



Virtuozzo Infrastructure Platform 2.5

Object Storage Orchestration API
Reference

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Contents

1. Introduction	1
1.1 About the Guide	1
1.2 Authentication	1
2. User Management	2
2.1 GET Service ostor-users	2
2.1.1 Description	2
2.1.2 Requests	2
2.1.2.1 Syntax	2
2.1.2.2 Parameters	3
2.1.2.3 Headers	3
2.1.3 Responses	3
2.1.3.1 Headers	3
2.1.3.2 Body	3
2.1.3.3 Errors	4
2.1.4 Examples	4
2.1.4.1 Sample Request #1	4
2.1.4.2 Sample Response #1	4
2.1.4.3 Sample Request #2	5
2.1.4.4 Sample Response #2	5
2.2 PUT Service ostor-users	6
2.2.1 Description	6
2.2.2 Requests	6
2.2.2.1 Syntax	6
2.2.2.2 Parameters	6
2.2.2.3 Headers	7
2.2.3 Responses	7

2.2.3.1	Headers	7
2.2.3.2	Body	7
2.2.4	Examples	8
2.2.4.1	Sample Request #1	8
2.2.4.2	Sample Response #1	8
2.2.4.3	Sample Request #2	8
2.2.4.4	Sample Response #2	9
2.3	DELETE Service ostor-users	9
2.3.1	Description	9
2.3.2	Requests	9
2.3.2.1	Syntax	9
2.3.2.2	Parameters	10
2.3.2.3	Headers	10
2.3.3	Responses	10
2.3.3.1	Headers	10
2.3.3.2	Body	10
2.3.3.3	Errors	10
2.3.4	Examples	11
2.3.4.1	Sample Request	11
2.3.4.2	Sample Response	11
2.4	GET Service ostor-limits	11
2.4.1	Description	11
2.4.2	Requests	11
2.4.2.1	Syntax	11
2.4.2.2	Parameters	12
2.4.2.3	Headers	12
2.4.3	Responses	12
2.4.3.1	Headers	12
2.4.3.2	Body	12
2.4.3.3	Errors	13
2.4.4	Examples	13
2.4.4.1	Sample Request #1	13
2.4.4.2	Sample Response #1	13
2.4.4.3	Sample Request #2	14
2.4.4.4	Sample Response #2	14

- 2.5 PUT Service ostor-limits 14
 - 2.5.1 Description 14
 - 2.5.2 Requests 15
 - 2.5.2.1 Syntax 15
 - 2.5.2.2 Parameters 15
 - 2.5.2.3 Headers 17
 - 2.5.3 Responses 17
 - 2.5.3.1 Headers 17
 - 2.5.3.2 Body 17
 - 2.5.3.3 Errors 17
 - 2.5.4 Examples 17
 - 2.5.4.1 Sample Request #1 17
 - 2.5.4.2 Sample Response #1 17
 - 2.5.4.3 Sample Request #2 18
 - 2.5.4.4 Sample Response #2 18
 - 2.5.4.5 Sample Request #3 18
 - 2.5.4.6 Sample Response #3 18
 - 2.5.4.7 Sample Request #4 19
 - 2.5.4.8 Sample Response #4 19
- 2.6 DELETE Service ostor-limits 19
 - 2.6.1 Description 19
 - 2.6.2 Requests 19
 - 2.6.2.1 Syntax 19
 - 2.6.2.2 Parameters 20
 - 2.6.2.3 Headers 20
 - 2.6.3 Responses 20
 - 2.6.3.1 Headers 20
 - 2.6.3.2 Body 21
 - 2.6.4 Examples 21
 - 2.6.4.1 Sample Request #1 21
 - 2.6.4.2 Sample Response 21
 - 2.6.4.3 Sample Request #2 21
 - 2.6.4.4 Sample Response #2 22
- 2.7 GET Service ostor-buckets 22
 - 2.7.1 Description 22

2.7.2	Requests	22
2.7.2.1	Syntax	22
2.7.2.2	Parameters	23
2.7.2.3	Headers	23
2.7.3	Responses	23
2.7.3.1	Headers	23
2.7.3.2	Body	23
2.7.3.3	Errors	24
2.7.4	Examples	24
2.7.4.1	Sample Request	24
2.7.4.2	Sample Response	24
3.	Usage Statistics	26
3.1	GET Service ostor-usage	26
3.1.1	Description	26
3.1.2	Requests	26
3.1.2.1	Syntax	26
3.1.2.2	Parameters	27
3.1.2.3	Headers	27
3.1.3	Responses	27
3.1.3.1	Headers	27
3.1.3.2	Body	27
3.1.4	Examples	28
3.1.4.1	Sample Request #1	28
3.1.4.2	Sample Response #1	28
3.1.4.3	Sample Request #2	29
3.1.4.4	Sample Response #2	29
3.2	DELETE Service ostor-usage	30
3.2.1	Description	30
3.2.2	Requests	30
3.2.2.1	Syntax	30
3.2.2.2	Parameters	30
3.2.2.3	Headers	30
3.2.3	Responses	31
3.2.3.1	Headers	31
3.2.3.2	Body	31

3.2.4	Examples	31
3.2.4.1	Sample Request	31
3.2.4.2	Sample Response	31

CHAPTER 1

Introduction

1.1 About the Guide

The guide explains how to use the REST API to manage S3 clusters based on Virtuozzo Infrastructure Platform. The system API enables storage administrators to manage users, limits, and billing statistics. The system REST API enables remote execution of operations similar to `ostor-s3-admin` functionality.

1.2 Authentication

Management request must be authenticated with the AWS Access Key ID corresponding to the S3 system user. You can create system users with the `ostor-s3-admin create-user -S` command.

CHAPTER 2

User Management

2.1 GET Service ostor-users

2.1.1 Description

Lists information about all users or the user specified by either email or ID.

2.1.2 Requests

2.1.2.1 Syntax

```
GET /?ostor-users HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-users&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-users&id=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

2.1.2.2 Parameters

Table 2.1: GET Service ostor-users parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	No*
id	User ID. Type: string. Default value: none.	No*

* Only one of the required parameters can be set in a single request.

If neither `emailAddress` nor `id` are set, the response is information about all users, otherwise the response is information about the user with the specified email or ID.

2.1.2.3 Headers

This implementation uses only common request headers.

2.1.3 Responses

2.1.3.1 Headers

This implementation uses only common response headers.

2.1.3.2 Body

A JSON dictionary with user information in the following format:

```
{
  "UserEmail" : "<email>"
  "UserId" : "<id>",
  "AWSAccessKeys" : [
    {
      "AWSAccessKeyId" : "<access_key>",
      "AWSSecretAccessKey" : "<secret_key>"
    }
  ]
}
```

```
}]
}
```

2.1.3.3 Errors

Returns Error Code 400 if more than one parameter is set.

2.1.4 Examples

2.1.4.1 Sample Request #1

Returns information about all users

```
GET /?ostor-users HTTP/1.1
Host: s3.amazonaws.com
Date: Wed, 30 Apr 2016 22:32:00 GMT
Authorization: <authorization_string>
```

2.1.4.2 Sample Response #1

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : keep-alive
x-amz-request-id : 800000000000000030003c6b538eedd95
Date: Wed, 30 Apr 2016 22:32:00 GMT
Connection:keep-alive
Content-type : application/json

[
{
  "UserEmail": "user@email.com",
  "UserId": "c5bf3c29f0a86585",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "c5bf3c29f0a865851KPQ",
      "AWSSecretAccessKey": "yqt3or2xMFn6mtvPH5Fdrr9nbp2foDCKOCLYjCTb"
    }
  ]
},
{
  "UserEmail": "root2@email.com",
  "UserId": "da2ccd035ce34bc3",
  "AWSAccessKeys": [
    {
```

```

"AWSAccessKeyId": "da2ccd035ce34bc3XD5P",
"AWSecretAccessKey": "wHfEBQF07HN7fhoHx451HHyBInA00CZTHtveY1B"
}]
},
{
  "UserEmail": "root0@email.com",
  "UserId": "f82c23f7823589eb",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "f82c23f7823589ebN4KD",
      "AWSecretAccessKey": "MbKetIRMW8rrZh16yfb2dMj16ejHuBHf0a37bp5V"
    }
  ]
},
{
  "UserEmail": "root1@email.com",
  "UserId": "fc06056891f36588",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "fc06056891f36588RMOE",
      "AWSecretAccessKey": "HHD59Sf9KB4fG0xrjqhzyLBeHsODXD40QZeomKfy"
    }
  ]
}
}]

```

2.1.4.3 Sample Request #2

Returns information about the user with the ID fc06056891f36588.

```

GET /?ostor-users&id=fc06056891f36588 HTTP/1.1
Host: s3.amazonaws.com
Date: Wed, 30 Apr 2016 22:32:00 GMT
Authorization: <authorization_string>

```

2.1.4.4 Sample Response #2

```

HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : keep-alive
x-amz-request-id : 800000000000000030003c6b538eedd95
Date: Wed, 30 Apr 2016 22:32:00 GMT
Connection:keep-alive
Content-type : application/json
{
  "UserEmail": "root1@email.com",
  "UserId": "fc06056891f36588",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "fc06056891f36588RMOE",

```

```
"AWSSecretAccessKey": "HHD59Sf9KB4fG0xrjqhzyLBeHsODXD40QZeomKfy"
}]
}
```

2.2 PUT Service ostor-users

2.2.1 Description

Creates a new user or generates/revokes access key pairs of existing users.

2.2.2 Requests

2.2.2.1 Syntax

```
PUT /?ostor-users&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
PUT /?ostor-users&emailAddress=<value>&genKey HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
PUT /?ostor-users&emailAddress=<value>&revokeKey=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

2.2.2.2 Parameters

Table 2.2: PUT Service ostor-users parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	Yes

Continued on next page

Table 2.2 – continued from previous page

Parameter	Description	Required
genKey	Generates a new access key pair for the user. A user can only have two key pairs. Type: flag. Default value: none.	No
revokeKey	Removes the access key pair that corresponds to the specified access key. Type: string. Default value: none.	No

If neither `genKey` nor `revokeKey` are set, a new user with the specified email will be created.

2.2.2.3 Headers

This implementation uses only common request headers.

2.2.3 Responses

2.2.3.1 Headers

This implementation uses only common response headers.

2.2.3.2 Body

If a new user is created or a key is generated, the body is a JSON dictionary with user information.

```
{
  "UserEmail" : "<email>",
  "UserId" : "<id>",
  "AWSAccessKeys" : [
    {
      "AWSAccessKeyId" : "<access_key>",
      "AWSSecretAccessKey" : "<secret_key>"
    }
  ]
}
```

If a key is revoked, the body is empty.

2.2.4 Examples

2.2.4.1 Sample Request #1

Creates a user with the email test@test.test.

```
PUT /?ostor-users&emailAddress=test@test.test HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 16:01:03 GMT +3:00
Authorization: <authorization_string>
```

2.2.4.2 Sample Response #1

```
HTTP/1.1 200 OK
x-amz-req-time-micros : 186132
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : keep-alive
X-amz-request-id : 800000000000000030003746059efad68
Date : Thu, 07 Apr 2016 13:01:08 GMT
Content-type : application/json

{
  "UserEmail": "test@test.test",
  "UserId": "a721fc1a64f13a05",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "a721fc1a64f13a050QF4",
      "AWSSecretAccessKey": "VtzYY4ZHWYzbWLUrRMSzVhB07UvD6Z5nGsAPtESV"
    }
  ]
}
```

2.2.4.3 Sample Request #2

Generates a new key pair for the user with the email user1@email.com.

```
PUT /?ostor-users&emailAddress=user1@email.com&genKey HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 15:51:13 GMT +3:00
Authorization: <authorization_string>
```

2.2.4.4 Sample Response #2

```
HTTP/1.1 200 OK
x-amz-req-time-micros : 384103
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : closed
x-amz-request-id : 80000000000000003000374603639905b
Date : Thu, 07 Apr 2016 12:51:09 GMT
Content-type : application/json

{
  "UserEmail": "user1@email.com",
  "UserId": "8eaa6ab4749a29b4",
  "AWSAccessKeys": [
    {
      "AWSAccessKeyId": "8eaa6ab4749a29b4034G",
      "AWSSecretAccessKey": "7spuMfShCI12tX6dFtS17TEP7ZQbIG11GgE0Emdy"
    },
    {
      "AWSAccessKeyId": "8eaa6ab4749a29b4EJUY",
      "AWSSecretAccessKey": "ELzQ8CTMfcYQCGSP51nGvmJxFC9xXrEJ4CjBAA2k"
    }
  ]
}
```

2.3 DELETE Service ostor-users

2.3.1 Description

Deletes the user specified by email or ID.

2.3.2 Requests

2.3.2.1 Syntax

```
DELETE /?ostor-users&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```


2.3.2.2 Parameters

Table 2.3: DELETE Service ostor-users parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	Yes*
id	User ID. Type: string. Default value: none.	Yes*

* Only one of the required parameters can be set in a single request.

2.3.2.3 Headers

This implementation uses only common request headers.

2.3.3 Responses

2.3.3.1 Headers

This implementation uses only common response headers.

2.3.3.2 Body

Empty.

2.3.3.3 Errors

Returns Error Code 400 if more than one required parameter is set.

Note: If a user is successfully deleted, Status204NoContent is returned.

2.3.4 Examples

2.3.4.1 Sample Request

Deletes the user with the email test@test.test.

```
DELETE /?ostor-users&emailAddress=test@test.test HTTP/1.1
Host: s3.amazonaws.com
Date: Wed, 30 Apr 2016 22:32:00 GMT
Authorization: <authorization_string>
```

2.3.4.2 Sample Response

```
HTTP/1.1 203 No Content
x-amz-req-time-micros : 172807
Server : nginx/1.8.1
Connection : closed
x-amz-request-id : 800000000000000030005c8ca5862476a
Date : Wed, 30 Apr 2016 22:32:03 GMT
Content-type : application/xml
```

2.4 GET Service ostor-limits

2.4.1 Description

Lists information about limits on operations and bandwidth for the specified user or bucket.

2.4.2 Requests

2.4.2.1 Syntax

```
GET /?ostor-limits&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-limits&bucket=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
```

```
Authorization: <authorization_string>
```

2.4.2.2 Parameters

Table 2.4: GET Service ostor-limits parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	Yes*
id	User ID. Type: string. Default value: none.	Yes*
bucket	Bucket name. Type: string. Default value: none.	Yes*

* Only one of the required parameters can be set in a single request.

2.4.2.3 Headers

This implementation uses only common request headers.

2.4.3 Responses

2.4.3.1 Headers

This implementation uses only common response headers.

2.4.3.2 Body

A JSON dictionary with information about limits for a user or bucket in the following format:

```
{
  "ops:default" : "<default_limit_value_in_ops/sec>",
  "ops:get" : "<get_ops_limit_value_in_ops/sec>",
```

```
"ops:put" : "<put_ops_limit_value_in_ops/sec>",
"ops:list" : "<list_ops_limit_value_in_ops/sec>",
"ops:delete" : "<delete_ops_limit_value_in_ops/sec>",
"bandwidth:out" : "<bandwidth_limit_value_in_kb/sec>",
}
```

Zero value means "unlimited".

2.4.3.3 Errors

Returns Error Code 400 if multiple parameters are set at once.

Note: The limits are disabled by default. If limits for a user/bucket requested are disabled, an error will be returned. Use PUT `ostor-limits` to enable limits.

2.4.4 Examples

2.4.4.1 Sample Request #1

Returns information about limits for the user with the email `user1@email.com`.

```
GET /?ostor-users&emailAddress=user1@email.com HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.4.4.2 Sample Response #1

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 80000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json

{
  "ops:default" : "0.50",
  "ops:get" : "0.50",
  "ops:put" : "0.50",
  "ops:list" : "0.50",
```

```
"ops:delete" : "0.50",  
"bandwidth:out" : "0"  
}
```

2.4.4.3 Sample Request #2

Returns information about limits for the bucket bucket-1.

```
GET /?ostor-limits&bucket=bucket-1 HTTP/1.1  
Host: s3.amazonaws.com  
Date: Wed, 30 Apr 2016 22:32:00 GMT  
Authorization: <authorization_string>
```

2.4.4.4 Sample Response #2

```
HTTP/1.1 200 OK  
Transfer-encoding : chunked  
Server : nginx/1.8.1  
Connection : closed  
x-amz-request-id : 800000000000000030003c6b538eedd95  
Date: Wed, 30 Apr 2016 22:32:00 GMT  
Content-type : application/json  
{  
  "ops:default" : "0",  
  "ops:get" : "0",  
  "ops:put" : "0",  
  "ops:list" : "0",  
  "ops:delete" : "0",  
  "bandwidth:out" : "3.33"  
}
```

2.5 PUT Service ostor-limits

2.5.1 Description

Sets limit values for the specified user or bucket. Either operations count or bandwidth limits can be specified in a single request.

2.5.2 Requests

2.5.2.1 Syntax

```
PUT /?ostor-limits&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-limits&bucket=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

2.5.2.2 Parameters

Table 2.5: PUT Service ostor-limits parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	Yes*
id	User ID. Type: string. Default value: none.	Yes*
bucket	Bucket name. Type: string. Default value: none.	Yes
bandwidth	Enables bandwidth limits. Bandwidth limits types: { out kb/s } Type: flag.	Yes**
ops	Enables operations limits. If set, all unspecified bandwidth limits are set to 0. Operations limits types: { default ops/min, put ops/min , get ops/min, list ops/min, delete ops/min } Type: flag.	Yes**

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Table 2.5 – continued from previous page

Parameter	Description	Required
default	Sets the default value for operations limits. If set, all unspecified operations limits are set to default, otherwise they are set to 0. Requires the ops subresource to be set. Type: integer. Default: 0.	No
put	Sets the PUT operations limit value. Requires the ops subresource to be set. Type: integer. Default: default.	No
get	Sets the GET operations limit value. Requires the ops subresource to be set. Type: integer. Default: default.	No
delete	Sets the DELETE operations limit value. Requires the ops subresource to be set. Type: integer. Default: default.	No
list	Sets the LIST operations limit value. Requires the ops subresource to be set. Type: integer. Default: default.	No
out	Sets an outgoing bandwidth limit. Requires the ops subresource to be set. Type: integer. Default: 0.	No

* Only one of the required parameters can be set in a single request.

** Either ops or bandwidth can be set in a single request.

Zero value means “unlimited”.

2.5.2.3 Headers

This implementation uses only common request headers.

2.5.3 Responses

2.5.3.1 Headers

This implementation uses only common response headers.

2.5.3.2 Body

Empty.

2.5.3.3 Errors

Returns Error Code 400 if a wrong set of parameters is specified.

2.5.4 Examples

2.5.4.1 Sample Request #1

Sets all operations limits for the user with the email user1@email.com to zero.

```
PUT /?ostor-limits&emailAddress=user1@email.com&ops&default=0 HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.5.4.2 Sample Response #1

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
```



```
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.5.4.3 Sample Request #2

Sets all operations limits for the user with the email user1@email.com to 1 ops/sec.

```
PUT /?ostor-limits&emailAddress=user1@email.com&ops&default=60 HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.5.4.4 Sample Response #2

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.5.4.5 Sample Request #3

Sets all badwidth.out limit for the bucket testbucket to 50 kb/s.

```
PUT /?ostor-limits&bucket=testbucket&bandwidth&out=50 HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.5.4.6 Sample Response #3

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.5.4.7 Sample Request #4

Sets operations limits for the bucket testbucket. The new PUT operations limit is 60 ops/s, LIST limit is 0.5 ops/s, GET and DELETE limits are 1 ops/s.

```
PUT /?ostor-limits&bucket=testbucket&ops&default=60&put=3600&list=30 HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.5.4.8 Sample Response #4

```
HTTP/1.1 200 OK
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.6 DELETE Service ostor-limits

2.6.1 Description

Sets a limit of the selected type to 0.0 (unlimited) for the specified user or bucket.

2.6.2 Requests

2.6.2.1 Syntax

```
DELETE /?ostor-limits&emailAddress=<value>&ops HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
DELETE /?ostor-limits&id=<value>&ops HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
DELETE /?ostor-limits&bucket=<value>&bandwidth HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

2.6.2.2 Parameters

Table 2.6: DELETE Service ostor-limits parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	Yes*
id	User ID. Type: string. Default value: none.	Yes*
bucket	Bucket name. Type: string. Default value: none.	Yes*
ops	Removes operations limits.	No
bandwidth	Removes bandwidth limits.	No

* Only one of the required parameters can be set in a single request.

2.6.2.3 Headers

This implementation uses only common request headers.

2.6.3 Responses

2.6.3.1 Headers

This implementation uses only common response headers.

2.6.3.2 Body

Empty.

Note: If limits are successfully removed, Status204NoContent will be returned.

2.6.4 Examples

2.6.4.1 Sample Request #1

The following request deletes all operations limits for a user with the email user1@email.com.

```
PUT /?ostor-limits&emailAddress=user1@email.com&ops HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.6.4.2 Sample Response

```
HTTP/1.1 204 No Content
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.6.4.3 Sample Request #2

The following request removes bandwidth limits for the bucket testbucket.

```
PUT /?ostor-limits&bucket=testbucket&bandwidth HTTP/1.1
Host: s3.amazonaws.com
Date: Thu, 07 Apr 2016 14:08:55 GMT
Authorization: <authorization_string>
```

2.6.4.4 Sample Response #2

```
HTTP/1.1 204 No Content
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection: closed
x-amz-request-id : 800000000000000030005c8caec96d65b
Date : Thu, 07 Apr 2016 14:08:56 GMT
Content-type : application/json
```

2.7 GET Service ostor-buckets

2.7.1 Description

Lists information on all buckets or the buckets of the user specified by either email or ID.

2.7.2 Requests

2.7.2.1 Syntax

```
GET /?ostor-buckets HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-buckets&emailAddress=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-buckets&id=<value> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

2.7.2.2 Parameters

Table 2.7: GET Service ostor-buckets parameters

Parameter	Description	Required
emailAddress	User email address. Type: string. Default value: none.	No*
id	User ID. Type: string. Default value: none.	No*

* Only one of the required parameters can be set in a single request.

If neither `emailAddress` nor `id` are set, the response is the list of all buckets, otherwise the response is the bucket list of the user with the specified email or ID.

2.7.2.3 Headers

This implementation uses only common request headers.

2.7.3 Responses

2.7.3.1 Headers

This implementation uses only common response headers.

2.7.3.2 Body

A JSON dictionary with a bucket list in the following format:

```
{
  "Buckets": [
    {
      "name": <name>,
      "epoch": <epoch>,
      "creation_date": <date>,
      "owner_id": <id>,
      "size":
```

```

    {
      "current" : <cur>,
      "hmax": <hmax>,
      "h_integral": <hint>,
      "last_ts": <last_ts>
    }
  ],
  {
    ...
  }]
}
```

2.7.3.3 Errors

Returns Error Code 400 if more than one parameter is set.

2.7.4 Examples

2.7.4.1 Sample Request

Returns information on all buckets in S3.

```

GET /?ostor-buckets HTTP/1.1
Host: s3.amazonaws.com
Date: Wed, 30 Apr 2016 22:32:00 GMT
Authorization: <authorization_string>
```

2.7.4.2 Sample Response

```

{
  "Buckets": [
    {
      "size": {
        "current": 12288,
        "h_integral": 7360512,
        "hmax": 12288,
        "last_ts": 424241
      },
      "epoch": 0,
      "owner_id": "ba7eba06129464c5",
      "name": "bucket1",
      "creation_date": "2018-05-25T17:12:00.000Z"
    },
    {

```

```
    "size": {
      "current": 46700160,
      "h_integral": 28160196480,
      "hmax": 46700160,
      "last_ts": 424237
    },
    "epoch": 0,
    "owner_id": "ccbec013d9fd3918",
    "name": "bucket2",
    "creation_date": "2018-05-25T13:51:55.000Z"
  },
  {
    "size": {
      "current": 12288,
      "h_integral": 8036352,
      "hmax": 12288,
      "last_ts": 424186
    },
    "epoch": 0,
    "owner_id": "9d80d59edbe2862a",
    "name": "bucket3",
    "creation_date": "2018-05-23T10:30:49.000Z"
  }
]}
```


CHAPTER 3

Usage Statistics

The S3 gateway can collect usage statistics for S3 users and S3 buckets. The collected data are saved as regular objects. One such object contains statistics for the set usage period.

To enable statistics collection, set `S3_GW_USAGE_BUCKET` to `True` in the gateway configuration file (`/var/lib/ostor/local/gw.conf` by default).

Other options you may need to set are: `S3_GW_USAGE_PERIOD` (usage period in a single statistics object, in seconds) and `S3_GW_USAGE_CACHE_TIMEOUT` (the frequency of dumping statistics from memory to storage, in seconds).

3.1 GET Service ostor-usage

3.1.1 Description

Lists existing statistics objects or queries information contained in a specified object.

3.1.2 Requests

3.1.2.1 Syntax

```
GET /?ostor-users HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

```
GET /?ostor-users&obj=object name
HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>
```

3.1.2.2 Parameters

The parameter is specified by the obj subresource. If the obj subresource is undefined, the response contains information about all existing statistics objects. Otherwise information from the specified object obj is returned.

Table 3.1: GET Service ostor-usage parameters

Parameter	Description	Required
obj	Statistics object name. Type: string. Default value: none.	No

3.1.2.3 Headers

This implementation uses only common request headers.

3.1.3 Responses

3.1.3.1 Headers

This implementation uses only common response headers.

3.1.3.2 Body

If obj is unspecified:

```
{ "nr_items": number of statistics objects,
  "truncated": true if a list is truncated,
  "items": [ //list of statistics objects
    "first object's name",
    "s3-usage-obj1",
```

```

"s3-usage-obj2",
"s3-usage-obj3",
...
]
}

```

If obj is specified:

```

{ "fmt_version": version of response format,
  "service_id": id of a service that collected statistics,
  "start_ts": timestamp of statistics upload,
  "period": statistics upload period in seconds,
  "nr_items": number of counters,
  "items": [//list of usage counters
    {
      "key": { "bucket": "bucket-name", "epoch": bucket's epoch, "user_id": "user id", "tag": "stat"
      "counters": {
        "ops": { "put": count of put ops, "get": count of get ops, "list": count of list ops,
        "net_io": { "uploaded": number of uploaded bytes during the period,
        "downloaded": number of downloaded bytes during the period }
      }
    },
    ...
  ]
}

```

3.1.4 Examples

3.1.4.1 Sample Request #1

The following request returns information about all statistics objects.

```

GET /?ostor-usage /HTTP1.1
Date : Mon, 11 Apr 2016 16:43:16 GMT+3:00
Host : ostor-test-1
Authorization : <authorization_string>

```

3.1.4.2 Sample Response #1

```

HTTP/1.1 200 OK
x-amz-req-time-micros : 404
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : keep-alive
x-amz-request-id : 800000000000000030006b6be3b0ae378
Date : Mon, 11 Apr 2016 13:43:16 GMT

```

```
Content-type : application/json
```

```
{ "nr_items": 9,
  "truncated": false,
  "items": [
    "s3-usage-8000000000000003-2016-04-11T13:10:29.000Z-1800",
    "s3-usage-8000000000000003-2016-04-11T13:12:53.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:13:23.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:15:53.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:16:23.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:31:54.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:33:25.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:33:55.000Z-30",
    "s3-usage-8000000000000003-2016-04-11T13:34:25.000Z-30"
  ]
}
```

3.1.4.3 Sample Request #2

The following request returns information from the object

s3-usage-8000000000000003-2016-04-11T13:33:55.000Z-30.

```
GET /?ostor-usage&obj=s3-usage-8000000000000003-2016-04-11T13:12:53.000Z-30 /HTTP1.1
Date: Mon, 11 Apr 2016 17:48:21 GMT+3:00
Host: ostor-test-1
Authorization: <authorization_string>
```

3.1.4.4 Sample Response #2

```
HTTP/1.1 200 OK
X-amz-req-time-micros : 576
Transfer-encoding : chunked
Server : nginx/1.8.1
Connection : keep-alive
X-amz-request-id : 80000000000000030006b6bf23c77f09
Date : Mon, 11 Apr 2016 14:48:21 GMT
Content-type : application/json

{ "fmt_version": 1, "service_id":8000000000000003,
  "start_ts":1460380373, "period": 30, "nr_items":2,
  "items": [
    {
      "key": { "bucket": "bucket", "epoch":16394, "user_id": "f82c23f7823589eb", "tag": "" },
      "counters": {
        "ops": { "put":15, "get":0, "list":1, "other":0 },
        "net_io": { "uploaded":99785, "downloaded":0 }
      }
    }
  ]
}
```

```

  },
  {
    "key": { "bucket": "", "epoch":0, "user_id": "f82c23f7823589eb", "tag": "" },
    "counters": {
      "ops": { "put":0, "get":2, "list":0, "other":0 },
      "net_io": { "uploaded":0, "downloaded":0 }
    }
  }
]
}

```

3.2 DELETE Service ostor-usage

3.2.1 Description

Deletes the statistics object specified by name.

3.2.2 Requests

3.2.2.1 Syntax

```

DELETE /?ostor-users&obj=<object_name> HTTP/1.1
Host: s3.amazonaws.com
Date: <date>
Authorization: <authorization_string>

```

3.2.2.2 Parameters

Table 3.2: DELETE Service ostor-usage parameters

Parameter	Description	Required
obj	Statistics object name. Type: string. Default value: none.	No

3.2.2.3 Headers

This implementation uses only common request headers.

3.2.3 Responses

3.2.3.1 Headers

This implementation uses only common response headers.

3.2.3.2 Body

Empty.

Note: If the request is successful, Status204NoContent is returned.

3.2.4 Examples

3.2.4.1 Sample Request

The following request deletes statistics object with name
s3-usage-8000000000000003-2016-04-11T13:33:55.000Z-30.

```
DELETE /?ostor-usage&obj=s3-usage-8000000000000003-2016-04-11T13:12:53.000Z-30 /HTTP1.1
Date : Mon, 11 Apr 2016 17:52:05 GMT+3:00
Host : ostor-test-1
Authorization : authorization string
```

3.2.4.2 Sample Response

```
HTTP/1.1 204 No Content
Date : Mon, 11 Apr 2016 14:52:05 GMT
x-amz-req-time-micros : 4717
Connection : keep-alive
x-amz-request-id : 8000000000000030006b6bf31262d2c
Server : nginx/1.8.1
```