Command-Line Management in vSphere 5 and vSphere 6 for Service Console Users

ESXi 6.0

Starting with vSphere 5.0, the service console (also called console OS or COS) with its associated Linux installation is no longer available. If you are currently using ESX service console commands, scripts, agents, or logs, this technical note helps you transition to an off-host implementation or to use the ESXi Shell in special cases.

The focus of this document is on ESXCLI commands and `vicfg–` commands. Commands in the dCLI command set, available in vSphere 6.0 and later, are initially for managing vCenter services and not for host management. These commands are not discussed in this document.

IMPORTANT Changes made to the host using the DCUI, the vSphere Client, ESXCLI, or other administrative tools are committed to permanent storage every hour or upon graceful shutdown. Changes might be lost if the host fails before they are committed.

Introduction

In vSphere 5.x and vSphere 6.x, VMware offers the following tools, CLIs, and APIs that replace ESX 4.x service console components.

CLI or Tool	Description	Availability
vCLI	Includes ESXCLI commands, `vicfg–` commands, and a few other commands for managing vSphere.	Install a vCLI package on a Windows or Linux system or run commands from vMA.
PowerCLI	PowerCLI cmdlets for managing ESXi hosts and virtual machines.	Install Microsoft PowerShell on a Windows system, and install vSphere PowerCLI to run both PowerShell and PowerCLI cmdlet from the PowerCLI prompt.

CLI or Tool	Description	Availability
vMA	A Linux virtual appliance that includes the vSphere SDK for Perl and the vCLI package. Also supports the vi-fastpass authentication component.	Deploy vMA on an ESXi system and run commands against authenticated target servers from vMA.
ESXi Shell commands	Set of troubleshooting commands to use when vCLI cannot access your ESXi system. Includes ESXCLI commands and `esxcfg-` commands (deprecated).	The ESXi Shell is disabled by default. You can enable the Shell for local or remote access.

Transitioning Service Console Commands

If you are currently managing your environment with service console commands, you can perform the same management tasks in vSphere 5.0 and vSphere 5.1 in one of the following ways.

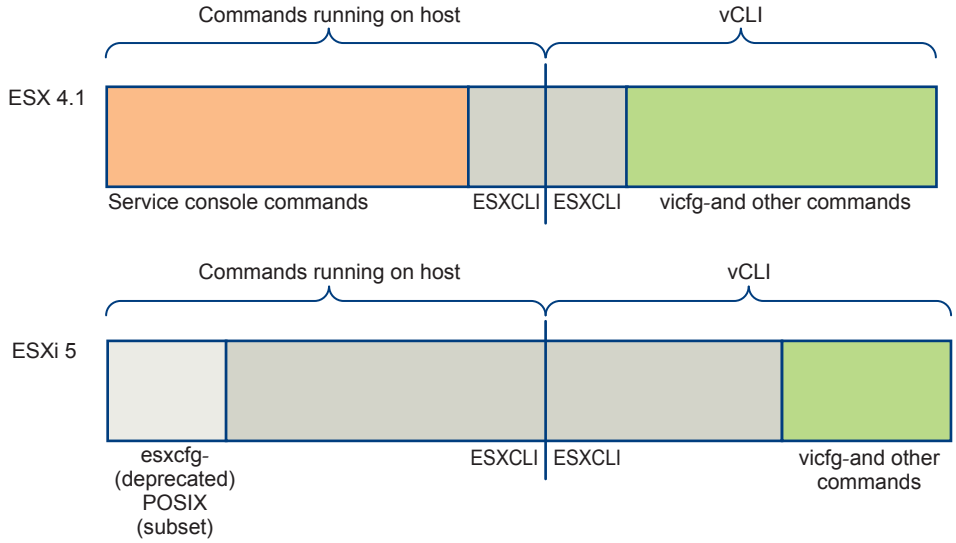
- Use one of the vSphere Client interfaces.
- Install vCLI or PowerCLI on a management server, write scripts with those commands, and run the scripts against target hosts. See "Running vCLI or PowerCLI Commands from Remote Hosts" on page 3.
- For certain troubleshooting and advanced management commands, use commands from the ESXCLI command set directly the ESXi Shell. See "Using the ESXi Shell" on page 5.

ESX 4.x Service Console	vSphere 5.0 and vSphere 5.1	See
Service console commands	Off-host management with vCLI. Install on Windows or Linux or use vMA.	"Transitioning Service Console Commands" on page 2. "Reference to Replacements for Service Console Commands" on page 13 lists vCLI or ESXCLI replacements for service console commands and points to migration lists in this technical note.
Service console commands	Off-host management with VMware PowerCLI cmdlets from a Windows system.	*Getting Started with vSphere Command-Line Interfaces* *vSphere Command-Line Interface Solutions and Examples*
Service console commands	On-host management in the ESXi Shell is possible if system failures or other issues prevent you from using off-host management commands. ESXi Shell is disabled by default	See "ESXi Shell Local Access" on page 5 and "Remote Access to ESXi Shell Using SSH" on page 7.
Agents	If you run agents in the ESX 4.x service console, you can replace them with infrastructure services in many cases. Running third-party agents in the ESXi Shell is not supported.	"Replacing Agents" on page 10.
Linux networking commands.	Not available in the ESXi Shell. Use ESXCLI commands instead.	See "Retrieving Networking Information" on page 13.
Service console logs	Fine-grained control over system logs is available. You can send logs to the local system or to a remote host.	"Logging in vSphere 5 and Later" on page 10

Figure 1 illustrates the differences between CLIs in ESXi 4.1 and ESXi 5.0 and later.

- In ESX 4.1, a fairly large set of service console commands is available. A small set of ESXCLI commands is available in both the service console and as part of the vCLI package. The vCLI package includes, in addition to ESXCLI commands, a set of `vicfg-` commands and other commands for host management.
- ESXi 5.0 and later does not include a service console. In the ESXi Shell, you can run a much expanded set of ESXCLI commands and a small set of other commands. The same ESXCLI commands, as well as a few other commands, are included in the vCLI package for off-host management.

Figure 1. Command-Line Interfaces in ESX 4.1 and ESXi 5.0 and later



Using vSphere Client Interfaces

Most tasks you perform in the ESX Service Console can be performed by one of the graphical user interfaces to ESXi or vCenter Server systems. The interfaces allow you to manage your infrastructure, and to perform operations on multiple hosts at the same time.

- Install the vSphere Client on the Windows system of your choice and connect to an ESXi or vCenter Server system. Perform management operations using the client.
- Use the vSphere Web Client from one of the supported browsers. The vSphere Web Client is a new interface and supports primarily operations on virtual machines.

vSphere 5 documentation explains how to perform tasks by using one of the client UIs. Online help is available from both client UIs.

Running vCLI or PowerCLI Commands from Remote Hosts

If you have scripts that use ESX 4.x service console commands or run commands in the ESX 4.x service console directly, running vCLI commands or PowerCLI cmdlets from the host on which you installed those packages gives the best results. Running off-host is highly recommended because it facilitates scripting.

You can use vCLI even if hosts are in lockdown mode by targeting the vCenterServer system and specifying the target ESXi host with the `--vihost` parameter, for example:

```
esxcli --server <my_vc> --vihost <my_esxi> [<authentication>] storage nfs list
```

If you do not specify additional authentication parameters, the vCLI infrastructure prompts for a username and password for the vCenter Server system specified by `--server`.

vCLI Command Set

The vCLI command set includes common system administration commands which you can run against ESXi systems from any machine with network access to those systems. You can also run most vCLI commands against a vCenter Server system and target any ESXi system that vCenter Server system manages.

Install the vCLI command set on a supported versions of Windows or Linux. The user running a command against a server must be authenticated for that server. The vCLI package includes several command sets.

Command Set	Description
ESXCLI vCLI commands	Extensible command framework for managing many aspects of vSphere. Run `esxcli --help` to see all top-level namespaces. You can run `--help` at any level of the hierarchy. The `esxcli` command set in the ESXi Shell and the `esxcli` vCLI command set support the same functionality. When running vCLI commands, you must specify the target server and authentication options.
`vicfg- (esxcfg-)` vCLI commands	Set of commands for managing many aspects of vSphere. For each `vicfg-` vCLI command, the package includes an `esxcfg-` vCLI command that is equivalent of the `vicfg-` vCLI command. **Important:** `esxcfg-` vCLI commands are not always equivalent to corresponding `esxcfg-` service console or ESXi Shell commands. `vicfg-` commands will be deprecated in future releases. Use `esxcli` commands instead where possible.
Management commands	A small set of management commands is available. Commands include `vifs` for file migration, `vmware-cmd` for managing virtual machines, and `vmkfstools` for VMFS file management.

The following documentation helps you work with vCLI commands.

- *Getting Started with vSphere Command-Line Interfaces* gives overviews of available commands and includes instructions for installing vCLI on Widows or Linux and detailed information about connection options.
- *vSphere Command-Line Interface Concepts and Examples* presents usage examples for many commands, such as setting up software and hardware iSCSI, adding virtual switches, setting up Active Directory authentication, and so on. The document includes the same example with the `vicfg-` command and the ESXCLI command where supported.
- *vSphere Command-Line Interface Reference* is a reference to both `vicfg-` commands and ESXCLI commands. The `vicfg-` command help is generated from the POD available for each command, run `pod2html` for any `vicfg-` command to generate individual HTML files interactively. The ESXCLI reference information is generated from the ESXCLI help.

Running ESXCLI Commands Against ESXi 4.x Hosts

When you run an ESXCLI vCLI command, you must know the commands supported on the target host specified with `--server` or as a vMA target.

- If you run commands against ESXi 4.x hosts, ESXCLI 4.x commands are supported.
- If you run commands against ESXi 5.0 hosts, ESXCLI 5.0 commands and most ESXCLI 5.1 commands are supported. Commands that are new in ESXCLI 5.1 are not supported.
- If you run commands against ESX 5.1 hosts, ESXCLI 5.0 commands and all ESXCLI 5.1 commands are supported.

VMware partners might develop custom ESXCLI commands that you can run on hosts where the partner VIB has been installed.

Run `esxcli --server <target> --help` for a list of namespaces supported on the target. You can drill down into the namespaces for additional help.

IMPORTANT ESXCLI on ESX 4.x hosts does not support targeting a vCenter Server system. You can therefore not run commands with `--server` pointing to a vCenter Server system even if you install vCLI 5.0 or vCLI 5.1.

PowerCLI Cmdlet Set

VMware offers a comprehensive set of PowerCLI cmdlets. You can install the PowerCLI package on a Windows system on which Microsoft PowerShell is installed and use PowerCLI cmdlets to manage hosts and virtual machines. PowerCLI cmdlets and vCLI commands overlap in functionality. The PowerCLI focus is on virtual machine management. The vCLI focus is on host management.

See the vSphere PowerCLI documentation set, available in the VMware Administration Automation Products section of http://www.vmware.com/support/pubs.

Using the ESXi Shell

Each ESXi host includes an ESXi Shell, which is disabled by default. Administrators can use that shell to perform troubleshooting and advanced tasks such as testing scripts in non production environments.

You can access the shell as follows:

- Enable local access and use the local shell on the physical console or using a serial port. See "ESXi Shell Local Access" on page 5.
- Enable SSH access and use the shell over a management network with SSH. See "ESXi Shell Access" on page 5.

IMPORTANT ESXi Shell is intended for experienced CLI users. Minor errors in the shell can result in serious problems. Instead of running commands directly in the ESXi Shell, use vCLI commands or PowerCLI cmdlets.

The ESXi Shell includes the following command sets.

Command Set	Description
ESXCLI commands	Extensible command framework for managing many aspects of vSphere. Run `esxcli --help` to see all top-level namespaces. You can run `--help` at any level of the hierarchy. The `esxcli` command set in the ESXi Shell and the `esxcli` vCLI command set support the same functionality. When running vCLI commands, you must specify the target server and authentication options.
`esxcfg-` commands (deprecated)	Set of commands for managing many aspects of vSphere. Most `esxcfg-` commands available in the ESX 4.x service console are available in the ESXi Shell but are deprecated in ESXi 5.0 and will be removed in a future release. Use ESXCLI commands instead of `esxcfg-` commands. If no ESXCLI command exists, use the `vicfg-` commands in the vCLI command set.
Other commands	A small set of POSIX-style commands is included in the shell (see "Shell Commands" on page 9). These commands are not supported by VMware but are included for use in troubleshooting situations. Use the vSphere Client or VMware commands instead where possible.
`localcli` commands	Set of troubleshooting commands for use with VMware Technical Support. `localcli` commands equivalent to ESXCLI commands but bypass the host daemon (`hostd`). **Warning:** `localcli` commands are only for situations when `hostd` is unavailable and cannot be restarted. After you run a `localcli` command, you must restart `hostd`. Using `localcli` commands in other situations is not supported. An inconsistent system state and potential failure can result.

ESXi Shell Access

An ESXi system includes a direct console that allows you to start and stop the system and to perform a limited set of maintenance and troubleshooting tasks. The direct console includes the ESXi Shell. The ESXi Shell includes a set of fully supported ESXCLI commands and a set of commands for troubleshooting and remediation. You must enable access to the ESXi Shell from the direct console of each system. You can enable access to the local ESXi Shell or access to the ESXi Shell with SSH.

NOTE For security reasons, you should enable ESXi Shell only when required.

ESXi Shell Local Access

The ESXi Shell is disabled by default. You can enable the ESXi Shell for troubleshooting from the direct console. All ESXCLI commands that are available in the ESXi Shell are also included in the vCLI package. Install the vCLI package or deploy the vMA virtual appliance, and run commands against your ESXi hosts, instead of running commands in the ESXi Shell itself. See *Getting Started with vSphere Command-Line Interfaces*.

Enabling the ESXi Shell

You can enable the ESXi Shell from the direct console and from the vSphere Client. Enabling the ESXi Shell means making it accessible as a local console available directly or over an out-of-band network.

To enable the ESXi Shell from the Direct Console

1 Access the direct console of the ESXi host, press F2, and provide credentials when prompted.

2 Scroll to **Troubleshooting Options**, and press Enter.

3 Select **Enable ESXi Shell** and press Enter.

On the left, **Enable ESXi Shell** changes to **Disable ESXi Shell**. On the right, **ESXi Shell is Disabled** changes to **ESXi Shell is Enabled**.

4 (Optional) Configure the time-out for the ESXi Shell

a Select **Modify ESXi Shell timeout** and press Enter.

b Enter the time-out value in minutes and press Enter.

5 Press Esc until you return to the main direct console screen.

You can enable the ESXi Shell from the vSphere Client.

To enable the local or remote ESXi Shell from the vSphere Client

1 Select the host, click the **Configuration** tab, and click **Security Profile** in the Software panel.

2 In the Services section, click **Properties.**

3 Select **ESXi Shell** and click **Options**.

4 Change the ESXi Shell options.

- To temporarily start or stop the service, click the **Start** or **Stop** button.
- To enable access permanently, click **Start and stop with host**. The change will take effect the next time you reboot the host.

5 Click **OK**.

After you have enabled the ESXi Shell, you can use it from that monitor or through an out-of-band network connection.

To enable to local or remote ESXi Shell from the vSphere Web Client

1 Select the host, click the **Manage** tab, and click **Settings**.

2 Under System, select **Security Profile**.

3 In the Services panel, click **Edit.**

4 Select a service from the list.

- ESXi Shell
- SSH
- Direct Console UI

5 Click Service Details and select the startup policy **Start and stop manually**.

When you select **Start and stop manually**, the service does not start when you reboot the host. If you want the service to start when you reboot the host, select **Start and stop with host**.

6 Select **Start** to enable the service.

7 Click **OK**.

After you have enabled the ESXi Shell, you can use it from that monitor or through an out-of-band network connection.

Setting Timeouts for the ESXi Shell

The ESXi Shell supports availability timeout and idle timeouts. By default, each timeout is disabled.

- **Availability timeout**. The amount of time that can elapse before you must log in after the ESXi Shell is enabled. After the timeout period, the service is disabled and users are not allowed to log in.
- **Idle timeout**. The amount of time that can elapse before the user is logged out of an idle interactive sessions. Changes to the idle timeout apply the next time a user logs in to the ESXi Shell and do not affect existing sessions.

To set ESXi Shell timeouts from the Direct Console

1 From the Troubleshooting Mode Options menu, select **Modify ESXi Shell and SSH timeouts** and press Enter.

2 Enter the availability timeout and press Enter.

3 Enter the idle timeout and press Enter.

4 Press Esc until you return to the main menu of the Direct Console Interface.

To set ESXi Shell timeouts from the vSphere Web Client

1 Select the host in the inventory, click the **Manage** tab, and click **Settings.**

2 Under System, select **Advanced System Settings**.

3 In the left panel, click **UserVars**.

4 Select **UserVars.ESXiShellTimeOut** and click the **Edit** icon

5 Enter the availability timeout in minutes.

You must restart the SSH service and the ESXi Shell service for the timeout to take effect.

6 Select **UserVars.ESXiShellInteractiveTimeOut** and click the **Edit** icon

7 Enter the availability timeout in minutes.

You must restart the SSH service and the ESXi Shell service for the timeout to take effect.

8 Click **OK**.

Accessing the ESXi Shell with the Direct Console

After you enable ESXi Shell access, you can access the local shell.

To access the local ESXi Shell

1 At the main direct console screen, press Alt-F1 to open a virtual console window to the host.

2 Provide credentials when prompted.

When you type the password, characters are not displayed on the console.

3 To log out, type `exit` in the shell.

4 To return to the direct console, press Alt-F2.

Remote Access to ESXi Shell Using SSH

If Secure Shell is enabled for the ESXi Shell, you can run shell commands by using a Secure Shell client such as SSH or PuTTY.

Enabling SSH for the ESXi Shell

By default, you cannot access the ESXi Shell using a Secure Shell client. You can enable SSH access from the direct console.

To enable SSH access in the direct console

1 At the direct console of the ESXi host, press F2 and provide credentials when prompted.

2 Scroll to **Troubleshooting Options**, and press Enter.

3 Select **Enable SSH** and press Enter once.

On the left, **Enable SSH** changes to **Disable SSH**. On the right, **SSH is Disabled** changes to **SSH is Enabled**.

4 Press Esc until you return to the main direct console screen.

You can enable remote command execution from the vSphere Client.

To enable SSH from the vSphere Client

1 Select the host and click the **Configuration** tab.

2 Click **Security Profile** in the Software panel.

3 In the Services section, click **Properties.**

4 Select **SSH** and click **Options**.

5 Change the SSH options.

- To temporarily start or stop the service, click the **Start** or **Stop** button.
- To enable SSH permanently, click **Start and stop with host**. The change takes effect the next time you reboot the host.

6 Click **OK**.

After you have enabled SSH, you can use an SSH client to log in to the ESXi Shell and run ESXi Shell commands.

Accessing the ESXi Shell with SSH

If SSH is enabled on your ESXi host, you can use an SSH client to run commands on that shell.

To access the ESXi Shell with SSH

1 Open an SSH client.

2 Specify the IP address or domain name of the ESXi host.

Precise directions vary depending on the SSH client you use. See vendor documentation and support.

3 Provide credentials when prompted.

ESXi Shell Commands

The ESXi Shell includes several sets of commands.

Table 1. ESXi Shell Commands

Command Set	Description
ESXCLI commands	A large set of new ESXCLI commands supports many administrative tasks. The commands are fully supported and tested by VMware and include command-line help. See *Getting Started with vSphere Command-Line Interfaces*.
`esxcfg-` commands	The `esxcfg-` commands available in the service console are deprecated. The commands will be removed from the ESXi Shell in a future release. See "Reference to Replacements for Service Console Commands" on page 13.

Table 1. ESXi Shell Commands (Continued)

Command Set	Description
POSIX-like commands	See "Shell Commands" on page 9.
`localcli` commands	Set of troubleshooting commands for use with VMware Technical Support. `localcli` commands are equivalent to ESXCLI commands but bypass the host daemon (`hostd`). **Warning:** `localcli` commands are only for situations when `hostd` is unavailable and cannot be restarted. After you run a `localcli` command, you must restart `hostd`. Using `localcli` commands in other situations is not supported. An inconsistent system state and potential failure can result.

ESXCLI Commands

The ESXi Shell in ESXi 5 includes a large set of new ESXCLI namespaces and commands. The complete ESXCLI command set is also part of the vCLI package. The ESXCLI command syntax in ESXi 5 is more flexible than the syntax in ESXi 4 and supports multiple namespaces.

```
esxcli [dispatch_option] <namespace> [namespace, ...] <cmd> [cmd_options]
```

Each command can use an arbitrary number of namespaces, and different commands have a different number of elements. All commands have also been reviewed for consistency and most commands have been renamed. For example:

- Each `get` command returns single values.

  ```
  esxcli hardware memory get
  ```

- The `list` commands are used for multiple return values.

  ```
  esxcli hardware cpu list
  ```

Many commands have options. Use an equal sign or a space between the option and the option value.

```
esxcli storage nfs add --host=<host_name> --share=<share_name> --volume=<volume_name>
esxcli storage nfs add --host <host_name> --share <share_name> --volume <volume_name>
```

IMPORTANT For a complete list of ESXCLI commands, see the *vSphere Command-Line Interface Reference*. The *vSphere Command-Line Interface Concepts and Examples* document illustrates how to perform common tasks with ESXCLI or `vicfg–` commands.

Shell Commands

In contrast to VMware ESX, VMware ESXi does not include a console OS with a large set of shell commands and other software. However, a small set of shell commands is available in the ESXi Shell.

IMPORTANT The commands are not tested or supported by VMware. Use VMware commands such as ESXCLI, `vicfg–` commands, and so on, instead.

You can see a list of commands in `/usr/bin`. When you list the commands with `ls –al`, notice that several of the utilities are redirected to commands appropriate in the vSphere environment. The following commands produce different results than typical shell commands.

- Several commands are redirected to `vmkvsitools`.

  IMPORTANT `vmkvsitools` is intended for use with VMware Technical Support. Do not use `vmkvsitools` to manage your system.

- Ping commands are redirected to `vmkping`.
- Some additional commands are available in the ESXi Shell for certain troubleshooting tasks. Use these commands when instructed by a VMware Knowledge Base article or VMware Technical Support staff.
- User management commands are deprecated.

Go to `/usr/bin` and run `ls –a` to see a complete list.

Replacing Agents

With ESX 4.x, management agents and hardware monitoring and management agents run in the service console. With ESXi 5, agents are implemented in other ways.

- **Management agents**. VMware partners create management agents by using one of the vSphere APIs.
- **Hardware agents**. Developers use CIM (Common Information Model) agents. CIM is a standards-based approach to monitoring hardware resources. CIM output is readable by third-party management tools. The VMkernel can include both VMware CIM providers and Partner CIM providers. Use a vSphere Client logged in to a vCenter Server system to view hardware information including alarms. Use the vSphere Client extension framework or the vSphere CIM SDK for customization.
- **Infrastructure service agents**. Administrators can use agents available in the ESXi Shell. Agents include hostd (host daemon), vpxa, NTP, syslog, SNMP, and so on. Use the vSphere SDK, vCLI commands, or ESXCLI commands to manage the agents.

Table 2. Infrastructure Services for Production Environments

Function	ESX	ESXi	Management
Time synchronization	NTP agent in service console	Built-in NTP service	`vicfg-ntp` command
Centralized log collection	Syslog agent in service console	Built-in Syslog service	`esxcli system syslog` commands vSphere Client
SNMP monitoring	SNMP agent in service console	Built-in SNMP service	`esxcli system snmp` command
Local access authentication	Active Directory (AD) agent in service console Built in Active Directory service	Built-in Active Directory service	vSphere Client `vicfg-authconfig` vCLI command.

Logging in vSphere 5 and Later

Logging in vSphere 5 has been significantly enhanced. You now have fine-grained control over system logs, the location where logs are sent, and, for each log, default size and rotation policy. You can set up logging with the vSphere Client or with the `esxcli system syslog` command. You can also set up logging behavior for a host by using the Host Profiles interface in the vSphere Client and can then import that host profile into other hosts.

Remote Logging Setup in ESXi

You can move most ESXi logging information off the host. Collecting data to a central location is especially useful for hosts provisioned with Auto Deploy. You can perform these tasks:

- Set up NTP on the ESXi hosts you are monitoring and on the systems that host the logging services or store the logs. You can use the vSphere Client or the `vicfg-ntp` vCLI command to set up NTP.
- Configure syslog to save logs to a remote host. You can send logs to a specific directory, and configure subloggers. See "Using ESXCLI for Syslog Configuration" on page 10.
- vCenter Server and ESXi have SNMP agents. You can set up the vCenter Server SNMP agent with the vSphere Client. You can set up the ESXi SNMP agent with the vSphere Client or the `esxcli system snmp` commands. See *vSphere Command-Line Interface Solutions and Examples*.
- Listen for CIM indications.

Using ESXCLI for Syslog Configuration

The `esxcli system syslog` command allows you to configure the logging behavior of your ESXi system. You can perform the same customizations with the vSphere client, as discussed in the *vCenter Server and Host Management* documentation. The command has the following options:

Table 3. esxcli syslog Options

Option	Description
`mark`	Mark all logs with the specified string.
`reload`	Reload the configuration and update any configuration values that have changed.
`config get`	Retrieve the current configuration.
`config set`	Set the configuration. Use one of the following options. ■ `--logdir=<path>` – Save logs to a given path. ■ `--loghost=<host>` – Send logs to a given host (see discussion on loghost format below) ■ `--logdir-unique=<true|false>` – Specify whether the log should go to a unique subdirectory of the directory specified in `logdir`. ■ `--default-rotate=<int>` – Default number of log rotations to keep ■ `--default-size=<int>` – Size before rotating logs, in kilobytes.
`config logger list`	Show currently configured sub-loggers.
`config logger set`	Set configuration options for a specific sublogger. Use one of the following options: ■ `--id=<str>` – ID of the logger to configure (required) ■ `--reset=<str>` – Reset values to default ■ `--rotate=<long>` – Number of rotated logs to keep for a specific logger (requires `--id`) ■ `--size=<long>` – Set size of logs before rotation for a specific logger, in kilobytes (requires `--id`)

esxcli system syslog Examples

The following workflow illustrates how you might use `esxcli system syslog` for log configuration.

1 Show configuration options.

```
esxcli system syslog config get
Default Rotation Size: 1024
   Default Rotations: 8
   Log Output: /scratch/log
   Logto Unique Subdirectory: false
   Remote Host: <none>
```

2 Set all logs to keep twenty versions, then start overwriting the oldest log.

```
esxcli system syslog config set --default-rotate=20
```

3 Set the rotation policy for VMkernel logs to 10 rotations, rotating at 2MB.

```
esxcli system syslog config logger --id=vmkernel --size=2048 --rotate=10
```

4 Send logs to remote host `myhost.mycompany.com`. The logs will use the default UDP port, 514.

```
esxcli system syslog config set --loghost='myhost.mycompany.com'
```

5 Send logs `/scratch/mylogs` on the remote host `myhost.mycompany.com` using TCP/IP port 1514.

```
esxcli system syslog config set --loghost='tcp://myhost.mycompany.com:1514'
               --logdir='/scratch/mylogs'
```

6 Send a log message into all logs simultaneously.

```
esxcli system syslog mark --message="this is a message!"
```

7 Reload the syslog daemon and apply configuration changes.

```
esxcli system syslog reload
```

Viewing Logs in the ESXi Shell

In the ESX 4.x shell, the location for logs is `/var/log`. In the ESXi Shell, you can also find all current logs in the `/var/log` directory. Some of the logs are symbolic links to the `/var/run/log` directory.

Most logs are at top level and not inside a directory under `/var/run/log`. Available logs depend on which plugins are installed and what other changes might have been made to the system. The following table lists some frequently used logs in the ESXi Shell.

ESX 4.x shell	ESXi 5.x shell	Description
`/var/log/vmware/hostd.log`	`/var/log/hostd.log`	Log for the host daemon.
`/var/log/vmkwarning`	`/var/log/vmkwarning.log`	
`/var/log/vmksummary`	`/var/log/vmksummary.log`	
`/var/log/messages`	`/var/log/vmkernel.log`	VMkernel warnings and VMkernel events.
`/var/log/vmware/vpx/vpxa.log`	`/var/log/vpxa.log`	vCenter Server agent log.

Core Dump Setup for ESXi

A core dump can be used to determine the reason for system failure. With ESX, the core dump was placed on the local disk in many cases. With ESXi, you have two options for managing core dumps.

- **Create a diagnostic partition on SAN storage**. Each host must have a diagnostic partition of 100MB. If multiple hosts share a SAN, configure a diagnostic partition with 100MB for each host.
- **Install and configure ESXi Dump Collector.** New in ESXi, the Dump Collector service allows you to send core dumps to a network server. ESXi Dump Collector is especially useful for determining reasons for failure of ESXi hosts provisioned with Auto Deploy.

You can use `esxcli system coredump` to configure a remote or local core dump partition. You can also use the Network Configuration host profile to set up hosts to use ESXi Dump Collector. For either case, you can apply the host profile of a host that uses ESXi Dump Collector to other hosts.

To use ESXi Dump Collector

1 Install the ESXi Dump Collector service on the vCenter Server system or a Windows or Linux system of your choice.

   ESXi Dump Collector is one of the services you can install using the vCenter Server system installation package. See *vSphere Installation and Setup*.

   If you use the vCenter Server on Linux appliance, ESXi Dump Collector is preinstalled.

2 Set up ESXi systems that should use ESXi Dump Collector with commands in the `esxcli system coredump` namespace.

   Two namespaces are supported inside this namespace.

   - `esxcli system coredump partition`
     - `get`: Retrieve one of the dump partition values.
     - `list`: List all partitions on the system that have a partition type matching the VMware Core partition type.
     - `set`: Set the core dump partition for this system.
   - `esxcli system coredump network`
     - `get`: Get the currently configure parameters for ESXi Dump Collector (network coredump), if enabled.
     - `set`: Set the parameters used for network coredump.

The following example sets up the network and enables ESXi Dump Collector with the ESXCLI vCLI command.

```
esxcli --server MyESXiHost system coredump network set --interface-name vmk0 --server-ipv4 10XX...
--port 6500
esxcli --server MyESXiHost system coredump network get --enable true --type network
```

You are prompted for a user name and password for the ESXi host.

Retrieving Networking Information

Linux commands for retrieving networking information are not included in the ESXi Shell. You can instead use ESXCLI commands.

On ESXi 5, `ifconfig` information is the information for the VMkernel NIC that attaches to the Management Network port group. You can retrieve that information by using ESXCLI commands.

```
esxcli network ip interface list
esxcli network ip interface ipv4 get –i vmk<X>
esxcli network ip interface ipv6 get –n vmk<X>
esxcli network ip interface ipv6 address list
```

You can retrieve information about DNS with the `esxcli network ip dns` command in the following two namespaces:

```
esxcli network ip dns search
esxcli network ip dns server
```

For information corresponding to the Linux `netstat` command, use the following ESXCLI command.

```
esxcli network ip connection list
```

Adding Third-Party Extensions to Hosts

The process of adding patches is simplified in ESXi 5. All patches and third-party extensions can be made available as VIB packages. When a VMware partner releases a third-party extension as a VIB package, the partner can make the package available as a ZIP depot (offline depot).

1 Download the ZIP depot to your ESXi system but do not unpack it.

2 Run `esxcli software vib` to add the package to your system.

3 Reboot your ESXi system

   Reboot is always recommended. Some patches do not require reboot.

The VIB system refreshes the host daemon after you reboot your system. If the VIB requires an exception to the firewall rules, rebooting also updates the firewall ruleset.

You can instead use a firewall configuration file to specify port rules for host services you want to enable for the extension.

vSphere Security documentation discusses how to add, apply, and refresh a firewall rule set and lists the `esxcli network firewall` commands. The ESXi 5 `ruleset.xml` format is the same as in ESX/ESXi 4.x, but has two additional tags, `enabled` and `required`. The firewall on ESXi 5.0 and on ESXi 5.1 still supports the old format.

vSphere Upgrade documentation discusses using `esxcli software sources` and `esxcli software vib` to explore and install patches and extensions.

In some situations, you might use *vSphere Update Manager* instead of the `esxcli` command to install third-party extensions. The extension vendor provides information on the install or upgrade process.

Reference to Replacements for Service Console Commands

Table 4 lists common ESX/ESXi 4.x service console commands and corresponding ESXi 5 shell commands.

IMPORTANT This document does not present a complete list of ESXCLI commands. The focus is on replacing existing service console commands. See the *vSphere Command-Line Interface Reference* for a complete list of commands.

The links in the Command column of the table point to more detailed information for each command, with corresponding ESXCLI commands for each option where available. Click the link in the More Information column for a table with detailed information about that command.

Table 4. Replacements for Service Console Commands

Service Console Command	ESXi 5 Replacement	More Information	Deprecated ESXi Shell
`esxcli`	Syntax for most ESXCLI commands has changed.	"ESXCLI Command Syntax" on page 15	No
`esxcfg-advcfg`	`esxcli system settings advanced`	"esxcfg-advcfg" on page 17	Yes
`esxcfg-dumppart`	`esxcli system coredump`	"esxcfg-dumppart" on page 18	Yes
`esxcfg-firewall`	In ESX 4.x, protects the service console. In ESXi 5.x, `esxcfg-firewall` is not necessary because no service console exists. The `esxcli network firewall` command is available for ESXi firewall management.	*vSphere Security* documentation.	N.A.
`esxcfg-info`	Provides a view of the internal state of the VMkernel and service console components. Some of the functionality is covered by certain ESXCLI commands.	"esxcfg-info" on page 19	No
`esxcfg-ipsec`	`esxcli network ip ipsec`	"esxcfg-ipsec" on page 20	No
`esxcfg-swiscsi` `esxcfg-hwiscsi`	`esxcli iscsi`	"esxcfg-swiscsi and esxcfg-hwiscsi" on page 21	Yes
`esxcfg-module`	`esxcli system module`	"esxcfg-module" on page 23	Yes
`esxcfg-mpath`	`esxcli storage core path` commands.	"esxcfg-mpath" on page 23	Yes
`esxcfg-nas`	`esxcli storage nfs`	"esxcfg-nas" on page 24	Yes
`esxcfg-nics`	`esxcli network nic`	"esxcfg-nics" on page 24	Yes
`esxcfg-rescan`	`esxcli storage core` commands.	"esxcfg-rescan" on page 25	Yes
`esxcfg-route`	`esxcli network ip route` commands	"esxcfg-route" on page 22	Yes
`esxcfg-scsidevs`	Use `esxcli storage core` and `esxcli storage core filesystem` commands.	"esxcfg-scsidevs" on page 22	Yes
`esxcfg-vmknic`	`esxcli network ip interface` covers most options and includes a number of options not available in the `esxcfg-vmknic` command.	"esxcfg-vmknic" on page 25	Yes
`esxcfg-volume`	`esxcli storage filesystem`	"esxcfg-volume" on page 26	Yes
`esxcfg-vswif`	Used to configure service console networking in 4.x systems. Not needed and not available in the ESXi 5.x ESXi Shell.		Yes
`esxcfg-vswitch`	`esxcli network vswitch standard` for standard switches. `esxcli network vswitch dvs` for distributed switches.	"esxcfg-vswitch" on page 27	Yes
`esxtop`	Supported in the ESXi 5.x ESXi Shell. If you do not have access to the ESXi Shell, use the `resxtop` remote vCLI command from a supported Linux system or from vMA.	"esxtop" on page 29	No
`esxupdate`	`esxcli software vib` **Note**: Both `esxupdate` and `vihostupdate` are not supported against ESXi 5.0 and ESXi 5.1 hosts.	"esxupdate" on page 29	Yes
`vmkfstools`	The `vmkfstools` command is available in the ESXi 5.x ESXi Shell. The `vmkfstools` vCLI command options differ slightly from the shell command options.	"vmkfstools" on page 29	No
`vmkping`	Use `esxcli network diag ping`.	*vSphere Command-Line Interface Reference*.	Yes

Table 4. Replacements for Service Console Commands (Continued)

Service Console Command	ESXi 5 Replacement	More Information	Deprecated ESXi Shell
`vmware-cmd`	Not available in ESXi Shell. Available in vCLI. In many cases, VMware PowerCLI cmdlets perform the same tasks as `vmware-cmd`.	Use `vmware-cmd --help` for information.	Yes
`vm-support`	Creates a tar archive containing debugging information for the server. This command is intended for use with VMware Support. No equivalent vCLI command exists.	Use `vm-support --help` for more information.	No

ESXCLI Command Syntax

In ESXi 4.x, all ESXCLI commands must follow the same syntax.

```
esxcli <conn_options> <namespace> <app> <cmd> [cmd_options]
```

In ESXi 5.0 and ESXi 5.1, the ESXCLI command syntax is more flexible. Each command can use an arbitrary number of namespaces. Different commands have a different number of elements.

```
esxcli <conn_options> <namespace> [namespace, ...] <cmd> [cmd_options]
```

IMPORTANT You must update all ESXCLI commands explicitly; no scripts are available for the task. Starting with vSphere 5.0, most management commands will be ESXCLI commands.

Updates to ESXCLI 4.x Commands

The following table lists equivalent commands for `esxcli corestorage` commands.

Table 5. esxcli 4.x corestorage namespace

ESXCLI in ESXi 4.x	ESXCLI in ESXi 5.x
`corestorage claiming reclaim --<option>`	`storage core claiming reclaim --<option>`
`corestorage claiming unclaim --<option>`	`storage core claiming unclaim --<option>`
`corestorage claimrule add --<options>`	`storage core claimrule add --<options>`
`corestorage claimrule convert --commit`	Several new options for this command are available. See the *vSphere Command-Line Interface Reference*, or run the command with `--help`.
`corestorage claimrule delete --<option>`	`storage core claimrule convert --commit`
`corestorage claimrule list --claimrule`	`storage core claimrule remove --<option>`
`corestorage claimrule load --claimrule-class`	`storage core claimrule list --claimrule-class`
`corestorage claimrule move --<option>`	`storage core claimrule load --claimrule-class`
`corestorage claimrule run --<option>`	`storage core claimrule move --<option>`
	`storage core claimrule run --<option>`

`corestorage device list --device`	`storage core device stats get`
	`storage core device list --device`
	Other list commands are included in this namespace.

`corestorage plugin list --plugin-class`	`storage core plugin list --plugin-class`

The following table lists equivalent commands for `esxcli storage nmp` commands.

Table 6. esxcli nmp namespace

esxcli storage nmp commands in ESXi 4.x	esxcli storage nmp commands in ESXi 5.x
`nmp device list --list` `nmp device list --device`	`nmp device list` `nmp device list --device`
`nmp device setpolicy <option>`	`nmp device set <option>`
`nmp path list [--device|--path]`	`nmp psp generic deviceconfig get --device`
`nmp fixed getpreferred <option>`	`nmp psp fixed deviceconfig set <option>`
`nmp psp list` `nmp psp getconfig [--device|--path]`	`nmp psp generic deviceconfig get [--device]`
`nmp psp setconfig` `[--config|--device|--path]`	`nmp psp generic deviceconfig set` `[--config|--path]`
`nmp roundrobin getconfig <option>`	`nmp psp roundrobin deviceconfig get <option>`
`nmp roundrobin setconfig <option>`	`nmp psp roundrobin deviceconfig set <option>`
`nmp satp list`	`nmp satp list`
`nmp satp listrules`	`nmp satp rule list`
`nmp satp addrule <option>`	`nmp satp rule add <option>`
`nmp satp deleterule <option>`	`nmp satp rule remove <option>`
`nmp satp getconfig --device` `nmp satp getconfig --path`	`nmp satp generic deviceconfig get --device` `nmp satp generic pathconfig get --path`
`nmp satp setconfig --config --device` `nmp satp setconfig --config --path`	`nmp psp generic deviceconfig set` `nmp psp generic pathconfig set`
`nmp satp setdefaultpsp [--boot | --psp | --satp]`	`nmp satp set [--boot | --psp | --satp]`

The `esxcli network` commands included in ESXCLI 4.1 have been renamed. Many additional networking commands are available in ESXCLI 5.x

Table 7. esxcli network namespace

esxcli 4.x	esxcli 5.x	Comment
`network neighbors list`	`network ip neighbor list`	List ARP table entries.
`network connection list`	`network ip connection list`	List active TCP/IP connections.

The `esxcli swiscsi` namespace supports a few management commands for software iSCSI in ESXi 4.1. The commands have been renamed. ESXCLI equivalents have also been added for the `esxcfg-swiscsi` and `esxcfg-hwiscsi` commands.

Table 8. esxcli swiscsi namespace

ESXCLI 4.x	esxcli 5.x	Comment
`swiscsi nic [--add | --list | --remove]`	`iscsi networkportal [add | list | remove]`	Perform operations on the iSCSI network portal (iSCSI VMkernel NIC).
`swiscsi vmknic --list`	`iscsi logicalnetworkportal list`	Perform operations on the iSCSI logical network portal.

Table 8. esxcli swiscsi namespace (Continued)

ESXCLI 4.x	esxcli 5.x	Comment
`swiscsi vmnic --list`	`iscsi physicalnetworkportal list`	Perform operations on the iSCSI physical network portal (uplink).
`swiscsi session [--add | --list | --remove]`	`iscsi session [add | list | remove]`	Perform operations on iSCSI sessions. **Note**: The `add` and `remove` commands are intended only for use by VMware partners. Use the `iscsi session connection` namespace to perform operations on the iSCSI connection.

The 4.1 `esxcli vms` namespace allows you to list virtual machines and forcibly stop them. The namespace has been renamed.

esxcli 4.x	esxcli 5.x	Comment
`vms vm kill`	`vm process kill`	Forcibly kill virtual machines that are not responding to normal stop operations. Requires the type of kill operation (`soft`, `hard`, `force`) and the world ID of the virtual machine to kill.
`vms vm list`	`vm process list`	Display the world ID of virtual machines on the host.

esxcfg-advcfg

Instead of `esxcfc-advcfg`, use `esxcli system settings advanced`. The following commands are supported.

Table 9. esxcfg-advcfg Replacement Commands

esxcfg-advcfg option	ESXCLI Command	Description
`-g|--get`	`system settings advanced list -o=option`	Get the value of the VMkernel advanced configuration option. Us `--option` to retrieve information for a single option, or `--tree` to limit the list to a specific subtree.
`-s|--set <value>`	`system settings advanced set`	Set the value of the VMkernel advanced configuration option.
`-d|--default`	`system settings advanced set -d|--default`	Reset a VMkernel advanced configuration option to default.
`-l|--list`	`system settings advanced list`	List all VMkernel advanced configuration options.
`-q|--quiet`	No longer supported	
`-k|--set-kernel`	`system settings kernel set`	Set a VMkernel load time option value for the next boot.
`-j|--get-kernel`	`system settings kernel list`	Get a VMkernel load time option value for the next boot.
`-c|--get-config`	Not supported	
`-m|--set-message`	`system welcomemsg set`	Set the welcome message for the direct console. You can retrieve the message with `system welcomemsg get`.
`-u|--uuid`	`system uuid get`	Ensure the VMkernel system UUID is set and print it.
`-G|--get-user-var`	`system settings advanced list | grep <var>`	Get the value of a user-specified generic value.
`-S|--set-user-var`	`system settings advanced set`	Set the value of a user-specified generic value.

Table 9. esxcfg-advcfg Replacement Commands (Continued)

esxcfg-advcfg option	ESXCLI Command	Description
`-D|--del-user-var`	Adding or deleting user variables is no longer supported.	
`-U|--user-var`	`--option=<str>`	Name of the user variable to use for when retrieving and setting user variables.
`-A|--add-option <name>`	No longer supported. This option was used to add CIM options. Use the CIM SDK instead.	
`-T|--add-type`	Adding or deleting user variables is no longer supported.	
`-E|--add-desc`	Adding or deleting user variables is no longer supported.	
`-F|--add-default`	Adding or deleting user variables is no longer supported.	
`-N|--add-min`	Adding or deleting user variables is no longer supported.	
`-M|--add-max`	Adding or deleting user variables is no longer supported.	
`-H|--add-hidden <val>`	Adding or deleting user variables is no longer supported.	
`-L|--del-option <name>`	No longer supported. This option was used to add CIM options. Use the CIM SDK instead.	
`-V|--has-option <name>`	Use `esxcli system settings advanced list` to list all options instead.	The ESXCLI command lists the value of the VMkernel advanced configuration options. The output includes the current setting for each option.
`-r|--restore`	No longer available. Internal use only in previous versions.	

esxcfg-dumppart

When using the ESXi Shell, you can configure your system to save core dumps to a local partition or to use the ESXi Dump Collector and save core dumps to a prespecified local or remote partition.

- Use `esxcli coredump partition` commands to configure a local dump partition.
- Install ESXi Dump Collector to support sending core dumps to a remote host and run `esxcli coredump network` commands to configure the remote dump partition.

IMPORTANT You can no longer use `esxcfg-dumppart` to enable core dumps. Use ESXCLI instead.

The following table lists the `esxcfg-dumppart` command options and corresponding ESXCLI commands.

Table 10. esxcfg-dumppart Replacement Commands

esxcfg-dumppart Option	ESXCLI Command	Description
`-l | --list`	`system coredump partition list`	List all partitions on the ESXi system that have the appropriate partition type to act as a diagnostic partition. **Important**: Execution might take several minutes and slow down your ESXi host because the command scans all LUNs on the system.
`-t | --get-active`	`system coredump partition get`	Display the active diagnostic partition for this system. Running the ESXCLI command returns the active configured partition. If an active partition exists, the command returns the naa number of the LUN and the corresponding partition, in the format `naa.xx...:p`.
`-c | --get-config`	`system coredump partition get`	Get the configured diagnostic partition for the system.
`-S | --smart-activate`	`system coredump partition set --smart --enable= true`	Run the smart activate algorithm to activate the configured dump partition, or if no partition is configured, select the best possible candidate based on the media of the available dump partitions.
`-a | --activate`	`system coredump partition set --enable=true`	Make the specified partition the current diagnostic partition.
`-d | --deactivate`	`system coredump partition set --enable=false`	Deactivate the active diagnostic partition or deactivate ESXi Dump Collector. **CAUTION**: If you run this command, your system cannot write errors to a file until another partition is activated. You lose any error record if errors occur.
`-s <naa.xx:1> | --set <naa.xxxxxxxx:1>`	`system coredump partition set --partition xxx.xxx`	Set and activate the diagnostic partition. Specify the partition using `naa.xxx:1` or `eui.xxx` syntax.
`-C | --copy [-n | --newonly] [-z | --zdumpname] [-o | --slot]`	No corresponding ESXCLI command.	
`-L --log`	No corresponding ESXCLI command.	

esxcfg-info

No comprehensive set of equivalent ESXCLI commands corresponding to `esxcfg-info` is available yet. The following commands are offering some of the `esxcfg-info` capability.

Table 11. ESXCLI Information Retrieval Commands

Command	Description
`hardware bootdevice list`	List the boot device order for this host, if available.
`hardware clock get`	Display the current hardware clock time.
`hardware cpu cpuid get`	Get information from the CPUID instruction on each CPU on this host.
`harware cpu cpuid get --cpu=<n>`	Get information from the CPUID instruction on CPU number <n>.

Table 11. ESXCLI Information Retrieval Commands (Continued)

Command	Description
`hardware cpu global get`	List information and configuration global to all CPUs.
`hardware cpu list`	List all CPUs on this host.
`hardware memory get`	Get information about memory.
`hardware pci list`	List all the PCI devices on this host.
`hardware platform get`	Get information about the platform.
`network vswitch standard list`	List the virtual switches on the ESXi host.
`network vswitch standard policy shaping get`	Retrieve the network shaping information for the virtual switch.
`network vswitch standard policy failover get`	Retrieve the failover policy information for the virtual switch.
`network vswitch standard policy security get`	Retrieve the security policy information for the virtual switch.
`network vswitch standard portgroup policy shaping get`	Retrieve the network shaping information for the port group.
`network vswitch standard portgroup policy failover get`	Retrieve the failover policy information for the port group.
`network vswitch standard portgroup policy security get`	Retrieve the security policy information for the port group.
`network nic list`	List the physical NICs currently installed and loaded on the system.
`network ip interface list`	List the VMkernel network interfaces currently known to the system.
`network ip dns server list`	Print a list of the DNS server currently configured on the system in the order in which they will be used.

esxcfg-ipsec

In vSphere 5.1, you can use commands in the `esxcli network ip ipsec` namespace in place of the `esxcfg-ipsec` command.

Table 12. esxcfg-ipsec Replacement Commands

vicfg-ipsec Option	esxcli Command or Option
`--action [none|discard|ipsec] |`	`network ip ipsec sp add --action`
`--add-sa <sa> |`	`network ip ipsec sa add`
`--add-sp <sp> |`	`network ip ipsec sp add`
`--dir [in | out] |`	`network ip ipsec sp add --flowdirection`
`--dst-port <port> |`	`network ip ipsec sp add --destinationport`
`--flush-sa |`	`network ip ipsec sp remove --removeall`
`--flush-sp |`	`network ip ipsec sa remove --removeall`
`--ealgo [null | 3des-cbc | aes128-cbc]|`	`network ip ipsec sa add --encryptionalgorithm`
`--ekey <e_key>|`	`network ip ipsec sa add --encryptionkey`
`--ialgo [hmac-sha1 | hmac-sha2-256] |`	`network ip ipsec sa add --integrityalgorithm`
`--ikey <i_key> |`	`network ip ipsec sa add --integritykey`
`--list-sa <sa> |`	`network ip ipsec sa list`
`--list-sp <sp> |`	`network ip ipsec sp list`
`--remove-sa <sa> |`	`network ip ipsec sa remove`

Table 12. esxcfg-ipsec Replacement Commands

vicfg-ipsec Option	esxcli Command or Option
--remove-sp <sp> |	network ip ipsec sp remove
--sa-dst <destination>	network ip ipsec sa add --sadestination network ip ipsec sa remove --sadestination
--sa-src <IP> |	network ip ipsec sa add --sasource network ip ipsec sa remove --sasource
--sa-name <name> |	network ip ipsec sa add --saname network ip ipsec sa remove --saname
--sp-dst <destination> |	network ip ipsec sp add --spdestination
--spi <spi> |	network ip ipsec sa add --saspi network ip ipsec sa remove --saspi
--sp-src <source> |	network ip ipsec sp add --spsource
--spmode <mode> |	network ip ipsec sp add --spmode
--src-port <port> |	network ip ipsec sp add --sourceport
--ulproto [any | tcp | udp | icmp6]	network ip ipsec sp add --sourceport --upperlayerprotocol

esxcfg-swiscsi and esxcfg-hwiscsi

The ESX 4.x service console includes two commands for iSCSI management.

The `esxcfg-swiscsi` command manages software iSCSI. Equivalent ESXCLI commands are available in vSphere 5.

Table 13. esxcfg-swiscsi Replacement Commands

esxcfg-swiscsi Option	ESXCLI Command	Description
-e --enable	iscsi software set --enabled=true	Enable Software iSCSI on the system, if disabled.
-D --disable	iscsi software set --enabled=false	Disable Software iSCSI on the system, if enabled.
-q --query	iscsi software get	Check if Software iSCSI is enabled or disabled on the system.
-s --scan	iscsi adapter discovery rediscover -A <adapter_name> storage core adapter rescan [-A <adapter_name> | -all]	Scan the system for disks available through Software iSCSI interface. Call the two commands in order.
-k --kill	Not supported	
-r --restore	Not supported	

The `esxcfg-hwiscsi` command managed hardware iSCSI.

Table 14. esxcfg-hwiscsi Replacement Commands

esxcfg-hwiscsi Option	ESXCLI Command	Description
`-l`	`iscsi physicalnetworkportal param get`	List current configuration

`-a [allow | deny] <vmkernel_SCSI_adapter>`	1. Find the adapter.
	`iscsi adapter list`
	2. Get ARP redirection information.
	`iscsi physicalnetworkportal param get -A vmhba4`
	3. Enable ARP redirect.
	`iscsi physicalnetworkportal param set --option ArpRedirect=true -A vmhba4`
		Allow or deny ARP redirection on the adapter.

`-j [enable | disable] <vmkernel_SCSI_adapter>`	1. Find the adapter.
	`iscsi adapter list`
	2. Get jumbo frame information.
	`iscsi physicalnetworkportal param get -A vmhba4`
	3, Set MTU to 9000 to enable jumbo frames.
	`set the mtu to 9000 to enable jumbo frames.`
	`esxcli iscsi physicalnetworkportal param set -o=MTU -v=9000 -A vmhbaXX`
	You can later set MTU back to 1500 to disable jumbo frames.
	`esxcli iscsi physicalnetworkportal param set -o=MTU -v=1500 -A vmhbaXX`
		Enable or disable jumbo frame support.

esxcfg-route

The `esxcfg-route` command has equivalent ESXCLI commands. The new command set has enhanced functionality.

Table 15. esxcfg-rout Replacement Commands

esxcfg-route Option	ESXCLI Command	Description
`add`	`network ip route ipv4 add` `network ip route ipv6 add`	Adds an IPv4 or IPv6 route. You specify the gateway and the network.
`del`	`network ip route ipv4 remove` `network ip route ipv6 remove`	Remove an IPv4 or IPv6 route. You specify the gateway and the network.
`list`	`network ip route ipv4 list` `network ip route ipv6 list`	Lists configured IPv4 or IPv6 routs
`--family`		Included in the command as a namespace.

esxcfg-scsidevs

The `esxcfg-scsidevs` command has equivalent ESXCLI commands for some of the options.

Table 16. esxcfg-scsidevs Replacement Commands

esxcfg-scsidevs Option	ESXCLI Command	Description
`-a |--hbas`	`storage core adapter list`	Print the mappings for each SCSI host bus adapter (HBA) to the information about that adapter.
`-l | --list`	`storage core device list`	List all the storage devices known to the system, including both SCSI and non-SCSI devices. The list can be filtered using the `--device` option to limit the output to specific device.

Table 16. esxcfg-scsidevs Replacement Commands (Continued)

esxcfg-scsidevs Option	ESXCLI Command	Description
-c -u	storage core device list	List all the device unique identifiers. Include the mapping from primary identifier to all secondary identifiers. The list can be filtered using the --device option to limit the output to specific device.
-m -f	storage filesystem list	Print the mappings from a VMFS volume to the device and partitions used in that VMFS.

ESXCLI does not have equivalent options for the --device, --vfat, and --hba-device-list filtering options.

The -o|--offline-cos-dev and -n|--online-cos-dev options are service console specific options and not applicable to ESXi 5.x.

esxcfg-module

The esxcfg-module command supports manipulation of the VMkernel loadable modules and device drivers.For the following esxcfg-module options, ESXCLI commands are available.

Table 17. esxcfg-module Replacement Commands

esxcfg-module Option	ESXCLI Command	Description
--get-options <module_name> -g <module_name>	system module parameters list	Returns the option string configured to be passed to the module when the module is loaded.
--set-options <options> <module_name> -s <options> <module_name>	system module parameters set	Specifies the option string to be passed to the module when the module is loaded.
-e --enable	system module set --enabled=true	Enable the given module, indicating that it should load at boot time.
-d --disable	system module set --enabled=false	Disable the given module and prevent it from loading at boot. Disabling the module has no immediate effect on the module state on a running system.
-q --query	system module list --enabled=[true|false]	Query the system for the modules to load at boot.
-m --mod-name -<name>	Not supported.	
-u --unload	Not supported.	
--list -l	system module list --loaded=[true|false]	List the set of currently loaded VMkernel modules.
-i --show-info	system module get system module parameters list	Show information about the module. This command can be run against a module file.
-f --force	system module <cmd> --force	Skip module validation for all options. The get and list commands do not support --force.
-v --verbose -<level>	Not supported	Display more verbose information.

esxcfg-mpath

The esxcfg-mpath command supports listing information about Fibre Channel or iSCSI LUNs and changing a path's state. In vSphere 5, equivalent ESXCLI commands are available.

Table 18. esxcfg-mpath Replacement Commands

esxcfg-mpath Option	ESXCLI Command	Description
`-l --list <path> | <device>`	`storage core path list` `storage core device list`	List detailed information for all paths on the system or for the specified path or device.
`-L --list-compact`	Not supported	
`-m --list-map`	`storage core device list`	For devices currently registered with the PSA, list the filters attached to them. (Not an exact equivalent)
`-b --list-paths`	`storage core path list`	List all devices with their corresponding paths, or list paths for the specified device.
`-G --list-plugins`	`storage core plugin list`	List all multipathing plugins loaded into the system. At a minimum, this command returns NMP (Native Multipathing Plugin). If other multipathing plugins have been loaded, they are listed as well.
`-s --state`	`storage core path setstate --path=<path> --state=[active|off]`	Set the state of a given LUN path to either active or off. This option requires that the `--path` options is set and specifies either the path UID or the path runtime name. If you are changing a path's state, the change operation fails if I/O is active when the path setting is changed. Reissue the command. You must successfully perform at least one I/O operation before the change takes effect.

esxcfg-nas

The `esxcfg-nas` command manipulates NAS file systems associated with ESXi systems. In vSphere 5, equivalent ESXCLI commands are available.

Table 19. esxcfg-nas Replacement Commands

esxcfg-nas Option	ESXCLI Command	Description
`--add <name>` `-a <name>`	`storage nfs add`	Add a new NAS file system to the ESXi host. You must specify the host name or IP address of the NFS volume to add, the share name on the remote system, and the volume name to use for the NFS mount.
`--delete <name>` `-d <name>`	`storage nfs remove --volume-name=<NAS_volume_name>`	Remove an existing NFS volume from the ESXi host. This command unmounts the NAS file system and removes it from the list of known file systems.
`--list` `-l`	`storage nfs list`	List all known NAS file systems with their mount name, share name, and host name. Indicate the mount status for each file system.
`--host <n_host>` `-o <n_host>`	`storage nfs add --host`	Add or remove a specified NAS host (not ESXi host). Used with other options.
`--readonly` `-y`	`storage nfs add --readonly`	Add the new NFS file system with read-only access.
`--share <share>` `-s <share>`	`storage nfs add --share=<share>`	Add or remove a specified NAS host (not ESXi host. Used with other options.

ESXCLI also includes commands to mount and unmount the NAS filesystem.

esxcfg-nics

The `esxcfg-nics` command manages physical NICs (uplink adapters) used by an ESXi host. In vSphere 5, equivalent ESXCLI commands are available.

Table 20. esxcfg-nics Replacement Commands

esxcfg-nics Option	ESXCLI Command	Description
`--auto` `-a`	`network nic set` `--auto`	Set the specified network adapter to autonegotiate its speed and duplex settings.

`--duplex`
`[full|half] <nic>`
`-d [full|half]`
`<nic>`
	`network nic set`
	`--duplex`
		Set the duplex value at which a given network adapter should run to either `full` (transmit data in both directions at the same time) or `half` (transmit data in one direction at a time).

`--list`
`-l`
	`network nic list`
	`network nic get`
	`<adapter>`
		List information about all the network adapters. Use `network nic get <adapter>` to list information about one specific adapter, for example `esxcli network nic get -n vmnic0`

`--speed <speed>`
`<nic>`
`-s <speed> <nic>`
	`network nic set`
	`--speed=<long>`
		Set the speed at which a given network adapter should run. Valid values for `speed` are 10, 100, 1000, or 10000.

esxcfg-rescan

The `esxcfg-rescan` command rescans the storage configuration. In vSphere 5, equivalent ESXCLI commands are available.

Table 21. esxcfg-rescan Replacement Commands

esxcfg-rescan Option	ESXCLI Command	Description
`-a|--add`	`storage core adapter rescan` `--type=add`	Scan for added devices.
`-d|--delete <vmhba#>`	`storage core adapter rescan` `--type=delete --adapter <vmhba#>`	Scan removing dead devices
`-A|--all`	`storage core adapter rescan`	Scan all adapters. By default, the command scans all adapters. You can specify individual adapters by using the `--adapter` option.
`-u|--update <vmhba#>`	`storage core adapter rescan` `--type=update --adapter <vmhba#>`	Scan existing paths and update their state.

In addition, ESXCLI supports several other rescan command. Run `esxcli storage core adapter rescan --help`.

esxcfg-vmknic

The `esxcfg-vmknic` command adds, deletes, and modifies VMkernel network interfaces. In vSphere 5, equivalent ESXCLI commands are available.

Table 22. esxcfg-vmknic Replacement Commands

esxcfg- option	ESXCLI Command	Description

`--add --ip<address>`
`--netmask <netmask>`
`<port-group-name>`
	`network ip interface add`	Add a VMkernel NIC to the system. When the command completes successfully, the newly added VMkernel NIC is enabled.

`--delete <nic_name>`	`network ip interface remove`	Remove a VMkernel NIC.

`--disable -D`	`network ip interface set`
	`--interface-name=<NIC>`
	`--enabled=[true|false]`
		The ESXCLI command enables or disables the specified VMkernel NIC.

`--dvs-name <dvs>` `-s`	Not supported.	
`--dvport_id` `<port_id>`	Not supported.	
`--enable`	`network ip interface ipv4 set` `--interface-name=<NIC>`	Set and enable the specified VMkernel NIC if it is disabled.

Table 22. esxcfg-vmknic Replacement Commands (Continued)

esxcfg- option	ESXCLI Command	Description
--enable-ipv6 -6 [true | false]	network ip interface ipv6 set --enable-dhcpv6 network ip interface ipv6 address [list|add|remove]	Enable IPv6 for the next boot; manage the IPv6 address.
--ip <address> -i <address>	network ip interface ipv4 set --interface-name=<NIC> network ip interface ipv6 set --interface-name=<NIC>	The IP address to be used for the VMkernel NIC. If you set a static IPv4 address, you must specify the --netmask option in same command.
--list -l	network ip interface list network ip interface ipv4 list network ip interface ipv6 list	List VMkernel network interfaces. List IPv4 addresses assigned to the system. List IPv6 addresses assigned to the system.
--mtu <mtu>	network ip interface set --interface-name=<NIC> --mtu=<long>	MTU for the interface being created. Used at the top-level ip namespace, not inside the ipv4 or ipv6 namespace.
--netmask <netmask> -n	network ip interface ipv4 set --interface=<NIC> --netmask=<netmask> network ip interface ipv4 set --interface=<NIC> --netmask=<netmask>	IP netmask(X.X.X.X) to be used for the VMkernel NIC. Setting an IP netmask requires that the --interface option be given in same command.
--peerdns -p	network ip interface ipv4 set --interface=<NIC> --peer-dns=[true|false] network ip interface ipv6 set --interface=<NIC> --peer-dns=[true|false]	Set peer DNS. If set, the system uses the host name, IP address and domain returned by DHCP. Valid only for DHCP.
--portgroup <port_group>	Not needed.	
--unset-ip -U	Not needed.	

esxcfg-volume

The esxcfg-volume command manages LVM snapshot or replica volumes. In vSphere 5, equivalent ESXCLI commands are available in the esxcli storage filesystem and in the esxcli storage vmfs namespaces.

Table 23. esxcfg-volume Replacement Commands

esxcfg-volume Option	ESXCLI Command	Description
--list -l	storage vmfs snapshot list	List unresolved snapshot LUNs or replicas of VMFS volumes.
--mount -m --persistent -M	storage vmfs snapshot mount	Mount a snapshot or replica of a VMFS volume. Use the --nopersist option to mount the volume non-persistently.

Table 23. esxcfg-volume Replacement Commands (Continued)

esxcfg-volume Option	ESXCLI Command	Description
`--resignature <VMFS-UUID|label>`	`storage vmfs snapshot resignature`	Resignature a snapshot or replica volume.
`--umount -u <VMFS-UUID|label>`	`storage vmfs snapshot unmount`	Disconnect and unmount an existing VMFS or NAS volume. The command does not delete the configuration for the volume, but removes the volume from the list of mounted volumes and halts all I/O or network traffic for this volume.

esxcfg-vswitch

The `esxcfg-vswitch` command manages virtual switches. In vSphere 5, equivalent ESXCLI commands are available.

Table 24. esxcfg-vswitch Replacement Commands

esxcfg-vswitch Option	ESXCLI Command	Description
`--add | -a <switch_name>`	`network vswitch standard add`	Add a new virtual switch.
`--add-pg | -A <portgroup> <vswitch_name>`	`network vswitch standard portgroup add portgroup-name=<string> vswitch-name=<string>`	Add a port group to the specified virtual switch.
`--add-dvp-uplink | -P`	Not supported.	Add an uplink adapter to a distributed virtual port (DVP).
`--add-pg-uplink | -M`	`esxcli network vswitch standard portgroup policy failover set --active-uplinks=vmnic1,vmnic6,vminic7`	Update the list of active uplinks for the port group. This command fails silently if the uplink adapter does not exist.
`--check | -c <vswitch_name>`	`network vswitch standard list`	Check whether a virtual switch exists. Print `1` if the switch exists and print `0` otherwise. Use the virtual switch name, e.g. vSwitch0 or vSwitch1, to specify the virtual switch.
`--check-pg | -C <port_group> <vswitch_name>`	`network vswitch standard portgroup list`	Check whether the specified port group exists or not.
`--delete | -d <vswitch_name>`	`network vswitch standard remove --vswitch-name=<vswitch>`	Remove a virtual switch. Running the command with this option fails if any ports on the virtual switch are in use by VMkernel networks or virtual machines.
`--del-pg | -D <port_group> <vswitch_name>`	`network vswitch standard portgroup remove --vswitch-name=<vswitch> --portgroup-name=<portgroup>`	Remove a port group from the virtual switch. Running the command with this option fails if the port group is in use, for example, by a virtual machine or a VMkernel network.
`--del-dvp-uplink | -Q <adapter_name> --dvp <DVPort_id> <dvswitch_name>`	ESXCLI does not support distributed switches. Use the vSphere Client to configure distributed switches.	
`--del-pg-uplink | -N <adapter_name> <port_group> <dvswitch_name>`	`network vswitch standard portgroup policy failover set --active-uplinks=vmnic1,vmnic6,vminic7`	Update the list of active uplinks for the port group.
`--dvp | -V`	ESXCLI does not support distributed switches. Use the vSphere Client to configure distributed switches.	
`--get-cdp | -b <vswitch_name>`	`network vswitch standard list` includes CDP information.	Print the current CDP (Cisco Discovery Protocol) setting for this virtual switch (valid for vSphere 4.0 and later).

Table 24. esxcfg-vswitch Replacement Commands (Continued)

esxcfg-vswitch Option	ESXCLI Command	Description
`--link | -L <physical_nic> <vswitch_name>`	`network vswitch standard uplink add --uplink --vswitch`	Add an uplink adapter (physical NIC) to a virtual switch. Running the command with this option attaches a new unused physical network adapter to a virtual switch.
`--list | -l`	`network vswitch standard list`	List all virtual switches and their port groups.
`--mtu | -m <vswitch_name>`	`network vswitch standard set --mtu=<long>`	Set the MTU (maximum transmission unit) of the virtual switch. This option affects all physical NICs assigned to the virtual switch.
`--pg | -p <port_group>`	`network vswitch standard portgroup set --vlan-id=<long>`	Provide the name of the port group for the `--vlan` option. Specify ALL to set VLAN IDs on all port groups of a virtual switch.
`--set-cdp | -B <vswitch_name> [down | listen | advertise | both]`	`network vswitch standard set --cpd-status=<string>`	Set the CDP status for a given virtual switch (valid for vSphere 4.0 and later). To set, specify `down`, `listen`, `advertise`, or `both`.
`--unlink | -U <physical_nic> <vswitch_name>`	`network vswitch standard uplink remove --uplink=<uplink> --vswitch=<vswitch>`	Remove an uplink adapter from a virtual switch. An uplink adapter corresponds to a physical Ethernet adapter to which the virtual switch is connected. If you remove the last uplink adapter, you lose physical network connectivity for that switch.
`--vlan | -v --pg <port_group>`	`network vswitch standard portgroup set --portgroup-name=<str> --vlan-id=<long>`	Set the VLAN ID for a specific port group of a virtual switch. Setting the option to 0 disables the VLAN for this port group. If you specify this option, you must also specify the `--portgroup` option.
`-X --set-maxactive`	`network vswitch standard portgroup policy failover set --active-uplinks=vmnic1,vmnic6,vminic7`	Explicitly specify the maximum number of active uplinks. At any time, there is one port group NIC array, and a corresponding set of active uplinks. For example, assume the portgroup nic array is [`vmnic1`, `vmnic0`, `vmnic3`, `vmnic5`, `vmnic6`, `vmnic7`] and `active-uplinks` is set to three uplinks (`vmnic1`, `vmnic0`, `vmnic3`), and the rest are standby uplinks. If you set the active uplinks with new set [`vmnic3`, `vmnic5`], those uplinks override the old set. The NIC array changes to [`vmnic3`, `vmnic5`, `vmnic6`, `vmnic7`] and `max-active` becomes 2.

esxtop

The `esxtop` command is available and supported in the ESXi Shell. Search the vSphere Documentation Center, or see the *vSphere Resource Management* documentation.

esxupdate

The `esxupdate` command allows you to manage ESX 4.0 and later systems. Use the commands in the `esxcli software` namespace to install, update, remove, or display individual VIBs (software packages). Use commands in the `esxcli software sources` namespace to query depot contents for VIBs and image profiles. An image profile defines an ESXi image and consists of VIBs.

IMPORTANT The update process in the vSphere 5 environment has been simplified and differs from the process in vSphere 4.1. Several command options do not have direct equivalents. See the *Upgrade Guide*.

Table 25. esxupdate Replacement Commands

esxupdate Command	ESXCLI Command	Description
`query`	`esxcli software vib list`	List all installed VIB packages.

`info`	vSphere 5 does not support bulletins. Instead, you update your system with individual VIBs or image profiles. See the *Upgrade* documentation.
	`esxcli software vib get --vibname=<str>`
	`esxcli software profile get`
		Display information on one or more VIBs.

`update`	`esxcli software vib update`
	`esxcli software profile update`
	`esxcli software vib install`
	`esxcli software profile install`
		The `update` command updates VIB packages but does not install new VIBs.
		The `install` command installs VIB packages from a URL or depot. The command installs, upgrades, or downgrades VIBs.

`remove`	`esxcli software vib remove`	Remove selected VIBs from the host.
`stage`	No longer necessary.	
`scan`	No longer necessary. Run `esxcli software sources profile` to query for image profiles in a depot. Run `esxcli software sources vib` to display information about VIB URLs and files.	

vicfg-snmp

In vSphere 5, you can use the `vicfg-snmp` command to manage the ESXi SNMP agent. In vSphere 5.1, the `esxcli system snmp` namespace has corresponding commands.

vmkfstools

`vmkfstools` is supported in the ESXi Shell and as a vCLI command. Some differences exist between the ESXi Shell `vmkfstools` command and the `vmkfstools.pl` vCLI command.

No equivalent ESXCLI command exists.

vmware-cmd

The `vmware-cmd` command is included in the vCLI package, but is not available in the ESXi Shell.

vm-support

The `vm-support` command is available in the ESXi Shell. The command is not included in the vCLI package.

IMPORTANT The vSphere Client now supports all options to `vm-support`. If you cannot use the vSphere Client to access your ESXi system, you can use the `vm-support` command.

If you have comments about this documentation, submit your feedback to: docfeedback@vmware.com

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Item: EN-001471-00