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# **SoftLayer API Python Client Documentation**

*Release latest*

**SoftLayer Technologies, Inc.**

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[API Docs](#) | [GitHub](#) | [Issues](#) | [Pull Requests](#) | [PyPI](#) |

This is the documentation to SoftLayer's Python API Bindings. These bindings use SoftLayer's [XML-RPC](#) interface in order to manage SoftLayer services.



## INSTALLATION

### 1.1 What's Included

When you install softlayer-python you you will get the following:

- a python package called 'SoftLayer' (casing is important) available in your python path.
- a command-line client placed in your system path named 'slcli'.

### 1.2 Using Pip

Install via pip:

```
$ pip install softlayer
```

### 1.3 Debian/Ubuntu

For Debian "jessie" (currently testing) and Ubuntu 14.04, official system packages are available. **These are typically a couple versions behind so it is recommended to install from pypi if problems are encountered.**

```
$ sudo apt-get install python-softlayer
```

### 1.4 From Source

The project is developed on GitHub, at <https://github.com/softlayer/softlayer-python>.

Install from source via pip (requires git):

```
$ pip install git+git://github.com/softlayer/softlayer-python.git
```

You can clone the public repository:

```
$ git clone git@github.com:softlayer/softlayer-python.git
```

Or, Download the [tarball](#):

```
$ curl -OL https://github.com/softlayer/softlayer-python/tarball/master
```

Or, download the [zipball](#):

```
$ curl -OL https://github.com/softlayer/softlayer-python/zipball/master
```

Once you have a copy of the source you can install it with one of the following commands:

```
$ python setup.py install
```

Or:

```
$ pip install .
```

For more information about working with the source, or contributing to the project, please see the [Contribution Guide](#).

## CONFIGURATION FILE

The SoftLayer API bindings load your settings from a number of different locations.

- Input directly into `SoftLayer.create_client_from_env(...)`
- Environment variables (`SL_USERNAME`, `SL_API_KEY`)
- Config file locations (`~/.softlayer`, `/etc/softlayer.conf`)
- Or argument (`-C/path/to/config` or `-config=/path/to/config`)

The configuration file is INI-based and requires the `softlayer` section to be present. The only required fields are `username` and `api_key`. You can optionally supply the `endpoint_url` as well. This file is created automatically by the `scli setup` command detailed here: [Configuration Setup](#).

### *Config Example*

```
[softlayer]
username = username
api_key = oyVmeipYQCNrjVS4rF9bHWV7D75S6pa1fghF1384v7mwRCbHTfuJ8qRORIqoVnha
endpoint_url = https://api.softlayer.com/xmlrpc/v3/
timeout = 40
```

### *Cloud.ibm.com Config Example*

```
[softlayer]
username = apikey
api_key = 123cNyhzg45Ab6789ADyzwR_2LAagNVbySgY73tAQOz1
endpoint_url = https://api.softlayer.com/rest/v3.1/
timeout = 40
```





## API DOCUMENTATION

This is the primary API client to make API calls. It deals with constructing and executing XML-RPC calls against the SoftLayer API. Below are some links that will help to use the SoftLayer API.

- [SoftLayer API Documentation](#)
- [Source on GitHub](#)

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env(username="username", api_key="api_key")
>>> resp = client.call('Account', 'getObject')
>>> resp['companyName']
'Your Company'
```

### 3.1 Getting Started

You can pass in your username and api\_key when creating a SoftLayer client instance. However, you can also set these in the environmental variables 'SL\_USERNAME' and 'SL\_API\_KEY'.

Creating a client instance by passing in the username/api\_key:

```
import SoftLayer
client = SoftLayer.create_client_from_env(username='YOUR_USERNAME', api_key='YOUR_API_KEY')
↪')
```

Creating a client instance with environmental variables set:

```
$ export SL_USERNAME=YOUR_USERNAME
$ export SL_API_KEY=YOUR_API_KEY
$ python
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
```

Below is an example of creating a client instance with more options. This will create a client with the private API endpoint (only accessible from the SoftLayer private network) and a timeout of 4 minutes.

```
client = SoftLayer.create_client_from_env(username='YOUR_USERNAME',
                                          api_key='YOUR_API_KEY',
                                          endpoint_url=SoftLayer.API_PRIVATE_ENDPOINT,
                                          timeout=240)
```

## 3.2 Managers

For day-to-day operation, most users will find the managers to be the most convenient means for interacting with the API. Managers abstract a lot of the complexities of using the API into classes that provide a simpler interface to various services. These are higher-level interfaces to the SoftLayer API.

```
from SoftLayer import VSManager, Client
client = Client(...)
vs = VSManager(client)
vs.list_instances()
[...]
```

Available managers:

### 3.2.1 SoftLayer.account

Account manager

**license** MIT, see License for more details.

**class** `SoftLayer.managers.account.AccountManager(client)`

Common functions for getting information from the Account service

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**ack\_event**(*event\_id*)

Acknowledge an event. This mostly prevents it from appearing as a notification in the control portal.

**Parameters** `event_id` (*int*) – Notification\_Occurrence\_Event ID you want to ack

**Returns** True on success, Exception otherwise.

**static** `add_event_filter(_filter, event_type)`

Add data to the object filter.

**Param** `_filter`: event filter.

**Param** `string event_type`: event type.

**cancel\_item**(*identifier, reason='No longer needed', note=None*)

Cancels a specific billing item with a reason

**Parameters**

- **identifier** (*int*) – Billing\_Item id
- **reason** (*string*) – A cancellation reason
- **note** (*string*) – Custom note to set when cancelling. Defaults to information about who canceled the item.

**Returns** bool

**get\_account\_all\_billing\_orders**(*limit=100, mask=None*)

Gets all the topLevelBillingItems currently active on the account

**Parameters** `mask` (*string*) – Object Mask

**Returns** Billing\_Item

**get\_account\_billing\_items**(*mask=None*)

Gets all the topLevelBillingItems currently active on the account

**Parameters** *mask* (*string*) – Object Mask

**Returns** Billing\_Item

**get\_active\_account\_licenses()**

Gets all active account licenses.

**Returns** Active account Licenses

**get\_active\_virtual\_licenses()**

Gets all active virtual licenses account.

**Returns** active virtual licenses account

**get\_billing\_item**(*identifier*, *mask=None*)

Gets details about a billing item

**Parameters**

- **identifier** (*int*) – Billing\_Item id
- **mask** (*string*) – Object mask to use.

**Returns** Billing\_Item

**get\_billing\_item\_from\_invoice**(*identifier*, *mask=None*)

Gets details about a billing item of a billing invoice item

**Parameters**

- **identifier** (*int*) – Billing\_Invoice\_Item id
- **mask** – Object mask to use.

**Returns** Billing\_Item

**get\_billing\_items**(*identifier*)

Gets all topLevelBillingItems from a specific invoice

**Parameters** **identifier** (*int*) – Invoice Id

**Returns** Billing\_Invoice\_Item

**get\_event**(*event\_id*)

Gets details about a maintenance event

**Parameters** **event\_id** (*int*) – Notification\_Occurrence\_Event ID

**Returns** Notification\_Occurrence\_Event

**get\_invoices**(*limit=50*, *closed=False*, *get\_all=False*)

Gets an accounts invoices.

**Parameters**

- **limit** (*int*) – Number of invoices to get back in a single call.
- **closed** (*bool*) – If True, will also get CLOSED invoices
- **get\_all** (*bool*) – If True, will paginate through invoices until all have been retrieved.

**Returns** Billing\_Invoice

**get\_item\_detail**(*identifier*)

Gets details about a billing item

**Parameters** **identifier** (*int*) – Billing\_Item id or Billing\_Invoice\_Item

**Returns** Billing\_Item

**get\_network\_message\_delivery\_accounts()**

Gets all Network Message delivery accounts.

**Returns** Network Message delivery accounts

**get\_routers**(*location=None, mask=None*)

Gets all the routers currently active on the account

**Parameters**

- **mask** (*string*) – Object Mask
- **location** (*string*) – location string

**Returns** Routers

**get\_summary()**

Gets some basic account information

**Returns** Account object

**get\_upcoming\_events**(*event\_type*)

Retrieves a list of Notification\_Occurrence\_Events that have not ended yet

**Param** String event\_type: notification event type.

**Returns** SoftLayer\_Notification\_Occurrence\_Event

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

### 3.2.2 SoftLayer.autoscale

Autoscale manager

**license** MIT, see LICENSE for more details.

**class** SoftLayer.managers.autoscale.AutoScaleManager(*client*)

Manager for interacting with Autoscale instances.

**details**(*identifier, mask=None*)

Calls SoftLayer\_Scale\_Group::getObject()

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group id
- **mask** – optional SoftLayer\_Scale\_Group objectMask

**edit**(*identifier, template*)

Calls SoftLayer\_Scale\_Group::editObject()

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group id
- **template** – SoftLayer\_Scale\_Group

**get\_logs**(*identifier, mask=None, object\_filter=None*)

Calls SoftLayer\_Scale\_Group::getLogs()

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group Id
- **mask** – optional SoftLayer\_Scale\_Group\_Log objectMask
- **object\_filter** – optional SoftLayer\_Scale\_Group\_Log objectFilter

**get\_policy**(*identifier, mask=None*)

Calls `SoftLayer_Scale_Policy::getObject()`

**Parameters**

- **identifier** – SoftLayer\_Scale\_Policy id
- **mask** – optional SoftLayer\_Scale\_Policy objectMask

**get\_virtual\_guests**(*identifier, mask=None*)

Calls `SoftLayer_Scale_Group::getVirtualGuestMembers()`

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group Id
- **mask** – optional SoftLayer\_Scale\_Member objectMask

**list**(*mask=None*)

Calls `SoftLayer_Account::getScaleGroups()`

**Parameters** **mask** – optional SoftLayer\_Scale\_Group objectMask

**scale**(*identifier, amount*)

Calls `SoftLayer_Scale_Group::scale()`

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group Id
- **amount** – positive or negative number to scale the group by

**scale\_to**(*identifier, amount*)

Calls `SoftLayer_Scale_Group::scaleTo()`

**Parameters**

- **identifier** – SoftLayer\_Scale\_Group Id
- **amount** – number to scale the group to.

### 3.2.3 SoftLayer.block

Block Storage Manager

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.block.BlockStorageManager`(*client*)

Manages SoftLayer Block Storage volumes.

See product information here: <https://www.ibm.com/cloud/block-storage>

**assign\_subnets\_to\_acl**(*access\_id, subnet\_ids*)

Assigns subnet records to ACL for the access host.

`access_id` is the `host_id` obtained by: `slcli block access-list <volume_id>`

**Parameters**

- **access\_id** (*integer*) – id of the access host
- **subnet\_ids** (*list*) – The ids of the subnets to be assigned

**Returns** Returns int array of assigned subnet ids

**authorize\_host\_to\_volume**(*volume\_id, hardware\_ids=None, virtual\_guest\_ids=None, ip\_address\_ids=None, subnet\_ids=None*)

Authorizes hosts to Storage Volumes

**Parameters**

- **volume\_id** – The File volume to authorize hosts to
- **hardware\_ids** – A List of SoftLayer\_Hardware ids
- **virtual\_guest\_ids** – A List of SoftLayer\_Virtual\_Guest ids
- **ip\_address\_ids** – A List of SoftLayer\_Network\_Subnet\_IpAddress ids
- **subnet\_ids** – A List of SoftLayer\_Network\_Subnet ids. Only use with File volumes.

**Returns** Returns an array of SoftLayer\_Network\_Storage\_Allowed\_Host objects which now have access to the given volume

**cancel\_block\_volume**(*volume\_id, reason='No longer needed', immediate=False*)

Cancels the given block storage volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate\_flag** (*boolean*) – Cancel immediately or on anniversary date

**cancel\_snapshot\_space**(*volume\_id, reason='No longer needed', immediate=False*)

Cancels snapshot space for a given volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate\_flag** (*boolean*) – Cancel immediately or on anniversary date

**cancel\_volume**(*volume\_id, reason='No longer needed', immediate=False*)

Cancels the given storage volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate\_flag** (*boolean*) – Cancel immediately or on anniversary date

**convert\_dep\_dupe**(*volume\_id*)

Convert a dependent duplicate volume to an independent volume.

**Parameters** **volume\_id** (*integer*) – The id of the volume.

**create\_or\_update\_lun\_id**(*volume\_id, lun\_id*)

Set the LUN ID on a volume.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume

- **lun\_id** (*integer*) – LUN ID to set on the volume

**Returns** a SoftLayer\_Network\_Storage\_Property object

**create\_snapshot** (*volume\_id*, *notes=""*, *\*\*kwargs*)

Creates a snapshot on the given block volume.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **notes** (*string*) – The notes or “name” to assign the snapshot

**Returns** Returns the id of the new snapshot

**deauthorize\_host\_to\_volume** (*volume\_id*, *hardware\_ids=None*, *virtual\_guest\_ids=None*,  
*ip\_address\_ids=None*, *subnet\_ids=None*)

Revokes authorization of hosts to File Storage Volumes

**Parameters**

- **volume\_id** – The File volume to deauthorize hosts to
- **hardware\_ids** – A List of SoftLayer\_Hardware ids
- **virtual\_guest\_ids** – A List of SoftLayer\_Virtual\_Guest ids
- **ip\_address\_ids** – A List of SoftLayer\_Network\_Subnet\_IpAddress ids
- **subnet\_ids** – A List of SoftLayer\_Network\_Subnet ids. Only use with File volumes

**Returns** Returns an array of SoftLayer\_Network\_Storage\_Allowed\_Host objects which have access to the given File volume

**delete\_snapshot** (*snapshot\_id*)

Deletes the specified snapshot object.

**Parameters** **snapshot\_id** – The ID of the snapshot object to delete.

**disable\_snapshots** (*volume\_id*, *schedule\_type*)

Disables snapshots for a specific block volume at a given schedule

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **schedule\_type** (*string*) – ‘HOURLY’|‘DAILY’|‘WEEKLY’

**Returns** Returns whether successfully disabled or not

**disaster\_recovery\_failover\_to\_replicant** (*volume\_id*, *replicant\_id*)

Disaster Recovery Failover to a volume replicant.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **replicant** (*integer*) – ID of replicant to failover to

**Returns** Returns whether failover to successful or not

**enable\_snapshots** (*volume\_id*, *schedule\_type*, *retention\_count*, *minute*, *hour*, *day\_of\_week*, *\*\*kwargs*)

Enables snapshots for a specific block volume at a given schedule

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **schedule\_type** (*string*) – ‘HOURLY’|‘DAILY’|‘WEEKLY’

- **retention\_count** (*integer*) – Number of snapshots to be kept
- **minute** (*integer*) – Minute when to take snapshot
- **hour** (*integer*) – Hour when to take snapshot
- **day\_of\_week** (*string*) – Day when to take snapshot

**Returns** Returns whether successfully scheduled or not

**failback\_from\_replicant**(*volume\_id*)

Failback from a volume replicant.

**Parameters** **volume\_id** (*integer*) – The id of the volume

**Returns** Returns whether failback was successful or not

**failover\_to\_replicant**(*volume\_id, replicant\_id*)

Failover to a volume replicant.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **replicant\_id** (*integer*) – ID of replicant to failover to

**Returns** Returns whether failover was successful or not

**get\_block\_volume\_access\_list**(*volume\_id, \*\*kwargs*)

Returns a list of authorized hosts for a specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of authorized hosts for a specified volume.

**get\_block\_volume\_details**(*volume\_id, \*\*kwargs*)

Returns details about the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns details about the specified volume.

**get\_block\_volume\_snapshot\_list**(*volume\_id, \*\*kwargs*)

Returns a list of snapshots for the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of snapshots for the specified volume.

**get\_replication\_locations**(*volume\_id*)

Acquires list of the datacenters to which a volume can be replicated.

**Parameters** **volume\_id** – The ID of the primary volume to be replicated

**Returns** Returns an array of SoftLayer\_Network\_Storage objects



**get\_replication\_partners**(*volume\_id*)

Acquires list of replicant volumes pertaining to the given volume.

**Parameters** **volume\_id** – The ID of the primary volume to be replicated

**Returns** Returns an array of SoftLayer\_Location objects

**get\_subnets\_in\_acl**(*access\_id*)

Returns a list of subnet records for the access host.

*access\_id* is the *host\_id* obtained by: `slcli block access-list <volume_id>`

**Parameters** **access\_id** (*integer*) – id of the access host

**Returns** Returns an array of SoftLayer\_Network\_Subnet objects

**get\_volume\_access\_list**(*volume\_id*, **\*\*kwargs**)

Returns a list of authorized hosts for a specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of authorized hosts for a specified volume.

**get\_volume\_count\_limits**()

Returns a list of block volume count limit.

**Returns** Returns a list of block volume count limit.

**get\_volume\_details**(*volume\_id*, **\*\*kwargs**)

Returns details about the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns details about the specified volume.

**get\_volume\_snapshot\_list**(*volume\_id*, **\*\*kwargs**)

Returns a list of snapshots for the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of snapshots for the specified volume.

**get\_volume\_snapshot\_notification\_status**(*volume\_id*)

returns Enabled/Disabled status of snapshot space usage threshold warning for a given volume.

**Parameters** **volume\_id** – ID of volume.

**Returns** Enables/Disables snapshot space usage threshold warning for a given volume.

**list\_block\_volume\_limit**()

Returns a list of block volume count limit.

**Returns** Returns a list of block volume count limit.

**list\_block\_volumes**(*datacenter=None, username=None, storage\_type=None, order=None, \*\*kwargs*)  
Returns a list of block volumes.

**Parameters**

- **datacenter** – Datacenter short name (e.g.: dal09)
- **username** – Name of volume.
- **storage\_type** – Type of volume: Endurance or Performance
- **order** – Volume order id.
- **kwargs** –

**Returns** Returns a list of block volumes.

**list\_volume\_schedules**(*volume\_id*)  
Lists schedules for a given volume

**Parameters** **volume\_id** (*integer*) – The id of the volume

**Returns** Returns list of schedules assigned to a given volume

**order\_block\_volume**(*storage\_type, location, size, os\_type, iops=None, tier\_level=None, snapshot\_size=None, service\_offering='storage\_as\_a\_service', hourly\_billing\_flag=False*)

Places an order for a block volume.

**Parameters**

- **storage\_type** – ‘performance’ or ‘endurance’
- **location** – Datacenter in which to order iSCSI volume
- **size** – Size of the desired volume, in GB
- **os\_type** – OS Type to use for volume alignment, see help for list
- **iops** – Number of IOPs for a “Performance” order
- **tier\_level** – Tier level to use for an “Endurance” order
- **snapshot\_size** – The size of optional snapshot space, if snapshot space should also be ordered (None if not ordered)
- **service\_offering** – Requested offering package to use in the order (‘storage\_as\_a\_service’, ‘enterprise’, or ‘performance’)
- **hourly\_billing\_flag** – Billing type, monthly (False) or hourly (True), default to monthly.

**order\_duplicate\_volume**(*origin\_volume\_id, origin\_snapshot\_id=None, duplicate\_size=None, duplicate\_iops=None, duplicate\_tier\_level=None, duplicate\_snapshot\_size=None, hourly\_billing\_flag=False, dependent\_duplicate=False*)

Places an order for a duplicate volume.

**Parameters**

- **origin\_volume\_id** – The ID of the origin volume to be duplicated
- **origin\_snapshot\_id** – Origin snapshot ID to use for duplication
- **duplicate\_size** – Size/capacity for the duplicate volume
- **duplicate\_iops** – The IOPS per GB for the duplicate volume

- **duplicate\_tier\_level** – Tier level for the duplicate volume
- **duplicate\_snapshot\_size** – Snapshot space size for the duplicate
- **hourly\_billing\_flag** – Billing type, monthly (False) or hourly (True), default to monthly.

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_modified\_volume**(*volume\_id, new\_size=None, new\_iops=None, new\_tier\_level=None*)

Places an order for modifying an existing block volume.

**Parameters**

- **volume\_id** – The ID of the volume to be modified
- **new\_size** – The new size/capacity for the volume
- **new\_iops** – The new IOPS for the volume
- **new\_tier\_level** – The new tier level for the volume

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_replicant\_volume**(*volume\_id, snapshot\_schedule, location, tier=None, os\_type=None*)

Places an order for a replicant volume.

**Parameters**

- **volume\_id** – The ID of the primary volume to be replicated
- **snapshot\_schedule** – The primary volume’s snapshot schedule to use for replication
- **location** – The location for the ordered replicant volume
- **tier** – The tier (IOPS per GB) of the primary volume
- **os\_type** – The OS type of the primary volume

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_snapshot\_space**(*volume\_id, capacity, tier, upgrade, \*\*kwargs*)

Orders snapshot space for the given block volume.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **capacity** (*integer*) – The capacity to order, in GB
- **tier** (*float*) – The tier level of the block volume, in IOPS per GB
- **upgrade** (*boolean*) – Flag to indicate if this order is an upgrade

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**refresh\_dupe**(*volume\_id, snapshot\_id*)

“Refresh a duplicate volume with a snapshot from its parent.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **snapshot\_id** (*integer*) – The id of the snapshot

**remove\_subnets\_from\_acl**(*access\_id, subnet\_ids*)

Removes subnet records from ACL for the access host.

access\_id is the host\_id obtained by: slcli block access-list <volume\_id>

**Parameters**

- **access\_id** (*integer*) – id of the access host
- **subnet\_ids** (*list*) – The ids of the subnets to be removed

**Returns** Returns int array of removed subnet ids

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**restore\_from\_snapshot**(*volume\_id, snapshot\_id*)

Restores a specific volume from a snapshot

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **snapshot\_id** (*integer*) – The id of the restore point

**Returns** Returns whether successfully restored or not

**set\_credential\_password**(*access\_id, password*)

Sets the password for an access host

**Parameters**

- **access\_id** (*integer*) – id of the access host
- **password** (*string*) – password to set

**set\_volume\_snapshot\_notification**(*volume\_id, enable*)

Enables/Disables snapshot space usage threshold warning for a given volume.

**Parameters**

- **volume\_id** – ID of volume.
- **enable** – Enable/Disable flag for snapshot warning notification.

**Returns** Enables/Disables snapshot space usage threshold warning for a given volume.

**volume\_set\_note**(*volume\_id, note*)

Set the notes for an existing block volume.

**Parameters**

- **volume\_id** – The ID of the volume to be modified
- **note** – the note

**Returns** Returns true if success

### 3.2.4 SoftLayer.cdn

CDN Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.cdn.CDNManager(client)`

Manage Content Delivery Networks in the account.

See product information here: <https://www.ibm.com/cloud/cdn> <https://cloud.ibm.com/docs/infrastructure/CDN?topic=CDN-about-content-delivery-networks-cdn->

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**add\_origin**(*unique\_id, origin, path, origin\_type='server', header=None, port=80, protocol='http', bucket\_name=None, file\_extensions=None, optimize\_for='web', cache\_query='include all'*)

Creates an origin path for an existing CDN.

#### Parameters

- **unique\_id** (*str*) – The unique ID associated with the CDN.
- **path** (*str*) – relative path to the domain provided, e.g. “/articles/video”
- **origin** (*str*) – ip address or hostname if `origin_type=server`, API endpoint for your S3 object storage if `origin_type=storage`
- **origin\_type** (*str*) – it can be ‘server’ or ‘storage’ types.
- **header** (*str*) – the edge server uses the host header to communicate with the origin. It defaults to hostname. (optional)
- **port** (*int*) – the http port number (default: 80)
- **protocol** (*str*) – the protocol of the origin (default: HTTP)
- **bucket\_name** (*str*) – name of the available resource
- **file\_extensions** (*str*) – file extensions that can be stored in the CDN, e.g. “jpg,png”
- **optimize\_for** (*str*) – performance configuration, available options: web, video, and file where:
  - ‘web’ = ‘General web delivery’
  - ‘video’ = ‘Video on demand optimization’
  - ‘file’ = ‘Large file optimization’
- **cache\_query** (*str*) – rules with the following formats: ‘include-all’, ‘ignore-all’, ‘include: space separated query-names’, ‘ignore: space separated query-names.’

**Returns** a CDN origin path object

**edit**(*identifier, header=None, http\_port=None, origin=None, respect\_headers=None, cache=None, performance\_configuration=None*)

Edit the cdn object.

#### Parameters

- **identifier** (*string*) – The CDN identifier.
- **header** – The cdn Host header.
- **http\_port** – The cdn HTTP port.
- **origin** – The cdn Origin server address.

- **respect\_headers** – The cdn Respect headers.
- **cache** – The cdn Cache key optimization.
- **performance\_configuration** – The cdn performance configuration.

**Returns** SoftLayer\_Container\_Network\_CdnMarketplace\_Configuration\_Mapping[].

**property end\_date**

Retrieve the cdn usage metric end date.

**static get\_cache\_key\_query\_rule**(*cache\_type, cache*)

Get the cdn object detail.

**Parameters**

- **cache\_type** (*string*) – Cache type.
- **cache** – Cache description.

**Returns** string value.

**get\_cdn**(*unique\_id, \*\*kwargs*)

Retrieves the information about the CDN account object.

**Parameters**

- **unique\_id** (*str*) – The unique ID associated with the CDN.
- **\*\*kwargs** (*dict*) – header-level option (mask)

**Returns** The CDN object

**get\_origins**(*unique\_id, \*\*kwargs*)

Retrieves list of origin pull mappings for a specified CDN account.

**Parameters**

- **unique\_id** (*str*) – The unique ID associated with the CDN.
- **\*\*kwargs** (*dict*) – header-level options (mask, limit, etc.)

**Returns** The list of origin paths in the CDN object.

**get\_usage\_metrics**(*unique\_id, history=30, frequency='aggregate'*)

Retrieves the cdn usage metrics.

It uses the ‘days’ argument if start\_date and end\_date are None.

**Parameters**

- **unique\_id** (*int*) – The CDN uniqueId from which the usage metrics will be obtained.
- **history** (*int*) – Last N days, default days is 30.
- **frequency** (*str*) – It can be day, week, month and aggregate. The default is “aggregate”.

**Returns** A Container\_Network\_CdnMarketplace\_Metrics object

**list\_cdn**(*\*\*kwargs*)

Lists Content Delivery Networks for the active user.

**Parameters** **\*\*kwargs** (*dict*) – header-level options (mask, limit, etc.)

**Returns** The list of CDN objects in the account

**purge\_content**(*unique\_id, path*)

Purges a URL or path from the CDN.

**Parameters**

- **unique\_id** (*str*) – The unique ID associated with the CDN.
- **path** (*str*) – A string of url or path that should be purged.

**Returns** A Container\_Network\_CdnMarketplace\_Configuration\_Cache\_Purge array object

**remove\_origin**(*unique\_id, path*)

Removes an origin pull mapping with the given origin pull ID.

**Parameters**

- **unique\_id** (*str*) – The unique ID associated with the CDN.
- **path** (*str*) – The origin path to delete.

**Returns** A string value

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly ‘identifier’ can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**property start\_data**

Retrieve the cdn usage metric start date.

### 3.2.5 SoftLayer.dedicatedhost

DH Manager/helpers

**license** MIT, see License for more details.

**class** SoftLayer.managers.dedicated\_host.DedicatedHostManager(*client, ordering\_manager=None*)

Manages SoftLayer Dedicated Hosts.

See product information here <https://www.ibm.com/cloud/dedicated>

**Parameters**

- **client** (*SoftLayer.API.BaseClient*) – the client instance
- **ordering\_manager** (*SoftLayer.managers.OrderingManager*) – an optional manager to handle ordering. If none is provided, one will be auto initialized.

**cancel\_guests**(*host\_id*)

Cancel all guests into the dedicated host immediately.

To cancel an specified guest use the method VSManger.cancel\_instance()

**Parameters** **host\_id** – The ID of the dedicated host.

**Returns** The id, fqdn and status of all guests into a dictionary. The status could be ‘Cancelled’ or an exception message, The dictionary is empty if there isn’t any guest in the dedicated host.

**Example::** # Cancel guests of dedicated host id 12345 result = mgr.cancel\_guests(12345)

**cancel\_host**(*host\_id*)

Cancel a dedicated host immediately, it fails if there are still guests in the host.

**Parameters** `host_id` – The ID of the dedicated host to be cancelled.

**Returns** True on success or an exception

**Example::** # Cancels dedicated host id 12345 result = mgr.cancel\_host(12345)

#### `get_create_options()`

Returns valid options for ordering a dedicated host.

#### `get_host(host_id, **kwargs)`

Get details about a dedicated host.

:param integer : the host ID :returns: A dictionary containing host information.

Example:

```
# Print out host ID 12345.
dh = mgr.get_host(12345)
print dh

# Print out only name and backendRouter for instance 12345
object_mask = "mask[name,backendRouter[id]]"
dh = mgr.get_host(12345, mask=mask)
print dh
```

#### `get_router_options(datacenter=None, flavor=None)`

Returns available backend routers for the dedicated host.

#### `list_guests(host_id, tags=None, cpus=None, memory=None, hostname=None, domain=None, local_disk=None, nic_speed=None, public_ip=None, private_ip=None, **kwargs)`

Retrieve a list of all virtual servers on the dedicated host.

Example:

```
# Print out a list of instances with 4 cpu cores in the host id 12345.

for vsi in mgr.list_guests(host_id=12345, cpus=4):
    print vsi['fullyQualifiedDomainName'], vsi['primaryIpAddress']

# Using a custom object-mask. Will get ONLY what is specified
object_mask = "mask[hostname,monitoringRobot[robotStatus]]"
for vsi in mgr.list_guests(mask=object_mask, cpus=4):
    print vsi
```

#### Parameters

- `host_id` (*integer*) – the identifier of dedicated host
- `tags` (*list*) – filter based on list of tags
- `cpus` (*integer*) – filter based on number of CPUS
- `memory` (*integer*) – filter based on amount of memory
- `hostname` (*string*) – filter based on hostname
- `domain` (*string*) – filter based on domain
- `local_disk` (*string*) – filter based on local\_disk
- `nic_speed` (*integer*) – filter based on network speed (in MBPS)



- **public\_ip** (*string*) – filter based on public ip address
- **private\_ip** (*string*) – filter based on private ip address
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**Returns** Returns a list of dictionaries representing the matching virtual servers

**list\_instances**(*tags=None, cpus=None, memory=None, hostname=None, disk=None, datacenter=None, \*\*kwargs*)

Retrieve a list of all dedicated hosts on the account

**Parameters**

- **tags** (*list*) – filter based on list of tags
- **cpus** (*integer*) – filter based on number of CPUs
- **memory** (*integer*) – filter based on amount of memory
- **hostname** (*string*) – filter based on hostname
- **disk** (*string*) – filter based on disk
- **datacenter** (*string*) – filter based on datacenter
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**Returns** Returns a list of dictionaries representing the matching dedicated host.

**place\_order**(*hostname, domain, location, flavor, hourly, router=None*)

Places an order for a dedicated host.

See `get_create_options()` for valid arguments.

**Parameters**

- **hostname** (*string*) – server hostname
- **domain** (*string*) – server domain name
- **location** (*string*) – location (datacenter) name
- **hourly** (*boolean*) – True if using hourly pricing (default). False for monthly.
- **router** (*int*) – an optional value for selecting a backend router

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**verify\_order**(*hostname, domain, location, hourly, flavor, router=None*)

Verifies an order for a dedicated host.

See `place_order()` for a list of available options.

### 3.2.6 SoftLayer.dns

DNS Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.dns.DNSManager(client)`

Manage SoftLayer DNS.

See product information here: <https://www.ibm.com/cloud/dns>

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**create\_record**(*zone\_id, record, record\_type, data, ttl=60*)

Create a resource record on a domain.

**Parameters**

- **id** (*integer*) – the zone’s ID
- **record** – the name of the record to add
- **record\_type** – the type of record (A, AAAA, CNAME, TXT, etc.)
- **data** – the record’s value
- **ttl** (*integer*) – the TTL or time-to-live value (default: 60)

**create\_record\_mx**(*zone\_id, record, data, ttl=60, priority=10*)

Create a mx resource record on a domain.

**Parameters**

- **id** (*integer*) – the zone’s ID
- **record** – the name of the record to add
- **data** – the record’s value
- **ttl** (*integer*) – the TTL or time-to-live value (default: 60)
- **priority** (*integer*) – the priority of the target host

**create\_record\_ptr**(*record, data, ttl=60*)

Create a reverse record.

**Parameters**

- **record** – the public ip address of device for which you would like to manage reverse DNS.
- **data** – the record’s value
- **ttl** (*integer*) – the TTL or time-to-live value (default: 60)

**create\_record\_srv**(*zone\_id, record, data, protocol, port, service, ttl=60, priority=20, weight=10*)

Create a resource record on a domain.

**Parameters**

- **id** (*integer*) – the zone’s ID
- **record** – the name of the record to add
- **data** – the record’s value
- **protocol** (*string*) – the protocol of the service, usually either TCP or UDP.
- **port** (*integer*) – the TCP or UDP port on which the service is to be found.

- **service** (*string*) – the symbolic name of the desired service.
- **ttl** (*integer*) – the TTL or time-to-live value (default: 60)
- **priority** (*integer*) – the priority of the target host (default: 20)
- **weight** (*integer*) – relative weight for records with same priority (default: 10)

**create\_zone**(*zone*, *serial=None*)

Create a zone for the specified zone.

**Parameters**

- **zone** – the zone name to create
- **serial** – serial value on the zone (default: `strftime('%Y%m%d01')`)

**delete\_record**(*record\_id*)

Delete a resource record by its ID.

**Parameters** **id** (*integer*) – the record's ID

**delete\_zone**(*zone\_id*)

Delete a zone by its ID.

**Parameters** **zone\_id** (*integer*) – the zone ID to delete

**dump\_zone**(*zone\_id*)

Retrieve a zone dump in BIND format.

**Parameters** **id** (*integer*) – The zone ID to dump

**edit\_record**(*record*)

Update an existing record with the options provided.

The provided dict must include an 'id' key and value corresponding to the record that should be updated.

**Parameters** **record** (*dict*) – the record to update

**edit\_zone**(*zone*)

Update an existing zone with the options provided.

The provided dict must include an 'id' key and value corresponding to the zone that should be updated.

**Parameters** **zone** (*dict*) – the zone to update

**get\_record**(*record\_id*)

Get a DNS record.

**Parameters** **id** (*integer*) – the record's ID

**get\_records**(*zone\_id*, *tll=None*, *data=None*, *host=None*, *record\_type=None*)

List, and optionally filter, records within a zone.

**Parameters**

- **zone** – the zone name in which to search.
- **tll** (*int*) – time in seconds
- **data** (*str*) – the records data
- **host** (*str*) – record's host
- **record\_type** (*str*) – the type of record

**Returns** A list of dictionaries representing the matching records within the specified zone.

**get\_zone**(*zone\_id*, *records=True*)

Get a zone and its records.

**Parameters** **zone** – the zone name

**Returns** A dictionary containing a large amount of information about the specified zone.

**list\_zones**(*\*\*kwargs*)

Retrieve a list of all DNS zones.

**Parameters** **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**Returns** A list of dictionaries representing the matching zones.

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**sync\_host\_record**(*zone\_id*, *hostname*, *ip\_address*, *record\_type='a'*, *ttl=7200*)

For a given zone\_id, will set hostname's A record to ip\_address

**Parameters**

- **zone\_id** (*integer*) – The zone id for the domain
- **hostname** (*string*) – host part of the record
- **ip\_address** (*string*) – data part of the record
- **ttl** (*integer*) – TTL for the record
- **record\_type** (*string*) – 'a' or 'aaaa'

**sync\_ptr\_record**(*ptr\_domains*, *ip\_address*, *fqdn*, *tll=7200*)

Sync PTR record.

**Parameters**

- **ptr\_domains** (*dict*) – result from `SoftLayer_Virtual_Guest.getReverseDomainRecords` or `SoftLayer_Hardware_Server.getReverseDomainRecords`
- **ip\_address** (*string*) – ip address to sync with
- **fqdn** (*string*) – Fully Qualified Domain Name
- **ttl** (*integer*) – TTL for the record

### 3.2.7 SoftLayer.email

Email manager

**license** MIT, see License for more details.

**class** `SoftLayer.managers.email.EmailManager`(*client*)

Common functions for getting information from the email service

**Parameters** **client** (`SoftLayer.API.BaseClient`) – the client instance

**editObject**(*identifier*, *username=None*, *password=None*)

Edit email delivery account related details.

**Parameters**

- **identifier** (*int*) – The ID of the email account
- **username** (*string*) – username of the email account.
- **email** (*string*) – email of the email account.
- **password** (*string*) – password of the email account to be updated to.

**get\_account\_overview**(*identifier*)

Gets all the Network Message Delivery Account Overview

**Returns** Network Message Delivery Account overview

**get\_instance**(*identifier*)

Gets the Network\_Message\_Delivery\_Email\_Sendgrid instance

**Returns** Network\_Message\_Delivery\_Email\_Sendgrid

**get\_statistics**(*identifier*, *days=30*)

gets statistics from email accounts

**Days** range number

**Returns** statistics Network Message Delivery Account

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**update\_email**(*identifier*, *email*)

Edit email address delivery account .

**Parameters**

- **identifier** (*int*) – The ID of the email account
- **email** (*string*) – email of the email account.

### 3.2.8 SoftLayer.event\_log

Network Manager/helpers

**license** MIT, see LICENSE for more details.

**class** SoftLayer.managers.event\_log.**EventManager**(*client*)

Provides an interface for the SoftLayer Event Log Service.

See product information here: [http://sldn.softlayer.com/reference/services/SoftLayer\\_Event\\_Log](http://sldn.softlayer.com/reference/services/SoftLayer_Event_Log)

**static build\_filter**(*date\_min=None*, *date\_max=None*, *obj\_event=None*, *obj\_id=None*, *obj\_type=None*, *utc\_offset=None*)

Returns a query filter that can be passed into EventLogManager.get\_event\_logs

**Parameters**

- **date\_min** (*string*) – Lower bound date in MM/DD/YYYY format
- **date\_max** (*string*) – Upper bound date in MM/DD/YYYY format
- **obj\_event** (*string*) – The name of the events we want to filter by
- **obj\_id** (*int*) – The id of the event we want to filter by

- **obj\_type** (*string*) – The type of event we want to filter by
- **utc\_offset** (*string*) – The UTC offset we want to use when converting date\_min and date\_max. (default '+0000')

**Returns** dict: The generated query filter

#### **get\_event\_log\_types()**

Returns a list of event log types

**Returns** List of event log types

#### **get\_event\_logs**(*request\_filter=None, log\_limit=20, iterator=True*)

Returns a list of event logs

Example:

```
event_mgr = SoftLayer.EventLogManager(env.client)
request_filter = event_mgr.build_filter(date_min="01/01/2019", date_max="02/01/
↳ 2019")
logs = event_mgr.get_event_logs(request_filter)
for log in logs:
    print("Event Name: {}".format(log['eventName']))
```

#### **Parameters**

- **request\_filter** (*dict*) – filter dict
- **log\_limit** (*int*) – number of results to get in one API call
- **iterator** (*bool*) – False will only make one API call for log\_limit results. True will keep making API calls until all logs have been retrieved. There may be a lot of these.

**Returns** List of event logs. If iterator=True, will return a python generator object instead.

## 3.2.9 SoftLayer.file

File Storage Manager

**license** MIT, see LICENSE for more details.

#### **class** SoftLayer.managers.file.**FileStorageManager**(*client*)

Manages file Storage volumes.

**authorize\_host\_to\_volume**(*volume\_id, hardware\_ids=None, virtual\_guest\_ids=None, ip\_address\_ids=None, subnet\_ids=None*)

Authorizes hosts to Storage Volumes

#### **Parameters**

- **volume\_id** – The File volume to authorize hosts to
- **hardware\_ids** – A List of SoftLayer\_Hardware ids
- **virtual\_guest\_ids** – A List of SoftLayer\_Virtual\_Guest ids
- **ip\_address\_ids** – A List of SoftLayer\_Network\_Subnet\_IpAddress ids
- **subnet\_ids** – A List of SoftLayer\_Network\_Subnet ids. Only use with File volumes.

**Returns** Returns an array of SoftLayer\_Network\_Storage\_Allowed\_Host objects which now have access to the given volume

**cancel\_file\_volume**(*volume\_id*, *reason*='No longer needed', *immediate*=False)  
Cancels the given file storage volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate** (*boolean*) – Cancel immediately or on anniversary date

**cancel\_snapshot\_space**(*volume\_id*, *reason*='No longer needed', *immediate*=False)  
Cancels snapshot space for a given volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate\_flag** (*boolean*) – Cancel immediately or on anniversary date

**cancel\_volume**(*volume\_id*, *reason*='No longer needed', *immediate*=False)  
Cancels the given storage volume.

**Parameters**

- **volume\_id** (*integer*) – The volume ID
- **reason** (*string*) – The reason for cancellation
- **immediate\_flag** (*boolean*) – Cancel immediately or on anniversary date

**convert\_dep\_dupe**(*volume\_id*)  
Convert a dependent duplicate volume to an independent volume.

**Parameters** **volume\_id** (*integer*) – The id of the volume.

**create\_snapshot**(*volume\_id*, *notes*='', *\*\*kwargs*)  
Creates a snapshot on the given block volume.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **notes** (*string*) – The notes or “name” to assign the snapshot

**Returns** Returns the id of the new snapshot

**deauthorize\_host\_to\_volume**(*volume\_id*, *hardware\_ids*=None, *virtual\_guest\_ids*=None, *ip\_address\_ids*=None, *subnet\_ids*=None)

Revokes authorization of hosts to File Storage Volumes

**Parameters**

- **volume\_id** – The File volume to deauthorize hosts to
- **hardware\_ids** – A List of SoftLayer\_Hardware ids
- **virtual\_guest\_ids** – A List of SoftLayer\_Virtual\_Guest ids
- **ip\_address\_ids** – A List of SoftLayer\_Network\_Subnet\_IpAddress ids
- **subnet\_ids** – A List of SoftLayer\_Network\_Subnet ids. Only use with File volumes

**Returns** Returns an array of SoftLayer\_Network\_Storage\_Allowed\_Host objects which have access to the given File volume

**delete\_snapshot**(*snapshot\_id*)

Deletes the specified snapshot object.

**Parameters** **snapshot\_id** – The ID of the snapshot object to delete.

**disable\_snapshots**(*volume\_id, schedule\_type*)

Disables snapshots for a specific block volume at a given schedule

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **schedule\_type** (*string*) – ‘HOURLY’|‘DAILY’|‘WEEKLY’

**Returns** Returns whether successfully disabled or not

**disaster\_recovery\_failover\_to\_replicant**(*volume\_id, replicant\_id*)

Disaster Recovery Failover to a volume replicant.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **replicant** (*integer*) – ID of replicant to failover to

**Returns** Returns whether failover to successful or not

**enable\_snapshots**(*volume\_id, schedule\_type, retention\_count, minute, hour, day\_of\_week, \*\*kwargs*)

Enables snapshots for a specific block volume at a given schedule

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **schedule\_type** (*string*) – ‘HOURLY’|‘DAILY’|‘WEEKLY’
- **retention\_count** (*integer*) – Number of snapshots to be kept
- **minute** (*integer*) – Minute when to take snapshot
- **hour** (*integer*) – Hour when to take snapshot
- **day\_of\_week** (*string*) – Day when to take snapshot

**Returns** Returns whether successfully scheduled or not

**failback\_from\_replicant**(*volume\_id*)

Failback from a volume replicant.

**Parameters** **volume\_id** (*integer*) – The id of the volume

**Returns** Returns whether failback was successful or not

**failover\_to\_replicant**(*volume\_id, replicant\_id*)

Failover to a volume replicant.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **replicant\_id** (*integer*) – ID of replicant to failover to

**Returns** Returns whether failover was successful or not

**get\_file\_volume\_access\_list**(*volume\_id, \*\*kwargs*)

Returns a list of authorized hosts for a specified volume.

**Parameters**



- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of authorized hosts for a specified volume.

**get\_file\_volume\_details**(*volume\_id*, *\*\*kwargs*)

Returns details about the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns details about the specified volume.

**get\_file\_volume\_snapshot\_list**(*volume\_id*, *\*\*kwargs*)

Returns a list of snapshots for the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of snapshots for the specified volume.

**get\_replication\_locations**(*volume\_id*)

Acquires list of the datacenters to which a volume can be replicated.

**Parameters** **volume\_id** – The ID of the primary volume to be replicated

**Returns** Returns an array of SoftLayer\_Network\_Storage objects

**get\_replication\_partners**(*volume\_id*)

Acquires list of replicant volumes pertaining to the given volume.

**Parameters** **volume\_id** – The ID of the primary volume to be replicated

**Returns** Returns an array of SoftLayer\_Location objects

**get\_volume\_access\_list**(*volume\_id*, *\*\*kwargs*)

Returns a list of authorized hosts for a specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of authorized hosts for a specified volume.

**get\_volume\_count\_limits**()

Returns a list of block volume count limit.

**Returns** Returns a list of block volume count limit.

**get\_volume\_details**(*volume\_id*, *\*\*kwargs*)

Returns details about the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns details about the specified volume.

**get\_volume\_snapshot\_list**(*volume\_id*, *\*\*kwargs*)

Returns a list of snapshots for the specified volume.

**Parameters**

- **volume\_id** – ID of volume.
- **kwargs** –

**Returns** Returns a list of snapshots for the specified volume.

**get\_volume\_snapshot\_notification\_status**(*volume\_id*)

returns Enabled/Disabled status of snapshot space usage threshold warning for a given volume.

**Parameters** **volume\_id** – ID of volume.

**Returns** Enables/Disables snapshot space usage threshold warning for a given volume.

**list\_file\_volume\_limit**()

Returns a list of block volume count limit.

**Returns** Returns a list of block volume count limit.

**list\_file\_volumes**(*datacenter=None*, *username=None*, *storage\_type=None*, *order=None*, *\*\*kwargs*)

Returns a list of file volumes.

**Parameters**

- **datacenter** – Datacenter short name (e.g.: dal09)
- **username** – Name of volume.
- **storage\_type** – Type of volume: Endurance or Performance
- **order** – Volume order id.
- **kwargs** –

**Returns** Returns a list of file volumes.

**list\_volume\_schedules**(*volume\_id*)

Lists schedules for a given volume

**Parameters** **volume\_id** (*integer*) – The id of the volume

**Returns** Returns list of schedules assigned to a given volume

**order\_duplicate\_volume**(*origin\_volume\_id*, *origin\_snapshot\_id=None*, *duplicate\_size=None*,  
*duplicate\_iops=None*, *duplicate\_tier\_level=None*,  
*duplicate\_snapshot\_size=None*, *hourly\_billing\_flag=False*,  
*dependent\_duplicate=False*)

Places an order for a duplicate volume.

**Parameters**

- **origin\_volume\_id** – The ID of the origin volume to be duplicated
- **origin\_snapshot\_id** – Origin snapshot ID to use for duplication
- **duplicate\_size** – Size/capacity for the duplicate volume
- **duplicate\_iops** – The IOPS per GB for the duplicate volume
- **duplicate\_tier\_level** – Tier level for the duplicate volume
- **duplicate\_snapshot\_size** – Snapshot space size for the duplicate

- **hourly\_billing\_flag** – Billing type, monthly (False) or hourly (True), default to monthly.

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_file\_volume**(*storage\_type, location, size, iops=None, tier\_level=None, snapshot\_size=None, service\_offering='storage\_as\_a\_service', hourly\_billing\_flag=False*)

Places an order for a file volume.

#### Parameters

- **storage\_type** – ‘performance’ or ‘endurance’
- **location** – Name of the datacenter in which to order the volume
- **size** – Size of the desired volume, in GB
- **iops** – Number of IOPs for a “Performance” order
- **tier\_level** – Tier level to use for an “Endurance” order
- **snapshot\_size** – The size of optional snapshot space, if snapshot space should also be ordered (None if not ordered)
- **service\_offering** – Requested offering package to use in the order (‘storage\_as\_a\_service’, ‘enterprise’, or ‘performance’)
- **hourly\_billing\_flag** – Billing type, monthly (False) or hourly (True), default to monthly.

**order\_modified\_volume**(*volume\_id, new\_size=None, new\_iops=None, new\_tier\_level=None*)

Places an order for modifying an existing block volume.

#### Parameters

- **volume\_id** – The ID of the volume to be modified
- **new\_size** – The new size/capacity for the volume
- **new\_iops** – The new IOPS for the volume
- **new\_tier\_level** – The new tier level for the volume

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_replicant\_volume**(*volume\_id, snapshot\_schedule, location, tier=None, os\_type=None*)

Places an order for a replicant volume.

#### Parameters

- **volume\_id** – The ID of the primary volume to be replicated
- **snapshot\_schedule** – The primary volume’s snapshot schedule to use for replication
- **location** – The location for the ordered replicant volume
- **tier** – The tier (IOPS per GB) of the primary volume
- **os\_type** – The OS type of the primary volume

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**order\_snapshot\_space**(*volume\_id, capacity, tier, upgrade, \*\*kwargs*)

Orders snapshot space for the given block volume.

#### Parameters

- **volume\_id** (*integer*) – The id of the volume

- **capacity** (*integer*) – The capacity to order, in GB
- **tier** (*float*) – The tier level of the block volume, in IOPS per GB
- **upgrade** (*boolean*) – Flag to indicate if this order is an upgrade

**Returns** Returns a SoftLayer\_Container\_Product\_Order\_Receipt

**refresh\_dupe**(*volume\_id, snapshot\_id*)

“Refresh a duplicate volume with a snapshot from its parent.

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **snapshot\_id** (*integer*) – The id of the snapshot

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly ‘identifier’ can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**restore\_from\_snapshot**(*volume\_id, snapshot\_id*)

Restores a specific volume from a snapshot

**Parameters**

- **volume\_id** (*integer*) – The id of the volume
- **snapshot\_id** (*integer*) – The id of the restore point

**Returns** Returns whether successfully restored or not

**set\_volume\_snapshot\_notification**(*volume\_id, enable*)

Enables/Disables snapshot space usage threshold warning for a given volume.

**Parameters**

- **volume\_id** – ID of volume.
- **enable** – Enable/Disable flag for snapshot warning notification.

**Returns** Enables/Disables snapshot space usage threshold warning for a given volume.

**volume\_set\_note**(*volume\_id, note*)

Set the notes for an existing block volume.

**Parameters**

- **volume\_id** – The ID of the volume to be modified
- **note** – the note

**Returns** Returns true if success

### 3.2.10 SoftLayer.firewall

Firewall Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.firewall.FirewallManager(client)`

Manages SoftLayer firewalls

See product information here: <https://www.ibm.com/cloud/network-security>

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**add\_standard\_firewall**(*server\_id, is\_virt=True*)

Creates a firewall for the specified virtual/hardware server.

**Parameters**

- **server\_id** (*int*) – The ID of the server to create the firewall for
- **is\_virt** (*bool*) – If true, will create the firewall for a virtual server, otherwise for a hardware server.

**Returns** A dictionary containing the standard virtual server firewall order

**add\_vlan\_firewall**(*vlan\_id, ha\_enabled=False*)

Creates a firewall for the specified vlan.

**Parameters**

- **vlan\_id** (*int*) – The ID of the vlan to create the firewall for
- **ha\_enabled** (*bool*) – If True, an HA firewall will be created

**Returns** A dictionary containing the VLAN firewall order

**cancel\_firewall**(*firewall\_id, dedicated=False*)

Cancels the specified firewall.

**Parameters**

- **firewall\_id** (*int*) – Firewall ID to be cancelled.
- **dedicated** (*bool*) – If true, the firewall instance is dedicated, otherwise, the firewall instance is shared.

**edit\_dedicated\_fwl\_rules**(*firewall\_id, rules*)

Edit the rules for dedicated firewall.

**Parameters**

- **firewall\_id** (*integer*) – the instance ID of the dedicated firewall
- **rules** (*list*) – the rules to be pushed on the firewall as defined by `SoftLayer_Network_Firewall_Update_Request_Rule`

**edit\_standard\_fwl\_rules**(*firewall\_id, rules*)

Edit the rules for standard firewall.

**Parameters**

- **firewall\_id** (*integer*) – the instance ID of the standard firewall
- **rules** (*list*) – the rules to be pushed on the firewall as defined by `SoftLayer_Network_Firewall_Update_Request_Rule`

**get\_dedicated\_fw\_rules**(*firewall\_id*)

Get the rules of a dedicated firewall.

**Parameters** *firewall\_id* (*integer*) – the instance ID of the dedicated firewall

**Returns** A list of the rules.

**get\_dedicated\_package**(*ha\_enabled=False*)

Retrieves the dedicated firewall package.

**Parameters** *ha\_enabled* (*bool*) – True if HA is to be enabled on the firewall False for No HA

**Returns** A dictionary containing the dedicated virtual server firewall package

**get\_firewalls**()

Returns a list of all firewalls on the account.

**Returns** A list of firewalls on the current account.

**get\_instance**(*firewall\_id, mask=None*)

Get the firewall information

**Parameters** *firewall\_id* (*integer*) – the instance ID of the standard firewall

**get\_standard\_fw\_rules**(*firewall\_id*)

Get the rules of a standard firewall.

**Parameters** *firewall\_id* (*integer*) – the instance ID of the standard firewall

**Returns** A list of the rules.

**get\_standard\_package**(*server\_id, is\_virt=True*)

Retrieves the standard firewall package for the virtual server.

**Parameters**

- **server\_id** (*int*) – The ID of the server to create the firewall for
- **is\_virt** (*bool*) – True if the ID provided is for a virtual server, False for a server

**Returns** A dictionary containing the standard virtual server firewall package

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** *identifier* (*string*) – identifying string

**Returns** list

`SoftLayer.managers.firewall.has_firewall(vlan)`

Helper to determine whether or not a VLAN has a firewall.

**Parameters** *vlan* (*dict*) – A dictionary representing a VLAN

**Returns** True if the VLAN has a firewall, false if it doesn't.

### 3.2.11 SoftLayer.hardware

Hardware Manager/helpers

**license** MIT, see LICENSE for more details.

**class** SoftLayer.managers.hardware.**HardwareManager**(*client, ordering\_manager=None*)  
Manage SoftLayer hardware servers.

Example:

```
# Initialize the Manager.
# env variables. These can also be specified in ~/.softlayer,
# or passed directly to SoftLayer.Client()
# SL_USERNAME = YOUR_USERNAME
# SL_API_KEY = YOUR_API_KEY
import SoftLayer
client = SoftLayer.Client()
mgr = SoftLayer.HardwareManager(client)
```

See product information here: <https://www.ibm.com/cloud/bare-metal-servers>

#### Parameters

- **client** (SoftLayer.API.BaseClient) – the client instance
- **ordering\_manager** (SoftLayer.managers.OrderingManager) – an optional manager to handle ordering. If none is provided, one will be auto initialized.

**authorize\_storage**(*hardware\_id, username\_storage*)  
Authorize File or Block Storage to a Hardware Server.

#### Parameters

- **hardware\_id** (*int*) – Hardware server id.
- **username\_storage** (*string*) – Storage username.

**Returns** bool.

**cancel\_hardware**(*hardware\_id, reason='unneeded', comment='', immediate=False*)  
Cancels the specified dedicated server.

Example:

```
# Cancels hardware id 1234
result = mgr.cancel_hardware(hardware_id=1234)
```

#### Parameters

- **hardware\_id** (*int*) – The ID of the hardware to be cancelled.
- **reason** (*string*) – The reason code for the cancellation. This should come from `get_cancellation_reasons()`.
- **comment** (*string*) – An optional comment to include with the cancellation.
- **immediate** (*bool*) – If set to True, will automatically update the cancellation ticket to request the resource be reclaimed asap. This request still has to be reviewed by a human

**Returns** True on success or an exception

**change\_port\_speed**(*hardware\_id, public, speed, redundant=None*)

Allows you to change the port speed of a server's NICs.

#### Parameters

- **hardware\_id** (*int*) – The ID of the server
- **public** (*bool*) – Flag to indicate which interface to change. True (default) means the public interface. False indicates the private interface.
- **speed** (*int*) – The port speed to set.

**Warning:** A port speed of 0 will disable the interface.

Example:

```
#change the Public interface to 10Mbps on instance 12345
result = mgr.change_port_speed(hardware_id=12345,
                               public=True, speed=10)
# result will be True or an Exception
```

**edit**(*hardware\_id, userdata=None, hostname=None, domain=None, notes=None, tags=None*)

Edit hostname, domain name, notes, user data of the hardware.

Parameters set to None will be ignored and not attempted to be updated.

#### Parameters

- **hardware\_id** (*integer*) – the instance ID to edit
- **userdata** (*string*) – user data on the hardware to edit. If none exist it will be created
- **hostname** (*string*) – valid hostname
- **domain** (*string*) – valid domain name
- **notes** (*string*) – notes about this particular hardware
- **tags** (*string*) – tags to set on the hardware as a comma separated list. Use the empty string to remove all tags.

Example:

```
# Change the hostname on instance 12345 to 'something'
result = mgr.edit(hardware_id=12345 , hostname="something")
#result will be True or an Exception
```

**get\_bandwidth\_allocation**(*instance\_id*)

Combines getBandwidthAllotmentDetail() and getBillingCycleBandwidthUsage()

**get\_bandwidth\_data**(*instance\_id, start\_date=None, end\_date=None, direction=None, rollup=3600*)

Gets bandwidth data for a server

Will get averaged bandwidth data for a given time period. If you use a rollup over 3600 be aware that the API will bump your start/end date to align with how data is stored. For example if you have a rollup of 86400 your start\_date will be bumped to 00:00. If you are not using a time in the start/end date fields, this won't really matter.

#### Parameters

- **instance\_id** (*int*) – Hardware Id to get data for



- **start\_date** (*date*) – Date to start pulling data for.
- **end\_date** (*date*) – Date to finish pulling data for
- **direction** (*string*) – Can be either ‘public’, ‘private’, or None for both.
- **rollup** (*int*) – 300, 600, 1800, 3600, 43200 or 86400 seconds to average data over.

**get\_cancellation\_reasons()**

Returns a dictionary of valid cancellation reasons.

These can be used when cancelling a dedicated server via [cancel\\_hardware\(\)](#).

**get\_components**(*hardware\_id*, *mask=None*, *filter\_component=None*)

Get details about a hardware components.

**Parameters** **hardware\_id** (*int*) – the instance ID

**Returns** A dictionary containing a large amount of information about the specified components.

**get\_create\_options**(*datacenter=None*)

Returns valid options for ordering hardware.

**Parameters** **datacenter** (*string*) – short name, like dal09

**get\_hard\_drives**(*instance\_id*)

Returns the hardware server hard drives.

**Parameters** **instance\_id** (*int*) – Id of the hardware server

**get\_hardware**(*hardware\_id*, *\*\*kwargs*)

Get details about a hardware device.

**Parameters** **id** (*integer*) – the hardware ID

**Returns** A dictionary containing a large amount of information about the specified server.

Example:

```
object_mask = "mask[id,networkVlans[vlanNumber]]"
# Object masks are optional
result = mgr.get_hardware(hardware_id=1234,mask=object_mask)
```

**get\_hardware\_guests**(*instance\_id*)

Returns the hardware server guests.

**Parameters** **instance\_id** (*int*) – Id of the hardware server.

**get\_hardware\_item\_prices**(*location*)

Returns the hardware server item prices by location.

**Parameters** **location** (*string*) – location to get the item prices.

**get\_instance**(*instance\_id*)

Get details about a hardware server instance.

**Parameters** **instance\_id** (*int*) – the instance ID

**Returns** A dictionary containing a large amount of information about the specified instance.

**get\_maintenance\_windows\_detail**(*location\_id*)

Get the disks prices to be added or upgraded.

**Parameters** **location\_id** (*int*) – Hardware Server location id.

**Return int**

**get\_sensors**(*hardware\_id*)

Returns Hardware sensor data

**get\_storage\_credentials**(*instance\_id*)

Returns the hardware server storage credentials.

**Parameters** **instance\_id** (*int*) – Id of the hardware server

**get\_storage\_details**(*instance\_id, nas\_type*)

Returns the hardware server attached network storage.

**Parameters**

- **instance\_id** (*int*) – Id of the hardware server
- **nas\_type** – storage type.

**get\_tracking\_id**(*instance\_id*)

Returns the Metric Tracking Object Id for a hardware server

**Parameters** **instance\_id** (*int*) – Id of the hardware server

**list\_hardware**(*tags=None, cpus=None, memory=None, hostname=None, domain=None, datacenter=None, nic\_speed=None, public\_ip=None, private\_ip=None, \*\*kwargs*)

List all hardware (servers and bare metal computing instances).

**param list tags** filter based on tags

**param integer cpus** filter based on number of CPUS

**param integer memory** filter based on amount of memory in gigabytes

**param string hostname** filter based on hostname

**param string domain** filter based on domain

**param string datacenter** filter based on datacenter

**param integer nic\_speed** filter based on network speed (in MBPS)

**param string public\_ip** filter based on public ip address

**param string private\_ip** filter based on private ip address

**param dict \*\*kwargs** response-level options (mask, limit, etc.)

**returns** Returns a list of dictionaries representing the matching hardware. This list will contain both dedicated servers and bare metal computing instances

Example:

```
# Using a custom object-mask. Will get ONLY what is specified
# These will stem from the SoftLayer_Hardware_Server datatype
object_mask = "mask[hostname,monitoringRobot[robotStatus]]"
result = mgr.list_hardware(mask=object_mask)
```

**place\_order**(*\*\*kwargs*)

Places an order for a piece of hardware.

See `get_create_options()` for valid arguments.

**Parameters**

- **size** (*string*) – server size name or presetId
- **hostname** (*string*) – server hostname

- **domain** (*string*) – server domain name
- **location** (*string*) – location (datacenter) name
- **os** (*string*) – operating system name
- **port\_speed** (*int*) – Port speed in Mbps
- **ssh\_keys** (*list*) – list of ssh key ids
- **post\_uri** (*string*) – The URI of the post-install script to run after reload
- **hourly** (*boolean*) – True if using hourly pricing (default). False for monthly.
- **no\_public** (*boolean*) – True if this server should only have private interfaces
- **extras** (*list*) – List of extra feature names

**reflash\_firmware**(*hardware\_id*, *ipmi=True*, *raid\_controller=True*, *bios=True*)

Reflash hardware firmware.

This will cause the server to be unavailable for ~60 minutes. The firmware will not be upgraded but rather reflashed to the version installed.

#### Parameters

- **hardware\_id** (*int*) – The ID of the hardware to have its firmware reflashed.
- **ipmi** (*bool*) – Reflash the ipmi firmware.
- **raid\_controller** (*bool*) – Reflash the raid controller firmware.
- **bios** (*bool*) – Reflash the bios firmware.

Example:

```
# Check the servers active transactions to see progress
result = mgr.reflash_firmware(hardware_id=1234)
```

**reload**(*hardware\_id*, *post\_uri=None*, *ssh\_keys=None*, *lvm=False*)

Perform an OS reload of a server with its current configuration.

[https://sldn.softlayer.com/reference/datatypes/SoftLayer\\_Container\\_Hardware\\_Server\\_Configuration/](https://sldn.softlayer.com/reference/datatypes/SoftLayer_Container_Hardware_Server_Configuration/)  
 :param integer hardware\_id: the instance ID to reload :param string post\_uri: The URI of the post-install script to run after reload :param list ssh\_keys: The SSH keys to add to the root user :param bool lvm: A flag indicating that the provision should use LVM for all logical drives.

**rescue**(*hardware\_id*)

Reboot a server into the a rescue kernel.

**Parameters** **instance\_id** (*integer*) – the server ID to rescue

Example:

```
result = mgr.rescue(1234)
```

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly ‘identifier’ can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**update\_firmware**(*hardware\_id*, *ipmi=True*, *raid\_controller=True*, *bios=True*, *hard\_drive=True*)  
Update hardware firmware.

This will cause the server to be unavailable for ~20 minutes.

#### Parameters

- **hardware\_id** (*int*) – The ID of the hardware to have its firmware updated.
- **ipmi** (*bool*) – Update the ipmi firmware.
- **raid\_controller** (*bool*) – Update the raid controller firmware.
- **bios** (*bool*) – Update the bios firmware.
- **hard\_drive** (*bool*) – Update the hard drive firmware.

Example:

```
# Check the servers active transactions to see progress
result = mgr.update_firmware(hardware_id=1234)
```

**upgrade**(*instance\_id*, *memory=None*, *nic\_speed=None*, *drive\_controller=None*, *public\_bandwidth=None*, *disk=None*, *test=False*)

Upgrades a hardware server instance.

#### Parameters

- **instance\_id** (*int*) – Instance id of the hardware server to be upgraded.
- **memory** (*int*) – Memory size.
- **nic\_speed** (*string*) – Network Port Speed data.
- **drive\_controller** (*string*) – Drive Controller data.
- **public\_bandwidth** (*int*) – Public keyName data.
- **disk** (*list*) – List of disks to add or upgrade Hardware Server.
- **test** (*bool*) – Test option to verify the request.

Returns bool

**verify\_order**(*\*\*kwargs*)

Verifies an order for a piece of hardware.

See [place\\_order\(\)](#) for a list of available options.

**wait\_for\_ready**(*instance\_id*, *limit=14400*, *delay=10*, *pending=False*)

Determine if a Server is ready.

A server is ready when no transactions are running on it.

#### Parameters

- **instance\_id** (*int*) – The instance ID with the pending transaction
- **limit** (*int*) – The maximum amount of seconds to wait.
- **delay** (*int*) – The number of seconds to sleep before checks. Defaults to 10.

`SoftLayer.managers.hardware.find_item_in_package`(*cost\_key*, *items*, *location\_group\_id*, *price*)

Find the item in the packages item list.

Will return the item cost.

#### Parameters

- **cost\_key** (*string*) – item cost key hourlyRecurringFee or recurringFee.
- **items** (*list*) – items list.
- **location\_group\_id** (*int*) – locationGroupId's to get price for.
- **price** – price data.

`SoftLayer.managers.hardware.get_item_price(prices, location_group_id=None)`  
Get item prices, optionally for a specific location.

Will return the default pricing information if there isn't any location specific pricing.

#### Parameters

- **list** (*prices*) – `SoftLayer_Product_Item_Price[]`
- **int** (*location\_group\_id*) – locationGroupId's to get price for.

### 3.2.12 SoftLayer.image

Image Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.image.ImageManager(client)`  
Manages SoftLayer server images.

See product information here: <https://cloud.ibm.com/docs/image-templates>

**Parameters** **client** (`SoftLayer.API.BaseClient`) – the client instance

**add\_locations**(*image\_id, location\_names*)  
Add available locations to an archive image template.

#### Parameters

- **image\_id** (*int*) – The ID of the image
- **location\_names** – Locations for the Image.

**delete\_image**(*image\_id*)  
Deletes the specified image.

**Parameters** **image\_id** (*int*) – The ID of the image.

**edit**(*image\_id, name=None, note=None, tag=None*)  
Edit image related details.

#### Parameters

- **image\_id** (*int*) – The ID of the image
- **name** (*string*) – Name of the Image.
- **note** (*string*) – Note of the image.
- **tag** (*string*) – Tags of the image to be updated to.

**export\_image\_to\_uri**(*image\_id, uri, ibm\_api\_key=None*)  
Export image into the given object storage

#### Parameters

- **image\_id** (*int*) – The ID of the image

- **uri** (*string*) – The URI for object storage of the format `swift://<objectStorageAccount>@<cluster>/<container>/<objectPath>` or `cos://<regionName>/<bucketName>/<objectPath>` if using IBM Cloud Object Storage
- **ibm\_api\_key** (*string*) – Ibm Api Key needed to communicate with IBM Cloud Object Storage

**get\_image**(*image\_id*, *\*\*kwargs*)

Get details about an image.

#### Parameters

- **image** (*int*) – The ID of the image.
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**get\_locations\_list**(*image\_id*, *location\_names*)

Converts a list of location names to a list of locations.

#### Parameters

- **image\_id** (*int*) – The ID of the image.
- **location\_names** (*list*) – A list of location names strings.

**Returns** A list of locations associated with the given location names in the image.

**get\_storage\_locations**(*image\_id*)

Get available locations for public image storage.

**Parameters** **image\_id** (*int*) – The ID of the image

**import\_image\_from\_uri**(*name*, *uri*, *os\_code=None*, *note=None*, *ibm\_api\_key=None*, *root\_key\_crn=None*, *wrapped\_dek=None*, *cloud\_init=False*, *byol=False*, *is\_encrypted=False*)

Import a new image from object storage.

#### Parameters

- **name** (*string*) – Name of the new image
- **uri** (*string*) – The URI for an object storage object (.vhd/iso file) of the format: `swift://<objectStorageAccount>@<cluster>/<container>/<objectPath>` or (.vhd/iso/raw file) of the format: `cos://<regionName>/<bucketName>/<objectPath>` if using IBM Cloud Object Storage
- **os\_code** (*string*) – The reference code of the operating system
- **note** (*string*) – Note to add to the image
- **ibm\_api\_key** (*string*) – Ibm Api Key needed to communicate with ICOS and your KMS
- **root\_key\_crn** (*string*) – CRN of the root key in your KMS. Go to your KMS (Key Protect or Hyper Protect) provider to get the CRN for your root key. An example CRN: `crn:v1:bluemix:public:hs-crypto:us-south:acctID:serviceID:key:keyID` Used only when `is_encrypted` is True.
- **wrapped\_dek** (*string*) – Wrapped Data Encryption Key provided by your KMS. Used only when `is_encrypted` is True.
- **cloud\_init** (*boolean*) – Specifies if image is cloud-init
- **byol** (*boolean*) – Specifies if image is bring your own license
- **is\_encrypted** (*boolean*) – Specifies if image is encrypted

**list\_private\_images**(*guid=None, name=None, \*\*kwargs*)

List all private images.

**Parameters**

- **guid** (*string*) – filter based on GUID
- **name** (*string*) – filter based on name
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**list\_public\_images**(*guid=None, name=None, \*\*kwargs*)

List all public images.

**Parameters**

- **guid** (*string*) – filter based on GUID
- **name** (*string*) – filter based on name
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**remove\_locations**(*image\_id, location\_names*)

Remove available locations from an archive image template.

**Parameters**

- **image\_id** (*int*) – The ID of the image
- **location\_names** – Locations for the Image.

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

### 3.2.13 SoftLayer.ipsec

IPSec VPN Manager

**license** MIT, see LICENSE for more details.

**class** SoftLayer.managers.ipsec.**IPSECManager**(*client*)

Manage SoftLayer IPSEC VPN tunnel contexts.

This provides helpers to manage IPSEC contexts, private and remote subnets, and NAT translations.

**Parameters**

- **client** (SoftLayer.API.BaseClient) – the client instance
- **account** (SoftLayer.API.BaseClient) – account service client
- **context** (SoftLayer.API.BaseClient) – tunnel context client
- **customer\_subnet** (SoftLayer.API.BaseClient) – remote subnet client

**add\_internal\_subnet**(*context\_id, subnet\_id*)

Add an internal subnet to a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.

- **subnet\_id** (*int*) – The id-value representing the internal subnet.

**Return bool** True if internal subnet addition was successful.

**add\_remote\_subnet**(*context\_id, subnet\_id*)

Adds a remote subnet to a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **subnet\_id** (*int*) – The id-value representing the remote subnet.

**Return bool** True if remote subnet addition was successful.

**add\_service\_subnet**(*context\_id, subnet\_id*)

Adds a service subnet to a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **subnet\_id** (*int*) – The id-value representing the service subnet.

**Return bool** True if service subnet addition was successful.

**apply\_configuration**(*context\_id*)

Requests network configuration for a tunnel context.

**Parameters** **context\_id** (*int*) – The id-value representing the context instance.

**Return bool** True if the configuration request was successfully queued.

**create\_remote\_subnet**(*account\_id, identifier, cidr*)

Creates a remote subnet on the given account.

**Parameters**

- **account\_id** (*string*) – The account identifier.
- **identifier** (*string*) – The network identifier of the remote subnet.
- **cidr** (*string*) – The CIDR value of the remote subnet.

**Return dict** Mapping of properties for the new remote subnet.

**create\_translation**(*context\_id, static\_ip, remote\_ip, notes*)

Creates an address translation on a tunnel context/

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **static\_ip** (*string*) – The IP address value representing the internal side of the translation entry,
- **remote\_ip** (*string*) – The IP address value representing the remote side of the translation entry,
- **notes** (*string*) – The notes to supply with the translation entry,

**Return dict** Mapping of properties for the new translation entry.

**delete\_remote\_subnet**(*subnet\_id*)

Deletes a remote subnet from the current account.

**Parameters** **subnet\_id** (*string*) – The id-value representing the remote subnet.

**Return bool** True if subnet deletion was successful.



**get\_translation**(*context\_id*, *translation\_id*)

Retrieves a translation entry for the given id values.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **translation\_id** (*int*) – The id-value representing the translation instance.

**Return dict** Mapping of properties for the translation entry.

**Raises** *SoftLayerAPIError* – If a translation cannot be found.

**get\_translations**(*context\_id*)

Retrieves all translation entries for a tunnel context.

**Parameters** **context\_id** (*int*) – The id-value representing the context instance.

**Return list(dict)** Translations associated with the given context

**get\_tunnel\_context**(*context\_id*, *\*\*kwargs*)

Retrieves the network tunnel context instance.

**Parameters** **context\_id** (*int*) – The id-value representing the context instance.

**Return dict** Mapping of properties for the tunnel context.

**Raises** *SoftLayerAPIError* – If a context cannot be found.

**get\_tunnel\_contexts**(*\*\*kwargs*)

Retrieves network tunnel module context instances.

**Return list(dict)** Contexts associated with the current account.

**remove\_internal\_subnet**(*context\_id*, *subnet\_id*)

Remove an internal subnet from a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **subnet\_id** (*int*) – The id-value representing the internal subnet.

**Return bool** True if internal subnet removal was successful.

**remove\_remote\_subnet**(*context\_id*, *subnet\_id*)

Removes a remote subnet from a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **subnet\_id** (*int*) – The id-value representing the remote subnet.

**Return bool** True if remote subnet removal was successful.

**remove\_service\_subnet**(*context\_id*, *subnet\_id*)

Removes a service subnet from a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **subnet\_id** (*int*) – The id-value representing the service subnet.

**Return bool** True if service subnet removal was successful.

**remove\_translation**(*context\_id*, *translation\_id*)

Removes a translation entry from a tunnel context.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **translation\_id** (*int*) – The id-value representing the translation.

**Return bool** True if translation entry removal was successful.

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**update\_translation**(*context\_id, translation\_id, static\_ip=None, remote\_ip=None, notes=None*)

Updates an address translation entry using the given values.

**Parameters**

- **context\_id** (*int*) – The id-value representing the context instance.
- **template** (*dict*) – A key-value mapping of translation properties.
- **static\_ip** (*string*) – The static IP address value to update.
- **remote\_ip** (*string*) – The remote IP address value to update.
- **notes** (*string*) – The notes value to update.

**Return bool** True if the update was successful.

**update\_tunnel\_context**(*context\_id, friendly\_name=None, remote\_peer=None, preshared\_key=None, phase1\_auth=None, phase1\_crypto=None, phase1\_dh=None, phase1\_key\_ttl=None, phase2\_auth=None, phase2\_crypto=None, phase2\_dh=None, phase2\_forward\_secrecy=None, phase2\_key\_ttl=None*)

Updates a tunnel context using the given values.

**Parameters**

- **context\_id** (*string*) – The id-value representing the context.
- **friendly\_name** (*string*) – The friendly name value to update.
- **remote\_peer** (*string*) – The remote peer IP address value to update.
- **preshared\_key** (*string*) – The preshared key value to update.
- **phase1\_auth** (*string*) – The phase 1 authentication value to update.
- **phase1\_crypto** (*string*) – The phase 1 encryption value to update.
- **phase1\_dh** (*string*) – The phase 1 diffie hellman group value to update.
- **phase1\_key\_ttl** (*string*) – The phase 1 key life value to update.
- **phase2\_auth** (*string*) – The phase 2 authentication value to update.
- **phase2\_crypto** (*string*) – The phase 2 encryption value to update.
- **phase2\_df** (*string*) – The phase 2 diffie hellman group value to update.
- **phase2\_forward\_secriecy** (*string*) – The phase 2 perfect forward secrecy value to update.
- **phase2\_key\_ttl** (*string*) – The phase 2 key life value to update.

**Return bool** True if the update was successful.

### 3.2.14 SoftLayer.load\_balancer

Load Balancer Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.load_balancer.LoadBalancerManager(client)`  
 Manages SoftLayer load balancers.

See product information here: <https://www.ibm.com/cloud/load-balancer>

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**add\_lb\_l7\_pool**(*identifier, pool, members, health, session*)  
 Creates a new l7 pool for a LBaaS instance

- [https://sldn.softlayer.com/reference/services/SoftLayer\\_Network\\_LBaaS\\_L7Pool/createL7Pool/](https://sldn.softlayer.com/reference/services/SoftLayer_Network_LBaaS_L7Pool/createL7Pool/)
- <https://cloud.ibm.com/docs/infrastructure/loadbalancer-service?topic=loadbalancer-service-api-reference>

#### Parameters

- **identifier** – UUID of the LBaaS instance
- **SoftLayer\_Network\_LBaaS\_L7Pool** (*pool*) – Description of the pool
- **SoftLayer\_Network\_LBaaS\_L7Member**[] (*members*) – Array of servers with their address, port, weight
- **SoftLayer\_Network\_LBaaS\_L7HealthMonitor** (*monitor*) – A health monitor
- **SoftLayer\_Network\_LBaaS\_L7SessionAffinity** (*session*) – Whether to use affinity

**add\_lb\_listener**(*identifier, listener*)  
 Adds or update a listener to a LBaaS instance

When using this to update a listener, just include the ‘listenerUuid’ in the listener object See the following for listener configuration options [https://sldn.softlayer.com/reference/datatypes/SoftLayer\\_Network\\_LBaaS\\_LoadBalancerProtocolConfiguration/](https://sldn.softlayer.com/reference/datatypes/SoftLayer_Network_LBaaS_LoadBalancerProtocolConfiguration/)

#### Parameters

- **identifier** – UUID of the LBaaS instance
- **listener** – Object with all listener configurations

**add\_lb\_member**(*identifier, service\_info*)  
 Adds a member to a LBaaS instance

[https://sldn.softlayer.com/reference/services/SoftLayer\\_Network\\_LBaaS\\_Member/deleteLoadBalancerMembers/](https://sldn.softlayer.com/reference/services/SoftLayer_Network_LBaaS_Member/deleteLoadBalancerMembers/) :param identifier: UUID of the LBaaS instance :param service\_info: datatypes/SoftLayer\_Network\_LBaaS\_LoadBalancerServerInstanceInfo

**cancel\_lbaas**(*uuid*)  
 Cancels a LBaaS instance.

[https://sldn.softlayer.com/reference/services/SoftLayer\\_Network\\_LBaaS\\_LoadBalancer/cancelLoadBalancer/](https://sldn.softlayer.com/reference/services/SoftLayer_Network_LBaaS_LoadBalancer/cancelLoadBalancer/) :param uuid string: UUID of the LBaaS instance to cancel

**del\_lb\_l7\_pool**(*identifier*)  
 Deletes a l7 pool

**Parameters identifier** – Id of the L7Pool

**delete\_lb\_member**(*identifier, member\_id*)

Removes a member from a LBaaS instance

[https://sldn.softlayer.com/reference/services/SoftLayer\\_Network\\_LBaaS\\_Member/deleteLoadBalancerMembers/](https://sldn.softlayer.com/reference/services/SoftLayer_Network_LBaaS_Member/deleteLoadBalancerMembers/) :param identifier: UUID of the LBaaS instance

:param member\_id: Member UUID to remove.

**get\_adc**(*identifier, mask=None*)

Returns a netscaler object.

**Returns** SoftLayer\_Network\_Application\_Delivery\_Controller.

**get\_adcs**(*mask=None*)

Returns a list of all netscalers.

**Returns** SoftLayer\_Network\_Application\_Delivery\_Controller[].

**get\_all\_l7policies**()

Gets all Layer7 policies

**Returns** Dictionary of (protocol\_id: policies list).

**get\_l7policies**(*identifier*)

Gets Layer7 policies from a listener

**Parameters identifier** – id

**get\_lb**(*identifier, mask=None*)

Returns a IBM Cloud LoadBalancer

**Returns** SoftLayer\_Network\_LBaaS\_LoadBalancer

**get\_lbaas**(*mask=None*)

Returns a list of IBM Cloud Loadbalancers

**Returns** SoftLayer\_Network\_LBaaS\_LoadBalancer[]

**get\_lbaas\_by\_name**(*name, mask=None*)

Gets a LBaaS by name.

**Parameters**

- **name** – Name of the LBaaS instance
- **mask** –

**Returns** SoftLayer\_Network\_LBaaS\_LoadBalancer.

**get\_lbaas\_uuid\_id**(*identifier*)

Gets a LBaaS uuid, id. Since sometimes you need one or the other.

**Parameters identifier** – either the LB Id, UUID or Name, this function will return UUI and LB Id.

**Return (uuid, id)**

**lbaas\_order\_options**()

Gets the options to order a LBaaS instance.

**order\_lbaas**(*datacenter, name, desc, protocols, subnet\_id, public=False, verify=False*)

Allows to order a Load Balancer

**Parameters**

- **datacenter** – Shortname for the SoftLayer datacenter to order in.

- **name** – Identifier for the new LB.
- **desc** – Optional description for the lb.
- **protocols** – [https://sldn.softlayer.com/reference/datatypes/SoftLayer\\_Network\\_LBaaS\\_Listener/](https://sldn.softlayer.com/reference/datatypes/SoftLayer_Network_LBaaS_Listener/)
- **subnet\_id** – Id of the subnet for this new LB to live on.
- **public** – Use Public side for the backend.
- **verify** – Don't actually order if True.

**remove\_lb\_listener**(*identifier, listener*)  
Removes a listener to a LBaaS instance

**Parameters**

- **identifier** – UUID of the LBaaS instance
- **listener** – UUID of the Listener to be removed.

**resolve\_ids**(*identifier*)  
Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**update\_lb\_health\_monitors**(*uuid, checks*)  
calls SoftLayer\_Network\_LBaaS\_HealthMonitor::updateLoadBalancerHealthMonitors()

- `updateLoadBalancerHealthMonitors`
- `SoftLayer_Network_LBaaS_LoadBalancerHealthMonitorConfiguration`

**Parameters**

- **uuid** – loadBalancerUuid
- **list** (*checks*) – `SoftLayer_Network_LBaaS_LoadBalancerHealthMonitorConfiguration[]`

### 3.2.15 SoftLayer.metadata

Metadata Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.metadata.MetadataManager`(*client=None, timeout=5*)  
Provides an interface for the SoftLayer metadata service.

See product information here: [http://sldn.softlayer.com/reference/services/SoftLayer\\_Resource\\_Metadata](http://sldn.softlayer.com/reference/services/SoftLayer_Resource_Metadata)

This provides metadata about the resource it is called from. See `METADATA_ATTRIBUTES` for full list of attributes.

Usage:

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
>>> from SoftLayer import MetadataManager
```

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```

>>> meta = MetadataManager(client)
>>> meta.get('datacenter')
'dal05'
>>> meta.get('fqdn')
'test.example.com'

```

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**get**(*name*, *param=None*)

Retrieve a metadata attribute.

**Parameters**

- **name** (*string*) – name of the attribute to retrieve. See *attrs*
- **param** – Required parameter for some attributes

**private\_network**(\*\**kwargs*)

Returns details about the private network.

**Parameters**

- **router** (*boolean*) – True to return router details
- **vlan** (*boolean*) – True to return vlan details
- **vlan\_ids** (*boolean*) – True to return `vlan_ids`

**public\_network**(\*\**kwargs*)

Returns details about the public network.

**Parameters**

- **router** (*boolean*) – True to return router details
- **vlan** (*boolean*) – True to return vlan details
- **vlan\_ids** (*boolean*) – True to return `vlan_ids`

```

metadata.METADATA_ATTRIBUTES = dict_keys(['backend_mac', 'datacenter', 'datacenter_id',
'domain', 'frontend_mac', 'fqdn', 'hostname', 'id', 'primary_backend_ip', 'primary_ip',
'primary_frontend_ip', 'provision_state', 'router', 'tags', 'user_data', 'user_metadata',
'vlan_ids', 'vlans'])

```

### 3.2.16 SoftLayer.network

Network Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.network.NetworkManager`(*client*)

Manage SoftLayer network objects: VLANs, subnets and IPs

See product information here: <https://www.ibm.com/cloud/network>

**Parameters** `client` (`SoftLayer.API.BaseClient`) – the client instance

**add\_global\_ip**(*version=4*, *test\_order=False*)

Adds a global IP address to the account.

**Parameters**

- **version** (*int*) – Specifies whether this is IPv4 or IPv6
- **test\_order** (*bool*) – If true, this will only verify the order.

**add\_securitygroup\_rule**(*group\_id, remote\_ip=None, remote\_group=None, direction=None, ethertype=None, port\_max=None, port\_min=None, protocol=None*)

Add a rule to a security group

#### Parameters

- **group\_id** (*int*) – The ID of the security group to add this rule to
- **remote\_ip** (*str*) – The remote IP or CIDR to enforce the rule on
- **remote\_group** (*int*) – The remote security group ID to enforce the rule on
- **direction** (*str*) – The direction to enforce (egress or ingress)
- **ethertype** (*str*) – The ethertype to enforce (IPv4 or IPv6)
- **port\_max** (*int*) – The upper port bound to enforce (icmp code if the protocol is icmp)
- **port\_min** (*int*) – The lower port bound to enforce (icmp type if the protocol is icmp)
- **protocol** (*str*) – The protocol to enforce (icmp, udp, tcp)

**add\_securitygroup\_rules**(*group\_id, rules*)

Add rules to a security group

#### Parameters

- **group\_id** (*int*) – The ID of the security group to add the rules to
- **rules** (*list*) – The list of rule dictionaries to add

**add\_subnet**(*subnet\_type, quantity=None, endpoint\_id=None, version=4, test\_order=False*)

Orders a new subnet

#### Parameters

- **subnet\_type** (*str*) – Type of subnet to add: private, public, global,static
- **quantity** (*int*) – Number of IPs in the subnet
- **endpoint\_id** (*int*) – id for the subnet to be placed into
- **version** (*int*) – 4 for IPv4, 6 for IPv6
- **test\_order** (*bool*) – If true, this will only verify the order.

**assign\_global\_ip**(*global\_ip\_id, target*)

Assigns a global IP address to a specified target.

#### Parameters

- **global\_ip\_id** (*int*) – The ID of the global IP being assigned
- **target** (*string*) – The IP address to assign

**attach\_securitygroup\_component**(*group\_id, component\_id*)

Attaches a network component to a security group.

#### Parameters

- **group\_id** (*int*) – The ID of the security group
- **component\_id** (*int*) – The ID of the network component to attach

**attach\_securitygroup\_components**(*group\_id, component\_ids*)

Attaches network components to a security group.

**Parameters**

- **group\_id** (*int*) – The ID of the security group
- **component\_ids** (*list*) – The IDs of the network components to attach

**cancel\_global\_ip**(*global\_ip\_id*)

Cancels the specified global IP address.

**Parameters** **id** (*int*) – The ID of the global IP to be cancelled.

**cancel\_item**(*identifier, cancel\_immediately, reason\_cancel, customer\_note*)

Cancel a billing item immediately, deleting all its data.

**Parameters**

- **identifier** (*integer*) – the instance ID to cancel
- **reason\_cancel** (*string*) – reason cancel

**cancel\_subnet**(*subnet\_id*)

Cancels the specified subnet.

**Parameters** **subnet\_id** (*int*) – The ID of the subnet to be cancelled.

**create\_securitygroup**(*name=None, description=None*)

Creates a security group.

**Parameters**

- **name** (*string*) – The name of the security group
- **description** (*string*) – The description of the security group

**delete\_securitygroup**(*group\_id*)

Deletes the specified security group.

**Parameters** **group\_id** (*int*) – The ID of the security group

**detach\_securitygroup\_component**(*group\_id, component\_id*)

Detaches a network component from a security group.

**Parameters**

- **group\_id** (*int*) – The ID of the security group
- **component\_id** (*int*) – The ID of the component to detach

**detach\_securitygroup\_components**(*group\_id, component\_ids*)

Detaches network components from a security group.

**Parameters**

- **group\_id** (*int*) – The ID of the security group
- **component\_ids** (*list*) – The IDs of the network components to detach

**edit**(*instance\_id, name=None, note=None, tags=None*)

Edit a vlan.

**Parameters**

- **instance\_id** (*integer*) – the instance ID to edit.
- **name** (*string*) – valid name.



- **note** (*string*) – note about this particular vlan.
- **tags** (*string*) – tags to set on the vlan as a comma separated list. Use the empty string to remove all tags.

**Returns** bool – True or an Exception

**edit\_note\_subnet**(*subnet\_id, note*)

Edit the note for this subnet.

**Parameters**

- **subnet\_id** (*int*) – The ID of the subnet.
- **note** (*string*) – The note.

**edit\_securitygroup**(*group\_id, name=None, description=None*)

Edit security group details.

**Parameters**

- **group\_id** (*int*) – The ID of the security group
- **name** (*string*) – The name of the security group
- **description** (*string*) – The description of the security group

**edit\_securitygroup\_rule**(*group\_id, rule\_id, remote\_ip=None, remote\_group=None, direction=None, ethertype=None, port\_max=None, port\_min=None, protocol=None*)

Edit a security group rule.

**Parameters**

- **group\_id** (*int*) – The ID of the security group the rule belongs to
- **rule\_id** (*int*) – The ID of the rule to edit
- **remote\_ip** (*str*) – The remote IP or CIDR to enforce the rule on
- **remote\_group** (*int*) – The remote security group ID to enforce the rule on
- **direction** (*str*) – The direction to enforce (egress or ingress)
- **ethertype** (*str*) – The ethertype to enforce (IPv4 or IPv6)
- **port\_max** (*str*) – The upper port bound to enforce
- **port\_min** (*str*) – The lower port bound to enforce
- **protocol** (*str*) – The protocol to enforce (icmp, udp, tcp)

**get\_cancel\_failure\_reasons**(*identifier*)

get the reasons why we cannot cancel the VLAN.

**Parameters** **identifier** (*integer*) – the instance ID

**get\_event\_logs\_by\_request\_id**(*request\_id*)

Gets all event logs by the given request id

**Parameters** **request\_id** (*string*) – The request id we want to filter on

**get\_ip\_by\_address**(*ip\_address*)

get the ip address object

**Parameters** **ip\_address** (*string*) – the ip address to edit.

**get\_nas\_credentials**(*identifier, \*\*kwargs*)

Returns a list of IDs of VLANs which match the given VLAN name.

**Parameters** `instance_id` (*integer*) – the instance ID

**Returns** A dictionary containing a large amount of information about the specified instance.

**get\_pods**(*datacenter=None*)

Calls `SoftLayer_Network_Pod::getAllObjects()`

returns list of all network pods and their routers.

**get\_securitygroup**(*group\_id, \*\*kwargs*)

Returns the information about the given security group.

**Parameters** `id` (*string*) – The ID for the security group

**Returns** A diction of information about the security group

**get\_subnet**(*subnet\_id, \*\*kwargs*)

Returns information about a single subnet.

**Parameters** `id` (*string*) – Either the ID for the subnet or its network identifier

**Returns** A dictionary of information about the subnet

**static get\_subnet\_item\_price**(*item, subnet\_type, version*)

Get the subnet specific item price id.

**Parameters**

- **version** – 4 for IPv4, 6 for IPv6.
- **subnet\_type** – Type of subnet to add: private, public, global,static.
- **item** – Subnet item.

**get\_vlan**(*vlan\_id*)

Returns information about a single VLAN.

**Parameters** `id` (*int*) – The unique identifier for the VLAN

**Returns** A dictionary containing a large amount of information about the specified VLAN.

**ip\_lookup**(*ip\_address*)

Looks up an IP address and returns network information about it.

**Parameters** `ip_address` (*string*) – An IP address. Can be IPv4 or IPv6

**Returns** A dictionary of information about the IP

**list\_global\_ips**(*version=None, identifier=None, \*\*kwargs*)

Returns a list of all global IP address records on the account.

**Parameters**

- **version** (*int*) – Only returns IPs of this version (4 or 6)
- **identifier** (*string*) – If specified, the list will only contain the global ips matching this network identifier.

**list\_securitygroup\_rules**(*group\_id*)

List security group rules associated with a security group.

**Parameters** `group_id` (*int*) – The security group to list rules for

**list\_securitygroups**(*\*\*kwargs*)

List security groups.

**list\_subnets**(*identifier=None, datacenter=None, version=0, subnet\_type=None, network\_space=None, \*\*kwargs*)

Display a list of all subnets on the account.

This provides a quick overview of all subnets including information about data center residence and the number of devices attached.

#### Parameters

- **identifier** (*string*) – If specified, the list will only contain the subnet matching this network identifier.
- **datacenter** (*string*) – If specified, the list will only contain subnets in the specified data center.
- **version** (*int*) – Only returns subnets of this version (4 or 6).
- **subnet\_type** (*string*) – If specified, it will only returns subnets of this type.
- **network\_space** (*string*) – If specified, it will only returns subnets with the given address space label.
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**list\_vlans**(*datacenter=None, vlan\_number=None, name=None, \*\*kwargs*)

Display a list of all VLANs on the account.

This provides a quick overview of all VLANs including information about data center residence and the number of devices attached.

#### Parameters

- **datacenter** (*string*) – If specified, the list will only contain VLANs in the specified data center.
- **vlan\_number** (*int*) – If specified, the list will only contain the VLAN matching this VLAN number.
- **name** (*int*) – If specified, the list will only contain the VLAN matching this VLAN name.
- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**remove\_securitygroup\_rule**(*group\_id, rule\_id*)

Remove a rule from a security group.

#### Parameters

- **group\_id** (*int*) – The ID of the security group
- **rule\_id** (*int*) – The ID of the rule to remove

**remove\_securitygroup\_rules**(*group\_id, rules*)

Remove rules from a security group.

#### Parameters

- **group\_id** (*int*) – The ID of the security group
- **rules** (*list*) – The list of IDs to remove

**resolve\_global\_ip\_ids**(*identifier*)

Resolve global ip ids.

**resolve\_subnet\_ids**(*identifier*)

Resolve subnet ids.

**resolve\_vlan\_ids**(*identifier*)

Resolve VLAN ids.

**set\_subnet\_ipaddress\_note**(*identifier, note*)

Set the ip address note of the subnet

**Parameters** **identifier** (*integer*) – the ip address ID to edit. **note** (*string*) – the note to edit.

**set\_tags**(*tags, vlan\_id*)

Sets tags on a vlan with a retry decorator

Just calls `vlan.setTags`, but if it fails from an `APIError` will retry.

**set\_tags\_subnet**(*subnet\_id, tags*)

Tag a subnet by passing in one or more tags separated by a comma.

**Parameters**

- **subnet\_id** (*int*) – The ID of the subnet.
- **tags** (*string*) – Comma separated list of tags.

**summary\_by\_datacenter**()

Summary of the networks on the account, grouped by data center.

The resultant dictionary is primarily useful for statistical purposes. It contains count information rather than raw data. If you want raw information, see the `list_vlans()` method instead.

**Returns** A dictionary keyed by data center with the data containing a set of counts for subnets, hardware, virtual servers, and other objects residing within that data center.

**unassign\_global\_ip**(*global\_ip\_id*)

Unassigns a global IP address from a target.

**Parameters** **id** (*int*) – The ID of the global IP being unassigned

### 3.2.17 SoftLayer.ordering

Ordering Manager

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.ordering.OrderingManager`(*client*)

Manager to help ordering via the SoftLayer API.

**Parameters** **client** (`SoftLayer.API.BaseClient`) – the client instance

**static filter\_outlet\_packages**(*packages*)

Remove packages designated as OUTLET.

Those type of packages must be handled in a different way, and they are not supported at the moment.

**Parameters** **packages** – Dictionary of packages. Name and description keys must be present in each of them.

**generate\_order**(*package\_keyname, location, item\_keynames, complex\_type=None, hourly=True, preset\_keyname=None, extras=None, quantity=1*)

Generates an order with the given package and prices.

This function takes in parameters needed for an order and generates an order dictionary. This dictionary can then be used in either `verify` or `placeOrder()`.

**Parameters**

- **package\_keyname** (*str*) – The keyname for the package being ordered
- **location** (*str*) – The datacenter location string for ordering (Ex: DALLAS13)
- **item\_keynames** (*List*) – The list of item keyname strings to order. To see list of possible keynames for a package, use `list_items()` (or `slcli order item-list`)
- **complex\_type** (*str*) – The complex type to send with the order. Typically begins with `SoftLayer_Container_Product_Order_.`
- **hourly** (*bool*) – If true, uses hourly billing, otherwise uses monthly billing
- **preset\_keyname** (*string*) – If needed, specifies a preset to use for that package. To see a list of possible keynames for a package, use `list_preset()` (or `slcli order preset-list`)
- **extras** (*dict*) – The extra data for the order in dictionary format. Example: A VSI order requires hostname and domain to be set, so extras will look like the following: `{'virtualGuests': [{'hostname': 'test', 'domain': 'softlayer.com'}]}`
- **quantity** (*int*) – The number of resources to order

**generate\_order\_template**(*quote\_id, extra, quantity=1*)

Generate a complete order template.

#### Parameters

- **quote\_id** (*int*) – ID of target quote
- **extra** (*dictionary*) – Overrides for the defaults of `SoftLayer_Container_Product_Order`
- **quantity** (*int*) – Number of items to order.

**get\_item\_capacity**(*items, item\_keynames*)

Get item capacity.

**static get\_item\_price\_id**(*core, prices, term=0*)

get item price id

core: None or a number to match against `capacityRestrictionType` prices: list of `SoftLayer_Product_Item_Price` term: int to match against `SoftLayer_Product_Item_Price.termLength`

**get\_item\_prices**(*package\_id*)

Get item prices.

Retrieve a `SoftLayer_Product_Package` item prices record.

**Parameters** **package\_id** (*int*) – package identifier.

**Returns** A list of price IDs associated with the given package.

**get\_item\_prices\_by\_location**(*location, package\_keyname*)

Returns the item prices by location.

#### Parameters

- **package\_keyname** (*string*) – The package for which to get the items.
- **location** (*string*) – location name or keyname to get the item prices.

**get\_location\_id**(*location*)

Finds the location ID of a given datacenter

This is mostly used so either a dc name, or regions keyname can be used when ordering :param str location: Region Keyname (DALLAS13) or datacenter name (dal13) :returns: integer id of the datacenter

**static get\_only\_active\_packages**(*packages*)

Return only active packages.

If a package is active, it is eligible for ordering This will inspect the 'isActive' property on the provided packages

**Parameters packages** – Dictionary of packages, isActive key must be present

**get\_order\_container**(*quote\_id*)

Generate an order container from a quote object.

**Parameters quote\_id** – ID number of target quote

**get\_order\_detail**(*order\_id, mask=None*)

Get order details.

**Parameters**

- **order\_id** (*int*) – to specify the order that we want to retrieve.
- **mask** (*string*) – Mask to specify the properties we want to retrieve.

**get\_package\_by\_key**(*package\_keyname, mask=None*)

Get a single package with a given key.

If no packages are found, returns None

**Parameters**

- **package\_keyname** – string representing the package key name we are interested in.
- **mask** (*string*) – Mask to specify the properties we want to retrieve

**get\_package\_by\_type**(*package\_type, mask=None*)

Get a single package of a given type.

Syntactic sugar to retrieve a single package of a given type. If multiple packages share the given type, this will return the first one returned by the API. If no packages are found, returns None

**Parameters package\_type** (*string*) – representing the package type key name we are interested in

**get\_package\_id\_by\_type**(*package\_type*)

Return the package ID of a Product Package with a given type.

**Parameters package\_type** (*string*) – representing the package type key name we are interested in

**Raises ValueError** – when no package of the given type is found

**get\_packages\_of\_type**(*package\_types, mask=None*)

Get packages that match a certain type.

Each ordering package has a type, so return all packages that match the types we are looking for

**Parameters**

- **package\_types** (*list*) – List of strings representing the package type keynames we are interested in.
- **mask** (*string*) – Mask to specify the properties we want to retrieve

**get\_preset\_by\_key**(*package\_keyname, preset\_keyname, mask=None*)

Gets a single preset with the given key.

**get\_preset\_prices**(*preset*)

Get preset item prices.

Retrieve a SoftLayer\_Product\_Package\_Preset record.

**Parameters** **preset** (*int*) – preset identifier.

**Returns** A list of price IDs associated with the given *preset\_id*.

**get\_price\_id\_list**(*package\_keyname, item\_keynames, core=None*)

Converts a list of item keynames to a list of price IDs.

This function is used to convert a list of item keynames into a list of price IDs that are used in the Product\_Order verifyOrder() and placeOrder() functions.

**Parameters**

- **package\_keyname** (*str*) – The package associated with the prices
- **item\_keynames** (*list*) – A list of item keyname strings
- **core** (*str*) – preset guest core capacity.

**Returns** A list of price IDs associated with the given item keynames in the given package

**get\_quote\_details**(*quote\_id*)

Retrieve quote details.

**Parameters** **quote\_id** – ID number of target quote

**get\_quotes**()

Retrieve a list of active quotes.

**Returns** a list of SoftLayer\_Billing\_Order\_Quote

**list\_categories**(*package\_keyname, \*\*kwargs*)

List the categories for the given package.

**Parameters** **package\_keyname** (*str*) – The package for which to get the categories.

**Returns** List of categories associated with the package

**list\_items**(*package\_keyname, \*\*kwargs*)

List the items for the given package.

**Parameters** **package\_keyname** (*str*) – The package for which to get the items.

**Returns** List of items in the package

**list\_packages**(*\*\*kwargs*)

List active packages.

**Returns** List of active packages.

**list\_presets**(*package\_keyname, \*\*kwargs*)

Gets active presets for the given package.

**Parameters** **package\_keyname** (*str*) – The package for which to get presets

**Returns** A list of package presets that can be used for ordering

**order\_quote**(*quote\_id, extra*)

Places an order using a quote

```
extras = {
    'hardware': {'hostname': 'test', 'domain': 'testing.com'},
    'quantity': 2
}
manager = ordering.OrderingManager(env.client)
result = manager.order_quote(12345, extras)
```

#### Parameters

- **quote\_id** (*int*) – ID for the target quote
- **extra** (*dictionary*) – Overrides for the defaults of `SoftLayer_Container_Product_Order`
- **quantity** (*int*) – Quantity to override default

#### **package\_locations**(*package\_keyname*)

List datacenter locations for a package keyname

**Parameters** **package\_keyname** (*str*) – The package for which to get the items.

**Returns** List of locations a package is orderable in

#### **place\_order**(*package\_keyname, location, item\_keynames, complex\_type=None, hourly=True, preset\_keyname=None, extras=None, quantity=1*)

Places an order with the given package and prices.

This function takes in parameters needed for an order and places the order.

#### Parameters

- **package\_keyname** (*str*) – The keyname for the package being ordered
- **location** (*str*) – The datacenter location string for ordering (Ex: DALLAS13)
- **item\_keynames** (*list*) – The list of item keyname strings to order. To see list of possible keynames for a package, use `list_items()` (or `slcli order item-list`)
- **complex\_type** (*str*) – The complex type to send with the order. Typically begins with `SoftLayer_Container_Product_Order_`.
- **hourly** (*bool*) – If true, uses hourly billing, otherwise uses monthly billing
- **preset\_keyname** (*string*) – If needed, specifies a preset to use for that package. To see a list of possible keynames for a package, use `list_preset()` (or `slcli order preset-list`)
- **extras** (*dict*) – The extra data for the order in dictionary format. Example: A VSI order requires hostname and domain to be set, so extras will look like the following: `{'virtualGuests': [{'hostname': 'test', 'domain': 'softlayer.com'}]}`
- **quantity** (*int*) – The number of resources to order

#### **place\_quote**(*package\_keyname, location, item\_keynames, complex\_type=None, preset\_keyname=None, extras=None, quantity=1, quote\_name=None, send\_email=False*)

Place a quote with the given package and prices.

This function takes in parameters needed for an order and places the quote.

#### Parameters

- **package\_keyname** (*str*) – The keyname for the package being ordered
- **location** (*str*) – The datacenter location string for ordering (Ex: DALLAS13)



- **item\_keynames** (*list*) – The list of item keyname strings to order. To see list of possible keynames for a package, use `list_items()` (or *slcli order item-list*)
- **complex\_type** (*str*) – The complex type to send with the order. Typically begins with *SoftLayer\_Container\_Product\_Order\_*.
- **preset\_keyname** (*string*) – If needed, specifies a preset to use for that package. To see a list of possible keynames for a package, use `list_preset()` (or *slcli order preset-list*)
- **extras** (*dict*) – The extra data for the order in dictionary format. Example: A VSI order requires hostname and domain to be set, so extras will look like the following: `{'virtualGuests': [{'hostname': 'test', 'domain': 'softlayer.com'}]}`
- **quantity** (*int*) – The number of resources to order
- **quote\_name** (*string*) – A custom name to be assigned to the quote (optional).
- **send\_email** (*bool*) – This flag indicates that the quote should be sent to the email address associated with the account or order.

**resolve\_location\_name**(*location\_key*)

Resolves a location name using a string location key.

**Parameters** **location\_key** (*string*) – A string location used to resolve the location name.

**Returns** An location name.

**save\_quote**(*quote\_id*)

Save a quote.

**Parameters** **quote\_id** – ID number of target quote

**verify\_order**(*package\_keyname, location, item\_keynames, complex\_type=None, hourly=True, preset\_keyname=None, extras=None, quantity=1*)

Verifies an order with the given package and prices.

This function takes in parameters needed for an order and verifies the order to ensure the given items are compatible with the given package.

**Parameters**

- **package\_keyname** (*str*) – The keyname for the package being ordered
- **location** (*str*) – The datacenter location string for ordering (Ex: DALLAS13)
- **item\_keynames** (*list*) – The list of item keyname strings to order. To see list of possible keynames for a package, use `list_items()` (or *slcli order item-list*)
- **complex\_type** (*str*) – The complex type to send with the order. Typically begins with *SoftLayer\_Container\_Product\_Order\_*.
- **hourly** (*bool*) – If true, uses hourly billing, otherwise uses monthly billing
- **preset\_keyname** (*string*) – If needed, specifies a preset to use for that package. To see a list of possible keynames for a package, use `list_preset()` (or *slcli order preset-list*)
- **extras** (*dict*) – The extra data for the order in dictionary format. Example: A VSI order requires hostname and domain to be set, so extras will look like the following: `{'virtualGuests': [{'hostname': 'test', 'domain': 'softlayer.com'}]}`
- **quantity** (*int*) – The number of resources to order

**verify\_quote**(*quote\_id, extra*)

Verifies that a quote order is valid.

```
extras = {
    'hardware': {'hostname': 'test', 'domain': 'testing.com'},
    'quantity': 2
}
manager = ordering.OrderingManager(env.client)
result = manager.verify_quote(12345, extras)
```

#### Parameters

- **quote\_id** (*int*) – ID for the target quote
- **extra** (*dictionary*) – Overrides for the defaults of `SoftLayer_Container_Product_Order`
- **quantity** (*int*) – Quantity to override default

### 3.2.18 SoftLayer.sshkey

SSH Key Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.sshkey.SshKeyManager`(*client*)

Manages account SSH keys in SoftLayer.

See product information here: <https://knowledgelayer.softlayer.com/procedure/ssh-keys>

**Parameters** **client** (`SoftLayer.API.BaseClient`) – the client instance

**add\_key**(*key, label, notes=None*)

Adds a new SSH key to the account.

#### Parameters

- **key** (*string*) – The SSH key to add
- **label** (*string*) – The label for the key
- **notes** (*string*) – Additional notes for the key

**Returns** A dictionary of the new key's information.

**delete\_key**(*key\_id*)

Permanently deletes an SSH key from the account.

**Parameters** **key\_id** (*int*) – The ID of the key to delete

**edit\_key**(*key\_id, label=None, notes=None*)

Edits information about an SSH key.

#### Parameters

- **key\_id** (*int*) – The ID of the key to edit
- **label** (*string*) – The new label for the key
- **notes** (*string*) – Notes to set or change on the key

**Returns** A Boolean indicating success or failure

**get\_key**(*key\_id*)

Returns full information about a single SSH key.

**Parameters** **key\_id** (*int*) – The ID of the key to retrieve

**Returns** A dictionary of information about the key

**list\_keys**(*label=None*)

Lists all SSH keys on the account.

**Parameters** **label** (*string*) – Filter list based on SSH key label

**Returns** A list of dictionaries with information about each key

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

### 3.2.19 SoftLayer.ssl

SSL Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.ssl.SSLManager(client)`

Manages SSL certificates in SoftLayer.

See product information here: <https://www.ibm.com/cloud/ssl-certificates>

Example:

```
# Initialize the Manager.
# env variables. These can also be specified in ~/.softlayer,
# or passed directly to SoftLayer.Client()
# SL_USERNAME = YOUR_USERNAME
# SL_API_KEY = YOUR_API_KEY
import SoftLayer
client = SoftLayer.Client()
mgr = SoftLayer.SSLManager(client)
```

**Parameters** **client** (`SoftLayer.API.BaseClient`) – the client instance

**add\_certificate**(*certificate*)

Creates a new certificate.

**Parameters** **certificate** (*dict*) – A dictionary representing the parts of the certificate. See [sldn.softlayer.com](https://sldn.softlayer.com) for more info.

Example:

```
cert = ??
result = mgr.add_certificate(certificate=cert)
```

**edit\_certificate**(*certificate*)

Updates a certificate with the included options.

The provided dict must include an 'id' key and value corresponding to the certificate ID that should be updated.

**Parameters** **certificate** (*dict*) – the certificate to update.

Example:

```
# Updates the cert id 1234
cert['id'] = 1234
cert['certificate'] = ??
result = mgr.edit_certificate(certificate=cert)
```

**get\_certificate**(*cert\_id*)

Gets a certificate with the ID specified.

**Parameters** *cert\_id* (*integer*) – the certificate ID to retrieve

Example:

```
cert = mgr.get_certificate(cert_id=1234)
print(cert)
```

**list\_certs**(*method='all'*)

List all certificates.

**Parameters** *method* (*string*) – The type of certificates to list. Options are ‘all’, ‘expired’, and ‘valid’.

**Returns** A list of dictionaries representing the requested SSL certs.

Example:

```
# Get all valid SSL certs
certs = mgr.list_certs(method='valid')
print(certs)
```

**remove\_certificate**(*cert\_id*)

Removes a certificate.

**Parameters** *cert\_id* (*integer*) – a certificate ID to remove

Example:

```
# Removes certificate with id 1234
result = mgr.remove_certificate(cert_id = 1234)
```

### 3.2.20 SoftLayer.ticket

Ticket Manager/helpers

**license** MIT, see LICENSE for more details.

**class** SoftLayer.managers.ticket.**TicketManager**(*client*)

Manages SoftLayer support tickets.

See product information here: <https://www.ibm.com/cloud/support>

**Parameters** *client* (SoftLayer.API.BaseClient) – the client instance

**attach\_hardware**(*ticket\_id=None, hardware\_id=None*)

Attach hardware to a ticket.

**Parameters**

- **ticket\_id** (*integer*) – the id of the ticket to attach to

- **hardware\_id** (*integer*) – the id of the hardware to attach

**Returns** dict – The new ticket attachment

**attach\_virtual\_server**(*ticket\_id=None, virtual\_id=None*)

Attach a virtual server to a ticket.

**Parameters**

- **ticket\_id** (*integer*) – the id of the ticket to attach to
- **virtual\_id** (*integer*) – the id of the virtual server to attach

**Returns** dict – The new ticket attachment

**create\_ticket**(*title=None, body=None, subject=None, priority=None*)

Create a new ticket.

**Parameters**

- **title** (*string*) – title for the new ticket
- **body** (*string*) – body for the new ticket
- **subject** (*integer*) – id of the subject to be assigned to the ticket
- **priority** (*integer*) – Value from 1 (highest) to 4 (lowest)

**detach\_hardware**(*ticket\_id=None, hardware\_id=None*)

Detach hardware from a ticket.

**Parameters**

- **ticket\_id** – the id of the ticket to detach from
- **hardware\_id** – the id of the hardware to detach

**Returns** bool – Whether the detachment was successful

**detach\_virtual\_server**(*ticket\_id=None, virtual\_id=None*)

Detach a virtual server from a ticket.

**Parameters**

- **ticket\_id** – the id of the ticket to detach from
- **virtual\_id** – the id of the virtual server to detach

**Returns** bool – Whether the detachment was successful

**get\_ticket**(*ticket\_id*)

Get details about a ticket.

**Parameters** **ticket\_id** (*integer*) – the ticket ID

**Returns** dict – information about the specified ticket

**list\_subjects**()

List all ticket subjects.

**list\_tickets**(*open\_status=True, closed\_status=True*)

List all tickets.

**Parameters**

- **open\_status** (*boolean*) – include open tickets
- **closed\_status** (*boolean*) – include closed tickets

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** *identifier* (*string*) – identifying string

**Returns** list

**update\_ticket**(*ticket\_id=None, body=None*)

Update a ticket.

**Parameters**

- **ticket\_id** (*integer*) – the id of the ticket to update
- **body** (*string*) – entry to update in the ticket

**upload\_attachment**(*ticket\_id=None, file\_path=None, file\_name=None*)

Upload an attachment to a ticket.

**Parameters**

- **ticket\_id** (*integer*) – the id of the ticket to upload the attachment to
- **file\_path** (*string*) – The path of the attachment to be uploaded
- **file\_name** (*string*) – The name of the attachment shown in the ticket

**Returns** dict – The uploaded attachment

### 3.2.21 SoftLayer.vs

VS Manager/helpers

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.managers.vs.VSManager`(*client, ordering\_manager=None*)

Manages SoftLayer Virtual Servers.

See product information here: <https://www.ibm.com/cloud/virtual-servers>

Example:

```
# Initialize the VSManager.
# env variables. These can also be specified in ~/.softlayer,
# or passed directly to SoftLayer.Client()
# SL_USERNAME = YOUR_USERNAME
# SL_API_KEY = YOUR_API_KEY
import SoftLayer
client = SoftLayer.Client()
mgr = SoftLayer.VSManager(client)
```

**Parameters**

- **client** (`SoftLayer.API.BaseClient`) – the client instance
- **ordering\_manager** (`SoftLayer.managers.OrderingManager`) – an optional manager to handle ordering. If none is provided, one will be auto initialized.

**attach\_portable\_storage**(*vs\_id, portable\_id*)

Attach portal storage to a Virtual Server.

**Parameters**

- **vs\_id** (*int*) – Virtual server id.
- **portable\_id** (*int*) – Portal storage id.

**Returns** SoftLayer\_Provisioning\_Version1\_Transaction.

**authorize\_storage**(*vs\_id, username\_storage*)

Authorize File or Block Storage to a Virtual Server.

**Parameters**

- **vs\_id** (*int*) – Virtual server id.
- **username\_storage** (*string*) – Storage username.

**Returns** bool.

**cancel\_instance**(*instance\_id*)

Cancel an instance immediately, deleting all its data.

**Parameters** **instance\_id** (*integer*) – the instance ID to cancel

Example:

```
# Cancels instance 12345
mgr.cancel_instance(12345)
```

**capture**(*instance\_id, name, additional\_disks=False, notes=None*)

Capture one or all disks from a VS to a SoftLayer image.

Parameters set to None will be ignored and not attempted to be updated.

**Parameters**

- **instance\_id** (*integer*) – the instance ID to edit
- **name** (*string*) – name assigned to the image
- **additional\_disks** (*bool*) – set to true to include all additional attached storage devices
- **notes** (*string*) – notes about this particular image

**Returns** dictionary – information about the capture transaction.

**Example::** name = “Testing Images” notes = “Some notes about this image” result = mgr.capture(instance\_id=12345, name=name, notes=notes)

**change\_port\_speed**(*instance\_id, public, speed*)

Allows you to change the port speed of a virtual server’s NICs.

Example:

```
#change the Public interface to 10Mbps on instance 12345
result = mgr.change_port_speed(instance_id=12345,
                               public=True, speed=10)
# result will be True or an Exception
```

**Parameters**

- **instance\_id** (*int*) – The ID of the VS

- **public** (*bool*) – Flag to indicate which interface to change. True (default) means the public interface. False indicates the private interface.
- **speed** (*int*) – The port speed to set.

**Warning:** A port speed of 0 will disable the interface.

**create\_instance**(\*\**kwargs*)

Creates a new virtual server instance.

**Warning:** This will add charges to your account

Example:

```
new_vsi = {
    'domain': u'test01.labs.sftlyr.ws',
    'hostname': u'minion05',
    'datacenter': u'hkg02',
    'flavor': 'BL1_1X2X100'
    'dedicated': False,
    'private': False,
    'os_code' : u'UBUNTU_LATEST',
    'hourly': True,
    'ssh_keys': [1234],
    'disks': ('100', '25'),
    'local_disk': True,
    'tags': 'test, pleaseCancel',
    'public_security_groups': [12, 15]
}

vsi = mgr.create_instance(**new_vsi)
# vsi will have the newly created vsi details if done properly.
print vsi
```

### Parameters

- **cpus** (*int*) – The number of virtual CPUs to include in the instance.
- **memory** (*int*) – The amount of RAM to order.
- **hourly** (*bool*) – Flag to indicate if this server should be billed hourly (default) or monthly.
- **hostname** (*string*) – The hostname to use for the new server.
- **domain** (*string*) – The domain to use for the new server.
- **local\_disk** (*bool*) – Flag to indicate if this should be a local disk (default) or a SAN disk.
- **datacenter** (*string*) – The short name of the data center in which the VS should reside.
- **os\_code** (*string*) – The operating system to use. Cannot be specified if image\_id is specified.



- **image\_id** (*int*) – The GUID of the image to load onto the server. Cannot be specified if `os_code` is specified.
- **dedicated** (*bool*) – Flag to indicate if this should be housed on a dedicated or shared host (default). This will incur a fee on your account.
- **public\_vlan** (*int*) – The ID of the public VLAN on which you want this VS placed.
- **public\_security\_groups** (*list*) – The list of security group IDs to apply to the public interface
- **private\_security\_groups** (*list*) – The list of security group IDs to apply to the private interface
- **private\_vlan** (*int*) – The ID of the private VLAN on which you want this VS placed.
- **disks** (*list*) – A list of disk capacities for this server.
- **post\_uri** (*string*) – The URI of the post-install script to run after reload
- **private** (*bool*) – If true, the VS will be provisioned only with access to the private network. Defaults to false
- **ssh\_keys** (*list*) – The SSH keys to add to the root user
- **nic\_speed** (*int*) – The port speed to set
- **tags** (*string*) – tags to set on the VS as a comma separated list
- **flavor** (*string*) – The key name of the public virtual server flavor being ordered.
- **host\_id** (*int*) – The host id of a dedicated host to provision a dedicated host virtual server on.

#### **create\_instances**(*config\_list*)

Creates multiple virtual server instances.

This takes a list of dictionaries using the same arguments as `create_instance()`.

**Warning:** This will add charges to your account

Example:

```
# Define the instance we want to create.
new_vsi = {
    'domain': u'test01.labs.sftlyr.ws',
    'hostname': u'minion05',
    'datacenter': u'hkg02',
    'flavor': 'BL1_1X2X100'
    'dedicated': False,
    'private': False,
    'os_code' : u'UBUNTU_LATEST',
    'hourly': True,
    'ssh_keys': [1234],
    'disks': ('100', '25'),
    'local_disk': True,
    'tags': 'test, pleaseCancel',
    'public_security_groups': [12, 15]
}
```

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```

# using .copy() so we can make changes to individual nodes
instances = [new_vsi.copy(), new_vsi.copy(), new_vsi.copy()]

# give each its own hostname, not required.
instances[0]['hostname'] = "multi-test01"
instances[1]['hostname'] = "multi-test02"
instances[2]['hostname'] = "multi-test03"

vsi = mgr.create_instances(config_list=instances)
#vsi will be a dictionary of all the new virtual servers
print vsi

```

**edit**(*instance\_id*, *userdata=None*, *hostname=None*, *domain=None*, *notes=None*, *tags=None*)  
 Edit hostname, domain name, notes, and/or the user data of a VS.

Parameters set to None will be ignored and not attempted to be updated.

#### Parameters

- **instance\_id** (*integer*) – the instance ID to edit
- **userdata** (*string*) – user data on VS to edit. If none exist it will be created
- **hostname** (*string*) – valid hostname
- **domain** (*string*) – valid domain name
- **notes** (*string*) – notes about this particular VS
- **tags** (*string*) – tags to set on the VS as a comma separated list. Use the empty string to remove all tags.

**Returns** bool – True or an Exception

**Example::** # Change the hostname on instance 12345 to ‘something’ result = mgr.edit(instance\_id=12345, hostname=”something”) #result will be True or an Exception

**get\_bandwidth\_allocation**(*instance\_id*)

Combines getBandwidthAllotmentDetail() and getBillingCycleBandwidthUsage()

**get\_bandwidth\_data**(*instance\_id*, *start\_date=None*, *end\_date=None*, *direction=None*, *rollup=3600*)

Gets bandwidth data for a server

Will get averaged bandwidth data for a given time period. If you use a rollup over 3600 be aware that the API will bump your start/end date to align with how data is stored. For example if you have a rollup of 86400 your start\_date will be bumped to 00:00. If you are not using a time in the start/end date fields, this won’t really matter.

#### Parameters

- **instance\_id** (*int*) – Hardware Id to get data for
- **start\_date** (*date*) – Date to start pulling data for.
- **end\_date** (*date*) – Date to finish pulling data for
- **direction** (*string*) – Can be either ‘public’, ‘private’, or None for both.
- **rollup** (*int*) – 300, 600, 1800, 3600, 43200 or 86400 seconds to average data over.

**get\_create\_options**(*vsi\_type='PUBLIC\_CLOUD\_SERVER', datacenter=None*)

Retrieves the available options for creating a VS.

**Parameters**

- **vsi\_type** (*string*) – vs keyName.
- **datacenter** (*string*) – short name, like dal09

**Returns** A dictionary of creation options.

Example:

```
# Prints out the create option dictionary
options = mgr.get_create_options()
print(options)
```

**get\_hardware\_guests**()

Returns all virtualHost capable hardware objects and their guests.

:return SoftLayer\_Hardware[].

**get\_instance**(*instance\_id, \*\*kwargs*)

Get details about a virtual server instance.

**Parameters** **instance\_id** (*integer*) – the instance ID

**Returns** A dictionary containing a large amount of information about the specified instance.

Example:

```
# Print out instance ID 12345.
vsi = mgr.get_instance(12345)
print vsi

# Print out only FQDN and primaryIP for instance 12345
object_mask = "mask[fullyQualifiedDomainName,primaryIpAddress]"
vsi = mgr.get_instance(12345, mask=mask)
print vsi
```

**get\_local\_disks**(*instance\_id*)

Returns the virtual server local disks.

**Parameters** **instance\_id** (*int*) – Id of the virtual server

**get\_portable\_storage**(*instance\_id*)

Returns the virtual server portable storage.

**Parameters** **instance\_id** (*int*) – Id of the virtual server

**get\_storage\_credentials**(*instance\_id*)

Returns the virtual server storage credentials.

**Parameters** **instance\_id** (*int*) – Id of the virtual server

**get\_storage\_details**(*instance\_id, nas\_type*)

Returns the virtual server attached network storage.

**Parameters**

- **instance\_id** (*int*) – Id of the virtual server
- **nas\_type** – storage type.

`get_summary_data_usage(instance_id, start_date=None, end_date=None, valid_type=None, summary_period=None)`

Retrieve the usage information of a virtual server.

**Parameters**

- **instance\_id** (*string*) – a string identifier used to resolve ids
- **start\_date** (*string*) – the start data to retrieve the vs usage information
- **end\_date** (*string*) – the start data to retrieve the vs usage information
- **valid\_type** (*string string*) – the Metric\_Data\_Type keyName.
- **summary\_period** (*int*) – summary period.

`get_tracking_id(instance_id)`

Returns the Metric Tracking Object Id for a hardware server

**Parameters** **instance\_id** (*int*) – Id of the hardware server

`list_instances(hourly=True, monthly=True, tags=None, cpus=None, memory=None, hostname=None, domain=None, local_disk=None, datacenter=None, nic_speed=None, public_ip=None, private_ip=None, transient=None, **kwargs)`

Retrieve a list of all virtual servers on the account.

Example:

```
# Print out a list of hourly instances in the DAL05 data center.

for vsi in mgr.list_instances(hourly=True, datacenter='dal05'):
    print vsi['fullyQualifiedDomainName'], vsi['primaryIpAddress']

# Using a custom object-mask. Will get ONLY what is specified
object_mask = "mask[hostname,monitoringRobot[robotStatus]]"
for vsi in mgr.list_instances(mask=object_mask, hourly=True):
    print vsi
```

**Parameters**

- **hourly** (*boolean*) – include hourly instances
- **monthly** (*boolean*) – include monthly instances
- **tags** (*list*) – filter based on list of tags
- **cpus** (*integer*) – filter based on number of CPUS
- **memory** (*integer*) – filter based on amount of memory
- **hostname** (*string*) – filter based on hostname
- **domain** (*string*) – filter based on domain
- **local\_disk** (*string*) – filter based on local\_disk
- **datacenter** (*string*) – filter based on datacenter
- **nic\_speed** (*integer*) – filter based on network speed (in MBPS)
- **public\_ip** (*string*) – filter based on public ip address
- **private\_ip** (*string*) – filter based on private ip address
- **transient** (*boolean*) – filter on transient or non-transient instances

- **\*\*kwargs** (*dict*) – response-level options (mask, limit, etc.)

**Returns** Returns a list of dictionaries representing the matching virtual servers

**migrate**(*instance\_id*)

Calls SoftLayer\_Virtual\_Guest::migrate

Only actually does anything if the virtual server requires a migration. Will return an exception otherwise.

**Parameters** **instance\_id** (*int*) – Id of the virtual server

**migrate\_dedicated**(*instance\_id, host\_id*)

Calls SoftLayer\_Virtual\_Guest::migrate

Only actually does anything if the virtual server requires a migration. Will return an exception otherwise.

**Parameters** **instance\_id** (*int*) – Id of the virtual server

**order\_guest**(*guest\_object, test=False*)

Uses Product\_Order::placeOrder to create a virtual guest.

Useful when creating a virtual guest with options not supported by Virtual\_Guest::createObject specifically ipv6 support.

**Parameters** **guest\_object** (*dictionary*) – See SoftLayer.CLI.virt.create.\_parse\_create\_args

Example:

```
new_vsi = {
    'domain': u'test01.labs.sftlyr.ws',
    'hostname': u'minion05',
    'datacenter': u'hkg02',
    'flavor': 'BL1_1X2X100'
    'dedicated': False,
    'private': False,
    'transient': False,
    'os_code' : u'UBUNTU_LATEST',
    'hourly': True,
    'ssh_keys': [1234],
    'disks': ('100', '25'),
    'local_disk': True,
    'tags': 'test, pleaseCancel',
    'public_security_groups': [12, 15],
    'ipv6': True
}

vsi = mgr.order_guest(new_vsi)
# vsi will have the newly created vsi receipt.
# vsi['orderDetails']['virtualGuests'] will be an array of created Guests
print vsi
```

**reload\_instance**(*instance\_id, post\_uri=None, ssh\_keys=None, image\_id=None*)

Perform an OS reload of an instance.

**Parameters**

- **instance\_id** (*integer*) – the instance ID to reload
- **post\_url** (*string*) – The URI of the post-install script to run after reload
- **ssh\_keys** (*list*) – The SSH keys to add to the root user

- **image\_id** (*int*) – The GUID of the image to load onto the server

**Warning:** This will reformat the primary drive. Post-provision script **MUST** be HTTPS for it to be executed.

Example:

```
# Reload instance ID 12345 then run a custom post-provision script.
# Post-provision script MUST be HTTPS for it to be executed.
post_uri = 'https://somehost.com/bootstrap.sh'
vsi = mgr.reload_instance(12345, post_uri=post_uri)
```

**rescue**(*instance\_id*)

Reboot a VSI into the Xen rescue kernel.

**Parameters** **instance\_id** (*integer*) – the instance ID to rescue

**Returns** bool – True or an Exception

**Example::** # Puts instance 12345 into rescue mode result = mgr.rescue(instance\_id=12345)

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**set\_tags**(*tags, guest\_id*)

Sets tags on a guest with a retry decorator

Just calls guest.setTags, but if it fails from an APIError will retry

**upgrade**(*instance\_id, cpus=None, memory=None, nic\_speed=None, public=True, preset=None, disk=None*)

Upgrades a VS instance.

Example:

```
# Upgrade instance 12345 to 4 CPUs and 4 GB of memory
import SoftLayer
client = SoftLayer.create_client_from_env()
mgr = SoftLayer.VSManager(client)
mgr.upgrade(12345, cpus=4, memory=4)
```

**Parameters**

- **instance\_id** (*int*) – Instance id of the VS to be upgraded
- **cpus** (*int*) – The number of virtual CPUs to upgrade to of a VS instance.
- **preset** (*string*) – preset assigned to the vsi
- **memory** (*int*) – RAM of the VS to be upgraded to.
- **nic\_speed** (*int*) – The port speed to set
- **public** (*bool*) – CPU will be in Private/Public Node.

**Returns** bool

**verify\_create\_instance**(\*\*kwargs)

Verifies an instance creation command.

Without actually placing an order. See `create_instance()` for a list of available options.

Example:

```
new_vsi = {
    'domain': u'test01.labs.sftlyr.ws',
    'hostname': u'minion05',
    'datacenter': u'hkg02',
    'flavor': 'BL1_1X2X100'
    'dedicated': False,
    'private': False,
    'transient': False,
    'os_code' : u'UBUNTU_LATEST',
    'hourly': True,
    'ssh_keys': [1234],
    'disks': ('100', '25'),
    'local_disk': True,
    'tags': 'test, pleaseCancel',
    'public_security_groups': [12, 15]
}

vsi = mgr.verify_create_instance(**new_vsi)
# vsi will be a SoftLayer_Container_Product_Order_Virtual_Guest
# if your order is correct. Otherwise you will get an exception
print vsi
```

**wait\_for\_ready**(instance\_id, limit=3600, delay=10, pending=False)

Determine if a VS is ready and available.

In some cases though, that can mean that no transactions are running. The default arguments imply a VS is operational and ready for use by having network connectivity and remote access is available. Setting `pending=True` will ensure future API calls against this instance will not error due to pending transactions such as OS Reloads and cancellations.

**Parameters**

- **instance\_id** (*int*) – The instance ID with the pending transaction
- **limit** (*int*) – The maximum amount of seconds to wait.
- **delay** (*int*) – The number of seconds to sleep before checks. Defaults to 10.
- **pending** (*bool*) – Wait for pending transactions not related to provisioning or reloads such as monitoring.

Example:

```
# Will return once vsi 12345 is ready, or after 10 checks
ready = mgr.wait_for_ready(12345, 10)
```

**wait\_for\_transaction**(instance\_id, limit, delay=10)

Waits on a VS transaction for the specified amount of time.

This is really just a wrapper for `wait_for_ready(pending=True)`. Provided for backwards compatibility.

**Parameters**

- **instance\_id** (*int*) – The instance ID with the pending transaction
- **limit** (*int*) – The maximum amount of time to wait.
- **delay** (*int*) – The number of seconds to sleep before checks. Defaults to 10.

### 3.2.22 SoftLayer.vs\_capacity

Reserved Capacity Manager and helpers

**license** MIT, see License for more details.

**class** `SoftLayer.managers.vs_capacity.CapacityManager`(*client, ordering\_manager=None*)  
Manages SoftLayer Reserved Capacity Groups.

Product Information

- <https://cloud.ibm.com/docs/virtual-servers?topic=virtual-servers-about-reserved-virtual-servers>
- [https://softlayer.github.io/reference/services/SoftLayer\\_Virtual\\_ReservedCapacityGroup/](https://softlayer.github.io/reference/services/SoftLayer_Virtual_ReservedCapacityGroup/)
- [https://softlayer.github.io/reference/services/SoftLayer\\_Virtual\\_ReservedCapacityGroup\\_Instance/](https://softlayer.github.io/reference/services/SoftLayer_Virtual_ReservedCapacityGroup_Instance/)

**Parameters**

- **client** (`SoftLayer.API.BaseClient`) – the client instance
- **ordering\_manager** (`SoftLayer.managers.OrderingManager`) – an optional manager to handle ordering. If none is provided, one will be auto initialized.

**create**(*name, backend\_router\_id, flavor, instances, test=False*)  
Orders a Virtual\_ReservedCapacityGroup

**Parameters**

- **name** (*string*) – Name for the new reserved capacity
- **backend\_router\_id** (*int*) – This selects the pod. See `create_options` for a list
- **flavor** (*string*) – Capacity KeyName, see `create_options` for a list
- **instances** (*int*) – Number of guest this capacity can support
- **test** (*bool*) – If True, don't actually order, just test.

**create\_guest**(*capacity\_id, test, guest\_object*)  
Turns an empty Reserve Capacity into a real Virtual Guest

**Parameters**

- **capacity\_id** (*int*) – ID of the RESERVED\_CAPACITY\_GROUP to create this guest into
- **test** (*bool*) – True will use `verifyOrder`, False will use `placeOrder`
- **guest\_object** (*dictionary*) – Below is the minimum info you need to send in `guest_object = { 'domain': 'test.com', 'hostname': 'A1538172419', 'os_code': 'UBUNTU_LATEST_64', 'primary_disk': '25', }`

**get\_available\_routers**(*dc=None*)  
Pulls down all backendRouterIds that are available

**Parameters** **dc** (*string*) – A specific location to get routers for, like 'dal13'.



**Returns list** A list of locations where RESERVED\_CAPACITY can be ordered.

**get\_create\_options()**

List available reserved capacity plans

**get\_object(*identifier*, *mask=None*)**

Get a Reserved Capacity Group

**Parameters**

- **identifier** (*int*) – Id of the SoftLayer\_Virtual\_ReservedCapacityGroup
- **mask** (*string*) – override default object Mask

**list()**

List Reserved Capacities

**resolve\_ids(*identifier*)**

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters identifier** (*string*) – identifying string

**Returns list**

### 3.2.23 SoftLayer.vs\_placement

Placement Group Manager

**license** MIT, see License for more details.

**class** SoftLayer.managers.vs\_placement.PlacementManager(*client*)

Manages SoftLayer Reserved Capacity Groups.

Product Information

- [https://console.test.cloud.ibm.com/docs/vsi/vsi\\_placegroup.html#placement-groups](https://console.test.cloud.ibm.com/docs/vsi/vsi_placegroup.html#placement-groups)
- [https://softlayer.github.io/reference/services/SoftLayer\\_Account/getPlacementGroups/](https://softlayer.github.io/reference/services/SoftLayer_Account/getPlacementGroups/)
- [https://softlayer.github.io/reference/services/SoftLayer\\_Virtual\\_PlacementGroup\\_Rule/](https://softlayer.github.io/reference/services/SoftLayer_Virtual_PlacementGroup_Rule/)

Existing instances cannot be added to a placement group. You can only add a virtual server instance to a placement group at provisioning. To remove an instance from a placement group, you must delete or reclaim the instance.

**Parameters client** (SoftLayer.API.BaseClient) – the client instance

**create(*placement\_object*)**

Creates a placement group

A placement\_object is defined as:

```
placement_object = {
    'backendRouterId': 12345,
    'name': 'Test Name',
    'ruleId': 12345
}
```

- [https://softlayer.github.io/reference/datatypes/SoftLayer\\_Virtual\\_PlacementGroup/](https://softlayer.github.io/reference/datatypes/SoftLayer_Virtual_PlacementGroup/)

**Parameters** `placement_object` (*dictionary*) –

**delete**(*group\_id*)

Deletes a PlacementGroup

Placement group must be empty to be deleted. [https://softlayer.github.io/reference/services/SoftLayer\\_Virtual\\_PlacementGroup/deleteObject](https://softlayer.github.io/reference/services/SoftLayer_Virtual_PlacementGroup/deleteObject)

**get\_all\_rules**()

Returns all available rules for creating a placement group

**get\_backend\_router\_id\_from\_hostname**(*hostname*)

Finds the backend router Id that matches the hostname given

No way to use an objectFilter to find a backendRouter, so we have to search the hard way.

**get\_object**(*group\_id*, *mask=None*)

Returns a PlacementGroup Object

[https://softlayer.github.io/reference/services/SoftLayer\\_Virtual\\_PlacementGroup/getObject](https://softlayer.github.io/reference/services/SoftLayer_Virtual_PlacementGroup/getObject)

**get\_routers**()

Calls `SoftLayer_Virtual_PlacementGroup::getAvailableRouters()`

**get\_rule\_id\_from\_name**(*name*)

Finds the rule that matches name.

`SoftLayer_Virtual_PlacementGroup_Rule.getAllObjects` doesn't support objectFilters.

**list**(*mask=None*)

List existing placement groups

Calls `SoftLayer_Account::getPlacementGroups`

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** `identifier` (*string*) – identifying string

**Returns** `list`

If you need more power or functionality than the managers provide, you can make direct API calls as well.

## 3.3 Making API Calls

For full control over your account and services, you can directly call the SoftLayer API. The SoftLayer API client for python leverages SoftLayer's XML-RPC API. It supports authentication, object masks, object filters, limits, offsets, and retrieving objects by id. The following section assumes you have an initialized client named 'client'.

The best way to test our setup is to call the `getObject` method on the `SoftLayer_Account` service.

```
client.call('Account', 'getObject')
```

For a more complex example we'll retrieve a support ticket with id 123456 along with the ticket's updates, the user it's assigned to, the servers attached to it, and the datacenter those servers are in. To retrieve our extra information using an `object mask`.

Retrieve a ticket using object masks.

```
ticket = client.call('Ticket', 'getObject',
                    id=123456, mask="updates, assignedUser, attachedHardware.datacenter")
```

Now add an update to the ticket with `Ticket.addUpdate`. This uses a parameter, which translate to positional arguments in the order that they appear in the API docs.

```
update = client.call('Ticket', 'addUpdate', {'entry' : 'Hello!'}, id=123456)
```

Let's get a listing of virtual guests using the domain example.com

```
client.call('Account', 'getVirtualGuests',
            filter={'virtualGuests': {'domain': {'operation': 'example.com'}}})
```

This call gets tickets created between the beginning of March 1, 2013 and March 15, 2013. More information on [Object Filters](#).

**NOTE** The *value* field for `startDate` and `endDate` is in `[],` if you do not put the date in brackets the filter will not work.

```
client.call('Account', 'getTickets',
            filter={
                'tickets': {
                    'createDate': {
                        'operation': 'betweenDate',
                        'options': [
                            {'name': 'startDate', 'value': ['03/01/2013 0:0:0']},
                            {'name': 'endDate', 'value': ['03/15/2013 23:59:59']}
                        ]
                    }
                }
            }
        )
```

SoftLayer's XML-RPC API also allows for pagination.

```
from pprint import pprint

page1 = client.call('Account', 'getVirtualGuests', limit=10, offset=0) # Page 1
page2 = client.call('Account', 'getVirtualGuests', limit=10, offset=10) # Page 2

#Automatic Pagination (v5.5.3+), default limit is 100
result = client.call('Account', 'getVirtualGuests', iter=True, limit=10)
pprint(result)

# Using a python generator, default limit is 100
results = client.iter_call('Account', 'getVirtualGuests', limit=10)
for result in results:
    pprint(result)
```

**NOTE** `client.call(iter=True)` will pull all results, then return. `client.iter_call()` will return a generator, and only make API calls as you iterate over the results.

Here's how to create a new Cloud Compute Instance using `SoftLayer_Virtual_Guest.createObject`. Be warned, this call actually creates an hourly virtual server so this will have billing implications.

```
client.call('Virtual_Guest', 'createObject', {
    'hostname': 'myhostname',
    'domain': 'example.com',
    'startCpus': 1,
    'maxMemory': 1024,
    'hourlyBillingFlag': 'true',
    'operatingSystemReferenceCode': 'UBUNTU_LATEST',
    'localDiskFlag': 'false'
})
```

## 3.4 Debugging

If you ever need to figure out what exact API call the client is making, you can do the following:

*NOTE* the `print_reproducible` method produces different output for REST and XML-RPC endpoints. If you are using REST, this will produce a CURL call. IF you are using XML-RPC, it will produce some pure python code you can use outside of the SoftLayer library.

```
# Setup the client as usual
client = SoftLayer.Client()
# Create an instance of the DebugTransport, which logs API calls
debugger = SoftLayer.DebugTransport(client.transport)
# Set that as the default client transport
client.transport = debugger
# Make your API call
client.call('Account', 'getObject')

# Print out the reproducible call
for call in client.transport.get_last_calls():
    print(client.transport.print_reproducible(call))
```

## 3.5 Dealing with KeyError Exceptions

One of the pain points in dealing with the SoftLayer API can be handling issues where you expected a property to be returned, but none was.

The `hostname` property of a `SoftLayer_Billing_Item` is a good example of this.

For example.

```
# Uses default username and apikey from ~/.softlayer
client = SoftLayer.create_client_from_env()
# iter_call returns a python generator, and only makes another API call when the loop
↳ runs out of items.
result = client.iter_call('Account', 'getAllBillingItems', iter=True, mask="mask[id,
↳ hostname]")
print("Id, hostname")
for item in result:
    # will throw a KeyError: 'hostname' exception on certain billing items that do not
    ↳ have a hostname
    print("{} {}".format(item['id'], item['hostname']))
```

### 3.5.1 The Solution

Using the python dictionary's `.get()` is great for non-nested items.

```
print("{} {}".format(item.get('id'), item.get('hostName')))
```

Otherwise, this SDK provides a util function to do something similar. Each additional argument passed into `utils.lookup` will go one level deeper into the nested dictionary to find the item requested, returning `None` if a `KeyError` shows up.

```
itemId = SoftLayer.utils.lookup(item, 'id')
itemHostname = SoftLayer.utils.lookup(item, 'hostName')
print("{} {}".format(itemId, itemHostname))
```

## 3.6 API Reference

### 3.6.1 SoftLayer Python API Client

SoftLayer API bindings

Usage:

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env(username="username",
                                             api_key="api_key")
>>> resp = client.call('Account', 'getObject')
>>> resp['companyName']
'Your Company'
```

**license** MIT, see LICENSE for more details.

### 3.6.2 SoftLayer.API

SoftLayer API bindings

**license** MIT, see LICENSE for more details.

**class** `SoftLayer.API.BaseClient`(*auth=None, transport=None, config\_file=None*)  
Base SoftLayer API client.

#### Parameters

- **auth** – auth driver that looks like `SoftLayer.auth.AuthenticationBase`
- **transport** – An object that's callable with this signature: `transport(SoftLayer.transports.Request)`

**authenticate\_with\_password**(*username, password, security\_question\_id=None, security\_question\_answer=None*)

Performs Username/Password Authentication

#### Parameters

- **username** (*string*) – your SoftLayer username
- **password** (*string*) – your SoftLayer password
- **security\_question\_id** (*int*) – The security question id to answer

- **security\_question\_answer** (*string*) – The answer to the security question

**call**(*service, method, \*args, \*\*kwargs*)

Make a SoftLayer API call.

#### Parameters

- **method** – the method to call on the service
- **\*args** – (optional) arguments for the remote call
- **id** – (optional) id for the resource
- **mask** – (optional) object mask
- **filter** (*dict*) – (optional) filter dict
- **headers** (*dict*) – (optional) optional XML-RPC headers
- **compress** (*boolean*) – (optional) Enable/Disable HTTP compression
- **raw\_headers** (*dict*) – (optional) HTTP transport headers
- **limit** (*int*) – (optional) return at most this many results
- **offset** (*int*) – (optional) offset results by this many
- **iter** (*boolean*) – (optional) if True, returns a generator with the results
- **verify** (*bool*) – verify SSL cert
- **cert** – client certificate path

#### Usage:

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
>>> client.call('Account', 'getVirtualGuests', mask="id", limit=10)
[...]
```

**iter\_call**(*service, method, \*args, \*\*kwargs*)

A generator that deals with paginating through results.

#### Parameters

- **service** – the name of the SoftLayer API service
- **method** – the method to call on the service
- **limit** (*integer*) – result size for each API call (defaults to 100)
- **\*args** – same optional arguments that `Service.call` takes
- **\*\*kwargs** – same optional keyword arguments that `Service.call` takes

`SoftLayer.API.Client`(*\*\*kwargs*)

Get a SoftLayer API Client using environmental settings.

Deprecated in favor of `create_client_from_env()`

**class** `SoftLayer.API.IAMClient`(*auth=None, transport=None, config\_file=None*)

IBM ID Client for using IAM authentication

#### Parameters

- **auth** – auth driver that looks like `SoftLayer.auth.AuthenticationBase`

- **transport** – An object that's callable with this signature: `transport(SoftLayer.transports.Request)`

**authenticate\_with\_iam\_token**(*a\_token*, *r\_token=None*)

Authenticates to the SL API with an IAM Token

**Parameters**

- **a\_token** (*string*) – Access token
- **r\_token** (*string*) – Refresh Token, to be used if Access token is expired.

**authenticate\_with\_passcode**(*passcode*)

Performs IBM IAM SSO Authentication

**Parameters** **passcode** (*string*) – your IBMid password

**authenticate\_with\_password**(*username*, *password*, *security\_question\_id=None*,  
*security\_question\_answer=None*)

Performs IBM IAM Username/Password Authentication

**Parameters**

- **username** (*string*) – your IBMid username
- **password** (*string*) – your IBMid password

**call**(*service*, *method*, *\*args*, *\*\*kwargs*)

Handles refreshing IAM tokens in case of a HTTP 401 error

**refresh\_iam\_token**(*r\_token*, *account\_id=None*, *ims\_account=None*)

Refreshes the IAM Token, will default to values in the config file

**class** `SoftLayer.API.Service`(*client*, *name*)

A SoftLayer Service.

**Parameters**

- **client** – A `SoftLayer.API.Client` instance
- **str** (*name*) – The service name

**call**(*name*, *\*args*, *\*\*kwargs*)

Make a SoftLayer API call

**Parameters**

- **service** – the name of the SoftLayer API service
- **method** – the method to call on the service
- **\*args** – same optional arguments that `BaseClient.call` takes
- **\*\*kwargs** – same optional keyword arguments that `BaseClient.call` takes
- **service** – the name of the SoftLayer API service

**Usage:**

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
>>> client['Account'].getVirtualGuests(mask="id", limit=10)
[...]
```

`iter_call(name, *args, **kwargs)`

A generator that deals with paginating through results.

**Parameters**

- **method** – the method to call on the service
- **chunk** (*integer*) – result size for each API call
- **\*args** – same optional arguments that `Service.call` takes
- **\*\*kwargs** – same optional keyword arguments that `Service.call` takes

**Usage:**

```
>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
>>> gen = client.call('Account', 'getVirtualGuests', iter=True)
>>> for virtual_guest in gen:
...     virtual_guest['id']
...
1234
4321
```

`SoftLayer.API.create_client_from_env(username=None, api_key=None, endpoint_url=None, timeout=None, auth=None, config_file=None, proxy=None, user_agent=None, transport=None, verify=True)`

Creates a SoftLayer API client using your environment.

Settings are loaded via keyword arguments, environmental variables and config file.

**Parameters**

- **username** – an optional API username if you wish to bypass the package’s built-in username
- **api\_key** – an optional API key if you wish to bypass the package’s built in API key
- **endpoint\_url** – the API endpoint base URL you wish to connect to. Set this to `API_PRIVATE_ENDPOINT` to connect via SoftLayer’s private network.
- **proxy** – proxy to be used to make API calls
- **timeout** (*integer*) – timeout for API requests
- **auth** – an object which responds to `get_headers()` to be inserted into the xml-rpc headers. Example: *BasicAuthentication*
- **config\_file** – A path to a configuration file used to load settings
- **user\_agent** – an optional User Agent to report when making API calls if you wish to bypass the packages built in User Agent string
- **transport** – An object that’s callable with this signature: `transport(SoftLayer.transports.Request)`
- **verify** (*bool*) – decide to verify the server’s SSL/TLS cert. DO NOT SET TO FALSE WITHOUT UNDERSTANDING THE IMPLICATIONS.

**Usage:**



```

>>> import SoftLayer
>>> client = SoftLayer.create_client_from_env()
>>> resp = client.call('Account', 'getObject')
>>> resp['companyName']
'Your Company'

```

### 3.6.3 SoftLayer.exceptions

Exceptions used throughout the library

**license** MIT, see LICENSE for more details.

**exception** `SoftLayer.exceptions.ApplicationError(fault_code, fault_string, *args)`  
Application Error.

**exception** `SoftLayer.exceptions.IAMError(fault_code, fault_string, url=None)`  
Errors from iam.cloud.ibm.com

**exception** `SoftLayer.exceptions.InternalError(fault_code, fault_string, *args)`  
Internal Server Error.

**exception** `SoftLayer.exceptions.InvalidCharacter(fault_code, fault_string, *args)`  
There was an invalid character.

**exception** `SoftLayer.exceptions.InvalidMethodParameters(fault_code, fault_string, *args)`  
Invalid method paramters.

**exception** `SoftLayer.exceptions.MethodNotFound(fault_code, fault_string, *args)`  
Method name not found.

**exception** `SoftLayer.exceptions.NotWellFormed(fault_code, fault_string, *args)`  
Request was not well formed.

**exception** `SoftLayer.exceptions.ParseError(fault_code, fault_string, *args)`  
Parse Error.

**exception** `SoftLayer.exceptions.RemoteSystemError(fault_code, fault_string, *args)`  
System Error.

**exception** `SoftLayer.exceptions.ServerError(fault_code, fault_string, *args)`  
Server Error.

**exception** `SoftLayer.exceptions.SoftLayerAPIError(fault_code, fault_string, *args)`  
SoftLayerAPIError is an exception raised during API errors.  
  
Provides faultCode and faultString properties.

**exception** `SoftLayer.exceptions.SoftLayerError`  
The base SoftLayer error.

**exception** `SoftLayer.exceptions.SpecViolation(fault_code, fault_string, *args)`  
There was a spec violation.

**exception** `SoftLayer.exceptions.TransportError(fault_code, fault_string, *args)`  
Transport Error.

**exception** `SoftLayer.exceptions.Unauthenticated`  
Unauthenticated.

**exception** `SoftLayer.exceptions.UnsupportedEncoding(fault_code, fault_string, *args)`  
Encoding not supported.

### 3.6.4 SoftLayer.decoration

Handy decorators to use

**license** MIT, see LICENSE for more details.

```
SoftLayer.decoration.retry(ex=(<class 'SoftLayer.exceptions.ServerError'>, <class  
    'SoftLayer.exceptions.ApplicationError'>, <class  
    'SoftLayer.exceptions.RemoteSystemError'>), tries=4, delay=5, backoff=2,  
    logger=None)
```

Retry calling the decorated function using an exponential backoff.

<http://www.saltycrane.com/blog/2009/11/trying-out-retry-decorator-python/> original from: <http://wiki.python.org/moin/PythonDecoratorLibrary#Retry>

#### Parameters

- **ex** – the exception to check. may be a tuple of exceptions to check
- **tries** – number of times to try (not retry) before giving up
- **delay** – initial delay between retries in seconds. A random 0-5s will be added to this number to stagger calls.
- **backoff** – backoff multiplier e.g. value of 2 will double the delay each retry
- **logger** – logger to use. If None, print

### 3.6.5 SoftLayer.utils

Utility function/classes.

**license** MIT, see LICENSE for more details.

**class** SoftLayer.utils.IdentifierMixin

Mixin used to resolve ids from other names of objects.

This mixin provides an interface to provide multiple methods for converting an 'identifier' to an id

**resolve\_ids**(*identifier*)

Takes a string and tries to resolve to a list of matching ids.

What exactly 'identifier' can be depends on the resolvers

**Parameters** **identifier** (*string*) – identifying string

**Returns** list

**class** SoftLayer.utils.NestedDict

This helps with accessing a heavily nested dictionary.

Dictionary where accessing keys that don't exist will return another NestedDict object.

**to\_dict**()

Converts a NestedDict instance into a real dictionary.

This is needed for places where strict type checking is done.

**class** SoftLayer.utils.UTC

UTC timezone.

**dst**(\_)

datetime -> DST offset as timedelta positive east of UTC.

**tzname(\_)**  
datetime -> string name of time zone.

**utcoffset(\_)**  
datetime -> timedelta showing offset from UTC, negative values indicating West of UTC

**SoftLayer.utils.build\_filter\_orderby(*orderby*)**  
Builds filters using the filter options passed into the CLI.

It only supports the orderBy option, the default value is DESC.

**SoftLayer.utils.clean\_splitlines(*string*)**  
Returns a string where is replaced with

**SoftLayer.utils.clean\_string(*string*)**  
Returns a string with all newline and other whitespace garbage removed.

Mostly this method is used to print out objectMasks that have a lot of extra whitespace in them because making compact masks in python means they don't look nice in the IDE.

**Parameters** **string** – The string to clean.

**Returns** **string** A string without extra whitespace.

**SoftLayer.utils.clean\_time(*sitime*, *in\_format*='%Y-%m-%dT%H:%M:%S%z', *out\_format*='%Y-%m-%d %H:%M')**

Easy way to format time strings

**Parameters**

- **sitime** (*string*) – A softlayer formatted time string
- **in\_format** (*string*) – Datetime format for strptime
- **out\_format** (*string*) – Datetime format for strftime

**SoftLayer.utils.days\_to\_datetime(*days*)**  
Returns the datetime value of last N days.

**Parameters** **days** (*int*) – From 0 to N days

**Returns** **int** The datetime of last N days or datetime.now() if days <= 0.

**SoftLayer.utils.dict\_merge(*dct1*, *dct2*)**  
Recursively merges dct2 and dct1, ideal for merging objectFilter together.

**Parameters**

- **dct1** – A dictionary
- **dct2** – A dictionary

**Returns** dct1 + dct2

**SoftLayer.utils.event\_log\_filter\_between\_date(*start*, *end*, *utc*)**  
betweenDate Query filter that SoftLayer\_EventLog likes

**Parameters**

- **start** (*string*) – lower bound date in mm/dd/yyyy format
- **end** (*string*) – upper bound date in mm/dd/yyyy format
- **utc** (*string*) – utc offset. Defaults to '+0000'

**SoftLayer.utils.event\_log\_filter\_greater\_than\_date(*date*, *utc*)**  
greaterThanDate Query filter that SoftLayer\_EventLog likes

**Parameters**

- **date** (*string*) – lower bound date in mm/dd/yyyy format
- **utc** (*string*) – utc offset. Defaults to '+0000'

`SoftLayer.utils.event_log_filter_less_than_date(date, utc)`  
lessThanDate Query filter that SoftLayer\_EventLog likes

**Parameters**

- **date** (*string*) – upper bound date in mm/dd/yyyy format
- **utc** (*string*) – utc offset. Defaults to '+0000'

`SoftLayer.utils.format_comment(comment, max_line_length=60)`  
Return a string that is length long, added a next line and keep the table format.

**Parameters**

- **comment** (*string*) – String you want to add next line
- **max\_line\_length** (*int*) – max length for the string

`SoftLayer.utils.format_event_log_date(date_string, utc)`  
Gets a date in the format that the SoftLayer\_EventLog object likes.

**Parameters**

- **date\_string** (*string*) – date in mm/dd/yyyy format
- **utc** (*string*) – utc offset. Defaults to '+0000'

`SoftLayer.utils.is_ready(instance, pending=False)`  
Returns True if instance is ready to be used

**Parameters**

- **instance** (*Object*) – Hardware or Virt with transaction data retrieved from the API
- **pending** (*bool*) – Wait for ALL transactions to finish?

**Returns bool**

`SoftLayer.utils.lookup(dic, key, *keys)`  
A generic dictionary access helper.

This helps simplify code that uses heavily nested dictionaries. It will return None if any of the keys in *\*keys* do not exist.

```
>>> lookup({'this': {'is': 'nested'}}, 'this', 'is')
nested

>>> lookup({}, 'this', 'is')
None
```

`SoftLayer.utils.query_filter(query)`  
Translate a query-style string to a 'filter'.

Query can be the following formats:

**Case Insensitive** 'value' OR '= value' Contains 'value' OR '^= value' Begins with value 'value' OR '\$= value'  
Ends with value '\*value' OR '\_= value' Contains value

**Case Sensitive** '~ value' Contains '!~ value' Does not contain '> value' Greater than value '< value' Less than  
value '>= value' Greater than or equal to value '<= value' Less than or equal to value

**Parameters** `query` (*string*) – query string

`SoftLayer.utils.query_filter_date(start, end)`

Query filters given start and end date.

:param start:YY-MM-DD :param end: YY-MM-DD

`SoftLayer.utils.query_filter_orderby(sort='ASC')`

Returns an object filter operation for sorting

**Parameters** `sort` (*string*) – either ASC or DESC

`SoftLayer.utils.resolve_ids(identifier, resolvers)`

Resolves IDs given a list of functions.

**Parameters**

- **identifier** (*string*) – identifier string
- **resolvers** (*list*) – a list of functions

**Returns list**

`SoftLayer.utils.timestamp(date)`

Converts a datetime to timestamp

**Parameters** `date` (*datetime*) –

**Returns int** The timestamp of date.

`SoftLayer.utils.trim_to(string, length=80, tail='...')`

Returns a string that is length long. tail added if trimmed

**Parameters**

- **string** (*string*) – String you want to trim
- **length** (*int*) – max length for the string
- **tail** (*string*) – appended to strings that were trimmed.



## COMMAND-LINE INTERFACE

The SoftLayer command line interface is available via the *slcli* command available in your *PATH*. The *slcli* command is a reference implementation of SoftLayer API bindings for python and how to efficiently make API calls. See the *Usage Examples* section to see how to discover all of the functionality not fully documented here.

### 4.1 Configuration Setup

To update the configuration, you can use *slcli setup*.

```
$ slcli setup
Username []: username
API Key or Password []:
Endpoint (public|private|custom): public
:.....:
:      Name : Value                               :
:.....:
:      Username : username                               :
:      API Key  : oyVmeipYQCNrjVS4rF9bHWV7D75S6pa1fghF1384v7mwRCbHTfuJ8qRORIqoVnha :
:      Endpoint URL : https://api.softlayer.com/xmlrpc/v3.1/           :
:.....:
Are you sure you want to write settings to "/home/me/.softlayer"? [y/N]: y
```

To check the configuration, you can use *slcli config show*.

```
$ slcli config show
:.....:
:      Name : Value                               :
:.....:
:      Username : username                               :
:      API Key  : oyVmeipYQCNrjVS4rF9bHWV7D75S6pa1fghF1384v7mwRCbHTfuJ8qRORIqoVnha :
:      Endpoint URL : https://api.softlayer.com/xmlrpc/v3.1/           :
:.....:
```

If you are using an account created from the <https://cloud.ibm.com> portal, your username will be literally *apikey*, and use the key provided. [How to create an IBM apikey](#)

To see more about the config file format, see [Configuration File](#).

## 4.2 Usage Examples

To discover the available commands, simply type `slcli`.

```
$ slcli
Usage: slcli [OPTIONS] COMMAND [ARGS]...

SoftLayer Command-line Client

Options:
  --format [table|raw|json|jsonraw] Output format [default: raw]
  -C, --config PATH                 Config file location [default: ~\.softlayer]
  -v, --verbose                     Sets the debug noise level, specify multiple.
↪times for more verbosity.
  --proxy TEXT                       HTTP[S] proxy to be use to make API calls
  -y, --really / --not-really       Confirm all prompt actions
  --demo / --no-demo               Use demo data instead of actually making API.
↪calls
  --version                         Show the version and exit.
  -h, --help                       Show this message and exit.

Commands:
  block           Block Storage.
  call-api       Call arbitrary API endpoints.
  cdn            Content Delivery Network.
  config        CLI configuration.
  dedicatedhost Dedicated Host.
  dns           Domain Name System.
  email        Email Deliviry Network
  event-log    Event Logs.
  file         File Storage.
  firewall     Firewalls.
  globalip    Global IP addresses.
  hardware     Hardware servers.
  image        Compute images.
  ipsec        IPSEC VPN
  loadbal      Load balancers.
  metadata     Find details about this machine.
  nas          Network Attached Storage.
  object-storage Object Storage.
  order        View and order from the catalog.
  report       Reports.
  securitygroup Network security groups.
  setup        Edit configuration.
  shell        Enters a shell for slcli.
  sshkey       SSH Keys.
  ssl          SSL Certificates.
  subnet       Network subnets.
  summary      Account summary.
  ticket       Support tickets.
  user         Manage Users.
  virtual      Virtual Servers.
  vlan         Network VLANs.
```

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To use most commands your SoftLayer username and `api_key` need to be configured. The easiest way to do that is to use: `'slcli setup'`

As you can see, there are a number of commands/sections. To look at the list of subcommands for virtual servers type `slcli vs`. For example:

```
$ slcli vs
Usage: slcli vs [OPTIONS] COMMAND [ARGS]...

Virtual Servers.

Options:
  --help  Show this message and exit.

Commands:
  cancel          Cancel virtual servers.
  capture         Capture SoftLayer image.
  create          Order/create virtual servers.
  create-options  Virtual server order options.
  credentials     List virtual server credentials.
  detail          Get details for a virtual server.
  dns-sync        Sync DNS records.
  edit            Edit a virtual server's details.
  list            List virtual servers.
  network         Manage network settings.
  pause           Pauses an active virtual server.
  power_off       Power off an active virtual server.
  power_on        Power on a virtual server.
  ready           Check if a virtual server is ready.
  reboot          Reboot an active virtual server.
  reload          Reload operating system on a virtual server.
  rescue          Reboot into a rescue image.
  resume          Resumes a paused virtual server.
  upgrade         Upgrade a virtual server.
```

Finally, we can make an actual call. Let's list out the virtual servers on our account by using `slcli vs list`.

Example:

```
$ slcli vs list
.....:
↪.....:
:   id   : datacenter :      host      : cores : memory :   primary_ip   : backend_
↪ip    : active_transaction :
.....:
↪.....:
: 1234567 :   sjc01   : test.example.com :    4   :   4G   :    12.34.56    :   65.43.
↪21    :           :                  :
.....:
↪.....:
```

Most commands will take in additional options/arguments. To see all available actions, use `-help`.

```
$ slcli vs list --help
Usage: slcli vs list [OPTIONS]

List virtual servers.

Options:
  --sortby [guid|hostname|primary_ip|backend_ip|datacenter]
                                Column to sort by
  -c, --cpu INTEGER             Number of CPU cores
  -D, --domain TEXT             Domain portion of the FQDN
  -d, --datacenter TEXT        Datacenter shortname
  -H, --hostname TEXT          Host portion of the FQDN
  -m, --memory INTEGER         Memory in mebibytes
  -n, --network TEXT           Network port speed in Mbps
  --hourly                     Show only hourly instances
  --monthly                    Show only monthly instances
  --tags TEXT                  Show instances that have one of these comma-
                                separated tags
  --help                       Show this message and exit.
```

## DEBUGGING

To see exactly what API call is being made by the SLCLI, you can use the verbose option.

A single `-v` will show a simple version of the API call, along with some statistics

```
slcli -v vs detail 74397127
Calling: SoftLayer_Virtual_Guest::getObject(id=74397127, mask='id,globalIdentifier,
↳fullyQualifiedDomainName,hostname,domain', filter='None', args=(), limit=None,↳
↳offset=None))
Calling: SoftLayer_Virtual_Guest::getReverseDomainRecords(id=77460683, mask='', filter=
↳'None', args=(), limit=None, offset=None))
:.....:
:   name      :                               value      :
:.....:
: execution_time :                               2.020334s    :
: api_calls     :      SoftLayer_Virtual_Guest::getObject (1.515583s) :
:               :      SoftLayer_Virtual_Guest::getReverseDomainRecords (0.494480s) :
: version       :                               softlayer-python/v5.7.2 :
: python_version :                               3.7.3 (default, Mar 27 2019, 09:23:15) :
:               :                               [Clang 10.0.1 (clang-1001.0.46.3)] :
: library_location : /Users/chris/Code/py3/lib/python3.7/site-packages/SoftLayer :
:.....:
```

Using `-vv` will print out some API call details in the summary as well.

```
slcli -vv account summary
Calling: SoftLayer_Account::getObject(id=None, mask='mask[ nextInvoiceTotalAmount,↳
↳pendingInvoice[invoiceTotalAmount], blockDeviceTemplateGroupCount, dedicatedHostCount,↳
↳domainCount, hardwareCount, networkStorageCount, openTicketCount, networkVlanCount,↳
↳subnetCount, userCount, virtualGuestCount ]', filter='None', args=(), limit=None,↳
↳offset=None))
:.....:
:   name      :                               value      :
:.....:
: execution_time :                               0.921271s    :
: api_calls     :      SoftLayer_Account::getObject (0.911208s) :
: version       :                               softlayer-python/v5.7.2 :
: python_version :                               3.7.3 (default, Mar 27 2019, 09:23:15) :
:               :                               [Clang 10.0.1 (clang-1001.0.46.3)] :
: library_location : /Users/chris/Code/py3/lib/python3.7/site-packages/SoftLayer :
:.....:
:.....:
```

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## COMMAND DIRECTORY

### 6.1 Account Commands

#### 6.1.1 account summary

Prints some various bits of information about an account

```
account summary [OPTIONS]
```

#### 6.1.2 account events

Summary and acknowledgement of upcoming and ongoing maintenance events

```
account events [OPTIONS]
```

#### Options

##### **--ack-all**

Acknowledge every upcoming event. Doing so will turn off the popup in the control portal

#### 6.1.3 account event-detail

Details of a specific event, and ability to acknowledge event.

```
account event-detail [OPTIONS] IDENTIFIER
```

#### Options

##### **--ack**

Acknowledge Event. Doing so will turn off the popup in the control portal

## Arguments

### IDENTIFIER

Required argument

## 6.1.4 account invoices

List invoices

```
account invoices [OPTIONS]
```

## Options

**--limit** <limit>

How many invoices to get back.

**Default** 50

**--closed**

Include invoices with a CLOSED status.

**Default** False

**--all**

Return ALL invoices. There may be a lot of these.

**Default** False

## 6.1.5 account invoice-detail

Invoice details

```
account invoice-detail [OPTIONS] IDENTIFIER
```

## Options

**--details**

Shows a very detailed list of charges

**Default** False

## Arguments

### IDENTIFIER

Required argument

### 6.1.6 account billing-items

Lists billing items with some other useful information.

Similar to <https://cloud.ibm.com/billing/billing-items>

```
account billing-items [OPTIONS]
```

### 6.1.7 account item-detail

Gets detailed information about a billing item.

```
account item-detail [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.1.8 account cancel-item

Cancels a billing item.

```
account cancel-item [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.1.9 account orders

Lists account orders. Use *slcli order lookup <ID>* to find more details about a specific order.

```
account orders [OPTIONS]
```

#### Options

**-l, --limit** <limit>

How many results to get in one api call

**Default** 100

### 6.1.10 account licenses

Show all licenses.

```
account licenses [OPTIONS]
```

## 6.2 Autoscale Commands

These commands were added in version 5.8.1

For making changes to the triggers or the autoscale group itself, see the [Autoscale Portal](#)

- [Autoscale Product](#)
- [Autoscale Documentation](#)
- [Autoscale Portal](#)

### 6.2.1 autoscale list

List AutoScale Groups.

```
autoscale list [OPTIONS]
```

### 6.2.2 autoscale detail

Get details of an Autoscale groups.

```
autoscale detail [OPTIONS] IDENTIFIER
```

#### Arguments

##### **IDENTIFIER**

Required argument

### 6.2.3 autoscale scale

Scales an Autoscale group. Bypasses a scale group's cooldown period.

```
autoscale scale [OPTIONS] IDENTIFIER
```



## Options

**--up, --down**

‘-up’ adds guests, ‘-down’ removes guests.

**--by, --to**

**Required** ‘-by’ will add/remove the specified number of guests. ‘-to’ will add/remove a number of guests to get the group’s guest count to the specified number.

**--amount** <amount>

**Required** Number of guests for the scale action.

## Arguments

**IDENTIFIER**

Required argument

### 6.2.4 autoscale logs

Retrieve logs for an autoscale group

```
autoscale logs [OPTIONS] IDENTIFIER
```

## Options

**-d, --date-min** <date\_min>

Earliest date to retrieve logs for.

## Arguments

**IDENTIFIER**

Required argument

### 6.2.5 autoscale tag

Tags all guests in an autoscale group.

-tags “Use, quotes, if you, want whitespace”

-tags Otherwise,Just,commas

```
autoscale tag [OPTIONS] IDENTIFIER
```

## Options

**-g, --tags** <tags>  
Tags to set for each guest in this group. Existing tags are overwritten. An empty string will remove all tags

## Arguments

**IDENTIFIER**  
Required argument

## 6.2.6 autoscale edit

Edits an Autoscale group.

```
autoscale edit [OPTIONS] IDENTIFIER
```

## Options

**--name** <name>  
Scale group's name.

**--min** <minimum>  
Set the minimum number of guests

**--max** <maximum>  
Set the maximum number of guests

**--userdata** <userdata>  
User defined metadata string

**-F, --userfile** <userfile>  
Read userdata from a file

**--cpu** <cpu>  
Number of CPUs for new guests (existing not effected)

**--memory** <memory>  
RAM in MB or GB for new guests (existing not effected)

## Arguments

**IDENTIFIER**  
Required argument

## 6.3 Block Commands

### 6.3.1 block access-authorize

Authorizes hosts to access a given volume

```
block access-authorize [OPTIONS] VOLUME_ID
```

#### Options

- h, --hardware-id** <hardware\_id>  
The id of one SoftLayer\_Hardware to authorize
- v, --virtual-id** <virtual\_id>  
The id of one SoftLayer\_Virtual\_Guest to authorize
- i, --ip-address-id** <ip\_address\_id>  
The id of one SoftLayer\_Network\_Subnet\_IpAddress to authorize
- ip-address** <ip\_address>  
An IP address to authorize

#### Arguments

**VOLUME\_ID**  
Required argument

### 6.3.2 block access-list

List ACLs.

```
block access-list [OPTIONS] VOLUME_ID
```

#### Options

- sortby** <sortby>  
Column to sort by
- columns** <columns>  
Columns to display. Options: id, name, type, private\_ip\_address, source\_subnet, host\_iqn, username, password, allowed\_host\_id

## Arguments

### VOLUME\_ID

Required argument

## 6.3.3 block access-revoke

Revokes authorization for hosts accessing a given volume

```
block access-revoke [OPTIONS] VOLUME_ID
```

## Options

- h, --hardware-id** <hardware\_id>  
The id of one SoftLayer\_Hardware to revoke authorization
- v, --virtual-id** <virtual\_id>  
The id of one SoftLayer\_Virtual\_Guest to revoke authorization
- i, --ip-address-id** <ip\_address\_id>  
The id of one SoftLayer\_Network\_Subnet\_IpAddress to revoke authorization
- ip-address** <ip\_address>  
An IP address to revoke authorization

## Arguments

### VOLUME\_ID

Required argument

## 6.3.4 block access-password

Changes a password for a volume's access.

access id is the allowed\_host\_id from slcli block access-list

```
block access-password [OPTIONS] ACCESS_ID
```

## Options

- p, --password** <password>  
Password you want to set, this command will fail if the password is not strong

## Arguments

### ACCESS\_ID

Required argument

## 6.3.5 block replica-failback

Failback a block volume from the given replicant volume.

```
block replica-failback [OPTIONS] VOLUME_ID
```

## Arguments

### VOLUME\_ID

Required argument

## 6.3.6 block replica-failover

Failover a block volume to the given replicant volume.

```
block replica-failover [OPTIONS] VOLUME_ID
```

## Options

**--replicant-id** <replicant\_id>  
ID of the replicant volume

## Arguments

### VOLUME\_ID

Required argument

## 6.3.7 block replica-order

Order a block storage replica volume.

```
block replica-order [OPTIONS] VOLUME_ID
```

## Options

**-s, --snapshot-schedule** <snapshot\_schedule>  
**Required** Snapshot schedule to use for replication, (HOURLY | DAILY | WEEKLY)

**Options** HOURLY | DAILY | WEEKLY

**-l, --location** <location>  
**Required** Short name of the data center for the replicant (e.g.: dal09)

**--tier** <tier>  
Endurance Storage Tier (IOPS per GB) of the primary volume for which a replicant is ordered [optional]

**Options** 0.25 | 2 | 4 | 10

**--os-type** <os\_type>  
Operating System Type (e.g.: LINUX) of the primary volume for which a replica is ordered [optional]

**Options** HYPER\_V | LINUX | VMWARE | WINDOWS\_2008 | WINDOWS\_GPT | WINDOWS | XEN

## Arguments

**VOLUME\_ID**  
Required argument

### 6.3.8 block replica-partners

List existing replicant volumes for a block volume.

```
block replica-partners [OPTIONS] VOLUME_ID
```

## Options

**--sortby** <sortby>  
Column to sort by

**--columns** <columns>  
Columns to display. Options: ID, Username, Account ID, Capacity (GB), Hardware ID, Guest ID, Host ID

## Arguments

**VOLUME\_ID**  
Required argument

### 6.3.9 block replica-locations

List suitable replication datacenters for the given volume.

```
block replica-locations [OPTIONS] VOLUME_ID
```

## Options

**--sortby** <sortby>  
Column to sort by

**--columns** <columns>  
Columns to display. Options: ID, Long Name, Short Name

## Arguments

### **VOLUME\_ID**

Required argument

## 6.3.10 block snapshot-cancel

Cancel existing snapshot space for a given volume.

```
block snapshot-cancel [OPTIONS] VOLUME_ID
```

## Options

**--reason** <reason>

An optional reason for cancellation

**--immediate**

Cancels the snapshot space immediately instead of on the billing anniversary

## Arguments

### **VOLUME\_ID**

Required argument

## 6.3.11 block snapshot-create

Creates a snapshot on a given volume

```
block snapshot-create [OPTIONS] VOLUME_ID
```

## Options

**-n, --notes** <notes>

Notes to set on the new snapshot

## Arguments

### **VOLUME\_ID**

Required argument

### 6.3.12 block snapshot-delete

Deletes a snapshot on a given volume

```
block snapshot-delete [OPTIONS] SNAPSHOT_ID
```

#### Arguments

**SNAPSHOT\_ID**

Required argument

### 6.3.13 block snapshot-disable

Disables snapshots on the specified schedule for a given volume

```
block snapshot-disable [OPTIONS] VOLUME_ID
```

#### Options

**--schedule-type** <schedule\_type>

**Required** Snapshot schedule [INTERVAL|HOURLY|DAILY|WEEKLY]

#### Arguments

**VOLUME\_ID**

Required argument

### 6.3.14 block snapshot-enable

Enables snapshots for a given volume on the specified schedule

```
block snapshot-enable [OPTIONS] VOLUME_ID
```

#### Options

**--schedule-type** <schedule\_type>

**Required** Snapshot schedule [INTERVAL|HOURLY|DAILY|WEEKLY]

**--retention-count** <retention\_count>

**Required** Number of snapshots to retain

**--minute** <minute>

Minute of the day when snapshots should be taken

**--hour** <hour>

Hour of the day when snapshots should be taken

**--day-of-week** <day\_of\_week>

Day of the week when snapshots should be taken



## Arguments

### VOLUME\_ID

Required argument

## 6.3.15 block snapshot-schedule-list

Lists snapshot schedules for a given volume

```
block snapshot-schedule-list [OPTIONS] VOLUME_ID
```

## Arguments

### VOLUME\_ID

Required argument

## 6.3.16 block snapshot-list

List block storage snapshots.

```
block snapshot-list [OPTIONS] VOLUME_ID
```

## Options

**--sortby** <sortby>

Column to sort by

**--columns** <columns>

Columns to display. Options: id, name, created, size\_bytes

## Arguments

### VOLUME\_ID

Required argument

## 6.3.17 block snapshot-order

Order snapshot space for a block storage volume.

```
block snapshot-order [OPTIONS] VOLUME_ID
```

## Options

- capacity** <capacity>  
    **Required** Size of snapshot space to create in GB
- tier** <tier>  
    Endurance Storage Tier (IOPS per GB) of the block volume for which space is ordered [optional, and only valid for endurance storage volumes]  
    **Options** 0.25 | 2 | 4 | 10
- upgrade**  
    Flag to indicate that the order is an upgrade

## Arguments

- VOLUME\_ID**  
    Required argument

### 6.3.18 block snapshot-restore

Restore block volume using a given snapshot

```
block snapshot-restore [OPTIONS] VOLUME_ID
```

## Options

- s, --snapshot-id** <snapshot\_id>  
    The id of the snapshot which will be used to restore the block volume

## Arguments

- VOLUME\_ID**  
    Required argument

### 6.3.19 block volume-cancel

Cancel an existing block storage volume.

```
block volume-cancel [OPTIONS] VOLUME_ID
```

## Options

**--reason** <reason>

An optional reason for cancellation

**--immediate**

Cancels the block storage volume immediately instead of on the billing anniversary

## Arguments

**VOLUME\_ID**

Required argument

### 6.3.20 block volume-count

List number of block storage volumes per datacenter.

```
block volume-count [OPTIONS]
```

## Options

**-d, --datacenter** <datacenter>

Datacenter shortname

**--sortby** <sortby>

Column to sort by

### 6.3.21 block volume-detail

Display details for a specified volume.

```
block volume-detail [OPTIONS] VOLUME_ID
```

## Arguments

**VOLUME\_ID**

Required argument

### 6.3.22 block volume-duplicate

Order a duplicate block storage volume.

```
block volume-duplicate [OPTIONS] ORIGIN_VOLUME_ID
```

## Options

- o, --origin-snapshot-id** <origin\_snapshot\_id>  
ID of an origin volume snapshot to use for duplication.
- c, --duplicate-size** <duplicate\_size>  
Size of duplicate block volume in GB. **\*If no size is specified, the size of the origin volume will be used.\*** Potential Sizes: [20, 40, 80, 100, 250, 500, 1000, 2000, 4000, 8000, 12000] Minimum: [the size of the origin volume]
- i, --duplicate-iops** <duplicate\_iops>  
Performance Storage IOPS, between 100 and 6000 in multiples of 100 [only used for performance volumes] **\*If no IOPS value is specified, the IOPS value of the origin volume will be used.\*** Requirements: [If IOPS/GB for the origin volume is less than 0.3, IOPS/GB for the duplicate must also be less than 0.3. If IOPS/GB for the origin volume is greater than or equal to 0.3, IOPS/GB for the duplicate must also be greater than or equal to 0.3.]
- t, --duplicate-tier** <duplicate\_tier>  
Endurance Storage Tier (IOPS per GB) [only used for endurance volumes] **\*If no tier is specified, the tier of the origin volume will be used.\*** Requirements: [If IOPS/GB for the origin volume is 0.25, IOPS/GB for the duplicate must also be 0.25. If IOPS/GB for the origin volume is greater than 0.25, IOPS/GB for the duplicate must also be greater than 0.25.]  
**Options** 0.25 | 2 | 4 | 10
- s, --duplicate-snapshot-size** <duplicate\_snapshot\_size>  
The size of snapshot space to order for the duplicate. **\*If no snapshot space size is specified, the snapshot space size of the origin block volume will be used.\*** Input "0" for this parameter to order a duplicate volume with no snapshot space.
- billing** <billing>  
Optional parameter for Billing rate (default to monthly)  
**Options** hourly | monthly
- dependent-duplicate** <dependent\_duplicate>  
Whether or not this duplicate will be a dependent duplicate of the origin volume.  
**Default** False

## Arguments

**ORIGIN\_VOLUME\_ID**  
Required argument

### 6.3.23 block volume-list

List block storage.

```
block volume-list [OPTIONS]
```

## Options

- u, --username** <username>  
Volume username
- d, --datacenter** <datacenter>  
Datacenter shortname
- o, --order** <order>  
Filter by ID of the order that purchased the block storage
- storage-type** <storage\_type>  
Type of storage volume  
**Options** performance | endurance
- sortby** <sortby>  
Column to sort by
- columns** <columns>  
Columns to display. Options: id, username, datacenter, storage\_type, capacity\_gb, bytes\_used, IOPs, ip\_addr, lunId, active\_transactions, rep\_partner\_count, created\_by, notes

### 6.3.24 block volume-modify

Modify an existing block storage volume.

```
block volume-modify [OPTIONS] VOLUME_ID
```

## Options

- c, --new-size** <new\_size>  
New Size of block volume in GB. **\*If no size is given, the original size of volume is used.\*** Potential Sizes: [20, 40, 80, 100, 250, 500, 1000, 2000, 4000, 8000, 12000] Minimum: [the original size of the volume]
- i, --new-iops** <new\_iops>  
Performance Storage IOPS, between 100 and 6000 in multiples of 100 [only for performance volumes] **\*If no IOPS value is specified, the original IOPS value of the volume will be used.\*** Requirements: [If original IOPS/GB for the volume is less than 0.3, new IOPS/GB must also be less than 0.3. If original IOPS/GB for the volume is greater than or equal to 0.3, new IOPS/GB for the volume must also be greater than or equal to 0.3.]
- t, --new-tier** <new\_tier>  
Endurance Storage Tier (IOPS per GB) [only for endurance volumes] **\*If no tier is specified, the original tier of the volume will be used.\*** Requirements: [If original IOPS/GB for the volume is 0.25, new IOPS/GB for the volume must also be 0.25. If original IOPS/GB for the volume is greater than 0.25, new IOPS/GB for the volume must also be greater than 0.25.]  
**Options** 0.25 | 2 | 4 | 10

## Arguments

### VOLUME\_ID

Required argument

## 6.3.25 block volume-order

Order a block storage volume.

Valid size and iops options can be found here: <https://cloud.ibm.com/docs/BlockStorage/index.html#provisioning-considerations>

```
block volume-order [OPTIONS]
```

## Options

**--storage-type** <storage\_type>

**Required** Type of block storage volume

**Options** performance | endurance

**--size** <size>

**Required** Size of block storage volume in GB.

**--iops** <iops>

Performance Storage IOPs. Options vary based on storage size. [required for storage-type performance]

**--tier** <tier>

Endurance Storage Tier (IOP per GB) [required for storage-type endurance]

**Options** 0.25 | 2 | 4 | 10

**--os-type** <os\_type>

**Required** Operating System

**Options** HYPER\_V | LINUX | VMWARE | WINDOWS\_2008 | WINDOWS\_GPT | WINDOWS | XEN

**--location** <location>

**Required** Datacenter short name (e.g.: dal09)

**--snapshot-size** <snapshot\_size>

Optional parameter for ordering snapshot space along with endurance block storage; specifies the size (in GB) of snapshot space to order

**--service-offering** <service\_offering>

The service offering package to use for placing the order. [optional, default is 'storage\_as\_a\_service']. enterprise and performance are deprecated

**Options** storage\_as\_a\_service | enterprise | performance

**--billing** <billing>

Optional parameter for Billing rate (default to monthly)

**Options** hourly | monthly

### 6.3.26 block volume-set-lun-id

Set the LUN ID on an existing block storage volume.

The LUN ID only takes effect during the Host Authorization process. It is recommended (but not necessary) to de-authorize all hosts before using this method. See *block access-revoke*.

**VOLUME\_ID** - the volume ID on which to set the LUN ID.

**LUN\_ID** - recommended range is an integer between 0 and 255. Advanced users can use an integer between 0 and 4095.

```
block volume-set-lun-id [OPTIONS] VOLUME_ID LUN_ID
```

#### Arguments

##### **VOLUME\_ID**

Required argument

##### **LUN\_ID**

Required argument

### 6.3.27 block volume-limits

List number of block storage volumes limit per datacenter.

```
block volume-limits [OPTIONS]
```

#### Options

**--sortby** <sortby>

Column to sort by

### 6.3.28 block volume-refresh

Refresh a duplicate volume with a snapshot from its parent.

```
block volume-refresh [OPTIONS] VOLUME_ID SNAPSHOT_ID
```

#### Arguments

##### **VOLUME\_ID**

Required argument

##### **SNAPSHOT\_ID**

Required argument

### 6.3.29 block volume-convert

Convert a dependent duplicate volume to an independent volume.

```
block volume-convert [OPTIONS] VOLUME_ID
```

#### Arguments

##### **VOLUME\_ID**

Required argument

### 6.3.30 block subnets-list

List block storage assigned subnets for the given host id.

access\_id is the host\_id obtained by: `slcli block access-list <volume_id>`

```
block subnets-list [OPTIONS] ACCESS_ID
```

#### Arguments

##### **ACCESS\_ID**

Required argument

### 6.3.31 block subnets-assign

Assign block storage subnets to the given host id.

access\_id is the host\_id obtained by: `slcli block access-list <volume_id>`

SoftLayer\_Account::iscsiisolationdisabled must be False to use this command

```
block subnets-assign [OPTIONS] ACCESS_ID
```

#### Options

**--subnet-id** <subnet\_id>

ID of the subnets to assign; e.g.: `--subnet-id 1234`

#### Arguments

##### **ACCESS\_ID**

Required argument



### 6.3.32 block subnets-remove

Remove block storage subnets for the given host id.

access\_id is the host\_id obtained by: `slcli block access-list <volume_id>`

SoftLayer\_Account::iscsiisolationdisabled must be False to use this command

```
block subnets-remove [OPTIONS] ACCESS_ID
```

#### Options

`--subnet-id <subnet_id>`

ID of the subnets to remove; e.g.: `--subnet-id 1234`

#### Arguments

**ACCESS\_ID**

Required argument

### 6.3.33 block volume-refresh

Refresh a duplicate volume with a snapshot from its parent.

```
block volume-refresh [OPTIONS] VOLUME_ID SNAPSHOT_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

**SNAPSHOT\_ID**

Required argument

### 6.3.34 block volume-convert

Convert a dependent duplicate volume to an independent volume.

```
block volume-convert [OPTIONS] VOLUME_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

### 6.3.35 block volume-set-note

Set note for an existing block storage volume.

```
block volume-set-note [OPTIONS] VOLUME_ID
```

#### Options

**-n, --note <note>**  
**Required** Public notes related to a Storage volume

#### Arguments

**VOLUME\_ID**  
Required argument

### 6.3.36 block disaster-recovery-failover

Failover an inaccessible block volume to its available replicant volume.

```
block disaster-recovery-failover [OPTIONS] VOLUME_ID
```

#### Options

**--replicant-id <replicant\_id>**  
ID of the replicant volume

#### Arguments

**VOLUME\_ID**  
Required argument

Failover an inaccessible block volume to its available replicant volume. If a volume (with replication) becomes inaccessible due to a disaster event, this method can be used to immediately failover to an available replica in another location. This method does not allow for failback via API. After using this method, to failback to the original volume, please open a support ticket. If you wish to test failover, please use replica-failover.

### 6.3.37 block snapshot-set-notification

Enables/Disables snapshot space usage threshold warning for a given volume

```
block snapshot-set-notification [OPTIONS] VOLUME_ID
```

## Options

**--enable, --disable**

**Required** Enable/Disable snapshot notification. Use *slcli block snapshot-set-notification volumeId --enable* to enable

## Arguments

**VOLUME\_ID**

Required argument

### 6.3.38 block snapshot-get-notification-status

Get snapshots space usage threshold warning flag setting for a given volume

```
block snapshot-get-notification-status [OPTIONS] VOLUME_ID
```

## Arguments

**VOLUME\_ID**

Required argument

## 6.4 Interacting with CDN

### 6.4.1 cdn detail

Detail a CDN Account.

```
cdn detail [OPTIONS] UNIQUE_ID
```

## Options

**--history <history>**

Bandwidth, Hits, Ratio counted over history number of days ago. 89 is the maximum.

## Arguments

**UNIQUE\_ID**

Required argument

## 6.4.2 cdn list

List all CDN accounts.

```
cdn list [OPTIONS]
```

### Options

**--sortby** <sortby>

Column to sort by

**Options** unique\_id | domain | origin | vendor | cname | status

## 6.4.3 cdn origin-add

Create an origin path for an existing CDN mapping.

For more information see the following documentation:

<https://cloud.ibm.com/docs/infrastructure/CDN?topic=CDN-manage-your-cdn#adding-origin-path-details>

```
cdn origin-add [OPTIONS] UNIQUE_ID ORIGIN_PATH
```

### Options

**-t, --origin-type** <origin\_type>

The origin type.

**Default** server

**Options** server | storage

**-H, --header** <header>

The host header to communicate with the origin.

**-b, --bucket-name** <bucket\_name>

The name of the available resource [required if --origin-type=storage]

**-p, --port** <port>

The http port number.

**Default** 80

**-P, --protocol** <protocol>

The protocol used by the origin.

**Default** http

**-o, --optimize-for** <optimize\_for>

Performance configuration

**Default** web

**Options** web | video | file

**-e, --extensions** <extensions>

File extensions that can be stored in the CDN, example: 'jpg, png, pdf'

**-c, --cache-query** <cache\_query>  
Cache query rules with the following formats: 'ignore-all', 'include: <query-names>', 'ignore: <query-names>'  
**Default** include-all

### Arguments

**UNIQUE\_ID**  
Required argument

**ORIGIN**  
Required argument

**PATH**  
Required argument

### 6.4.4 cdn origin-list

List origin path for an existing CDN mapping.

```
cdn origin-list [OPTIONS] UNIQUE_ID
```

### Arguments

**UNIQUE\_ID**  
Required argument

### 6.4.5 cdn origin-remove

Removes an origin path for an existing CDN mapping.

```
cdn origin-remove [OPTIONS] UNIQUE_ID ORIGIN_PATH
```

### Arguments

**UNIQUE\_ID**  
Required argument

**ORIGIN\_PATH**  
Required argument

### 6.4.6 cdn purge

Creates a purge record and also initiates the purge call.

**Example:** `slcli cdn purge 9779455 /article/file.txt`

For more information see the following documentation:

<https://cloud.ibm.com/docs/infrastructure/CDN?topic=CDN-manage-your-cdn#purging-cached-content>

```
cdn purge [OPTIONS] UNIQUE_ID PATH
```

## Arguments

### UNIQUE\_ID

Required argument

### PATH

Required argument

## 6.4.7 cdn edit

Edit a CDN Account.

Note: You can use the hostname or uniqueId as IDENTIFIER.

```
cdn edit [OPTIONS] IDENTIFIER
```

## Options

**-H, --header** <header>

Host header.

**-t, --http-port** <http\_port>

HTTP port.

**-o, --origin** <origin>

Origin server address.

**-r, --respect-headers** <respect\_headers>

Respect headers. The value 1 is On and 0 is Off.

**Options** 1 | 0

**-c, --cache** <cache>

Cache key optimization. These are the valid options to choose: 'include-all', 'ignore-all', 'include-specified', 'ignore-specified'. If you select 'include-specified' or 'ignore-specified' please add a description too using again `-cache`, e.g `-cache=include-specified -cache=description`.

**-p, --performance-configuration** <performance\_configuration>

Optimize for, 'General web delivery', 'Large file optimization', 'Video on demand optimization', the Dynamic content acceleration option is not added because this has a special configuration.

**Options** General web delivery | Large file optimization | Video on demand optimization

## Arguments

### IDENTIFIER

Required argument

## 6.5 Call API

This function allows you to easily call any API. The format is

```
slcli call-api SoftLayer_Service method param1 param2 --id=1234 --mask="mask[id,name]"
```

Parameters should be in the order they are presented on sldn.softlayer.com. Any complex parameters (those that link to other datatypes) should be presented as JSON strings. They need to be enclosed in single quotes ('), and variables and strings enclosed in double quotes (").

For example: `{"hostname": "test", "ssh_keys": [{"id": 1234}]}`

### 6.5.1 call-api

Call arbitrary API endpoints with the given SERVICE and METHOD.

For parameters that require a datatype, use a JSON string for that parameter. Example:

```
slcli call-api Account getObject
slcli call-api Account getVirtualGuests --limit=10 --mask=id,hostname
slcli call-api Virtual_Guest getObject --id=12345
slcli call-api Metric_Tracking_Object getBandwidthData --id=1234 \
    "2015-01-01 00:00:00" "2015-01-1 12:00:00" public
slcli call-api Account getVirtualGuests \
    -f 'virtualGuests.datacenter.name=dal05' \
    -f 'virtualGuests.maxCpu=4' \
    --mask=id,hostname,datacenter.name,maxCpu
slcli call-api Account getVirtualGuests \
    -f 'virtualGuests.datacenter.name IN dal05,sng01'
slcli call-api Account getVirtualGuests \
    --json-filter '{"virtualGuests":{"hostname":{"operation":"^= test"}}}' --limit=10
slcli -v call-api SoftLayer_User_Customer addBulkPortalPermission --id=1234567 \
    '[{"keyName": "NETWORK_MESSAGE_DELIVERY_MANAGE"}]'
slcli call-api Account getVirtualGuests \
    --orderBy virttualguests.id=ASC
```

```
call-api [OPTIONS] SERVICE METHOD [PARAMETERS]...
```

## Options

- id** <\_id>  
Init parameter
- f, --filter** <\_filters>  
Object filters. This should be of the form: 'property=value' or 'nested.property=value'.Complex filters should use `-json-filter`. (multiple occurrence permitted)
- mask** <mask>  
String-based object mask
- limit** <limit>  
Result limit
- offset** <offset>  
Result offset
- orderBy** <orderby>  
To set the sort direction, ASC or DESC can be provided.This should be of the form: '-orderBy nested.property' default DESC or '-orderBy nested.property=ASC', e.g. `-orderBy subnets.id` default DESC `-orderBy subnets.id=ASC`
- output-python, --no-output-python**  
Show python example code instead of executing the call
- json-filter** <json\_filter>  
A JSON string to be passed in as the object filter to the API call. Remember to use double quotes (") for variable names. Can NOT be used with `-filter`. Dont use whitespace outside of strings, or the slcli might have trouble parsing it.

## Arguments

### SERVICE

Required argument

### METHOD

Required argument

### PARAMETERS

Optional argument(s)

## 6.6 Shell

## 6.7 MetaData

Used to retrieve information about the server making the API call. Can be called with an un-authenticated API call.



## 6.7.1 metadata

Find details about the machine making these API calls.

Table 1: Choices

backend_ip
backend_mac
datacenter
datacenter_id
fqdn
frontend_mac
id
ip
network
provision_state
tags
user_data

```
metadata [OPTIONS] {backend_ip|backend_mac|datacenter|datacenter_id|fqdn|front
end_mac|id|ip|network|provision_state|tags|user_data}
```

### Arguments

#### PROP

Required argument

These commands only work on devices on the backend SoftLayer network. This allows for self-discovery for newly provisioned resources.

## 6.8 Config

[Creating an IBMID apikey IBMid for services](#)

[Creating a SoftLayer apikey](#)

### 6.8.1 config setup

Setup the `~/.softlayer` file with username and apikey.

[Auth Types]

`ibmid`: Requires your cloud.ibm.com username and password, and generates a classic infrastructure API key.

`cloud_key`: A 32 character API key. Username will be 'apikey'

`classic_key`: A 64 character API key used in the Softlayer/Classic Infrastructure systems.

`sso`: For users with @ibm.com email addresses.

```
config setup [OPTIONS]
```

## Options

**-a, --auth** <auth>

Select a method of authentication.

**Default** classic\_key

**Options** ibmid | cloud\_key | classic\_key | sso

## 6.8.2 config show

Show current configuration.

```
config show [OPTIONS]
```

## 6.8.3 setup

Setup the ~/.softlayer file with username and apikey.

[Auth Types]

ibmid: Requires your cloud.ibm.com username and password, and generates a classic infrastructure API key.

cloud\_key: A 32 character API key. Username will be 'apikey'

classic\_key: A 64 character API key used in the Softlayer/Classic Infrastructure systems.

sso: For users with @ibm.com email addresses.

```
setup [OPTIONS]
```

## Options

**-a, --auth** <auth>

Select a method of authentication.

**Default** classic\_key

**Options** ibmid | cloud\_key | classic\_key | sso

## 6.9 Dedicated Host Commands

### 6.9.1 dedicatedhost list

List dedicated host.

```
dedicatedhost list [OPTIONS]
```

## Options

- c, --cpu** <cpu>  
Number of CPU cores
- tag** <tag>  
Filter by tags (multiple occurrence permitted)
- sortby** <sortby>  
Column to sort by  
**Default** name
- columns** <columns>  
Columns to display. [options: datacenter, created\_by, tags]  
**Default** id,name,cpuCount,diskCapacity,memoryCapacity,datacenter,guestCount
- d, --datacenter** <datacenter>  
Datacenter shortname
- H, --name** <name>  
Host portion of the FQDN
- m, --memory** <memory>  
Memory capacity in mebibytes
- D, --disk** <disk>  
Disk capacity

## 6.9.2 dedicatedhost create

Order/create a dedicated host.

```
dedicatedhost create [OPTIONS]
```

## Options

- H, --hostname** <hostname>  
**Required** Host portion of the FQDN
- r, --router** <router>  
Router hostname ex. fcr02a.dal13
- D, --domain** <domain>  
**Required** Domain portion of the FQDN
- d, --datacenter** <datacenter>  
**Required** Datacenter shortname
- f, --flavor** <flavor>  
**Required** Dedicated Virtual Host flavor
- billing** <billing>  
Billing rate  
**Default** hourly  
**Options** hourly | monthly

**--verify**

Verify dedicatedhost without creating it.

**-t, --template <template>**

A template file that defaults the command-line options

**--export <export>**

Exports options to a template file

See 'slcli dedicatedhost create-options' for valid options.

### 6.9.3 dedicatedhost create-options

host order options for a given dedicated host.

To get a list of available backend routers see example: `slcli dh create-options --datacenter dal05 --flavor 56_CORES_X_242_RAM_X_1_4_TB`

```
dedicatedhost create-options [OPTIONS]
```

#### Options

**-d, --datacenter <datacenter>**

Router hostname (requires --flavor) ex. ams01

**-f, --flavor <flavor>**

Dedicated Virtual Host flavor (requires --datacenter) ex. 56\_CORES\_X\_242\_RAM\_X\_1\_4\_TB

### 6.9.4 dedicatedhost detail

Get details for a dedicated host.

```
dedicatedhost detail [OPTIONS] IDENTIFIER
```

#### Options

**--price**

Show associated prices

**--guests**

Show guests on dedicated host

#### Arguments

**IDENTIFIER**

Required argument

### 6.9.5 dedicatedhost cancel

Cancel a dedicated host server immediately

```
dedicatedhost cancel [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.9.6 dedicatedhost cancel-guests

Cancel all virtual guests of the dedicated host immediately.

Use the 'slcli vs cancel' command to cancel an specific guest

```
dedicatedhost cancel-guests [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.9.7 dedicatedhost list-guests

List guests which are in a dedicated host server.

```
dedicatedhost list-guests [OPTIONS] IDENTIFIER
```

#### Options

- c, --cpu** <cpu>  
Number of CPU cores
- D, --domain** <domain>  
Domain portion of the FQDN
- H, --hostname** <hostname>  
Host portion of the FQDN
- m, --memory** <memory>  
Memory in mebibytes
- tag** <tag>  
Filter by tags (multiple occurrence permitted)
- sortby** <sortby>  
Column to sort by
- Default** hostname

**--columns** <columns>

Columns to display. [options: guid, cpu, memory, datacenter, primary\_ip, backend\_ip, created\_by, power\_state, tags]

**Default** id,hostname,domain,primary\_ip,backend\_ip,power\_state

## Arguments

### IDENTIFIER

Required argument

## 6.10 DNS Management

### 6.10.1 dns import

Import zone based off a BIND zone file.

```
dns import [OPTIONS] ZONEFILE
```

## Options

**--dry-run**

Don't actually create records

## Arguments

### ZONEFILE

Required argument

### 6.10.2 dns record-add

Add resource record.

Each resource record contains a RECORD and DATA property, defining a resource's name and it's target data. Domains contain multiple types of resource records so it can take one of the following values: A, AAAA, CNAME, MX, SPF, SRV, and PTR.

About reverse records (PTR), the RECORD value must to be the public Ip Address of device you would like to manage reverse DNS.

```
slcli dns record-add 10.10.8.21 PTR myhost.com --ttl=900
```

Examples:

```
slcli dns record-add myhost.com A 192.168.1.10 --zone=foobar.com --ttl=900
```

```
slcli dns record-add myhost.com AAAA 2001:DB8::1 --zone=foobar.com
```

```
slcli dns record-add 192.168.1.2 MX 192.168.1.10 --zone=foobar.com --priority=11 --ttl=1800
```

```
slcli dns record-add myhost.com TXT "txt-verification=rXOxyZounZs87oacJSKvbUSIQ" --zone=2223334
```

```
slcli dns record-add myhost.com SPF "v=spf1 include:_spf.google.com ~all" --zone=2223334
```

```
slcli dns record-add myhost.com SRV 192.168.1.10 --zone=2223334 --service=foobar --port=80 --protocol=TCP
```

```
dns record-add [OPTIONS] RECORD RECORD_TYPE DATA
```

## Options

**--zone** <zone>

Zone name or identifier that the resource record will be associated with. Required for all record types except PTR

**--ttl** <ttl>

TTL value in seconds, such as 86400

**Default** 900

**--priority** <priority>

The priority of the target host. (MX or SRV type only)

**Default** 10

**--protocol** <protocol>

The protocol of the service, usually either TCP or UDP. (SRV type only)

**Default** tcp

**Options** tcp | udp | tls

**--port** <port>

The TCP/UDP/TLS port on which the service is to be found. (SRV type only)

**--service** <service>

The symbolic name of the desired service. (SRV type only)

**--weight** <weight>

Relative weight for records with same priority. (SRV type only)

**Default** 5

## Arguments

**RECORD**

Required argument

**RECORD\_TYPE**

Required argument

**DATA**

Required argument

### 6.10.3 dns record-edit

Update DNS record.

```
dns record-edit [OPTIONS] ZONE_ID
```

#### Options

- by-record** <by\_record>  
Edit by host record, such as www
- by-id** <by\_id>  
Edit a single record by its ID
- data** <data>  
Record data, such as an IP address
- ttl** <ttl>  
TTL value in seconds, such as 86400

#### Arguments

- ZONE\_ID**  
Required argument

### 6.10.4 dns record-list

List all records in a zone.

```
dns record-list [OPTIONS] ZONE
```

#### Options

- data** <data>  
Record data, such as an IP address
- record** <record>  
Host record, such as www
- ttl** <ttl>  
TTL value in seconds, such as 86400
- type** <record\_type>  
Record type, such as A or CNAME



## Arguments

### ZONE

Required argument

## 6.10.5 dns record-remove

Remove resource record.

```
dns record-remove [OPTIONS] RECORD_ID
```

## Arguments

### RECORD\_ID

Required argument

## 6.10.6 dns zone-create

Create a zone.

```
dns zone-create [OPTIONS] ZONE
```

## Arguments

### ZONE

Required argument

## 6.10.7 dns zone-delete

Delete zone.

```
dns zone-delete [OPTIONS] ZONE
```

## Arguments

### ZONE

Required argument

## 6.10.8 dns zone-list

List all zones.

```
dns zone-list [OPTIONS]
```

## 6.10.9 dns zone-print

Print zone in BIND format.

```
dns zone-print [OPTIONS] ZONE
```

### Arguments

#### **ZONE**

Required argument

## 6.11 Email Commands

### 6.11.1 email list

Lists Email Delivery Service

```
email list [OPTIONS]
```

### 6.11.2 email detail

Display details for a specified email.

```
email detail [OPTIONS] IDENTIFIER
```

### Arguments

#### **IDENTIFIER**

Required argument

### 6.11.3 email edit

Edit details of an email delivery account.

```
email edit [OPTIONS] IDENTIFIER
```

### Options

**--username** <username>

Sets username for this account

**--email** <email>

Sets the contact email for this account

**--password** <password>

Password must be between 8 and 20 characters and must contain one letter and one number.

## Arguments

### IDENTIFIER

Required argument

## 6.12 Event-Log Commands

### 6.12.1 event-log get

Get Event Logs

**Example:** `slcli event-log get -d 01/01/2019 -D 02/01/2019 -t User -l 10`

```
event-log get [OPTIONS]
```

### Options

**-d, --date-min** <date\_min>  
The earliest date we want to search for event logs in mm/dd/yyyy format.

**-D, --date-max** <date\_max>  
The latest date we want to search for event logs in mm/dd/yyyy format.

**-e, --obj-event** <obj\_event>  
The event we want to get event logs for

**-i, --obj-id** <obj\_id>  
The id of the object we want to get event logs for

**-t, --obj-type** <obj\_type>  
The type of the object we want to get event logs for

**-z, --utc-offset** <utc\_offset>  
UTC Offset for searching with dates. +/-HHMM format

**Default** -0000

**--metadata, --no-metadata**  
Display metadata if present

**Default** False

**-l, --limit** <limit>  
Total number of result to return. -1 to return ALL, there may be a LOT of these.

**Default** 50

There are usually quite a few events on an account, so be careful when using the `-limit -1` option. The command will automatically break requests out into smaller sub-requests, but this command may take a very long time to complete. It will however print out data as it comes in.

## 6.12.2 event-log types

Get Event Log Types

```
event-log types [OPTIONS]
```

Currently the types are as follows, more may be added in the future.

```
.....:
:      types      :
:      Account    :
:      CDN        :
:      User       :
: Bare Metal Instance :
: API Authentication :
:      Server     :
:      CCI       :
:      Image     :
:      Bluemix LB  :
:      Facility   :
: Cloud Object Storage :
:      Security Group :
:.....:
```

## 6.13 File Commands

### 6.13.1 file access-authorize

Authorizes hosts to access a given volume

```
file access-authorize [OPTIONS] VOLUME_ID
```

#### Options

- h, --hardware-id** <hardware\_id>  
The id of one SoftLayer\_Hardware to authorize
- v, --virtual-id** <virtual\_id>  
The id of one SoftLayer\_Virtual\_Guest to authorize
- i, --ip-address-id** <ip\_address\_id>  
The id of one SoftLayer\_Network\_Subnet\_IPAddress to authorize
- ip-address** <ip\_address>  
An IP address to authorize
- s, --subnet-id** <subnet\_id>  
The id of one SoftLayer\_Network\_Subnet to authorize

## Arguments

### VOLUME\_ID

Required argument

## 6.13.2 file access-list

List ACLs.

```
file access-list [OPTIONS] VOLUME_ID
```

## Options

**--sortby** <sortby>

Column to sort by

**--columns** <columns>

Columns to display. Options: id, name, type, private\_ip\_address, source\_subnet, host\_iqn, username, password, allowed\_host\_id

## Arguments

### VOLUME\_ID

Required argument

## 6.13.3 file access-revoke

Revokes authorization for hosts accessing a given volume

```
file access-revoke [OPTIONS] VOLUME_ID
```

## Options

**-h, --hardware-id** <hardware\_id>

The id of one SoftLayer\_Hardware to revoke authorization

**-v, --virtual-id** <virtual\_id>

The id of one SoftLayer\_Virtual\_Guest to revoke authorization

**-i, --ip-address-id** <ip\_address\_id>

The id of one SoftLayer\_Network\_Subnet\_IpAddress to revoke authorization

**--ip-address** <ip\_address>

An IP address to revoke authorization

**-s, --subnet-id** <subnet\_id>

The id of one SoftLayer\_Network\_Subnet to revoke authorization

## Arguments

**VOLUME\_ID**

Required argument

### 6.13.4 file replica-failback

Failback a file volume from the given replicant volume.

```
file replica-failback [OPTIONS] VOLUME_ID
```

## Arguments

**VOLUME\_ID**

Required argument

### 6.13.5 file replica-failover

Failover a file volume to the given replicant volume.

```
file replica-failover [OPTIONS] VOLUME_ID
```

## Options

**--replicant-id** <replicant\_id>

ID of the replicant volume

## Arguments

**VOLUME\_ID**

Required argument

### 6.13.6 file replica-order

Order a file storage replica volume.

```
file replica-order [OPTIONS] VOLUME_ID
```

## Options

**-s, --snapshot-schedule** <snapshot\_schedule>

**Required** Snapshot schedule to use for replication, (HOURLY | DAILY | WEEKLY)

**Options** HOURLY | DAILY | WEEKLY

**-l, --location** <location>

**Required** Short name of the data center for the replicant (e.g.: dal09)

**--tier** <tier>  
Endurance Storage Tier (IOPS per GB) of the primary volume for which a replicant is ordered [optional]  
**Options** 0.25 | 2 | 4 | 10

### Arguments

**VOLUME\_ID**  
Required argument

## 6.13.7 file replica-partners

List existing replicant volumes for a file volume.

```
file replica-partners [OPTIONS] VOLUME_ID
```

### Options

**--sortby** <sortby>  
Column to sort by

**--columns** <columns>  
Columns to display. Options: ID, Username, Account ID, Capacity (GB), Hardware ID, Guest ID, Host ID

### Arguments

**VOLUME\_ID**  
Required argument

## 6.13.8 file replica-locations

List suitable replication datacenters for the given volume.

```
file replica-locations [OPTIONS] VOLUME_ID
```

### Options

**--sortby** <sortby>  
Column to sort by

**--columns** <columns>  
Columns to display. Options: ID, Long Name, Short Name

## Arguments

### **VOLUME\_ID**

Required argument

## 6.13.9 file snapshot-cancel

Cancel existing snapshot space for a given volume.

```
file snapshot-cancel [OPTIONS] VOLUME_ID
```

## Options

**--reason** <reason>

An optional reason for cancellation

**--immediate**

Cancels the snapshot space immediately instead of on the billing anniversary

## Arguments

### **VOLUME\_ID**

Required argument

## 6.13.10 file snapshot-create

Creates a snapshot on a given volume

```
file snapshot-create [OPTIONS] VOLUME_ID
```

## Options

**-n, --notes** <notes>

Notes to set on the new snapshot

## Arguments

### **VOLUME\_ID**

Required argument



### 6.13.11 file snapshot-delete

Deletes a snapshot on a given volume

```
file snapshot-delete [OPTIONS] SNAPSHOT_ID
```

#### Arguments

**SNAPSHOT\_ID**

Required argument

### 6.13.12 file snapshot-disable

Disables snapshots on the specified schedule for a given volume

```
file snapshot-disable [OPTIONS] VOLUME_ID
```

#### Options

**--schedule-type** <schedule\_type>

**Required** Snapshot schedule [INTERVAL|HOURLY|DAILY|WEEKLY]

#### Arguments

**VOLUME\_ID**

Required argument

### 6.13.13 file snapshot-enable

Enables snapshots for a given volume on the specified schedule

```
file snapshot-enable [OPTIONS] VOLUME_ID
```

#### Options

**--schedule-type** <schedule\_type>

**Required** Snapshot schedule [INTERVAL|HOURLY|DAILY|WEEKLY]

**--retention-count** <retention\_count>

**Required** Number of snapshots to retain

**--minute** <minute>

Minute of the day when snapshots should be taken

**--hour** <hour>

Hour of the day when snapshots should be taken

**--day-of-week** <day\_of\_week>

Day of the week when snapshots should be taken

## Arguments

**VOLUME\_ID**  
Required argument

### 6.13.14 file snapshot-list

List file storage snapshots.

```
file snapshot-list [OPTIONS] VOLUME_ID
```

## Options

**--sortby** <sortby>  
Column to sort by

**--columns** <columns>  
Columns to display. Options: id, name, created, size\_bytes

## Arguments

**VOLUME\_ID**  
Required argument

### 6.13.15 file snapshot-order

Order snapshot space for a file storage volume.

```
file snapshot-order [OPTIONS] VOLUME_ID
```

## Options

**--capacity** <capacity>  
**Required** Size of snapshot space to create in GB

**--tier** <tier>  
Endurance Storage Tier (IOPS per GB) of the file volume for which space is ordered [optional, and only valid for endurance storage volumes]  
**Options** 0.25 | 2 | 4 | 10

**--upgrade**  
Flag to indicate that the order is an upgrade

## Arguments

### **VOLUME\_ID**

Required argument

## 6.13.16 file snapshot-restore

Restore file volume using a given snapshot

```
file snapshot-restore [OPTIONS] VOLUME_ID
```

## Options

**-s, --snapshot-id <snapshot\_id>**

The id of the snapshot which will be used to restore the block volume

## Arguments

### **VOLUME\_ID**

Required argument

## 6.13.17 file volume-cancel

Cancel an existing file storage volume.

```
file volume-cancel [OPTIONS] VOLUME_ID
```

## Options

**--reason <reason>**

An optional reason for cancellation

**--immediate**

Cancels the file storage volume immediately instead of on the billing anniversary

## Arguments

### **VOLUME\_ID**

Required argument

### 6.13.18 file volume-count

List number of file storage volumes per datacenter.

```
file volume-count [OPTIONS]
```

#### Options

- d, --datacenter** <datacenter>  
Datacenter shortname
- sortby** <sortby>  
Column to sort by

### 6.13.19 file volume-detail

Display details for a specified volume.

```
file volume-detail [OPTIONS] VOLUME_ID
```

#### Arguments

**VOLUME\_ID**  
Required argument

### 6.13.20 file volume-duplicate

Order a duplicate file storage volume.

```
file volume-duplicate [OPTIONS] ORIGIN_VOLUME_ID
```

#### Options

- o, --origin-snapshot-id** <origin\_snapshot\_id>  
ID of an origin volume snapshot to use for duplication.
- c, --duplicate-size** <duplicate\_size>  
Size of duplicate file volume in GB. **\*If no size is specified, the size of the origin volume will be used.\***  
Minimum: [the size of the origin volume]
- i, --duplicate-iops** <duplicate\_iops>  
Performance Storage IOPS, between 100 and 6000 in multiples of 100 [only used for performance volumes] **\*If no IOPS value is specified, the IOPS value of the origin volume will be used.\*** Requirements: [If IOPS/GB for the origin volume is less than 0.3, IOPS/GB for the duplicate must also be less than 0.3. If IOPS/GB for the origin volume is greater than or equal to 0.3, IOPS/GB for the duplicate must also be greater than or equal to 0.3.]
- t, --duplicate-tier** <duplicate\_tier>  
Endurance Storage Tier (IOPS per GB) [only used for endurance volumes] **\*If no tier is specified, the tier of the origin volume will be used.\*** Requirements: [If IOPS/GB for the origin volume is 0.25, IOPS/GB for the duplicate must also be 0.25. If IOPS/GB for the origin volume is greater than 0.25, IOPS/GB for the duplicate must also be greater than 0.25.]

**Options** 0.25 | 2 | 4 | 10

- s, --duplicate-snapshot-size** <duplicate\_snapshot\_size>  
The size of snapshot space to order for the duplicate. **\*If no snapshot space size is specified, the snapshot space size of the origin file volume will be used.\*** Input “0” for this parameter to order a duplicate volume with no snapshot space.
- billing** <billing>  
Optional parameter for Billing rate (default to monthly)  
**Options** hourly | monthly
- dependent-duplicate** <dependent\_duplicate>  
Whether or not this duplicate will be a dependent duplicate of the origin volume.  
**Default** False

## Arguments

**ORIGIN\_VOLUME\_ID**  
Required argument

### 6.13.21 file volume-list

List file storage.

```
file volume-list [OPTIONS]
```

## Options

- u, --username** <username>  
Volume username
- d, --datacenter** <datacenter>  
Datacenter shortname
- o, --order** <order>  
Filter by ID of the order that purchased the block storage
- storage-type** <storage\_type>  
Type of storage volume  
**Options** performance | endurance
- sortby** <sortby>  
Column to sort by
- columns** <columns>  
Columns to display. Options: id, username, datacenter, storage\_type, capacity\_gb, bytes\_used, ip\_addr, active\_transactions, mount\_addr, rep\_partner\_count, created\_by, notes

### 6.13.22 file volume-modify

Modify an existing file storage volume.

```
file volume-modify [OPTIONS] VOLUME_ID
```

#### Options

- c, --new-size <new\_size>**  
New Size of file volume in GB. **\*If no size is given, the original size of volume is used.\*** Potential Sizes: [20, 40, 80, 100, 250, 500, 1000, 2000, 4000, 8000, 12000] Minimum: [the original size of the volume]
- i, --new-iops <new\_iops>**  
Performance Storage IOPS, between 100 and 6000 in multiples of 100 [only for performance volumes] **\*If no IOPS value is specified, the original IOPS value of the volume will be used.\*** Requirements: [If original IOPS/GB for the volume is less than 0.3, new IOPS/GB must also be less than 0.3. If original IOPS/GB for the volume is greater than or equal to 0.3, new IOPS/GB for the volume must also be greater than or equal to 0.3.]
- t, --new-tier <new\_tier>**  
Endurance Storage Tier (IOPS per GB) [only for endurance volumes] **\*If no tier is specified, the original tier of the volume will be used.\*** Requirements: [If original IOPS/GB for the volume is 0.25, new IOPS/GB for the volume must also be 0.25. If original IOPS/GB for the volume is greater than 0.25, new IOPS/GB for the volume must also be greater than 0.25.]  
**Options** 0.25 | 2 | 4 | 10

#### Arguments

**VOLUME\_ID**  
Required argument

### 6.13.23 file volume-order

Order a file storage volume.

Valid size and iops options can be found here: <https://cloud.ibm.com/docs/FileStorage/index.html#provisioning-considerations>

```
file volume-order [OPTIONS]
```

#### Options

- storage-type <storage\_type>**  
**Required** Type of file storage volume  
**Options** performance | endurance
- size <size>**  
**Required** Size of file storage volume in GB
- iops <iops>**  
Performance Storage IOPs. Options vary based on storage size. [required for storage-type performance]

- tier** <tier>  
Endurance Storage Tier (IOP per GB) [required for storage-type endurance]  
**Options** 0.25 | 2 | 4 | 10
- location** <location>  
**Required** Datacenter short name (e.g.: dal09)
- snapshot-size** <snapshot\_size>  
Optional parameter for ordering snapshot space along with endurance file storage; specifies the size (in GB) of snapshot space to order
- service-offering** <service\_offering>  
The service offering package to use for placing the order. [optional, default is 'storage\_as\_a\_service']. enterprise and performance are deprecated  
**Options** storage\_as\_a\_service | enterprise | performance
- billing** <billing>  
Optional parameter for Billing rate (default to monthly)  
**Options** hourly | monthly

### 6.13.24 file volume-limits

List number of block storage volumes limit per datacenter.

```
file volume-limits [OPTIONS]
```

#### Options

- sortby** <sortby>  
Column to sort by

### 6.13.25 file volume-refresh

Refresh a duplicate volume with a snapshot from its parent.

```
file volume-refresh [OPTIONS] VOLUME_ID SNAPSHOT_ID
```

#### Arguments

- VOLUME\_ID**  
Required argument
- SNAPSHOT\_ID**  
Required argument

### 6.13.26 file volume-convert

Convert a dependent duplicate volume to an independent volume.

```
file volume-convert [OPTIONS] VOLUME_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

### 6.13.27 file snapshot-schedule-list

Lists snapshot schedules for a given volume

```
file snapshot-schedule-list [OPTIONS] VOLUME_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

### 6.13.28 file volume-refresh

Refresh a duplicate volume with a snapshot from its parent.

```
file volume-refresh [OPTIONS] VOLUME_ID SNAPSHOT_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

**SNAPSHOT\_ID**

Required argument

### 6.13.29 file volume-convert

Convert a dependent duplicate volume to an independent volume.

```
file volume-convert [OPTIONS] VOLUME_ID
```



## Arguments

### VOLUME\_ID

Required argument

## 6.13.30 file volume-set-note

Set note for an existing file storage volume.

```
file volume-set-note [OPTIONS] VOLUME_ID
```

## Options

**-n, --note** <note>

**Required** Public notes related to a Storage volume

## Arguments

### VOLUME\_ID

Required argument

## 6.13.31 file disaster-recovery-failover

Failover an inaccessible file volume to its available replicant volume.

```
file disaster-recovery-failover [OPTIONS] VOLUME_ID
```

## Options

**--replicant-id** <replicant\_id>

ID of the replicant volume

## Arguments

### VOLUME\_ID

Required argument

Failover an inaccessible file volume to its available replicant volume. If a volume (with replication) becomes inaccessible due to a disaster event, this method can be used to immediately failover to an available replica in another location. This method does not allow for failback via API. After using this method, to failback to the original volume, please open a support ticket. If you wish to test failover, please use replica-failover.

### 6.13.32 file snapshot-set-notification

Enables/Disables snapshot space usage threshold warning for a given volume

```
file snapshot-set-notification [OPTIONS] VOLUME_ID
```

#### Options

**--enable, --disable**

**Required** Enable/Disable snapshot notification. Use *slcli file snapshot-set-notification volumeId --enable* to enable

#### Arguments

**VOLUME\_ID**

Required argument

### 6.13.33 file snapshot-get-notification-status

Get snapshots space usage threshold warning flag setting for a given volume

```
file snapshot-get-notification-status [OPTIONS] VOLUME_ID
```

#### Arguments

**VOLUME\_ID**

Required argument

## 6.14 Firewall Management

### 6.14.1 firewall add

Create new firewall.

**TARGET:** Id of the server the firewall will protect

```
firewall add [OPTIONS] TARGET
```

#### Options

**--firewall-type <firewall\_type>**

**Required** Firewall type

**Options** vs | vlan | server

**-ha, --high-availability**

High available firewall option

## Arguments

### TARGET

Required argument

## 6.14.2 firewall cancel

Cancels a firewall.

```
firewall cancel [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.14.3 firewall detail

Detail firewall.

```
firewall detail [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.14.4 firewall edit

Edit firewall rules.

```
firewall edit [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.14.5 firewall list

List firewalls.

```
firewall list [OPTIONS]
```

## 6.15 Global IP Addresses

### 6.15.1 globalip assign

Assigns the global IP to a target.

```
globalip assign [OPTIONS] IDENTIFIER TARGET
```

#### Arguments

##### IDENTIFIER

Required argument

##### TARGET

Required argument

### 6.15.2 globalip cancel

Cancel global IP.

```
globalip cancel [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.15.3 globalip create

Creates a global IP.

```
globalip create [OPTIONS]
```

#### Options

##### **-v6, --ipv6**

Order a IPv6 IP

##### **--test <test>**

test order

## 6.15.4 globalip list

List all global IPs.

```
globalip list [OPTIONS]
```

### Options

**--ip-version** <ip\_version>

Display only IPv4

**Options** v4 | v6

## 6.15.5 globalip unassign

Unassigns a global IP from a target.

```
globalip unassign [OPTIONS] IDENTIFIER
```

### Arguments

**IDENTIFIER**

Required argument

## 6.16 Interacting with Hardware

### 6.16.1 hardware bandwidth

Bandwidth data over date range. Bandwidth is listed in GB

Using just a date might get you times off by 1 hour, use T00:01 to get just the specific days data Timezones can also be included with the YYYY-MM-DDTHH:mm:ss.00000-HH:mm format.

Due to some rounding and date alignment details, results here might be slightly different than results in the control portal.

Example:

```
slcli hw bandwidth 1234 -s 2019-05-01T00:01 -e 2019-05-02T00:00:01.00000-12:00
```

```
hardware bandwidth [OPTIONS] IDENTIFIER
```

## Options

- s, --start\_date <start\_date>**  
Required Start Date YYYY-MM-DD, YYYY-MM-DDTHH:mm:ss,
- e, --end\_date <end\_date>**  
Required End Date YYYY-MM-DD, YYYY-MM-DDTHH:mm:ss
- p, --summary\_period <summary\_period>**  
300, 600, 1800, 3600, 43200 or 86400 seconds  
**Default** 3600
- q, --quite\_summary**  
Only show the summary table  
**Default** False

## Arguments

**IDENTIFIER**  
Required argument

### 6.16.2 hardware cancel-reasons

Display a list of cancellation reasons.

```
hardware cancel-reasons [OPTIONS]
```

### 6.16.3 hardware cancel

Cancel a dedicated server.

```
hardware cancel [OPTIONS] IDENTIFIER
```

## Options

- immediate**  
Cancels the server immediately (instead of on the billing anniversary)
- comment <comment>**  
An optional comment to add to the cancellation ticket
- reason <reason>**  
An optional cancellation reason. See cancel-reasons for a list of available options

## Arguments

### IDENTIFIER

Required argument

## 6.16.4 hardware create-options

Server order options for a given chassis.

```
hardware create-options [OPTIONS] [LOCATION]
```

## Options

### -p, --prices

Use `--prices` to list the server item prices, and to list the Item Prices by location, add it to the `--prices` option using location short name, e.g. `--prices dal13`

## Arguments

### LOCATION

Optional argument

## 6.16.5 hardware create

Order/create a dedicated server.

```
hardware create [OPTIONS]
```

## Options

### -H, --hostname <hostname>

**Required** Host portion of the FQDN

### -D, --domain <domain>

**Required** Domain portion of the FQDN

### -s, --size <size>

**Required** Hardware size

### -o, --os <os>

**Required** OS Key value

### -d, --datacenter <datacenter>

**Required** Datacenter shortname

### --port-speed <port\_speed>

Port speeds. DEPRECATED, use `--network`

### --no-public

Private network only. DEPRECATED, use `--network`.

### --network <network>

Network Option Key. Use instead of port-speed option

**--billing** <billing>  
Billing rate  
**Default** hourly  
**Options** hourly | monthly

**-i, --postinstall** <postinstall>  
Post-install script. Should be a HTTPS URL.

**--test**  
Do not actually create the server

**-t, --template** <template>  
A template file that defaults the command-line options

**--export** <export>  
Exports options to a template file

**--wait** <wait>  
Wait until the server is finished provisioning for up to X seconds before returning

**--router-public** <router\_public>  
The ID of the public ROUTER on which you want the virtual server placed

**--router-private** <router\_private>  
The ID of the private ROUTER on which you want the virtual server placed

**-k, --key** <key>  
SSH keys to add to the root user (multiple occurrence permitted)

**-e, --extra** <extra>  
Extra option Key Names (multiple occurrence permitted)

See 'slcli server create-options' for valid options.

Provides some basic functionality to order a server. *slcli order* has a more full featured method of ordering servers. This command only supports the FAST\_PROVISION type.

As of v5.9.0 please use the *-network* option for specifying port speed, as that allows a bit more granularity for choosing your networking type.

## 6.16.6 hardware credentials

List server credentials.

```
hardware credentials [OPTIONS] IDENTIFIER
```

### Arguments

**IDENTIFIER**

Required argument



### 6.16.7 hardware detail

Get details for a hardware device.

```
hardware detail [OPTIONS] IDENTIFIER
```

#### Options

- passwords**  
Show passwords (check over your shoulder!)
- price**  
Show associated prices
- components**  
Show associated hardware components

#### Arguments

**IDENTIFIER**  
Required argument

### 6.16.8 hardware billing

Get billing for a hardware device.

```
hardware billing [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

### 6.16.9 hardware edit

Edit hardware details.

```
hardware edit [OPTIONS] IDENTIFIER
```

#### Options

- D, --domain <domain>**  
Domain portion of the FQDN
- F, --userfile <userfile>**  
Read userdata from file
- g, --tag <tag>**  
Tags to set or empty string to remove all

- H, --hostname** <hostname>  
Host portion of the FQDN
- u, --userdata** <userdata>  
User defined metadata string
- public-speed** <public\_speed>  
Public port speed. -1 is best speed available  
**Options** 0 | 10 | 100 | 1000 | 10000 | -1
- private-speed** <private\_speed>  
Private port speed. -1 is best speed available  
**Options** 0 | 10 | 100 | 1000 | 10000 | -1
- redundant**  
The desired state of redundancy for the interface(s)
- degraded**  
The desired state of degraded for the interface(s)

## Arguments

### IDENTIFIER

Required argument

**Note** : Using multiple ‘ : ‘ can cause an error.

```
$ slcli hw edit 123456 --tag "cloud:service:db2whoc, cloud:svcplan:flex, cloud:svcenv:prod, cloud:bmixenv:fra"
```

```
TransportError(0): ('Connection aborted.',
```

```
RemoteDisconnected('Remote end closed connection without response',))
```

When setting port speed, use “-1” to indicate best possible configuration. Using 10/100/1000/10000 on a server with a redundant interface may result the interface entering a degraded state. See [setPublicNetworkInterfaceSpeed](#) for more information.

## 6.16.10 hardware list

List hardware servers.

```
hardware list [OPTIONS]
```

### Options

- c, --cpu** <cpu>  
Filter by number of CPU cores
- D, --domain** <domain>  
Filter by domain
- d, --datacenter** <datacenter>  
Filter by datacenter
- H, --hostname** <hostname>  
Filter by hostname

**-m, --memory** <memory>  
Filter by memory in gigabytes

**-n, --network** <network>  
Filter by network port speed in Mbps

**--tag** <tag>  
Filter by tags (multiple occurrence permitted)

**--sortby** <sortby>  
Column to sort by  
**Default** hostname

**--columns** <columns>  
Columns to display. [options: guid, primary\_ip, backend\_ip, datacenter, action, created\_by, tags]  
**Default** id,hostname,primary\_ip,backend\_ip,datacenter,action

**-l, --limit** <limit>  
How many results to get in one api call, default is 100  
**Default** 100

### 6.16.11 hardware power-cycle

Power cycle a server.

```
hardware power-cycle [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

### 6.16.12 hardware power-off

Power off an active server.

```
hardware power-off [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

### 6.16.13 hardware power-on

Power on a server.

```
hardware power-on [OPTIONS] IDENTIFIER
```

#### Arguments

##### **IDENTIFIER**

Required argument

### 6.16.14 hardware reboot

Reboot an active server.

```
hardware reboot [OPTIONS] IDENTIFIER
```

#### Options

##### **--hard, --soft**

Perform a hard or soft reboot

#### Arguments

##### **IDENTIFIER**

Required argument

### 6.16.15 hardware reload

Reload operating system on a server.

```
hardware reload [OPTIONS] IDENTIFIER
```

#### Options

##### **-i, --postinstall <postinstall>**

Post-install script to download (Only HTTPS executes, HTTP leaves file in /root)

##### **-k, --key <key>**

SSH keys to add to the root user (multiple occurrence permitted)

##### **-l, --lvm**

A flag indicating that the provision should use LVM for all logical drives.

**Default** False

## Arguments

### IDENTIFIER

Required argument

## 6.16.16 hardware rescue

Reboot server into a rescue image.

```
hardware rescue [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.16.17 hardware reflash-firmware

Reflash server firmware.

```
hardware reflash-firmware [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

Reflash here means the current version of the firmware running on your server will be re-flashed onto the selected hardware. This does require a reboot. See `slcli hw update-firmware` if you want the newest version.

## 6.16.18 hardware update-firmware

Update server firmware.

```
hardware update-firmware [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

This function updates the firmware of a server. If already at the latest version, no software is installed.

### 6.16.19 hardware toggle-ipmi

Toggle the IPMI interface on and off

```
hardware toggle-ipmi [OPTIONS] IDENTIFIER
```

#### Options

**--enable, --disable**

Whether enable (DEFAULT) or disable the interface.

#### Arguments

**IDENTIFIER**

Required argument

### 6.16.20 hardware ready

Check if a server is ready.

```
hardware ready [OPTIONS] IDENTIFIER
```

#### Options

**--wait <wait>**

Seconds to wait

**Default 0**

#### Arguments

**IDENTIFIER**

Required argument

### 6.16.21 hardware dns-sync

Sync DNS records.

```
hardware dns-sync [OPTIONS] IDENTIFIER
```

## Options

- a, --a-record**  
Sync the A record for the host
- aaaa-record**  
Sync the AAAA record for the host
- ptr**  
Sync the PTR record for the host
- ttl <ttl>**  
Sets the TTL for the A and/or PTR records  
**Default** 7200

## Arguments

**IDENTIFIER**  
Required argument

If you don't specify any arguments, it will attempt to update both the A and PTR records. If you don't want to update both records, you may use the -a or -ptr arguments to limit the records updated.

### 6.16.22 hardware storage

Get storage details for a hardware server.

```
hardware storage [OPTIONS] IDENTIFIER
```

## Arguments

**IDENTIFIER**  
Required argument

### 6.16.23 hardware guests

Lists the Virtual Guests running on this server.

```
hardware guests [OPTIONS] IDENTIFIER
```

## Arguments

**IDENTIFIER**  
Required argument

### 6.16.24 hardware authorize-storage

Authorize File or Block Storage to a Hardware Server.

```
hardware authorize-storage [OPTIONS] IDENTIFIER
```

#### Options

**-u, --username-storage** <username\_storage>  
The storage username to be added to the hardware server

#### Arguments

**IDENTIFIER**  
Required argument

### 6.16.25 hardware upgrade

Upgrade a Hardware Server.

```
hardware upgrade [OPTIONS] IDENTIFIER
```

#### Options

**--memory** <memory>  
Memory Size in GB

**--network** <network>  
Network port speed in Mbps

**Options** 100 | 100 Redundant | 100 Dual | 1000 | 1000 Redundant | 1000 Dual | 10000 | 10000 Redundant | 10000 Dual

**--drive-controller** <drive\_controller>  
Drive Controller

**Options** Non-RAID | RAID

**--public-bandwidth** <public\_bandwidth>  
Public Bandwidth in GB

**--add-disk** <add\_disk>  
Add a Hard disk in GB to a specific channel, e.g 1000 GB in disk2, it will be `--add-disk 1000 2`

**--resize-disk** <resize\_disk>  
Upgrade a specific disk size in GB, e.g `--resize-disk 2000 2`

**--test**  
Do not actually upgrade the hardware server



## Arguments

### IDENTIFIER

Required argument

## 6.16.26 hardware sensor

Retrieve a server's hardware state via its internal sensors.

```
hardware sensor [OPTIONS] IDENTIFIER
```

## Options

### --discrete

Show discrete units associated hardware sensor

## Arguments

### IDENTIFIER

Required argument

## 6.17 Disk Image Commands

### 6.17.1 image delete

Delete an image.

```
image delete [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

### 6.17.2 image detail

Get details for an image.

```
image detail [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.17.3 image edit

Edit details of an image.

```
image edit [OPTIONS] IDENTIFIER
```

## Options

**--name** <name>

Name of the image

**--note** <note>

Additional note for the image

**--tag** <tag>

Tags for the image

## Arguments

### IDENTIFIER

Required argument

## 6.17.4 image list

List images.

```
image list [OPTIONS]
```

## Options

**--name** <name>

Filter on image name

**--public, --private**

Display only public or private images

## 6.17.5 image import

Import an image.

The URI for an object storage object (.vhd/.iso file) of the format: `swift://<objectStorageAccount>@<cluster>/<container>/<objectPath>` or `cos://<regionName>/<bucketName>/<objectPath>` if using IBM Cloud Object Storage

```
image import [OPTIONS] NAME URI
```

### Options

**--note** <note>

The note to be applied to the imported template

**--os-code** <os\_code>

The referenceCode of the operating system software description for the imported VHD, ISO, or RAW image

**--ibm-api-key** <ibm\_api\_key>

The IBM Cloud API Key with access to IBM Cloud Object Storage instance and IBM KeyProtect instance. For help creating this key see <https://cloud.ibm.com/docs/cloud-object-storage?topic=cloud-object-storage-iam-overview#iam-overview-service-id-api-key>

**--root-key-crn** <root\_key\_crn>

CRN of the root key in your KMS instance

**--wrapped-dek** <wrapped\_dek>

Wrapped Data Encryption Key provided by IBM KeyProtect. For more info see <https://cloud.ibm.com/docs/key-protect?topic=key-protect-wrap-keys>

**--cloud-init**

Specifies if image is cloud-init

**--byol**

Specifies if image is bring your own license

**--is-encrypted**

Specifies if image is encrypted

### Arguments

**NAME**

Required argument

**URI**

Required argument

## 6.17.6 image export

Export an image to object storage.

The URI for an object storage object (.vhd/.iso file) of the format: `swift://<objectStorageAccount>@<cluster>/<container>/<objectPath>` or `cos://<regionName>/<bucketName>/<objectPath>` if using IBM Cloud Object Storage

```
image export [OPTIONS] IDENTIFIER URI
```

## Options

**--ibm-api-key** <ibm\_api\_key>

The IBM Cloud API Key with access to IBM Cloud Object Storage instance. For help creating this key see <https://cloud.ibm.com/docs/cloud-object-storage?topic=cloud-object-storage-iam-overview#iam-overview-service-id-api-key>

## Arguments

**IDENTIFIER**

Required argument

**URI**

Required argument

## 6.17.7 image datacenter

Add/Remove datacenter of an image.

```
image datacenter [OPTIONS] IDENTIFIER LOCATIONS...
```

## Options

**--add, --remove**

To add or remove Datacenter

## Arguments

**IDENTIFIER**

Required argument

**LOCATIONS**

Required argument(s)

## 6.18 Interacting with IPSEC Tunnels

The IPSEC *Command-line Interface* commands can be used to configure an existing IPSEC tunnel context. Subnets in the SoftLayer private network can be associated to the tunnel context along with user-defined remote subnets. Address translation entries may also be defined to provide NAT functionality from static subnet IP addresses associated with the tunnel context to user-defined remote subnet IP addresses.

---

**Note:** Most CLI actions that affect an IPSEC tunnel context do not result in configuration changes to SoftLayer network devices. A separate *configure* command is available to issue a device configuration request.

---

To see more information about the IPSEC tunnel context module and API interaction, see *IPSEC Module* documentation.



## Options

**-i, --include <include>**  
Include additional resources

**Options** at | is | rs | sr | ss

## Arguments

### CONTEXT\_ID

Required argument

More detailed information can be retrieved for an individual context using the `ipsec detail` command. Using the detail command, information about associated internal subnets, remote subnets, static subnets, service subnets and address translations may also be retrieved using multiple instances of the `-i|--include` option.

```
$ slcli ipsec detail 445 -i at -i is -i rs -i sr -i ss
Context Details:
:.....:.....:
:              name : value              :
:.....:.....:
:              id : 445                   :
:              name : ipsec038              :
:      friendly name : ipsec tunnel          :
:      internal peer IP address : 173.192.250.79      :
:      remote peer IP address : 158.85.80.22        :
:      advanced configuration flag : 0                   :
:              preshared key : secret              :
:      phase 1 authentication : MD5                  :
:      phase 1 diffie hellman group : 0                   :
:              phase 1 encryption : DES                  :
:              phase 1 key life : 240                  :
:      phase 2 authentication : MD5                  :
:      phase 2 diffie hellman group : 1                   :
:              phase 2 encryption : DES                  :
:              phase 2 key life : 240                  :
:      phase 2 perfect forward secrecy : 1                   :
:              created : 2012-03-05T14:07:34-06:00 :
:              modified : 2017-05-17T12:01:33-06:00 :
:.....:.....:
Address Translations:
:.....:.....:.....:.....:
↔.....:
:      id : static IP address : static IP address id : remote IP address : remote IP_
↔address id :      note      :
:.....:.....:.....:.....:
↔.....:
: 15920 :      10.1.249.86      :      9791681      :      158.85.80.22      :      98828      _
↔      : windows server :
: 15918 :      10.1.249.84      :      9791679      :      158.85.80.20      :      98824      _
↔      : unix server :
:.....:.....:.....:.....:
↔.....:
Internal Subnets:
```

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```

:.....:
:  id   : network identifier : cidr : note :
:.....:
: 180767 : 10.28.67.128 : 26 :      :
:.....:
Remote Subnets:
:.....:
:  id   : network identifier : cidr : note :
:.....:
: 7852 : 158.85.80.20 : 30 :      :
:.....:
Static Subnets:
:.....:
:  id   : network identifier : cidr : note :
:.....:
: 231807 : 10.1.249.84 : 30 :      :
:.....:
Service Subnets:
:.....:
:  id   : network identifier : cidr : note :
:.....:
: 162079 : 10.0.80.0 : 25 :      :
:.....:

```

### 6.18.3 ipsec update

#### ipsec update

Update tunnel context properties.

Updates are made atomically, so either all are accepted or none are.

Key life values must be in the range 120-172800.

Phase 2 perfect forward secrecy must be in the range 0-1.

A separate configuration request should be made to realize changes on network devices.

```
ipsec update [OPTIONS] CONTEXT_ID
```

#### Options

- friendly-name** <friendly\_name>  
Friendly name value
- remote-peer** <remote\_peer>  
Remote peer IP address value
- preshared-key** <preshared\_key>  
Preshared key value
- phase1-auth, --p1-auth** <phase1\_auth>  
Phase 1 authentication value

**Options** MD5 | SHA1 | SHA256

**--phase1-crypto, --p1-crypto** <phase1\_crypto>  
Phase 1 encryption value

**Options** DES | 3DES | AES128 | AES192 | AES256

**--phase1-dh, --p1-dh** <phase1\_dh>  
Phase 1 diffie hellman group value

**Options** 0 | 1 | 2 | 5

**--phase1-key-ttl, --p1-key-ttl** <phase1\_key\_ttl>  
Phase 1 key life value

**--phase2-auth, --p2-auth** <phase2\_auth>  
Phase 2 authentication value

**Options** MD5 | SHA1 | SHA256

**--phase2-crypto, --p2-crypto** <phase2\_crypto>  
Phase 2 encryption value

**Options** DES | 3DES | AES128 | AES192 | AES256

**--phase2-dh, --p2-dh** <phase2\_dh>  
Phase 2 diffie hellman group value

**Options** 0 | 1 | 2 | 5

**--phase2-forward-secretcy, --p2-forward-secretcy** <phase2\_forward\_secretcy>  
Phase 2 perfect forward secrecy value

**--phase2-key-ttl, --p2-key-ttl** <phase2\_key\_ttl>  
Phase 2 key life value

## Arguments

### CONTEXT\_ID

Required argument

Most values listed in the tunnel context detail printout can be modified using the `ipsec update` command. The following is given when executing with the `-h` or `--help` option and highlights all properties that may be modified.

```
$ slcli ipsec update -h
Usage: slcli ipsec update [OPTIONS] CONTEXT_ID

Update tunnel context properties.

Updates are made atomically, so either all are accepted or none are.

Key life values must be in the range 120-172800.

Phase 2 perfect forward secrecy must be in the range 0-1.

A separate configuration request should be made to realize changes on
network devices.

Options:
  --friendly-name TEXT           Friendly name value
```

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```

--remote-peer TEXT           Remote peer IP address value
--preshared-key TEXT         Preshared key value
--p1-auth, --phase1-auth [MD5|SHA1|SHA256]
                             Phase 1 authentication value
--p1-crypto, --phase1-crypto [DES|3DES|AES128|AES192|AES256]
                             Phase 1 encryption value
--p1-dh, --phase1-dh [0|1|2|5] Phase 1 diffie hellman group value
--p1-key-ttl, --phase1-key-ttl INTEGER RANGE
                             Phase 1 key life value
--p2-auth, --phase2-auth [MD5|SHA1|SHA256]
                             Phase 2 authentication value
--p2-crypto, --phase2-crypto [DES|3DES|AES128|AES192|AES256]
                             Phase 2 encryption value
--p2-dh, --phase2-dh [0|1|2|5] Phase 2 diffie hellman group value
--p2-forward-secrecy, --phase2-forward-secrecy INTEGER RANGE
                             Phase 2 perfect forward secrecy value
--p2-key-ttl, --phase2-key-ttl INTEGER RANGE
                             Phase 2 key life value
-h, --help                   Show this message and exit.

```

## 6.18.4 ipsec configure

### ipsec configure

Request configuration of a tunnel context.

This action will update the advancedConfigurationFlag on the context instance and further modifications against the context will be prevented until all changes can be propagated to network devices.

```
ipsec configure [OPTIONS] CONTEXT_ID
```

### Arguments

#### CONTEXT\_ID

Required argument

A request to configure SoftLayer network devices for a given tunnel context can be issued using the `ipsec configure` command.

**Note:** Once a configuration request is received, the IPSEC tunnel context will be placed into an unmodifiable state, and further changes against the tunnel context will be prevented. Once configuration changes have been made, the tunnel context may again be modified. The unmodifiable state of a tunnel context is indicated by an *advanced configuration flag* value of 1.

## 6.18.5 ipsec subnet-add

### ipsec subnet-add

Add a subnet to an IPSEC tunnel context.

A subnet id may be specified to link to the existing tunnel context.

Otherwise, a network identifier in CIDR notation should be specified, indicating that a subnet resource should first be created before associating it with the tunnel context. Note that this is only supported for remote subnets, which are also deleted upon failure to attach to a context.

A separate configuration request should be made to realize changes on network devices.

```
ipsec subnet-add [OPTIONS] CONTEXT_ID
```

### Options

**-s, --subnet-id** <subnet\_id>  
Subnet identifier to add

**-t, --subnet-type, --type** <subnet\_type>  
**Required** Subnet type to add

**Options** internal | remote | service

**-n, --network-identifier, --network** <network\_identifier>  
Subnet network identifier to create

### Arguments

#### CONTEXT\_ID

Required argument

Internal, remote and service subnets can be associated to an IPSEC tunnel context using the `ipsec subnet-add` command. Additionally, remote subnets can be created using this same command, which will then be associated to the targeted tunnel context.

---

**Note:** The targeted subnet type must be specified. A subnet id must be provided when associating internal and service subnets. Either a subnet id or a network identifier must be provided when associating remote subnets. If a network identifier is provided when associating a remote subnet, that subnet will first be created and then associated to the tunnel context.

---

The following is an example of associating an internal subnet to a tunnel context.

```
$ slcli ipsec subnet-add 445 --subnet-id 180767 --subnet-type internal
Added internal subnet #180767
```

The following is an example of creating and associating a remote subnet to a tunnel context.

```
$ slcli ipsec subnet-add 445 --subnet-type remote --network 50.100.0.0/26
Created subnet 50.100.0.0/26 #21268
Added remote subnet #21268
```

## 6.18.6 ipsec subnet-remove

### ipsec subnet-remove

Remove a subnet from an IPSEC tunnel context.

The subnet id to remove must be specified.

Remote subnets are deleted upon removal from a tunnel context.

A separate configuration request should be made to realize changes on network devices.

```
ipsec subnet-remove [OPTIONS] CONTEXT_ID
```

### Options

**-s, --subnet-id** <subnet\_id>  
**Required** Subnet identifier to remove

**-t, --subnet-type, --type** <subnet\_type>  
**Required** Subnet type to add

**Options** internal | remote | service

### Arguments

**CONTEXT\_ID**  
 Required argument

Internal, remote and service subnets can be disassociated from an IPSEC tunnel context via the `ipsec subnet-remove` command.

---

**Note:** The targeted subnet id and type must be specified. When disassociating remote subnets, that subnet record will also be deleted.

---

The following is an example of disassociating an internal subnet from a tunnel context.

```
$ slcli ipsec subnet-remove 445 --subnet-id 180767 --subnet-type internal
Removed internal subnet #180767
```

## 6.18.7 ipsec translation-add

### ipsec translation-add

Add an address translation to an IPSEC tunnel context.

A separate configuration request should be made to realize changes on network devices.

```
ipsec translation-add [OPTIONS] CONTEXT_ID
```

## Options

- s, --static-ip** <static\_ip>  
    **Required** Static IP address value
- r, --remote-ip** <remote\_ip>  
    **Required** Remote IP address value
- n, --note** <note>  
    Note value

## Arguments

### CONTEXT\_ID

Required argument

Address translation entries can be added to a tunnel context to provide NAT functionality from a statically routed subnet associated with the tunnel context to a remote subnet. This action is performed with the `ipsec translation-add` command.

---

**Note:** Both static and remote IP address values must be specified. An optional note value may also be provided.

---

The following is an example of adding a new address translation entry.

```
$ slcli ipsec translation-add 445 --static-ip 10.1.249.87 --remote-ip 50.100.0.10 --note  
↪ 'email server'  
Created translation from 10.1.249.87 to 50.100.0.10 #15922
```

## 6.18.8 ipsec translation-remove

### ipsec translation-remove

Remove a translation entry from an IPSEC tunnel context.

A separate configuration request should be made to realize changes on network devices.

```
ipsec translation-remove [OPTIONS] CONTEXT_ID
```

## Options

- t, --translation-id** <translation\_id>  
    **Required** Translation identifier to remove

## Arguments

### CONTEXT\_ID

Required argument

Address translation entries can be removed using the `ipsec translation-remove` command.

The following is an example of removing an address translation entry.

```
$ slcli ipsec translation-remove 445 --translation-id 15922
Removed translation #15922
```

## 6.18.9 ipsec translation-update

### ipsec translation-update

Update an address translation for an IPSEC tunnel context.

A separate configuration request should be made to realize changes on network devices.

```
ipsec translation-update [OPTIONS] CONTEXT_ID
```

### Options

- t, --translation-id** <translation\_id>  
Required Translation identifier to update
- s, --static-ip** <static\_ip>  
Static IP address value
- r, --remote-ip** <remote\_ip>  
Remote IP address value
- n, --note** <note>  
Note value

### Arguments

#### CONTEXT\_ID

Required argument

Address translation entries may also be modified using the `ipsec translation-update` command.

The following is an example of updating an existing address translation entry.

```
$ slcli ipsec translation-update 445 --translation-id 15924 --static-ip 10.1.249.86 --
↪remote-ip 50.100.0.8 --note 'new email server'
Updated translation #15924
```

## 6.19 licenses Commands

### 6.19.1 licenses create-options

Server order options for a given chassis.

```
licenses create-options [OPTIONS]
```

### 6.19.2 licenses create

Order/Create License.

```
licenses create [OPTIONS]
```

#### Options

**-k, --key** <key>

**Required** The VMware License Key. To get could use the product\_package::getItems id=301 with name Software License PackageE.g VMWARE\_VSAN\_ENTERPRISE\_TIER\_III\_65\_124\_TB\_6\_X\_2

**-d, --datacenter** <datacenter>

**Required** Datacenter shortname

### 6.19.3 licenses cancel

Cancel a license.

```
licenses cancel [OPTIONS] KEY
```

#### Options

**--immediate**

Immediate cancellation

#### Arguments

**KEY**

Required argument

## 6.20 LoadBalancers

These commands were added in version 5.8.0

### 6.20.1 LBaaS Commands

- [LBaaS Product](#)
- [LBaaS Documentation](#)

#### loadbal detail

Get Load Balancer as a Service details.

```
loadbal detail [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

#### loadbal list

List active Load Balancer as a Service devices.

```
loadbal list [OPTIONS]
```

#### loadbal health

Manage LBaaS health checks.

```
loadbal health [OPTIONS] IDENTIFIER
```

#### Options

- uuid** <uuid>  
Required Health check UUID to modify.
- i, --interval** <interval>  
Seconds between checks. [2-60]
- r, --retry** <retry>  
Number of times before marking as DOWN. [1-10]
- t, --timeout** <timeout>  
Seconds to wait for a connection. [1-59]
- u, --url** <url>  
Url path for HTTP/HTTPS checks.

## Arguments

### IDENTIFIER

Required argument

## loadbal member-add

Add a new LBaaS members.

```
loadbal member-add [OPTIONS] IDENTIFIER
```

## Options

**--private, --public**

**Required** Private or public IP of the new member.

**-m, --member <member>**

**Required** Member IP address.

**-w, --weight <weight>**

Weight of this member.

## Arguments

### IDENTIFIER

Required argument

## loadbal member-del

Remove a LBaaS member.

Member UUID can be found from *slcli lb detail*.

```
loadbal member-del [OPTIONS] IDENTIFIER
```

## Options

**-m, --member <member>**

**Required** Member UUID

## Arguments

### IDENTIFIER

Required argument



## loadbal pool-add

Adds a listener to the identifier LB

```
loadbal pool-add [OPTIONS] IDENTIFIER
```

### Options

- P, --frontProtocol** <frontprotocol>  
Protocol type to use for incoming connections  
**Default** HTTP  
**Options** HTTP | HTTPS | TCP
- p, --backProtocol** <backprotocol>  
Protocol type to use when connecting to backend servers. Defaults to whatever `--frontProtocol` is.  
**Options** HTTP | HTTPS | TCP
- f, --frontPort** <frontport>  
**Required** Internet side port
- b, --backPort** <backport>  
**Required** Private side port
- m, --method** <method>  
Balancing Method  
**Default** ROUNDROBIN  
**Options** ROUNDROBIN | LEASTCONNECTION | WEIGHTED\_RR
- c, --connections** <connections>  
Maximum number of connections to allow.
- s, --sticky**  
Make sessions sticky based on `source_ip`.
- x, --sslCert** <sslcert>  
SSL certificate ID. See `slcli ssl list`

### Arguments

**IDENTIFIER**  
Required argument

## loadbal pool-edit

Updates a listener's configuration.

LISTENER should be a UUID, and can be found from `slcli lb detail <IDENTIFIER>`

```
loadbal pool-edit [OPTIONS] IDENTIFIER LISTENER
```

## Options

- P, --frontProtocol** <frontprotocol>  
Protocol type to use for incoming connections  
**Options** HTTP | HTTPS | TCP
- p, --backProtocol** <backprotocol>  
Protocol type to use when connecting to backend servers. Defaults to whatever `--frontProtocol` is.  
**Options** HTTP | HTTPS | TCP
- f, --frontPort** <frontport>  
Internet side port
- b, --backPort** <backport>  
Private side port
- m, --method** <method>  
Balancing Method  
**Options** ROUNDROBIN | LEASTCONNECTION | WEIGHTED\_RR
- c, --connections** <connections>  
Maximum number of connections to allow.
- t, --clientTimeout** <clienttimeout>  
maximum idle time in seconds(Range: 1 to 7200).
- s, --sticky**  
Make sessions sticky based on source\_ip.
- x, --sslCert** <sslcert>  
SSL certificate ID. See `slcli ssl list`

## Arguments

- IDENTIFIER**  
Required argument
- LISTENER**  
Required argument

## loadbal pool-del

Removes the listener from identified LBaaS instance

LISTENER should be a UUID, and can be found from `slcli lb detail <IDENTIFIER>`

```
loadbal pool-del [OPTIONS] IDENTIFIER LISTENER
```

## Arguments

### IDENTIFIER

Required argument

### LISTENER

Required argument

## loadbal l7pool-add

Adds a new l7 pool

-S is in colon delimited format to make grouping IP:port:weight a bit easier.

```
loadbal l7pool-add [OPTIONS] IDENTIFIER
```

## Options

**-n, --name** <name>

**Required** Name for this L7 pool.

**-m, --method** <method>

Balancing Method.

**Default** ROUNDROBIN

**Options** ROUNDROBIN | LEASTCONNECTION | WEIGHTED\_RR

**-P, --protocol** <protocol>

Protocol type to use for incoming connections

**Default** HTTP

**Options** HTTP | HTTPS

**-S, --server** <server>

**Required** Backend servers that are part of this pool. Format is colon delimited. BACK-END\_IP:PORT:WEIGHT. eg. 10.0.0.1:80:50 (multiple occurrence permitted)

**--healthPath** <healthpath>

Health check path.

**Default** /

**--healthInterval** <healthinterval>

Health check interval between checks.

**Default** 5

**--healthRetry** <healthretry>

Health check number of times before marking as DOWN.

**Default** 2

**--healthTimeout** <healthtimeout>

Health check timeout.

**Default** 2

**-s, --sticky**

Make sessions sticky based on source\_ip.

## Arguments

### IDENTIFIER

Required argument

## loadbal l7pool-del

Deletes the identified pool

Identifier is L7Pool Id. NOT the UUID

```
loadbal l7pool-del [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## loadbal l7policies

List policies of the front-end protocol (listener).

```
loadbal l7policies [OPTIONS]
```

## Options

**-p, --protocol-id** <protocol\_id>  
Front-end Protocol identifier

## loadbal order

Creates a LB. Protocols supported are TCP, HTTP, and HTTPS.

```
loadbal order [OPTIONS]
```

## Options

**-n, --name** <name>  
**Required** Label for this loadbalancer.

**-d, --datacenter** <datacenter>  
**Required** Datacenter shortname (dal13).

**-l, --label** <label>  
A descriptive label for this loadbalancer.

**-f, --frontend** <frontend>  
**Required** PROTOCOL:PORT string for incoming internet connections.  
**Default** HTTP:80

- b, --backend** <backend>  
**Required** PROTOCOL:PORT string for connecting to backend servers.  
**Default** HTTP:80
- m, --method** <method>  
Balancing Method.  
**Default** ROUNDROBIN  
**Options** ROUNDROBIN | LEASTCONNECTION | WEIGHTED\_RR
- s, --subnet** <subnet>  
**Required** Private subnet Id to order the LB on. See *slcli lb order-options*
- public**  
Use a Public to Public loadbalancer.  
**Default** False
- verify**  
Only verify an order, dont actually create one.  
**Default** False

### loadbal order-options

Prints options for order a LBaaS

```
loadbal order-options [OPTIONS]
```

### Options

- d, --datacenter** <datacenter>  
Show only selected datacenter, use shortname (dal13) format.

### loadbal cancel

Cancels a LBaaS instance

```
loadbal cancel [OPTIONS] IDENTIFIER
```

### Arguments

- IDENTIFIER**  
Required argument

## 6.20.2 NetScaler Commands

### loadbal ns-detail

Get Netscaler details.

```
loadbal ns-detail [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### loadbal ns-list

List active Netscaler devices.

```
loadbal ns-list [OPTIONS]
```

## 6.21 NAS Commands

### 6.21.1 nas list

List NAS accounts.

```
nas list [OPTIONS]
```

### 6.21.2 nas credentials

List NAS account credentials.

```
nas credentials [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

## 6.22 Object Storage Commands

### 6.22.1 object-storage accounts

List object storage accounts.

```
object-storage accounts [OPTIONS]
```

#### Options

**--limit** <limit>  
Result limit

### 6.22.2 object-storage endpoints

List object storage endpoints.

```
object-storage endpoints [OPTIONS]
```

### 6.22.3 object-storage credential list

Retrieve credentials used for generating an AWS signature. Max of 2.

```
object-storage credential list [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

### 6.22.4 object-storage credential limit

Credential limits for this IBM Cloud Object Storage account.

```
object-storage credential limit [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

### 6.22.5 object-storage credential delete

Delete the credential of an Object Storage Account.

```
object-storage credential delete [OPTIONS] IDENTIFIER
```

#### Options

**-c, --credential\_id** <credential\_id>  
This is the credential id associated with the volume

#### Arguments

**IDENTIFIER**  
Required argument

### 6.22.6 object-storage credential create

Create credentials for an IBM Cloud Object Storage Account

```
object-storage credential create [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**  
Required argument

## 6.23 Ordering

The Order *Command-line Interface* commands can be used to build an order for any product in the SoftLayer catalog.

The basic flow for ordering goes something like this...

1. package-list
2. category-list <package key name>
3. item-list <package key name>
4. place <package key name> <item key names> <location>



### 6.23.1 order package-list

List packages that can be ordered via the placeOrder API.

```
# List out all packages for ordering
slcli order package-list

# List out all packages with "server" in the name
slcli order package-list --keyword server

# Select only specifict package types
slcli order package-list --package_type BARE_METAL_CPU
```

```
order package-list [OPTIONS]
```

#### Options

**--keyword** <keyword>

A word (or string) used to filter package names.

**--package\_type** <package\_type>

The keyname for the type of package. BARE\_METAL\_CPU for example

#### Note:

- CLOUD\_SERVER: These are Virtual Servers
- BARE\_METAL\_INSTANCE: Hourly Bare Metal
- BARE\_METAL\_SERVER: Other monthly server types
- *#\_PROC\_#\_DRIVES*: Packages in this format will contain only this CPU model and Drive bays
- ADDITIONAL\_PRODUCTS: Additional IPs, Vlans, SSL certs and other things are in here
- NETWORK\_GATEWAY\_APPLIANCE: Vyattas

Bluemix services listed here may still need to be ordered through the Bluemix CLI/Portal

### 6.23.2 order package-locations

List Datacenters a package can be ordered in.

Use the location Key Name to place orders

```
order package-locations [OPTIONS] PACKAGE_KEYNAME
```

## Arguments

### PACKAGE\_KEYNAME

Required argument

## 6.23.3 order category-list

List the categories of a package.

```
# List the categories of Bare Metal servers
slcli order category-list BARE_METAL_SERVER

# List the required categories for Bare Metal servers
slcli order category-list BARE_METAL_SERVER --required
```

```
order category-list [OPTIONS] PACKAGE_KEYNAME
```

## Options

### --required

List only the required categories for the package

## Arguments

### PACKAGE\_KEYNAME

Required argument

Shows all the available categories for a certain package, useful in finding the required categories. Categories that are required will need to have a corresponding item included with any orders

These are all the required categories for BARE\_METAL\_SERVER

```
$ slcli order category-list BARE_METAL_SERVER
:.....:
:      name      :      categoryCode      : isRequired :
:.....:
:      Server    :      server            :      Y      :
:      Operating System :      os                :      Y      :
:      RAM       :      ram                :      Y      :
:      Disk Controller :      disk_controller    :      Y      :
:      First Hard Drive :      disk0              :      Y      :
:      Public Bandwidth :      bandwidth          :      Y      :
:      Uplink Port Speeds :      port_speed         :      Y      :
:      Remote Management :      remote_management  :      Y      :
:      Primary IP Addresses :      pri_ip_addresses  :      Y      :
:      VPN Management - Private Network :      vpn_management    :      Y      :
:.....:
```

### 6.23.4 order item-list

List package items used for ordering.

The item keyNames listed can be used with `slcli order place` to specify the items that are being ordered in the package.

**Note:** Items with a numbered category, like `disk0` or `gpu0`, can be included multiple times in an order to match how many of the item you want to order.

```
# List all items in the VSI package
slcli order item-list CLOUD_SERVER

# List Ubuntu OSes from the os category of the Bare Metal package
slcli order item-list BARE_METAL_SERVER --category os --keyword ubuntu
```

```
order item-list [OPTIONS] PACKAGE_KEYNAME [LOCATION]
```

#### Options

- k, --keyword <keyword>**  
A word (or string) used to filter item names.
- c, --category <category>**  
Category code to filter items by
- p, --prices**  
Use `-prices` to list the server item prices, and to list the Item Prices by location, add it to the `-prices` option using location KeyName, e.g. `-prices AMSTERDAM02`

#### Arguments

**PACKAGE\_KEYNAME**  
Required argument

**LOCATION**  
Optional argument

Shows all the prices for a given package. Collect all the items you want included on your server. Don't forget to include the required category items. If forgotten, `order place` will tell you about it.

### 6.23.5 order preset-list

List package presets.

**Note:** Presets are set CPU / RAM / Disk allotments. You still need to specify required items. Some packages do not have presets.

```
# List the presets for Bare Metal servers
slcli order preset-list BARE_METAL_SERVER
```

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```
# List the Bare Metal server presets that include a GPU
slcli order preset-list BARE_METAL_SERVER --keyword gpu
```

```
order preset-list [OPTIONS] PACKAGE_KEYNAME
```

## Options

**--keyword** <keyword>  
A word (or string) used to filter preset names.

## Arguments

**PACKAGE\_KEYNAME**  
Required argument

### 6.23.6 order place

Place or verify an order.

1. Find the package keyName from *slcli order package-list*
2. Find the location from *slcli order package-locations PUBLIC\_CLOUD\_SERVER*  
If the package does not require a location, use 'NONE' instead.
3. Find the needed items *slcli order item-list PUBLIC\_CLOUD\_SERVER*  
Some packages, like PUBLIC\_CLOUD\_SERVER need presets, *slcli order preset-list PUBLIC\_CLOUD\_SERVER*
4. Find the complex type from <https://sldn.softlayer.com/reference>
5. Use that complex type to fill out any `--extras`

Example:

```
slcli order place --verify --preset B1_2X8X100 --billing hourly
--complex-type SoftLayer_Container_Product_Order_Virtual_Guest
--extras '{"virtualGuests": [{"hostname": "test", "domain": "ibm.com"}]}'
PUBLIC_CLOUD_SERVER DALLAS13
BANDWIDTH_0_GB_2 MONITORING_HOST_PING NOTIFICATION_EMAIL_AND_TICKET
OS_DEBIAN_9_X_STRETCH_LAMP_64_BIT 1_IP_ADDRESS 1_IPV6_ADDRESS
1_GBPS_PUBLIC_PRIVATE_NETWORK_UPLINKS REBOOT_REMOTE_CONSOLE
AUTOMATED_NOTIFICATION UNLIMITED_SSL_VPN_USERS_1_PPTP_VPN_USER_PER_ACCOUNT
```

```
order place [OPTIONS] PACKAGE_KEYNAME LOCATION [ORDER_ITEMS]...
```

## Options

- preset** <preset>  
The order preset (if required by the package)
- verify**  
Flag denoting whether or not to only verify the order, not place it
- quantity** <quantity>  
The quantity of the item being ordered
- billing** <billing>  
Billing rate  
**Default** hourly  
**Options** hourly | monthly
- complex-type** <complex\_type>  
The complex type of the order. Starts with 'SoftLayer\_Container\_Product\_Order'.
- extras** <extras>  
JSON string denoting extra data that needs to be sent with the order

## Arguments

**PACKAGE\_KEYNAME**  
Required argument

**LOCATION**  
Required argument

**ORDER\_ITEMS**  
Optional argument(s)

Now that you have the package you want, the prices needed, and found a location, it is time to place an order.

### 6.23.7 order place <preset>

```
$ slcli --really order place --preset D2620V4_64GB_2X1TB_SATA_RAID_1 BARE_METAL_SERVER \
↳TORONTO \
  OS_UBUNTU_16_04_LTS_XENIAL_XERUS_64_BIT \
  BANDWIDTH_0_GB_2 \
  1_GBPS_PRIVATE_NETWORK_UPLINK \
  REBOOT_KVM_OVER_IP 1_IP_ADDRESS \
  UNLIMITED_SSL_VPN_USERS_1_PPTP_VPN_USER_PER_ACCOUNT \
  --extras '{"hardware": [{"hostname": "testOrder", "domain": "cgallo.com"}]}' \
  --complex-type SoftLayer_Container_Product_Order_Hardware_Server
```

## 6.23.8 order place <Virtual Server>

```
$ slcli order place --billing hourly CLOUD_SERVER DALLAS13 \  
  GUEST_CORES_4 \  
  RAM_16_GB \  
  REBOOT_REMOTE_CONSOLE \  
  1_GBPS_PUBLIC_PRIVATE_NETWORK_UPLINKS \  
  BANDWIDTH_0_GB_2 \  
  1_IP_ADDRESS \  
  GUEST_DISK_100_GB_SAN \  
  OS_UBUNTU_16_04_LTS_XENIAL_XERUS_MINIMAL_64_BIT_FOR_VSI \  
  MONITORING_HOST_PING \  
  NOTIFICATION_EMAIL_AND_TICKET \  
  AUTOMATED_NOTIFICATION \  
  UNLIMITED_SSL_VPN_USERS_1_PPTP_VPN_USER_PER_ACCOUNT \  
  --extras '{"virtualGuests": [{"hostname": "test", "domain": "softlayer.com"}]}' \  
  --complex-type SoftLayer_Container_Product_Order_Virtual_Guest
```

## 6.24 Quotes

### 6.24.1 order quote

View and Order a quote

```
order quote [OPTIONS] QUOTE
```

#### Options

##### **--verify**

If specified, will only show what the quote will order, will NOT place an order

**Default** False

##### **--quantity** <quantity>

The quantity of the item being ordered if different from quoted value

##### **--complex-type** <complex\_type>

The complex type of the order. Starts with 'SoftLayer\_Container\_Product\_Order'.

**Default** SoftLayer\_Container\_Product\_Order\_Hardware\_Server

##### **-u, --userdata** <userdata>

User defined metadata string

##### **-F, --userfile** <userfile>

Read userdata from file

##### **-i, --postinstall** <postinstall>

Post-install script to download

##### **-k, --key** <key>

SSH keys to add to the root user (multiple occurrence permitted)

**--fqdn** <fqdn>

**Required** <hostname>.<domain.name.tld> formatted name to use. Specify one fqdn per server (multiple occurrence permitted)

**--image** <image>

Image ID. See: 'slcli image list' for reference

## Arguments

**QUOTE**

Required argument

### 6.24.2 order quote-list

List all active quotes on an account

```
order quote-list [OPTIONS]
```

### 6.24.3 order quote-detail

View a quote

```
order quote-detail [OPTIONS] QUOTE
```

## Arguments

**QUOTE**

Required argument

### 6.24.4 order quote-save

Save a quote

```
order quote-save [OPTIONS] QUOTE
```

## Arguments

**QUOTE**

Required argument

## 6.24.5 order place-quote

Place a quote.

This CLI command is used for creating a quote of the specified package in the given location (denoted by a data-center's long name). Orders made via the CLI can then be converted to be made programmatically by calling `SoftLayer.OrderingManager.place_quote()` with the same keynames.

Packages for ordering can be retrieved from `slcli order package-list`. Presets for ordering can be retrieved from `slcli order preset-list` (not all packages have presets).

Items can be retrieved from `slcli order item-list`. In order to find required items for the order, use `slcli order category-list`, and then provide the `--category` option for each category code in `slcli order item-list`.

Example:

```
# Place quote a VSI with 4 CPU, 16 GB RAM, 100 GB SAN disk,
# Ubuntu 16.04, and 1 Gbps public & private uplink in dal13
slcli order place-quote --name "foobar" --send-email CLOUD_SERVER DALLAS13 \
    GUEST_CORES_4 \
    RAM_16_GB \
    REBOOT_REMOTE_CONSOLE \
    1_GBPS_PUBLIC_PRIVATE_NETWORK_UPLINKS \
    BANDWIDTH_0_GB_2 \
    1_IP_ADDRESS \
    GUEST_DISK_100_GB_SAN \
    OS_UBUNTU_16_04_LTS_XENIAL_XERUS_MINIMAL_64_BIT_FOR_VSI \
    MONITORING_HOST_PING \
    NOTIFICATION_EMAIL_AND_TICKET \
    AUTOMATED_NOTIFICATION \
    UNLIMITED_SSL_VPN_USERS_1_PPTP_VPN_USER_PER_ACCOUNT \
    --extras '{"virtualGuests": [{"hostname": "test", "domain": "softlayer.com"}]}' \
    --complex-type SoftLayer_Container_Product_Order_Virtual_Guest
```

```
order place-quote [OPTIONS] PACKAGE_KEYNAME LOCATION [ORDER_ITEMS]...
```

### Options

**--preset** <preset>

The order preset (if required by the package)

**--name** <name>

A custom name to be assigned to the quote (optional)

**--send-email**

The quote will be sent to the email address associated with your user.

**--complex-type** <complex\_type>

The complex type of the order. Starts with 'SoftLayer\_Container\_Product\_Order'.

**--extras** <extras>

JSON string denoting extra data that needs to be sent with the order



## Arguments

**PACKAGE\_KEYNAME**

Required argument

**LOCATION**

Required argument

**ORDER\_ITEMS**

Optional argument(s)

## 6.25 Lookup

### 6.25.1 order lookup

Provides some details related to order owner, date order, cost information, initial invoice.

```
order lookup [OPTIONS] IDENTIFIER
```

## Options

**--details**

Shows a very detailed list of charges

**Default** False

## Arguments

**IDENTIFIER**

Required argument

## 6.26 Reports

There are a few report type commands in the SLCLI.

### 6.26.1 summary

Account summary.

```
summary [OPTIONS]
```

## Options

**--sortby** <sortby>  
Column to sort by

**Options** datacenter | hardware | virtual\_servers | vlans | subnets | public\_ips

A list of datacenters, and how many servers, VSI, vlans, subnets and public\_ips are in each.

## 6.26.2 report bandwidth

Bandwidth report for every pool/server.

This reports on the total data transferred for each virtual sever, hardware server and bandwidth pool.

```
report bandwidth [OPTIONS]
```

## Options

**--start** <start>  
datetime in the format 'YYYY-MM-DD' or 'YYYY-MM-DD HH:MM:SS'

**--end** <end>  
datetime in the format 'YYYY-MM-DD' or 'YYYY-MM-DD HH:MM:SS'

**--sortby** <sortby>  
Column to sort by

**Default** hostname

**--virtual**  
Show the all bandwidth summary for each virtual server

**--server**  
show the all bandwidth summary for each hardware server

## 6.27 Security Groups

### 6.27.1 securitygroup list

List security groups.

```
securitygroup list [OPTIONS]
```

## Options

- sortby** <sortby>  
Column to sort by
  - Options** id | name | description
- l, --limit** <limit>  
How many results to get in one api call, default is 100
  - Default** 100

### 6.27.2 securitygroup detail

Get details about a security group.

```
securitygroup detail [OPTIONS] IDENTIFIER
```

## Arguments

- IDENTIFIER**  
Required argument

### 6.27.3 securitygroup create

Create a security group.

```
securitygroup create [OPTIONS]
```

## Options

- n, --name** <name>  
The name of the security group
- d, --description** <description>  
The description of the security group

### 6.27.4 securitygroup edit

Edit details of a security group.

```
securitygroup edit [OPTIONS] GROUP_ID
```

## Options

- n, --name** <name>  
The name of the security group
- d, --description** <description>  
The description of the security group

## Arguments

- GROUP\_ID**  
Required argument

### 6.27.5 securitygroup delete

Deletes the given security group

```
securitygroup delete [OPTIONS] SECURITYGROUP_ID
```

## Arguments

- SECURITYGROUP\_ID**  
Required argument

### 6.27.6 securitygroup rule-list

List security group rules.

```
securitygroup rule-list [OPTIONS] SECURITYGROUP_ID
```

## Options

- sortby** <sortby>  
Column to sort by  
**Options** id | remoteIp | remoteGroupId | direction | ethertype | portRangeMin | portRangeMax | protocol | createDate | modifyDate

## Arguments

- SECURITYGROUP\_ID**  
Required argument

## 6.27.7 securitygroup rule-add

Add a security group rule to a security group.

Examples:

```
# Add an SSH rule (TCP port 22) to a security group
slcli sg rule-add 384727
    -direction ingress
    -protocol tcp
    -port-min 22
    -port-max 22
```

```
# Add a ping rule (ICMP type 8 code 0) to a security group
slcli sg rule-add 384727
    -direction ingress
    -protocol icmp
    -port-min 8
    -port-max 0
```

```
securitygroup rule-add [OPTIONS] SECURITYGROUP_ID
```

### Options

- r, --remote-ip** <remote\_ip>  
The remote IP/CIDR to enforce
- s, --remote-group** <remote\_group>  
The ID of the remote security group to enforce
- d, --direction** <direction>  
The direction of traffic to enforce (ingress, egress)
- e, --ethertype** <ethertype>  
The ethertype (IPv4 or IPv6) to enforce
- M, --port-max** <port\_max>  
The upper port bound to enforce. When the protocol is ICMP, this specifies the ICMP code to permit
- m, --port-min** <port\_min>  
The lower port bound to enforce. When the protocol is ICMP, this specifies the ICMP type to permit
- p, --protocol** <protocol>  
The protocol (icmp, tcp, udp) to enforce

## Arguments

**SECURITYGROUP\_ID**  
Required argument

### 6.27.8 securitygroup rule-edit

Edit a security group rule in a security group.

```
securitygroup rule-edit [OPTIONS] SECURITYGROUP_ID RULE_ID
```

## Options

- r, --remote-ip** <remote\_ip>  
The remote IP/CIDR to enforce
- s, --remote-group** <remote\_group>  
The ID of the remote security group to enforce
- d, --direction** <direction>  
The direction of traffic to enforce
- e, --ethertype** <ethertype>  
The ethertype (IPv4 or IPv6) to enforce
- M, --port-max** <port\_max>  
The upper port bound to enforce
- m, --port-min** <port\_min>  
The lower port bound to enforce
- p, --protocol** <protocol>  
The protocol (icmp, tcp, udp) to enforce

## Arguments

**SECURITYGROUP\_ID**  
Required argument

**RULE\_ID**  
Required argument

### 6.27.9 securitygroup rule-remove

Remove a rule from a security group.

```
securitygroup rule-remove [OPTIONS] SECURITYGROUP_ID RULE_ID
```

## Arguments

**SECURITYGROUP\_ID**  
Required argument

**RULE\_ID**  
Required argument

### 6.27.10 securitygroup interface-list

List interfaces associated with security groups.

```
securitygroup interface-list [OPTIONS] SECURITYGROUP_ID
```

## Options

**--sortby** <sortby>  
Column to sort by

**Options** networkComponentId | virtualServerId | hostname | interface | ipAddress

## Arguments

**SECURITYGROUP\_ID**  
Required argument

### 6.27.11 securitygroup interface-add

Attach an interface to a security group.

```
securitygroup interface-add [OPTIONS] SECURITYGROUP_ID
```

## Options

**-n, --network-component** <network\_component>  
The network component to associate with the security group

**-s, --server** <server>  
The server ID to associate with the security group

**-i, --interface** <interface>  
The interface of the server to associate (public/private)

## Arguments

**SECURITYGROUP\_ID**  
Required argument

### 6.27.12 securitygroup interface-remove

Detach an interface from a security group.

```
securitygroup interface-remove [OPTIONS] SECURITYGROUP_ID
```

## Options

- n, --network-component** <network\_component>  
The network component to remove from with the security group
- s, --server** <server>  
The server ID to remove from the security group
- i, --interface** <interface>  
The interface of the server to remove (public/private)

## Arguments

**SECURITYGROUP\_ID**  
Required argument

### 6.27.13 securitygroup event-log

Search for event logs by request id

```
securitygroup event-log [OPTIONS] REQUEST_ID
```

## Arguments

**REQUEST\_ID**  
Required argument

## 6.28 SSH Keys

### 6.28.1 sshkey add

Add a new SSH key.

```
sshkey add [OPTIONS] LABEL
```



## Options

- f, --in-file** <in\_file>  
The id\_rsa.pub file to import for this key
- k, --key** <key>  
The actual SSH key
- note** <note>  
Extra note that will be associated with key

## Arguments

- LABEL**  
Required argument

### 6.28.2 sshkey remove

Permanently removes an SSH key.

```
sshkey remove [OPTIONS] IDENTIFIER
```

## Arguments

- IDENTIFIER**  
Required argument

### 6.28.3 sshkey edit

Edits an SSH key.

```
sshkey edit [OPTIONS] IDENTIFIER
```

## Options

- k, --label** <label>  
The new label for the key
- note** <note>  
New notes for the key

## Arguments

### IDENTIFIER

Required argument

## 6.28.4 sshkey list

List SSH keys.

```
sshkey list [OPTIONS]
```

## Options

**--sortby** <sortby>

Column to sort by

**Options** id | label | fingerprint | notes

## 6.28.5 sshkey print

Prints out an SSH key to the screen.

```
sshkey print [OPTIONS] IDENTIFIER
```

## Options

**-f, --out-file** <out\_file>

The public SSH key will be written to this file

## Arguments

### IDENTIFIER

Required argument

## 6.29 SSL Certificates

### 6.29.1 ssl add

Add and upload SSL certificate details.

```
ssl add [OPTIONS]
```

## Options

- crt** <crt>  
Certificate file
- csr** <csr>  
Certificate Signing Request file
- icc** <icc>  
Intermediate Certificate file
- key** <key>  
Private Key file
- notes** <notes>  
Additional notes

### 6.29.2 ssl download

Download SSL certificate and key file.

```
ssl download [OPTIONS] IDENTIFIER
```

## Arguments

- IDENTIFIER**  
Required argument

### 6.29.3 ssl edit

Edit SSL certificate.

```
ssl edit [OPTIONS] IDENTIFIER
```

## Options

- crt** <crt>  
Certificate file
- csr** <csr>  
Certificate Signing Request file
- icc** <icc>  
Intermediate Certificate file
- key** <key>  
Private Key file
- notes** <notes>  
Additional notes

## Arguments

### IDENTIFIER

Required argument

## 6.29.4 ssl list

List SSL certificates.

```
ssl list [OPTIONS]
```

## Options

**--status** <status>

Show certificates with this status

**Default** all

**Options** all | valid | expired

**--sortby** <sortby>

Column to sort by

**Options** id | common\_name | days\_until\_expire | notes

## 6.29.5 ssl remove

Remove SSL certificate.

```
ssl remove [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.30 Subnets

### 6.30.1 subnet cancel

Cancel a subnet.

```
subnet cancel [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.30.2 subnet create

Add a new subnet to your account. Valid quantities vary by type.

### IPv4

static - 1, 2, 4, 8, 16, 32, 64, 128, 256

public - 4, 8, 16, 32, 64, 128, 256

private - 4, 8, 16, 32, 64, 128, 256

### IPv6

static - 64

public - 64

### endpoint-id

static - Network\_Subnet\_IpAddress identifier.

public - Network\_Vlan identifier

private - Network\_Vlan identifier

```
subnet create [OPTIONS] {static|public|private} QUANTITY ENDPOINT_ID
```

## Options

**--ipv6, --v6**

Order IPv6 Addresses

**--test**

Do not order the subnet; just get a quote

## Arguments

### NETWORK

Required argument

### QUANTITY

Required argument

### ENDPOINT\_ID

Required argument

### 6.30.3 subnet detail

Get subnet details.

```
subnet detail [OPTIONS] IDENTIFIER
```

#### Options

- no-vs**  
Hide virtual server listing
- no-hardware**  
Hide hardware listing

#### Arguments

**IDENTIFIER**  
Required argument

### 6.30.4 subnet edit

Edit note and tags of a subnet.

```
subnet edit [OPTIONS] IDENTIFIER
```

#### Options

- t, --tags <tags>**  
Comma separated list of tags, enclosed in quotes. "tag1, tag2"
- n, --note <note>**  
The note

#### Arguments

**IDENTIFIER**  
Required argument

### 6.30.5 subnet list

List subnets.

```
subnet list [OPTIONS]
```

## Options

- sortby** <sortby>  
Column to sort by  
**Options** id | identifier | type | network\_space | datacenter | vlan\_id | IPs | hardware | vs
- d, --datacenter** <datacenter>  
Filter by datacenter shortname (sng01, dal05, ...)
- identifier** <identifier>  
Filter by network identifier
- t, --subnet-type** <subnet\_type>  
Filter by subnet type
- network-space** <network\_space>  
Filter by network space
- ipv4, --v4**  
Display only IPv4 subnets
- ipv6, --v6**  
Display only IPv6 subnets

### 6.30.6 subnet lookup

Find an IP address and display its subnet and device info.

```
subnet lookup [OPTIONS] IP_ADDRESS
```

## Arguments

**IP\_ADDRESS**  
Required argument

### 6.30.7 subnet edit-ip

Set the note of the ipAddress

```
subnet edit-ip [OPTIONS] IDENTIFIER
```

## Options

**--note** <note>  
set ip address note of subnet

## Arguments

### IDENTIFIER

Required argument

## 6.31 Tag Commands

These commands will allow you to interact with the **IMS** provier tagging service. The **IBM Global Search and Tagging API** can be used to interact with both the **GHOST** provider and **IMS** provider. The **GHOST** provider will handle tags for things outside of the Classic Infrastructure (aka SoftLayer) space.

### 6.31.1 tags list

List Tags.

```
tags list [OPTIONS]
```

#### Options

**-d, --detail**

Show information about the resources using this tag.

### 6.31.2 tags set

Set Tags.

```
tags set [OPTIONS]
```

#### Options

**-t, --tags <tags>**

**Required** Comma seperated list of tags, enclosed in quotes. "tag1, tag2"

**-k, --key-name <key\_name>**

**Required** Key name of a tag type e.g. GUEST, HARDWARE. See slcli tags taggable output.

**-r, --resource-id <resource\_id>**

**Required** ID of the object being tagged

### 6.31.3 tags details

Get details for a Tag. Identifier can be either a name or tag-id

```
tags details [OPTIONS] IDENTIFIER
```



## Options

### **--name**

Assume identifier is a tag name. Useful if your tag name is a number.

## Arguments

### **IDENTIFIER**

Required argument

## 6.31.4 tags delete

Delete a Tag. Tag names that contain spaces need to be encased in quotes

```
tags delete [OPTIONS] IDENTIFIER
```

## Options

### **--name**

Assume identifier is a tag name. Useful if your tag name is a number.

## Arguments

### **IDENTIFIER**

Required argument

## 6.31.5 tags taggable

List everything that could be tagged.

```
tags taggable [OPTIONS]
```

## 6.31.6 tags cleanup

Removes all empty tags.

```
tags cleanup [OPTIONS]
```

## Options

### **-d, --dry-run**

Don't delete, just show what will be deleted.

## 6.32 Support Tickets

The SoftLayer ticket API is used to create “classic” or Infrastructure Support cases. These tickets will still show up in your web portal, but for the more unified case management API, see the [Case Management API](#)

---

**Note:** Windows Git-Bash users might run into issues with `ticket create` and `ticket update` if `-body` isn’t used, as it doesn’t report that it is a real TTY to python, so the default editor can not be launched.

---

### 6.32.1 ticket create

Create a Infrastructure support ticket.

Will create the ticket with *Some text*:

```
slcli ticket create --body="Some text" --subject-id 1522 --hardware 12345 --title "My
↵New Ticket"
```

Will create the ticket with text from STDIN:

```
cat sometfile.txt | slcli ticket create --subject-id 1003 --virtual 111111 --title
↵"Reboot Me"
```

Will open the default text editor, and once closed, use that text to create the ticket:

```
slcli ticket create --subject-id 1482 --title "Vyatta Questions..."
```

```
ticket create [OPTIONS]
```

#### Options

**--title** <title>

**Required** The title of the ticket

**--subject-id** <subject\_id>

**Required** The subject id to use for the ticket, run ‘slcli ticket subjects’ to get the list

**--body** <body>

The ticket body

**--hardware** <hardware\_identifier>

The identifier for hardware to attach

**--virtual** <virtual\_identifier>

The identifier for a virtual server to attach

**--priority** <priority>

Ticket priority, from 1 (Critical) to 4 (Minimal Impact). Only settable with Advanced and Premium support. See <https://www.ibm.com/cloud/support>

**Options** 1 | 2 | 3 | 4

### 6.32.2 ticket detail

Get details for a ticket.

```
ticket detail [OPTIONS] IDENTIFIER
```

#### Options

**--count** <count>  
Number of updates  
**Default** 10

#### Arguments

**IDENTIFIER**  
Required argument

### 6.32.3 ticket list

List tickets.

```
ticket list [OPTIONS]
```

#### Options

**--open, --closed**  
Display only open or closed tickets

### 6.32.4 ticket update

Adds an update to an existing ticket.

Will update the ticket with *Some text*:

```
slcli ticket update 123456 --body="Some text"
```

Will update the ticket with text from STDIN:

```
cat sometfile.txt | slcli ticket update 123456
```

Will open the default text editor, and once closed, use that text to update the ticket:

```
slcli ticket update 123456
```

```
ticket update [OPTIONS] IDENTIFIER
```

## Options

**--body** <body>  
Text to add to the ticket. STDIN or the default text editor will be used otherwise.

## Arguments

**IDENTIFIER**  
Required argument

### 6.32.5 ticket upload

Adds an attachment to an existing ticket.

```
ticket upload [OPTIONS] IDENTIFIER
```

## Options

**--path** <path>  
The path of the attachment to be uploaded

**--name** <name>  
The name of the attachment shown in the ticket

## Arguments

**IDENTIFIER**  
Required argument

### 6.32.6 ticket subjects

List Subject IDs for ticket creation.

```
ticket subjects [OPTIONS]
```

### 6.32.7 ticket summary

Summary info about tickets.

```
ticket summary [OPTIONS]
```

### 6.32.8 ticket attach

Attach devices to a ticket.

```
ticket attach [OPTIONS] IDENTIFIER
```

#### Options

- hardware** <hardware\_identifier>  
The identifier for hardware to attach
- virtual** <virtual\_identifier>  
The identifier for a virtual server to attach

#### Arguments

**IDENTIFIER**  
Required argument

### 6.32.9 ticket detach

Detach devices from a ticket.

```
ticket detach [OPTIONS] IDENTIFIER
```

#### Options

- hardware** <hardware\_identifier>  
The identifier for hardware to detach
- virtual** <virtual\_identifier>  
The identifier for a virtual server to detach

#### Arguments

**IDENTIFIER**  
Required argument

## 6.33 Users

Version 5.6.0 introduces the ability to interact with user accounts from the cli.

### 6.33.1 user list

List Users.

```
user list [OPTIONS]
```

#### Options

**--columns** <columns>  
Columns to display. [options: id, username, email, displayName, status, hardwareCount, virtualGuestCount, 2FA, classicAPIKey]  
**Default** id,username,email,displayName,2FA,classicAPIKey

### 6.33.2 user detail

User details.

```
user detail [OPTIONS] IDENTIFIER
```

#### Options

**-k, --keys**  
Show the users API key.

**-p, --permissions**  
Display permissions assigned to this user. Master users will show no permissions

**-h, --hardware**  
Display hardware this user has access to.

**-v, --virtual**  
Display virtual guests this user has access to.

**-l, --logins**  
Show login history of this user for the last 30 days

**-e, --events**  
Show event log for this user.

#### Arguments

**IDENTIFIER**  
Required argument

### 6.33.3 user notifications

My Notifications.

```
user notifications [OPTIONS]
```

### 6.33.4 user permissions

User Permissions.

```
user permissions [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.33.5 user edit-notifications

Enable or Disable specific notifications for the active user.

Notification names should be enclosed in quotation marks. Example:

```
slcli user edit-notifications --enable 'Order Approved' 'Reload Complete'
```

```
user edit-notifications [OPTIONS] NOTIFICATION...
```

#### Options

##### --enable, --disable

Enable (DEFAULT) or Disable selected notification

#### Arguments

##### NOTIFICATION

Required argument(s)

### 6.33.6 user edit-permissions

Enable or Disable specific permissions.

```
user edit-permissions [OPTIONS] IDENTIFIER
```

## Options

**--enable, --disable**

Enable (DEFAULT) or Disable selected permissions

**-p, --permission <permission>**

Permission keyName to set, multiple instances allowed. Use keyword ALL to select ALL permissions

**-u, --from-user <from\_user>**

Set permissions to match this user's permissions. Will add then remove the appropriate permissions

## Arguments

**IDENTIFIER**

Required argument

### 6.33.7 user edit-details

Edit a Users details

JSON strings should be enclosed in ‘ and each item should be enclosed in “”

Example:

```
slcli user edit-details testUser -t '{"firstName": "Test", "lastName": "Testerson"}'
```

```
user edit-details [OPTIONS] USER
```

## Options

**-t, --template <template>**

**Required** A json string describing [https://softlayer.github.io/reference/datatypes/SoftLayer\\_User\\_Customer/](https://softlayer.github.io/reference/datatypes/SoftLayer_User_Customer/)

## Arguments

**USER**

Required argument

### 6.33.8 user create

Creates a user Users.

Remember to set the permissions and access for this new user.

Example:

```
slcli user create my@email.com -e my@email.com -p generate -a  
-t '{"firstName": "Test", "lastName": "Testerson"}'
```

```
user create [OPTIONS] USERNAME
```



## Options

- e, --email** <email>  
**Required** Email address for this user. Required for creation.
- p, --password** <password>  
 Password to set for this user. If no password is provided, user will be sent an email to generate one, which expires in 24 hours. '-p generate' will create a password for you (Requires Python 3.6+). Passwords require 8+ characters, upper and lowercase, a number and a symbol.
- u, --from-user** <from\_user>  
 Base user to use as a template for creating this user. Will default to the user running this command. Information provided in -template supersedes this template.
- t, --template** <template>  
 A json string describing [https://softlayer.github.io/reference/datatypes/SoftLayer\\_User\\_Customer/](https://softlayer.github.io/reference/datatypes/SoftLayer_User_Customer/)

## Arguments

**USERNAME**  
 Required argument

### 6.33.9 user delete

Sets a user's status to CANCEL\_PENDING, which will immediately disable the account, and will eventually be fully removed from the account by an automated internal process.

Example: slcli user delete userId

```
user delete [OPTIONS] IDENTIFIER
```

## Arguments

**IDENTIFIER**  
 Required argument

### 6.33.10 user vpn-manual

Enable or disable user vpn subnets manual config

```
user vpn-manual [OPTIONS] USER
```

## Options

**--enable, --disable**

Enable or disable vpn subnets manual config.

## Arguments

**USER**

Required argument

### 6.33.11 user vpn-subnet

Add or remove subnets access for a user.

```
user vpn-subnet [OPTIONS] USER SUBNET...
```

## Options

**--add, --remove**

Add or remove access to subnets.

## Arguments

**USER**

Required argument

**SUBNET**

Required argument(s)

## 6.34 VLANs

### 6.34.1 vlan create

Order/create a VLAN instance.

```
vlan create [OPTIONS]
```

## Options

**--name <name>**

Vlan name

**-d, --datacenter <datacenter>**

Datacenter shortname

**-p, --pod <pod>**

Pod name. E.g dal05.pod01

**--network <network>**

Network vlan type

**Default** public

**Options** public | private

**--billing** <billing>

Billing rate

**Default** hourly

**Options** hourly | monthly

### 6.34.2 vlan detail

Get details about a VLAN.

```
vlan detail [OPTIONS] IDENTIFIER
```

#### Options

**--no-vs**

Hide virtual server listing

**--no-hardware**

Hide hardware listing

#### Arguments

**IDENTIFIER**

Required argument

### 6.34.3 vlan edit

Edit a vlan's details.

```
vlan edit [OPTIONS] IDENTIFIER
```

#### Options

**-n, --name** <name>

The optional name for this VLAN

**-e, --note** <note>

The note for this vlan.

**-g, --tags** <tags>

Tags to set e.g. "tag1,tag2", or empty string to remove all

## Arguments

### IDENTIFIER

Required argument

## 6.34.4 vlan list

List VLANs.

```
vlan list [OPTIONS]
```

## Options

**--sortby** <sortby>

Column to sort by

**Options** id | number | name | Gateway/Firewall | datacenter | hardware | virtual\_servers | public\_ips

**-d, --datacenter** <datacenter>

Filter by datacenter shortname (sng01, dal05, ...)

**-n, --number** <number>

Filter by VLAN number

**--name** <name>

Filter by VLAN name

**-l, --limit** <limit>

How many results to get in one api call, default is 100

**Default** 100

## 6.34.5 vlan cancel

Cancel network VLAN.

```
vlan cancel [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.35 Working with Virtual Servers

Using the SoftLayer portal to order virtual servers is fine, but for a number of reasons it's often more convenient to use the command line. For this, you can use SoftLayer's command-line client to make administrative tasks quicker and easier. This page gives an intro to working with SoftLayer virtual servers using SoftLayer's command-line client.

---

**Note:** The following assumes that the client is already *configured with valid SoftLayer credentials*.

---

First, let's list the current virtual servers with `slcli vs list`.

```
$ slcli vs list
:.....:
↪.....:
: id : datacenter :      host      : cores : memory : primary_ip : backend_
↪ip : active_transaction : owner  :
:.....:
↪.....:
:.....:
↪.....:
```

We don't have any virtual servers yet! Let's fix that. Before we can create a virtual server (VS), we need to know what options are available to us: RAM, CPU, operating systems, disk sizes, disk types, datacenters, and so on. Luckily, there's a simple command to show all options: `slcli vs create-options`.

*Some values were omitted for brevity*

```
$ slcli vs create-options
:.....:
↪.....:
:          name : value
↪          :
:.....:
↪.....:
:      datacenter : ams01
↪          :
:          : ams03
↪          :
:          : wdc07
↪          :
: flavors (balanced) : B1_1X2X25
↪          :
:          : B1_1X2X25
↪          :
:          : B1_1X2X100
↪          :
:      cpus (standard) : 1,2,4,8,12,16,32,56
↪          :
:      cpus (dedicated) : 1,2,4,8,16,32,56
↪          :
:      cpus (dedicated host) : 1,2,4,8,12,16,32,56
↪          :
:          memory : 1024,2048,4096,6144,8192,12288,16384,32768,49152,
↪65536,131072,247808 :
```

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```

:      memory (dedicated host) : 1024,2048,4096,6144,8192,12288,16384,32768,49152,
↳ 65536,131072,247808      :
:      os (CENTOS) : CENTOS_5_64      〰
↳      :
:      : CENTOS_LATEST_64      〰
↳      :
:      os (CLOUDLINUX) : CLOUDLINUX_5_64      〰
↳      :
:      : CLOUDLINUX_6_64      〰
↳      :
:      : CLOUDLINUX_LATEST      〰
↳      :
:      : CLOUDLINUX_LATEST_64      〰
↳      :
:      os (COREOS) : COREOS_CURRENT_64      〰
↳      :
:      : COREOS_LATEST      〰
↳      :
:      : COREOS_LATEST_64      〰
↳      :
:      os (DEBIAN) : DEBIAN_6_64      〰
↳      :
:      : DEBIAN_LATEST_64      〰
↳      :
:      os (OTHERUNIXLINUX) : OTHERUNIXLINUX_1_64      〰
↳      :
:      : OTHERUNIXLINUX_LATEST      〰
↳      :
:      : OTHERUNIXLINUX_LATEST_64      〰
↳      :
:      os (REDHAT) : REDHAT_5_64      〰
↳      :
:      : REDHAT_6_64      〰
↳      :
:      : REDHAT_7_64      〰
↳      :
:      : REDHAT_LATEST      〰
↳      :
:      : REDHAT_LATEST_64      〰
↳      :
:      san disk(0) : 25,100      〰
↳      :
:      san disk(2) : 10,20,25,30,40,50,75,100,125,150,175,200,250,300,350,
↳ 400,500,750,1000,1500,2000 :
:      local disk(0) : 25,100      〰
↳      :
:      local disk(2) : 25,100,150,200,300      〰
↳      :
: local (dedicated host) disk(0) : 25,100      〰
↳      :
:      nic (dedicated host) : 100,1000      〰
↳      :

```

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```

:.....:
↪.....:

```

Here's the command to create a 2-core virtual server with 1GiB memory, running Ubuntu 14.04 LTS, and that is billed on an hourly basis in the San Jose 1 datacenter using the command *slcli vs create*.

```

$ slcli vs create --hostname=example --domain=softlayer.com -f B1_1X2X25 -o DEBIAN_
↪LATEST_64 --datacenter=ams01 --billing=hourly
This action will incur charges on your account. Continue? [y/N]: y
:.....:
↪.....:
:   ID   :          FQDN           :          guid           ↪
↪:   Order Date   :          :
:.....:
↪.....:
: 70112999 : testtesttest.test.com : 1abc7afb-9618-4835-89c9-586f3711d8ea : 2019-01-
↪30T17:16:58-06:00 :
:.....:
↪.....:
:.....:
:                               OrderId: 12345678                               :
:.....:
: Cost : Description :
:.....:
: 0.0 : Debian GNU/Linux 9.x Stretch/Stable - Minimal Install (64 bit) :
: 0.0 : 25 GB (SAN) :
: 0.0 : Reboot / Remote Console :
: 0.0 : 100 Mbps Public & Private Network Uplinks :
: 0.0 : 0 GB Bandwidth Allotment :
: 0.0 : 1 IP Address :
: 0.0 : Host Ping and TCP Service Monitoring :
: 0.0 : Email and Ticket :
: 0.0 : Automated Reboot from Monitoring :
: 0.0 : Unlimited SSL VPN Users & 1 PPTP VPN User per account :
: 0.0 : 2 GB :
: 0.0 : 1 x 2.0 GHz or higher Core :
: 0.000 : Total hourly cost :
:.....:

```

After the last command, the virtual server is now being built. It should instantly appear in your virtual server list now.

```

$ slcli vs list
:.....:
↪.....:
:   id   : datacenter :          host           : cores : memory : primary_ip : ↪
↪backend_ip : active_transaction :
:.....:
↪.....:
: 1234567 : ams01      : example.softlayer.com : 2     : 1G     : 108.168.200.11 : 10.54.
↪80.200 : Assign Host :
:.....:
↪.....:

```

Cool. You may ask, “It’s creating... but how do I know when it’s done?” Well, here’s how:

```
$ slcli vs ready 'example' --wait=600
READY
```

When the previous command returns, you’ll know that the virtual server has finished the provisioning process and is ready to use. This is *very* useful for chaining commands together.

Now that you have your virtual server, let’s get access to it. To do that, use the *slcli vs detail* command. From the example below, you can see that the username is ‘root’ and password is ‘ABCDEFGH’.

**Warning:** Be careful when using the *-passwords* flag. This will print the virtual server’s password on the screen. Make sure no one is looking over your shoulder. It’s also advisable to change your root password soon after creating your virtual server, or to create a user with sudo access and disable SSH-based login directly to the root account.

```
$ slcli vs detail example --passwords
:.....:
:      Name : Value      :
:.....:
:      id   : 1234567     :
: hostname : example.softlayer.com :
: status   : Active              :
: state    : Running              :
: datacenter : ams01                :
: cores    : 2                   :
: memory   : 1G                   :
: public_ip : 108.168.200.11       :
: private_ip : 10.54.80.200         :
: os       : Debian                :
: private_only : False                :
: private_cpu : False                :
: created   : 2013-06-13T08:29:44-06:00 :
: modified  : 2013-06-13T08:31:57-06:00 :
: users    : root ABCDEFGH        :
:.....:
```

### 6.35.1 virtual bandwidth

Bandwidth data over date range. Bandwidth is listed in GB

Using just a date might get you times off by 1 hour, use T00:01 to get just the specific days data Timezones can also be included with the YYYY-MM-DDTHH:mm:ss.00000-HH:mm format.

Due to some rounding and date alignment details, results here might be slightly different than results in the control portal.

Example:

```
slcli hw bandwidth 1234 -s 2019-05-01T00:01 -e 2019-05-02T00:00:01.00000-12:00
```

```
virtual bandwidth [OPTIONS] IDENTIFIER
```



## Options

- s, **--start\_date** <start\_date>  
**Required** Start Date YYYY-MM-DD, YYYY-MM-DDTHH:mm:ss,
- e, **--end\_date** <end\_date>  
**Required** End Date YYYY-MM-DD, YYYY-MM-DDTHH:mm:ss
- p, **--summary\_period** <summary\_period>  
300, 600, 1800, 3600, 43200 or 86400 seconds  
**Default** 3600
- q, **--quite\_summary**  
Only show the summary table  
**Default** False

## Arguments

### IDENTIFIER

Required argument

If no timezone is specified, IMS local time (CST) will be assumed, which might not match your user's selected timezone.

## 6.35.2 virtual cancel

Cancel virtual servers.

```
virtual cancel [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.35.3 virtual capture

Capture one or all disks from a virtual server to a SoftLayer image.

```
virtual capture [OPTIONS] IDENTIFIER
```

## Options

- n, **--name** <name>  
**Required** Name of the image
- all** <all>  
Capture all disks belonging to the VS
- note** <note>  
Add a note to be associated with the image

## Arguments

### IDENTIFIER

Required argument

## 6.35.4 virtual create

Order/create virtual servers.

```
virtual create [OPTIONS]
```

## Options

- H, --hostname** <hostname>  
**Required** Host portion of the FQDN
- D, --domain** <domain>  
**Required** Domain portion of the FQDN
- c, --cpu** <cpu>  
Number of CPU cores (not available with flavors)
- m, --memory** <memory>  
Memory in mebibytes (not available with flavors)
- f, --flavor** <flavor>  
Public Virtual Server flavor key name
- d, --datacenter** <datacenter>  
**Required** Datacenter shortname
- o, --os** <os>  
OS install code. Tip: you can specify <OS>\_LATEST
- image** <image>  
Image ID. See: 'slcli image list' for reference
- boot-mode** <boot\_mode>  
Specify the mode to boot the OS in. Supported modes are HVM and PV.
- billing** <billing>  
Billing rate  
**Default** hourly  
**Options** hourly | monthly
- dedicated, --public**  
Create a Dedicated Virtual Server
- host-id** <host\_id>  
Host Id to provision a Dedicated Host Virtual Server onto
- san**  
Use SAN storage instead of local disk.
- test**  
Do not actually create the virtual server

---

**--export** <export>  
Exports options to a template file

**-i, --postinstall** <postinstall>  
Post-install script to download

**-k, --key** <key>  
SSH keys to add to the root user (multiple occurrence permitted)

**--disk** <disk>  
Disk sizes (multiple occurrence permitted)

**--private**  
Forces the VS to only have access the private network

**--like** <like>  
Use the configuration from an existing VS

**-n, --network** <network>  
Network port speed in Mbps

**-g, --tag** <tag>  
Tags to add to the instance (multiple occurrence permitted)

**-t, --template** <template>  
A template file that defaults the command-line options

**-u, --userdata** <userdata>  
User defined metadata string

**-F, --userfile** <userfile>  
Read userdata from file

**--vlan-public** <vlan\_public>  
The ID of the public VLAN on which you want the virtual server placed

**--vlan-private** <vlan\_private>  
The ID of the private VLAN on which you want the virtual server placed

**--subnet-public** <subnet\_public>  
The ID of the public SUBNET on which you want the virtual server placed

**--subnet-private** <subnet\_private>  
The ID of the private SUBNET on which you want the virtual server placed

**--router-public** <router\_public>  
The ID of the public ROUTER on which you want the virtual server placed

**--router-private** <router\_private>  
The ID of the private ROUTER on which you want the virtual server placed

**-S, --public-security-group** <public\_security\_group>  
Security group ID to associate with the public interface (multiple occurrence permitted)

**-s, --private-security-group** <private\_security\_group>  
Security group ID to associate with the private interface (multiple occurrence permitted)

**--wait** <wait>  
Wait until VS is finished provisioning for up to X seconds before returning

**--placementgroup** <placementgroup>  
Placement Group name or Id to order this guest on. See: slcli vs placementgroup list

**--ipv6**

Adds an IPv6 address to this guest

**--transient**

Create a transient virtual server

See 'slcli vs create-options' for valid options

### 6.35.5 virtual create-options

Virtual server order options.

```
virtual create-options [OPTIONS] [LOCATION]
```

#### Options

**--vsi-type** <vsi\_type>

VS keyName type.

**Default** PUBLIC\_CLOUD\_SERVER

**Options** PUBLIC\_CLOUD\_SERVER | TRANSIENT\_CLOUD\_SERVER | SUS-  
PEND\_CLOUD\_SERVER | CLOUD\_SERVER

**-p, --prices**

Use `-prices` to list the server item prices, and to list the Item Prices by location, add it to the `-prices` option using location short name, e.g. `-prices dal13`

#### Arguments

**LOCATION**

Optional argument

### 6.35.6 virtual dns-sync

Sync DNS records.

```
virtual dns-sync [OPTIONS] IDENTIFIER
```

#### Options

**-a, --a-record**

Sync the A record for the host

**--aaaa-record**

Sync the AAAA record for the host

**--ptr**

Sync the PTR record for the host

**--ttl** <ttl>

Sets the TTL for the A and/or PTR records

**Default** 7200

## Arguments

### IDENTIFIER

Required argument

If you don't specify any arguments, it will attempt to update both the A and PTR records. If you don't want to update both records, you may use the `-a` or `-ptr` arguments to limit the records updated.

## 6.35.7 virtual edit

Edit a virtual server's details.

```
virtual edit [OPTIONS] IDENTIFIER
```

## Options

- D, --domain** <domain>  
Domain portion of the FQDN
- H, --hostname** <hostname>  
Host portion of the FQDN. example: server
- g, --tag** <tag>  
Tags to set or empty string to remove all
- u, --userdata** <userdata>  
User defined metadata string
- F, --userfile** <userfile>  
Read userdata from file
- public-speed** <public\_speed>  
Public port speed.  
**Options** 0 | 10 | 100 | 1000 | 10000
- private-speed** <private\_speed>  
Private port speed.  
**Options** 0 | 10 | 100 | 1000 | 10000

## Arguments

### IDENTIFIER

Required argument

### 6.35.8 virtual list

List virtual servers.

```
virtual list [OPTIONS]
```

#### Options

- c, --cpu <cpu>**  
Number of CPU cores
- D, --domain <domain>**  
Domain portion of the FQDN
- d, --datacenter <datacenter>**  
Datacenter shortname
- H, --hostname <hostname>**  
Host portion of the FQDN
- m, --memory <memory>**  
Memory in mebibytes
- n, --network <network>**  
Network port speed in Mbps
- hourly**  
Show only hourly instances
- monthly**  
Show only monthly instances
- transient <transient>**  
Filter by transient instances
- hardware**  
Show the all VSI related to hardware
- all-guests**  
Show the all VSI and hardware VSIs
- tag <tag>**  
Filter by tags (multiple occurrence permitted)
- sortby <sortby>**  
Column to sort by  
**Default** hostname
- columns <columns>**  
Columns to display. [options: guid, primary\_ip, backend\_ip, datacenter, action, power\_state, created\_by, tags]  
**Default** id,hostname,primary\_ip,backend\_ip,datacenter,action
- l, --limit <limit>**  
How many results to get in one api call, default is 100  
**Default** 100

### 6.35.9 virtual pause

Pauses an active virtual server.

```
virtual pause [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**

Required argument

### 6.35.10 virtual power-on

Power on a virtual server.

```
virtual power-on [OPTIONS] IDENTIFIER
```

#### Arguments

**IDENTIFIER**

Required argument

### 6.35.11 virtual power-off

Power off an active virtual server.

```
virtual power-off [OPTIONS] IDENTIFIER
```

#### Options

**--hard, --soft**

Perform a hard shutdown

#### Arguments

**IDENTIFIER**

Required argument

### 6.35.12 virtual resume

Resumes a paused virtual server.

```
virtual resume [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.35.13 virtual rescue

Reboot into a rescue image.

```
virtual rescue [OPTIONS] IDENTIFIER
```

## Arguments

### IDENTIFIER

Required argument

## 6.35.14 virtual reboot

Reboot an active virtual server.

```
virtual reboot [OPTIONS] IDENTIFIER
```

## Options

**--hard, --soft**

Perform a hard or soft reboot

## Arguments

### IDENTIFIER

Required argument

## 6.35.15 virtual ready

Check if a virtual server is ready.

```
virtual ready [OPTIONS] IDENTIFIER
```

## Options

**--wait <wait>**

Seconds to wait

**Default 0**



## Arguments

### IDENTIFIER

Required argument

## 6.35.16 virtual upgrade

Upgrade a virtual server.

```
virtual upgrade [OPTIONS] IDENTIFIER
```

## Options

**--cpu** <cpu>

Number of CPU cores

**--private**

CPU core will be on a dedicated host server.

**--memory** <memory>

Memory in megabytes

**--network** <network>

Network port speed in Mbps

**--add-disk** <add\_disk>

add Hard disk in GB

**--resize-disk** <resize\_disk>

Update disk number to size in GB. `--resize-disk 250 2`

**--flavor** <flavor>

Flavor keyName Do not use `--memory`, `--cpu` or `--private`, if you are using flavors

## Arguments

### IDENTIFIER

Required argument

Note: SoftLayer automatically reboots the VS once upgrade request is placed. The VS is halted until the Upgrade transaction is completed. However for Network, no reboot is required.

## 6.35.17 virtual usage

Usage information of a virtual server.

```
virtual usage [OPTIONS] IDENTIFIER
```

## Options

- s, **--start\_date** <start\_date>  
    **Required** Start Date e.g. 2019-3-4 (yyyy-MM-dd)
- e, **--end\_date** <end\_date>  
    **Required** End Date e.g. 2019-4-2 (yyyy-MM-dd)
- t, **--valid\_type** <valid\_type>  
    **Required** Metric\_Data\_Type keyName e.g. CPU0, CPU1, MEMORY\_USAGE, etc.
- p, **--summary\_period** <summary\_period>  
    300, 600, 1800, 3600, 43200 or 86400 seconds

## Arguments

**IDENTIFIER**  
    Required argument

### 6.35.18 virtual storage

Get storage details for a virtual server.

```
virtual storage [OPTIONS] IDENTIFIER
```

## Arguments

**IDENTIFIER**  
    Required argument

### 6.35.19 virtual billing

Get billing for a virtual device.

```
virtual billing [OPTIONS] IDENTIFIER
```

## Arguments

**IDENTIFIER**  
    Required argument

### 6.35.20 virtual detail

Get details for a virtual server.

```
virtual detail [OPTIONS] IDENTIFIER
```

#### Options

- passwords**  
Show passwords (check over your shoulder!)
- price**  
Show associated prices

#### Arguments

**IDENTIFIER**  
Required argument

### 6.35.21 virtual reload

Reload operating system on a virtual server.

```
virtual reload [OPTIONS] IDENTIFIER
```

#### Options

- i, --postinstall** <postinstall>  
Post-install script to download
- image** <image>  
Image ID. The default is to use the current operating system. See: 'slcli image list' for reference
- k, --key** <key>  
SSH keys to add to the root user (multiple occurrence permitted)

#### Arguments

**IDENTIFIER**  
Required argument

### 6.35.22 virtual credentials

List virtual server credentials.

```
virtual credentials [OPTIONS] IDENTIFIER
```

#### Arguments

##### IDENTIFIER

Required argument

### 6.35.23 virtual migrate

Manage VSIs that require migration. Can migrate Dedicated Host VSIs as well.

```
virtual migrate [OPTIONS]
```

#### Options

**-g, --guest** <guest>

Guest ID to immediately migrate.

**-a, --all**

Migrate ALL guests that require migration immediately.

**-h, --host** <host>

Dedicated Host ID to migrate to. Only works on guests that are already on a dedicated host.

### 6.35.24 virtual authorize-storage

Authorize File, Block and Portable Storage to a Virtual Server.

```
virtual authorize-storage [OPTIONS] IDENTIFIER
```

#### Options

**-u, --username-storage** <username\_storage>

The storage username to be added to the virtual server

**--portable-id** <portable\_id>

The portable storage id to be added to the virtual server

## Arguments

### IDENTIFIER

Required argument

Manages the migration of virtual guests. Supports migrating virtual guests on Dedicated Hosts as well.

## 6.35.25 Reserved Capacity

### Working with Reserved Capacity

There are two main concepts for Reserved Capacity. The [Reserved Capacity Group](#) and the [Reserved Capacity Instance](#). The Reserved Capacity Group, is a set block of capacity set aside for you at the time of the order. It will contain a set number of Instances which are all the same size. Instances can be ordered like normal VSIs, with the exception that you need to include the reservedCapacityGroupId, and it must be the same size as the group you are ordering the instance in.

- [About Reserved Capacity](#)
- [Reserved Capacity FAQ](#)

The SLCLI supports some basic Reserved Capacity Features.

#### vs capacity create

This command will create a Reserved Capacity Group.

**Warning: These groups can not be canceled until their contract expires in 1 or 3 years!**

```
$ slcli vs capacity create --name test-capacity -d dal13 -b 1411193 -c B1_1X2_1_YEAR_
↪TERM -q 10
```

#### vs cacpacity create\_options

This command will print out the Flavors that can be used to create a Reserved Capacity Group, as well as the backend routers available, as those are needed when creating a new group.

#### vs capacity create\_guest

This command will create a virtual server (Reserved Capacity Instance) inside of your Reserved Capacity Group. This command works very similar to the *slcli vs create* command.

```
$ slcli vs capacity create-guest --capacity-id 1234 --primary-disk 25 -H ABCD -D test.
↪com -o UBUNTU_LATEST_64 --ipv6 -k test-key --test
```



## vs placementgroup create

This command will create a placement group.

```
$ slcli vs placementgroup create --name testGroup -b bcr02a.dal06 -r SPREAD
```

### Options

- name TEXT** Name for this new placement group. [required]
- b, --backend\_router TEXT** backendRouter, can be either the hostname or id. [required]
- r, --rule TEXT** The keyName or Id of the rule to govern this placement group. [required]

## vs placementgroup create-options

This command will print out the available routers and rule sets for use in creating a placement group.

```
$ slcli vs placementgroup create-options
:.....:
:           Available Routers           :
:.....:
: Datacenter : Hostname   : Backend Router Id :
:.....:
: Washington 1 : bcr01.wdc01 :          16358     :
: Tokyo 5      : bcr01a.tok05 :          1587015   :
:.....:
: Rules       :
:.....:
: Id : KeyName :
:.....:
: 1  : SPREAD  :
:.....:
```

## vs placementgroup delete

This command will remove a placement group. The placement group needs to be empty for this command to succeed.

### Options

- purge** Delete all guests in this placement group. The group itself can be deleted once all VMs are fully reclaimed

```
$ slcli vs placementgroup delete testGroup
```

You can use the flag `--purge` to auto-cancel all VSIs in a placement group. You will still need to wait for them to be reclaimed before proceeding to delete the group itself.

```
$ slcli vs placementgroup delete testGroup --purge
You are about to delete the following guests!
  issues10691547768562.test.com, issues10691547768572.test.com, issues10691547768552.
↪test.com, issues10691548718280.test.com
This action will cancel all guests! Continue? [y/N]: y
Deleting issues10691547768562.test.com...
Deleting issues10691547768572.test.com...
Deleting issues10691547768552.test.com...
Deleting issues10691548718280.test.com...
```

### vs placementgroup list

This command will list all placement groups on your account.

```
$ slcli vs placementgroup list
:.....:
↪...:
:
:                               Placement Groups                               ↪
↪ :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
↪...:
:  Id  :      Name      : Backend Router : Rule  : Guests :      Created      ↪
↪ :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
↪...:
: 31741 :      fotest      : bcr01a.tor01   : SPREAD : 1      : 2018-11-22T14:36:10-
↪06:00 :
: 64535 :      testGroup   : bcr01a.mex01   : SPREAD : 3      : 2019-01-17T14:36:42-
↪06:00 :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
↪...:
```

### vs placementgroup detail

This command will provide some detailed information about a specific placement group

```
$ slcli vs placementgroup detail testGroup
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
:  Id  :      Name      : Backend Router : Rule  :      Created      :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
: 64535 : testGroup     : bcr01a.mex01   : SPREAD : 2019-01-17T14:36:42-06:00 :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
↪.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
:  Id  :      FQDN      : Primary IP     : Backend IP : CPU : Memory :
↪ Provisioned : Transaction :
:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
↪.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
: 69134895 : testGroup62.test.com : 169.57.70.166 : 10.131.11.32 : 1 : 1024 : 2019-
↪01-17T17:44:50-06:00 :      -      :
```

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```
: 69134901 : testGroup72.test.com : 169.57.70.184 : 10.131.11.59 : 1 : 1024 : 2019-  
↪01-17T17:44:53-06:00 : - :  
: 69134887 : testGroup52.test.com : 169.57.70.187 : 10.131.11.25 : 1 : 1024 : 2019-  
↪01-17T17:44:43-06:00 : - :  
:.....:.....:.....:.....:.....:.....  
↪.....:.....:.....:.....:.....:.....
```



## 7.1 Contribution Guide

This page explains how to get started contributing code to the SoftLayer API Python Bindings project.

### 7.1.1 Code Organization

- **docs** - Where The source to this documentation lives.
- **SoftLayer** - All the source lives under here.
  - **API** - Primary API client.
  - **CLI** - Code for the command-line interface.
  - **managers** - API Managers. Abstractions to help use the API.

### 7.1.2 Setting Up A Dev Environment

Before working with the SoftLayer Python API client source, we strongly recommend that you know how to use Python's virtual environment, [virtualenv](#). Virtualenv allows you to create isolated Python environments that are individually tailored to particular development projects. Each environment can have its own set of libraries and even its own Python interpreter. This keeps them fully isolated, reducing the possibility of library conflicts between different projects.

After you have virtualenv, you should set up a virtual environment and activate it whenever you are working on softlayer-python. The commands needed to setup an environment and activate it might look something like this:

```
virtualenv --no-site-packages softlayer_env
source softlayer_env/bin/activate
```

Please refer to the virtualenv documentation for more information about creating, and working with virtual environments.

Once you have an appropriate environment, you will then download the SoftLayer API Python Bindings source code by following the [installation instructions](#). Change into softlayer-python source directory and run the following to install the pre-requisites that you'll need in order to run the test suites:

```
pip install -r tools/test-requirements.txt
```

### 7.1.3 Testing

The project has a mix of functional and unit tests. Before submitting changes to be integrated into the project, you should validate your code using `tox`. Simply issue the `tox` command from the root of the source tree:

```
tox
```

In addition to testing different versions of Python, `tox` checks for common mistakes in the code using `Flake8` and `pylint`. You should eliminate the linting errors that are reported before submitting your code. You can run only the linting checks by using this command:

```
tox -eanalysis
```

The project's configuration instructs `tox` to test against many different versions of Python. A `tox` test will use as many of those as it can find on your local computer.

Using `tox` to run tests in multiple environments can be very time consuming. If you wish to quickly run the tests in your own environment, you may do so using `py.test`. The command to do that is:

```
py.test tests
```

### Fixtures

Testing of this project relies quite heavily on fixtures to simulate API calls. When running the unit tests, we use the `FixtureTransport` class, which instead of making actual API calls, loads data from `/fixtures/SoftLayer_Service_Name.py` and tries to find a variable that matches the method you are calling.

When adding new Fixtures you should try to sanitize the data of any account identifying results, such as account ids, username, and that sort of thing. It is ok to leave the id in place for things like datacenter ids, price ids.

To Overwrite a fixture, you can use a mock object to do so. Like either of these two methods:

```
# From tests/CLI/modules/vs_capacity_tests.py
from SoftLayer.fixtures import SoftLayer_Product_Package

def test_create_test(self):
    item_mock = self.set_mock('SoftLayer_Product_Package', 'getItems')
    item_mock.return_value = SoftLayer_Product_Package.getItems_RESERVED_CAPACITY

def test_detail_pending(self):
    capacity_mock = self.set_mock('SoftLayer_Virtual_ReservedCapacityGroup', 'getObject')
    get_object = {
        'name': 'test-capacity',
        'instances': []
    }
    capacity_mock.return_value = get_object
```

## 7.1.4 Documentation

The project is documented in `reStructuredText` and built using `Sphinx`. If you have `fabric` installed, you simply need to run the following to build the docs:

```
fab make_html
```

The documentation will be built in `docs/_build/html`. If you don't have `fabric`, use the following commands.

```
cd docs
make html
sphinx-build -b html ./ ./html
```

The primary docs are built at [Read the Docs](#).

## 7.1.5 Style

This project tries to follow [PEP 8](#) and most of the style suggestions that `pyflakes` recommends. Run `Flake8` regularly. `Flake8`, with project-specific exceptions, can be run by using `tox`:

```
tox -e analysis
```

`Autopep8` can fix a lot of the simple `flake8` errors about whitespace and indentation.

```
autopep8 -r -a -v -i --max-line-length 119
```

## 7.1.6 Contributing

Contributing to the Python API bindings follows the [fork-pull-request model](#) on [GitHub](#). The project uses [GitHub's issue tracker](#) and [pull requests](#) to manage source control, bug fixes and new feature development regarding the API bindings and the CLI. In order to contribute, we require that you sign a contributor agreement:

- Sign our contributor agreement (CLA) You can find the CLA [here](#).
- If you're contributing on behalf of your employer we'll need a signed copy of our corporate contributor agreement (CCLA) as well. You can find the CCLA [here](#).

## 7.1.7 Developer Resources

## 7.2 Command-Line Interface Developer Guide

The SoftLayer CLI can be used to manage many different SoftLayer services directly from the command line.

The command line parsing is currently based on `click`, which is a command parsing library along with some additions to dynamically load modules from a routes-like file and from [entry points](#).

## 7.2.1 First Example

For the first example, we can create `slcli table-example` by creating the following file at `SoftLayer/CLI/table_example.py`:

```

"""A formatting table example."""
from SoftLayer.CLI import environment
from SoftLayer.CLI import formatting

import click

@click.command()
@environment.pass_env
def cli(env):
    """This returns an table that highlights how tables are output"""
    # create a table with two columns: col1, col2
    table = formatting.Table(['col1', 'col2'])

    # align the data facing each other
    # valid values are r, c, l for right, center, left
    # note, these are suggestions based on the format chosen by the user
    table.align['col1'] = 'r'
    table.align['col2'] = 'l'

    # add rows
    table.add_row(['test', 'test'])
    table.add_row(['test2', 'test2'])

    env.fout(table)

```

Then we need to register it so that `slcli table-example` will know to route to this new module. We do that by adding `ALL_ROUTES` in `SoftLayer/CLI/routes.py` to include the following:

```

...
('table-example', 'SoftLayer.CLI.table_example:cli'),
...

```

Which gives us

```

$ slcli table-example
:.....:
:  col1 : col2  :
:.....:
:  test : test   :
: test2 : test2  :
:.....:

$ slcli --format=raw table-example
test  test
test2 test2

```

Formatting of the data represented in the table is actually controlled upstream from the `CLIRunnable`'s making supporting more data formats in the future easier.

## 7.2.2 Arguments

A command usually isn't very useful without context or arguments of some kind. With click, you have a large array of argument and option types at your disposal. Additionally, with the SoftLayer CLI, we have global options and context which is stored in `SoftLayer.CLI.environment.Environment` and is attainable through a decorator located at `SoftLayer.CLI.environment.pass_env`. An example of options and the environment is shown below. It also shows how output should be done using `env.out` instead of printing. This is used for testing and to have a consistent way to print things onto the screen.

```
from SoftLayer.CLI import environment

import click

@click.command()
@click.option("--number",
              required=True,
              type=click.INT,
              help="print different output")
@click.option("--choice",
              type=click.Choice(['this', 'that']),
              help="print different output")
@click.option("--test", help="print different output")
@environment.pass_env
def cli(env, number, choice, test):
    """Argument parsing example"""

    if test:
        env.out("Just testing, move along...")
    else:
        env.out("This is fo'realz!")

    if choice == 'this':
        env.out("Selected this")
    elif choice == 'that':
        env.out("Selected that")

    env.out("This is a number: %d" % number)
```

Refer to the click library documentation for more options.

## 7.2.3 Accessing the API

A SoftLayer client is stood up for every command and is available through `SoftLayer.CLI.environment.Environment.client`. The example below shows how to make a simple API call to the `SoftLayer_Account::getObject`.

```
from SoftLayer.CLI import environment

import click

@click.command()
```

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```
@environment.pass_env
def cli(env):
    """Using the SoftLayer API client"""

    account = env.client['Account'].getObject()
    return account['companyName']
```

## 7.2.4 Aborting execution

When a confirmation fails, you probably want to stop execution and give a non-zero exit code. To do that, raise a *SoftLayer.CLI.exceptions.CLIAbort* exception with the message for the user as the first parameter. This will prevent any further execution and properly return the right error code.

```
raise CLIAbort("Aborting. Failed confirmation")
```

## 7.2.5 Documenting Commands

All commands should be documented, luckily there is a sphinx module that makes this pretty easy.

If you were adding a summary command to *slcli account* you would find the documentation in *docs/cli/account.rst* and you would just need to add this for your command

```
.. click:: SoftLayer.CLI.account.summary:cli
   :prog: account summary
   :show-nested:
```

The following REGEX can take the route entry and turn it into a document entry.

```
s/^\(['([a-z]*):([a-z-]*)', '([a-zA-Z\.\:~]*)'\)\),$/.. click:: $3\n   :prog: $1 $2\n   ↪:show-nested:\n/
```

Find:

```
^\(['([a-z]*):([a-z-]*)', '([a-zA-Z\.\:~]*)'\)\),$
```

REPLACE:

```
.. click:: $3
   :prog: $1 $2
   :show-nested:
```

I tried to get sphinx-click to auto document the ENTIRE slcli, but the results were all on one page, and required a few changes to sphinx-click itself to work. This is due to the fact that most commands in SLCLI use the function name “cli”, and some hacks would have to be put in place to use the path name instead.



## 7.2.6 Architecture

*SLCLI* is the base command, and it starts at *SoftLayerCLLcore.py*. Commands are loaded from the *SoftLayer-CLLroutes.py* file. How Click figures this out is defined by the *CommandLoader* class in *core.py*, which is an example of a *MultiCommand*.

There are a few examples of commands that are three levels deep, that use a bit more graceful command loader.

- *SoftLayerCLLvirtcapacity\_\_init\_\_.py*
- *SoftLayerCLLvirtplacementgroup\_\_init\_\_.py*
- *SoftLayerCLLobject\_storagecredential\_\_init\_\_.py*

These commands are not directly listed in the routes file, because the autoloader doesn't have the ability to parse multiple commands like that. For now it was easier to make the rare third level commands have their own special loader than re-write the base command loader to be able to look deeper into the project for commands.



## EXTERNAL LINKS

- [SoftLayer API Documentation](#)
- [Source on GitHub](#)
- [Issues](#)
- [Pull Requests](#)
- [PyPI](#)



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