



INFINIDAT Best Practices for SLES 11 and Qlogic HBAs

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Introduction

This document describes best practices for attaching SLES 11 hosts to InfiniBox over Fiber Channel. INFINIDAT Host PowerTools will support SLES 11 in the 1Q15 release, including automatic host configuration (settings check), but this document is intended for SLES hosts that need early access to InfiniBox.

Supported SLES versions

This procedure supports SLES 11 SP3Topology.

Required software packages

Ensure that the following packages are installed:

Package Name	Used For
sg3_utils	SCSI troubleshooting
device-mapper	MPIO
parted	Volume Provisioning
mkinitrd	Create an initial ram disk image

```
# zypper install sg3_utils + device_mapper + parted + mkinitrd
```

Linux multipath-tools checks

Step 1 Check that multipathing and udev start at boot:

```
#chkconfig multipathd on
#chkconfig boot.multipath on
#chkconfig boot.udev on
```

Step 2 Start the multipath service:

```
#!/etc/init.d/boot.multipath start && /etc/init.d/multipathd start
```

Step 3 Apply the following settings to `/etc/multipath.conf`:

```
defaults {
    max_fds 8192 }
devices {
device {
    vendor "NFINIDAT"
    product "InfiniBox.*"
    prio alua
    path_grouping_policy group_by_prio
    path_checker tur
    path_selector "round-robin 0"
    features "0"
    failback 30
    rr_weight priorities
    no_path_retry queue
    rr_min_io 1 # for kernels up to 2.6.31
    rr_min_io_rq 1 # for kernels 2.6.31 or newer
    flush_on_last_del yes
    fast_io_fail_tmo 5
    dev_loss_tmo 30
    }
}
```

Step 4 Add local device blacklist rules to the multipath config file.
Run `multipath -ll` and manually add blacklist rules for local devices.

FC connectivity checks

Step 1	Ensure that no initiator ports are connected to both InfiniBox and other storage arrays. Update zoning if required.
Step 2	Review zoning and check that zoning adheres to InfiniBox best practices, available here: http://kb.infinidat.com/display/kb/3670211 .
Step 3	Check that the host is connected to InfiniBox by more than one initiator port.
Step 4	Check that the host is connected to all three InfiniBox nodes.
Step 5	Check that the host is connected to InfiniBox via 12 or less paths.
Step 6	Check that the host has less than 32 volumes mapped to it. This is not a hard limit. Consider redesigning the volume layout to use a smaller number of larger volumes with InfiniBox.

FC HBA checks

Step 1	Ensure that QLA driver is installed. Recommended drivers are:
	SLES 11 SP2 8.07.00.08.11.1-k2
	SLES 11 SP3 8.07.00.08.11.3-k2
Step 2	Ensure that the following kernel driver parameters are persistently set via a <code>modprobe.d</code> entry:
	<pre>options qla2xxx ql2xmaxqdepth=128 ql2xenablesix=0 \ ql2xextended_error_logging=507510784</pre>
Step 3	Make a backup of the initial ram disk:
	<pre>cp /boot/initrd-`uname -r` /boot/initrd-`uname -r`_old</pre>
Step 4	Rebuild the initial ram disk:
	<pre>#mkinitrd</pre>
Step 5	Create an entry in <code>/boot/grub/menu.lst</code> for the backup ram disk. Duplicate the default stanza, but change the name and <code>initrd</code> path.

Miscellaneous

Rescan

Step 1	Run <code>rescan-scsi-bus.sh</code> as root after volume provisioning operations.
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How to contact support

Step 1	For 24x7 support, please contact us at: support@infinidat.com or call: 1.855.900.4634 .
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