    <periodStart>2011-07-29T18:06:06.508+0000</periodStart>
    <periodEnd>2011-07-29T18:11:55.438+0000</periodEnd>
    <dataPoints>
      <serverData>
        <timestamp>2011-07-29T18:06:06.508+0000</timestamp>
        <resourceState>NORMAL</resourceState>
        <operationalState>NORMAL</operationalState>
        <icmpPingResponseTimeInMillis>5</icmpPingResponseTimeInMillis>
        <guest cpuLoad="0.02" cpuUtilization="0.02" processCount="74"
               responseTimeInMillis="449" cpuCount="1" ramInUseInMb="492"
               totalRamInMb="635" />
        <hypervisor averageCpuUtilization="8.10556"
                    maximumCpuUtilization="25.42" minimumCpuUtilization="1.19"
                    averageDiskReadBytes="0" maximumDiskReadBytes="0"
                    minimumDiskReadBytes="0" averageDiskReadOps="0"
                    maximumDiskReadOps="0" minimumDiskReadOps="0"
                    averageDiskWriteBytes="0" maximumDiskWriteBytes="0"
                    minimumDiskWriteBytes="0" averageDiskWriteOps="0"
                    maximumDiskWriteOps="0" minimumDiskWriteOps="0"
                    averageNetworkInput="676" maximumNetworkInput="3884"
                    minimumNetworkInput="0"  />
      </serverData>
    </dataPoints>
  </serverAnalytics>
</analytics>
```

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TierAnalytics

Tier analytics represent the performance of a servers grouped into a deployment tier over a specified period of time. A tier analytics object defines a period start, end, and data capture interval and then provides data points in support for those parameters.

Version

Introduced: 2011-07-15

Status: Active

Supported Methods

• GET

Attributes

`tierId [read-only, number]`

The unique Enstratius ID for the tier represented by the analytics object.

Elements

`dataPoints [read-only, list(TierData)]`

Data points representing a snapshot of the tier's state at a given interval point.

`intervalInMinutes [read-only, number]`

The interval between data points in minutes delivered by this response. This value represents the default value, the value you requested, or a substitute value. Enstratius will substitute interval values if the specified interval would result in more than 1500 data points. The default value is 1.

`periodEnd [read-only, datetime]`

The date and time for the last data point in the response. This value represents either the default value, the value you requested, or a substitute value. Enstratius will substitute

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period endings when the requested period end makes no sense (for example, a period end before the start. The default value is now.

`periodStart [read-only, datetime]`
The actual date and time when the data set begins. This may differ from the value you requested for a number of reasons. The most common reason is that you requested a start prior to the first data point available.

Query Parameters

Unlike other parts of the Enstratius API, you cannot list analytics for multiple tiers. You can, however, pass query parameters in when requesting the analytics for a specific tier.

`interval [number]`
The interval in minutes for the requested data points.

`periodEnd [number OR datetime]`
The end time in UNIX milliseconds or a datetime indicating the time for the last data point in the response.

`periodStart [number OR datetime]`
The start time in UNIX milliseconds or a datetime indicating the time for the first data point in the response.

Updates

No update operations are yet supported.

Errors

No special errors exist for analytics.

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Examples

GET (JSON)

```
GET
/api/enstratus/2011-07-15/analytics/TierAnalytics/56202?interval=1&periodStart=
1311960433342&periodEnd=1311961033342 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: xkoGH/nEj1rgYM8jm+M3974GEMlY0W/Nj4ExD4JwrO8=
x-esauth-timestamp: 1311961033342
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 29 Jul 2011 17:37:13 GMT

{"analytics":
  [
    {"periodStart":"2011-07-29T17:28:33.287+0000",
     "intervalInMinutes":5,
     "periodEnd":"2011-07-29T17:33:54.357+0000",
     "tierId":56202,
     "dataPoints":
     [
      {"ramOverallocation":"0.00",
       "trailingYearlyAvailability":"100.00",
       "ramEfficiency":"0.71",
       "trailingMonthlyAvailability":"100.00",
       "trailingWeeklyAvailability":"100.00",
       "maximumActiveVolumes":"2",
       "diskWaste":"100.00",
       "ramUnderallocation":"0.01",
       "operationalState":"NORMAL",
       "diskImpairment":"0.00",
       "diskUnderallocation":"0.00",
       "cpuOverallocation":"66.51",
       "maximumActiveServers":"1",
       "minute":"28",
       "timestamp":"2011-07-29T17:28:33.287+0000",
       "year":"2011",
       "cpuEfficiency":"0.05",
       "cpuWaste":"99.95",
       "ramImpairment":"0.00",
```

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```
        "cpuImpairment":"0.00",
        "cpuUnderallocation":"0.00",
        "diskOverallocation":"0.00",
        "trailingDailyAvailability":"100.00",
        "netServerChange":"-1",
        "diskEfficiency":"0.00",
        "ramWaste":"99.29",
        "hour":"17",
        "resourceState":"UNDER_UTILIZED",
        "averageDiskUtilization":"0.00",
        "breachState":"BREACH_LOWER",
        "averageRamUtilization":"53.23",
        "dayOfMonth":"29",
        "month":"7",
        "maximumDiskAllocatedInGb":"9",
        "averageCpuUtilization":"3.83"
       }
      ]
    }
   ]
}
```

GET (XML)

```
GET
/api/enstratus/2011-07-15/analytics/TierAnalytics/56202?interval=1&periodStart=
1311960434392&periodEnd=1311961034392 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: JK8xTuLjTKU4sk8NBIGcLStEW9xiz/qskbmSjoOJ7z8=
x-esauth-timestamp: 1311961034392
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 29 Jul 2011 17:37:14 GMT

<analytics>
  <tierAnalytics tierId="56202">
    <intervalInMinutes>5</intervalInMinutes>
    <periodStart>2011-07-29T17:28:33.287+0000</periodStart>
    <periodEnd>2011-07-29T17:33:54.357+0000</periodEnd>
    <dataPoints>
```

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```
      <tierData>
        <timestamp>2011-07-29T17:28:33.287+0000</timestamp>
        <dayOfMonth>29</dayOfMonth>
        <month>7</month>
        <year>2011</year>
        <hour>17</hour>
        <minute>28</minute>
        <resourceState>UNDER_UTILIZED</resourceState>
        <operationalState>NORMAL</operationalState>
        <breachState>BREACH_LOWER</breachState>
        <maximumActiveServers>1</maximumActiveServers>
        <maximumActiveVolumes>2</maximumActiveVolumes>
        <averageCpuUtilization>3.832</averageCpuUtilization>
        <averageDiskUtilization>0.00</averageDiskUtilization>
        <averageRamUtilization>53.22835</averageRamUtilization>
        <cpuEfficiency>0.05109</cpuEfficiency>
        <cpuImpairment>0.00</cpuImpairment>
        <cpuOverallocation>66.51339</cpuOverallocation>
        <cpuUnderallocation>0.00068</cpuUnderallocation>
        <cpuWaste>99.94891</cpuWaste>
        <diskEfficiency>0.00</diskEfficiency>
        <diskImpairment>0.00</diskImpairment>
        <diskOverallocation>0.00</diskOverallocation>
        <diskUnderallocation>0.00</diskUnderallocation>
        <diskWaste>100.00</diskWaste>
        <ramEfficiency>0.70971</ramEfficiency>
        <ramImpairment>0.00</ramImpairment>
        <ramOverallocation>0.00</ramOverallocation>
        <ramUnderallocation>0.00946</ramUnderallocation>
        <ramWaste>99.29028</ramWaste>
        <maximumDiskAllocatedInGb>9</maximumDiskAllocatedInGb>
        <netServerChange>-1</netServerChange>
        <trailingDailyAvailability>100.00</trailingDailyAvailability>
        <trailingWeeklyAvailability>100.00</trailingWeeklyAvailability>
        <trailingMonthlyAvailability>100.00</trailingMonthlyAvailability>
        <trailingYearlyAvailability>100.00</trailingYearlyAvailability>
      </tierData>
    </dataPoints>
  </tierAnalytics>
</analytics>
```

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AUTOMATION API

The automation API falls under the */api/enstratus/VERSION/automation* namespace and supports all resources associated with Enstratius automation capabilities.

ConfigurationManagementAccount

A configuration management account is an account with a configuration management service. A typical Enstratius installation will have any number of configuration management services for different configuration management systems (Chef, Puppet, etc.) installed. Enstratius also supports customer-owned configuration management services as well. A configuration management account is simply an account in one of these services. For example, you might set up two Chef repositories—one in the OpsCode platform and one inside your data center. You would therefore two configuration management accounts in Enstratius tied to two different configuration management services, both based on the single Chef configuration management system.

NOTE: This resource partially replaces the ConfigurationManagementOption resource. *In reality, ConfigurationManagementOption was the combination of what is now ConfigurationManagementAccount and ConfigurationManagementService. ConfigurationManagementOption is now deprecated as a result.*

Version

Introduced: 2011-12-15

Status: Active

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Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`cmAccountId [read-only, number]`
The unique ID of this configuration management account.

`budget [read-only, number]`
The Enstratius ID of the budget under which charges associated with this configuration management account are billed. This is currently read-only as chargebacks for configuration management are not currently supported.

`removable [read-only, boolean]`
Indicates whether or not it is safe to remove this account.

`status [read-only, ACTIVE|INACTIVE]`
The current status of the configuration management account.

Elements

`accessKey [write-only, string, nullable]`
The public key/user name that servers use to access the configuration management service.

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accountNumber [write-once, string]

The account number that identifies you with your configuration management account. This is something that will never change.

cmService [extended(ConfigurationManagementService)]

The configuration management service behind this option. Enstratius supports public services like the OpsCode Platform as well as private ones visible only to the customers who own them.

createdTimestamp [read-only, datetime]

A date and time when this account was first created in Enstratius.

customer [write-once, extended(Customer)]

The customer to whom this account belongs.

description [string]

A detailed description of the configuration management account.

guid [read-only, string]

The unique GUID that identifies this configuration management account in Enstratius.

label [enumeration(Label), nullable]

A label assigned to this configuration management account.

lastModifiedTimestamp [read-only, datetime]

A date and time when this account was last changed in Enstratius.

name [string(100)]

The user-friendly name for the configuration management account.

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owningGroups [read-only, list(Group)]

The value is currently always empty.

owningUser [read-only, extended(User), nullable]

The user to whom this account belongs.

secretKey [write-only, encrypted string, nullable]

The private key/password that servers use to access the configuration management service.

Query Parameters

DELETE request accept a reason (string) parameter.

GET and HEAD operations allow the following parameters:

`activeOnly [boolean]`

Show only active accounts.

`customerId [number]`

Show accounts for the specified customer. Allowed only for the administrative account.

Updates

The following PUT operations are supported:

`describeAccount`

Requires: none

Optional: `description`, `label`, `name`

Permissions: CONFIGURATION_MANAGEMENT/Configure

Response: 204

Changes the basic meta-data for a configuration management account. You may specify

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any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

There are no unique errors associated with configuration management accounts.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount/1
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: lzU7GDoEI6qhFIzC071rWkf/X/W8drFhVj7UR9P1iXg=
x-esauth-timestamp: 1323630970278
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 11 Dec 2011 19:16:08 GMT

{"cmAccounts":
  [
    {
      "budget":111,
      "lastModifiedTimestamp":"2011-12-05T20:49:49.060+0000",
      "cmAccountId":1,
      "createdTimestamp":"1970-01-01T00:00:01.000+0000",
      "status":"ACTIVE",
      "removable":true,
      "label":"purple",
      "customer":{"customerId":100},
      "guid":"/customer/100/cmAccount/1",
      "accountNumber":"789461675046",
      "description":"Oregon CM",
      "name":"Oregon CM",
      "cmService":{"cmServiceId":1}
    }
  ]
}
```

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GET (XML)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount/1
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: tCUBnijNI1JQ4miul6BuZ95xO0ZxYtfHBgkrihap7i8=
x-esauth-timestamp: 1323630970704
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 11 Dec 2011 19:16:10 GMT

<cmAccounts>
  <cmAccount cmAccountId="1" budget="111" status="ACTIVE" removable="true" >
    <guid>/customer/100/cmAccount/1</guid>
    <accountNumber>789461675046</accountNumber>
    <name>Oregon CM</name>
    <label>purple</label>
    <description>Oregon CM</description>
    <createdTimestamp>1970-01-01T00:00:01.000+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-12-05T20:49:49.060+0000</lastModifiedTimestamp>
    <customer customerId="100" />
    <cmService cmServiceId="1" />
  </cmAccount>
</cmAccounts>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: IKL+AJkJwGuxlLoeFxV0+4O8ub7k+78aqjuDHDtI/TM=
x-esauth-timestamp: 1323630970091
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 1
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sun, 11 Dec 2011 19:16:08 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: /uURVY3o7/itkqbY6YcL6fd6N5u9dzN8NB/m8UU1iwY=
x-esauth-timestamp: 1323630971052
x-es-details: basic
x-es-with-perms: false

{"addAccount":
  [
    {
      "accessKey":"12345",
      "accountNumber":"0ccea597-320b-470c-af6a-fba2b2bbea87",
      "secretKey":"mh7d3Y21+wkXmlSPs7aOrA==",
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1323630971",
      "label":"red",
      "cmService":{"cmServiceId":1200}
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 39
Date: Sun, 11 Dec 2011 19:16:10 GMT

{"cmAccounts":[{"cmAccountId":1325}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: axK+a5nZjw5pCDJPpSR7ghBdbTfIxnZoQoMJk3nQh04=
```

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```
x-esauth-timestamp: 1323630971483
x-es-details: basic
x-es-with-perms: false

<addAccount>
  <cmAccounts>
    <cmAccount>
      <cmService cmServiceId="1200"/>
      <name>Unit Test 1323630971</name>
      <description>XML-based creation from Enstratius unit tests</description>
      <label>green</label>
      <accountNumber>9cd7694d-8acb-4000-9add-13e3b53844f7</accountNumber>
      <accessKey>12345</accessKey>
      <accessSecret>mh7d3Y21+wkXmlSPs7aOrA==</accessSecret>
    </cmAccount>
  </cmAccounts>
</addAccount>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 63
Date: Sun, 11 Dec 2011 19:16:10 GMT

<cmAccounts>
  <cmAccount cmAccountId="1326" />
</cmAccounts>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount/1328
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: QLUVtUmmg4FCZbXVeFKY2wL3GvNXKf+WwOQJZ3eZmsc=
x-esauth-timestamp: 1323630973087
x-es-details: basic
x-es-with-perms: false

{"describeAccount":
  [
    {
      "description":"Renamed configuration management option",
      "name":"Rename Unit Test 1323630973",
      "label":"orange"
    }
  ]
}
```

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```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 19:16:12 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/automation/ConfigurationManagementAccount/1329
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: EAiycuzQYAVIlSK3O36wDYmN2ObbOFb4GprW8Z+Kjc4=
x-esauth-timestamp: 1323630973755
x-es-details: basic
x-es-with-perms: false

<describeAccount>
  <cmAccounts>
    <cmAccount>
      <name>Rename Unit Test 1323630973</name>
      <label>blue</label>
      <description>Renamed configuration management account</description>
    </cmAccount>
  </cmAccounts>
</describeAccount>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 19:16:12 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/automation/ConfigurationManagementAccount/1327?reason
=Enstratius+Unit+Test HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: ZbXfsH8YeNziBExiGM3ZhwAuomLrO0IsAAl+YFXqmzo=
x-esauth-timestamp: 1323630972151
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 19:16:11 GMT
```

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ConfigurationManagementService

A configuration management service is an actual service endpoint running a supported configuration management system. Some services like the public OpsCode Platform for Chef may be available to all customers, or you may define your own configuration management service for your company's private use.

NOTE: *Enstratius requires a special information when creating a service using the Enstratius Object Store configuration management from one of your cloud storage buckets. You specify an Enstratius regionId instead of an endpoint. Enstratius will infer the endpoint as well as all connectivity information from what you have already entered into Enstratius for your cloud provide*r.

Version

Introduced: 2011-12-15

Status: Active

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`budget [number, nullable]`

For private configuration management services, the default budget against which new accounts get billed. Currently not used.

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cmServiceId [read-only, number]
The unique ID of this configuration management service.

removable [read-only, boolean]
Identifies whether or not this service can be de-activated in Enstratius.

Elements

cmSystem [write-once, extended(ConfigurationManagementSystem)]

The configuration management software behind this service. This enables Enstratius to use the right protocols to interact with your service.

customer [write-once, extended(Customer), nullable]
The customer who owns this private configuration management service (if private). If it is a public service, no value is specified for `customer`.

description [string(10000)]
A detailed description of the configuration management service.

label [enumeration(Label), nullable]
A label assigned to this configuration management service.

name [string(100)]
The user-friendly name for the configuration management service.

owningGroups [list(Group)]
For private configuration management services, the group that owns this service.

owningUser [extended(User), nullable]
For private configuration management services, the user to whom this service belongs.

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`properties [read-only, complex(Properties)]`

A list of system-specific properties that support connectivity to the service in question. A property should be given a value for each property name in `ConfigurationManagementSystem.propertyNames`.

`serviceEndpoint [string(255)]`

The name of the company/organization behind the configuration management system.

Query Parameters

GET and HEAD operations support the following query parameters:

`activeOnly [boolean]`

Show only currently active services. The default value is `false`.

`customerId [number]`

Valid only for keys belonging to the administrative account. Shows the services visible to the specified customer.

`onlyMine [boolean]`

Show only services that belong to my account (or the specified `customerId`). In other words, hide public services.

Updates

The following PUT operations are supported:

`changeServiceEndpoint`

Requires: `serviceEndpoint`

Optional: none

Permissions: CONFIGURATION_MANAGEMENT/Configure

Response: 204

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Changes the endpoint to which the service is attached. Not valid for services tied to the Enstratius Object Store configuration management.

`describeService`

Requires: none

Optional: `description, label, name`

Permissions: CONFIGURATION_MANAGEMENT/Configure

Response: 204

Modifies the core meta-data for a service.

Errors

There are no unique errors associated with configuration management services.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementService
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: CkH2FlvmTSieo1IgpHtC59HGrpvClJdVGi8WH9pWZPA=
x-esauth-timestamp: 1323450228158
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 09 Dec 2011 17:03:49 GMT

{"cmServices":
  [
    {
      "status":"ACTIVE",
      "serviceEndpoint":"https://ec2.us-west-2.amazonaws.com",
      "description":"Enstratius CM test edit",
      "removable":true,
      "name":"Enstratius CM",
```

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```
      "cmServiceId":1,
      "label":"purple",
      "cmSystem":{"cmSystemId":3},
      "properties":
        {
          "esRegionId":"52301",
          "cloudDelegate":"org.dasein.cloud.aws.AWSCloud",
          "bucket":"osscripts",
          "regionId":"us-west-2"
        },
      "customer":{"customerId":100}},
    {
      "status":"ACTIVE",
      "serviceEndpoint":"https://puppet.enstratius.com/v1.0",
      "description":"testing puppet",
      "removable":true,
      "name":"annetest2",
      "cmServiceId":1201,
      "cmSystem":{"cmSystemId":2},
      "properties":{},
      "customer":{"customerId":100}},
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementService
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: suAFxT/eTgC+JRyfU5T/dOxbZVrb3mReUzE4VGa95Fc=
x-esauth-timestamp: 1323450229347
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 09 Dec 2011 17:03:49 GMT

<cmServices>
  <cmService cmServiceId="1" status="ACTIVE" removable="true" >
    <name>Enstratius CM</name>
    <label>purple</label>
    <description>Enstratius CM test edit</description>
    <serviceEndpoint>https://ec2.us-west-2.amazonaws.com</serviceEndpoint>
```

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```
    <properties>
      <esRegionId>52301</esRegionId>
      <cloudDelegate>org.dasein.cloud.aws.AWSCloud</cloudDelegate>
      <bucket>osscripts</bucket>
      <regionId>us-west-2</regionId>
    </properties>
    <customer customerId="100" />
    <cmSystem cmSystemId="3" />
  </cmService>
  <cmService cmServiceId="1201" status="ACTIVE" removable="true" >
    <name>annetest2</name>
    <description>puppet test</description>
    <serviceEndpoint> https://puppet.enstratius.com/v1.0 </serviceEndpoint>
    <properties></properties>
    <customer customerId="100" />
    <cmSystem cmSystemId="2" />
  </cmService>
</cmServices>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/ConfigurationManagementService
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: A83aMnsmDQDZbMaING92U0YENz93GiaXvxNlwIhy3/A=
x-esauth-timestamp: 1323450229829
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 2
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Fri, 09 Dec 2011 17:03:49 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/automation/ConfigurationManagementService
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: IivBVXlNT7vXj6t3HUiP7CJ7IUmcrY6RZsvLHlHrIkc=
x-esauth-timestamp: 1323491789450
x-es-details: basic
x-es-with-perms: false
```

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```
{"addService":
  [
    {
      "budget":201,
      "serviceEndpoint":"http://api.example.com",
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1323491789",
      "label":"red",
      "properties":{},
      "cmSystem":{"cmSystemId":2}
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 39
Date: Sat, 10 Dec 2011 04:36:28 GMT

{"cmServices":[{"cmServiceId":1301}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/automation/ConfigurationManagementService
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: u6PXDez8oaED8WBRYBIfrAbFh17kGlGrpkmxywlDZAY=
x-esauth-timestamp: 1323619825118
x-es-details: basic
x-es-with-perms: false

<addService>
  <cmServices>
    <cmService budget="201">
      <cmSystem cmSystemId="2”/>
      <name>XML Unit Test 1323619825</name>
      <description>Created by the Enstratius unit tests.</description>
      <label>blue</label>
      <serviceEndpoint>http://api.example.com</serviceEndpoint>
      <properties></properties>
    </cmService>
  </cmServices>
</addService>
```

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```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 63
Date: Sun, 11 Dec 2011 16:10:25 GMT

<cmServices>
  <cmService cmServiceId="1418" />
</cmServices>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/automation/ConfigurationManagementService/1424
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: by8uOGKC7sRhK0fgWFe287C8P+4v1LWqxKpRvCUmlOc=
x-esauth-timestamp: 1323620602230
x-es-details: basic
x-es-with-perms: false

{"describeService":
  [
    {
      "description":"Renamed configuration management service",
      "name":"Rename JSON Unit Test 1323620602",
      "label":"orange"
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 16:23:22 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/automation/ConfigurationManagementService/1425
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 4Sq2b1FoYFP4UopLq6WnR4DnsHUE4r2XM0GcYK1J77k=
x-esauth-timestamp: 1323620603020
x-es-details: basic
x-es-with-perms: false

<describeService>
  <cmServices>
```

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```
    <cmService cmServiceId="1425">
      <name>Rename JSON Unit Test 1323620603</name>
      <description>Renamed CM service</description>
      <label>purple</label>
    </cmService>
  </cmServices>
</describeService>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 16:23:23 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/automation/ConfigurationManagementService/1421?reason
=Unit+test+deactivate+test HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 7WP6dX/IKYX9UJ+b+FFSLwdUSeRIzGcV340E5WdEAoM=
x-esauth-timestamp: 1323620600407
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 11 Dec 2011 16:23:20 GMT
```

ConfigurationManagementSystem

A configuration management system represents a product supported by Enstratius for configuration management. It might be a commercial product like Chef or Puppet or a custom, in-house system. Configuration management systems are configured by an Enstratius administrator. In the SaaS environment, you may request through the help desk system for Enstratius to include your configuration management system of choice if it isn't one that is supported.

Note that some configuration management systems may be private, meaning that only one tenant in a multi-tenant environment (for example, the Enstratius SaaS environment) can see it.

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Version

Introduced: 2011-07-15
Status: Active

Supported Methods

- GET
- HEAD

Attributes

`cmSystemId [read-only, number]`
The unique ID of this configuration management system.

Elements

`customer [read-only, extended(Customer), nullable]`
The customer who owns this private configuration management system (if private). If it is a public system, no value is specified for `customer`.

`description [read-only, string]`
A detailed description of the configuration management option.

`logoUrl [read-only, string, nullable]`
A URL referencing a logo you can use in graphical interfaces for representing the configuration management system.

`name [read-only, string]`
The user-friendly name for the configuration management option.

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private [read-only, string]

If true, the configuration management system belongs to a specific customer (namely, you) and therefore only you may create configuration management options based on this configuration management system.

propertyNames [read-only, list(string)]

A list of properties which must be set when

type [read-only, string]

The type of configuration management system. Current values are CHEF, ENSTRATUS, PUPPET.

vendor [read-only, string]

The name of the company/organization behind the configuration management system.

Query Parameters

No query parameters are currently supported.

Updates

No changes may be made to the installed configuration management system. You specify your individual configurations for configuration management by creating configuration management options based on an installed configuration management system.

Errors

There are no unique errors associated with configuration management systems.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementSystem HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: LgBK4a9yB7gSeQ3FYDgAJm1KlHunFtMn3TkEMzhanxg=
```

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```
x-esauth-timestamp: 1323444264055
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 09 Dec 2011 15:24:24 GMT

{"cmSystems":
  [
    {
      "description":"Chef configuration management from OpsCode.",
      "vendor":"OpsCode",
      "name":"Chef",
      "cmSystemId":1,
      "type":"CHEF",
      "propertyNames":[""],
      "private":false
    },
    {
      "description":"Puppet configuration management from Puppet Labs.",
      "vendor":"Puppet",
      "name":"Puppet",
      "cmSystemId":2,
      "type":"PUPPET",
      "propertyNames":[""],
      "private":false
    },
    {
      "description":"Built-in CM system using an object store for script stor-
age.",
      "vendor":"Enstratius",
      "name":"ObjectStore",
      "cmSystemId":3,
      "type":"ENSTRATUS",
      "propertyNames":["cloudDelegate","regionId","bucket"],
      "private":false
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/automation/ConfigurationManagementSystem HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
```

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```
x-esauth-signature: z879XHsYPPSeIQdqN7LV44H12BywdfIB8Ru96f0Lgno=
x-esauth-timestamp: 1323444264992
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 09 Dec 2011 15:24:24 GMT

<cmSystems>
  <cmSystem cmSystemId="1">
    <name>Chef</name>
    <description>Chef configuration management from OpsCode.</description>
    <private>false</private>
    <type>CHEF</type>
    <vendor>OpsCode</vendor>
  </cmSystem>
  <cmSystem cmSystemId="2">
    <name>Puppet</name>
    <description>Puppet configuration management from Puppet
Labs.</description>
    <private>false</private>
    <type>PUPPET</type>
    <vendor>Puppet</vendor>
  </cmSystem>
  <cmSystem cmSystemId="3">
    <name>ObjectStore</name>
    <description>Built-in CM system using an object store for script
storage.</description>
    <private>false</private>
    <propertyNames>
      <propertyName>cloudDelegate</propertyName>
      <propertyName>regionId</propertyName>
      <propertyName>bucket</propertyName>
    </propertyNames>
    <type>ENSTRATUS</type>
    <vendor>Enstratius</vendor>
  </cmSystem>
</cmSystems>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/ConfigurationManagementSystem
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
```

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```
x-esauth-signature: eKc21A+gB7dxJ064yV30JlQq6oM6Gdqv29jMTil597o=
x-esauth-timestamp: 1323444265336
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 3
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Fri, 09 Dec 2011 15:24:24 GMT
```

DataSource

A data source is a dependency of one service on another. Data sources are typically realized as database data sources operating within a database service and used by application services.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`dataSourceId [read-only, number]`
The unique ID of this data source.

Elements

`description [string(10000)]`
A detailed description of the function of the data source.

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label [string(30), optional]
A label to place on the data source.

name [string(100)]
A user-friendly name for the data source.

nameInDatabase [string(100)]
The name of the data source as it exists in the database.

Query Parameters

No query parameters are required. If none are specified, all data sources for a customer will be returned, subject to access rights.

`serviceId [number, optional]`
Displays all data sources installed on the specified service.

`tierId [number, optional]`
Displays all data sources operating within the specified tier.

Updates

The following PUT operations are supported:

`assignGroups`
Requires: `owningGroups`
Optional: none
Permissions: CLUSTER/ManageOwnership
Response: 204
Changes the group ownership of this data source. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of a data source.

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`changeBackupInterval`

Requires: `backupIntervalInMinutes`

Optional: none

Permissions: CLUSTER/Backup

Response: 204

Modifies the interval at which the data source is backed up.

`changeConfiguration`

Requires: `configuration`

Optional: `serviceUser, servicePassword`

Permissions: CLUSTER/ManageUsers

Response: 204

Alters the runtime configuration data for the data source.

`changeDataSourceImage`

Requires: none

Optional: `dataSourceImage`

Permissions: CLUSTER/UploadImages

Response: 204

Changes (or nulls out) the data source image from which this service is deployed.

`changeDataSourceNameInDatabase`

Requires: `name`

Optional: none

Permissions: CLUSTER/Configure

Response: 204

Changes the name of a data source as it is deployed inside the database service. This operation cannot occur on a running data source.

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`describeDataSource`

Requires: none

Optional: `description`, `label`, `name`

Permissions: CLUSTER/Configure

Response: 204

Changes the basic meta-data for a data source. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

There are no unique errors associated with data sources.

Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/automation/DataSource/54800 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: dL02y9wEzVjsovO2NgI9a9rXdY1fP8msH+0v+MoM30g=
x-esauth-timestamp: 1336457822847
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 08 May 2012 06:17:01 GMT

{
  "dataSources":
  [
    {
      "databaseType":"VM_DYNAMIC",
      "removable":true,
      "nameInDatabase":"anneds",
      "customConfiguration":"hN71b//sBgOt11wSHjwDgA==",
      "customer":{"customerId":100},
      "dataSourceId":54800,
```

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```
      "servicePassword":"uIMVN8j54wVdR/KFCV29ow==",
      "serviceUser":"anne",
      "description":"datasource anne test",
      "name":"AnneDS",
      "service":{"serviceId":55400},
      "dataSourceImage":{"cloudFileId": 52903},
      "backupIntervalInMinutes":1440,
      "preventRemove":null,
      "owningUser":{"userId":1770}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/automation/DataSource/54800 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: NtSinF1MqmC5lpnnWbw3xOhmSCV19SmdH7Y4U+4S/14=
x-esauth-timestamp: 1336457823067
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 08 May 2012 06:17:02 GMT

<dataSources>
  <dataSource dataSourceId="54800" removable="true">
    <backupIntervalInMinutes>1440</backupIntervalInMinutes>
    <name>AnneDS</name>
    <description>datasource anne test</description>
    <preventRemove></preventRemove>
    <nameInDatabase>anneds</nameInDatabase>
    <owningUser userId="1770" />
    <databaseType>VM_DYNAMIC</databaseType>
    <service serviceId="55400" />
    <customer customerId="100" />
    <dataSourceImage cloudFileId="52903" />
    <serviceUser>anne</serviceUser>
    <servicePassword>uIMVN8j54wVdR/KFCV29ow==</servicePassword>
  </dataSource>
</dataSources>
```

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HEAD

```
HEAD /api/enstratus/2012-06-15/automation/DataSource HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: /fKyq5QjpofA90dk/haAHfWk52LFf2hkIBSBvFdV3K8=
x-esauth-timestamp: 1336457823378
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-count: 114
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Tue, 08 May 2012 06:17:07 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/automation/DataSource HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: DpdVWSNKDWXgm/IisOSbAKIYZXoym7sM1iQTc0UGyRU=
x-esauth-timestamp: 1336596809672
x-es-details: basic
x-es-with-perms: false

{
  "addDataSource":
  [
    {
      "databaseType":"VM_DYNAMIC",
      "servicePassword":"8roRTAUox8JkkUKJUnitcg==",
      "serviceUser":"unittest",
      "description":"Created by unit tests",
      "name":"UT 1336596809622",
      "service":{"serviceId":59001},
      "nameInDatabase":"ut1336596809622",
      "dataSourceImage":{"cloudFileId":59006},
      "label":"red",
      "backupIntervalInMinutes":3600
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
```

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```
Content-Type: application/json;charset=UTF-8
Content-Length: 48
Date: Wed, 09 May 2012 20:53:29 GMT

{"jobs":[{"jobId":100036,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/automation/DataSource HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 0fYfBfNl7YwmpZ9xVFH3/xuXIYRa5559w5PaGimiMbA=
x-esauth-timestamp: 1336596841754
x-es-details: basic
x-es-with-perms: false

<addDataSource>
  <dataSources>
    <dataSource>
      <name>UT 1336596841753</name>
      <nameInDatabase>ut1336596841753</nameInDatabase>
      <description>Created by unit tests</description>
      <label>red</label>
      <databaseType>VM_DYNAMIC</databaseType>
      <backupIntervalInMinutes>3600</backupIntervalInMinutes>
      <service serviceId="59001"/>
      <dataSourceImage cloudFileId="59006"/>
      <serviceUser>unittest</serviceUser>
      <servicePassword>G0yuvg6YdftFp+juPplL8Q==</servicePassword>
    </dataSource>
  </dataSources>
</addDataSource>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Wed, 09 May 2012 20:54:01 GMT

<jobs><job jobId="100037" status="RUNNING" /></jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2012-06-15/automation/DataSource/57806 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: R8hYWK9afDDcthNFHKaFvPhNfdLb9EypmDhF5IpA6hM=
x-esauth-timestamp: 1336596868250
```

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```
x-es-details: basic
x-es-with-perms: false

{"changeBackupInterval":[{"backupIntervalInMinutes":1200}]}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 09 May 2012 20:54:27 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-06-15/automation/DataSource/57806 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: GTuNSN8f6Vtp9Bb8WVOSCzzX5gzL7ry6jQbcBNbOBGs=
x-esauth-timestamp: 1336596868417
x-es-details: basic
x-es-with-perms: false

<changeBackupInterval>
  <dataSources>
    <dataSource>
      <backupIntervalInMinutes>1200</backupIntervalInMinutes>
    </dataSource>
  </dataSources>
</changeBackupInterval>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 09 May 2012 20:54:27 GMT
```

DELETE

```
DELETE /api/enstratus/2012-06-15/automation/DataSource/57807?reason=Test+system
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: G7ozjmYvFVICWYqS6FONJlYBdALJ1dVLccfltIhKib4=
x-esauth-timestamp: 1336596868610
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 09 May 2012 20:54:27 GMT
```

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DataSourceBackup

A data source backup is an automated backup of a specific data source running in a database service performed by Enstratius.

Supported Methods

- GET
- HEAD
- POST

Attributes

`dataSourceBackupId [read-only, number]`

The unique ID of this data source backup.

`status [read-only, numeration(BackupStatus)]`

The status of this key. Inactive keys may not be used in authentication.

Elements

`dataSource [extended(DataSource)]`

The data source that was backed up.

`dataSourceImage [read-only, extended(CloudFile), nullable]`

The data source image representing the backup.

`endTimestamp [read-only, datetime, nullable]`

The time at which the backup completed.

`errorMessage [read-only, string, nullable]`

If there was an error performing the backup, this value will contain the error message.

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server [read-only, extended(Server)]

The server against which the data source backup was attempted.

startTimestamp [read-only, datetime, nullable]

The time when the backup began executing.

Query Parameters

GET and HEAD operations require a dataSourceId parameter.

dataSourceId [number]

Displays all backups for the specified data source.

Updates

No PUT operations are supported with data source backups.

Errors

There are no unique errors associated with data source backups.

Examples

GET (JSON)

```
GET /api/enstratus/2012-02-29/automation/DataSourceBackup/3 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: TbbD1jvxATDRvlu4VqWNzhkynjEQOxx/CCx58qt/ETw=
x-esauth-timestamp: 1336456082167
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 08 May 2012 05:48:01 GMT

{
  "dataSourceBackups":
```

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```
  [
    {
      "dataSource":{"dataSourceId":55400},
      "dataSourceBackupId":3,
      "status":"ERROR",
      "startTimestamp":"2012-05-08T05:30:16.042+0000",
      "server":{"serverId":65900},
      "endTimestamp":"2012-05-08T05:30:16.054+0000"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/automation/DataSourceBackup/3 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: n1IfBrhfJU7AMYViuflBJ3CUOzgKtdnwRfEoFrW5Eu4=
x-esauth-timestamp: 1336456083019
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 08 May 2012 05:48:02 GMT

<dataSourceBackups>
  <dataSourceBackup dataSourceBackupId="3" status="ERROR">
    <startTimestamp>2012-05-08T05:30:16.042+0000</startTimestamp>
    <endTimestamp>2012-05-08T05:30:16.054+0000</endTimestamp>
    <server serverId="65900" />
    <dataSource dataSourceId="55400" />
  </dataSourceBackup>
</dataSourceBackups>
```

HEAD

```
HEAD /api/enstratus/2012-02-29/automation/DataSourceBackup?dataSourceId=55400
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: HWmY1Ye75vwMi9oYVEQ7SQEK9ZMG/ldoD68M00qUfPs=
x-esauth-timestamp: 1336456083384
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 10
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Tue, 08 May 2012 05:48:02 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/automation/DataSourceBackup HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: JlD1Je2+Ap2dsMc0VvPgKYDRHEEFEyFgPr5709WcW9U=
x-esauth-timestamp: 1336527179564
x-es-details: basic
x-es-with-perms: false

{"runBackup":[{"dataSource":{"dataSourceId":55400}}]}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 54
Date: Wed, 09 May 2012 01:33:08 GMT

{"dataSourceBackups":[{"dataSourceBackupId":65400}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/automation/DataSourceBackup HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: Hvi4AjwYd9wsNctZNDIyPbRuX8h7JHic5iqEnCV0a5Q=
x-esauth-timestamp: 1336527190632
x-es-details: basic
x-es-with-perms: false

<runBackup>
  <dataSourceBackup><dataSource dataSourceId="55400" /></dataSourceBackup>
</runBackup>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 94
Date: Wed, 09 May 2012 01:33:12 GMT
```

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```
<dataSourceBackups>
  <dataSourceBackup dataSourceBackupId="65401" />
</dataSourceBackups>
```

Deployment

A deployment is the central concept in the Enstratius automation system. It represents a logical system made up of multiple tiers that may be spread across multiple clouds. The deployment and its components capture the rules around which your system should be automated in Enstratius.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`budget [number]`

The ID of the default billing code against which any costs associated with this deployments are billed.

`deploymentId [read-only, number]`

The unique Enstratius ID for this deployment.

`removable [read-only, boolean]`

Indicates whether or not this machine image is in a state that will allow you to execute a `DELETE` operation on it.

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status [enumeration(DeploymentState)]
The current status of the deployment.

type [enumeration(DeploymentType)]
Indicates whether this deployment is dedicated to a single use or shared among multiple uses (and thus budgets).

Elements

backupWindow [read-only, extended(TimeWindow)]

The time window during which any daily backups may be performed for this deployment. Any deployment with components with backups that are to occur more regularly than daily will violate this backup window.

creationTimestamp [read-only, datetime]
The date and time when this deployment was first created.

customer [read-only, extended(Customer)]
The customer in whose library this deployment is being managed.

description [string(255)]
The full description of the deployment.

drStorage [extended(Region), nullable]
When set, Enstratius automatically copies all backups for this deployment into the cloud storage associated with the target region.

forServiceCatalog [read-only, boolean]
Indicates whether the deployment is a template deployment for use in service catalogs.

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label [enumeration(Label), nullable]
A label assigned to this deployment.

launchTimestamp [read-only, datetime, nullable]
If currently running or in maintenance, this value is the date and time when the deployment was initially launched.

loadBalancers [list(DeploymentLoadBalancer)]
A deployment has zero or more load balancers assigned to a pool from which services in the deployment can be load balanced. You can thus have a load balancer in a different region (or even cloud) from your application servers (if it makes sense). *These are not the same as the* ***LoadBalancer*** *resources under infrastructure.*

maintenanceWindow [read-only, extended(TimeWindow)]

The time window during which Enstratius performs automated maintenance such as patching servers and rolling out deployment changes.

name [string(100)]
A user-friendly name for the deployment.

owningGroups [list(Group)]
The groups who have ownership over this deployment. The current Enstratius release supports 0 or 1 group owner over a deployment. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying deployments.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this deployment.

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reasonNotRemovable [read-only, string, nullable]

If the deployment isn't currently removable, this value contains an explanation for why it isn't removable.

regions [read-only, list(extended(Region))]

Lists the set of regions for which this deployment is currently configured. To add new regions, you must create launch configurations for target tiers.

Query Parameters

By default, all deployments belonging to a customer are returned.

`forServiceCatalog [boolean]`

Return or exclude deployments based on their service catalog status.

Updates

The following PUT operations are supported:

`addLoadBalancer`

Requires: `loadBalancers`

Optional: none

Permissions: CLUSTER/Resize

Response: 204

Adds one or more load balancers to the pool of load balancers supporting this deployment. Note that these are not necessarily cloud load balancers. See the description of a deployment for more on load balancers.

`assignBudget`

Requires: `budget`

Optional: none

Permissions: CLUSTER/Configure

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Response: 204

Changes the budget associated with this deployment. The user making this change must have the rights to bill to both the new budget and the old budget.

`assignGroups`

Requires: `owningGroups`

Optional: none

Permissions: CLUSTER/ManageOwnership

Response: 204

Changes the group ownership of this deployment. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of a deployment.

`changeBackupWindow`

Requires: `backupWindow`

Optional: none

Permissions: CLUSTER/Backup

Response: 204

Changes the window during which daily backups are made.

`changeDeploymentType`

Requires: `type`

Optional: none

Permissions: CLUSTER/Configure

Response: 204

Changes the deployment type for this deployment.

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`changeDrStorage`

Requires: none

Optional: `drStorage`

Permissions: CLUSTER/Backup

Response: 204

Alters the disaster recovery storage region associated with this deployment. If no region is specified, the deployment will not perform any cross-cloud backups for DR purposes. Note: you must have the ability to write to the cloud storage in the target region.

`changeMaintenanceWindow`

Requires: `maintenanceWindow`

Optional: none

Permissions: CLUSTER/Backup

Response: 204

Changes the maintenance window for this deployment.

`changeServiceCatalogState`

Requires: `forServiceCatalog`

Optional: none

Permissions: CLUSTER/Configure

Response: 204

Changes the service catalog state for this deployment.

`describeDeployment`

Requires: none

Optional: `description`, `label`, `name`

Permissions: CLUSTER/Configure

Response: 204

Changes the basic meta-data for a deployment. You may specify any or all of the above. If

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you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

`deploy`
Requires: none
Permissions: CLUSTER/Launch
Response: 204
Alters the deployment state to LAUNCHING and initiates the process of spinning up any resources necessary for the deployment to operate.

`enterMaintenance`
Requires: none
Permissions: CLUSTER/Pause
Response: 204
Manually places the deployment into maintenance mode. No auto-scaling, auto-recovery, backups, or other Enstratius-managed activities occur while a deployment is in maintenance.

`exitMaintenance`
Requires: none
Permissions: CLUSTER/Pause
Response: 204
Returns the deployment into a normal operational mode (state=`RUNNING`). You should verify that the deployment is in a consistent state before exiting maintenance mode as Enstratius will immediately try to correct any inconsistencies.

`removeLoadBalancer`
Requires: `loadBalancers`
Optional: none

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Permissions: CLUSTER/Resize

Response: 204

Removes one or more load balancers from the pool of load balancers supporting this deployment. Note that these are not necessarily cloud load balancers. See the description of a deployment for more on load balancers.

`stop`

Requires: none

Optional: `reason`

Permissions: CLUSTER/Pause

Response: 204

Alters the deployment state to STOPPING and initiates the process of shutting down any Enstratius-managed resources belonging to this deployment. It will not shutdown resources belonging to other deployments or resources not managed by Enstratius.

Errors

There are no unique errors associated with deployments.

Examples

TBC

DeploymentLoadBalancer

Version

Status: **Active**

Changes:

2013-01-29

Fixed issues when adding Deployment Load Balancers using JSON.

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A deployment load balancer is a logical load balancer sitting in a deployment's load balancer pool. Enstratius automation supports three kinds of load balancers:

- Cloud. A cloud load balancer is a load balancer backed by a virtual load balancer from the underlying cloud provider. You associate a cloud load balancer you have previously provisioned with this deployment as a cloud load balancer.
- VM Static. A VM static load balancer is a software-based load balancer running on a server you have provisioned in the cloud. You should have some kind of load balancing software installed on the virtual machine as well as the scripts to enable Enstratius to control that software.
- VM Dynamic. A VM dynamic load balancer uses software-based load balancing on a server in the cloud like VM static. The key difference is that Enstratius provisions the server dynamically and handles auto-recovery of failed load balancers. You pick a static IP address and Enstratius maps the active server load balancer to that IP address. VM dynamic also requires you to provide a machine image, server product, and list of firewalls for the servers that are launched.

Supported Methods

None. You cannot directly interact with deployment load balancers. Instead, you manage them via the `Deployment` resource.

Attributes

`loadBalancerId [read-only, number]`

The unique Enstratius ID for the cloud load balancer, server, or static IP address behind your load balancer.

`scope [enumeration(LoadBalancerScope)]`

Defines the operational scope of the load balancer.

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type [read-only, enumeration(LoadBalancerType)]
Defines whether the load balancer is a cloud load balancer, VM static load balancer, or VM dynamic load balancer.

Elements

firewalls [list(MachineImage), nullable]

Only valid for VM dynamic load balancers. A list of firewalls that will protect any launched load balancing servers.

machineImage [extended(MachineImage), nullable]

Only valid for VM dynamic load balancers. The machine image from which Enstratius will provisioning new servers to act as load balancers.

product [extended(ServerProduct), nullable]

Only valid for VM dynamic load balancers. The server product used to provision new servers acting as load balancers.

LaunchConfiguration

A launch configuration is a set of launch characteristics for a tier in a particular region. It defines region-specific things like the machine image from which servers in the tier are launched.

Version

Introduced: 2011-02-24
Status: Active

Changes:

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2011-07-15

Added support for networking and configuration management. This includes the ability to specify a network, subnet, and configuration management option when creating a launch configuration as well as PUT operations for changing the networking and for changing the configuration management.

2011-12-15

Modified support for configuration management and added attributes for managing personalities and scripts.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`launchConfigurationId [read-only, number]`
The unique Enstratius ID for this tier.

`status [read-only, ACTIVE|INACTIVE]`
The current status of the launch configuration.

Elements

`arrayVolumeCapacity [number]`
The capacity in gigabytes of the volumes provisioned in the block volume array supporting the services running in this tier. If the volume count is less than 1 or the underlying cloud

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does not support block volumes, any value here is meaningless. If your volume count is greater than 1, this value must be at least 1 (or the minimum allocation value for the underlying cloud provider).

arrayVolumeCount [number]
The number of volumes in the block volume array supporting the services running in this tier. This value can be zero if you want services to run on the root volume or if the underlying cloud does not support block volumes.

autoScalingGroup [write-once, extended(AutoScalingGroup), nullable]
The cloud auto-scaling group supporting auto-scaling for this launch configuration. This value makes sense only in the context of cloud-based auto-scaling.

burstAt [number]
The number of servers beyond which Enstratius will “burst” into another region/cloud. For even distribution across regions, this value should be 0. The burstAt value is cumulative. For example, if you have 4 regions in a tier with region A set to 5, B to 10, and C and D to 0, Enstratius will launch all VMs initially in A with the sixth VM going into B and continued launching in B through the tenth VM. Beginning with the eleventh VM, all new VMs are launched evenly across C and D.

configurationManagement [extended(ConfigurationManagementAccount), nullable]
The configuration management account to use when configuring servers launched based on this launch configuration.

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configurationManagementConfiguration [string, nullable]
A run list or other free-form text specific to your configuration management system that provides it with the information needed to execute configuration management. This value is provided only when you request extended details for the launch configuration.

customer [read-only, extended(Customer)]
The customer to which this launch configuration belongs.

deployment [read-only, extended(Deployment)]
The deployment to which this launch configuration belongs.

firewalls [list(Firewall)]
The list of firewalls that will protect servers provisioned in this launch configuration.

network [extended(Network), nullable]
The network into which servers will be launched. If not specified, the server will be launched into the default network for the cloud.

personalities [extended(Personality), nullable]
The list of personalities to be applied by the configuration management system post-launch. If no configuration management account is specified, it will be inferred from this list or the list of scripts.

primaryMachineImage [extended(MachineImage)]
The machine image to use for provisioning servers in this launch configuration. If a secondary machine image is set, this machine image will be used only for provisioning the first server launched.

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primaryProduct [extended(ServerProduct)]

The server product to use for provisioning servers in this launch configuration. If a secondary server product is set, this machine image will be used only for provisioning the first server launched.

raidLevel [enumeration(RaidLevel)]

Defines the RAID level to use if installing services across multiple block volumes. If using multiple block volumes, we recommend using RAID0. Other RAID levels provide no value in the cloud.

recoveryDelayInMinutes [number]

The number of minutes Enstratius will wait after it loses communication with a virtual machine before it will remove that virtual machine from the tier supported by this launch configuration. That removal may cause Enstratius to execute an auto-recovery. Note that Enstratius will handle over failures immediately regardless of this value.

region [write-once, extended(Region)]

The region for which this launch configuration is configured. You may have at most one launch configuration per region for a tier.

scripts [extended(Script), nullable]

The list of scripts to be applied by the configuration management system post-launch. If no configuration management account is specified, it will be inferred from this list or the list of personalities.

secondaryMachineImage [extended(MachineImage), nullable]

The machine image to use for provisioning servers two and on in this launch configuration. Secondary products and machine images can be desirable for master versus slave servers in replicated configurations.

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secondaryProduct [extended(ServerProduct), nullable]

The server product to use for provisioning servers two and on in this launch configuration. Secondary products and machine images can be desirable for master versus slave servers in replicated configurations.

serverNameTemplate [string(50), nullable]

The template Enstratius will use in naming servers provisioned through this launch configuration. The default value is `{tier}-{role}-{count}`. The following placeholders may be used:

`{count}` The server number within the tier represented by the new server. For example, if 5 servers are already running, the {count} value for the next server is 6.

`{day}` The day when the server was provisioned.

`{dc}` The provider ID for the data center into which the server is deployed.

`{hour}` The hour when the server was provisioned.

`{ip}` The IP address for the server.

`{minute}` The minute when the server was provisioned.

`{month}` The month in which the server was provisioned.

`{region}` The provider ID for the region into which the server is deployed.

`{role}` The role being played by this server. Values are: cluster-node, independent-node, master, replicant.

`{tier}` The name of the tier in which the new server is running.

`{type}` The function of this server in the deployment. Values are: clustered-database, load, replicated-database, service.

`{year}` The year in which the server was provisioned.

serverType [enumeration(ServerType)]

What type of servers are launched in this launch configuration.

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snapshotIntervalInMinutes [number]

If the services running on servers under this launch configuration run on independent block storage devices, Enstratius will automatically snapshot those volumes according to the interval specified here. If the interval is daily, the snapshots will occur during the deployment's backup window.

subnet [extended(Subnet), nullable]

The subnet into which servers will be launched.

tier [write-once, extended(Tier)]

The tier whose services run on the servers provisioned through this launch configuration.

useEncryptedVolumes [boolean]

If you are allocating volumes to your services in this launch configuration, this value indicates whether those volumes should be encrypted or not.

useHypervisorStats [boolean]

Determines whether the performance metrics used in auto-scaling should be pulled from any hypervisor statistics provided by the cloud. This value only indicates a preference, as Enstratius will fall back on guest OS statistics pulled from the Enstratius agent if it cannot get hypervisor stats.

Query Parameters

Any attempt to list launch configurations requires a `tierId` parameter.

`activeOnly [boolean]`

Returns only active launch configurations.

`tierId [number]`

Returns the launch configurations belonging to the tier with the specified unique ID.

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Updates

The following PUT operations are supported:

`addFirewall`
Requires: `firewalls`
Optional: none
Permissions: CLUSTER/Resize
Response: 204
Adds one or more firewalls to the list of firewalls that will be associated with newly provisioned servers under this launch configuration.

`changeArray`
Requires: `arrayVolumeCapacity, arrayVolumeCount, raidLevel`
Optional: none
Permissions: CLUSTER/Resize
Response: 204
Changes the array configuration for services running on servers provisioned under this launch configuration.

`changeConfiguration`
Requires: none
Optional: `serverType, serverNameTemplate, useEncryptedVolumes, useHypervisorStats`
Permissions: CLUSTER/Configure
Response: 204
Changes basic launch configuration configuration data. You may change all of these values or just some in any given call.

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`changeImages`

Requires: `primaryMachineImage, primaryProduct`

Optional: `secondaryMachineImage, secondaryProduct`

Permissions: CLUSTER/Resize

Response: 204

Changes the machine images and products used to launch virtual machines under this launch configuration.

`removeFirewall`

Requires: `firewalls`

Optional: none

Permissions: CLUSTER/Resize

Response: 204

Removes one or more firewalls from the list of firewalls that will be associated with newly provisioned servers under this launch configuration.

Errors

There are no unique errors associated with launch configurations.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/LaunchConfiguration?tierId=56601
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: /BbPoBHLIBDeCW92XjZhovLtODmMQUmffviJh1n/dgQ=
x-esauth-timestamp: 1323840022322
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
```

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```
Transfer-Encoding: chunked
Date: Wed, 14 Dec 2011 05:20:22 GMT

{"launchConfigurations":
  [
    {
      "region":{"regionId":741},
      "primaryMachineImage":{"machineImageId":55314},
      "useHypervisorStats":true,
      "raidLevel":"NONE",
      "status":"ACTIVE",
      "arrayVolumeCapacity":0,
      "tier":{"tierId":56601},
      "customer":{"customerId":100},
      "snapshotIntervalInMinutes":1440,
      "serverType":"CLUSTERED_DATABASE",
      "serverNameTemplate":"{group}-{count}",
      "launchConfigurationId":55101,
      "primaryProduct":{"productId":"t1.micro"},
      "arrayVolumeCount":0,
      "useEncryptedVolumes":false,
      "deployment":{"deploymentId":56500},
      "recoveryDelayInMinutes":10
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/automation/LaunchConfiguration?tierId=56601
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: v2Nr9eBvAFU/lLelykO+4vw9wrWu1ToOI03arWAZpLg=
x-esauth-timestamp: 1323840023302
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 14 Dec 2011 05:20:22 GMT

<launchConfigurations>
  <launchConfiguration launchConfigurationId="55101" status="ACTIVE">
    <arrayVolumeCapacity>0</arrayVolumeCapacity>
    <arrayVolumeCount>0</arrayVolumeCount>
```

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```
    <useEncryptedVolumes>false</useEncryptedVolumes>
    <useHypervisorStats>true</useHypervisorStats>
    <raidLevel>NONE</raidLevel>
    <recoveryDelayInMinutes>10</recoveryDelayInMinutes>
    <serverNameTemplate>{group}-{count}</serverNameTemplate>
    <serverType>CLUSTERED_DATABASE</serverType>
    <snapshotIntervalInMinutes>1440</snapshotIntervalInMinutes>
    <primaryProduct productId="t1.micro"/>
    <customer customerId="100" />
    <deployment deploymentId="56500" />
    <region regionId="741" />  <tier tierId="56601" />
    <primaryMachineImage machineImageId="55314" />
  </launchConfiguration>
</launchConfigurations>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/LaunchConfiguration?tierId=56601
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: Gq2Re0bcovhYlqqGte9KBqxte89lkdOZ3stJ6esyKZo=
x-esauth-timestamp: 1323840023605
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 1
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Wed, 14 Dec 2011 05:20:22 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/automation/LaunchConfiguration HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: MOOsu7NCnAZBipFKHa7+rX6k0YiL3iUWbzFV+ow1Wws=
x-esauth-timestamp: 1323840024836
x-es-details: basic
x-es-with-perms: false

{"addLaunchConfiguration":
  [
    {
      "region":{"regionId":52301},
```

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```
      "primaryProduct":{"productId":"m1.large"},
      "primaryMachineImage":{"machineImageId":69316},
      "scripts":
        [
          {"sharedScriptCode":"1-1"},
          {"sharedScriptCode":"500-1"}
        ],
      "cmAccount":{"cmAccountId":1},
      "tier":{"tierId":56601}
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Wed, 14 Dec 2011 05:20:25 GMT

{"jobs":[{"jobId":83775,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/automation/LaunchConfiguration HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: R3f0dzqHWH2NKh0V30XJPWOzwb+69NyT0PrQRpBk7gk=
x-esauth-timestamp: 1323840057706
x-es-details: basic
x-es-with-perms: false

<addLaunchConfiguration>
  <launchConfigurations>
    <launchConfiguration>
      <cmAccount cmAccountId="1" />
      <scripts>
        <script sharedScriptCode="1-1" />
        <script sharedScriptCode="500-1" />
      </scripts><tier tierId="56601" />
      <region regionId="52301" />
      <primaryMachineImage machineImageId="69316" />
      <primaryProduct productId="m1.large" />
    </launchConfiguration>
  </launchConfigurations>
</addLaunchConfiguration>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
```

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```
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Wed, 14 Dec 2011 05:20:58 GMT

<jobs>
  <job jobId="83777" status="RUNNING" />
</jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/automation/LaunchConfiguration/58049 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 6J34Ef76IHM+/Loc//HAlUJTHlnPC43/GdFqydUOXuU=
x-esauth-timestamp: 1323840144950
x-es-details: basic
x-es-with-perms: false

{"setFirewalls":
  [
    {
      "firewalls":
        [
          {"firewallId":53001},
          {"firewallId":52900},
          {"firewallId":52901},
          {"firewallId":52701},
          {"firewallId":53400},
          {"firewallId":53000},
          {"firewallId":202}
        ]
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 14 Dec 2011 05:22:24 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/automation/LaunchConfiguration/58050 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 35P8WnMUdUJlDsDT6xaWouUEO3x6IGkA/3JSPlSkkXI=
x-esauth-timestamp: 1323840167682
x-es-details: basic
x-es-with-perms: false
```

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```
<setFirewalls>
  <launchConfigurations>
    <launchConfiguration>
      <firewalls>
        <firewall firewallId="53001"/>
        <firewall firewallId="52900"/>
        <firewall firewallId="52901"/>
        <firewall firewallId="52701"/>
        <firewall firewallId="53400"/>
        <firewall firewallId="53000"/>
        <firewall firewallId="202"/>
      </firewalls>
    </launchConfiguration>
  </launchConfigurations>
</setFirewalls>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 14 Dec 2011 05:22:47 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/automation/LaunchConfiguration/58048?reason=Enstratiu
s+Unit+Test HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: HEYNhxHsNw9YyFVjub2H/AYq5/9Khvoth7FWSW8lttw=
x-esauth-timestamp: 1323840111761
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 14 Dec 2011 05:21:51 GMT
```

Personality

An Enstratius personality represents an ordered collection of scripts that are executed in an environment to bring a server to fit a certain role.

Personalities are NOT uniquely identified by their `personalityId`. Because a given personality may be shared across a number of accounts, the unique identifier for your

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version of that personality is `sharedPersonalityCode`. For example, `personalityId` 1234 may be a public personality that any number of customers may reference. Your reference may have the `sharedPersonalityCode` 1234-100. Because you have your own unique reference, you can change meta-data for the personality even if you don't own the personality.

Version

Introduced: 2011-12-15
Status: Active

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`budget [read-only, number]`
The Enstratius ID of the budget under which charges associated with this personality are billed.

`personalityId [read-only, number]`
The unique ID for a specific personality. While this ID uniquely identifies a specific personality in a configuration management system, it does NOT uniquely refer to your reference to the personality. The truly unique identifier is `sharedPersonalityCode`.

`removable [read-only, boolean]`
Indicates whether or not it is safe to remove this personality.

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sharedPersonalityCode [read-only, string]

The unique code of this account's reference to the target personality. As noted above, a given script may have a number of references within Enstratius. The sharedPersonalityCode identifies these references uniquely.

status [read-only, ACTIVE|INACTIVE]

The current status of the personality.

Elements

cmAccount [write-once, extended(ConfigurationManagementAccount)]

The configuration management account in which this personality is stored.

createdTimestamp [read-only, datetime]

A date and time when this personality was first created in Enstratius.

customer [read-only, extended(Customer)]

The customer to whom this personality belongs.

description [string]

A detailed description of the personality. Because you have an independent reference to this personality, you may alter this description to serve your needs, even for public and shared personalities.

label [enumeration(Label), nullable]

A label assigned to this personality. Because you have an independent reference to this personality, you may alter this label to serve your needs, even for public and shared personalities.

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lastModifiedTimestamp [read-only, datetime]
A date and time when this personality was last changed in Enstratius.

name [string(100)]
The shell-level name of this personality as stored in the configuration management system.

owningGroups [read-only, list(Group)]
The group or groups that own this personality for access control purposes.

owningUser [read-only, extended(User), nullable]
The user to whom this personality belongs.

scripts [extended(Script)]
The scripts included in this personality definition. Available only with detail level set to extended.

Query Parameters

DELETE request accept a reason (string) parameter.

GET and HEAD operations allow the following parameters (`cmAccountId` is required when listing personalities via GET or HEAD):

`activeOnly [boolean]`
Show only active personalities.

`cmAccountId [number]`
Show personalities for the specified configuration management account.

`onlyMine [boolean]`
Show only personalities that belong to me (no public or shared personalities).

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Updates

The following PUT operations are supported:

`defineScripts`

Requires: `scripts`

Optional: none

Permissions: PERSONALITY/Edit

Response: 204

Specifies which scripts are in this personality. Order matters. Any old values are overwritten.

`describePersonality`

Requires: none

Optional: `description`, `label`, `name`

Permissions: PERSONALITY/Configure

Response: 204

Changes the basic meta-data for the personality. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

There are no unique errors associated with personalities.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/Personality/202-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: uH9voYGwIdzSMZ8eKnsUvahgJQqY9vWsPF75Xoean7I=
x-esauth-timestamp: 1323740259014
x-es-details: extended
x-es-with-perms: false
```

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```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 13 Dec 2011 01:37:37 GMT

{"personalities":
  [
    {
      "budget":1,
      "lastModifiedTimestamp":"2011-12-13T00:02:25.075+0000",
      "createdTimestamp":"2011-12-01T19:53:32.172+0000",
      "status":"ACTIVE",
      "removable":true,
      "label":"purple",
      "customer":
        {
          "businessName":"Enstratius, Inc.",
          "customerId":100,
          "createdTimestamp":"2008-12-27T15:55:18.454+0000",
          "status":"ACTIVE",
          "accountingCurrency":"USD",
          "created":"2008-12-27T15:55:18.454+0000",
          "timeZone":"UTC",
          "automatedExchangeRates":true
        },
      "cmAccount":
      {
        "budget":111,
        "lastModifiedTimestamp":"2011-12-05T20:49:49.060+0000",
        "cmAccountId":1,
        "createdTimestamp":"1970-01-01T00:00:01.000+0000",
        "status":"ACTIVE",
        "removable":true,
        "label":"blue",
        "customer":{"customerId":100},
        "guid":"/customer/100/cmAccount/1",
        "accountNumber":"747261675046",
        "description":"Oregon CM",
        "name":"Oregon CM",
        "cmService":{"cmServiceId":1}
      },
      "scripts":
        [
          {"sharedScriptCode":"600-1"},
          {"sharedScriptCode":"601-1"},
          {"sharedScriptCode":"711-1"}
        ],
      "description":"Another test for billing code",
```

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```
      "personalityId":202,
      "name":"another1",
      "sharedPersonalityCode":"202-1"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/automation/Personality/202-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: G55vinu9sO2YfKkrMjP7P4JMLKIO29D863FjCH2+GKE=
x-esauth-timestamp: 1323740259557
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 13 Dec 2011 01:37:39 GMT

<personalities>
  <personality sharedPersonalityCode="202-1" personalityId="202"
               budget="1" status="ACTIVE" removable="true" >
    <name>another1</name>
    <label>purple</label>
    <description>Another test for billing code</description>
    <createdTimestamp>2011-12-01T19:53:32.172+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-12-13T00:02:25.075+0000</lastModifiedTimestamp>
    <customer customerId="100" status="ACTIVE">
      <automatedExchangeRates>true</automatedExchangeRates>
      <accountingCurrency>USD</accountingCurrency>
      <created>2008-12-27T15:55:18.454+0000</created>
      <businessName>Enstratius, Inc.</businessName>
      <timeZone>UTC</timeZone>
    </customer>
    <cmAccount cmAccountId="1" budget="111" status="ACTIVE" removable="true" >
      <guid>/customer/100/cmAccount/1</guid>
      <accountNumber>747261675046</accountNumber>
      <name>Oregon CM</name>
      <label>blue</label>
      <description>Oregon CM</description>
      <createdTimestamp>1970-01-01T00:00:01.000+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-12-05T20:49:49.060+0000</lastModifiedTimestamp>
      <customer customerId="100" />
      <cmService cmServiceId="1" />
```

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```
    </cmAccount>
    <script sharedScriptCode="600-1" />
    <script sharedScriptCode="601-1" />
    <script sharedScriptCode="711-1" />
  </personality>
</personalities>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/Personality?cmAccountId=1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: BqN+Xvcb4xrMqycwvEO2pQUlY8iVNtrobxCdefeULqU=
x-esauth-timestamp: 1323720262211
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 33
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Mon, 12 Dec 2011 20:04:21 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/automation/Personality HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: sTWbK2VhZEqNcoxsuFVq6FagWGAGbExOmkxBZj3kDRQ=
x-esauth-timestamp: 1323740259869
x-es-details: extended
x-es-with-perms: false

{"addPersonality":
  [
    {
      "budget":201,
      "cmAccount":{"cmAccountId":1},
      "description":"Unit test: testCreatePersonalityWithJSON",
      "name":"utpersonality1323740259",
      "label":"green"
    }
  ]
}
```

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```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Tue, 13 Dec 2011 01:37:39 GMT

{"jobs":[{"jobId":83528,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/automation/Personality HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 2xB9wgMV15FPPCJLvexl94TIbFfiZKvMMgmxjuZ4QuY=
x-esauth-timestamp: 1323740415699
x-es-details: extended
x-es-with-perms: false

<addPersonality>
  <personalities>
    <personality budget="201">
      <cmAccount cmAccountId="1" />
      <name>utpersonality1323740415</name>
      <label>yellow</label>
      <description>Unit test: testCreateAccountWithXML</description>
    </personality>
  </personalities>
</addPersonality>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Tue, 13 Dec 2011 01:40:19 GMT

<jobs>
  <job jobId="83530" status="RUNNING" />
</jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/automation/Personality/1107-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: jK20aGKxlNiQTQB1bmEN7oyU8SSBr6lYFZNIMZojwsM=
x-esauth-timestamp: 1323741730443
x-es-details: extended
x-es-with-perms: false
```

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```
{"defineScripts":
  [
    {
      "scripts":[{"sharedScriptCode":"1-1"},{"sharedScriptCode":"500-1"}]
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Tue, 13 Dec 2011 02:02:09 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/automation/Personality/1108-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: gRPPnQST/4mH8ZURbK2FdmiVXW3IKFIz+TmCxEje1/s=
x-esauth-timestamp: 1323741895420
x-es-details: extended
x-es-with-perms: false

<defineScripts>
  <personalities>
    <personality>
      <scripts>
        <script sharedScriptCode="1-1" />
        <script sharedScriptCode="500-1" />
      </scripts>
    </personality>
  </personalities>
</defineScripts>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Tue, 13 Dec 2011 02:04:55 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/automation/Personality/1104-1?reason=Enstratius+Unit+
Test HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: ch9lqMYy+HPFKQlni4YrqZrtnRE6pCv4Z1OVMeWJ5H4=
x-esauth-timestamp: 1323740889932
```

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```
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Tue, 13 Dec 2011 01:48:09 GMT
```

Script

An Enstratius script represents some kind of scriptable item of code managed in a configuration management account. It may or may not actually be what you would think of as a shell script. How Enstratius maps a “script” to a specific configuration management account depends on the underlying configuration management system.

Scripts are NOT uniquely identified by their `scriptId`. Because a given script may be shared across a number of accounts, the unique identifier for your version of that script is `sharedScriptCode`. For example, `scriptId` 1234 may be a public script that any number of customers may reference. Your reference may have the `sharedScriptCode` 1234-100. Because you have your own unique reference, you can change meta-data for the script even if you don’t own the script.

Version

Introduced: 2011-12-15

Status: Active

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

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Attributes

budget [read-only, number]
The Enstratius ID of the budget under which charges associated with this script are billed.

removable [read-only, boolean]
Indicates whether or not it is safe to remove this script.

scriptId [read-only, number]
The unique ID for a specific script. While this ID uniquely identifies a specific script in a configuration management system, it does NOT uniquely refer to your reference to the script.

sharedScriptCode [read-only, string]
The unique code of this account's reference to the target script. As noted above, a given script may have a number of references within Enstratius. The sharedScriptCode identifies these references uniquely.

status [read-only, ACTIVE|INACTIVE]
The current status of the script.

Elements

cmAccount [write-once, extended(ConfigurationManagementAccount)]
The configuration management account in which this script is stored.

content [encrypted string]
The actual content behind the script. This value is available only when the detail level is set to extended. *IMPORTANT: This appears only when the detail level is extended because fetching the content is a very slow operation. Enstratius does not store the content. As a*

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result, when you request the content, the system actually goes to your configuration management system to get it.

createdTimestamp [read-only, datetime]
A date and time when this script was first created in Enstratius.

customer [read-only, extended(Customer)]
The customer to whom this script belongs.

description [string]
A detailed description of the script. Because you have an independent reference to this script, you may alter this description to serve your needs, even for public and shared scripts.

label [enumeration(Label), nullable]
A label assigned to this script. Because you have an independent reference to this script, you may alter this label to serve your needs, even for public and shared scripts.

lastModifiedTimestamp [read-only, datetime]
A date and time when this script was last changed in Enstratius.

name [string(100)]
The shell-level name of this script as stored in the configuration management system.

owningGroups [read-only, list(Group)]
The group or groups that own this script for access control purposes.

owningUser [read-only, extended(User), nullable]
The user to whom this account belongs.

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sizeInKb [read-only, number]

The size of the script content in kilobytes. Not all configuration management systems provide this value.

version [read-only, string]

Current version of the script as established in the configuration management system.

Query Parameters

DELETE request accept a reason (string) parameter.

GET and HEAD operations allow the following parameters (`cmAccountId` is required when listing scripts via GET or HEAD):

`activeOnly [boolean]`

Show only active scripts.

`cmAccountId [number]`

Show scripts for the specified configuration management account.

`onlyMine [boolean]`

Show only scripts that belong to me (no public or shared scripts).

Updates

The following PUT operations are supported:

`changeContent`

Requires: `content`

Optional: none

Permissions: SCRIPT/Edit

Response: 204

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Changes the content of the script and saves it to the underlying configuration management system.

`describeScript`

Requires: none

Optional: `description`, `label`, `name`

Permissions: SCRIPT/Configure

Response: 204

Changes the basic meta-data for the script. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

There are no unique errors associated with scripts.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/automation/Script/1-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: Tn7fHQeah2l5LtNYF2FVeSwFQgSdB49lH99CHRd1NTs=
x-esauth-timestamp: 1323650615504
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 12 Dec 2011 00:43:37 GMT

{"scripts":
  [
    {
      "budget":100,
      "lastModifiedTimestamp":"2011-12-09T03:18:09.522+0000",
```

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```
      "createdTimestamp":"2011-11-22T02:33:31.992+0000",
      "sharedScriptCode":"1-1",
      "status":"ACTIVE",
      "removable":true,
      "label":"orange",
      "sizeInKb":0,
      "customer":
        {
          "businessName":"Enstratius, Inc.",
          "customerId":100,
          "createdTimestamp":"2008-12-27T15:55:18.454+0000",
          "status":"ACTIVE",
          "accountingCurrency":"USD",
          "created":"2008-12-27T15:55:18.454+0000",
          "timeZone":"UTC",
          "automatedExchangeRates":true
        },
      "version":"-",
      "content":"mfiqvqMWiobve1EMNArGdjqk8IoLuvtMrHCO3kugpv0=",
      "cmAccount":
        {
          "budget":111,
          "lastModifiedTimestamp":"2011-12-05T20:49:49.060+0000",
          "cmAccountId":1,
          "createdTimestamp":"1970-01-01T00:00:01.000+0000",
          "status":"ACTIVE",
          "removable":true,
          "label":"iconkey",
          "customer":{"customerId":100},
          "guid":"/customer/100/cmAccount/1",
          "accountNumber":"747261675046",
          "description":"Oregon CM",
          "name":"Oregon CM",
          "cmService":{"cmServiceId":1}
        },
      "description":"osscripts/adduser",
      "name":"adduser-1",
      "scriptId":1
    }
  ]
}
```


GET (XML)

```
GET /api/enstratus/2011-12-15/automation/Script/1-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: a8B5r86h6dgXcroQpdsaKZppqFCQTJSZ85TrxV1/c44=
x-esauth-timestamp: 1323650617701
```

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```
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 12 Dec 2011 00:43:39 GMT

<scripts>
  <script sharedScriptCode="1-1" scriptId="1" budget="100" status="ACTIVE"
          removable="true" >
    <name>adduser-1</name>
    <label>orange</label>
    <description>osscripts/adduser</description>
    <createdTimestamp>2011-11-22T02:33:31.992+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-12-09T03:18:09.522+0000</lastModifiedTimestamp>
    <sizeInKb>0</sizeInKb>
    <version>-</version>
    <customer customerId="100" status="ACTIVE">
      <automatedExchangeRates>true</automatedExchangeRates>
      <accountingCurrency>USD</accountingCurrency>
      <created>2008-12-27T15:55:18.454+0000</created>
      <businessName>Enstratius, Inc.</businessName>
      <timeZone>UTC</timeZone>
    </customer>
    <cmAccount cmAccountId="1" budget="111" status="ACTIVE" removable="true" >
      <guid>/customer/100/cmAccount/1</guid>
      <accountNumber>747261675046</accountNumber>
      <name>Oregon CM</name>
      <label>iconkey</label>
      <description>Oregon CM</description>
      <createdTimestamp>1970-01-01T00:00:01.000+0000</createdTimestamp>
      <lastModifiedTimestamp>
        2011-12-05T20:49:49.060+0000
      </lastModifiedTimestamp>
      <customer customerId="100" />
      <cmService cmServiceId="1" />
    </cmAccount>
    <content>mfiqvqMWiobve1EMNArGdjqk8IoLuvtMrHCO3kugpv0=</content>
  </script>
</scripts>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/automation/Script?cmAccountId=1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
```

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```
x-esauth-signature: UgFeJ0PxKsl2qocnB/OinYSsh6+mX4eXOVATZImuCrI=
x-esauth-timestamp: 1323650615255
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 34
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Mon, 12 Dec 2011 00:43:35 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/automation/Script HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: fhaGQz4WZVF8yESq99z2Saj2MAu5maV7mc3lCMbNQCs=
x-esauth-timestamp: 1323650619817
x-es-details: extended
x-es-with-perms: false

{"addScript":
  [
    {
  "content":"Rie+dMdtR1BFFFLXjU03X18Bg3fiOLn2hIokB7++LCOTmNi1KIiVd7W+19yBK3ww",
      "budget":201,
      "cmAccount":{"cmAccountId":1},
      "description":"Unit test: testCreateScriptWithJSON",
      "name":"cheese1323650619",
      "label":"green"
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Mon, 12 Dec 2011 00:43:41 GMT

{"jobs":[{"jobId":83300,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/automation/Script HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
```

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```
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 8YUvhDDmfrnbgLY7tnEdBxfcOgq0lJiV7IKvcPC+Q3E=
x-esauth-timestamp: 1323650648983
x-es-details: extended
x-es-with-perms: false

<addScript>
  <scripts>
    <script budget="201">
      <cmAccount cmAccountId="1" />
      <name>cheese1323650648</name>
      <label>yellow</label>
      <description>Unit test: testCreateAccountWithXML</description>
      <content>
        Rie+dMdtR1BFFFLXjU03X18Bg3fiOLn2hIokB7++LCOTmNi1KIiVd7W+19yBK3ww
      </content>
    </script>
  </scripts>
</addScript>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Mon, 12 Dec 2011 00:44:08 GMT

<jobs>
  <job jobId="83302" status="RUNNING" />
</jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/automation/Script/917-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: QnjyBhpVbbbXlMjGh7T5EnG8V2m6OTd93UT7+qZ51KU=
x-esauth-timestamp: 1323650789383
x-es-details: extended
x-es-with-perms: false

{"describeScript":
  [
    {
      "description":"Renamed script",
      "name":"renamedls1323650789",
      "label":"blue"
    }
  ]
}
```

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```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Mon, 12 Dec 2011 00:46:28 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/automation/Script/918-1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 57p7gIRqQz2gBzyjIPKbLCt6hfu7wE8m7ApCHVfHkWc=
x-esauth-timestamp: 1323650870791
x-es-details: extended
x-es-with-perms: false

<describeScript>
  <scripts>
    <script>
      <name>renamels1323650870</name>
      <label>purple</label>
      <description>Renamed script</description>
    </script>
  </scripts>
</describeScript>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Mon, 12 Dec 2011 00:47:50 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/automation/Script/916-1?reason=Enstratius+Unit+Test
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: ym1psCE7sGZTVv2ChHwGHaqVO1RckgItXTeceTYfKKA=
x-esauth-timestamp: 1323650761734
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Mon, 12 Dec 2011 00:46:01 GMT
```

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Service

A service is a programmatic component of a deployment. It can be your MySQL database engine, your Tomcat application service, or any other program that must be managed by Enstratius.

Updates

The following PUT operations are supported:

`addServiceCredentials`
Requires: `name, publicPart, privatePart`
Optional: none
Permissions: CLUSTER/ManageUsers
Response: 204
Adds or replaces a service credential which the specified name. A service credential is any identity you want to configure in Enstratius and have your configuration scripts install at runtime. For example, you might have a ‘admin’ and ‘replication’ credentials that are set up for your MySQL database.

`addServicePort`
Requires: `protocol, publicPort, privatePort, dnsNames`
Optional: none
Permissions: CLUSTER/Resize
Response: 204
Adds or replaces a service port mapping.

`assignBudget`
Requires: `budgetId`
Optional: none
Permissions: CLUSTER/ManageBilling

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Response: 204
Changes the billing of this service. This change only makes sense for shared (not dedicated) deployments. You can only change the billing if you have rights to bill to both the old and new budgets.

`assignGroups`
Requires: `owningGroups`
Optional: none
Permissions: CLUSTER/ManageOwnership
Response: 204
Changes the group ownership of this service. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of a service.

`changeBackupInterval`
Requires: `backupIntervalInMinutes`
Optional: none
Permissions: CLUSTER/Backup
Response: 204
Modifies the interval at which the service is backed up.

`changeConfiguration`
Requires: `configuration`
Optional: `runAsUser`
Permissions: CLUSTER/ManageUsers
Response: 204
Alters the runtime configuration data for the service.

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`changeServiceImage`

Requires: none

Optional: `serviceImage`

Permissions: CLUSTER/UploadImages

Response: 204

Changes (or nulls out) the service image from which this service is deployed.

`changeScalingModel`

Requires: `scalingModel`

Optional: none

Permissions: CLUSTER/Configure

Response: 204

Changes the scaling model for the service.

`describeService`

Requires: none

Optional: `description`, `label`, `name`

Permissions: CLUSTER/Configure

Response: 204

Changes the basic meta-data for a service. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

`removeServiceCredentials`

Requires: `name`

Optional: none

Permissions: CLUSTER/ManageUsers

Response: 204

Removes the specified service credentials from the service.

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`removeServicePort`

Requires: `protocol, publicPort`

Optional: none

Permissions: CLUSTER/Resize

Response: 204

Removes a service port mapping.

Tier

A tier (formerly known as a server group) is a logical tier in a deployment representing a group of servers that all handle the same processing and scale up or down together.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`tierId [read-only, number]`

The unique Enstratius ID for this tier.

`removable [read-only, boolean]`

Indicates whether or not this tier is in a state that will allow you to execute a `DELETE` operation on it.

`status [enumeration(BreachState)]`

The current status of the tier.

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Elements

`breachIncrement [number]`

How many servers will be launched or terminated when Enstratius executes an auto-scaling event.

`breachPeriodInMinutes [number]`

The number of minutes that must pass after a breach threshold has been crossed before Enstratius executes an auto-scaling event.

`cooldownPeriodInMinutes [number]`

The number of minutes that must pass after an auto-scaling event before Enstratius begins checking for auto-scaling threshold breaches. In other words, the time between two auto-scaling events is always at a minimum `cooldownPeriodInMinutes + breachPeriodInMinutes`.

`description [string(255)]`
The full description of the deployment.

`label [enumeration(Label), nullable]`
A label assigned to this deployment.

`lastBreachChangeTimestamp [read-only, datetime]`
The date and time when this tier last changed its status. If the status is BREACH_UPPER or BREACH_LOWER, the status will change to SCALING `breachPeriodInMinutes` minutes after `lastBreachChangeTimestamp` (unless scaling would cause the system to cross the min/max server barrier).

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lowerCpuThreshold [number]
A number between 1 and 100 representing the percentage of CPU for the lower CPU threshold. If the usage across the tier goes below this value for more than `breachPeriodInMinutes` minutes, Enstratius will execute a scale down event. This value should be left empty (or -1) if you don't want to scale on CPU usage.

lowerRamThreshold [number]
A number between 1 and 100 representing the percentage of RAM for the lower RAM threshold. If the usage across the tier goes below this value for more than `breachPeriodInMinutes` minutes, Enstratius will execute a scale down event. This value should be left empty (or -1) if you don't want to scale on RAM usage.

maximumServers [number]

The maximum number of servers allowed to be active in this tier. No matter what your auto-scaling characteristics are, Enstratius will not auto-scale beyond this number.

minimumServers [number]

The minimum number of servers allowed to be active in this tier. No matter what your auto-scaling characteristics are, Enstratius will not auto-scale below this number. If a server is failed or terminated externally and brings the system under the minimum servers value, Enstratius will execute an auto-recovery event.

name [string(100)]
A user-friendly name for the deployment.

scalingRules [enumeration(ScalingRules]
The scaling rules you want to use for scaling this tier.

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upperCpuThreshold [number]

A number between 1 and 100 representing the percentage of CPU for the upper CPU threshold. If the usage across the tier goes above this value for more than `breachPeriodInMinutes` minutes, Enstratius will execute a scale up event. This value should be left empty (or -1) if you don't want to scale on CPU usage.

upperRamThreshold [number]

A number between 1 and 100 representing the percentage of RAM for the upper RAM threshold. If the usage across the tier goes above this value for more than `breachPeriodInMinutes` minutes, Enstratius will execute a scale up event. This value should be left empty (or -1) if you don't want to scale on RAM usage.

Query Parameters

Any attempt to list tiers requires a `deploymentId` parameter.

`deploymentId [number]`

Returns the tiers belonging to the deployment with the specified unique ID.

Updates

The following PUT operations are supported:

`describeTier`

Requires: `tierId`

Optional: `description`, `label`, `name`

Permissions: CLUSTER/Configure

Response: 204

Changes the basic meta-data for a tier. You may specify any or all of the above.

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`changeScalingRules`

Requires: `tierId, scalingRules, breachIncrement, breachPeriodInMinutes, cooldownPeriodInMinutes`

Optional: none

Permissions: CLUSTER/Resize

Response: 204

Changes the scaling rules governing the target tier.

`changeThresholds`

Requires: `tierId`

Optional: `lowerCpuThreshold, upperCpuThreshold, lowerRamThreshold, upperRamThreshold`

Permissions: CLUSTER/Resize

Response: 204

Changes the thresholds for tiers governed by cloud or Enstratius rules. These thresholds are meaningless for custom scaling rules.

`setServerLimits`

Requires: `tierId, minimumServers, maximumServers`

Optional: none

Permissions: CLUSTER/Resize

Response: 204

Specifies the minimum and maximum number of servers that can be running in this deployment.

Errors

There are no unique errors associated with tiers.

Examples

TBC

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TierBackup

A tier backup is a snapshot of the block volumes belonging to a server in a scaling group being managed by Enstratius.

Supported Methods

- GET
- HEAD
- POST
- DELETE

Attributes

`tierBackupId [read-only, number]`
The unique ID of this scaling group backup.

`status [read-only, numeration(BackupStatus)]`
The status of this service backup.

Elements

`array [read-only, extended(Array), nullable]`
The volume array from which this backup was created.

`endTimestamp [read-only, datetime, nullable]`
The time at which the backup completed.

`errorMessage [read-only, string, nullable]`
If there was an error performing the backup, this value will contain the error message.

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scalingGroup [read-only, extended(ScalingGroup), nullable]

The scaling group this backup supports.

region [read-only, extended(Region), nullable]

The region in which this backup was made and can be restored.

server [read-only, extended(Server)]

The server against which the scaling group backup was attempted.

startTimestamp [read-only, datetime, nullable]

The time when the backup began executing.

Query Parameters

GET and HEAD operations require a `scalingGroupId` parameter.

`regionId [optional, number]`

Displays only the backups in the specified region.

`scalingGroupId [number]`

Displays all backups for the specified scaling group.

Updates

No PUT operations are supported with service backups.

Errors

There are no unique errors associated with service backups.

Examples

GET

```
GET /api/enstratus/2011-02-24/ScalingGroupBackup?scalingGroupId=60&region=99
HTTP/1.1
User-agent: Test
Accept: application/xml
```

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```
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: /uVnD6PtjYxgk5YFT97lMYKMowrfAy6uZTo4nv7ZABQ=
x-esauth-timestamp: 1284487477271
x-es-details: basic
x-es-with-perms: false
```

```
<scalingGroupBackups>
  <scalingGroupBackup scalingGroupBackupId="1004" status="COMPLETE">
    <array arrayId="27" />
    <startTimestamp>2010-09-12T11:22:37.148-0000</startTimestamp>
    <endTimestamp>2010-09-12T11:23:37.148-0000</endTimestamp>
    <server serverId="13"/>
    <scalingGroup scalingGroupId="60"/>
    <region regionId="99"/>
  </scalingGroupBackup>
</scalingGroupBackups>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/ScalingGroupBackup?scalingGroupId=60&region=99
HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: sYWKJDi6uJ/P3E54J3qh2wGglN0jwcHJECiGEmRMIbs=
x-esauth-timestamp: 1284487621796
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Content-type: application/xml
Content-length: 0
x-es-version: 2011-02-24
x-es-count: 1
```

POST

```
POST /api/enstratus/2011-02-24/ScalingGroupBackup HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: ksvyp4Fk4MZTA1FCU3Nq+pojsGIjDeigDMjNzdarbH0=
x-esauth-timestamp: 1284487660040
x-es-details: basic
x-es-with-perms: false
```

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```
<runBackup>
  <scalingGroupBackup>
    <scalingGroup scalingGroupId="60"/>
    <server serverId="567"/>
  <scalingGroupBackup>
</runBackup>
```

```
HTTP/1.1 201 CREATED
Content-type: application/xml
Content-length: 23
x-es-version: 2011-02-24

<scalingGroupBackup scalingGroupBackupId="59" />
```

DELETE

```
DELETE /api/enstratus/2011-02-24/ScalingGroupBackup/59 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: oOSITlBmohRYlQg9VT2XSiv1+ntBxxsQQrzKTuZX7BI=
x-esauth-timestamp: 1284487734718
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 NO CONTENT
x-es-version: 2011-02-24
```

Service

A service is any application managed by Enstratius and deployed in a scaling group.

ServiceBackup

A service backup is a backup of a service being managed by Enstratius stored in a cloud storage repository.

Supported Methods

- GET

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- HEAD
- POST
- DELETE

Attributes

`serviceBackupId [read-only, number]`
The unique ID of this service backup.

`status [read-only, numeration(BackupStatus)]`
The status of this service backup.

Elements

`service [extended(Service)]`
The service that was backed up.

`serviceImage [read-only, extended(CloudFile), nullable]`
The service image from cloud storage representing the backup.

`endTimestamp [read-only, datetime, nullable]`
The time at which the backup completed.

`errorMessage [read-only, string, nullable]`
If there was an error performing the backup, this value will contain the error message.

`server [read-only, extended(Server)]`
The server against which the service backup was attempted.

`startTimestamp [read-only, datetime, nullable]`
The time when the backup began executing.

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Query Parameters

GET and HEAD operations require a `serviceId` parameter.

`serviceId [number]`

Displays all backups for the specified service.

Updates

No PUT operations are supported with service backups.

Errors

There are no unique errors associated with service backups.

Examples

GET

```
GET /api/enstratus/2011-02-24/ServiceBackup?serviceId=21 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: w77M8LQmAL9GfrMoG/wzvIfDoZ6B2brfEw1Js8gtlVQ=
x-esauth-timestamp: 1284486559694
x-es-details: basic
x-es-with-perms: false
```

```
<serviceBackups>
  <serviceBackup serviceBackupId="42" status="COMPLETE">
    <serviceImage cloudFileId="17" />
    <startTimestamp>2010-09-12T11:22:37.148-0000</startTimestamp>
    <endTimestamp>2010-09-12T11:23:37.148-0000</endTimestamp>
    <server serverId="13"/>
    <service serviceId="21"/>
  </serviceBackup>
</serviceBackups>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/ServiceBackup?serviceId=21 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
```

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```
x-esauth-access: 123456789
x-esauth-signature: jnOC9adDtehTxFZ6rBMlL9X2wBg4yFSoHZgfncc8ZKA=
x-esauth-timestamp: 1284486867453
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Content-type: application/xml
Content-length: 0
x-es-version: 2011-02-24
x-es-count: 1
```

POST

```
POST /api/enstratus/2011-02-24/ServiceBackup HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: 2GaY0M+xNnhgELlZ35hhEgIdLMQeNWMobXi1kOZFqQM=
x-esauth-timestamp: 1284486905935
x-es-details: basic
x-es-with-perms: false

<runBackup>
  <serviceBackup>
    <service serviceId="21"/>
    <server serverId="56778"/>
  <serviceBackup>
</runBackup>
```

```
HTTP/1.1 201 CREATED
Content-type: application/xml
Content-length: 23
x-es-version: 2011-02-24

<serviceBackup serviceBackupId="58" />
```

DELETE

```
DELETE /api/enstratus/2011-02-24/ServiceBackup/58 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: KXZXXLHyCbtFvGsW7u2AZMm2/D5GkiMnQL7+RGY/kLE=
x-esauth-timestamp: 1284486964136
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 204 NO CONTENT
x-es-version: 2011-02-24
```

SslCertificate

An SSL certificate is a common SSL certificate stored in the Enstratius key management environment and installed by Enstratius on load balancers and application servers.

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FINANCE API

The finance API supports all resources relating to financial interaction with the cloud. It includes things like payments and pricing, but does not include the administrative aspects like billing codes.

ServerPrepayment

A server prepayment represents a fixed reservation for virtual server assets in the cloud. Prepayments generally provide you with guaranteed access to the specified compute power with an up-front fee and reduced hourly fee. At this time, Enstratius supports only the ability to query server prepayments via the API. We will add the capability to provision in a future release.

In AWS terms, a server prepayment is a reserved instance.

Version

Introduced: 2011-07-15

Status: Active

Supported Methods

- GET
- HEAD

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Attributes

serverPrepaymentId [read-only, number]
The unique Enstratius ID for this prepayment.

status [read-only, ACTIVE|INACTIVE]
The current status of the prepayment.

Elements

account [read-only, extended(Account)]
The Enstratius billing account to which this prepayment belongs.

billingPreferences [list(BillingCode)]
A list of billing codes against which servers associated with this prepayment will be tracked when auto-discovered. By default, Enstratius will use the account's default billing code. You may, however, specify an arbitrary list of billing codes and when Enstratius discovers a new server that is not yet assigned a budget, it will find the first free budget from this prepayment if the server matches this prepayment object.

cloud [read-only, extended(Cloud)]
The cloud in which this prepayment operates.

currency [read-only, Currency]
The currency in which the underlying cloud provider is billing you for charges associated with this prepayment.

dataCenter [extended(DataCenter)]
The data center to which this prepayment is tied.

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description [string(255)]
The description of the prepayment established in Enstratius.

expiration [write-once, datetime]
The date when this prepayment expires. After this period, the prepayment becomes inactive and any servers previously operating under this prepayment are thus no longer operating under the prepayment.

fixedFee [read-only, float]
The one-time charge you pay in the specified currency upon provisioning this prepayment.

guid [read-only, guid]
The permanent unique URI identifier for this prepayment in Enstratius.

hourlyFee [read-only, float]
The ongoing hourly fee you are charged for any servers operating under this prepayment.

label [enumeration(Label), nullable]
A label assigned to this prepayment.

name [string(100)]
A user-friendly name for the prepayment.

owningGroups [list(Group)]
The groups who have ownership over this prepayment. The current Enstratius release supports 0 or 1 group owner over a prepayment. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying prepayments.

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owningUser [read-only, extended(User), nullable]

The user who is the owner of record of this prepayment. The owner may be null in cases of auto-discovery or certain automated scenarios.

periodInDays [read-only, number]

The number of days for which this prepayment is operational.

periodStart [read-only, datetime]

The date when this prepayment came into effect.

providerId [read-only, string(100)]

The unique ID with the cloud provider for this prepayment.

providerProductId [write-once, string(100)]

The product ID from the cloud provider associated with servers that may operate under this prepayment.

region [read-only, extended(Region)]

The region in which this prepayment operates.

serverCount [write-once, number]

The number of servers reserved under this prepayment. Ideally, the number of servers operating under this prepayment equals the server count, but that is not necessarily the case. The server count reflects how many instances you reserved at initial purchase time.

Query Parameters

You may optionally specify a regionId when querying prepayments. If no regionId is specified, all prepayments in all regions belonging to this account are returned.

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`regionId [number]`

Limits the list of prepayments to those in the specified region.

Updates

No update operations are yet supported.

Errors

No special errors exist for prepayments.

Examples

GET (JSON)

```
GET /api/enstratus/2011-07-15/finance/ServerPrepayment/400 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: ymDAtTElcJQbZ+bxLky36Kf3pCsp6jiAyTErdyCFgCY=
x-esauth-timestamp: 1311704561745
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 26 Jul 2011 18:22:41 GMT

{
  "serverPrepayments":
  [
    {"budgetPreferences":[{"billingCodeId":100}],
     "region":{"regionId":741},
     "periodStart":"2010-05-07T00:55:15.237+0000",
     "expiration":"2011-05-07T00:55:15.237+0000",
     "status":"INACTIVE",
     "periodInDays":365,
     "serverPrepaymentId":400,
     "label":null,
     "dataCenter":{"dataCenterId":942},
     "customer":{"customerId":100},
     "currency":"USD",
     "fixedFee":"227.5000",
     "guid":"/customer/100/cloud/1/100/region/741/dc/942/prepayment/400",
     "hourlyFee":"0.0300",
```

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```
      "serverCount":1,
      "description":"f127bd27-b0f2-4db8-a204-5d794cfd6602",
      "name":"f127bd27-b0f2-4db8-a204-5d794cfd6602",
      "cloud":{"cloudId":1},
      "account":{"accountId":100},
      "providerId":"f127bd27-b0f2-4db8-a204-5d794cfd6602",
      "providerProductId":"m1.small"
     }
   ]
}
```

GET (XML)

```
GET /api/enstratus/2011-07-15/finance/ServerPrepayment/400 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: MJKVfqZwR9pzcXqMYiOKhUUGnHcxl8XCuLwC8NLWTcg=
x-esauth-timestamp: 1311704562455
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 26 Jul 2011 18:22:41 GMT

<serverPrepayments>
  <serverPrepayment serverPrepaymentId="400" status="INACTIVE">
    <budgetPreferences>
      <billingCode billingCodeId="100" />
    </budgetPreferences>
    <account accountId="100" />
    <cloud cloudId="1" />
    <customer customerId="100" />
    <region regionId="741" />
    <dataCenter dataCenterId="942" />
    <guid>/customer/100/cloud/1/100/region/741/dc/942/prepayment/400</guid>
    <currency>USD</currency>
    <description>f127bd27-b0f2-4db8-a204-5d794cfd6602</description>
    <name>f127bd27-b0f2-4db8-a204-5d794cfd6602</name>
    <label></label>
    <expiration>2011-05-07T00:55:15.237+0000</expiration>
    <fixedFee>227.5000</fixedFee>
    <hourlyFee>0.0300</hourlyFee>
    <periodInDays>365</periodInDays>
    <periodStart>2010-05-07T00:55:15.237+0000</periodStart>
    <providerProductId>m1.small</providerProductId>
```

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```
    <providerId>f127bd27-b0f2-4db8-a204-5d794cfd6602</providerId>
    <serverCount>1</serverCount>
  </serverPrepayment>
</serverPrepayments>
```

HEAD

```
HEAD /api/enstratus/2011-07-15/finance/ServerPrepayment HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: f0pTZUj8UcZnfv260Gyq0BQ2aZiljDAPJOwzrGZpShQ=
x-esauth-timestamp: 1311704562663
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
x-es-count: 2
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Tue, 26 Jul 2011 18:22:43 GMT
```

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GEOGRAPHY API

The Enstratius geography API operates under the */api/enstratus/VERSION/geography* namespace and supports all resources defining a cloud's physical geography.

Cloud

A cloud is a distinct infrastructure providing cloud services. It may be a private cloud or a public cloud and may provide infrastructure or platform services. Version 2012-06-15 saw a significant re-structuring of the schema behind this resource, though the old schema is preserved for clients requesting old versions.

Among the cloud elements are special label values. Labels help indicate what kind of information is being sought in cloud-specific language for the kind of data Enstratius needs to connect to the cloud. For example, in AWS, an "account number" uniquely identifies an account. In Joyent, however, the "user name" uniquely identifies an account. The computeAccountNumberLabel identifies what text you should provide in a user interface when prompting for an account number. The values Enstratius will provide you are key strings that are used to look up localized, language-specific labels.

Also, there are two sets of values: compute values and storage values. Both sets of values exist only if you are using different actual clouds for compute and storage. For example, if you are using Atmos to support your CloudStack private cloud. If your cloud provider has both compute and storage (like AWS) or if it is only compute or only storage and you are not pairing it with another cloud to appear as a single cloud, only the computeXXX values will have any data—even if the cloud is a storage-only cloud.

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Supported Methods

- GET
- HEAD

Attributes

`cloudId [read-only, number]`

The unique ID for this cloud.

`privateCloud [read-only, boolean]`

Indicates whether or not this cloud is a private cloud owned by a specific customer. If true, there should be an `owningCustomer` element describing to whom the private cloud belongs.

`status [read-only, ACTIVE|INACTIVE]`

The current status for this cloud.

Elements

`cloudProviderConsoleURL [read-only, string(255), nullable]`

A URL indicating where someone can go to sign up for this cloud and access the provider-specific console.

`cloudProviderLogoURL [read-only, string(255), nullable]`

A URL relative to the Enstratius installation where a logo is placed.

`computeAccessKeyLabel [read-only, string(30), nullable]`

The label key for the localized text representing the proper label to display for the public part of the API key that will enable Enstratius to access a customer's account in this cloud.

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computeAccountNumberLabel [read-only, string(30), nullable]
The label key for the localized text representing the proper label to display for a cloud's user account number.

computeDelegate [read-only, string(255), nullable]
The name of a Java class implementing the Dasein Cloud API supporting compute operations for this cloud. This value is generally meaningless to SaaS customers, but useful for on-premise customers supporting their own API.

computeEndpoint [read-only, string(255)]
A comma-separated list of possible endpoints that can serve API queries for this cloud.

computeSecretKeyLabel [read-only, string(30), nullable]
The label key for the localized text representing the proper label to display for the secret part of the API key that will enable Enstratius to access a customer's account in this cloud.

computeX509CertLabel [read-only, string(10000), nullable]
The label key for the localized text representing the proper label to display for any X509 certificate required to manage the customer's cloud account.

computeX509KeyLabel [read-only, string(10000), nullable]
The label key for the localized text representing the proper label to display for any X509 key required to manage the customer's cloud account.

storageAccessKeyLabel [read-only, string(30), nullable]
The label key for the localized text representing the proper label to display for the public part of the API key that will enable Enstratius to access a customer's account in this cloud.

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storageAccountNumberLabel [read-only, string(30), nullable]
The label key for the localized text representing the proper label to display for a cloud's user account number.

storageDelegate [read-only, string(255), nullable]
The name of a Java class implementing the Dasein Cloud API supporting storage operations for this cloud. This value is generally meaningless to SaaS customers, but useful for on-premise customers supporting their own API. If the cloud is a storage-only cloud, all storageXXX values should be null and just the compute ones used.

storageEndpoint [read-only, string(255)]
A comma-separated list of possible endpoints that can serve storage API queries for this cloud if the cloud has separate compute and storage nodes. If the cloud is a storage-only cloud, all storageXXX values should be null and just the compute ones used.

storageSecretKeyLabel [read-only, string(30), nullable]
The label key for the localized text representing the proper label to display for the secret part of the API key that will enable Enstratius to access a customer's account in this cloud.

storageX509CertLabel [read-only, string(10000), nullable]
The label key for the localized text representing the proper label to display for any X509 certificate required to manage the customer's cloud account.

storageX509KeyLabel [read-only, string(10000), nullable]
The label key for the localized text representing the proper label to display for any X509 key required to manage the customer's cloud account.

name [read-only, string(100)]
The name of the cloud.

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providerName [read-only, string(100)]

The name of vendor providing the cloud. The provider name may indicate custom cloud functionality for standard platforms like OpenStack. Current known extensions based on the private name include “HP” for HP/OpenStack implementations and “Rackspace” for Rackspace/OpenStack implementations.

Query Parameters

If no parameters are specified, all clouds visible to you will be displayed, both active and inactive; both public and private

publicOnly [optional, boolean]

Show only the visible public clouds.

status [optional, ACTIVE|INACTIVE]

Only clouds matching the specified status.

Errors

There are no unique errors associated with clouds.

Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/geography/Cloud/1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: ZWMinw2bv48dKVXZmNvTpI/gX/u3uVzPgm9tippxY8U=
x-esauth-timestamp: 1339722265978
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x23157630
x-es-version: 2012-06-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
```

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```
Date: Fri, 15 Jun 2012 01:04:24 GMT

{
  "clouds":
  [
    {
      "computeDelegate":"org.dasein.cloud.aws.AWSCloud",
      "cloudId":1,
      "computeX509KeyLabel":"AWS_PRIVATE_KEY",
      "status":"ACTIVE",
      "computeEndpoint":"https://ec2.sa-east-1.amazonaws.com",
      "privateCloud":false,
      "computeSecretKeyLabel":"AWS_SECRET_ACCESS_KEY",
      "computeX509CertLabel":"AWS_CERTIFICATE",
      "computeAccountNumberLabel":"AWS_ACCOUNT_NUMBER",
      "documentationLabel":"AWS_DOCS",
      "name":"Amazon Web Services",
      "cloudProviderName":"Amazon",
      "computeAccessKeyLabel":"AWS_ACCESS_KEY",
      "cloudProviderConsoleURL":"http://aws.amazon.com",
      "cloudProviderLogoURL":"/clouds/aws.gif"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/geography/Cloud/1 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: o+m31gCJstyM4bUKkqDFGT4ffGT1t3kTyXewxoeQW3k=
x-esauth-timestamp: 1339722266178
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x23158007
x-es-version: 2012-06-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 15 Jun 2012 01:04:24 GMT

<clouds>
  <cloud cloudId="1" status="ACTIVE" privateCloud="false">
    <name>Amazon Web Services</name>
    <cloudProviderName>Amazon</cloudProviderName>
    <cloudProviderConsoleURL>http://aws.amazon.com</cloudProviderConsoleURL>
    <cloudProviderLogoURL>/clouds/aws.gif</cloudProviderLogoURL>
```

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```
    <computeEndpoint>https://ec2.sa-east-1.amazonaws.com</computeEndpoint>
    <computeDelegate>org.dasein.cloud.aws.AWSCloud</computeDelegate>
    <computeAccountNumberLabel>AWS_ACCOUNT_NUMBER</computeAccountNumberLabel>
    <computeAccessKeyLabel>AWS_ACCESS_KEY</computeAccessKeyLabel>
    <computeSecretKeyLabel>AWS_SECRET_ACCESS_KEY</computeSecretKeyLabel>
    <computeX509CertLabel>AWS_CERTIFICATE</computeX509CertLabel>
    <computeX509KeyLabel>AWS_PRIVATE_KEY</computeX509KeyLabel>
  </cloud>
</clouds>
```

HEAD

```
HEAD /api/enstratus/2012-06-15/geography/Cloud HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: lyxx5WREWBAcI56RcaFJ0UYpVs+EJKPpmtUNArqWXIc=
x-esauth-timestamp: 1339722265666
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-request: msp0x23156037
x-es-count: 36
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Fri, 15 Jun 2012 01:04:24 GMT
```

DataCenter

A data center is a part of a regional infrastructure that has some ability to share resources with other data centers in the same region. All active regions have at least one data center. Depending on the underlying cloud, a data center may be as simple as a VMware cluster or as complex as an AWS availability zone.

Supported Methods

- GET
- HEAD

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Attributes

dataCenterId [read-only, number]
The unique Enstratius ID for this data center.

status [read-only, ACTIVE|INACTIVE]
The current status of the data center.

Elements

description [read-only, string(255)]
A description of the data center. The nature of this description will vary from cloud to cloud.

name [read-only, string(100)]
A user-friendly name for the data center. This value generally comes from the cloud provider.

providerId [read-only, string(100)]
The cloud provider's unique ID for the data center. This value is generally unique only among the data centers belonging to your account and is generally re-used across accounts. For example, the data center us-east-1a in one account is generally not the same as the data center represented by the ID us-east-1a in another AWS account.

region [read-only, extended(Region)]
The region to which this data center belongs.

Query Parameters

Queries against this resource must specify a `regionId` query parameter.

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`regionId [number]`

Limits the data center list to only data centers in the specified region.

Errors

There are no unique errors associated with data centers.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/geography/DataCenter?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: g/ihtoe3nFzVgdJvav7LpLKtLcEBFme1kjm4yCWq3P8=
x-esauth-timestamp: 1324066104321
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 16 Dec 2011 20:08:24 GMT

{"dataCenters":
  [
    {
      "region":{"regionId":52701},
      "status":"ACTIVE",
      "description":"us-east-1a",
      "name":"us-east-1a",
      "dataCenterId":57103,
      "providerId":"us-east-1a"
    },
    {
      "region":{"regionId":52701},
      "status":"ACTIVE",
      "description":"us-east-1c",
      "name":"us-east-1c",
      "dataCenterId":57104,
      "providerId":"us-east-1c"
    },
    {
      "region":{"regionId":52701},
      "status":"ACTIVE",
```

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```
      "description":"us-east-1d",
      "name":"us-east-1d",
      "dataCenterId":57105,
      "providerId":"us-east-1d"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/geography/DataCenter?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: +rTDL+2BE2ZIeu+65okzmIfDMssTcKhQsdW6847LF9E=
x-esauth-timestamp: 1324066104965
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 16 Dec 2011 20:08:24 GMT

<dataCenters>
  <dataCenter dataCenterId="57103" status="ACTIVE">
    <name>us-east-1a</name>
    <description>us-east-1a</description>
    <providerId>us-east-1a</providerId>
    <region regionId="52701" />
  </dataCenter>
  <dataCenter dataCenterId="57104" status="ACTIVE">
    <name>us-east-1c</name>
    <description>us-east-1c</description>
    <providerId>us-east-1c</providerId>
    <region regionId="52701" />
  </dataCenter>
  <dataCenter dataCenterId="57105" status="ACTIVE">
    <name>us-east-1d</name>
    <description>us-east-1d</description>
    <providerId>us-east-1d</providerId>
    <region regionId="52701" />
  </dataCenter>
</dataCenters>
```

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HEAD

```
HEAD /api/enstratus/2011-12-15/geography/DataCenter?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: idVFIY+O1s8Sj40Zyn4lZq2+xTOjQB/5GpBqxGlaOzU=
x-esauth-timestamp: 1324066105132
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 3
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Fri, 16 Dec 2011 20:08:24 GMT
```

Region

A region is a logical sub-infrastructure within a cloud. All clouds have at least one region even if the underlying cloud provider does not define such a concept in its own API. If a cloud provider has multiple regions, they behave almost as if they were in different clouds with very limited ability to share resources between them.

Version

Introduced: 2010-09-30

Status: Active

Supported Methods

- GET
- HEAD

Attributes

`regionId [read-only, number]`

The unique Enstratius ID for this region.

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status [ACTIVE|INACTIVE]

The current status of the region.

Elements

cloud [read-only, extended(Cloud)]

The cloud to which this region belongs.

customer [read-only, extended(Customer)]

The customer to whom this region belongs.

description [read-only, string(255)]

A description of the region. The nature of this description will vary from cloud to cloud.

jurisdiction [read-only, enumeration(Jurisdiction)]

The legal context in which the region operates.

name [read-only, string(100)]

A user-friendly name for the region. This value generally comes from the cloud provider.

providerId [read-only, string(100)]

The cloud provider's unique ID for the region. It's important to note that this identifier may be unique only within a given account and thus two regions sharing the same `providerId` in two different accounts may not actually refer to the same region.

Query Parameters

Without any parameters, Enstratius will provide all regions visible to the authenticated credentials.

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`accountId [optional, number]`

Limits the regions listed to only those regions associated with the specified account. If the specified account is not configured, no regions will be returned. Similarly, if your credentials don't have access to the specified account, you will get a 403 error.

`jurisdiction [optional, enumeration(Jurisdiction)]`

Limits the regions listed to only those regions having the specified jurisdiction. Valid values come from the jurisdiction enumeration.

`scope [optional, all|account]`

Limits the scope of the returned regions. Valid values are: `all` (default) and `account`. If `account` is specified, only the regions within the account associated with your authentication credentials are provided. In short, `all` is a cross-cloud view and `account` is a cloud-specific view.

Errors

There are no unique errors associated with regions.

Examples

GET (JSON)

```
GET /api/enstratus/2011-07-15/geography/Region/743 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: 51NsKhUMOAfajwsRszhuywqvX7FyIdzc/wU7mTmRBsk=
x-esauth-timestamp: 1311553366860
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 25 Jul 2011 00:22:45 GMT
```

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```
{
  "regions":
  [
    {"status":"ACTIVE",
     "description":"AWS Northeast Asia/Pacific (1)",
     "name":"Japan (ap-northwest-1)",
     "providerId":"ap-northeast-1",
     "cloud":{"cloudId":1},
     "jurisdiction":"JP",
     "customer":{"customerId":100},
     "regionId":743
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-07-15/geography/Region?scope=account HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: v3aguCTyQI1GhhboK2l4D1n5Yl7YeHXZeg0+feEYoCU=
x-esauth-timestamp: 1311553735597
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 25 Jul 2011 00:28:54 GMT

<regions>
  <region regionId="743" status="ACTIVE">
    <name>Japan (ap-northwest-1)</name>
    <description>AWS Northeast Asia/Pacific (1)</description>
    <providerId>ap-northeast-1</providerId>
    <jurisdiction>JP</jurisdiction>
    <cloud cloudId="1" />
    <customer customerId="100" />
  </region>
  <region regionId="1340" status="ACTIVE">
    <name>Singapore (ap-southeast-1)</name>
    <description>AWS Southeast Asia/Pacific (1)</description>
    <providerId>ap-southeast-1</providerId>
    <jurisdiction>SG</jurisdiction>
    <cloud cloudId="1" />
    <customer customerId="100" />
  </region>
```

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```
  <region regionId="740" status="ACTIVE">
    <name>Ireland (eu-west-1)</name>
    <description>eu-west-1</description>
    <providerId>eu-west-1</providerId>
    <jurisdiction>EU</jurisdiction>
    <cloud cloudId="1" />
    <customer customerId="100" />
  </region>
  <region regionId="741" status="ACTIVE">
    <name>N. Virginia (us-east-1)</name>
    <description>us-east-1</description>
    <providerId>us-east-1</providerId>
    <jurisdiction>US</jurisdiction>
    <cloud cloudId="1" />
    <customer customerId="100" />
  </region>
  <region regionId="742" status="ACTIVE">
    <name>N. California (us-west-1)</name>
    <description>us-west-1</description>
    <providerId>us-west-1</providerId>
    <jurisdiction>US</jurisdiction>
    <cloud cloudId="1" />
    <customer customerId="100" />
  </region>
</regions>
```

HEAD

```
HEAD /api/enstratus/2011-07-15/geography/Region?scope=account HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: Y95x0EpZ4lcAg5No+vygikr8455l6bIUBiENufHnV8Y=
x-esauth-timestamp: 1311553737705
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
x-es-count: 5
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Mon, 25 Jul 2011 00:28:56 GMT
```

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Subscription

A subscription describes the capabilities of a specific region as matched by your subscription to the region. You can use this object to tell what cloud capabilities exist in this region. In some cases, failure to support something will be a limitation/design choice of the cloud in question. In other cases, it just represents the fact that you have yet to subscribe to the service in question.

Version

Introduced: 2011-12-15

Status: Active

Supported Methods

- GET
- HEAD

Attributes

`regionId [read-only, number]`

The unique Enstratius ID for this region.

Elements

`customImages [read-only, boolean, nullable]`

Can this region support the creation of user-built images? Some clouds simply don't allow you to bundle your own machine images. If not, you are stuck with the images they give you, or maybe you can send them an ISO or other image format and they can register it for you.

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customNetworks [read-only, boolean, nullable]
Indicates that you can create your own networks/VLANs in your compute cloud. Present only if networks are supported in this region.

customSubnets [read-only, boolean, nullable]
Indicates that you can create subnets in you virtual networks. Not present if networks are not supported.

hypervisorAnalytics [read-only, boolean]
Indicates whether or not the cloud provider collects hypervisor-based performance metrics on your VM that you can consume through Enstratius. Amazon CloudWatch is an example of a cloud in which `hypervisorAnalytics` is true for its regions.

ipAddressesForwarded [read-only, boolean, nullable]
Indicates whether or not you manage mapping static IP addresses to services on servers through IP forwarding rules (as opposed to NAT). Only present if the region supports static IP addresses.

loadBalancerAddressAssigned [read-only, boolean, nullable]
Indicates whether or not the cloud provider automatically assigns an IP address to new load balancers. If false, you must specify an IP address from your static IP pool when creating a new load balancer. Only present if the region supports virtual load balancers.

loadBalancerCreateWithServer [read-only, boolean, nullable]
Indicates that you MUST specify at least one active server when creating new load balancers or the creation will fail. Only present if the region supports virtual load balancers.

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loadBalancerDataCenterLimited [read-only, boolean, nullable]
Indicates whether or not the cloud provider governs the behavior of load balancers based on a data center assignment. An example of such a cloud is AWS, in which you must pick which data centers (availability zones) are supported by your load balancer. Only present if the region supports virtual load balancers.

maxLoadBalancerListeners [read-only, number, nullable]
Indicates the maximum number of listeners that may be added to any virtual load balancer, if load balancing is supported in this region. If this value is less than 1, it means that either there is no limit. Not present if load balancing is not supported.

networkDataCenterConstrained [read-only, boolean, nullable]
Indicates that networks/VLANs are associated with a data center and do not span the full region. Present only if the region supports networks.

networkWithSubnets [read-only, boolean, nullable]
Indicates that you can networks/VLANs are divided into subnets.

privateImageSharing [read-only, boolean, nullable]
Indicates that you can share your private images with other accounts in the same cloud. Not present if machine images are not supported.

privateIPAddressesAssigned [read-only, boolean, nullable]
Indicates that you are able to assign static private IP addresses to VMs directly rather than relying on the cloud to do the assignment for you. Only present if the region supports static IP addresses.

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privateIPAddressesRequestable [read-only, boolean, nullable]
Indicates that you can request private, static IP addresses individually (as opposed to having a static pool assigned to you or requested as part of creating a network). Only present if the region supports static IP addresses.

privateSnapshotSharing [read-only, boolean, nullable]
Indicates that you can share your snapshots with other accounts in the same region. Present only if the region supports snapshots.

publicImageLibrary [read-only, boolean, nullable]
Indicates that the region has a library of public images that you can search and from which you can bootstrap your account. Not present if machine images are not supported.

publicImageSharing [read-only, boolean, nullable]
Indicates that you can share your private images with all other accounts (in other words, make them public) in the same region. Not present if machine images are not supported.

publicIPAddressesAssigned [read-only, boolean, nullable]
Indicates that you are able to assign static public IP addresses to VMs directly rather than relying on the cloud to do the assignment for you. Only present if the region supports static IP addresses.

publicIPAddressesRequestable [read-only, boolean, nullable]
Indicates that you can request public, static IP addresses individually (as opposed to having a static pool assigned to you or requested as part of creating a network). Only present if the region supports static IP addresses.

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publicSnapshotSharing [read-only, boolean, nullable]
Indicates that you can share your snapshots with all other accounts (in other words, make them public) in the same region. Present only if the region supports snapshots.

rdbmsFirewalled [read-only, boolean, nullable]
Indicates that you can set up firewall rules that protect access to your cloud RDBMS instances. Present only if the region supports cloud RDBMS.

rdbmsHA [read-only, boolean, nullable]
Indicates that you can set up an RDBMS with the option for high-availability. It does not imply how that high-availability is achieved. Present only if the region supports cloud RDBMS.

rdbmsLA [read-only, boolean, nullable]
Indicates that you can set up an RDBMS WITHOUT the option for high-availability. If false, it means that all databases created will be high availability. If true, it means that you may have a choice of normal availability or high-availability (if `rdbmsHA`). Present only if the region supports cloud RDBMS.

rdbmsMaintenance [read-only, boolean, nullable]
Indicates that you can configure RDBMS maintenance periods in this region. Present only if the region supports cloud RDBMS.

rdbmsSnapshots [read-only, boolean, nullable]
Indicates that you can configure backups through a database snapshotting mechanism in this region. Present only if the region supports cloud RDBMS.

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serverKeyBootstrapped [read-only, boolean, nullable]
Indicates that you may optionally name an SSH key/RDP key when launching a server for bootstrapping root/administrator access. Present only if the region supports servers.

subnetDataCenterConstrained [read-only, boolean, nullable]
Indicates that subnets are associated with a data center and do not span the full region. Present only if the region supports networks.

subscribedAutoScaling [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud-based auto-scaling. Note that this has no bearing on whether Enstratius does auto-scaling in this region; it just indicates whether the cloud has some kind of native auto-scaling capability independent of Enstratius in this region.

subscribedBlobStore [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud object storage services like AWS S3 or Rackspace CloudFiles.

subscribedCDN [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud content distribution network) CDN services.

subscribedDNS [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud DNS services.

subscribedEmail [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud email transport services.

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subscribedFirewall [read-only, boolean]
Indicates whether or not this region supports/is subscribed to virtual firewall services like AWS security groups.

subscribedKVDB [read-only, boolean]
Indicates whether or not this region supports/is subscribed to a cloud-based key/value database system.

subscribedLoadBalancer [read-only, boolean]
Indicates whether or not this region supports/is subscribed to virtual load balancers.

subscribedMachineImage [read-only, boolean]
Indicates whether or not this region supports/is subscribed to machine images. Enstratius requires machine image support in order to launch servers. The existence of machine image support, however, does not imply the ability to create your own. See `customImages`.

subscribedMQ [read-only, boolean]
Indicates whether or not this region supports/is subscribed to a cloud message queue services.

subscribedNetwork [read-only, boolean]
Indicates whether or not this region supports/is subscribed to virtual networks.

subscribedPushNotification [read-only, boolean]
Indicates whether or not this region supports/is subscribed to a cloud-based push notifications.

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subscribedRDBMS [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud relational databases.

subscribedStaticIP [read-only, boolean]
Indicates whether or not this region supports/is subscribed to static IP addresses.

subscribedServer [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud virtual machines.

subscribedSnapshot [read-only, boolean]
Indicates whether or not this region supports/is subscribed to volume snapshots. Obviously, this value makes no sense if the region is not also `subscribedVolume`.

subscribedVolume [read-only, boolean]
Indicates whether or not this region supports/is subscribed to block storage volumes.

subscribedVPN [read-only, boolean]
Indicates whether or not this region supports/is subscribed to cloud-based virtual private network configuration.

Query Parameters

Without any parameters, Enstratius will provide the subscriptions for all regions in the account of the authenticated credentials.

`accountId [optional, number]`
Limits the subscriptions listed to only those regions associated with the specified account. If the specified account is not configured, no regions will be returned. Similarly, if your credentials don't have access to the specified account, you will get a 403 error.

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Errors

There are no unique errors associated with subscriptions.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/geography/Subscription/52702 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: iQ6NnJNOzqd7/T8B7X5WbRqb+EbtplrnF3FFP4Cl/JM=
x-esauth-timestamp: 1324149727738
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 17 Dec 2011 19:22:07 GMT

{"subscriptions":
  [
    {
      "subscribedPushNotification":true,
      "privateImageSharing":true,
      "publicImageSharing":true,
      "subscribedNetwork":true,
      "subscribedSnapshot":true,
      "subscribedMachineImage":true,
      "customImages":true,
      "subscribedCDN":true,
      "hypervisorAnalytics":true,
      "subscribedFirewall":true,
      "publicIPAddressesAssigned":true,
      "networkWithSubnets":true,
      "privateSnapshotSharing":true,
      "rdbmsMaintenance":true,
      "publicImageLibrary":true,
      "privateIPAddressesAssigned":false,
      "rdbmsLA":true,
      "publicIPAddressesRequestable":true,
      "regionId":52702,
      "serverKeyBootstrapped":true,
      "subscribedVPN":false,
      "subnetDataCenterConstrained":true,
```

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```
      "customNetworks":true,
      "rdbmsHA":true,
      "subscribedAutoScaling":true,
      "subscribedEmail":false,
      "loadBalancerCreateWithServer":false,
      "networkDataCenterConstrained":false,
      "rdbmsSnapshots":true,
      "ipAddressesForwarded":false,
      "subscribedDNS":true,
      "subscribedRDBMS":true,
      "maxLoadBalancerListeners":0,
      "subscribedBlobStore":true,
      "loadBalancerDataCenterLimited":true,
      "rdbmsFirewalled":true,
      "subscribedServer":true,
      "subscribedVolume":true,
      "subscribedMQ":false,
      "loadBalancerAddressAssigned":true,
      "subscribedStaticIP":true,
      "privateIPAddressesRequestable":false,
      "customSubnets":true,
      "subscribedKVDB":true,
      "subscribedLoadBalancer":true
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/geography/Subscription/52702 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: pt/DNbpj8CC7C37znZTSiAtZaI9oulO29uw4Tj/KmWw=
x-esauth-timestamp: 1324149728145
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 17 Dec 2011 19:22:07 GMT

<subscriptions>
  <subscription regionId="52702">
    <hypervisorAnalytics>true</hypervisorAnalytics>
    <subscribedAutoScaling>true</subscribedAutoScaling>
    <subscribedBlobStore>true</subscribedBlobStore>
```

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```
    <subscribedCDN>true</subscribedCDN>
    <subscribedDNS>true</subscribedDNS>
    <subscribedEmail>false</subscribedEmail>
    <subscribedFirewall>true</subscribedFirewall>
    <subscribedKVDB>true</subscribedKVDB>
    <subscribedLoadBalancer>true</subscribedLoadBalancer>
    <loadBalancerAddressAssigned>true</loadBalancerAddressAssigned>
    <loadBalancerDataCenterLimited>true</loadBalancerDataCenterLimited>
    <loadBalancerCreateWithServer>false</loadBalancerCreateWithServer>
    <maxLoadBalancerListeners>0</maxLoadBalancerListeners>
    <subscribedMachineImage>true</subscribedMachineImage>
    <customImages>true</customImages>
    <privateImageSharing>true</privateImageSharing>
    <publicImageSharing>true</publicImageSharing>
    <subscribedMQ>false</subscribedMQ>
    <subscribedNetwork>true</subscribedNetwork>
    <customNetworks>true</customNetworks>
    <customSubnets>true</customSubnets>
    <networkWithSubnets>true</networkWithSubnets>
    <networkDataCenterConstrained>false</networkDataCenterConstrained>
    <subnetDataCenterConstrained>true</subnetDataCenterConstrained>
    <subscribedPushNotification>true</subscribedPushNotification>
    <subscribedRDBMS>true</subscribedRDBMS>
    <rdbmsFirewalled>true</rdbmsFirewalled>
    <rdbmsHA>true</rdbmsHA>
    <rdbmsLA>true</rdbmsLA>
    <rdbmsMaintenance>true</rdbmsMaintenance>
    <rdbmsSnapshots>true</rdbmsSnapshots>
    <subscribedServer>true</subscribedServer>
    <serverKeyBootstrapped>true</serverKeyBootstrapped>
    <subscribedSnapshot>true</subscribedSnapshot>
    <privateSnapshotSharing>true</privateSnapshotSharing>
    <publicSnapshotSharing>true</publicSnapshotSharing>
    <subscribedStaticIP>true</subscribedStaticIP>
    <ipAddressesForwarded>false</ipAddressesForwarded>
    <privateIPAddressesAssigned>false</privateIPAddressesAssigned>
    <privateIPAddressesRequestable>false</privateIPAddressesRequestable>
    <publicIPAddressesAssigned>true</publicIPAddressesAssigned>
    <publicIPAddressesRequestable>true</publicIPAddressesRequestable>
    <subscribedVolume>true</subscribedVolume>
    <subscribedVPN>false</subscribedVPN>
  </subscription>
</subscriptions>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/geography/Subscription?scope=account HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: /Xg/v7CJ6UjZbW32iN1vlAk/vdRIsaL5uDgm0IOmad0=
```

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```
x-esauth-timestamp: 1324149728557
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 7
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sat, 17 Dec 2011 19:22:08 GMT
```

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INFRASTRUCTURE API

The Enstratius infrastructure API under the /api/enstratus/VERSION/infrastructure namespace supports all Infrastructure as a Service resources that represent virtualized compute hardware assets.

MachineImage

A machine image is the baseline image or template from which virtual machines may be provisioned. Some clouds allow machine image/template sharing. In those clouds, Enstratius creates multiple machine image records referencing the shared machine image object to enable users to maintain separate meta-data over those shared images.

Version

Status: Active

2012-06-15
Introduced pagination.

Supported Methods

- GET (pagination supported)
- HEAD
- POST
- PUT
- DELETE

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Attributes

budget [number]
The ID of the billing code against which any costs associated with this machine image are billed.

machineImageId [read-only, number]
The unique Enstratius ID for this machine image.

removable [read-only, boolean]
Indicates whether or not this machine image is in a state that will allow you to execute a `DELETE` operation on it.

sharable [read-only, boolean]
Indicates whether or not you are able to share this machine image.

status [ACTIVE|INACTIVE]
The current status of the machine image.

Elements

agentVersion [read-only, number, nullable]
If installed in the machine image, the version of the Enstratius agent installed on the machine image. A value of zero or no value both indicate no agent installed.

architecture [read-only, enumeration(Architecture)]
The underlying CPU architecture of the virtual machine in question.

cloud [read-only, extended(Cloud)]
The cloud in which this machine image is installed.

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creationTimestamp [read-only, datetime]
The date and time when this machine image was first created. Some clouds do not report this value and it may therefore be 00:00 UTC January 1, 1970 in those clouds.

customer [read-only, extended(Customer)]
The customer in whose library this machine image record is being managed.

description [string(255)]
The description of the machine image established in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this machine image.

name [string(100)]
A user-friendly name for the machine image.

owningAccount [read-only, extended(Account), nullable]
The Enstratius account under which the machine image is registered. This value may be empty if the machine image belongs to an account not using Enstratius.

owningCloudAccountId [read-only, number, nullable]
The Enstratius cloud account that is the account under which the machine image is registered. This value may be empty if the machine image belongs to an account not using Enstratius.

owningCloudAccountNumber [read-only, string(100), nullable]
The account number with the cloud provider of the account with whom the machine image is registered. This value is empty for some public images and in rare circumstances when Enstratius is unable to determine the ownership.

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owningGroups [list(Group)]

The groups who have ownership over this machine image. The current Enstratius release supports 0 or 1 group owner over a machine image. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying machine images.

owningUser [read-only, extended(User), nullable]

The user who is the owner of record of this machine image. The owner may be null in cases of auto-discovery or certain automated scenarios.

platform [read-only, enumeration(Platform)]

The operating system bundled into the machine image/template.

products [read-only, list(ServerProduct)]

The server products that can be used to provision a virtual machine based on this machine image/template.

providerId [read-only, string(100)]

The cloud provider's unique ID for the machine image.

public [boolean]

Indicates whether or not this image is publicly shared. This value may be modified only for machine images that belong to your account.

region [read-only, extended(Region)]

The region in which this machine image is available.

Query Parameters

You must specify a `regionId` when querying for machine images.

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`active [optional, boolean]`
List only active machine images. The default is true.

`available [optional, boolean]`
List only images available for launching as virtual machines. The default is false. When `true`, this parameter implies `active=true` and will override any specific conflict.

`regionId [number]`
Limits the list of machine images to the specified region.

`registered [optional, boolean]`
List only images with the Enstratius agent installed. The default is false. When `true`, this attribute implies `available=true` and `active=true` and will override anything that conflicts.

Updates

The following PUT operations are supported:

`assignBudget`
Requires: `machineImageId, budget`
Optional: none
Permissions: IMAGE/ManageBilling
Response: 204
Changes the budget associated with this machine image. The user making this change must have the rights to bill to the new budget.

`assignGroups`
Requires: `machineImageId, owningGroups`
Optional: none
Permissions: IMAGE/ManageOwnership

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Response: 204
Changes the group ownership of this machine image. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of an image.

`describeImage`
Requires: `machineImageId`
Optional: `description`, `label`, `name`
Permissions: IMAGE/Configure
Response: 204
Changes the basic meta-data for an image. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

`shareImage`
Requires: `machineImageId`
Optional: `accountId, cloudAccountNumber, public`
Permissions: IMAGE/ShareLocal or IMAGE/SharePublic
Response: 204
Shares this machine image with either the Enstratius account or cloud provider account specified or makes the machine image public. You may share only with accounts in the same cloud.

`unshareImage`
Requires: `machineImageId`
Optional: `accountId, cloudAccountNumber, public`
Permissions: IMAGE/ShareLocal or IMAGE/SharePublic
Response: 204

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Removes a share of this machine image with either the Enstratius account or cloud provider account specified or removes the public share for the image.

Errors

There are no unique errors associated with machine images.

Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/infrastructure/MachineImage/77000 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: FhFm4ZIwAYuVa392h+dxKHJg4EBtb/l0tZ+AQoEggDI=
x-esauth-timestamp: 1336844213922
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x35a8704
x-es-version: 2012-06-15
x-es-pagination: msp0x7d4825
x-es-page: 1
x-es-last-page: true
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 12 May 2012 17:36:53 GMT

{
  "images":
  [
    {
      "region":{"regionId":741},
      "budget":100,
      "platform":"UNKNOWN",
      "status":"ACTIVE",
      "removable":true,
      "owningCloudAccountNumber":"141981815288",
      "architecture":"I64",
      "customer":{"customerId":100},
      "description":"clovr-standard-2011-01-07-16-01-33 (x86_64 Unknown)",
      "sharable":false,
      "name":"clovr-standard-2011-01-07-16-01-33",
      "cloud":{"cloudId":1},
      "machineImageId":77000,
```

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```
      "providerId":"ami-0011e069",
      "creationTimestamp":"1970-01-01T00:00:00.000+0000"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/infrastructure/MachineImage/77000 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: GWk/zxuKIqkcNEHiJK/GuSWEeQMXit64n9p28xqcLrY=
x-esauth-timestamp: 1336844214212
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x35a9050
x-es-version: 2012-06-15
x-es-pagination: msp0x7d5574
x-es-page: 1
x-es-last-page: true
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sat, 12 May 2012 17:36:53 GMT

<images>
  <image machineImageId="77000" budget="100" removable="true" sharable="false"
         status="ACTIVE">
    <public>true</public>
    <name>clovr-standard-2011-01-07-16-01-33</name>
    <description>
      clovr-standard-2011-01-07-16-01-33 (x86_64 Unknown)
    </description>
    <architecture>I64</architecture>
    <creationTimestamp>1970-01-01T00:00:00.000+0000</creationTimestamp>
    <cloud cloudId="1" />
    <customer customerId="100" />
    <region regionId="741" />
    <owningCloudAccountNumber>141981815288</owningCloudAccountNumber>
    <platform>UNKNOWN</platform>
    <providerId>ami-0011e069</providerId>
  </image>
</images>
```

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HEAD

```
HEAD /api/enstratus/2012-06-15/infrastructure/MachineImage?regionId=741
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: KSgzgJ/N600nU0o1r+e5JZ5q767F55mX0t4BpUg7A/A=
x-esauth-timestamp: 1336844214459
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-count: 163
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sat, 12 May 2012 17:36:53 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/infrastructure/MachineImage HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: HJt0JLjwYtiE5bWcWGXUV/7lHHCx60CAHBPSqUHIUhU=
x-esauth-timestamp: 1336866083082
x-es-details: basic
x-es-with-perms: false

{
  "imageServer":
  [
    {
      "budget":50420,
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1336866080",
      "server":{"serverId":176678},
      "label":"red"
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 48
Date: Sat, 12 May 2012 23:41:23 GMT
```

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```
{"jobs":[{"jobId":100724,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/infrastructure/MachineImage HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: KV/f5xO2L2orH9grkyzh4EPOHGghJOL7OXFYE5sb4eM=
x-esauth-timestamp: 1336866809311
x-es-details: basic
x-es-with-perms: false

<imageServer>
  <images>
    <image budget="50420">
      <name>UT testImageServerWithXML-1336866806</name>
      <description>testImageServerWithXML Enstratius Unit Test</description>
      <label>red</label>
      <server serverId="176689" />
    </image>
  </images>
</imageServer>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Sat, 12 May 2012 23:53:28 GMT

<jobs><job jobId="100727" status="RUNNING" /></jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2012-06-15/infrastructure/MachineImage/80511 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: eswdL+EoouBogaMIyRRzP7rM6vA6TsEAykzG9Qd9DXs=
x-esauth-timestamp: 1336870296374
x-es-details: basic
x-es-with-perms: false

{
  "describeImage":
  [
    {
      "description":"Renamed snapshot",
      "name":"Rename Unit Test 1336870296",
```

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```
      "label":"orange"
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 13 May 2012 00:51:36 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-06-15/infrastructure/MachineImage/80512 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: WEazys6d+5RJbKlDb1lQwVodFUs06BJnjREwuRTAQvA=
x-esauth-timestamp: 1336870674478
x-es-details: basic
x-es-with-perms: false

<describeImage>
  <images>
    <image>
      <name>Rename Unit Test 1336870674</name>
      <label>blue</label>
      <description>Renamed item</description>
    </image>
  </images>
</describeImage>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 13 May 2012 00:57:54 GMT
```

DELETE

```
DELETE
/api/enstratus/2012-06-15/infrastructure/MachineImage/80513?reason=UT+execution
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: FP9pNoGQ7Crp5S+bw5gDow7xZx2+LPommf8VyWEsg0Y=
x-esauth-timestamp: 1336871398613
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 13 May 2012 01:09:58 GMT
```

Server

A server is a virtual machine running within a data center. In clouds/virtualization environments in which machine images are simply special template virtual machines, those items are excluded from any list of servers and treated by the Enstratius API as a machine image.

Version

Status: Active

Changes:

2013-01-29

Added the following PUT operations: `reboot`, `provisionUser`, `deprovisionUser`, `alterServer`, `suspend`, `stop`, `unpause`, `resume`.

Added support for `userData` attribute in POST operation.

Changed Server DELETE operation to return a job.

Replaced `personalities` and `scripts` elements with `runList`.

Added `environment` element to servers with Chef configuration management.

Added `parameters` element to servers with Puppet configurations management.

Fixed issue with Server POST with no product.

Added `persistent` & `architecture` elements.

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Supported Methods

- GET (pagination supported)
- HEAD
- POST
- PUT
- DELETE

Attributes

analytics [boolean]

Whether or not hypervisor analytics are on for this server.

budget [number]

The ID of the billing code against which any costs associated with this server are billed.

imageable [read-only, boolean]

Indicates whether this server may be currently imaged. A number of contextual factors impact the ability of Enstratius to image a server.

managementState [read-only, enumeration(ManagementState)]

Defines the management state of a server with respect to Enstratius automation capabilities. A server that is not part of Enstratius automation will have the management state of UNMANAGED.

persistent [read-only, boolean]

Indicates whether or not this server is ephemeral or persistent.

registered [read-only, boolean]

Indicates whether or not this server has a registered agent on it.

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removable [read-only, boolean]
Indicates whether or not this server can be terminated.

serverId [read-only, number]
The unique Enstratius ID for this server.

status [read-only, enumeration(ServerState)]
The current status of the machine image.

userData [*write-once,* string, nullable]
Bootstrapping data that is passed to the server at launch time via the cloud provider in clouds that support user data.

Elements

architecture [read-only, enumeration(Architecture)]
The architecture of the server.

cloud [read-only, extended(Cloud)]
The cloud in which this server is running.

createdTimestamp [read-only, datetime]
The date and time when this server was initially defined. Some clouds do not report this value and it may therefore be 00:00 UTC January 1, 1970 in those clouds.

customer [read-only, extended(Customer)]
The customer to which the server belongs.

dataCenter [read-only, extended(DataCenter)]
The data center in which this server is running.

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description [string(255)]
The description of the server established in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this server.

lastBootTimestamp [read-only, datetime]
The date and time when this server was last booted up. Some clouds do not report this value and it may therefore be 00:00 UTC January 1, 1970 in those clouds.

lastPauseTimestamp [read-only, datetime]
The date and time when this server was last paused. Some clouds do not report this value and it may therefore be 00:00 UTC January 1, 1970 in those clouds.

machineImage [read-only, extended(MachineImage), nullable]
Identifies the machine from which this server was built. Some clouds may allow this value to be empty.

name [string(100)]
A user-friendly name for the server.

owningAccount [read-only, extended(Account)]
The Enstratius account to which the server belongs.

owningGroups [list(Group)]
The groups who have ownership over this server. The current Enstratius release supports 0 or 1 group owner over a server. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying servers.

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owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this server. The owner may be null in cases of auto-discovery or certain automated scenarios.

pauseAfter [read-only, datetime, nullable]
If present, this server will automatically pause at the specified timestamp.

personalities [extended(Personality), nullable]
The list of personalities to be applied by the configuration management system post-launch. If no configuration management account is specified, it will be inferred from this list or the list of scripts.

platform [read-only, enumeration(Platform)]
The operating system running on this server.

prepayment [read-only, enumeration(Prepayment)]
The prepayment against which Enstratius is counting this server.

privateDnsAddress [read-only, string(255), nullable]
The DNS address that maps to the server's private IP address within the VLAN in which the server is operating.

privateIpAddresses [list(IpAddress)]
The private IP addresses assigned to this server.

product [read-only, extended(ServerProduct)]
The server product associated with this server.

providerId [read-only, string(100)]
The cloud provider's unique ID for the server.

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publicDnsAddress [read-only, string(255), nullable]
The DNS address that maps to the server's public IP address.

publicIpAddresses [list(IpAddress)]
The public IP addresses assigned to this server.

region [read-only, extended(Region)]
The region in which this server is running.

scripts [extended(Script), nullable]
The list of scripts to be applied by the configuration management system post-launch. If no configuration management account is specified, it will be inferred from this list or the list of personalities.

terminateAfter [read-only, datetime, nullable]
If present, this server will automatically terminate at the specified timestamp.

terminationTimestamp [read-only, datetime, nullable]
The date and time when this server was terminated.

vlan [write-once, extended(Vlan), nullable]
The VLAN into which the server has been deployed.

Query Parameters

If no query parameters are specified, all visible servers are returned.

`accountId [number]`
Limits the list of servers int the specified account.

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`dataCenterId [number]`
Limits the list of servers in the specified data center.

`deploymentId [number]`
Limits the list of servers deployed as part of the specified deployment.

`regionId [number]`
Limits the list of servers int the specified region.

`tierId [number]`
Limits the list of servers deployed as part of the specified tier.

Updates

The following PUT operations are supported:

`alterServer`
Requires: `product`
Optional: none
Permissions: SERVER/Configure
Response: 202
Adjusts the existing product of the server to the one specified. Only allowed for servers whose product can be altered after launch.

`assignBudget`
Requires: `serverId, budget`
Optional: none
Permissions: SERVER/ManageBilling
Response: 204
Changes the budget associated with this server. The user making this change must have the rights to bill to the new budget.

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`assignGroups`

Requires: `owningGroups`
Optional: none
Permissions: SERVER/ManageOwnership
Response: 204
Changes the group ownership of this server. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of a server.

`assignPublicIpAddress`

Requires: none
Optional: none
Permissions: SERVER/Configure
Response: 204
Assigns a public ip address to a server from an IP pool for clouds like OpSource that support IP pools.

`describeServer`
Requires: none
Optional: `description`, `label`, `name`
Permissions: SERVER/Configure
Response: 204
Changes the basic meta-data for a server. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

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`deprovisionUser`

Requires: `userId`

Optional: none

Permissions: SERVER/Configure

Response: 204

Removes an already provisioned user account from the server.

`pause`

Requires: none

Optional: `pauseAfter, reason`

Permissions: SERVER/Pause

Response: 202

Pauses the target server. Only allowed for servers that can be paused.

`provisionUser`

Requires: `userId`

Optional: `adminRole`

Permissions: SERVER/Configure

Response: 204

On a server with the Enstratius agent installed, this adds an account onto the server with the specified Enstratius user's details.

`reboot`

Requires: none

Optional: none

Permissions: SERVER/Start

Response: 202

Reboots the server.

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`resume`

Requires: none

Optional: none

Permissions: SERVER/Start

Response: 202

Resumes a suspended server.

`start`

Requires: none

Optional: `reason`

Permissions: SERVER/Start

Response: 202

Starts the stopped server. Only allowed for servers that can be stopped.

`stop`

Requires: none

Optional: `pauseAfter, force, reason`

Permissions: SERVER/Pause

Response: 202

Stops a running server. If force is false (the default) then a graceful shutdown will be attempted. If force is true then the server will be 'powered off' instead.

`suspend`

Requires: none

Optional: none

Permissions: SERVER/Pause

Response: 202

Suspends or hibernates the server.

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`unpause`

Requires: none
Optional: none
Permissions: SERVER/Start
Response: 202
Unpauses a paused server.

Errors

A 400 error may occur if that server does not support being paused/stopped/suspended/unpaused/started/resumed.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/infrastructure/Server/65717 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: 9QAX4nIAc+irAqdgoNtIgahzjyjrj/ihmUN3XbK7lrA=
x-esauth-timestamp: 1323997290842
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 16 Dec 2011 01:01:32 GMT

{"servers":
  [
    {
      "region":{"regionId":741},
      "budget":111,
      "platform":"UBUNTU",
      "startDate":"2011-10-12T16:43:41.000+0000",
      "status":"RUNNING",
      "label":"green",
      "dataCenter":{"dataCenterId":942},
      "customer":{"customerId":100},
      "privateIpAddresses":["10.241.30.224"],
      "cmAccount":{"cmAccountId":1200},
```

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```
      “owningGroups":[{"groupId":1}],
      "machineImage":{"machineImageId":68516},
      "description":"Agent 16 Launch 23",
      "name":"Agent 16 Launch 23",
      "publicIpAddress":"50.19.204.192",
      "providerId":"i-46390d26",
      "cloud":{"cloudId":1},
      "serverId":65717,
      "agentVersion":16,
      "owningUser":{"userId":2071}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/infrastructure/Server/65717 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: KjsewWdJNreinZ+tj0SeNx9jp9Z2ZjLDrzlXKnKq4cM=
x-esauth-timestamp: 1323997292583
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Fri, 16 Dec 2011 01:01:34 GMT

<servers>
  <server serverId="65717" status="RUNNING" budget="111">
    <providerId>i-46390d26</providerId>
    <providerServerId>i-46390d26</providerServerId>
    <name>Agent 16 Launch 23</name>
    <description>Agent 16 Launch 23</description>
    <agentVersion>16</agentVersion>
    <label>green</label>
    <platform>UBUNTU</platform>
    <privateIpAddresses>
      <privateIp>10.241.30.224</privateIp>
    </privateIpAddresses>
    <publicIp>50.19.204.192</publicIp>
    <startDate>2011-10-12T16:43:41.000+0000</startDate>
    <cloud cloudId="1" />
    <customer customerId="100" />
    <dataCenter dataCenterId="942" />
    <region regionId="741" />
```

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```
    <machineImage machineImageId="68516" />
    <owningUser userId="2071" />
    <owningGroups>
      <group groupId="1" />
    </owningGroups>
    <cmAccount cmAccountId="1200" />
  </server>
</servers>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/infrastructure/Server?regionId=741 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: Cziz/7/16WfohQBTPk8Qu+qW0NcLWreWQyhoq4fFGGY=
x-esauth-timestamp: 1323997295517
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 27
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Fri, 16 Dec 2011 01:01:38 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/infrastructure/Server HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: uRY3yeuTZ6AY/sPQbYG7v2pPdfuSoB5zEo9dgN+fklw=
x-esauth-timestamp: 1323997301511
x-es-details: basic
x-es-with-perms: false

{"launch":
  [
    {
      "terminateAfter":"2011-12-15T19:31:41.502-0600",
      "product":{"productId":""},
      "firewalls":[{"firewallId":3064},{"firewallId":3263}],
      "scripts":[{"sharedScriptCode":"1-1"},{"sharedScriptCode":"500-1"}],
      "cmAccount":{"cmAccountId":1},
      "machineImage":{"machineImageId":70000},
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1323997299",
```

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```
      "label":"red",
      "dataCenter":{"dataCenterId":942}
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Fri, 16 Dec 2011 01:01:42 GMT

{"jobs":[{"jobId":84322,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/infrastructure/Server HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: IcyiYBe9FGMgC8b8v6mOWpJVB8xS97Tvpr9VB9Y+aVE=
x-esauth-timestamp: 1323997809565
x-es-details: basic
x-es-with-perms: false

<launch>
  <servers>
    <server budget="100">
      <product productId="" />
      <name>UT testLaunchServerWithXML-1323997808</name>
      <description>testLaunchServerWithXML Enstratius Unit Test</description>
      <label>red</label>
      <machineImage machineImageId="70000" />
      <terminateAfter>2011-12-15T19:40:09.072-0600</terminateAfter>
      <firewalls>
        <firewall firewallId="3064" />
        <firewall firewallId="3263" />
      </firewalls>
      <cmAccount cmAccountId="1" />
      <scripts>
        <script sharedScriptCode="1-1" />
        <script sharedScriptCode="500-1" />
      </scripts>
      <dataCenter dataCenterId="942" />
    </server>
  </servers>
</launch>
```

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```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Fri, 16 Dec 2011 01:10:09 GMT

<jobs>
  <job jobId="84324" status="RUNNING" />
</jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/infrastructure/Server/67649 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: wsX8H7JPzlL6o/DTPDctATTJSTsDLxHCLHN540qa1Cw=
x-esauth-timestamp: 1323998392131
x-es-details: basic
x-es-with-perms: false

{"describeServer":
  [
    {
      "description":"Renamed server",
      "name":"Rename Unit Test 1323998392",
      "label":"orange"
    }
  ]
}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Fri, 16 Dec 2011 01:19:53 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/infrastructure/Server/67651 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: C5MfUuQ6jIfug8bKFYiD4CLKcC+6iNl+gDp0TKLbfBw=
x-esauth-timestamp: 1323998813960
x-es-details: basic
x-es-with-perms: false

<describeServer>
  <servers>
    <server>
      <name>Rename Unit Test 1323998813</name>
```

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```
      <label>blue</label>
      <description>Renamed configuration management option</description>
    </server>
  </servers>
</describeServer>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Fri, 16 Dec 2011 01:26:53 GMT
```

DELETE

```
DELETE /api/enstratus/2011-12-15/infrastructure/Server/67652?reason=Test+system
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: OrrmSmNY2oUgay2smH6mlNu8CF0QQApbfJ4oS6PY3GA=
x-esauth-timestamp: 1323999202300
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Fri, 16 Dec 2011 01:33:25 GMT
```

ServerAgent

The Server Agent resource provides methods by which you can query the output of the Enstratius agent and retrieve its log output. Soon this will be expanded such that you can also query for basic health information of the server on which the agent is installed.

Version

Introduced: 2013-01-29

Status: Active

Supported Methods

- GET
- HEAD

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Attributes

serverId [read-only, string(100)]

The ID of the Server on which the agent is installed.

serverName [read-only, string(100)]

The user-friendly name of the server.

Elements

log [list(log)]

A line from the Enstratius agent logs.

Query Parameters

You must specify a serverId to list the agent logs.

logLines [number]

Specifies the number of lines of logs to be returned from the end of the log.

serverId [number]

Specifies the server on which an Enstratius agent is installed.

reverseOrder [boolean]

Allows the logs to be displayed most recent first rather than the default of earliest first.

Updates

There are no updates allowed on Server Agent.

Errors

There are no unique errors associated with Server Agent.

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Examples

ServerProduct

Server products represent the available options and pricing for launching a virtual machine. The current implementation of this resource in the Enstratius API is a temporary implementation that will be replaced early in 2011. You're code should thus use this API today simply to get a list of products available for a specific MachineImage or for a target Architecture. If you do that and you do not rely on the fact that the product IDs today match up with the cloud product IDs, your code will survive unchanged in the future update. In the future, product IDs will be numeric and ServerProduct instances will include pricing information and other relationships.

Supported Methods

- GET
- HEAD

Attributes

`productId [read-only, string(100)]`

The unique identifier for this product. NOTE: this ID field will become a numeric field in 2011.

Elements

`architecture [read-only, enum(Architecture)]`

The CPU architecture of the underlying virtual CPUs.

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cloud [read-only, extended(Cloud)]
The cloud in which this server product is valid.

cpuCount [read-only, number]
The number of virtual CPUs associated with this server product. Depending on the underlying cloud, this value can mean different things (or have no meaning at all). In general, however, it represents the number of CPUs or number of cores.

cpuSpeedInMhz [read-only, number]
The speed of the virtual CPUs in megahertz. It's very unlikely this value actually means anything for most clouds.

currency [read-only, currency]
The currency in which the costs associated with this product are charged.

description [read-only, string(1000)]
A detailed description of what this server product represents.

diskSizeInGb [read-only, number]
The size of the root volume associated with this server in gigabytes. This value may not always be meaningful. In some clouds, it can also be wildly inaccurate.

hourlyRate [read-only, number]
How much you are charged for each hour or partial hour of usage for a virtual machine represented by this server product.

name [read-only, string(100)]
The user-friendly description of this server product. It currently may not be terribly user-friendly.

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platform [read-only, enum(Platform)]
The operating system for which this product is licensed (or should be licensed).

providerProductId [read-only, string(100)]
The unique identifier to the cloud provider for this product. Generally the value passed to the cloud provider when launching a virtual machine.

providerRegionId [read-only, string(100)]
The region in which this product is valid. Note that this is the provider region ID and not the Enstratius region ID.

ramInMb [read-only, number]
The amount of RAM in megabytes allocated to a server launched under this product. This value may not be meaningful in some clouds that do not provide RAM information.

software [read-only, string(255)]
Any software beyond the core operating system embedded in the cost for this product. This value is never null. An empty string means no extra software.

Query Parameters

You must specify either a `machineImageId` or a `regionId`.

`architecture [optional, enumeration(Architecture)]`
Limits the values to the products supporting the specified architecture. You must provide a `regionId` when specifying an architecture. Specifying a `machineImageId` is nonsensical with an `architecture`.

`machineImageId [optional, number]`
Enables you to identify all server products that can be used with the specified machine image.

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`regionId [number]`

Limits the list of products in the specified region.

Updates

Server products are not currently updatable.

Errors

No special errors exist for server products.

Examples

GET (JSON)

```
GET /api/enstratus/2012-02-29/infrastructure/ServerProduct/79 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: CE6I/JLxZHBu1WmaphK4KelDkco/1EIQAKLAiR/h5ug=
x-esauth-timestamp: 1333651303762
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 18:41:44 GMT

{
  "serverProducts":[
    {
      "cpuCount":8,
      "platform":"UNIX",
      "hourlyRate":0.68,
      "providerRegionId":"us-east-1",
      "ramInMb":7000,
      "architecture":"I64",
      "cpuSpeedInMhz":2,
      "productId":79,
      "currency":"USD",
      "software":"",
      "diskSizeInGb":1690,
      "description":"64-bit, 8x2.5 CPU, 7.0 GB RAM, 1690 GB Disk",
      "name":"64-bit High CPU Extra Large",
      "cloud":{
```

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```
        "cloudId":1,
        "webUrl":"http://aws.amazon.com",
        "status":"ACTIVE",
        "name":"Amazon Web Services",
        "privateCloud":false,
        "provider":"Amazon",
        "logoUrl":"/clouds/aws.gif",
        "statusUrl":"http://status.aws.amazon.com/",
        "daseinComputeDelegate":"org.dasein.cloud.aws.AWSCloud",
        "endpoint":"https://ec2.sa-east-1.amazonaws.com"
      },
      "providerProductId":"c1.xlarge"
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/infrastructure/ServerProduct/79 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: D3RcSonccU7Zl/ZLLHqTf+ob3rh7LohGi3aFXy9/S2c=
x-esauth-timestamp: 1333651304532
x-es-details: extended
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Thu, 05 Apr 2012 18:41:44 GMT

<serverProducts>
  <serverProduct productId="79">
    <name>64-bit High CPU Extra Large</name>
    <description>64-bit, 8x2.5 CPU, 7.0 GB RAM, 1690 GB Disk</description>
    <providerProductId>c1.xlarge</providerProductId>
    <providerRegionId>us-east-1</providerRegionId>
    <currency>USD</currency>
    <cpuCount>8</cpuCount>
    <cpuSpeedInMhz>2</cpuSpeedInMhz>
    <diskSizeInGb>1,690</diskSizeInGb>
    <platform>UNIX</platform>
    <architecture>I64</architecture>
    <ramInMb>7,000</ramInMb>
    <software></software>
    <hourlyRate>0.68</hourlyRate>
    <cloud cloudId="1" status="ACTIVE" privateCloud="false">
```

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```
      <name>Amazon Web Services</name>
      <endpoint>https://ec2.sa-east-1.amazonaws.com</endpoint>
      <daseinComputeDelegate>
        org.dasein.cloud.aws.AWSCloud
      </daseinComputeDelegate>
      <provider>Amazon</provider>
      <statusUrl>http://status.aws.amazon.com/</statusUrl>
      <webUrl>http://aws.amazon.com</webUrl>
      <logoUrl>/clouds/aws.gif</logoUrl>
    </cloud>
  </serverProduct>
</serverProducts>
```

HEAD

```
HEAD
/api/enstratus/2012-02-29/infrastructure/ServerProduct?regionId=741&architectur
e=I64 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: FMKPVBVBCKUZJETXXRVP
x-esauth-signature: SAVpnZPOgfUYxQFHNCTuQeyMq85bz+1Tqn+eXqvWv8Y=
x-esauth-timestamp: 1333651303588
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 20
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Thu, 05 Apr 2012 18:41:43 GMT
```

Snapshot

A snapshot is a point-in-time snapshot of a volume.

Version

Status: Active

Changes:

2012-06-15

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Fixed a number of performance issues returning snapshots and added support for pagination.

Supported Methods

- GET (supports pagination)
- HEAD
- POST
- PUT
- DELETE

Attributes

`available [read-only, boolean]`
Identifies whether or not this snapshot is available for creating volumes.

`budget [number]`
The ID of the billing code against which any costs associated with this snapshot are billed.

`encrypted [read-only, boolean]`
Indicates whether or not this snapshot comes from a volume known by Enstratius to have been encrypted.

`sharable [read-only, boolean]`
Indicates whether or not this snapshot can be shared with others.

`removable [read-only, boolean]`
Indicates whether or not this snapshot can be removed.

`snapshotId [read-only, number]`
The unique Enstratius ID for this snapshot.

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status [read-only, ACTIVE|INACTIVE]
The current status of the snapshot.

Elements

array [read-only, extended(Array), nullable]
The volume array, if any, to which the volume from which this snapshot was created belonged.

cloud [read-only, extended(Cloud)]
The cloud in which this snapshot is stored.

customer [read-only, extended(Customer)]
The customer to which the snapshot belongs.

description [string(255)]
The description of the snapshot established in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this snapshot.

name [string(100)]
A user-friendly name for the server.

owningAccount [read-only, extended(Account), nullable]
The Enstratius account under which the snapshot is registered. This value may be empty if the snapshot belongs to an account not using Enstratius.

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owningCloudAccountId [read-only, number, nullable]
The Enstratius cloud account that is the account under which the snapshot is registered. This value may be empty if the snapshot belongs to an account not using Enstratius.

owningCloudAccountNumber [read-only, string(100), nullable]
The account number with the cloud provider of the account with whom the snapshot is registered. This value is empty for some public snapshots and in rare circumstances when Enstratius is unable to determine the ownership.

owningGroups [list(Group)]
The groups who have ownership over this snapshot. The current Enstratius release supports 0 or 1 group owner over a snapshot. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying snapshots.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this snapshot. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100)]
The unique ID with the cloud provider for this snapshot.

public [boolean]
Indicates whether or not this image is publicly shared. This value may be modified only for machine images that belong to your account.

region [read-only, extended(Region)]
The region in which this snapshot is stored.

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sizeInGb [read-only, number]

The size in Gigabytes reported by the cloud for the volume from which this snapshot was created. Some clouds do not provide this information; others provide inaccurate information.

snapshotTimestamp [read-only, datetime]

The timestamp when this snapshot was created if provided by the cloud.

volume [read-only, extended(Volume), nullable]

The volume, if known, from which this snapshot was created.

Query Parameters

If no query parameters are specified, all visible snapshots are returned.

`accountId [number]`

Limits the list of snapshots int the specified account.

`regionId [number]`

Limits the list of snapshots int the specified region.

`volumeId [number]`

Limits the list of snapshots to the snapshots made from the specified volume.

Updates

The following PUT operations are supported:

`describeSnapshot`

Requires: `snapshotId`

Optional: `description`, `label`, `name`

Response: 204

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Changes the basic meta-data for a snapshot. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

No special errors exist for snapshots.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/infrastructure/Snapshot?regionId=52400 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: Gzx/B8LifVW0mfuHf9djpaJLYaTrhgqK8lgxT3QD1+I=
x-esauth-timestamp: 1327454903072
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 25 Jan 2012 01:28:30 GMT

{"snapshots":
  [
    {
      "region":{"regionId":52400},
      "snapshotId":423915,
      "budget":111,
      "createdTimestamp":"2012-01-25T01:25:22.000+0000",
      "status":"ACTIVE",
      "removable":true,
      "label":null,
      "available":true,
      "customer":{"customerId":100},
      "owningGroups":[{"groupId":1}],
      "encrypted":false,
      "description":"UT #1",
      "sharable":true,
      "sizeInGb":5,
      "name":"UT #1",
      "volume":{"volumeId":103705},
```

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```
      "providerId":"snap-1b578473",
      "cloud":{"cloudId":1},
      "owningUser":{"userId":400},
      "owningAccount":{"accountId":100}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/infrastructure/Snapshot?regionId=52400 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: YCpQPLQpvINLa0iwNnVptSMlHFyQafACEXbLCvBTDto=
x-esauth-timestamp: 1327454911238
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 25 Jan 2012 01:28:37 GMT

<snapshots>
  <snapshot snapshotId="423915" status="ACTIVE" available="true"
            removable="true" sharable="true" encrypted="false"
            budget="111">
    <name>UT #1</name>
    <description>UT #1</description>
    <providerId>snap-1b578473</providerId>
    <sizeInGb>5</sizeInGb>
    <createdTimestamp>2012-01-25T01:25:22.000+0000</createdTimestamp>
    <owningAccount accountId="100" />
    <customer customerId="100" />
    <cloud cloudId="1" />
    <region regionId="52400" />  <owningUser userId="400" />
    <owningGroups>
      <group groupId="1" />
    </owningGroups>
    <volume volumeId="103705" />
  </snapshot>
</snapshots>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/infrastructure/Snapshot?regionId=52400 HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: t//Eb9O6aApCVEQz4DzP6tbxJjIMIzqlXHR6t/dbCf8=
x-esauth-timestamp: 1327454928737
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
x-es-count: 1
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Wed, 25 Jan 2012 01:28:50 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/infrastructure/Snapshot HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: OWsbZVhWlbTB95oS9EQbEQ746HZJsx89JPfzIkvK7Ps=
x-esauth-timestamp: 1327454932731
x-es-details: basic
x-es-with-perms: false

{"addSnapshot":
  [
    {
      "budget":50234,
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1327454931",
      "volume":{"volumeId":103705},
      "label":"red"
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Wed, 25 Jan 2012 01:28:52 GMT

{"jobs":[{"jobId":88505,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/infrastructure/Snapshot HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: yx1Hetjud0vksKEDoHwE/MT+LgrusiLkTysfdWYh3eE=
x-esauth-timestamp: 1327455331925
x-es-details: basic
x-es-with-perms: false

<addSnapshot>
  <snapshots>
    <snapshot budget="50234">
      <name>UT testCreateSnapshotWithXML-1327455331</name>
      <description>testCreateSnapshotWithXML Enstratius Unit Test</description>
      <label>red</label>
      <volume volumeId="103705" />
    </snapshot>
  </snapshots>
</addSnapshot>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Wed, 25 Jan 2012 01:35:31 GMT

<jobs>
  <job jobId="88506" status="RUNNING" />
</jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/infrastructure/Snapshot/423925 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: gqNxNINTdz8AXPd9fv73j4YykQYxmxvw0k3l0KQ3e9o=
x-esauth-timestamp: 1327457123060
x-es-details: basic
x-es-with-perms: false

{"describeSnapshot":
  [
    {
      "description":"Renamed snapshot",
      "name":"Rename Unit Test 1327457123",
      "label":"orange"
    }
  ]
}
```

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```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 25 Jan 2012 02:05:22 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/infrastructure/Snapshot/423926 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: vw4O6OcB/loIOcQXxU4ctLIgP1qSDesPa3XekRm+PrU=
x-esauth-timestamp: 1327457539013
x-es-details: basic
x-es-with-perms: false

<describeSnapshot>
  <snapshots>
    <snapshot>
      <name>Rename Unit Test 1327457539</name>
      <label>blue</label>
      <description>Renamed item</description>
    </snapshot>
  </snapshots>
</describeSnapshot>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 25 Jan 2012 02:12:18 GMT
```

DELETE

```
DELETE
/api/enstratus/2011-12-15/infrastructure/Snapshot/423927?reason=UT+execution
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: XIJZOCUMPNYYZJHOSXYU
x-esauth-signature: U6z8i6pRA7KlkGPjjh2lQOQUB9VlV5kJS9V435BQO0c=
x-esauth-timestamp: 1327457736848
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Wed, 25 Jan 2012 02:15:42 GMT
```

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Volume

A volume is a block storage device that may be mounted by servers, yet they have an existence independent of virtual servers.

Version

Status: Active

Changes:

2012-06-15

Added pagination support and better bounds checking.

2013-01-29

Added support for volumeProductId and iops attributes in Volume POST operation.

Supported Methods

- GET (supports pagination)
- HEAD
- POST
- PUT
- DELETE

Attributes

`available [read-only, boolean]`
Identifies whether or not this volume is available for attaching to a server.

`budget [number]`
The ID of the billing code against which any costs associated with this volume are billed.

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encrypted [boolean]
Indicates whether or not this volume is known by Enstratius to be encrypted.

iops [write-once, number, nullable]
The number of input/output operations per second supported by the volume when configurable by the cloud provider.

removable [read-only, boolean]
Indicates whether or not this volume can be removed.

status [read-only, ACTIVE|INACTIVE]
The current status of the volume.

volumeId [read-only, number]
The unique Enstratius ID for this volume.

volumeProductId [write-once, string, nullable]
The cloud provider product id for the volume when supported by the cloud provider.

Elements

array [read-only, extended(Array), nullable]
The array, if any, to which this volume belongs.

cloud [read-only, extended(Cloud)]
The cloud in which this volume is stored.

creationTimestamp [read-only, datetime]
The timestamp when this volume was created.

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customer [read-only, extended(Customer)]
The customer to which the volume belongs.

dataCenter [read-only, extended(DataCenter)]
The data center in which this volume is stored.

description [string(10000)]
The description of the volume established in Enstratius.

deviceId [string(100), nullable]
The operating system device identifier under which this volume was attached to a server.

label [enumeration(Label), nullable]
A label assigned to this volume.

name [string(100)]
A user-friendly name for the volume.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the volume is registered.

owningGroups [list(Group)]
The groups who have ownership over this volume. The current Enstratius release supports 0 or 1 group owner over a volume. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying volumes.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this volume. The owner may be null in cases of auto-discovery or certain automated scenarios.

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providerId [read-only, string(100)]
The unique ID with the cloud provider for this volume.

region [read-only, extended(Region)]
The region in which this volume is stored.

server [read-only, extended(Snapshot), nullable]
The server to which this volume is attached, if any.

sizeInGb [read-only, number(1,10000)]
The size in Gigabytes reported by the cloud for the storage space on this volume. Not all clouds may support all volume sizes.

snapshot [read-only, extended(Snapshot), nullable]
The snapshot (if any) from which this volume was created.

Query Parameters

If no query parameters are specified, all visible snapshots are returned.

`accountId [number]`
Limits the list of volumes int the specified account.

`dataCenterId [number]`
Limits the list of volumes int the specified data center.

`regionId [number]`
Limits the list of volumes int the specified region.

Updates

The following PUT operations are supported:

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`assignBudget`

Requires: `volumeId, budget`

Optional: none

Permissions: VOLUME/ManageBilling

Response: 204

Changes the budget associated with this volume. The user making this change must have the rights to bill to the new budget.

`assignGroups`

Requires: `volumeId, owningGroups`

Optional: none

Permissions: VOLUME/ManageOwnership

Response: 204

Changes the group ownership of this volume. The user making this change must be part of the new groups. Note that Enstratius currently supports only one group as an owner of a volume.

`attach`

Requires: `server, deviceId`

Optional: none

Permissions: VOLUME/Attach

Response: 204

Attaches the volume to the specified server as the specified device ID.

`describeVolume`

Requires: `volumeId`

Optional: `description`, `label`, `name`

Permissions: VOLUME/Configure

Response: 204

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Changes the basic meta-data for a volume. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

`detach`

Requires: none

Optional: none

Permissions: VOLUME/Detach

Response: 204

Detaches the volume from the server to which it is currently attached.

Errors

No special errors exist for volumes.

Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/infrastructure/Volume/81005 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 8x1Eidug/Y2Ejwh/i2059Fz7UJnLjrVlD3kvNTfKdYs=
x-esauth-timestamp: 1336934968935
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x3d62716
x-es-version: 2012-06-15
x-es-pagination: msp0xa2c511
x-es-page: 1
x-es-last-page: true
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 13 May 2012 18:49:28 GMT

{
  "volumes":
  [
```

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```
    {
      "region":{"regionId":741},
      "budget":100,
      "volumeId":81005,
      "status":"ACTIVE",
      "removable":false,
      "sizeString":"15GB",
      "dataCenter":{"dataCenterId":942},
      "available":true,
      "customer":{"customerId":100},
      "encrypted":false,
      "description":"vol-1ee0a7778",
      "name":"vol-1ee0a7778",
      "sizeInGb":15,
      "providerId":"vol-1ee0a777",
      "cloud":{"cloudId":1},
      "server":{"serverId":18828},
      "creationTimestamp":"1970-01-01T00:00:00.000+0000",
      "deviceId":"/dev/sda1",
      "owningAccount":{"accountId":100}
    },
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/infrastructure/Volume/81005 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: gJi4etm05c6tVbsNqFfX4T9mdxrJJLptCt1qjrrSF/M=
x-esauth-timestamp: 1336934969765
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x3d63189
x-es-version: 2012-06-15
x-es-pagination: msp0xa2d647
x-es-page: 1
x-es-last-page: true
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 13 May 2012 18:49:30 GMT

<volumes>
  <volume volumeId="81005" status="ACTIVE" available="true"
          removable="false" encrypted="false" budget="100">
    <name>vol-1ee0a7778</name>
```

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```
    <description>vol-1ee0a7778</description>
    <providerId>vol-1ee0a777</providerId>
    <deviceId>/dev/sda1</deviceId>
    <sizeInGb>15</sizeInGb>
    <sizeString>15GB</sizeString>
    <createdTimestamp>1970-01-01T00:00:00.000+0000</createdTimestamp>
    <owningAccount accountId="100" />
    <customer customerId="100" />
    <cloud cloudId="1" />
    <dataCenter dataCenterId="942" />
    <region regionId="741" />
    <server serverId="18828" />
  </volume>
</volumes>
```

HEAD

```
HEAD /api/enstratus/2012-06-15/infrastructure/Volume?regionId=741 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: OEnjV5ChENe2lGRZETMO5muaulltPf8I4mmlSjABA9Y=
x-esauth-timestamp: 1336934970781
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-count: 57
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sun, 13 May 2012 18:49:37 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/infrastructure/Volume HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: GEXGubFFf56y+dRi7oeq4r4D8VT0MzzogWm/dT7Ar00=
x-esauth-timestamp: 1336934980198
x-es-details: basic
x-es-with-perms: false

{
  "addVolume":
  [
    {
      "budget":50420,
```

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```
      "description":"Created by the Enstratius unit tests.",
      "sizeInGb":5,
      "name":"Unit Test 1336934977",
      "label":"red",
      "dataCenter":{"dataCenterId":942}
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 48
Date: Sun, 13 May 2012 18:49:40 GMT

{"jobs":[{"jobId":100805,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/infrastructure/Volume HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: dB+XdtDI27V4g74SGGspyQ/KD3MV/FqBKsBJachtRMU=
x-esauth-timestamp: 1336935533244
x-es-details: basic
x-es-with-perms: false

<addVolume>
  <volumes>
    <volume budget="50420" sizeInGb="5">
      <dataCenter dataCenterId="942" />
      <name>UT testCreateVolumeWithXML-1336935531</name>
      <description>testCreateVolumeWithXML Enstratius Unit Test</description>
      <label>red</label>
    </volume>
  </volumes>
</addVolume>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Sun, 13 May 2012 18:58:54 GMT

<jobs><job jobId="100806" status="RUNNING" /></jobs>
```

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PUT (JSON)

```
PUT /api/enstratus/2012-06-15/infrastructure/Volume/113751 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: qLDr/H6MM1tFzkTj2y3BoHt/fBmgyzRi5GiFmrLnErM=
x-esauth-timestamp: 1336940694037
x-es-details: basic
x-es-with-perms: false

{"attach":[{"server":{"serverId":178106}}]}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 48
Date: Sun, 13 May 2012 20:24:53 GMT

{"jobs":[{"jobId":100906,"status":"RUNNING"}]}
```

PUT (XML)

```
PUT /api/enstratus/2012-06-15/infrastructure/Volume/113753 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: kiBYOKMiJR1Vw11m8Otj1xK3TOwVBdudkUSLwYyJBYs=
x-esauth-timestamp: 1336941474549
x-es-details: basic
x-es-with-perms: false

<attach>
  <volumes><volume><server serverId="178119" /></volume></volumes>
</attach>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Sun, 13 May 2012 20:37:54 GMT

<jobs><job jobId="100910" status="RUNNING" /></jobs>
```

DELETE

```
DELETE
/api/enstratus/2012-06-15/infrastructure/Volume/113759?reason=UT+execution
HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: DLLkaVwA9ufPgsiffumxyu6kojkjc1SZ5wxroiOOI3A=
x-esauth-timestamp: 1336943435726
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 13 May 2012 21:10:46 GMT
```

VolumeProduct

A volume product represents the available options and pricing for allocating a block storage device.

NOT YET IMPLEMENTED

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NETWORK API

The Enstratius network API was introduced under the /api/enstratus/VERSION/network as part of version 2011-07-15 to support all cloud networking concepts. As a result of this introduction, several resources moved from the infrastructure API into the network API. Those legacy resources may be referenced under either namespace, though the referencing networking resources through infrastructure namespace is considered deprecated. All new networking resources will appear solely via this API.

DnsZone

A DNS zone is a regular DNS zone managed in a cloud DNS service. The key difference between traditional DNS services and cloud DNS services is the existence of an API to manage them. A DNS zone is a zone like *example.com* that has records like www.example.com.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

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Attributes

budget [number]
The ID of the billing code against which any costs associated with this DNS zone are billed.

dnsZoneId [read-only, number]
The unique Enstratius ID for this DNS zone.

removable [read-only, boolean]
Indicates whether or not this DNS zone can be removed.

status [read-only, ACTIVE|INACTIVE]
The current status of the DNS zone.

Elements

cloud [read-only, extended(Cloud)]
The cloud in which this DNS zone operates.

creationTimestamp [read-only, datetime]
The timestamp when this DNS zone was initially created.

customer [read-only, extended(Customer)]
The customer to which the load balancer belongs.

lastChangeTimestamp [read-only, datetime]
The timestamp when this DNS zone was last modified.

owningAccount [read-only, extended(Account)]

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The account under which this DNS zone is managed.

description [string(255)]
The description of the DNS zone established in Enstratius.

friendlyName [string(100)]
A user-friendly name stored in Enstratius for the DNS zone.

label [enumeration(Label), nullable]
A label assigned to this DNS zone.

name [string(100)]
The name of this DNS zone. For example, *example.com*.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the DNS zone is registered.

owningGroups [list(Group)]
The groups who have ownership over this DNS zone. The current Enstratius release supports 0 or 1 group owner over a DNS zone. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying DNS zones.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this DNS zone. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100)]
The unique ID with the cloud provider for this DNS zone.

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records [list(DnsRecord), nullable]

The list of DNS records configured for this zone.

Query Parameters

If no query parameters are specified, all visible load balancers are returned.

`accountId [number]`

Limits the list of DNS zones in the specified account.

`activeOnly [boolean]`

Limits the list of DNS zones to only active zones.

Updates

The following PUT operations are supported:

`addRecords`

Requires: `records`

Optional: none

Response: 204

Adds the specified record(s) to this DNS zone.

`changeBudget`

Requires: `budget`

Optional: none

Response: 204

Changes the budget to which costs associated with this DNS record are billed.

`describeDnsZone`

Requires: none

Optional: `description, label, name`

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Response: 204

Changes the meta-data associated with the DNS zone to the values you specify.

`removeRecords`

Requires: `records`

Optional: none

Response: 204

Removes the specified DNS records from the DNS zone. Only the `recordId` is required for each record to be removed.

Errors

No special errors exist for DNS zones.

Examples

GET

HEAD

POST

PUT

DELETE

Firewall

A firewall manages rules for filtering traffic passing through a virtual firewall, either ingress, egress, or both.

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Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

budget [number]

The ID of the billing code against which any costs associated with this firewall are billed.

firewallId [read-only, number]

The unique Enstratius ID for this firewall.

removable [read-only, boolean]

Indicates whether or not this firewall can be removed.

status [read-only, ACTIVE|INACTIVE]

The current status of the volume.

Elements

cloud [read-only, extended(Cloud)]

The cloud in which this firewall operates

customer [read-only, extended(Customer)]

The customer to which the firewall belongs.

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description [string(255)]
The description of the firewall established in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this firewall.

name [string(100)]
A user-friendly name for the firewall.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the firewall is registered.

owningGroups [list(Group)]
The groups who have ownership over this firewall. The current Enstratius release supports 0 or 1 group owner over a volume. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying firewalls.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this firewall. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100)]
The unique ID with the cloud provider for this firewall.

region [read-only, extended(Region)]
The region in which this firewall operates.

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`rules [read-only, extended(FirewallRule)]`

The firewall rules in force for this firewall. Only displayed when `withDetails` is set. Otherwise, query the `FirewallRule` object for a list of rules for a specific firewall.

Query Parameters

If no query parameters are specified, all visible firewalls are returned.

`accountId [number]`

Limits the list of firewalls in the specified account.

`regionId [number]`

Limits the list of firewalls in the specified region.

Updates

The following PUT operations are supported:

`describeFirewall`

Requires: `firewallId`

Optional: `description`, `label`, `name`

Permissions: FIREWALL/Configure

Response: 204

Changes the basic meta-data for a firewall. You may specify any or all of the above. If you wish to null out the label, you should include an empty tag for the label. Otherwise, Enstratius assumes you want the label unchanged.

Errors

No special errors exist for firewalls.

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Examples

GET (JSON)

```
GET /api/enstratus/2012-02-29/network/Firewall/54501 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: 63QV3cRmoEurt1k5GMcuPPYEoFcqOtmwU3vEaJMsM2A=
x-esauth-timestamp: 1334622796382
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 17 Apr 2012 00:33:15 GMT

{
  "firewalls":[
    {
      "region":{"regionId":53101},
      "budget":111,
      "status":"ACTIVE",
      "description":"default",
      "name":"default",
      "removable":true,
      "providerId":"391",
      "cloud":{"cloudId":28},
      "customer":{"customerId":100},
      "firewallId":54501,
      "owningAccount":{"accountId":53900}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-02-29/network/Firewall/54501 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: +6m2ZQRBL4h4+phiecqg9yk4D5OEaBNj/mA0J0hCjMI=
x-esauth-timestamp: 1334622796991
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Tue, 17 Apr 2012 00:33:17 GMT

<firewalls>
  <firewall firewallId="54501" budget="111" status="ACTIVE" removable="true" >
    <description>default</description>
    <name>default</name>
    <providerId>391</providerId>
    <owningAccount accountId="53900" />
    <customer customerId="100" />
    <cloud cloudId="28" />
    <region regionId="53101" />
  </firewall>
</firewalls>
```

HEAD

```
HEAD /api/enstratus/2012-02-29/network/Firewall?regionId=53101 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: IfiZIPFz2FuzYvwplrQ8QiTWwLURas9swpVYC+2iEKg=
x-esauth-timestamp: 1334622796141
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-02-29
x-es-count: 6
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Tue, 17 Apr 2012 00:33:15 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-02-29/network/Firewall HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: mAqObNr5WbWdMFpDc0cxS6wHZkazy5nwyqzar2nCMhg=
x-esauth-timestamp: 1334622801847
x-es-details: basic
x-es-with-perms: false

{
```

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```
  "addFirewall":[
    {
      "region":{"regionId":53101},
      "budget":50420,
      "description":"Created by the Enstratius unit tests.",
      "name":"utjson-1334622797",
      "label":"red"
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Tue, 17 Apr 2012 00:33:21 GMT

{"jobs":[{"jobId":98608,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2012-02-29/network/Firewall HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: /YBvKteT/ggS6Ficump2dZxPsjqeHI1a+Kpn6/opu7w=
x-esauth-timestamp: 1334622856699
x-es-details: basic
x-es-with-perms: false

<addFirewall>
  <firewalls>
    <firewall budget="50420">
      <name>utxml-1334622855</name>
      <description>testAddFirewallWithXML Enstratius Unit Test</description>
      <label>red</label>
      <region regionId="53101" />
    </firewall>
  </firewalls>
</addFirewall>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 59
Date: Tue, 17 Apr 2012 00:34:16 GMT

<jobs>
```

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```
  <job jobId="98609" status="RUNNING" />
</jobs>
```

PUT

```
Not currently supported
```

DELETE

```
DELETE /api/enstratus/2012-02-29/network/Firewall/56307?reason=Test+system
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LNCTPDQULZYWZCMSQFGR
x-esauth-signature: +56XFrU5W+6WRuF1XUdlqNGQ3erM587Qoyqv96j3IY4=
x-esauth-timestamp: 1334622983842
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Tue, 17 Apr 2012 00:36:32 GMT
```

FirewallRule

A firewall rule is an ingress or egress permission that grants or denies the right for traffic from a specific network source to a specific network destination.

Version

Status: Active

Changes:

2013-01-29

Added `ruleProviderId` element to extended detail FirewallRule.

Changed firewall rule POST & DELETE operations to return jobs.

Firewall rules have the following new elements: sourceType, source (replaces networkAddress), destinationType, destination, permission, precedence.

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Supported Methods

- GET
- HEAD
- POST
- DELETE

Attributes

`firewallRuleId [read-only, number]`

The unique Enstratius ID for this firewall rule.

Elements

`destination [write-once, string(100)]`

The endpoint for the firewall rule. This could describe a different value depending on the destination type.

`destinationType [write-once, enumeration(RuleTargetType)]`

Describes the type of the destination value. Most clouds do not support every destination type.

`direction [write-once, enumeration(Direction)]`

Indicates whether this rule represents an ingress or egress rule. Not all clouds support both (or any) kinds of rules.

`endPort [write-once, number, nullable]`

The last port in the range supported by this rule. Not required for ICMP packets. Not all clouds support ICMP firewall rules.

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firewallId [write-once, number]
The firewall to which this rule is attached.

permission [write-once, enumeration(Permission)]
Indicates whether the rule allows or denies traffic.

precedence [write-once, number, nullable]
A value indicating the position in the order list by which the firewall should process the rules. Not all clouds support precedence for rule ordering.

protocol [write-once, enumeration(Protocol)]
The network protocol being allowed by this rule.

ruleProviderId [read-only, string]
The cloud provider id that uniquely identifies this firewall rule. Only provided when detail level is EXTENDED.

source [write-once, string(100)]
The starting point for the firewall rule. This could describe a different value depending on the source type.

sourceType [write-once, enumeration(RuleTargetType)]
Describes the type of the source value. Most clouds do not support every source type.

startPort [write-once, number, nullable]
The first port in the range supported by this rule. Not required for ICMP packets. Not all clouds support ICMP firewall rules.

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Query Parameters

You must specify a `firewallId` parameter.

`firewallId [number]`

The firewall whose rules are being sought.

Updates

No PUT operations are available for a firewall rule.

Errors

No special errors exist for firewalls.

Examples

GET

```
GET /api/enstratus/2013-01-29/network/FirewallRule?firewallId=474 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: S1TtAuEMgFyZ6r7c5Om2qvKOnBdFWi87KcikPScdGh0=
x-esauth-timestamp: 1367531029844
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Wed, 02 May 2013 21:43:49 GMT
x-es-version: 2013-01-29
Content-Type: application/xml;charset=UTF-8

<rules>
       <rule firewallRuleId="316506">
              <sourceType>CIDR</sourceType>
              <source>50.23.10.2/32</source>
              <destinationType>GLOBAL</destinationType>
              <destination>94900</destination>
              <permission>DENY</permission>
              <precedence>0</precedence>
              <firewall firewallId="94900" />
              <direction>INGRESS</direction>
              <startPort>80</startPort>
              <endPort>81</endPort>
```

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```
            <protocol>TCP</protocol>
        </rule>
        <rule firewallRuleId="316516">
            <sourceType>VLAN</sourceType>
            <source>10700</source>
            <destinationType>GLOBAL</destinationType>
            <destination>94900</destination>
            <permission>ALLOW</permission>
            <precedence>0</precedence>
            <firewall firewallId="94900" />
            <direction>INGRESS</direction>
            <startPort>0</startPort>
            <endPort>65535</endPort>
            <protocol>ANY</protocol>
        </rule>
        <rule firewallRuleId="319502">
            <sourceType>GLOBAL</sourceType>
            <source>94900</source>
            <destinationType>CIDR</destinationType>
            <destination>10.122.158.164/32</destination>
            <permission>ALLOW</permission>
            <precedence>0</precedence>
            <firewall firewallId="94900" />

            <direction>INGRESS</direction>
            <startPort>2003</startPort>
            <endPort>2003</endPort>
            <protocol>TCP</protocol>
        </rule>
</rules>
```

HEAD

```
HEAD /api/enstratus/2011-02-24/network/FirewallRule?firewallId=474 HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: DL7Ki3W8+JzUt8Ay8XZi81yOvm5LkDOZwuOr9zC1WI8=
x-esauth-timestamp: 1290639581872
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Date: Wed, 24 Nov 2010 23:00:22 GMT
x-es-version: 2011-02-24
x-es-count: 5
Content-Type: application/xml;charset=UTF-8
```

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POST

```
POST /api/enstratus/2013-01-29/network/FirewallRule HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 123456789
x-esauth-signature: WB+llwhyMvdihRnCDRQ11WMrISoQpZsKFDW1NoTEg4Q=
x-esauth-timestamp: 1367534014718
x-es-details: basic
x-es-with-perms: false
Content-length: 244

<addRule>
  <firewallRule firewallId="94900" sourceType="VLAN" source="10700"
  permission="ALLOW" destinationType="CIDR" destination="8.8.8.8/32"
  direction="EGRESS" protocol="ANY">
    <reason>This is an example</reason>
  </firewallRule>
</addRule>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
x-es-request: msp0x4040fe181
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Thu, 02 May 2013 22:08:03 GMT

<jobs>
  <job jobId="173706" status="RUNNING" />
</jobs>
```

DELETE

```
DELETE /api/enstratus/2013-01-29/network/FirewallRule/2574?reason=Invalidated
HTTP/1.1
User-agent: Test
Accept: application/xml
Host: api.enstratius.com
x-esauth-access: 1367534014718
x-esauth-signature: 2TEI01wasn6zvDTNrV29Jdsvc4gK0seQvQGGyIdsh/g=
x-esauth-timestamp: 1290640865498
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
x-es-request: msp0x4040fe181
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
```

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```
Date: Thu, 02 May 2013 22:08:03 GMT

<jobs>
  <job jobId="173707" status="RUNNING" />
</jobs>
```

ForwardingRule

A forwarding rule describes the path by which traffic received from a given public IP address and port is forwarded on to a specified server on a specified port.

Version

Introduced: 2013-01-29

Status: Active

Supported Methods

- GET
- HEAD
- POST

Attributes

addressId [read-only, string(100)]

The ID of the originating Static IP Address from which traffic is being forwarded by the rule.

forwardingRuleId [read-only, string(100)]

The unique identifier of the forwarding rule.

privatePort [read-only, number]

The internal port on the server to which the traffic is being forwarded.

publicPort [read-only, number]

The external port from which traffic is received and processed by the rule.

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protocol [read-only, string(4)]

The IP protocol via which traffic is received and processed by the rule.

serverId [read-only, string(100)]

The ID of the destination Server to which traffic is being forwarded by the rule.

Elements

address [read-only, string(15)]

The IP address on which traffic is received.

description [string(255)]

The description of the forwarding rule.

label [enumeration(Label), nullable]

A label assigned to this rule.

name [string(100)]

A user-friendly name for the rule.

providerForwardingRuleId [read-only, string(100)]

The unique ID with the cloud provider for this rule.

providerServerId [read-only, string(100)]

The unique ID with the cloud provider for the destination Server.

serverName [string(100)]

The user-friendly name of the associated destination Server.

Query Parameters

You must specify an addressId when listing forwarding rules.

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addressId [number]

Required for the query and displays all the forwarding rules for the specified address.

Updates

There are no updates allowed on Forwarding Rules.

Errors

There are no unique errors associated with Forwarding Rules.

Examples

LoadBalancer

A load balancer is a virtual load balancer such as an AWS Elastic Load Balancer. It is specifically not a VM-hosted load balancer. Load balancers vary wildly from cloud provider to cloud provider. As a result, you should check with your cloud meta-data to see what elements are necessary in order to create a load balancer.

Supported Methods

- GET (pagination supported)
- HEAD
- POST
- PUT
- DELETE

Attributes

budget [number]

The ID of the billing code against which any costs associated with this load balancer are billed.

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loadBalancerId [read-only, number]
The unique Enstratius ID for this load balancer.

removable [read-only, boolean]
Indicates whether or not this load balancer can be removed.

status [read-only, ACTIVE|INACTIVE]
The current status of the load balancer.

Elements

address [read-only, string]
An IPv4 or DNS address (depending on whether the load balancer is CNAME based) for the load balancer.

cloud [read-only, extended(Cloud)]
The cloud in which this load balancer operates

cnameBased [read-only, boolean]
Indicates whether this load balancer uses a CNAME for mapping to its destination. If true, you are given a DNS name to which you should create a CNAME in your DNS records. Otherwise, the load balancer will have a permanent IP to which you can assign an A record in your DNS.

customer [read-only, extended(Customer)]
The customer to which the load balancer belongs.

dataCenters [list(DataCenter), nullable]
The list of data centers across which this load balancer expects to see endpoints. In general, you should maintain one running server in each data center supported by this

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load balancer. Ideally, you should have an equal number of load balancers in each data center. Only provided when detail level is EXTENDED.

description [string(255)]
The description of the load balancer established in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this load balancer.

listeners [list(Listener)]
The list of network services being routed through this load balancer. In general, it is a good idea to create your load balancer with at least one listener. Many clouds do not allow you to modify your listener list after the creation of the load balancer. Some do not allow you to specify more than one listener. Only provided when detail level is EXTENDED.

name [string(100)]
A user-friendly name for the load balancer.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the load balancer is registered.

owningGroups [list(Group)]
The groups who have ownership over this load balancer. The current Enstratius release supports 0 or 1 group owner over a load balancer. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying load balancers.

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owningUser [read-only, extended(User), nullable]

The user who is the owner of record of this load balancer. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100)]

The unique ID with the cloud provider for this load balancer.

region [read-only, extended(Region)]

The region in which this load balancer operates.

servers [list(Server), nullable]

The list of servers in the load balancer pool. Only provided when detail level is EXTENDED.

Query Parameters

If no query parameters are specified, all visible load balancers are returned.

`accountId [number]`

Limits the list of load balancers in the specified account.

`activeOnly [boolean]`

Limits the list of load balancers to only active load balancers.

`regionId [number]`

Limits the list of load balancers in the specified region.

Updates

The following PUT operations are supported:

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`addDataCenter`

Requires: `dataCenters`

Optional: none

Response: 204

Adds the specified data center(s) into the list of data centers supported by this load balancer.

`addServer`

Requires: `servers`

Optional: none

Response: 204

Adds the specified server(s) to the load balancing pool. The server must be located in a data center supported by this load balancer.

`removeDataCenter`

Requires: `dataCenters`

Optional: none

Response: 204

Removes the specified data center(s) from the list of data centers supported by this load balancer

`removeServer`

Requires: `servers`

Optional: none

Response: 204

Removes the specified server(s) from the load balancing pool.

Errors

No special errors exist for load balancers.

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Examples

GET (JSON)

```
GET /api/enstratus/2012-06-15/network/LoadBalancer/1000 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 537MtGjkrUn1kF993aYj9YTXF+XyuxEUYPyNa9RMMLI=
x-esauth-timestamp: 1337181680929
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x6d07627
x-es-version: 2012-06-15
x-es-pagination: msp0xb58034
x-es-page: 1
x-es-last-page: true
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 16 May 2012 15:21:21 GMT

{
  "loadBalancers":
  [
    {
      "region":{"regionId":741},
      "budget":100,
      "status":"ACTIVE",
      "loadBalancerId":1000,
      "label":"tagblue",
      "customer":{"customerId":100},
      "cnameBased":true,
      "owningGroups":[{"groupId":1}],
      "address":"QA-Load-Balancer-1770973838.us-east-1.elb.amazonaws.com",
      "description":"ELB for testing with the QA Cluster",
      "name":"QA-Load-Balancer",
      "providerId":"QA-Load-Balancer",
      "cloud":{"cloudId":1},
      "owningAccount":{"accountId":100}
    },
  ]
}
```

GET (XML)

```
GET /api/enstratus/2012-06-15/network/LoadBalancer/1000 HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: +muOkTEqpoMzxP6caAo90558Liye7TnWxgF/Si1lNNQ=
x-esauth-timestamp: 1337181681630
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-request: msp0x6d08065
x-es-version: 2012-06-15
x-es-pagination: msp0xb59101
x-es-page: 1
x-es-last-page: true
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Wed, 16 May 2012 15:21:22 GMT

<loadBalancers>
  <loadBalancer loadBalancerId="1000" budget="100" status="ACTIVE"
                removable="true" >
    <name>QA-Load-Balancer</name>
    <label>tagblue</label>
    <description>ELB for testing with the QA Cluster</description>
    <address>QA-Load-Balancer-1770973838.us-east-1.elb.amazonaws.com</address>
    <cnameBased>true</cnameBased>
    <providerId>QA-Load-Balancer</providerId>
    <owningAccount accountId="100" />
    <customer customerId="100" />
    <cloud cloudId="1" />
    <region regionId="741" />
    <owningGroups>
      <group groupId="1" />
    </owningGroups>
  </loadBalancer>
</loadBalancers>
```

HEAD

```
HEAD /api/enstratus/2012-06-15/network/LoadBalancer?regionId=741 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: xQGKMf9/hGZDlhLl5uf84U4ekub7hZ9p2AACAG1B/1U=
x-esauth-timestamp: 1337181715747
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2012-06-15
x-es-request: msp0x6d0b951
x-es-count: 7
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Wed, 16 May 2012 15:21:56 GMT
```

POST (JSON)

```
POST /api/enstratus/2012-06-15/network/LoadBalancer HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: rD7+I5u/0DFZIBs/D3+nmi0RY3VlLLF/OWl+c6a6hDI=
x-esauth-timestamp: 1337218244834
x-es-details: basic
x-es-with-perms: false

{
  "addLoadBalancer":
  [
    {
      "region":{"regionId":741},
      "listeners":
      [
        {
          "protocol":"HTTP",
          "publicPort":9999,
          "privatePort":8080,
          "algorithm":"ROUND_ROBIN"
        }
      ],
      "budget":50420,
      "servers":[{"serverId":183571}],
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1337218238",
      "dataCenters":[{"dataCenterId":942}],
      "label":"red"
    }
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
x-es-request: msp0x71e1851
Content-Type: application/json;charset=UTF-8
Content-Length: 48
Date: Thu, 17 May 2012 01:30:45 GMT
```

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```
{"jobs":[{"jobId":101308,"status":"RUNNING"}]}
```

POST (XML)

```
POST /api/enstratus/2012-06-15/network/LoadBalancer HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 3ZVDbYEqFv9S7Is3i7HEC5DKVr5K/tiN16+9wYMFx1w=
x-esauth-timestamp: 1337218799110
x-es-details: basic
x-es-with-perms: false

<addLoadBalancer>
  <loadBalancers>
    <loadBalancer budget="50420">
      <name>UT testCreateLoadBalancerWithXML-1337218797</name>
      <description>
        testCreateLoadBalancerWithXML Enstratius Unit Test
      </description>
      <label>red</label>
      <region regionId="741"/>
      <dataCenters><dataCenter dataCenterId="942" /></dataCenters>
      <server serverId="183579" />
      <listeners>
        <listener>
          <protocol>HTTP</protocol>
          <algorithm>ROUND_ROBIN</algorithm>
          <publicPort>9999</publicPort>
          <privatePort>8080</privatePort>
        </listener>
      </listeners>
    </loadBalancer>
  </loadBalancers>
</addLoadBalancer>
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
x-es-request: msp0x7248275
Content-Type: application/xml;charset=UTF-8
Content-Length: 60
Date: Thu, 17 May 2012 01:39:58 GMT

<jobs><job jobId="101311" status="RUNNING" /></jobs>
```

PUT (JSON)

```
PUT /api/enstratus/2012-06-15/network/LoadBalancer/54604 HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: Og4YwCoX7xcyulyZDgBJ9H8V2f5Rpi7Sgxmbd/uyW74=
x-esauth-timestamp: 1337222220054
x-es-details: basic
x-es-with-perms: false

{"addServer":[{"servers":[{"serverId":183645}]}]}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
x-es-request: msp0x73e1959
Date: Thu, 17 May 2012 02:36:59 GMT
```

PUT (XML)

```
PUT /api/enstratus/2012-06-15/network/LoadBalancer/54605 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: 6ckKrE5NmWC9MC3iHS3CckPJL9Jz5AXe4KvkyT9sPXw=
x-esauth-timestamp: 1337223146900
x-es-details: basic
x-es-with-perms: false

<addServer>
  <loadBalancers>
    <loadBalancer>
      <servers><server serverId="183666" /></servers>
    </loadBalancer>
  </loadBalancers>
</addServer>
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
x-es-request: msp0x7496939
Date: Thu, 17 May 2012 02:52:26 GMT
```

DELETE

```
DELETE /api/enstratus/2012-06-15/network/LoadBalancer/54602?reason=UT+execution
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: ZIHAWGNOFRSCSDIDTPIS
x-esauth-signature: Y67Y1XENFxWyk819UBiU/1aaVqxbZqclLknRSXiwvLE=
x-esauth-timestamp: 1337219615772
x-es-details: basic
x-es-with-perms: false
```

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```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
x-es-request: msp0x72da627
Date: Thu, 17 May 2012 01:53:42 GMT
```

Network

Enstratius models two distinct kinds of networks as network resources:

- Standard networks such as an AWS VPC or Cloud.com network that represent a network as known to a cloud provider
- Overlay networks such as a VPNCubed, CloudSwitch, or vCider network in which the network is an overlay on top of the cloud provider's network

Enstratius works to manage these distinct networks so that other parts of your cloud infrastructure do not need to know which is which.

Whether or not your cloud has a "network" concept, you can always create overlay networks. The cloud must, however, specifically support standard networks in order for you to reference them in a specific cloud. Furthermore, not all clouds support dynamic creation of standard networks. Enstratius provides plenty of meta-data so you can dynamically discover what you can do with different clouds.

Version

Introduced: 2011-07-15
Status: Active

Changes:

2013-01-29

Fixed an issue for calls that did not include a budget.

Supported Methods

- GET

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- HEAD
- POST
- PUT
- DELETE

Attributes

budget [number]
The ID of the billing code against which any costs associated with this network are billed.

networkId [read-only, number]
The unique Enstratius ID for this network.

removable [read-only, boolean]
Indicates whether or not this network can be removed.

status [read-only, ACTIVE|INACTIVE]
The current status of the network.

Elements

agentCommunication [read-only, PUBLIC|PRIVATE]
Indicates whether communication between Enstratius and the agents on the guest operating systems in the cloud occur over a public or private channel.

allowSubnetCreation [read-only, boolean]
Indicates whether or not you can POST to the Subnet resource to dynamically create subnets against this network.

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canHaveSubnets [read-only, boolean]

Indicates whether the technology behind this network supports subdivision into subnets. Just because the technology supports subnets, however, does not mean you can dynamically create them. You must check the `allowsSubnetCreation` attribute to see if that is possible.

createdTimestamp [read-only, datetime]

Either the time when this network was first recognized by Enstratius or the original creation date, depending on the underlying cloud. Where the cloud provides Enstratius with this information, this value will represent the original creation time. Otherwise it represents the Enstratius creation time.

cloud [read-only, extended(Cloud)]

The cloud in which this network operates.

dataCenter [extended(DataCenter), nullable]

The data center (if any) to which this network is tied. Different clouds will tie networks at the region or data center level.

description [string(255)]

The description of the network established in Enstratius.

dnsServers [list(string)]

A list of DNS servers configured for this network.

flat [read-only, boolean]

Indicates whether this network is a flat network (like the normal AWS configuration) or is part of a more fine-grained network hierarchy.

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guid [read-only, guid]
The permanent unique URI identifier for this network in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this network.

lastModifiedTimestamp [read-only, datetime]
The time when a modification was last made to this network.

name [string(100)]
A user-friendly name for the network.

networkAddress [write-once, string]
An IPv4 CIDR representing the block of IP addresses hosted in this network.

networkType [read-only, STANDARD|OVERLAY]
Identifies what kind of network is represented by this resource.

ntpServers [list(string)]
A list of NTP servers configured for this network.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the network is registered.

owningGroups [list(Group)]
The groups who have ownership over this network. The current Enstratius release supports 0 or 1 group owner over a network. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying networks.

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owningUser [read-only, extended(User), nullable]

The user who is the owner of record of this network. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100), nullable]

The unique ID with the cloud provider for this network. Unlike the provider ID values most other cloud objects in Enstratius, this value may be nullable when the network is an overlay network.

publiclyAddressable [read-only, boolean]

identifies whether the resources in this network can be accessed from the public Internet.

region [read-only, extended(Region)]

The region in which this network operates.

subnets [list(Subnet)]

The list of subnets associated with this network.

Query Parameters

You specify a dataCenterId, regionId, or accountId when listing networks.

`accountId [number]`

Limits the list of networks to those in the specified account.

`activeOnly [boolean]`

Limits the list of networks to only active networks.

`dataCenterId [number]`

Limits the list of networks to those in the specified data center.

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`regionId [number]`

Limits the list of networks to those in the specified region.

Delete Parameters

You may specify a reason as a parameter when de-activating a network.

`reason [string, optional]`

Specifies a reason for the change that will be tracked within Enstratius.

Updates

The following PUT operations are supported:

`changeBudget`

Requires: `budget`

Optional: none

Permissions: NETWORK/ManageBilling

Response: 204

Changes the budget against which any costs associated with this network are tracked. In addition to needing NETWORK/ManageBilling rights, the keys making this change must also have the right to bill against the old and the new budgets.

`changeOwnership`

Requires: none

Optional: `owningGroups, owningUser`

Permissions: NETWORK/ManageOwnership

Response: 204

Changes the ownership of this network. If being done by user keys, only the group may be changed and the user making the change must belong to all old and new groups.

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`describeNetwork`

Requires: none

Optional: `description, label, name`

Permissions: NETWORK/Configure

Response: 204

Changes the descriptive information for the network.

Errors

No special errors exist for network.

Examples

GET (JSON)

```
GET /api/enstratus/2011-07-15/network/Network/701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: opdjv7hoWIn45SdQJH1xZCJaPfLt0yOBu7XV59xPIOE=
x-esauth-timestamp: 1311627134786
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 25 Jul 2011 20:52:14 GMT

{
  "networks":
  [
    {"region":{"regionId":741},
     "lastModifiedTimestamp":"2011-07-25T20:20:09.154+0000",
     "budget":111,
     "networkType":"STANDARD",
     "ntpServers":["10.2.5.1"],
     "networkId":701,
     "removable":true,
     "agentCommunication":"PUBLIC",
     "customer":{"customerId":100},
     "owningGroups":[{"groupId":1}],
     "description":"test",
```

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```
      "name":"gregTest",
      "publiclyAddressable":false,
      "canHaveSubnets":true,
      "owningAccount":{"accountId":100},
      "createdTimestamp":"2011-07-12T21:42:39.431+0000",
      "status":"ACTIVE",
      "flat":false,
      "networkAddress":"192.168.1.0/24",
      "label":"blue",
      "guid":"/customer/100/cloud/1/100/region/741/network/701",
      "providerId":"vpc-a35a09ca",
      "cloud":{"cloudId":1},
      "owningUser":{"userId":2370},
      "allowSubnetCreation":true
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-07-15/network/Network/701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: UqWyHrGflReRNa/6okWTQiVNazkvyNEy6ihC90x+6Sc=
x-esauth-timestamp: 1311531929913
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 24 Jul 2011 18:25:29 GMT

<networks>
  <network networkId="701" budget="111" status="ACTIVE" removable="true" >
    <guid>/customer/100/cloud/1/100/region/741/network/701</guid>
    <agentCommunication>PUBLIC</agentCommunication>
    <name>regTest</name>
    <label>blue</label>
    <canHaveSubnets>true</canHaveSubnets>
    <allowSubnetCreation>true</allowSubnetCreation>
    <flat>false</flat>
    <publiclyAddressable>false</publiclyAddressable>
    <description>test</description>
    <providerId>vpc-a35a09ca</providerId>
    <createdTimestamp>2011-07-12T21:42:39.431+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-07-24T18:22:38.008+0000</lastModifiedTimestamp>
```

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```
    <networkAddress>192.168.1.0/24</networkAddress>
    <ntpServers>
      <ntpServer>10.2.5.1</ntpServer>
    </ntpServers>
    <networkType>STANDARD</networkType>
    <owningAccount accountId="100 />
    <cloud cloudId="1" />
    <region regionId="741" />
    <owningUser userId="2370" />
    <owningGroup groupId="1" />
  </network>
</networks>
```

HEAD

```
HEAD /api/enstratus/2011-07-15/network/Network?regionId=741 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: ccLfSsn89ZKyfbtqivLnIXbujieI6zlvol7dJh25unQ=
x-esauth-timestamp: 1311531930831
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
x-es-count: 2
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sun, 24 Jul 2011 18:25:30 GMT
```

POST

```
POST /api/enstratus/2011-07-15/network/Network HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: 9p2PP1XG6sI2Q36Y29M1YCJiOJcq74We4pfK14tTbKU=
x-esauth-timestamp: 1311618733110
x-es-details: basic
x-es-with-perms: false

{
  "addNetwork":
  [
    {"region":{"regionId":741},
     "budget":100,
     "owningGroups":[{"groupId":186}],
     "ntpServers":["192.168.32.12"],
```

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```
      "description":"Created by the Enstratius unit tests.",
      "name":"Unit Test 1311618733",
      "networkAddress":"192.168.32.0/24",
      "label":"red",
      "dnsServers":["192.168.32.13"]}
  ]
}
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 47
Date: Mon, 25 Jul 2011 20:51:42 GMT

{"jobs":[{"jobId":71747,"status":"RUNNING"}]}
```

PUT

DELETE

```
DELETE
/api/enstratus/2011-07-15/network/Network/701?reason=Enstratius+Unit+Test
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: ZqCMNG8Tqj5D5QUb8dJnJfaxRgDUXdDxPrvmpU1IU9Q=
x-esauth-timestamp: 1311627136860
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 202 Accepted
Server: Apache-Coyote/1.1
Content-Length: 47
Date: Mon, 25 Jul 2011 20:52:16 GMT

{"jobs":[{"jobId":71749,"status":"RUNNING"}]}
```

PublicIpPool

When allocating Public IP addresses to virtual machines, certain clouds support IP Pooling. This resource can be used to request the allocation of new pools for a given cloud network

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and will also indicate which IPs within the pool have already been associated with a virtual machine.

Version

Introduced: 2013-03-13
Status: Active

Supported Methods

- GET
- HEAD
- POST

Attributes

networkDefault [read-only, boolean]
Indicates whether the given block is the default for its network.

networkId [read-only, number]
The ID of the network to which the pool belongs.

publicIpPoolId [read-only, string(100)]
The unique identifier for this pool.

Elements

staticIps [list(ipAddress)]
The static (public) IPs contained within the pool (also indicates whether the IPs are associated with a virtual machine).

Query Parameters

If no query parameters are specified, all visible pools are returned.

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`networkId [number]`

Limits the list of servers to the specified network.

Updates

There are no updates allowed on Public IP Pools.

Errors

There are no unique errors associated with Public IP Pools.

Examples

StaticIpAddress

A Static IP Address is an IP Address that is publicly accessible to the internet. Certain clouds require a static IP to be assigned to a Server or a Gateway before the virtual machine can be accessed over an internet connection.

Version

Introduced: 2013-01-29

Status: Active

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

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Attributes

budget [number]
The ID of the billing code against which any costs associated with this IP address are billed.

removable [read-only, boolean]
Indicates whether this IP address can be dissociated from a server.

staticIPAddressId [read-only, string(100)]
The unique identifier for this static IP address.

Elements

address [read-only, string(15)]
The value of the IP address.

providerId [read-only, string(100)]
The cloud provider's unique ID for the IP address.

serverId [read-only, string(100)]
The unique identifier for the server to which the IP address is associated (-1 indicates no association).

Query Parameters

If no query parameters are specified, all visible Static IP Addresses are returned.

`regionId [number]`
Limits the list of IP Addresses to the specified region.

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`serverId [number]`

Limits the list of IP Addresses to those associated with the specified server.

`serviceId [number]`

Limits the list of IP Addresses to the specified service.

Updates

The following PUT operations are supported:

`attachIpAddress`

Requires: `serverId`

Optional: none

Permissions: SERVER/Configure

Response: 204

Associates the Static IP Address with the specified Server.

`releaseIpAddress`

Requires: `none`

Optional: reason

Permissions: SERVER/Configure

Response: 204

Removes the association between the Static IP Address and the specified Server.

Errors

There are no unique errors associated with Static IP Addresses.

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Examples

Subnet

A subnet is a segmentation of a Network into which various resources may be deployed. Not all clouds or networks support subnets, so you should check with the meta-data associated with a network before trying to create a subnet.

Version

Introduced: 2011-07-15

Status: Active

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

Attributes

`budget [number]`

The ID of the billing code against which any costs associated with this subnet are billed.

`subnetId [read-only, number]`

The unique Enstratius ID for this subnet.

`removable [read-only, boolean]`

Indicates whether or not this subnet can be removed.

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status [read-only, ACTIVE|INACTIVE]
The current status of the subnet.

Elements

createdTimestamp [read-only, datetime]
Either the time when this subnet was first recognized by Enstratius or the original creation date, depending on the underlying cloud. Where the cloud provides Enstratius with this information, this value will represent the original creation time. Otherwise it represents the Enstratius creation time.

cloud [read-only, extended(Cloud)]
The cloud in which this subnet operates

customer [read-only, extended(Customer)]
The customer to which the subnet belongs.

dataCenter [extended(DataCenter), nullable]
The data center (if any) to which this subnet is tied. Different clouds will tie networks at the region or data center level. If the network governing this subnet is data-center constrained, then the subnet will have a data center value.

description [string(255)]
The description of the subnet established in Enstratius.

guid [read-only, guid]
The permanent unique URI identifier for this subnet in Enstratius.

label [enumeration(Label), nullable]
A label assigned to this subnet.

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lastModifiedTimestamp [read-only, datetime]
The time when a modification was last made to this subnet.

name [string(100)]
A user-friendly name for the subnet.

network [write-once, extended(Network)]
The network to which this subnet belongs.

networkAddress [write-once, string]
An IPv4 CIDR representing the block if IP addresses hosted in this subnet.

owningAccount [read-only, extended(Account)]
The Enstratius account under which the subnet is registered.

owningGroups [list(Group)]
The groups who have ownership over this subnet. The current Enstratius release supports 0 or 1 group owner over a load balancer. In a future release, however, Enstratius will support multiple owning groups and this structure reflects that capability. Until that time, you should thus submit one or zero groups when creating/modifying subnets.

owningUser [read-only, extended(User), nullable]
The user who is the owner of record of this subnet. The owner may be null in cases of auto-discovery or certain automated scenarios.

providerId [read-only, string(100), nullable]
The unique ID with the cloud provider for this subnet. Unlike the provider ID values most other cloud objects in Enstratius, this value may be nullable. The reason is that the subnet may belong to an overlay network and thus not technically be a cloud resource.

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region [read-only, extended(Region)]

The region in which this subnet operates.

Query Parameters

You must minimally provide a network query parameter when listing subnets.

`networkId [number]`

Limits the list of subnets to those in the specified network.

`activeOnly [boolean]`

Limits the list of subnet to only active subnets.

Updates

The following PUT operations are supported:

`changeBudget`

Requires: `budget`

Optional: none

Permissions: SUBNET/ManageBilling

Response: 204

Changes the budget against which any costs associated with this subnet are tracked. In addition to needing SUBNET/ManageBilling rights, the keys making this change must also have the right to bill against the old and the new budgets.

`changeOwnership`

Requires: none

Optional: `owningGroups, owningUser`

Permissions: SUBNET/ManageOwnership

Response: 204

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Changes the ownership of this subnet. If being done by user keys, only the group may be changed and the user making the change must belong to all old and new groups.

`describeSubnet`

Requires: none

Optional: `description, label, name`

Permissions: SUBNET/Configure

Response: 204

Changes the descriptive information for the subnet.

Errors

No special errors exist for subnets.

Examples

GET (JSON)

```
GET /api/enstratus/2011-07-15/network/Subnet?networkId=701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: KNXSEBLDYUITQTQNVIGS
x-esauth-signature: f5IybucS/p3PuZWR2QNisRdTyHMY3xrUU/Ml6Ic2fl8=
x-esauth-timestamp: 1311532512618
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-07-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 24 Jul 2011 18:35:13 GMT

{"subnets":
  [
    {"region": {"regionId":741},
     "budget":111,
     "lastModifiedTimestamp":"2011-07-15T22:50:22.238+0000",
     "createdTimestamp":"2011-07-15T22:50:22.238+0000",
     "status":"ACTIVE",
     "networkAddress":"192.168.1.0/28",
     "label":"blue",
```

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```
      "dataCenter":{"dataCenterId":942},
      "subnetId":200,
      "network":{"networkId":701},

   "guid":"/customer/100/cloud/1/100/region/741/dc/942/network/701/subnet/200",
      "description":"subnet-dacc9eb3",
      "name":"subnet-dacc9eb3",
      "providerId":"subnet-dacc9eb3",
      "cloud":{"cloudId":1},
      "owningAccount":{"accountId":100},
      "owningGroups":[{"groupId":1}]
     }
   ]
  }
```


HEAD

POST

PUT

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DELETE

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PLATFORM API

The Enstratius platform API in the */api/enstratus/VERSION/platform* namespace provides access to all Platform as a Service assets in supported clouds.

Distribution

A distribution is a CDN distribution that enables you to publish certain content to global endpoints by placing it into cloud storage and having the cloud CDN replicate it.

Not yet implemented.

KeyValueDatabase

A key/value database is a database as a service offering based on the key/value model. Examples of a key/value database include Amazon SimpleDB.

Not yet implemented.

MessageQueue

A cloud-based message queue in a message queue service. Messages queues enable you to push short messages for consumptions by subscribers polling the queue.

Not yet implemented.

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PushNotificationTopic

A push notification topic is a notification service in which messages may be published and are subsequently pushed out to subscribers.

Not yet implemented.

RelationalDatabase

A relational database is a database as a service offering supporting a relational model. Examples of relational database services include Amazon RDS and Microsoft SQL Azure.

RelationalDatabaseProduct

Represents a product with costs from a cloud relational database vendor. Enstratius maps RelationalDatabase instances to products for the purpose of calculating chargebacks. A relational database product will map to one or more cloud provider definitions of their product.

Version

Introduced: 2011-12-15

Status: Active

Supported Methods

- GET
- HEAD

Attributes

`productId [read-only, number]`

The unique ID in Enstratius for this relational database product.

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status [read-only, ACTIVE|INACTIVE]
The current status of the product.

Elements

architecture [read-only, enum(Architecture)]
The underlying CPU architecture of this database server.

cloud [read-only, extended(Cloud)]
The cloud for which this product operates.

coreCount [read-only, number]
The number of CPU cores allocated to your database environment. This value should not be relied upon to be entirely accurate.

cpuInGHz [read-only, number]
The speed of the CPUs allocated to your database environment. This value should not be relied upon to be entirely accurate.

customPricing [read-only, boolean]
Indicates whether or not this pricing reflects the standard retail rates from the cloud provider.

description [read-only, string(10000)]
A long description for this product.

engine [read-only, enum(DatabaseEngine)]
The database engine represented by this product.

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hourlyPricing [read-only, complex(Money)]
The hourly rate the cloud provider charges for having a relational database provisioned.

ioPricing [read-only, complex(Money)]
The rate charged by the cloud provider for data going in and out of the cloud to this database. The rate is depends on the number of units specified in `ioUnits`.

ioUnits [read-only, number]
The number of I/O units reflected in the I/O pricing.

maximumStorageInGb [read-only, number]
The amount of storage up to which you may have allocated to be reflected by this product.

memoryInGb [read-only, number]
The amount of RAM allocated to this virtual database server. This value should not be relied upon to be entirely accurate.

minimumStorageInGb [read-only, number]
The amount of storage you must have allocated to receive the pricing reflected in this product.

name [read-only, string(100)]
A user-friendly name to describe this product.

region [read-only, extended(Region)]
A region for which this product is good.

providerId [read-only, string(100)]
How this product is identified to the cloud provider. Note that this value will uniquely identify something with the cloud provider, but it may not map in a one-to-one fashion with

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what Enstratius considers an RDBMS product. In other words, there may be multiple Enstratius RelationalDatabaseProduct instances with the same provider ID.

`storagePricing [read-only, complex(Money)]`

The rate per `storageUnits` charged for the storage allocated for this relational database product.

`storageUnits [read-only, number]`

The number of storage units reflected in the storage pricing.

Query Parameters

GET and HEAD operations require both a regionId and an engine.

`engine [enum(DatabaseEngine)]`

The database engine for which you want a product listing.

`regionId [number]`

The region for which you want products.

Updates

No updates are currently allowed. In the future, we will add support for on-premise customers to manage their RDBMS product listings as well as for SaaS customers to define their own chargebacks.

Errors

No special error considerations.

Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/platform/RelationalDatabaseProduct/100031
HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: qCLsSXUEpL+paHm0KAAOrL7OpuZEhRCfr/25Id++vgU=
x-esauth-timestamp: 1324253417971
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 19 Dec 2011 00:10:17 GMT

{"rdbmsProducts":
  [
    {
      "memoryInGb":1.7,
      "region":{"regionId":52701},
      "status":"ACTIVE",
      "engine":"MYSQL55",
      "maximumStorageInGb":0,
      "architecture":"I64",
      "coreCount":1,
      "productId":100031,
      "ioUnits":1000000,
      "minimumStorageInGb":5,
      "storageUnits":1,
      "customPricing":false,
      "cpuInGHz":1,
      "ioPricing":{"value":0.10,"currency":"USD"},
      "description":"64-bit, 1.7GB RAM, 1x1.0 GHz CPU Core",
      "storagePricing":{"value":0.10,"currency":"USD"},
      "name":"Small DB Instance",
      "providerId":"db.m1.small",
      "cloud":{"cloudId":111},
      "hourlyPricing":{"value":0.11,"currency":"USD"}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/platform/RelationalDatabaseProduct/100031
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: weRjuO4yqfl4AS/cM4K+x6r14ID8+xMmsSvkEyHjZ/I=
x-esauth-timestamp: 1324253418699
```

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```
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Mon, 19 Dec 2011 00:10:19 GMT

<rdbmsProducts>
  <rdbmsProduct productId="100031" status="ACTIVE">
    <name>Small DB Instance</name>
    <description>64-bit, 1.7GB RAM, 1x1.0 GHz CPU Core</description>
    <providerId>db.m1.small</providerId>
    <engine>MYSQL55</engine>
    <coreCount>1</coreCount>
    <cloud cloudId="111" />
    <region regionId="52701" />
    <architecture>I64</architecture>
    <customPricing>false</customPricing>
    <cpuInGHz>1.0</cpuInGHz>
    <hourlyPricing currency="USD">0.11</hourlyPricing>
    <ioPricing currency="USD">0.10</ioPricing>
    <ioUnits>1000000</ioUnits>
    <storagePricing currency="USD">0.10</storagePricing>
    <storageUnits>1.0</storageUnits>
    <maximumStorageInGb>0</maximumStorageInGb>
    <minimumStorageInGb>5</minimumStorageInGb>
    <memoryInGb>1.7</memoryInGb>
  </rdbmsProduct>
</rdbmsProducts>
```

HEAD

```
HEAD
/api/enstratus/2011-12-15/platform/RelationalDatabaseProduct?regionId=52701&eng
ine=MYSQL55 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: dl1lHb11pT4CzDf7acW8lhuMD7cSfBOIK8qFPVabd88=
x-esauth-timestamp: 1324253419506
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
```

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```
x-es-count: 6
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Mon, 19 Dec 2011 00:10:19 GMT
```

StorageObject

A blob or container in which blobs are stored in a cloud storage system. Enstratius currently provides no mechanism for uploading or downloading files. This feature will be added in a later release.

NOTE: Storage objects always provider their permissions and do not provide extended details.

Version

Introduced: 2010-02-24

Status: Active

Changes:

2011-12-15

Budget is now an attribute rather than an element in order to maintain consistency with the rest of the API.

There is no `describeStorageObject` PUT. This is now `renameObject`.

Supported Methods

- GET
- HEAD
- POST
- PUT
- DELETE

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Attributes

budget [number, nullable]
The budget to which the data stored in a container/bucket is billed against. Not present if the object isn't a container/bucket.

storageObjectId [read-only, number]
The unique ID of this storage object.

type [read-only, blob|container]
The type of storage object.

Elements

cloud [extended(Cloud)]
The cloud in which the object is stored.

container [extended(StorageObject)]
The container in which this storage object rests.

createdTimestamp [read-only, datetime]
The time when this storage object was initially created in cloud storage.

label [enumeration(Label), nullable]
A label for displaying the storage object.

lastModifiedTimestamp [read-only, datetime]
The time when this storage object last had changes made to it.

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name [latin(100)]

The user-friendly name you use to identify the storage object.

owningGroup [extended(Group), nullable]

The group owning this container and governing permissions on the container. This value is not present in objects of type “blob”.

owningUser [extended(User), nullable]

The user who owns this storage object.

providerId [read-only, string(255)]

The unique identifier in the cloud storage system for this storage object.

readAny [boolean, nullable]

Indicates that anyone with access to this account can read items stored in the container. Only for containers.

readCode [boolean, nullable]

Indicates that anyone with provisioning rights to the billing code under which this container is billed can read items stored in the container. Only for containers.

readGroup [boolean, nullable]

Indicates that anyone in the same group owning this container can read items stored in the container. Only valid for containers.

readPublic [boolean, nullable]

Indicates that items in this container should be made public to the entire world. Only valid for containers.

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region [read-only, extended(Region)]
The region in which this object is stored.

size [read-only, number, nullable]
The file size for the storage object. Only valid for objects of type “blob”.

writeAny [boolean, nullable]
Indicates that anyone with access to this account can write to this container. Valid only for containers.

writeCode [boolean, nullable]
Indicates that anyone with provisioning rights to the billing code under which this container is billed can write to the container. Valid only for containers.

writeGroup [boolean, nullable]
Indicates that anyone in the same group owning this container can write to this container. Valid only for containers.

Query Parameters

GET and HEAD operations require either a region ID and optionally a container ID.

`containerId [optional, number]`
Provides the contents of the specified container.

`regionId [number]`
Displays the root containers for the specified region.

DELETE operations on containers support two optional parameters:

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`clearContents [optional, boolean]`

Will cause all blob contents of the container to be deleted. Default is false.

`recursive [optional, boolean]`

Causes Enstratius to recursively delete all contents and sub-containers and their contents. Default is false.

Updates

The following PUT operations are supported:

`changePermissions`

Requires: `readAny, readCode, readGroup, readPublic, writeAny, writeCode, writeGroup`

Optional: none

Success: 204

Sets the quotas for this billing code. If you wish to clear a quota (make it unlimited), you should specify an empty tag for that quota.

`renameObject`

Requires: `name`

Optional: none

Success: 204

Renames the object.

Creating Objects

You create containers via the makeContainer POST action. Uploading files happens through a separate interface that enables the posting of binary objects

Errors

There are no unique errors associated with storage containers.

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Examples

GET (JSON)

```
GET /api/enstratus/2011-12-15/platform/StorageObject?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: ket4eadrTQicOAzOvzB4wGFIBqjvu2i1Tpcxn2TAe1o=
x-esauth-timestamp: 1324171943466
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 18 Dec 2011 01:32:24 GMT

{"storageObjects":
  [
    {
      "region":{"regionId":52701},
      "lastModifiedTimestamp":"2011-12-16T16:10:40.000+0000",
      "budget":50200,
      "writeCode":true,
      "storageObjectId":154800,
      "writeGroup":true,
      "createdTimestamp":"2011-12-16T16:10:40.000+0000",
      "readPublic":false,
      "label":"gray",
      "type":"container",
      "readGroup":true,
      "readAny":true,
      "name":"utscripts",
      "providerId":"utscripts",
      "cloud":{"cloudId":111},
      "user":{"userId":53601},
      "writeAny":true,
      "readCode":true,
      "owningGroup":{"groupId":50200}
    }
  ]
}
```

GET (XML)

```
GET /api/enstratus/2011-12-15/platform/StorageObject?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
```

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```
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: Ecee8BBrR0M66IvxjPpdH76FMKgO88jN+cErYhAkzsc=
x-esauth-timestamp: 1324171944482
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
Content-Type: application/xml;charset=UTF-8
Transfer-Encoding: chunked
Date: Sun, 18 Dec 2011 01:32:24 GMT

<storageObjects>
  <storageObject storageObjectId="154800" type="container" budget="50200">
    <owningGroup groupId="50200" />
    <readAny>true</readAny>
    <readCode>true</readCode>
    <readGroup>true</readGroup>
    <readPublic>false</readPublic>
    <writeAny>true</writeAny>
    <writeCode>true</writeCode>
    <writeGroup>true</writeGroup>
    <name>utscripts</name>
    <label>gray</label>
    <createdTimestamp>2011-12-16T16:10:40.000+0000</createdTimestamp>
    <lastModifiedTimestamp>2011-12-16T16:10:40.000+0000</lastModifiedTimestamp>
    <providerId>utscripts</providerId>
    <cloud cloudId="111" />
    <region regionId="52701" />
    <owningUser userId="53601" />
  </storageObject>
</storageObjects>
```

HEAD

```
HEAD /api/enstratus/2011-12-15/platform/StorageObject?regionId=52701 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: nzBpEMtjsfgpfI+N2ccUdWMyWMHQL7fz/xL10u0vPaI=
x-esauth-timestamp: 1324171946582
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
x-es-version: 2011-12-15
```

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```
x-es-count: 1
Content-Type: application/json;charset=UTF-8
Content-Length: 0
Date: Sun, 18 Dec 2011 01:32:26 GMT
```

POST (JSON)

```
POST /api/enstratus/2011-12-15/platform/StorageObject HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: 6RvL0HhHpV2j83PoVH0aAO9H4NXCBVIJ/OhFQeDKpYw=
x-esauth-timestamp: 1324177522304
x-es-details: basic
x-es-with-perms: false

{"makeContainer":
  [
    {
      "region":{"regionId":52701},
      "budget":50200,
      "name":"esut1324177520690",
      "label":"yellow",
      "findFreeName":false
    }
  ]
}
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/json;charset=UTF-8
Content-Length: 49
Date: Sun, 18 Dec 2011 03:05:26 GMT

{"storageObjects":
  [
    {
      "storageObjectId":155100
    }
  ]
}
```

POST (XML)

```
POST /api/enstratus/2011-12-15/platform/StorageObject HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: lFOULafI2gYdUTNXL2LVuY/aEltlCHbl5rliZ3mpGbc=
```

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```
x-esauth-timestamp: 1324177526954
x-es-details: basic
x-es-with-perms: false

<makeContainer>
  <storageObjects>
    <storageObject budget="50200">
      <name>esut1324177526954</name>
      <findFreeName>false</findFreeName>
      <region regionId="52701" />
      <label>yellow</label>
    </storageObject>
  </storageObjects>
</makeContainer>
```

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Type: application/xml;charset=UTF-8
Content-Length: 83
Date: Sun, 18 Dec 2011 03:05:28 GMT

<storageObjects>
  <storageObject storageObjectId="155101" />
</storageObjects>
```

PUT (JSON)

```
PUT /api/enstratus/2011-12-15/platform/StorageObject/155109 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: oyPXIs0IH1enmrUQaJ652Nnsyvr9aSPA0/1qZbkmvpo=
x-esauth-timestamp: 1324178304823
x-es-details: basic
x-es-with-perms: false

{"changePermissions":[{"readAny":true}]}
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 18 Dec 2011 03:18:25 GMT
```

PUT (XML)

```
PUT /api/enstratus/2011-12-15/platform/StorageObject/155110 HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/xml
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: SokvsF2sAA59yqfNAzIKC8kU/v2Zu2fM6GeK5QBk8VU=
x-esauth-timestamp: 1324178308881
```

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```
x-es-details: basic
x-es-with-perms: false

<changePermissions>
  <storageObjects>
    <storageObject>
      <readAny>true</readAny>
    </storageObject>
  </storageObjects>
</changePermissions>
```

DELETE

```
DELETE /api/enstratus/2011-12-15/platform/StorageObject/155102?reason=Unit+Test
HTTP/1.1
User-agent: Enstratius Test Case
Accept: application/json
x-esauth-access: LTODCYJPHYESNJLQCJER
x-esauth-signature: hNHf6BK7nLs2+hL44qpqwmoAHQZm79vhrsntJr6ITlM=
x-esauth-timestamp: 1324177530986
x-es-details: basic
x-es-with-perms: false
```

```
HTTP/1.1 204 No Content
Server: Apache-Coyote/1.1
Date: Sun, 18 Dec 2011 03:05:32 GMT
```

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COMPLEX DATA TYPES

This section describes the complex data types used inside the resources of the Enstratius API. A complex data type is an object with attributes that cannot be directly queried via the API. Instead, it represents a value inside one or more resources of the API.

AlertConfiguration

Configuration for alerts associated with resources in a specific cloud account.

Attributes

No attributes.

Elements

`alertIntervalInMinutes [number]`

Specifies the number of minutes between notifications for the same alert. For example, if a server is unreachable and this value is set to 5, you will receive a notification about it being unreachable once ever 5 minutes.

`allowIndividualEmailAlerts [boolean]`

Indicates whether users are able to set their own email alert configurations. If false, then the only email alerts sent are those to the `globalEmailAlertTarget`.

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allowIndividualSmsAlerts [boolean]

Indicates whether users are able to set their own SMS alert configurations. If false, then the only SMS alerts sent are those to the `globalSmsAlertTarget`.

globalEmailTarget [string(100), nullable]

When set, notifications associated with an alert having an alert level exceeding the `globalEmailThreshold` will automatically be routed to this email address.

globalEmailThreshold [number, nullable]

The threshold (on a scale between 0 and 11) for alert notifications to the global email target. If set to 0, all notifications for all alerts will go out to the global email target. If set to 11, none will go out.

globalSmsTarget [string(100), nullable]

When set, notifications associated with an alert having an alert level exceeding the `globalSmsThreshold` will automatically be routed to this SMS target.

globalSmsThreshold [number, nullable]

The threshold (on a scale between 0 and 11) for alert notifications to the global SMS target. If set to 0, all notifications for all alerts will go out to the global SMS target. If set to 11, none will go out.

notificationTargetId [number, nullable]

If not null, this value represents the unique ID push notification to which all alerts will be sent.

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stopAfterMinutes [number]

Specifies the number of minutes after an alert is raised until notifications are automatically silenced. For example, if a server is unreachable and this value is set to 60, you will receive notifications about it until 60 minutes have passed.

CloudSubscription

When an Account has been assigned to a cloud, that assignment includes a variety of subscription information. Some of this information is data you provide to help Enstratius talk to the cloud. Some of it is information Enstratius discovers from the cloud about its capabilities.

Attributes

accountNumber [write-once, string(100)]

The is the unique account number for your account with the cloud provider. The nature of this value is cloud-dependent. Once this account is configured, this value becomes read-only. Only one account in Enstratius may be associated with this account number in this cloud.

cloudId [write-once, number]

The Enstratius ID of the cloud to which your account is assigned. An account's association with a cloud may not be changed once it is set.

cloudSubscriptionId [read-only, number]

The unique ID of this subscription in Enstratius.

storageAccountNumber [write-once, string(100), nullable]

If your subscription has different authentication for compute and storage resources, this account number is the account number associated with the storage cloud.

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Elements

apiKeyId [write-only, string(255), nullable]
The API access key or user name for accessing your cloud account, depending on the underlying cloud. This may be the same as the account number if the underlying cloud does not support API keys and multi-user access to the same account.

assignablePrivateIpAddresses [read-only, boolean]
Indicates whether you can assign private IP addresses to servers via the API.

assignablePublicIpAddresses [read-only, boolean]
Indicates whether you can assign public IP addresses to servers via the API.

hasPublicImageLibrary [read-only, boolean]
Indicates that the underlying cloud has a public library from which you can launch servers.

ipAddressForwarding [read-only, boolean]
Indicates whether IP address forwarding is supported for IP addresses in this account. If true, that means you can leverage the IP address forwarding capabilities of Enstratius in this cloud. For example, you can forward port 80 on an IP address to port 8080 on a private address.

loadBalancerDataCenterLimited [read-only, boolean]
Indicates whether load balancers can be limited in the data centers they balance across. For example, in AWS, you can configure your load balancer to balance across only a specified set of data centers (availability zones). When false, a cloud load balancer does not care about what data centers.

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loadBalancerIpAddressAssigned [read-only, boolean]
Indicates whether the underlying cloud assigns an IP address to a load balancer or whether you are expected to provide an IP address as part of a create operation.

requestablePrivateIpAddresses [read-only, boolean]
Indicates whether you can request private IP addresses or address blocks via the API.

requestablePublicIpAddresses [read-only, boolean]
Indicates whether you can request public IP addresses or address blocks via the API.

secretKeySecret [write-only, string(255), nullable]
The secret key or password for accessing your cloud account via API.

subscribedAutoScaling [read-only, boolean]
Indicates that your account is subscribed for cloud-based auto-scaling support. Enstratius supports auto-scaling regardless of whether your cloud supports it or you are subscribed for the service.

subscribedBlobStore [read-only, boolean]
Indicates that your account is subscribed for blob storage services.

subscribedCdn [read-only, boolean]
Indicates that your account is subscribed for CDN services.

subscribedDns [read-only, boolean]
Indicates that your account is subscribed for DNS services.

subscribedEmail [read-only, boolean]
Indicates that your account is subscribed for email services.

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subscribedFirewall [read-only, boolean]
Indicates that your account is subscribed for firewall services.

subscribedImage [read-only, boolean]
Indicates that your account is subscribed for image services.

subscribedIpAddress [read-only, boolean]
Indicates that your account is subscribed for IP address services.

subscribedKeyValue [read-only, boolean]
Indicates that your account is subscribed for key/value database services.

subscribedLoadBalancer [read-only, boolean]
Indicates that your account is subscribed for load balancer services.

subscribedMessageQueue [read-only, boolean]
Indicates that your account is subscribed for message queue services.

subscribedPushNotifications [read-only, boolean]
Indicates that your account is subscribed for push notifications services.

subscribedRdbms [read-only, boolean]
Indicates that your account is subscribed for RDBMS services.

subscribedServer [read-only, boolean]
Indicates that your account is subscribed for server services.

subscribedSnapshot [read-only, boolean]
Indicates that your account is subscribed for volume snapshot services.

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subscribedVlan [read-only, boolean]
Indicates that your account is subscribed for VLAN services.

subscribedVolume [read-only, boolean]
Indicates that your account is subscribed for volume services.

supportsCustomImages [read-only, boolean]
Indicates whether the underlying cloud allows you to build your own images from running servers or via upload.

supportsHaRdbms [read-only, boolean]
Indicates whether the underlying cloud supports high-availability RDBMS instances.

supportsHypervisorAnalytics [read-only, boolean]
Indicates whether the underlying cloud provides access to operational analytics gathered via the hypervisor (e.g. AWS CloudWatch).

supportsNonHaRdbms [read-only, boolean]
Indicates whether the underlying cloud supports non-high-availability RDBMS instances.

supportsPrivateImageSharing [read-only, boolean]
Indicates whether the underlying cloud allows you to privately share your images with other accounts.

supportsPrivateSnapshotSharing [read-only, boolean]
Indicates whether the underlying cloud allows you to privately share your snapshots with other accounts.

supportsPublicImageSharing [read-only, boolean]
Indicates whether the underlying cloud allows you to share your images with the public.

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supportsPublicSnapshotSharing [read-only, boolean]
Indicates whether the underlying cloud allows you to share your snapshots with the public.

supportsRdbmsFirewalls [read-only, boolean]
Indicates whether the RDBMS support with your cloud provider includes support for RDBMS firewalls.

supportsRdbmsMaintenanceWindows [read-only, boolean]
Indicates whether RDBMS support in the underlying cloud includes pre-defined maintenance windows during which the cloud provider will perform maintenance.

supportsRdbmsSnapshots [read-only, boolean]
Indicates whether RDBMS support in the underlying cloud supports database snapshots.

supportsSshKeyBootstrapping [read-only, boolean]
Indicates whether root access to new virtual machines is bootstrapped via SSH key injection.

x509Cert [write-only, string(10000), nullable]
The public portion of an X509 key used for the cloud provider.

x509Key [write-only, string(10000), nullable]
The private portion of an X509 key used for the cloud provider. As of the writing of this document, this value is used only with AWS and Eucalyptus clouds.

CreditCard

A credit card used in billing. Note that some fields are masked for read operations.

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Attributes

No attributes.

Elements

creditCardNumber [masked-on-read, string(50)]

The number of the credit card without any formatting.

cvv2 [write-only, string(4)]

The CVV2 validation code for the credit card.

expirationYear [number]

The year when the credit card expires.

expirationMonth [number[1-12]]

The month when the credit card expires.

firstName [string(100)]

The first name or given name of the credit card holder.

lastName [string(100), nullable]

The last name or family name of the credit card holder.

DnsAutomation

Enstratius supports DNS automation for newly created servers in the cloud. This type represents the configuration for DNS automation.

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Attributes

dnsZoneId [number]

Specifies the DNS zone into which server DNS records are entered for new servers.

ttl [number]

A time-to-live value for the automated DNS records created by Enstratius.

Elements

No elements.

DnsRecord

A DNS record is an entry inside a cloud DNS zone.

Attributes

recordId [number]

The unique ID in Enstratius for the specified record.

ttl [number]

A record's time-to-live.

type [enumeration(DnsRecordType)]

A record type of this DNS entry.

Elements

name [string(255)]

The name of the record. For example, *www* or *www.example.com*.

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value [string(1000)]

The value for the record. For example, *192.168.1.1*.

Listener

A listener is a service mapping for a load balancer.

Attributes

No attributes.

Elements

algorithm [write-once, enumeration(Algorithm)]

The load balancing algorithm in force for this listener.

protocol [write-once, enumeration(LBProtocol)]

The network protocol supported by this listener

privatePort [write-once, number]

The private port to which traffic is routed on load balanced servers.

publicPort [write-once, number]

The public port on which this load balancer is listening.

Money

Represents an amount of money in a specific currency.

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Attributes

currency [string(3)]
A 3-digit ISO code representing the currency in which this money value is denominated.

Elements

value [number]
The value of this currency. In XML form, this is the body of the object.

Examples

```
“cost” : { “currency” : “USD”, “value” : 12.45 }
```

```
<cost currency=”USD”>12.45</cost>
```

NotificationsSetting

Represents a single setting for a given event type. Each notification setting comprises an event type, a target resource, and the settings that define what happens when something happens to a matching target resource. Target resources may be specific (like a specific server) or general (like all servers in this account).

Elements

eventType [enum(EventType)]
The type of event this setting matches.

notifyViaApi [boolean]
Indicates that any notifications matching this setting should be sent via API.

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notifyViaCloudNotificationService [boolean]
Indicates that any notifications matching this setting should be sent via a cloud notification service such as AWS SNS.

notifyViaEmail [boolean]
Indicates that any notifications matching this setting should be sent via email.

notifyViaScreen [boolean]
Indicates that any notifications matching this setting should appear on screen.

notifyViaSms [boolean]
Indicates that any notifications matching this setting should be sent via SMS.

severity [number, optional]
The minimum severity of a that a notification must have to match this setting. Only makes sense for ALARM event types.

targetAccountId [number]
The account ID for the target resource behind any matching notifications or -1 to indicate ANY account.

targetCloudId [number]
The cloud ID for the target resource behind any matching notifications or -1 to indicate ANY cloud.

targetCustomerId [number]
The customer ID for the target resource behind any matching notifications or -1 to indicate ANY customer.

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targetProviderRegionId [string(100)]

The provider region ID for the target resource behind any matching notifications or ANY to indicate ANY region.

targetResourceId [string(100)]

The resource ID for the target resource behind any matching notifications or ANY to indicate ANY resource of the same type.

targetResourceType [string(100)]

The resource type for the target resource behind any matching notifications or ANY to indicate ANY kind of resource.

Examples

```
“setting” :
  {
    “eventType”:”ALARM.EVENT”,
    "targetResourceType":"ANY",
    "notifyViaEmail":false,
    "notifyViaScreen":true,
    "notifyViaCloudNotificationService":false,
    "targetProviderRegionId":"ANY",
    "targetCustomerId":100,
    "severity":11,
    "notifyViaSms":false,
    "targetResourceId":"ANY",
    "targetAccountId":"ANY",
    "targetCloudId":"ANY",
    "notifyViaApi":false
  }
```

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```
<notificationsSetting>
  <notifyViaApi>false</notifyViaApi>
  <notifyViaCloudNotificationService>false</
notifyViaCloudNotificationService>
  <notifyViaEmail>false</notifyViaEmail>
  <notifyViaScreen>true</notifyViaScreen>
  <notifyViaSms>false</notifyViaSms>
  <eventType>ALARM.EVENT</eventType>
  <severity>11</severity>
  <targetCustomerId>100</targetCustomerId>
  <targetAccountId>ANY</targetAccountId>
  <targetCloudId>ANY</targetCloudId>
  <targetProviderRegionId>ANY</targetProviderRegionId>
  <targetResourceType>ANY</targetResourceType>
  <targetResourceId>ANY</targetResourceId>
</notificationsSetting>
```

NotificationsTargets

Represents a set of targets for notifications.

Elements

`apiTarget [string(255), optional]`
The URL endpoint to which notifications will be posted.

`cloudNotificationTarget [extended(NotificationTopic), optional]`
The cloud notification topic in a cloud notification system like AWS SNS to which any notifications are posted.

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emailTarget [string(100), optional]

The email address to which notifications will be emailed.

smsTarget [string(50), optional]

The pager/phone number to which notifications will be sent as an SMS message.

Examples

```
"targets" : {
  "emailTarget" : "target@example.com",
  "cloudNotificationTarget" : { "topicId" : 1 }
}
```

```
<targets>
  <emailTarget>target@example.com</emailTarget>
  <cloudNotificationTarget topicId="1"/>
</targets>
```

PhysicalAddress

A physical address for regular mail, billing, etc.

Attributes

No attributes.

Elements

address1 [string(100)]

The first line in the physical address.

address2 [string(100), nullable]

The second line in the physical address.

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address3 [string(100), nullable]
The third line in the physical address.

city [string(100)]
The city for the physical address.

country [string(3)]
The ISO country code for the country represented by this physical address.

postalCode [string(50)]
The postal/zip code for the address.

state [string(3)]
The two or three character ISO state or province code for the region associated with the address.

Properties

A list of arbitrary, user-defined properties.

Attributes

No attributes.

Elements

USER_DEFINED [string(100)]
Each property is defined as `<USER_DEFINED>VALUE</USER_DEFINED>` (XML) or `"USER_DEFINED" : "VALUE"` (JSON) where the place-holder `USER_DEFINED` represents the user-defined name of the property and `VALUE` represents the property value.

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ENUMERATIONS

This section describes standard enumerations that are used throughout the Enstratius API.

AccountStatus

Account status is the set of valid states a customer account can be in.

ACTIVE, ARCHIVED, CANCELLED, EXPIRED, PERMANENT, SUSPENDED, TERMINATED, TRIAL

ACTIVE

The account is currently active, provisioned, and in good standing.

ARCHIVED

The account is no longer provisioned or available for access.

CANCELLED

The account has been cancelled at customer request. It is not provisioned.

EXPIRED

The account is no longer provisioned because contract has expired.

PERMANENT

This account is permanently provisioned and not billed for usage.

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SUSPENDED

The account is no longer provisioned and has been suspended for lack of payment or violation of terms of service.

TERMINATED

The account has been terminated and is no longer provisioned or available for customer access.

TRIAL

The account is a trial account. It is actively provisioned, but not being billed to the customer.

Action

An action is any kind of action controlled by the Enstratius access control system. The types of actions available are dependent on the resource type being protected. See *http://docs.enstratius.com/console/users/example_access_rights.html* for a discussion of actions in the Enstratius access control system.

Account Actions

ANY, Access, Configure, Create, ManageAlerts, ManageBilling, ManageCloudCredentials, ManageDefaults, ViewInvoices

Agent Proxy Actions

ANY, Access, Associate, Contact, Disassociate

Company Actions

ANY, Access, Configure, ViewBilling

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Configuration Management Actions

ANY, Access, Configure, Create, Delete

Console Actions

ANY, Access, CreateAPIKeys, EditAccount, EditBilling, ManageUsers, UseAPI, ViewInvoices, ViewBilling

Deployment Actions

ANY, Access, Configure, Copy, Create, Delete, EditRequirements, ManageBackups, ManageBilling, ManageOwnership, ManageResources, ManageScaling, ManageUsers, PerformMaintenance, PublishCatalog, Start, Stop, UploadImages

Distribution Actions

ANY, Access, Configure, Create, Delete

Dns Actions

ANY, Access, Configure, Create, Delete, ManageBilling, ManageOwnership, ManageRecords

Environment Actions

ANY, Access, Use

Files Actions

ANY, Access, Configure, Create, Delete, ManagePermissions, Upload

Finance Actions

ANY, Access, Configure, PrepayServer

Firewall Actions

ANY, Access, AddRule, Create, Configure, Delete, EditRule

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Image Actions

ANY, Access, Configure, Delete, DefineService, DefineServerFromPublic, ShareLocal, SharePublic

Ip Actions

ANY, Access, Assign, Configure, Create, Delete, Forward, Release, StopForward

KVDB (Key/Value Database) Actions

ANY, Access, Configure, Create, Terminate

LoadBalancer Actions

ANY, Access, AddDataCenter, AddListener, AddServer, Configure, Create, Delete, EditListener, RemoveDataCenter, RemoveServer

Network Actions

ANY, Access, Configure, Create, Delete, ManageBilling, ManageOwnership, Provision

Personality Actions

ANY, Access, Configure, Create, Delete, Edit, Use

RDBMS Actions

ANY, Access, Configure, Create, ManageNetwork, Snapshot, Terminate, ChangePassword

Script Actions

ANY, Access, Configure, Create, Delete, Edit, Use

Server Actions

ANY, Access, Configure, Image, ManageBilling, ManageOwnership, ManageUsers, Pause, Prepay, Start, Terminate

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Snapshot Actions

ANY, Access, Configure, CreateVolume, Delete, ShareLocal, SharePublic

Ssl Actions

ANY, Access, Configure, Edit, Delete

Subnet Actions

ANY, Access, Configure, Delete, DeployResources, ManageBilling, ManageOwnship

Topic Actions

ANY, Access, Create, Publish, Subscribe, Remove

User Actions

ANY, Access, Configure, Create, Delete, Grant, ResetPassword

Volume Actions

ANY, Access, Attach, Configure, Create, Delete, Detach, Snapshot

Vpn Actions

ANY, Access, Configure, Create, Delete, ManageKeys

Architecture

Architecture is the CPU architecture for virtual machines.

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I32, I64

Algorithm

An algorithm represents a load balancing algorithm in force for a specific load balancer algorithm. Not all clouds support all algorithms.

LEAST_CONN, ROUND_ROBIN, SOURCE

BackupStatus

Represents the current status of any Enstratius-managed backup.

RUNNING, COMPLETE, ERROR

BreachState

Represents the current breach state of a deployment tier.

NORMAL, BREACH_UPPER, BREACH_LOWER, COOLDOWN, SCALING

BudgetState

Represents the current provisioning state for a given billing code.

HARD_ALARM, NORMAL, SOFT_ALARM

DatabaseEngine

Database engines supported in various cloud database systems.

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MYSQL, MYSQL50, MYSQL51, MYSQL55, ORACLE11G, ORACLE11GEX, ORACLE11GX

DeploymentState

Identifies the current operational state of an Enstratius deployment.

STOPPED, LAUNCHING, MAINTENANCE, RUNNING, STOPPING

DeploymentType

Specifies whether a deployment is dedicated to a specific logical service or is shared among multiple services with different budgets.

DEDICATED, SHARED

Direction

Direction indicates whether a firewall rule effects inbound or outbound traffic.

INGRESS, EGRESS

DnsRecordType

The record type associated with a DNS entry.

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A, AAAA, CNAME, MX, NS, PTR, SOA, SPF, SRV, TXT

EventType

ALARM.ANY, ALARM.IDS, STATE.ANY, STATE.CREATE, STATE.DELETE, STATE.UPDATE

JobStatus

The current status of a job.

RUNNING, COMPLETE, ERROR

Jurisdiction

Jurisdiction represents the legal context for a region.

AU, CA, CN, EU, SG, US

Label

Label represents valid label icons used throughout Enstratius.

none, blue, yellow, green, orange, purple, red, gray, white, flagblue, flaggreen, flagorange, flagpurple, flagred, iconasterisk, iconbug, iconkey, iconlightbulb, iconstar, tagblue, taggreen, tagorange, tagpurple, tagred, tagyellow

LBProtocol

A network protocol used in firewall rules listeners.

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AJP, HTTP, HTTPS, RAW_TCP

LoadBalancerScope

Identifies whether the deployment load balancer should operate across multiple clouds, all data centers in a region, or specified data centers within a region.

GLOBAL, REGION, DATA_CENTER

LoadBalancerType

Enstratius supports three different load balancing models:

CLOUD
Cloud load balancing using the virtual load balancers provided by a cloud provider to do load balancing. Because not all clouds provide virtual load balancers, this option is not available for all clouds.

VM_DYNAMIC
With a VM_DYNAMIC configuration, you select a mappable, static IP address and Enstratius will launch/terminate virtual machines based on events in the cloud. Not all clouds support static IP address mapping to virtual machines, and thus this option is not available in all clouds.

VM_STATIC
Enables you to select a specific virtual machine to act as a load balancer.

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CLOUD, VM_DYNAMIC, VM_STATIC

ManagementState

The current state of the server with respect to Enstratius automation.

CONFIGURING, INITIALIZING, OPERATIONAL, OUT_OF_SERVICE, STOPPING, TERMINATED, UNMANAGED

Permission

Permission indicates whether a firewall rule is allowing traffic or blocking it.

ALLOW, DENY

Platform

An operating system platform.

CENT_OS, DEBIAN, FEDORA_CORE, FREE_BSD, OPEN_BSD, RHEL, SOLARIS, UBUNTU, UNIX, UNKNOWN, WINDOWS

Protocol

A network protocol used in firewall rules listeners.

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TCP, UDP, ICMP, IPSEC, ANY

Qualifier

A qualifier limits the scope of a permission. See *http://docs.enstratius.com/console/users/roles.html* for a full discussion of qualifiers in the Enstratius access control system.

ANY, GROUP, THIS_GROUP, BILLING, MINE

ResourceType

A type of resource protected by the Enstratius access control system. There are two special resource types: ANY and CONSOLE. Everything else represented a specific protected resource. See *http://docs.enstratius.com/console/users/roles.html* for a discussion of resource types in the Enstratius access control system.

ANY, ACCOUNT, AGENT_PROXY, CONSOLE, COMPANY, CONFIGURATION_MANAGEMENT, DEPLOYMENT, DISTRIBUTION, DNS, ENVIRONMENT, FILES, FINANCE, FIREWALL, IMAGE, IP, KVDB, LB, NETWORK, PERSONALITY, RDBMS, SCRIPT, SERVER, SNAPSHOT, SSL_CERT, SUBNET, TOPIC, USER, VOLUME, VPN

RuleTargetType

Rule target type is the set of valid types a firewall rule can have as a source or destination.

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CIDR, VM, VLAN, GLOBAL

CIDR
The source or destination type is described by an IP Address that may or may not include a subnet (i.e. 192.168.0.1/32).

VM
The source or destination type is described by an Enstratius ID for a virtual machine.

VLAN
The source or destination type is described by an Enstratius ID for a network.

GLOBAL
The source or destination type is described by nothing specific in the given direction (i.e. The entire internet or internal network).

ServerState

The current operational state of a server in the cloud.

PENDNG, RUNNING, PAUSED, REBOOTING, STOPPING, TERMINATED

ScalingRules

The auto-scaling rules in force for a deployment tier.

BASIC, CLOUD, CUSTOM

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