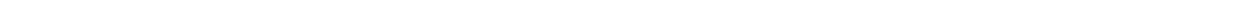




**VDI Assessment and Diagnostics**

# **Reference Guide**

**Version 4.6.0**



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## Chapter 1: Introduction to ssconsole

---

|   |  |
|---|--|
| <b>About ssconsole</b>                        | The Stratusphere virtual appliance command line interface (CLI), called ssconsole, has two types of commands: Action Commands and Assignment commands. You can use these commands to configure Stratusphere virtual appliances from ssconsole.                               |
| <b>Action commands vs Assignment commands</b> | Action commands cause ssconsole to immediately perform the action you specify. Assignment commands assign a value to a configuration element. Assignment commands take effect immediately, but are not permanent until you execute a <code>write</code> command (see below). |
| <b>Accessing ssconsole</b>                    | You can access ssconsole by setting up a terminal services session directly to the virtual appliance or by SSH.  |
| <b>Organization of this chapter</b>           | This chapter describes all the Action commands, followed by the Assignment commands.   |

## ssconsole Action Commands

### Guidelines

- At the `ssconsole` prompt, type the command as shown in the left column below. Some commands have arguments that give you additional control. These are shown in smaller print in the left column, below the command they are used with.
- `ssconsole` executes action commands as soon as you enter them.
- Commands that return confirmation prompts are noted below.
- `ssconsole` reports any errors it encounters to the console and to the system log.
- You can use action commands in any order.

### exit

---

This command **ends** the `ssconsole` session.

**Note:** Any configuration changes you have made during the session will not be saved unless you execute the `write` command before exiting.

### help or ?

---

#### help

Type `help` before another command to display all subcommands within that category. The following shows the result of using the `help` command with the `policy` command:

```
SS>
SS>help software
software list
software install
software uninstall
software update tools
software check
set software update url
set software update proxy
SS>
```

?

Type a ? after a partial command to display related configurations and preferences. The following shows the result of using the ? command with the `software` command:

```
SS>  
SS>software ?  
software check  
software install  
software list  
software uninstall  
software update tools  
SS>software _
```

Note that the ? command returns you to the command prompt including the partial command you typed before you added the ? command.

## quickstart

This command launches a series of prompts that lead you through a quick configuration of the minimum elements required to start the virtual appliance. These include:

- virtual appliance hostname.
- virtual appliance IP address.
- virtual appliance netmask
- default gateway IP address
- virtual appliance DNS server. You can specify multiple DNS servers, separating them with commas.

If the virtual appliance is a Network Station, you will be prompted for additional information that enables the Hub to automatically register the Station. The additional prompts are:

- Hub address (the address of the Stratusphere Hub you want this Station to register with)
- Hub Admin account
- Hub Admin password (the admin account and password—on the Hub— that the Station will use to register with the Hub)

**Note:** If you leave the center address prompt blank, Stratusphere cannot auto-register the Station, and the other prompts will not appear.

## reboot

Reboots the operating system and restarts the virtual appliance.

`ssconsole` returns a confirmation prompt before executing the command.

## show

---

Displays information about the virtual appliance. The information `ssconsole` displays for a Network Station is slightly different than what it displays for a Stratusphere Hub.

Type the command by itself for a complete list of information or filter it by adding one of five arguments:

- `info`
- `running`
- `config`
- `mac`
- `disk`

### **info**

The `show info` command displays information about the virtual appliance's interfaces. You can add another argument to specify which interface you want information about:

- `internal`
- `external`
- `management`
- `bridge`

**Example:** `show info internal`

### **running**

The `show running` command displays all the values that are currently in effect. These include saved values and any values you have changed since you last executed the `write` command. The `write` command saves temporary values so they are persistent over a reboot.

### **config**

The `show config` command displays the permanent configuration values (those that have been saved using the `write` command).

### **mac**

The `show mac` command displays the learned MAC addresses for the bridge.

### **disk**

The `show disk` command displays all the disk drives available for use as the Stratusphere Hub database drive.

### **quickstart**

The `show quickstart` command displays the current quickstart settings. See the `quickstart` command on page 4.

## add disk

---

You can add drives to the virtual appliance, and then inform the Stratusphere Hub about them by using the `add drives` command. Complete instructions for the process of adding a drive are located later in this book.

```
add disk <disk name> <where>
```

You can use the `show disk` command (above) to obtain the disk name if necessary.

---

## software

---

Use the `software` commands to control the software release running on the virtual appliance (including upgrades). The `software` commands include:

### install

To install a software component from a remote site via `http`, `ftp`, or `scp`, type:

```
software install latest:<type>:<location>
```

if you use `software install latest` the virtual appliance will communicate with Liquidware Labs software distribution site and automatically upgrade to the latest release.

The format for `<type>` is one of the following:

- `http`—the `http` URL where the software component can be downloaded from
- `ftp`—the `ftp` URL where the software component can be downloaded from
- `ssh`—a URL that can be used to use SSH to copy software components to the appliance.

The format for `<location>` is: `//<user>:<password>@<host>:<port>/<url-path>` (as defined in RFC1738).

**Example:** `software install`  
`http://download.example.com/upgrades/2.5.1_2.5.2.bin`

**Example:** `software install`  
`http://admin:password@download.example.com:8080/upgrades/2.5.1_2.5.2.bin`

### uninstall

To remove a software component, type: `software uninstall <component>`

where `<component>` is the name of the software component you want to uninstall.

**Note:** For a list of available components, use the `software list available` command.

### update tools

The `software update tools` command lets you install or update VMware tools without using vCenter. You must first have installed VMware tools. Right-click the `vm` in the vCenter and choose `Install/Upgrade VMware tools`. Choose `Interactive Tools Upgrade`, and then click `OK`.

In `ssconsole`, type `software update tools`, and Stratusphere mounts the `cdrom` with the correct iso that has the latest VMware tools.

### check

The `software check` command causes `ssconsole` to list all available Stratusphere software.

Syntax: `software check`

---

## shutdown

---

This command shuts the virtual appliance down. `ssconsole` returns a confirmation prompt before executing the command.

## write

---

Saves any unsaved configuration values so that they are persistent over a reboot. During a `ssconsole` session, you can use the assignment commands to assign values to configuration parameters. These values take effect immediately, but are not permanent until you use the `write` command.

## ping

---

The `ping` command allows you to ping a device. By default, it will send 4 pings.

```
ping <host> <count>
```

where `<host>` is the host being pinged and `<count>` is an optional count of how many ping packets to send. If zero is given, the ping will run continuously. You can interrupt the ping by typing CTRL-C.

## traceroute

---

The `traceroute` command allows you to do a traceroute to the device.

```
traceroute <host>
```

where `<host>` is the host to traceroute to. You can interrupt the traceroute by typing CTRL-C.

## rescan nic

---

The `rescan nic` determines what network interfaces are on the appliance and configures the appliance to use those NICs. Execute the following command to rescan the network interfaces:

```
rescan nic
```

## restart services

---

The `restart services` command restarts the backend services needed by the virtual appliance. Execute the following command to restart services:

```
restart services
```

The `restart services` command prompts you with the prompt “You are about to restart the system services. Continue? [yes/no]”. Yes and No are the allowed responses to this prompt.

---

## diag

---

The *diag* command displays basic diagnostic information and provides you with an easy way to send extensive diagnostic information to customer support, if needed. Comprehensive diagnostic information can be sent via email, FTPed, SSHed, or put on a USB stick.

```
diag
```

The *diag* command displays basic diagnostic information. The output might look like this:

```
Version: 4.2.0-1

HA: OFF

Overall Health Check: PASS

System Modules ----- [PASS]
System Identity ----- [PASS]
Key Material ----- [PASS]
Capturing Traffic ----- [PASS]
Services ----- [PASS]
Interfaces ----- [PASS]
Policy Loaded ----- [PASS]
Disk Space ----- [PASS]

Done !

Warning: This file may contain sensitive data.
```

### email

Adding an email address to the *diag* command causes it to send extensive diagnostic information to the email account. A password can be given after the email address. This password is used to encrypt the data before it is sent. The recipient of the email must use this password to decrypt the diagnostic data.

```
diag janet@mail.example.com secretpassword
```

### ftp

Giving an FTP URL to the *diag* command causes it to send extensive diagnostic information using FTP. A password can be given after the URL. This password is used to encrypt the data before it is sent.

```
diag
ftp://admin:password@download.example.com/diag.tar.enc.gz
secretpassword
```

**ssh** Giving a SSH URL to the diag command, cause it to send extensive diagnostic information using SSH. A password can be given after the URL. This password is used to encrypt the data before it is sent.

```
diag  
ssh://admin:password@download.example.com/diag.tar.enc.gz  
secretpassword
```

**usb** Indicating to the diag command that it should use USB causes it to copy extensive diagnostic information to the plugged in usb memory stick. A password can be given after the URL. This password is used to encrypt the data before it is sent.

```
diag usb://diag.tar.enc.gz secretpassword
```

## push policy

---

You can push policy from the command line. This command is useful after you perform command line tasks that require you to update policy, such as changing policy mode from monitoring to enforcement.

```
push policy
```

---

# ssconsole Assignment Commands

## Guidelines

- At the ssconsole prompt, type the command as shown in the left column below. Some commands have arguments that give you additional control. These are shown in smaller print in the left column, below the command they are used with.
- Assignment commands take effect as soon as you enter them, but they are not permanent until you execute a `write` command (see above).
- Commands that return confirmation prompts are noted below.
- ssconsole reports any errors it encounters.

## management

---

### Overview

Use the `management` commands to configure the virtual appliance's management interface.

### ip

To set the IP address of the management interface, type:

```
set management ip <IPv4 address>
```

**Example:** 10.10.3.3

### netmask

To set the netmask of the management interface, type:

```
set management netmask <IPv4 netmask>
```

**Example:** 255.255.255.0

### default gateway

To set the default gateway of the management interface, type:

```
set management default gateway <IPv4 address of the default gateway>
```

**Example:** 10.10.3.1

- `auto`—Auto-detect the correct duplex

If the management interface is a **copper NIC** and **both** duplex and the link partner are set to **auto-negotiate**, the board auto-detects the correct duplex.

If the link partner is forced (either full or half), the duplex defaults to half-duplex.

## Port

---

The port subcomponent is used to configure the external and internal interfaces.

### Port number

The port commands require the port number. To see a list of port numbers, type `show port`

### external

Execute the following command to indicate that the interface is an external port:

```
set port <port number> type external
```

Where `<port number>` is a integer representing the physical port.

**internal** Execute the following command to indicate that the interface is an internal port:

```
set port <port number> type internal
```

Where <port number> is a integer representing the physical port.

**vlan** Execute the following command to set vlan tags for a particular port:

```
set port <port number> vlan <tag1,tag2>
```

Where <port> is an integer representing the physical port and <tag1,tag2> is a list of numbers between 0 and 65536 representing a vlan tag. Once the vlan tag is set, all packets for that vlan are routed from the *external*/interface to this port. All packets coming in on this port are tagged with that particular vlan tag.

If you have multiple vlans, repeat this command for each vlan.

Adding the command “off” at the end of the vlan command causes the vlan tag to be removed.

```
set port <port number> vlan <number> off
```

## bridge

---

Bridge commands are used in enforcement mode only.

Every virtual appliance has three interfaces: management, external, and internal. The external and internal interfaces are bridged together. The following commands let you control the operation of the bridge.

**enabled** To enable or disable the bridge port, type:

```
set bridge <on or off>
```

**priority** The bridge priority controls which virtual appliance is primary and which is secondary. The bridge with the lowest priority is the primary (root) bridge.

```
Type: set bridge priority <number>
```

where <number> is a number between 0 and 65535.

**mtu** To set the bridge mtu, type: 

```
set bridge mtu <number>
```

where <number> is a number between 0 and the maximum Ethernet frame size.

**aging time** The bridge keeps track of Ethernet addresses seen on each port. When it needs to forward a frame, and it knows which port the destination Ethernet address is located on, it can forward the frame to that port only.

However, the Ethernet address is not static, so it is removed after it has not been seen for some amount of time. You can set this amount of time by typing:

```
set bridge aging time <number seconds>
```

After <number seconds> passes without the virtual appliance seeing a given Ethernet address, it deletes the address from its tracking database.

**forward delay time** To set the bridge’s forward delay time, type: 

```
set bridge forward delay time <number seconds >
```

where <number seconds> is the forward delay time in seconds.

- 
- hello time** To set the bridge hello time, type: `set bridge hello time <number seconds >`
- where `<number seconds>` is the number of seconds the hello time should be set to.
- maximum message age** To set the bridge maximum message age, type:
- `set bridge max age <number seconds >`
- where `<number seconds>` is the number of seconds the maximum message age should be set to.
- stp** To enable Spanning Tree Protocol (STP) on the bridges, type: `set stp <parameter>`
- where `<parameter>` can be:
- `on—enable stp`
  - `off—disable stp`

## SNMP

---

These commands allow SNMP to be configured to be queried. At this time, Stratusphere does not support setting SNMP traps on system events.

- snmp** To enable SNMP on the virtual appliance, type:
- `set snmp <parameter>`
- where `<parameter>` can be:
- `on—enable SNMP to send SNMP v1 or SNMP v2 notifications`
  - `off—disable SNMP`

- community** The SNMP community is the group the virtual appliance belongs to. The SNMP community string defines the relationship between an SNMP server and the client. This string acts as a password to control the client's access to the server.

To set the community string on the virtual appliance, type:

`set snmp community <string>`

where `<string>` string is string of characters.

- location** Location refers to the physical location of the virtual appliance.

To set the location string of the virtual appliance, type:

`set snmp location <string>`

where `<string>` string is string of characters.

**contact information** Contact information identifies the person who monitors this Station Group at your company.

To set the contact information, type:

```
set snmp contact <string>
```

where <string> string is string of characters.

## password

---

The `password` command is used to set the password of the three accounts on the virtual appliance: `root`, `friend`, and `ssconsole`.

**root** To set the root password, type:

```
set password root <password>
```

where <password> is the password for root.

**friend** To set the friend password, type:

```
set password friend <password>
```

where <password> is the password for friend.

**ssconsole** To set the `ssconsole` password, type:

```
set password ssconsole <password>
```

where <password> is the password for `ssconsole`.

## ssh

---

**ssh** The SSH daemon is turned OFF by default. To turn the SSH daemon ON or OFF, type:

```
set ssh <parameter>
```

where <parameter> can be:

- `on`—enable the SSH daemon
- `off`—disable the SSH daemon

**ssconsole** The ability to access the `ssconsole` via SSH can be turned ON or OFF by executing the following command:

```
set ssh ssconsole <parameter>
```

where <parameter> can be:

- `on`—allow users to use SSH to access `ssconsole`
- `off`—prevent users from using SSH to access `ssconsole`

It is OFF by default.

---

## system

---

|                              |   |
|------------------------------|---|
|                              | System commands affect the entire virtual appliance.  |
| <b>type</b>                  | The <code>type</code> command is a read-only value that indicates the appliance type: Network Station or Hub.   |
| <b>hostname</b>              | To set the host name of the virtual appliance, type:<br><pre>set system hostname &lt;parameter&gt;</pre> <p>where <code>&lt;parameter&gt;</code> is the FQDN of this virtual appliance.</p>   |
| <b>mail relay</b>            | To set the mail relay on the virtual appliance, type:<br><pre>set system mail relay &lt;parameter&gt;</pre> <p>where <code>&lt;parameter&gt;</code> is the hostname of the mail relay.</p>  |
| <b>Update client address</b> | To set parameters to update the client IP address, type:<br><pre>set system update client address &lt;parameter&gt;</pre> <p>where <code>&lt;parameter&gt;</code> can be:</p> <ul style="list-style-type: none"><li>• <code>on</code>—turn on the ability for the Stratusphere Hub to update the IP address of the client</li><li>• <code>off</code>—the Stratusphere Hub is not able to update the asset record's IP address</li></ul> |
| <b>hub address</b>           | For Network Stations only, this command sets the IP address of the remote Stratusphere Hub that manages this virtual appliance is required.<br><br>To set the IP address of the Stratusphere Hub, type:<br><pre>set system hub address &lt;IPv4 address of the Stratusphere Hub&gt;</pre>   |
| <b>hub admin</b>             | For Network Stations only, this command specifies the admin account on the Stratusphere Hub, which the Station can use to automatically register itself with the Center.<br><br><pre>set system hub admin &lt;admin account username&gt;</pre>  |
| <b>hub password</b>          | For Network Stations only, this command specifies the password of the admin account on the Stratusphere Hub, which the Station can use to automatically register itself with the Center.<br><br><pre>set system hub admin &lt;admin account username&gt;</pre>  |
| <b>hub dns name</b>          | For Stratusphere Hubs, the Stratusphere Hub's DNS name is required.<br><br>To set the DNS name for <b>this</b> Stratusphere Hub, type:<br><pre>set system hub dns name &lt;dns name&gt;</pre>   |
| <b>timezone</b>              | Set the time zone for this virtual appliance. You can also use the <code>timezone</code> command to display the currently set time zone to help when you're setting the time.   |

```
set system timezone <time zone>
```

**time** Set the local time (based on previously set time zone) for this virtual appliance. Use the format `YYYYMMDDHHmm`. Use zeros if you don't need both digits. For example, indicate January by typing `01` for the first `MM`.

```
set system time <time>
```

**dhcp** This command turns the embedding of Connector ID Key information in the DHCP protocol on or off.

```
set system dhcp <on|off>
```

**Note:** This command is available only on the Stratusphere Hub.

**ondemand** This command turns the on-demand protocol on or off. The default is OFF.

```
set system ondemand <on|off>
```

**Note:** This command is available only on the Stratusphere Hub.

**nonpersistent tracking** When using a system such as VMware View with non-persistent virtual desktops, turn this on to allow proper tracking of the non-persistent VMs that are dynamically destroyed and created. The default is ON.

```
set system nonpersistent tracking <on|off>
```

**Note:** This command is available only on the Stratusphere Hub.

**user privacy, machine privacy** Use these options when privacy regulations require it, or when for other reasons you do not want to record actual user and machine names. Turning ON user privacy will cause Stratusphere to encode all user names so the actual user names cannot be read or discovered, and turning ON machine privacy will do the same for machine names. The default is OFF.

```
set system user privacy <on|off>
```

```
set system machine privacy <on|off>
```

**Note:** These commands are only available on the Stratusphere Hub.

**clear cache** This command notifies all drivers to clear their cache.

```
set system clear cache <on|off>
```

**Note:** This command is available only on the Stratusphere Hub.

**hardware check** This command turns off hardware checking on all Connector ID Keys. The default is OFF.

```
set system hardware check <on|off>
```

**Note:** This command is available only on the Stratusphere Hub.

**allow database connection** This command allows computers to connect to the database port.

```
set system allow database connection <list of ips>
```

where `<list of ips>` is a comma-separated list of IP addresses that are allowed to connect to the database port.

**Note:** This command is available only on the Stratusphere Hub.

## dns

---

dns commands configure the domain name system, which resolves hostnames to IP addresses.

### **server**

To set the list of DNS servers to be used by this virtual appliance, type:

```
set dns server <hostname>
```

where <parameter> is a comma separated list of DNS servers.

### **search**

When a domain is not specified, append these domains when querying for an IP Address:

```
set dns search <domain>
```

where <domain> is a comma separated list of domains.

## ntp

---

The NTP server is turned OFF by default.

To turn the NTP daemon ON or OFF, type:

```
set ntp <parameter>
```

where <parameter> can be:

- `on`—enable the NTP daemon
- `off`—disable the NTP daemon

### server

NTP Time Servers are used by the virtual appliance to keep time in sync.

To provide a list of NTP Time Servers to be used by the virtual appliance, type:

```
set ntp server <parameter>
```

where <parameter> is a comma separated list of NTP servers.

## prompt

---

To change the `ssconsole` prompt, type:

```
set prompt <parameter>
```

where <parameter> can be any string.

The default prompt is `VS`

## audit

---

Audit data is delivered to the Stratusphere Hub at intervals based on time as defined by the `audit` command.

### time

To set the audit interval delivery time, type:

```
set audit time <numberparameter>
```

where `number` is the number of minutes or hours and `parameter` is *m* (minutes) or *h* (hours). Example: `set audit time 1m` would set the audit time to one minute.

### interval time

To set the amount of time that elapses between interval record collection events, type:

```
set audit interval time <numberparameter>
```

where `number` is the number of minutes or hours and `parameter` is *m* (minutes) or *h* (hours). Example: `set audit interval time 1m` would set the audit time to one minute. The default is 60 minutes.

---

## log

---

The log command allows you to set up logging to a remote syslog server.

### host

This command allows you to set the remote host that syslog messages should be sent to:

```
set log host <hostname>
```

where <hostname> can be an IP address or a hostname.

### selector

This command allows you to set what should be sent to the syslog server:

```
set log selector <sel1, sel2, ...>
```

where <sel1> is of the format *facility.priority*. The *facility* specifies what type of program is logging the message. It can be one of the following:

kern, mail, syslog, user, local0, local1, local2, local3, local4, local5, local6, local7

The *priority* determines the importance of the message. The priority can be (in order of decreasing importance): emerg, alert, crit, error, warning, notice, info, debug

---

## contrack

---

The contrack command controls some of the connection tracking parameters.

### irc

This command sets the ports that IRC protocol is running on:

```
set contrack irc ports <port-list>
```

where <port-list> is a comma separated list of port numbers.

### ftp

This command sets the ports that FTP protocol is running on:

```
set contrack ftp ports <port-list>
```

where <port-list> is a comma separated list of port numbers.

### tftp

This command sets the ports that TFTP protocol is running on:

```
set contrack tftp ports <port-list>
```

where <port-list> is a comma separated list of port numbers.

### tcp timeout established

This command sets the connection tracking timeout for the established connections.

```
set contrack tcp timeout established <seconds>
```

where <seconds> is number of seconds before we timeout. The default is 432,000 seconds (5 days).

### tcp timeout syn sent

This command sets the connection tracking timeout for how long the appliance stays in the SYN sent state.

```
set contrack tcp timeout syn sent <seconds>
```

where <seconds> is number of seconds before timeout. The default is 120 seconds (2 minutes).

|                                |  |
|--------------------------------|--|
| <b>udp timeout stream</b>      | <p>This command sets the connection tracking timeout for the udp stream.</p> <pre>set contrack udp timeout stream &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before timeout. The default is 30 seconds (2 minutes).</p>   |
| <b>udp timeout stream sent</b> | <p>This command sets the connection tracking timeout for the udp stream sent.</p> <pre>set contrack udp timeout stream sent &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before timeout. The default is 30 seconds (2 minutes).</p>                                       |
| <b>tcp timeout syn rcv</b>     | <p>This command sets the connection tracking timeout for how long the appliance stays in the SYN received state.</p> <pre>set contrack tcp timeout syn rcv &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 60 seconds.</p>                 |
| <b>tcp timeout fin wait</b>    | <p>This command sets the connection tracking timeout for how long the appliance stays in the FIN wait state.</p> <pre>set contrack tcp timeout fin wait &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 120 seconds (2 minutes).</p>       |
| <b>tcp timeout time wait</b>   | <p>This command sets the connection tracking timeout for how long the appliance stays in the time wait state.</p> <pre>set contrack tcp timeout time wait &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 120 seconds (2 minutes).</p>     |
| <b>tcp timeout close</b>       | <p>This command sets the connection tracking timeout for how long the appliance stays in the close state.</p> <pre>set contrack tcp timeout close &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 10 seconds.</p>                          |
| <b>tcp timeout close wait</b>  | <p>This command sets the connection tracking timeout for how long the appliance stays in the close wait state.</p> <pre>set contrack tcp timeout close wait &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 43,200 seconds (12 hours).</p> |
| <b>tcp timeout last ack</b>    | <p>This command sets the connection tracking timeout for how long the appliance stays in the last ACK state.</p> <pre>set contrack tcp timeout last ack &lt;seconds&gt;</pre> <p>where &lt;seconds&gt; is number of seconds before we timeout. The default is 30 seconds.</p>                    |

**max connections** This command sets the maximum connections that can be tracked by the connection tracking subsystem.

```
set conntrack max connections <count>
```

where <count> is number of connections that can be tracked. The default is 500,000 connections.

---

## netdiag

The netdiag command is used to control the line test daemon.

**Starting or stopping the test daemon** This command starts or stops the line test daemon on the alliance:

```
set netdiag <on/off>
```

The test daemon is off by default.

---

## bypass

The bypass command is available on physical appliances only.

The bypass command controls the 2-port bypass adapter. The bypass command is *off* by default.

**on** This command puts the adapter in bypass mode from power start until the kernel controls the adapter. At any time during its operation, if a failure occurs that results in the kernel relinquishing control of the adapter for more than two seconds, the adapter will revert to its bypass mode.

```
set bypass on
```

**off** This command puts the adapter in non-bypass mode, and the NIC behaves like a standard NIC. It will not pass traffic if the system hangs or if the kernel is not controlling the hardware.

```
set bypass off
```

---

## route

The route command is used to add static routes. The command can be executed as follows:

```
set route [net|host] <target> [netmask <mask>] [gw gateway]
[metric N]
[mss M] [window W] [irtt I]
```

- Where [net|host] are optional and <target> is the destination network or host in IP format. The <target> option is not optional.
- The *netmask* option takes a network mask as an option.
- The *gw* options takes an IP address of a host that routes packets for the virtual appliance.
- The *metric* option sets the metric field in the routing table.
- The TCP Maximum Segment Size option, *mms*, takes an integer as its parameter.

- The *window* options sets the TCP window size for connections over this route.
- The initial round trip time option can be set using the *irtt* option.

The following are some examples:

```
set route net 192.168.1.0 netmask 255.255.255.0 gw
192.168.1.1
```

```
set route net 192.168.1.0 netmask 255.255.255.0 gw
192.168.1.1 metric 2
```

To remove a route, set the route you want to remove to off. For example:

```
set route net 192.168.1.0 netmask 255.255.255.0 gw
192.168.1.1 off
```

## policy

---

The policy command determines which policy mode is in effect. The appliance can be in enforcement mode, blocking packets based on policy, or it can be in monitor mode, in which it records the packets without blocking.

### mode

This command sets the mode of operation:

```
set policy mode <mode>
```

where <mode> is either monitor or enforce. The default is monitor.

### monitor

This command sets the type of monitoring. The appliance can be in inline monitor mode, which monitors the packets as they pass through the appliance, or it can be in out-of-band monitor mode, in which case the packets are monitored off the switch.

```
set policy monitor <mode>
```

where <mode> is either inline or not inline (for out-of-band monitoring). The default is not inline.

**Note:** This command is only available when the policy mode is monitor.

### enforcement

This command sets the policy enforcement to use stateful inspection (connection tracking) when evaluating packets or no stateful inspection (no connection tracking):

```
set policy enforcement <state>
```

where <state> is either stateful or not stateful. The default is stateful.

Note that this command is only available when the policy mode is enforce.



---

## Chapter 2: Adding Disk Space

---

### Overview

#### When do you add disk space?

Because the Stratusphere Hub is a virtual appliance, just another virtual machine in your environment, it is very easy to add disk space with the same methods used for other VMs. You can monitor the free space on your current disk on the Status tab. (CMDB Administration > Audit Data > Status)

You can also schedule data to export automatically on a regular basis. Additionally, the Auto Delete Settings tab lets you specify when to delete data, based on a Percent Full threshold. Use these tabs to help you determine when you should add disk space. For more information see the Stratusphere Product Guide.

If data is accumulating so quickly that the disk is filling and auto-delete occurs before your data is exported during regularly scheduled exports, you should consider adding disk space. An alternative would be to have export scheduled more frequently, but that may limit the days' data available to you in reports (some historical data of interest may have been exported). Adding disk space is an easy solution.

**Note:** One gigabyte of disk space can hold approximately one month of data for 200 virtual desktops.

#### Process

Adding disk space to your Stratusphere virtual appliances is a two-stage process:

- Add the disk to the virtual appliance in your virtualization management system (for example VMware vCenter and Virtual Infrastructure Client).
- Use `ssconsole` to make the appliance aware of the new disk.

#### Prerequisites

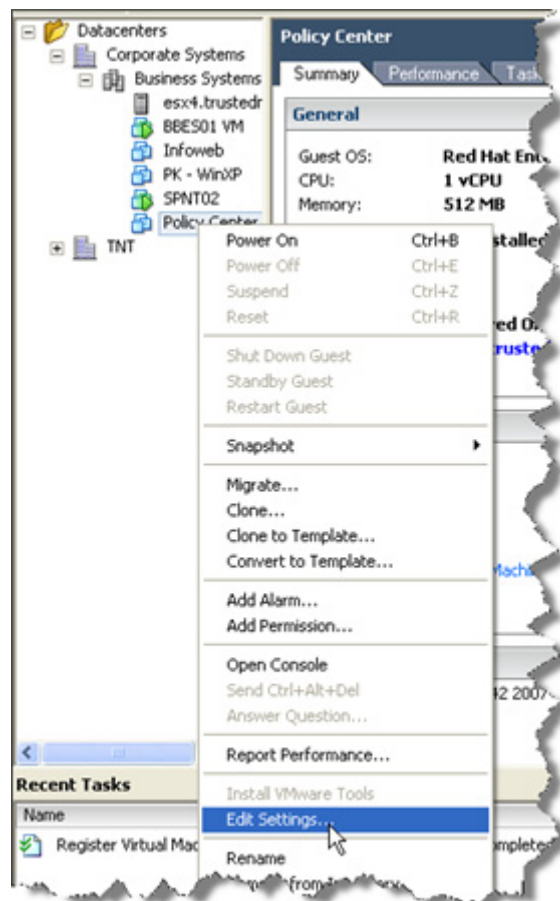
You can add a hard disk to a Stratusphere virtual appliance if there is a free virtual SCSI node on an existing virtual SCSI controller.

Additionally, you will need to know your login credentials for `ssconsole`.

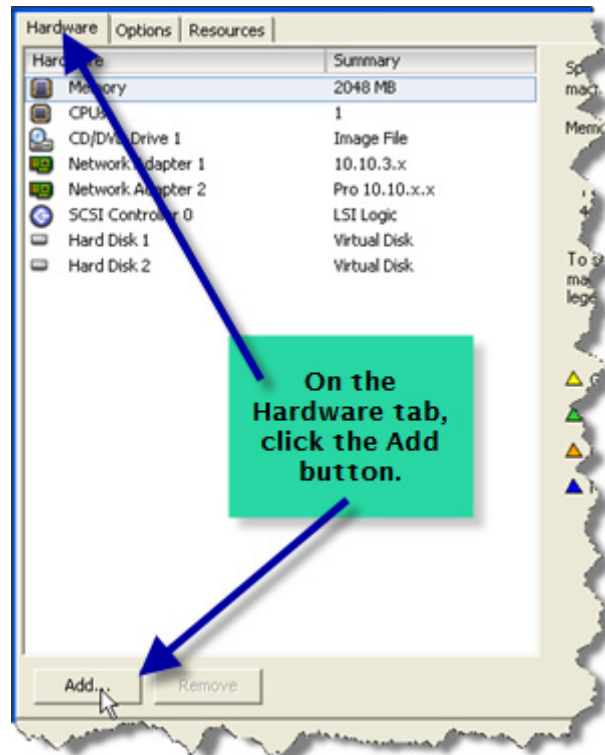
# In the Virtual Infrastructure Client

## Procedure

- 1 In the Hosts and Clusters pane, right click on the virtual appliance's name, and then click **Edit settings**.

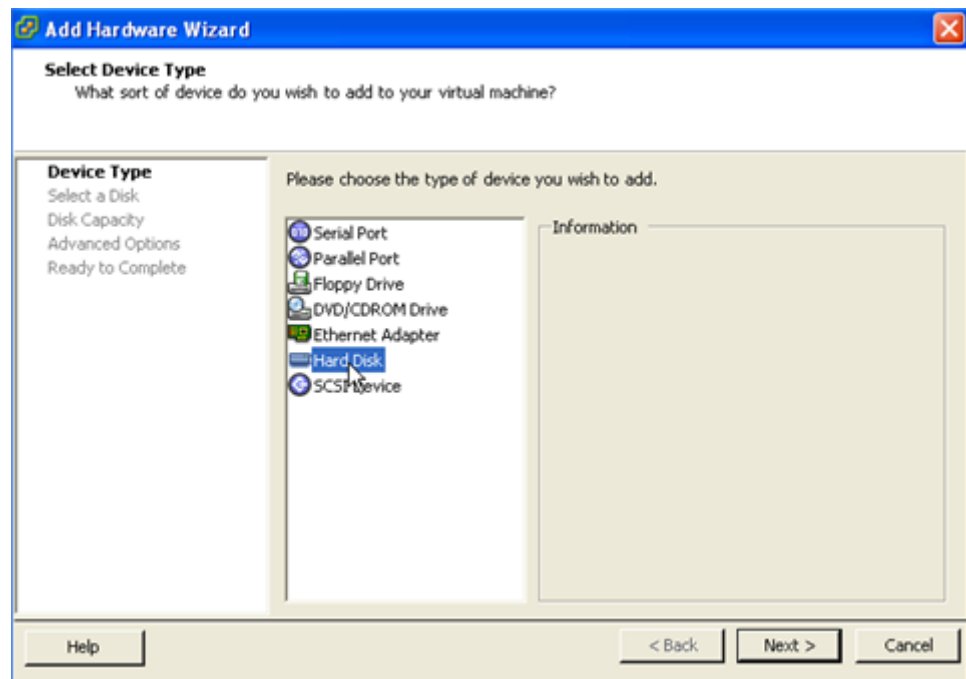


- 2 On the **Hardware** tab, click the **Add** button.

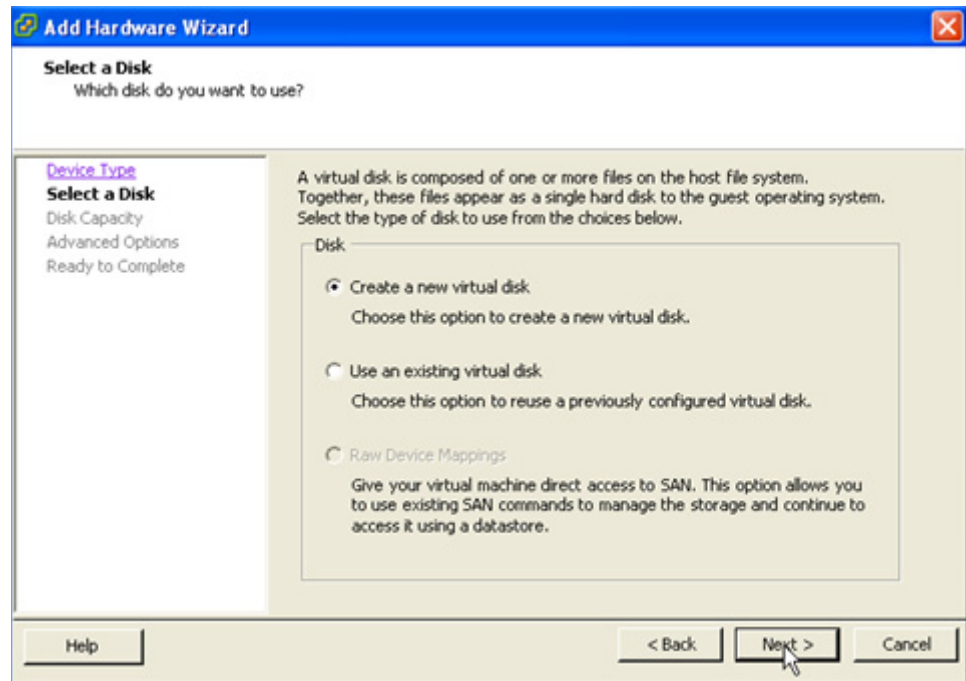


The Add Hardware wizard appears.

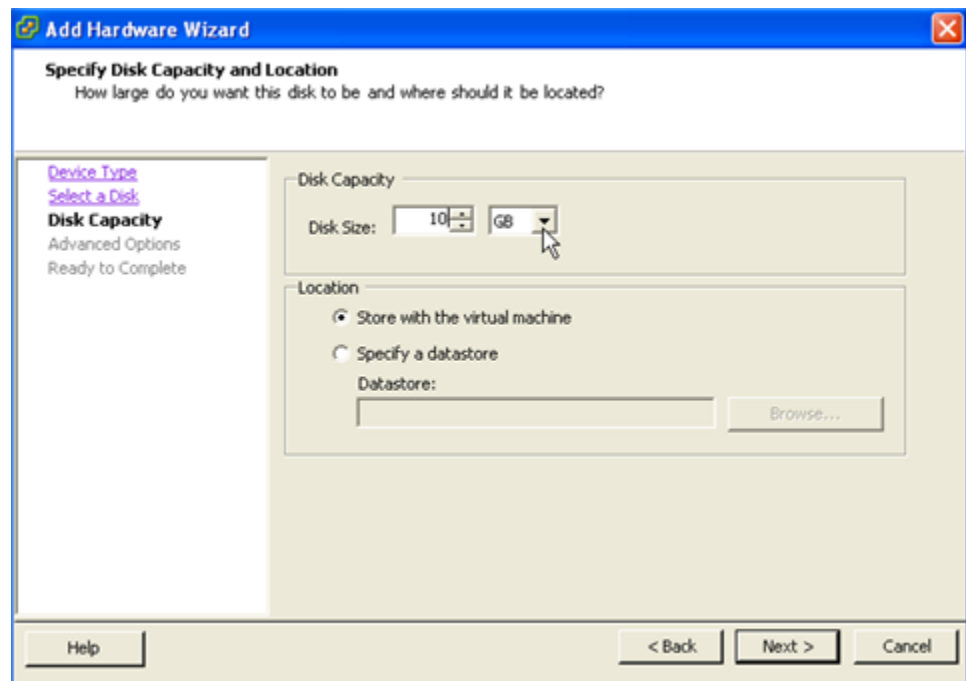
- 3 Choose **Hard Disk**, and then click **Next**.



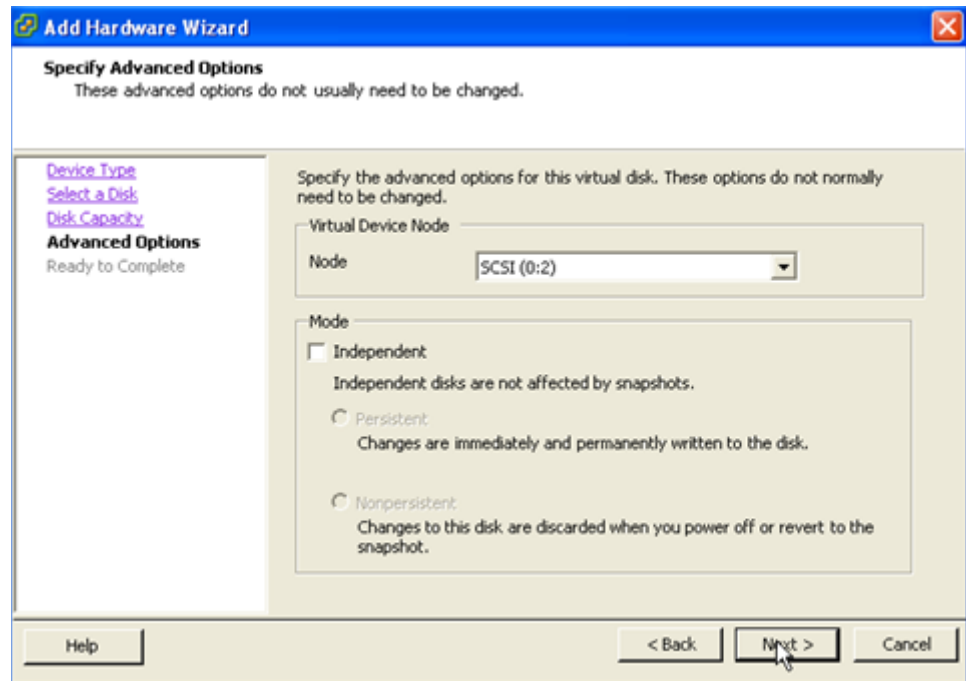
- 4 Select the **Create a new virtual disk** radio button, and then click **Next**.



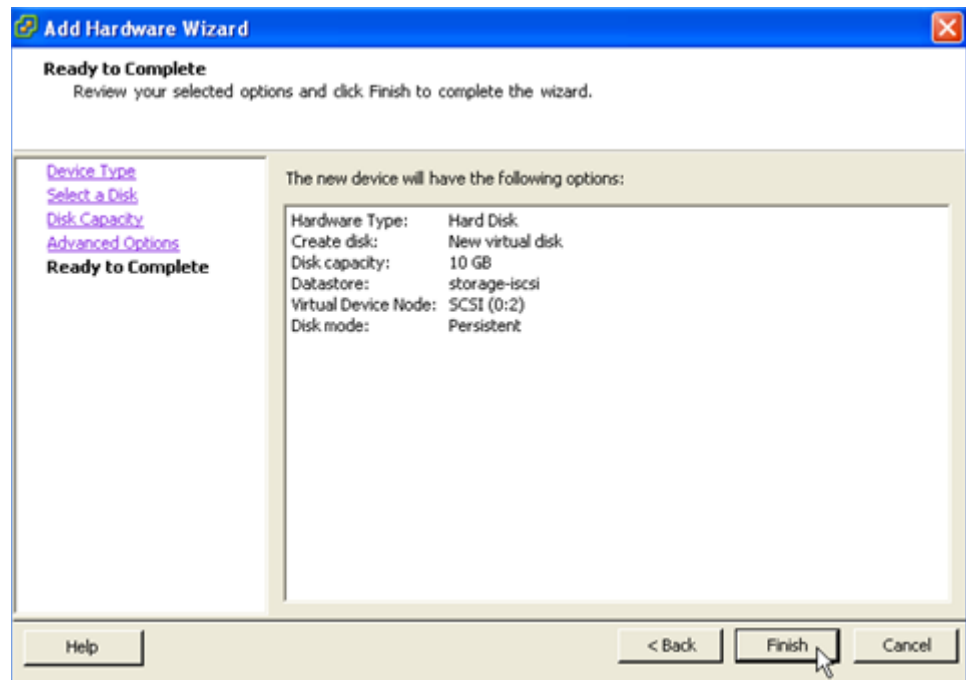
- 5 Specify the **Disk Size** and units, and leave **Store with the virtual machine** selected for Location. Click **Next**.



6 Click **Next** to accept the default Advanced Options.



7 Click **Finish**.



## Configure the New Disk in sscnsole

**Overview** sscnsole, the Command Line Interface for Stratusphere virtual appliances, lets you make the virtual appliance aware of the new disk.

**Procedure** Access sscnsole by setting up a terminal services session directly to the virtual appliance or by right-clicking on the virtual appliance in the Hosts and Clusters pane of the Virtual Infrastructure Client.

- 1 Log in.
- 2 At the prompt, type `show disk`, and then press **Enter**.  
sscnsole displays the disks currently in the virtual appliance. This list should include the one you just added.
- 3 Type `add disk <disk name> <where>` using the added disk indicator to identify the new disk.
- 4 Type `write`, then press **Enter**, then type `exit` and press **Enter**.

## Instructions when Using XenServer

**Adding Disk on XenServer** If you are running the Stratusphere Hub on XenServer, the following are the steps and instructions (these steps will be changing in Stratusphere version 4.6):

- 1 Shutdown and power off the Stratusphere Hub
- 2 Add a disk to the Hub by clicking on Storage for the Hub in the XenCenter Client, choose an appropriate name
- 3 Power on the Hub
- 4 Connect to the Hub console and login as root
- 5 Open for edit the `addrive` file, command `vi /opt/tnt/bin/addrive`
- 6 Go to the line with `DISK='ls -l /sys/block|egrep -v 'ram|md?|fd?|hd?'`, using the x key delete the string `'|hd?'` from end, hit the ESC key then enter `:wq!`
- 7 Exit the vi editor saving the file
- 8 Log in to the Hub console (default `sscnsole/sspassword`)
- 9 Type in `"show disk"` -- it will show 3 errors then show `hdb`, where `hd` is for the IDE and `b` is the next disk in line
- 10 Type in `"add disk hdb"` to add the disk
- 11 Type `"exit"` to leave the Hub console



## Chapter 3: Upgrade

---

|                                      |  |
|--------------------------------------|--|
| <b>Overview</b>                      | This chapter provides instructions for upgrading Stratusphere. We recommend that you review this document before installing the software.  |
| <b>Back up your Stratusphere Hub</b> | <b>Before you begin the upgrade procedure, back up the Stratusphere Hub virtual machine.</b> Any time you upgrade, it's important to have a backup. You may want to use VMware's snapshot functionality to create your backup. Snapshots let you preserve the state of a virtual machine so you can return to the same state repeatedly. The Stratusphere Hub virtual appliance is just another virtual machine in your environment, so you can use your preferred method to backup. |
| <b>Customer Support</b>              | Licensed partners and users can find support contact information in the welcome materials emailed to them by Liquidware Labs, or on the Liquidware Labs web site at <a href="http://www.liquidwarelabs.com">http://www.liquidwarelabs.com</a> .  |

# Preparing to Upgrade the Stratusphere Hub

## Checking your current version

The version is displayed on the lower left corner of the Stratusphere Hub UI. If you don't want to log in to the Hub user interface, you can determine your current version in the following way:

- 1 In the VMware Virtual Infrastructure Client, select the Stratusphere Hub virtual machine you want to upgrade.
- 2 Click Open Console, and then log in to `ssconsole` (the command line interface for Stratusphere virtual appliances).
- 3 At the command line prompt, type `show version`.  
`ssconsole` displays the current version.

It is important to note your current version, and to check the release notes on the version you plan to upgrade to. Make sure to follow any special instructions related to upgrading the version you currently have.

## Disk Space

You may need to add disk space to your virtual appliance to complete the upgrade. Typically to upgrade you will need approximately 60% of your current disk allocation for the Stratusphere Hub to be free, to ensure that all database upgrades can be performed successfully without losing any data. If insufficient space is available, the upgrade will fail although no data should be lost. You can check your available disk space on the CMDB Administration > Audit Data page.

- If you want to be certain that there is enough disk space, go ahead and add a disk that is double the size of your current disk as `/var/tmp` before you start the upgrade.
- If you begin the upgrade and there's not enough disk space, you will see a message that the upgrade failed. If that happens, add a disk, then continue the upgrade procedure.

Instructions are located after the upgrade procedure in this guide.

# Upgrading the Stratusphere Hub

## **Run software install latest**

Upgrading the Stratusphere Hub is a simple matter of logging into the console (command line interface) and using the `software install latest` command. Stratusphere automatically locates the most recent version of the software, downloads it, and then installs it. To see if there are updates available, use the `software check` command in the console. If you experience problems with `software install latest`, it could be due to a proxy between the Hub and the Liquidware Labs web site, in which case use the `set software update proxy` command to identify the proxy address. If you are still having problems, contact Liquidware Labs support, and it may be necessary to use the `set software update url` command to point at the specific Liquidware Labs download URL to obtain the necessary updates.

## **Reboot the Stratusphere Hub**

When the upgrade procedure ends, you must reboot the Stratusphere Hub for the upgrade to be complete. Reboot by logging into `ssconsole` (the command line interface), and using the `reboot` command, or start and stop the Hub using standard procedures for a virtual machine. See the Reference Guide for more details.

## **Clear your browser cache**

After you reboot, it is recommended you clear your browser cache. Until you clear the browser cache, user interface changes may not display properly when you log in to the Stratusphere Hub due to cached pages or style sheets.

## Verifying The Stratusphere Hub Version

- Command line** For all versions of Stratusphere, the version is easy to locate in sconsole. At the command line prompt, type `show version`.  
sconsole displays the current version.
- User interface** The version number is also displayed in the user interface. The version appears at the bottom left corner of the Stratusphere Hub user interface.

# Upgrading Connector ID Keys

## Deploying updates

After you upgrade the Stratusphere Hub, any associated Connector ID Key upgrades are automatically added to those available on the Connector ID Key software tab. If you have any Connector ID Keys deployed, you can distribute upgrades to end users by through Active Directory group policies, or by using a patch distribution system (VMware Update Manager, SMS, Shavlik, Bigfix, etc.), or by using Stratusphere's built-in auto-update functionality for Connector ID Keys.

## Auto-update

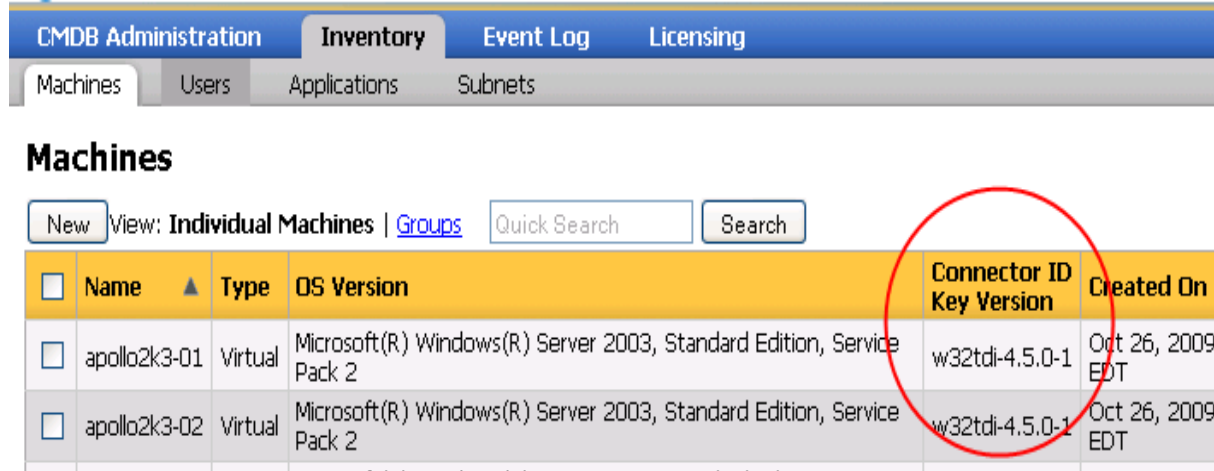
You can update Connector ID Keys easily by turning Stratusphere's automatic update feature on. After you enable this feature, clients will receive the update the next time they call back to the Stratusphere Hub (according to the set Callback Frequency).

The screenshot shows the 'Connector ID Key Software Administration' page in the Stratusphere Hub. The page has a navigation bar with tabs for 'CMDB Administration', 'Inventory', 'Event Log', and 'Licensing'. Below this, there are sub-tabs for 'Connector ID Key Properties' and 'Connector ID Key Software'. The main content area is titled 'Properties' and contains several configuration options:

- Callback Frequency:** Set to 10 minutes.
- Enable Connector ID for TCP connections:** Checked.
- Enable Connector ID for UDP connections:** Unchecked.
- Enable Machine Inspection:** Checked.
- Inspection sample interval:** Set to 3 minutes.
- Automatically update Connector ID Keys when new software versions are installed in the Stratusphere Hub:** Checked (circled in red).
- Automatically uninstall Connector ID Key software:** Unchecked.

## Verifying the Connector ID Key Version

**User interface** You can verify the version of a (physical or virtual) machine's Connector ID Key on the Machines tab, under Inventory.



The screenshot shows the CMDB Administration interface. The top navigation bar includes 'CMDB Administration', 'Inventory', 'Event Log', and 'Licensing'. Below this, the 'Machines' tab is selected, with other tabs for 'Users', 'Applications', and 'Subnets'. The main content area is titled 'Machines' and features a 'New' button, a 'View: Individual Machines | Groups' dropdown, a 'Quick Search' input field, and a 'Search' button. A table displays machine inventory with columns for Name, Type, OS Version, Connector ID Key Version, and Created On. The 'Connector ID Key Version' column is circled in red.

| <input type="checkbox"/> | Name         | Type    | OS Version  | Connector ID Key Version | Created On       |
|--------------------------|--------------|---------|---|--------------------------|------------------|
| <input type="checkbox"/> | apollo2k3-01 | Virtual | Microsoft(R) Windows(R) Server 2003, Standard Edition, Service Pack 2 | w32tdi-4.5.0-1           | Oct 26, 2009 EDT |
| <input type="checkbox"/> | apollo2k3-02 | Virtual | Microsoft(R) Windows(R) Server 2003, Standard Edition, Service Pack 2 | w32tdi-4.5.0-1           | Oct 26, 2009 EDT |

# Upgrading Network Stations

## Deploying updates

After you upgrade the Stratusphere Hub, you can perform upgrade on all or selected Network Stations through the Stratusphere Hub user interface. Note that since they are also virtual appliances that also support the Stratusphere sconsole command line interface, you can also upgrade them individually using the same software install latest command described on previous pages for the Hub.

## Upgrade using Stratusphere Hub user interface

To upgrade Network Stations, go to CMDB Administration > Network Stations. Simply select the stations from the list that you want to upgrade, then click on the Upgrade button. Upgrade of the selected stations will launch, although it may take minutes to complete.

The screenshot shows the CMDB Administration interface with the 'Network Stations' page selected. The 'Upgrade' button is circled in red. Below the buttons is a table of network stations with columns for Name, Station Group, Host, and IP Address. Three stations are selected, indicated by checkmarks in the first column.

| <input type="checkbox"/>            | Name           | Station Group         | Host       | IP Address |
|-------------------------------------|----------------|-----------------------|------------|------------|
| <input type="checkbox"/>            | Demo_hub_450a  | Default Station Group | 10.0.6.213 | 10.0.6.220 |
| <input checked="" type="checkbox"/> | NMS on ESX 210 | Default Station Group | 10.0.6.210 | 10.0.6.223 |
| <input checked="" type="checkbox"/> | NMS on ESX 211 | Default Station Group | 10.0.6.211 | 10.0.6.221 |
| <input checked="" type="checkbox"/> | NMS on ESX 212 | Default Station Group | 10.0.6.212 | 10.0.6.222 |

## Verifying the Network Station Version

### User interface

The version number for each Network Station is displayed in the list found when you go to CMDB Administration > Network Stations. If you have done an upgrade and allowed a number of minutes to complete but a station is not showing up with a new version number, select the station and click on Re-Register. If the upgrade is complete, the new station number will appear.

CMDB Administration | Inventory | Event Log | Licensing

Audit Data | Connector ID Keys | ProfileUnity Agents | Network Stations | VM Directories | User Directories | Backup & Restore

**Network Stations** Page 1 of 1 < Pre

New Selected 1: View Report Upgrade **Re-register** Delete Unselect

View: Individual Network Stations | Groups Quick Search

| <input type="checkbox"/>            | Name           | Station Group         | Host       | IP Address | Last policy update           | Last audit receipt           | Status               | Version | Register        |
|-------------------------------------|----------------|-----------------------|------------|------------|------------------------------|------------------------------|----------------------|---------|-----------------|
| <input type="checkbox"/>            | Demo_hub_450a  | Default Station Group | 10.0.6.213 | 10.0.6.220 | Oct 14, 2009 12:55:33 PM EDT | Oct 28, 2009 11:00:00 AM EDT | OK 11:00:05 AM EDT   | 4.5.0-1 | Oct 14, 11:12:4 |
| <input checked="" type="checkbox"/> | NMS on ESX 210 | Default Station Group | 10.0.6.210 | 10.0.6.223 | Oct 14, 2009 12:55:35 PM EDT | Oct 28, 2009 10:28:50 AM EDT | OK 11:00:04 AM EDT   | 4.5.0-1 | Oct 14, 12:29:5 |
| <input type="checkbox"/>            | NMS on ESX 211 | Default Station Group | 10.0.6.211 | 10.0.6.221 | Oct 14, 2009 12:55:36 PM EDT | Oct 28, 2009 10:49:28 AM EDT | WARN 11:00:05 AM EDT | 4.5.0-1 | Oct 14, 12:43:2 |
| <input type="checkbox"/>            | NMS on ESX 212 | Default Station Group | 10.0.6.212 | 10.0.6.222 | Oct 14, 2009 12:55:34 PM EDT | Oct 28, 2009 10:43:40 AM EDT | OK 11:00:02 AM EDT   | 4.5.0-1 | Oct 14, 12:44:3 |



## Chapter 4: Command Line Install Parameters for Connector ID Key

---

### Overview

This chapter provides details on the command line parameters available for the install of the Windows versions of Connector ID Keys. Other install information can be found in the Getting Started Guide and the Product Guide.

### Windows MSI Command Line Parameters

The following is the example command line to install the Windows Connector ID Key using the MSI, along with details on the custom parameters:

```
msiexec /i /q cid_msi_file  
[HUBADDRESS="hub-ip or dns-name"]  
[MACHINEGROUP="machine-group-name"]  
[USERGROUP="user-group-name"]
```

- HUBADDRESS -- optional parameter specifies the IP address or DNS name of the Stratusphere Hub (if not provided then the Connector ID Key will attempt to discover its Hub through a broadcast - response mechanism)
- MACHINEGROUP -- specifies the name of machine group defined in the Stratusphere Hub that the machine will be automatically assigned to
- USERGROUP -- specifies the name of user group defined in the Stratusphere Hub that any logged on users will be automatically assigned to

### Using the Windows Network agent for Assessments

The following is the example command line to run the network version of the Windows Connector ID Key for assessments, along with details on the optional parameters. In this case the Connector ID Key package is installed in a shared network folder, and is launched via AD GPO on each desktop machine.

```
netcid start | stop cid_folder_path  
[-ha hub-ip-or-dns]  
[-mg machine-group-name]  
[-ug user-group-name]
```

- -ha -- optional parameter specifies the IP address or DNS name of the Stratusphere Hub (if not provided then the Connector ID Key will attempt to discover its Hub through a broadcast - response mechanism)

- `-mg --` specifies the name of machine group defined in the Stratusphere Hub that the machine will be automatically assigned to
- `-ug --` specifies the name of user group defined in the Stratusphere Hub that any logged on users will be automatically assigned to

---

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