Configure ESXi server multipathing and timeout settings

VSC, VASA Provider, and SRA 9.7

NetApp
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Virtual Storage Console for VMware vSphere checks and sets the ESXi host multipathing settings and HBA timeout settings that work best with storage systems.

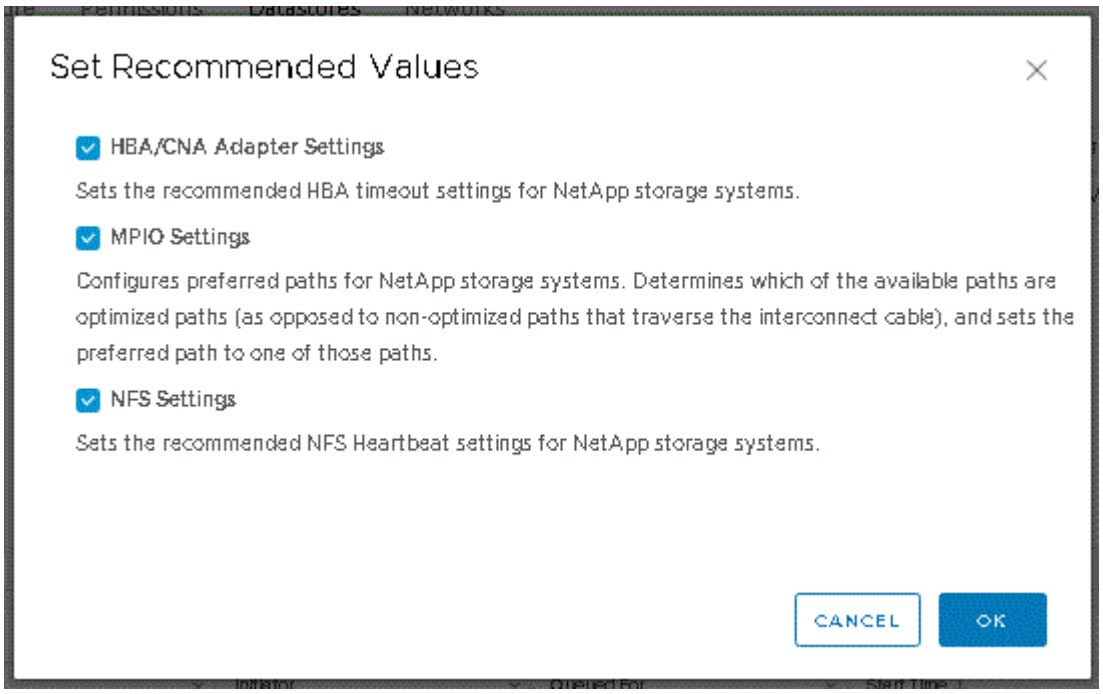
About this task

This process might take a long time, depending on your configuration and system load. The task progress is displayed in the **Recent Tasks** panel. As the tasks are completed, the host status Alert icon is replaced by the Normal icon or the Pending Reboot icon.

Steps

1. From the VMware vSphere Web Client **Home** page, click **vCenter › Hosts**.
2. Right-click a host, and then select **Actions › NetApp VSC › Set Recommended Values**.
3. In the **NetApp Recommended Settings** dialog box, select the values that work best with your system.

   The standard, recommended values are set by default.



4. Click **OK**.

ESXi host values set using Virtual Storage Console for VMware vSphere

You can set timeouts and other values on the ESXi hosts using Virtual Storage Console for VMware vSphere to ensure best performance and successful failover. The values that Virtual Storage Console (VSC) sets are based on internal testing.

You can set the following values on an ESXi host:

ESXi advanced configuration

- **VMFS3.HardwareAcceleratedLocking**

  You should set this value to 1.

- **VMFS3.EnableBlockDelete**

  You should set this value to 0.

NFS settings

- **Net.TcpipHeapSize**

  If you are using vSphere 6.0 or later, you should set this value to 32.

- **Net.TcpipHeapMax**

  If you are using vSphere 6.0 or later, you should set this value to 1536.

- **NFS.MaxVolumes**

  If you are using vSphere 6.0 or later, you should set this value to 256.

- **NFS41.MaxVolumes**

  If you are using vSphere 6.0 or later, you should set this value to 256.

- **NFS.MaxQueueDepth**

  If you are using the vSphere 6.0 or later version of ESXi host, then you should set this value to 128 or higher to avoid queuing bottlenecks.

  For vSphere versions prior to 6.0, you should set this value to 64.

- **NFS.HeartbeatMaxFailures**

  You should set this value to 10 for all NFS configurations.

- **NFS.HeartbeatFrequency**

  You should set this value to 12 for all NFS configurations.

- **NFS.HeartbeatTimeout**

  You should set this value to 5 for all NFS configurations.

FC/FCoE settings

- **Path selection policy**

  You should set this value to “RR” (round robin) when FC paths with ALUA are used.

  You should set this value to “FIXED” for all other configurations.

Setting this value to “RR” helps to provide load balancing across all of the active/optimized paths. The value “FIXED” is used for older, non-ALUA configurations and helps to prevent proxy I/O.

- **Disk.QFullSampleSize**

  You should set this value to 32 for all configurations. Setting this value helps to prevent I/O errors.

- **Disk.QFullThreshold**

  You should set this value to 8 for all configurations. Setting this value helps prevent I/O errors.

- **Emulex FC HBA timeouts**

  Use the default value.

- **QLogic FC HBA timeouts**

  Use the default value.

iSCSI settings

- **Path selection policy**

  You should set this value to “RR” for all iSCSI paths.

  Setting this value to “RR” helps to provide load balancing across all of the active/optimized paths.

- **Disk.QFullSampleSize**

  You should set this value to 32 for all configurations. Setting this value helps to prevent I/O errors.

- **Disk.QFullThreshold**

  You should set this value to 8 for all configurations. Setting this value helps prevent I/O errors.

Configure guest operating system scripts

The ISO images of the guest operating system (OS) scripts are mounted on the Virtual Storage Console for VMware vSphere server. To use the guest OS scripts to set the storage timeouts for virtual machines, you must mount the scripts from the vSphere Client.

Operating System Type	60-second timeout settings	190-second timeout settings
Linux	*https*://<appliance_ip>:8143/vsc/public/writable/linux_gos_timeout-install.iso	*https*://<appliance_ip>:8143/vsc/public/writable/linux_gos_timeout_190-install.iso

Operating System Type	60-second timeout settings	190-second timeout settings
Windows	*https*://<appliance_ip>:8143/vsc/public/writable/windows_gos_timeout.iso	*https*://<appliance_ip>:8143/vsc/public/writable/windows_gos_timeout_190.iso
Solaris	*https*://<appliance_ip>:8143/vsc/public/writable/solaris_gos_timeout-install.iso	*https*://<appliance_ip>:8143/vsc/public/writable/solaris_gos_timeout_190-install.iso

You should install the script from the copy of the VSC instance that is registered to the vCenter Server that manages the virtual machine. If your environment includes multiple vCenter Servers, you should select the server that contains the virtual machine for which you want to set the storage timeout values.

You should log in to the virtual machine, and then run the script to set the storage timeout values.

Set timeout values for Windows guest operating systems

The guest operating system (OS) timeout scripts set the SCSI I/O timeout settings for Windows guest operating systems. You can specify either a 60-second timeout or a 190-second timeout. You must reboot the Windows guest OS for the settings to take effect.

Before you begin

You must have mounted the ISO image containing the Windows script.

Steps

1. Access the console of the Windows virtual machine, and log in to an account with Administrator privileges.
2. If the script does not automatically start, open the CD drive, and then run the `windows_gos_timeout.reg` script.

   The Registry Editor dialog is displayed.

3. Click **Yes** to continue.

   The following message is displayed: `The keys and values contained in D:\windows_gos_timeout.reg have been successfully added to the registry.`

4. Reboot the Windows guest OS.
5. Unmount the ISO image.

Set timeout values for Solaris guest operating systems

The guest operating system (OS) timeout scripts set the SCSI I/O timeout settings for Solaris 10. You can specify either a 60-second timeout or a 190-second timeout.

Before you begin

You must have mounted the ISO image containing the Solaris script.

Steps

1. Access the console of the Solaris virtual machine, and log in to an account with root privileges.
2. Run the `solaris_gos_timeout-install.sh` script.

   For Solaris 10, a message similar to the following is displayed:

   ```
   Setting I/O Timeout for /dev/s-a - SUCCESS!
   ```

3. Unmount the ISO image.

Set timeout values for Linux guest operating systems

The guest operating system (OS) timeout scripts set the SCSI I/O timeout settings for versions 4, 5, 6, and 7 of Red Hat Enterprise Linux and versions 9, 10, and 11 of SUSE Linux Enterprise Server. You can specify either a 60-second timeout or a 190-second timeout. You must run the script each time you upgrade to a new version of Linux.

Before you begin

You must have mounted the ISO image containing the Linux script.

Steps

1. Access the console of the Linux virtual machine, and log in to an account with root privileges.
2. Run the `linux_gos_timeout-install.sh` script.

   For Red Hat Enterprise Linux 4 or SUSE Linux Enterprise Server 9, a message similar to the following is displayed:

   ```
   Restarting udev... this may take a few seconds.
   ```

   ```
   Setting I/O Timeout (60s) for /dev/sda - SUCCESS!
   ```

   For Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, and Red Hat Enterprise Linux 7 a message similar to the following is displayed:

   ```
   patching file /etc/udev/rules.d/50-udev.rules
   ```

   ```
   Hunk #1 succeeded at 333 (offset 13 lines).
   ```

   ```
   Restarting udev... this may take a few seconds.
   ```

```
Starting udev: [ OK ]
```

```
Setting I/O Timeout (60s) for /dev/sda - SUCCESS!
```

For SUSE Linux Enterprise Server 10 or SUSE Linux Enterprise Server 11, a message similar to the following is displayed:

```
patching file /etc/udev/rules.d/50-udev-default.rules
```

```
Hunk #1 succeeded at 114 (offset 1 line).
```

```
Restarting udev ...this may take a few seconds.
```

```
Updating all available device nodes in /dev:   done
```

3. Unmount the ISO image.

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