

IBM Cloud Object Storage System
Version 3.14.6

*Container Mode Storage Account
Management API Guide*



This edition applies to IBM Cloud Object Storage System and is valid until replaced by new editions.

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About this document

This document describes an IBM cloud object storage system product.

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Overview

The Storage as a Service (STaaS) feature delivers a base set of service APIs that are intended for deployment, system management, and service operator usage.

This specific section covers the interfaces that relate to the management of storage accounts. While these interfaces are heavily influenced by the interface provided by Swift, they are not intended to replace Swift storage account interfaces but complement them. Request headers that are interface-specific (for example, Temp URL keys) are outside of the scope of this document and left to the interface-specific documentation for the IBM Cloud Object Storage System™.

Note: When not otherwise noted, items in Future are future facing statements and are planned for releases post-3.9.0.

Roles and permissions

The Container Mode Storage Account Management API is intended to be used by development operations, system management, and service operators.

The authenticated user that is using this interface must be assigned a role that is configured with permissions that allow for Container Mode Storage Account Management API and storage account management.

In 3.9.0, an IBM Cloud Object Storage System™ user with the role of "Service User" must be used to perform storage account management functions. This user is authenticated by using existing methods that are supported on the system. For more details, refer to the *IBM Manager Administration Guide*.

After 3.9.0, a more granular RBAC system is in place where roles can be configured with finer control of permissions. These roles are described below and are marked in Future to indicate that they are future facing.

Service capabilities

A service API to list system capabilities is out of scope for 3.9.0, but is in consideration as a roadmap item.

Interface details

These sections describe the interface details.

Common request headers

Request headers that are commonly used for all messages or for specific logical groupings of messages.

Table 1. Common request headers

Request Parameter	Style	Type	Description
X-Trans-Id-Extra (Optional)	header	String	<p>Extra transaction information. Use the X-Trans-Id-Extra request header to include extra information to help you debug any errors that might occur with large object upload and other Object Storage transactions.</p> <p>Object Storage appends the first 32 characters of the X-Trans-Id-Extra request header value to the transaction ID value in the generated X-Trans-Id response header. You must UTF-8-encode and then URL-encode the extra transaction information before you include it in the X-Trans-Id-Extra request header.</p> <p>You can also use X-Trans-Id-Extra strings to help operators debug requests that fail to receive responses. The operator can search for the extra information in the logs.</p>

Common response headers

Response headers that are commonly used for all messages or for specific logical groupings of messages.

Table 2. Common response headers

Response Parameter	Style	Type	Description
Content-Length	header/body	String	This value is the length of the error text in the response body.
Content-Type	header/body	String	If the operation fails, this value is the MIME type of the error text in the response body.
X-Trans-Id	header/body	String	A unique transaction ID for this request. Your service provider might need this value if you report a problem.

Table 2. Common response headers (continued)

Response Parameter	Style	Type	Description
Date	header/body	DateTime	The transaction date and time. The date and time stamp format is ISO 8601: CCYY-MM-DDThh:mm:ss-hh:mm. For example, 2015-08-27T09:49:58-05:00. The -hh:mm value, if included, is the time zone as an offset from UTC. In the previous example, the offset value is -05:00. A null value indicates that the token never expires.

Command summary

High-level listing of all of the available commands that are covered in this specification.

Table 3. Command summary

Interface	Method	Command	Description
Accounts Listing	GET	<accesser>:8338/accounts	List all storage accounts on the system or under a specific Keystone Domain.
Account creation	PUT	<accesser>:8338/accounts/{account.id}	Manually create a storage account.
Account retrieval	HEAD	<accesser>:8338/accounts/{account.id}	Retrieve information about a specific storage account.
Specific account listing	GET	<accesser>:8338/accounts/{account.id}	Retrieve information about a specific storage account.
Account modification	POST	<accesser>:8338/accounts/{account.id}	Update information or the operational behavior of a specific storage account.
Account deletion	DELETE	<accesser>:8338/accounts/{account.id}	Delete a storage account.
Container Listing	GET	<accesser>:8338/accounts/{account.id}/containers	Retrieve the list of containers under a specific storage account.

Account listing

Storage account listing is a new feature introduced by STaaS and is not supported in Swift today.

This capability can be leveraged at various integration points within a deployment by service operators to better understand what storage accounts have been provisioned within the system and for what end customers (domains) they belong to.

Base Command :

GET <accesser>:8338/accounts

Table 4. Common Request Parameters

Request Parameter	Style	Type	Description
"Common request headers" on page 2			

Table 4. Common Request Parameters (continued)

Request Parameter	Style	Type	Description
limit (Optional)	query	Integer	For an integer value n, limits the number of results to n. Maximum limit is 1000 and the default limit is 1000 if none is provided.
marker (Optional)	query	String	For a string value, x, returns account names that are greater than the marker value.
end_marker (Optional)	query	String	For a string value, x, returns account names that are less than the marker value.

Table 5. Common response headers

Response Parameter	Style	Type	Description
"Common response headers" on page 2			
Accepted-Ranges	header	String	Only "bytes" is allowed
Per Storage Account			
id	body	String	The id of the storage account

Table 6. HTTP response codes

HTTP Response Code	Description
200 OK	The request was successful
204 No Content	The request was successful but no storage accounts exist
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to the system that the user lacks the appropriate permission.
404 Not Found	If there is no mapping Keystone Domain for the domain provided a 404 will be returned

Table 7. Role Guidance

Role Guidance	Description
Service User	A user configured at the system manager with a Service User Role

Example Output

Request

GET <accesser>:8338/accounts

Response

HTTP/1.1 200 OK

Content-Length: 176

Accept-Ranges: bytes

Content-Type: application/json; charset=utf-8

X-Trans-Id: tx8ea13a3a835544d8bebf1-0056eb522a

Date: Fri, 18 Mar 2016 00:56:10 GMT

```
{
  "accounts": [
    {
      "id" : "32af68f229914e328d6e4a5e3ff612cb"
    },
    {
      "id" : "72af68f229914e328d6e4a5e3ff6FFcb"
    }
  ]
}
```

Account creation

This API covers the manual creation of a storage account via the Service API.

The storage account name must be from 1-256 characters long and must be alphanumeric or "-" characters only. The name also cannot contain a slash (/) character as this delimits the account and container name.

The keys for request parameters must be treated as case-insensitive at all times. These keys can contain ASCII 7-bit characters that are not control (0-31) characters, DEL, or a separator character, according to HTTP/1.1. Also, Object Storage does not support the underscore character, which it silently converts to a hyphen.

The user and system metadata values in do not follow HTTP/1.1 rules for character encodings. The caller must use a UTF-8 encoding to get a byte array for any string that contains characters that are not in the 7-bit ASCII 0-127 range.

Base Command :

```
PUT <accesser>:8338/accounts/{account.id}
```

Table 8. Common Request Parameters

Request Parameter	Style	Type	Description
X-Account-Meta-name (Optional)	header	String	The account user metadata. The {name} is the name of metadata item that you want to add. You must specify an x-account-meta-{name} header for each metadata item (for each{name}) that you want to add

Table 8. Common Request Parameters (continued)

Request Parameter	Style	Type	Description
X-Account-Sysmeta-name (Optional)	header	String	The account system metadata. This requires a special permission to be configured for the role for which the authenticated user has been assigned
ibm-account-id (Optional)	header	String	Optional. Your IBM Cloud Platform ID, which the system stores. This request header is only available for IAM-authenticated requests.
X-Account-Max-Container-Count (Optional)	header	String	<p>The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account.</p> <p>If the value is set to 0, then the storage account cannot create containers but with appropriate permissions (container ACL or IAM) can access other containers.</p> <p>Creation of numerous containers simultaneously or in rapid succession for a storage account can result in container creation failing for the account with the response code HTTP 500 during the period of contention.</p> <p>A smaller value can result in Ceph tests failing for this storage account (The number of buckets required for full Ceph test suite depends on the version of the suite).</p> <p>If the parameter is not set, then the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.</p>

Table 9. Common response headers

Response Parameter	Style	Type	Description
id	Body	String	The id of the storage account
All User Metadata (optional)	Body	String	The current key value pair for each user metadata item (only if the output format is JSON or XML)
All System Metadata (optional)	Body	String	The current key value pair for each system metadata item (only if the output format is JSON or XML)
X-Timestamp	header	Integer	The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version. For example, 1440619048 is equivalent to Mon, Wed, 26 Aug 2015 19:57:28 GMT.
X-Account-Max-Container-Count (Optional)	header	String	The maximum number of containers for this storage account. If the value is not set in the request, then this parameter is not present
ibm-account-id (Optional)	header	String	Optional. Your IBM Cloud Platform ID stored by the system. This request header is only available for IAM-authenticated requests.

Table 10. HTTP response codes

HTTP Response Code	Description
201 Created	The storage account was properly created
400 Bad Request	The storage account name exceeds 256 characters or has invalid characters
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to Swift that the user lacks the appropriate permission.
409 Conflict	The account was not created due to an an account already existing or during an internal conflict

Table 11. Role Guidance

Role Guidance	Description
Service User	A user configured at the Manager with a Service User Role

Example Output

```
Request
PUT <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
x-account-sysmeta-tagid: "82443531-09ed-4184-b790-3607543ae79f",
x-account-meta-name: "Company Account"
x-account-max-container-count: "1000"
```

```
Response
HTTP/1.1 201 CREATED
Content-Length: 63
Content-Type: application/json; charset=utf-8
X-Trans-Id: tx8ea13a3a835544d8bebf1-0056eb522a
X-Account-Max-Container-Count: 1000
Date: Fri, 18 Mar 2016 00:56:10 GMT
X-Timestamp: 1458262564.22774
```

```
{
  "account": {
    "id": "731fc6f265cd486d900f16e84c5cb594",
    "metadata": {
      "name": "Company Account"
      "location": "Chicago"
    },
    "system_metadata": {
      "tagid": "82443531-09ed-4184-b790-3607543ae79f"
    }
  }
}
```

Account retrieval

The account retrieval interface has been created in order to obtain the current configuration and usage for a specific storage account.

Base Command :

```
HEAD <accesser>:8338/accounts/{account.id}
```

Table 12. Request Parameter

Request Parameter	Style	Type	Description
"Common request headers" on page 2			
ibm-account-id (Optional)	header	String	Optional. Your Bluemix ID, which the system stores. This request header is only available for IAM-authenticated requests.

Table 13. Response Parameter

Response Parameter	Style	Type	Description
"Common response headers" on page 2			
Accepted-Ranges	header	String	Only "bytes" is allowed
X-Account-Object-Count	header	Integer	The number of objects in the account.
X-Account-Container-Count	header	Integer	The number of containers.
X-Account-Bytes-Used	header	Integer	The total number of bytes that are stored in Object Storage for the account.

Table 13. Response Parameter (continued)

Response Parameter	Style	Type	Description
X-Account-Max-Container-Count (Optional)	header	String	<p>The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account.</p> <p>If this parameter is not set using the Service API, then the parameter is not returned in the response and the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.</p>
X-Account-Meta-name (Optional)	header	String	<p>The custom account metadata item, where {name} is the name of the metadata item. One x-account-meta-{name} response header appears for each metadata item (for each {name}).</p>
X-Timestamp	header	Integer	<p>The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version.</p> <p>For example, 1440619048 is equivalent to Mon, Wed, 26 Aug 2015 19:57:28 GMT.</p>
X-Account-Sysmeta-name (Optional)	header	String	<p>The account system metadata. This requires a special permission to be configured for the role for which the authenticated user has been assigned</p>
ibm-account-id (Optional)	header	String	<p>Optional. Your IBM Cloud Platform ID stored by the system. This request header is only available for IAM-authenticated requests.</p>

Table 14. HTTP response code

HTTP Response Code	Description
200 OK	The account exists and command succeeds
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to Swift that the user lacks the appropriate permission.
404 Not Found	The specific account was not found on the system

Table 15. Role Guidance

Role Guidance	Description
Service User	A user configured at the dsNet manager with a Service User Role

Example Output

Request

```
HEAD <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
```

Response

```
HTTP/1.1 200 OK
Content-Length: 158
Accept-Ranges: bytes
X-Account-Object-Count: 0
X-Timestamp: 1458262564.22774
X-Account-Bytes-Used: 0
X-Account-Status: ENABLED
X-Account-Container-Count: 1
X-Account-Max-Container-Count: 1000
Content-Type: application/json; charset=utf-8
```

```
X-Trans-Id: tx17d63305be1c4dfa978a3-0056ec0c92
Date: Fri, 18 Mar 2016 14:11:30 GMT
```

Specific account listing

The account listing command allows the user to list the information for a specific storage account.

Note that this request may take two round trips (one trip to obtain the list of storage locations that a storage account has containers in, another trip to obtain the storage account's usage in each storage location).

Base Command :

```
GET <accesser>:8338/accounts/{account.id}
```

Table 16. Request Parameter

Request Parameter	Style	Type	Description
"Common request headers" on page 2			
ibm-account-id (Optional)	header	String	Optional. Your Bluemix ID, which the system stores. This request header is only available for IAM-authenticated requests.

Table 17. Response Parameter

Response Parameter	Style	Type	Description
"Common response headers" on page 2			
Accepted-Ranges	header	String	Only "bytes" is allowed
X-Account-Object-Count	header	Integer	The number of objects in the account.
X-Account-Container-Count	header	Integer	The number of containers.
X-Account-Bytes-Used	header	Integer	The total number of bytes that are stored in Object Storage for the account.
X-Account-Meta-name (Optional)	header	String	The custom account metadata item, where {name} is the name of the metadata item. One <i>x-account-meta-{name}</i> response header appears for each metadata item (for each {name}).
X-Account-Sysmeta-name (Optional)	header	String	The account system metadata. This requires a special permission to be configured for the role for which the authenticated user has been assigned
X-Account-Max-Container-Count (Optional)	header	String	<p>The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account.</p> <p>If this parameter is not set using the Service API, then the parameter is not returned in the response and the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.</p>

Table 17. Response Parameter (continued)

Response Parameter	Style	Type	Description
X-Timestamp	header	Integer	The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version. For example, 1440619048 is equivalent to Mon, Wed, 26 Aug 2015 19:57:28 GMT.
X-Account-Meta-Quota-Bytes (Optional)	header	Integer	The number of bytes allocated for this storage account
Per Storage Policy / Vault (Response Body - Optional)			
name	body	String	Provisioning code of the storage location (only if the output format is JSON or XML). Will be an empty string if storage location has no associated provisioning code
id	body	String	The uuid of the storage location.
object_count	body	Integer	The number of bytes used under this account stored within this vault (only if the output format is JSON or XML)
bytes_used	body	Integer	The number of objects under this account stored within this vault (only if the output format is JSON or XML)
container_count	body	Integer	The number of containers under this account (only if the output format is JSON or XML)
Per Account (Response Body - Optional)			
id	body	String	Id of the account (only if the output format is JSON or XML)
object_count	body	Integer	Number of objects within the account (only if the output format is JSON or XML)
bytes_used	body	Integer	Number of bytes within the account (only if the output format is JSON or XML)
container_count	body	String	The number of containers under this account (only if the output format is JSON or XML)

Table 17. Response Parameter (continued)

Response Parameter	Style	Type	Description
ibm-account-id (Optional)	header	String	Optional. Your IBM Cloud Platform ID stored by the system. This request header is only available for IAM-authenticated requests.

Table 18. HTTP Response Code

HTTP Response Code	Description
200 OK	The account exists and command succeeds
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to Swift that the user lacks the appropriate permission.
404 Not Found	The specific account was not found on the system

Table 19. Role Guidance

Role Guidance	Description
Service User	A user configured at the Manager with a Service User Role

Example Output

Request

```
GET <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
```

Response

```
HTTP/1.1 200 OK
Content-Length: 158
Accept-Ranges: bytes
X-Account-Object-Count: 0
X-Timestamp: 1458262564.22774
X-Account-Bytes-Used: 0
X-Account-Container-Count: 3
X-Account-Max-Container-Count: 1000
X-Account-Status: ENABLED
Content-Type: application/json; charset=utf-8
X-Trans-Id: txa214ce1fb3614b6aa15e1-0056ec0f3c
Date: Fri, 18 Mar 2016 14:22:52 GMT
{
  "account": {
    "storage_location": [
      {
        "name": "us-standard",
        "id": "b190120d-6bc2-7c06-0105-fbc3fa265865"
        "container_count": 1,
        "object_count": 0,
        "bytes_used": 0
      },
      {
        "name": "us-standard",
        "id": "a200159c-6af2-5d26-9125-acd4dd574877"
        "container_count": 2,
        "object_count": 1,
        "bytes_used": 1000
      }
    ]
  }
}
```

```

    ],
    "id": "731fc6f265cd486d900f16e84c5cb594",
    "container_count": 3,
    "object_count": 1,
    "bytes_used": 1000
  }
}

```

Account modification

The account modification interface has been created in order to modify the metadata or the operational behavior of a storage account.

This includes adding user metadata, system metadata, quota allocation, maximum containers for the account or changing the operational state.

The keys for request parameters must be treated as case-insensitive at all times. These keys can contain ASCII 7-bit characters that are not control (0-31) characters, DEL, or a separator character, according to HTTP/1.1. Also, Object Storage does not support the underscore character, which it silently converts to a hyphen.

The user and system metadata values in do not follow HTTP/1.1 rules for character encodings. The caller must use a UTF-8 encoding to get a byte array for any string that contains characters that are not in the 7-bit ASCII 0-127 range.

Base Command :

```
POST <accesser>:8338/accounts/{account.id}
```

Table 20. Request Parameter

Request Parameter	Style	Type	Description
"Common request headers" on page 2			
X-Account-Meta-name (Optional)	header	String	The account user metadata. The {name} is the name of metadata item that you want to add, update, or delete. To delete this item, send an empty value in this header or use X-Remove-Account-Meta-{name}. You must specify an x-account-meta-{name} header for each metadata item (for each{name}) that you want to add, update, or delete.
X-Account-Sysmeta-name (Optional)	header	String	The account system metadata. This requires a special permission to be configured for the role for which the authenticated user has been assigned.
X-Account-Meta-Quota-Bytes (Optional) [Future]	header	Integer	The number of bytes allocated for this storage account

Table 20. Request Parameter (continued)

Request Parameter	Style	Type	Description
X-Account-Max-Container-Count (Optional)	header	String	<p>The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account.</p> <p>If the value is set to 0, then the storage account cannot create containers but with appropriate permissions (container ACL or IAM) can access other containers.</p> <p>If the maximum container count was set prior to the current invocation, then the value overwrites the previous value.</p> <p>If the value is less than the total number of containers already created for the storage account, then container creation is effectively "disabled" until the number of containers falls below the value. In such a scenario, S3 PUT Bucket returns HTTP response code 507.</p> <p>Creation of numerous containers simultaneously or in rapid succession for a storage account can result in container creation failing for the account with the response code HTTP 500 during the period of contention.</p> <p>A smaller value can result in Ceph tests failing for this storage account (The number of buckets required for the full Ceph test suite depends on the version of the suite).</p> <p>If this parameter is not set using the Service API, then the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.</p>

Table 20. Request Parameter (continued)

Request Parameter	Style	Type	Description
X-Account-Status (Optional)	header	String	This value can be set to enabled
ibm-account-id (Optional)	header	String	Optional. Your Bluemix ID, which the system stores. This request header is only available for IAM-authenticated requests.

Table 21. Response Parameter

Response Parameter	Style	Type	Description
“Common response headers” on page 2			
id	body	String	The id of the storage account
All User Metadata (optional)	body	String	The current key value pair for each user metadata item (only if the output format is JSON or XML)
All System Metadata (optional)	body	String	The current key value pair for each system metadata item (only if the output format is JSON or XML)
X-Account-Max-Container-Count (Optional)	header	String	<p>The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account.</p> <p>If this parameter is not set using the Service API, then the parameter is not returned in the response and the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.</p>

Table 21. Response Parameter (continued)

Response Parameter	Style	Type	Description
X-Timestamp	Integer	header	The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version. For example, 1440619048 is equivalent to Mon, Wed, 26 Aug 2015 19:57:28 GMT.
ibm-account-id (Optional)	header	String	Optional. Your Bluemix ID stored by the system. This request header is only available for IAM-authenticated requests.

Table 22. HTTP Response Code

HTTP Response Code	Description
202 Accepted	The account already exists. Note that any user metadata will be updated during this process but the stored account creation time would not be updated.
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to Swift that the user lacks the appropriate permission.
404 Not Found	The account does not exist in Swift.
409 Conflict	The account was not modified due to an internal conflict (e.g. invalid quota specified)
410 Gone	The account has been recently deleted and its data is gone

Operational Note:

Once disabled, any normal requests that Swift receives against the account, its containers, or objects, will receive a 401 Unauthorized response. This happens even if a user provides a valid Keystone token that would otherwise have access to the account.

Table 23. Role Guidance

Role Guidance	Description
Service User	A user configured at the Manager with a Service User Role

Example Output

Request
 POST <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
 x-account-meta-name: "Company Account"
 X-Account-Max-Container-Count: 10000

Response
 HTTP/1.1 202 Accepted

```

Content-Length: 202
X-Timestamp: 1458262564.22774
Content-Type: application/json; charset=utf-8
X-Trans-Id: tx9809aded32734d38a61e5-0056ebe748
X-Account-Max-Container-Count: 10000
Date: Fri, 18 Mar 2016 11:32:24 GMT
{
  "account": {
    "id": "731fc6f265cd486d900f16e84c5cb594",
    "metadata": {
      "name": "Company Account"
      "location": "Chicago"
    },
    "system_metadata": {
      "tagid": "82443531-09ed-4184-b790-3607543ae79f"
    }
  }
}

```

Account deletion

The account deletion command allows for a storage account to be removed from the system.

Typically the storage account must be empty before deletion unless the user has permissions to purge the account.

Base Command

```
DELETE <accessor>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
```

Table 24. Request Parameter

Request Parameter	Style	Type	Description
Common Request Parameters			

Table 25. Response Parameter

Response Parameter	Style	Type	Description
Common response headers			
No unique headers			

Table 26. Role Guidance

Role Guidance	Description
Service User	A user who is configured at the Manager with a Service User Role.

Table 27. HTTP Response Code

HTTP Response Code	Description
204 No Content	The account exists and is successfully deleted.
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token might be valid, but Keystone reported to Swift that the user lacks the appropriate permission.
404 Not Found	The account does not exist.

Table 27. HTTP Response Code (continued)

HTTP Response Code	Description
409 Conflict	The account exists but is not empty, the authenticated user's role lacks the permission to purge (that is, force account deletion).
410 Gone	The account is recently deleted and its data is gone.

Example Output

Request

```
DELETE <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594
```

Response

```
HTTP/1.1 204 No Content
```

```
Content-Type: application/json; charset=utf-8
```

```
X-Trans-Id: tx8ea13a3a835544d8bebf1-0056eb522a
```

```
Date: Fri, 18 Mar 2016 00:56:10 GMT
```

Container / bucket listing

The following API provides an interface intended to be used by a Service User for generically listing containers and buckets under a storage account that is not tied to a specific client interface (S3 or Swift).

Swift storage account operators that desire a similar capability would leverage the standard Swift interface for storage account container listing. Note that this is a resource intensive listing operation and has performance implications on the system, frequent usage of this interface is highly discouraged and integration into any automated systems (e.g. billing) will result in unacceptable performance impacts to the system and is also highly discouraged.

Base Command

```
GET <accesser>:8338/accounts/731fc6f265cd486d900f16e84c5cb594/containers
```

Table 28. Request Parameter

Request Parameter	Style	Type	Description
"Common request headers" on page 2			
limit (Optional)	query	Integer	For an integer value n, limits the number of results to n. Maximum limit is 1000 and the default limit is 1000 if none is provided.
marker (Optional)	query	String	For a string value, x, returns container names that are greater than the marker value.
end_marker (Optional)	query	String	For a string value, x, returns container names that are less than the marker value.
prefix (Optional)	query	String	Prefix value. Named items in the response begin with this value.
ibm-account-id (Optional)	header	String	Optional. Your Bluemix ID, which the system stores. All containers owned by this Bluemix ID are returned. This request header is only available for IAM-authenticated requests.

Table 29. Response Parameter

Response Parameter	Style	Type	Description
"Common response headers" on page 2			
Accepted-Ranges	header	String	Only "bytes" is allowed
X-Timestamp	header	Integer	The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version. For example, 1440619048 is equivalent to Mon, Wed, 26 Aug 2015 19:57:28 GMT.
X-Account-Object-Count	header	Integer	The number of objects in the account.
X-Account-Container-Count	header	Integer	The number of containers.
X-Account-Bytes-Used	header	Integer	The total number of bytes that are stored in Object Storage for the account.
X-Account-Max-Container-Count (Optional)	header	String	The maximum number of containers for this storage account. The range is 0 to a system-wide upper limit of maximum containers per storage account. Contact Customer Support personnel to determine or change the value of the upper limit of the maximum containers per storage account. If the parameter is not set using Service API, then the parameter is not present in the response and the system-wide maximum container limit per storage account applies. Contact Customer Support personnel to determine this value.
X-Account-Status	header	Integer	The status of the storage account i.e. ENABLED/DISABLED
Response Body			
is_truncated	body	Boolean	This will be set to true if the number of containers listed has been truncated due to the limit request parameter.
limit	body	Integer	Will reflect the value specified in the limit request parameter or the default of 1000 if limit was not provided.
Per Bucket / Container (Response Body)			
name (optional)	body	String	Name of the container
storage_location (optional)	body	String	Provisioning code of the storage location (only if the output format is JSON or XML). Will be an empty string if storage location has no associated provisioning code.
creation_time (optional)	body	Integer	The date and time in UNIX Epoch time stamp format when the account, container, or object was initially created as a current version. For example, 1440619048 is equivalent to Mon, Wed, 40026 Aug 2015 19:57:28 GMT .

Table 29. Response Parameter (continued)

Response Parameter	Style	Type	Description
object_count (optional)	body	Integer	Number of objects within the bucket / container (only if the output format is JSON or XML)
bytes_used (optional)	body	Integer	Number of bytes within the bucket / container (only if the output format is JSON or XML)
is_legacy	body	Boolean	True when a vault is migrated to a container.
bucket_protection_state (optional)	body	String	Indicates what the bucket protection state is for a container. This field is only included if protection is enabled for the container vault that the bucket resides in and the requester has a service user role on the system. Values for the field, if included, are: Compliance or Disabled

Table 30. Role Guidance

Role Guidance	Description
Service User	A user configured as the Manager with a Service User Role

Table 31. HTTP Response Code

HTTP Response Code	Description
200 OK	The specified account exists.
401 Unauthorized	The provided token is invalid or could not be verified with Keystone.
403 Forbidden	The provided token may be valid, but Keystone has reported to Swift that the user lacks the appropriate permission.
404 Not Found	The specified account was not found on the system.

Example Output

Request

```
GET <accessor>:8338/accounts/731fc6f265cd486d900f16e84c5cb594/containers
```

Response

```
HTTP/1.1 200 OK
Content-Length: 257
Accept-Ranges: bytes
X-Account-Object-Count: 0
X-Account-Bytes-Used: 0
X-Account-Container-Count: 2
X-Account-Max-Container-Count: 1000
X-Account-Status: ENABLED
X-Timestamp: 1458262564.22774
Content-Type: application/json; charset=utf-8
X-Trans-Id: txa214ce1fb3614b6aa15e1-0056ec0f3c
Date: Fri, 18 Mar 2016 14:22:52 GMT
{
  "is_truncated": false,
  "limit": 1000,
  "containers": [
    {
      "name": "container1",
      "storage_location": "us-standard",
      "creation_time": 1440619048,
```

```
    "object_count": 0,  
    "bytes_used": 0,  
    "is_legacy": false  
  },  
  {  
    "name": "container2",  
    "storage_location": "us-standard",  
    "creation_time": 1440619048,  
    "object_count": 0,  
    "bytes_used": 0,  
    "is_legacy": false  
  }  
]  
}
```

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