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Troubleshooting the iSCSI Driver for Solaris

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Introduction

Prerequisites

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Ethernet Jumbo Frame Configuration Procedure

Performance Improvement Techniques

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Related Information

Introduction

This document includes a variety of selected technical topics that you must review if you use the Cisco iSCSI Driver for Solaris 2.6, 7, or 8.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Solaris Operating System maintenance and installation procedures
- The README file that is included with the driver

Components Used

The information in this document is based on these software and hardware versions:

- Version 2.1.4 of the Cisco iSCSI Driver for Solaris, although the majority of the information that is included in this document is also applicable to earlier or later versions of the driver
- Solaris Operating System version 2.6, 7, or 8
- The latest recommended patch set from Sun

Note: There are no known limitations with particular server hardware models or versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

This document uses the term `SN 5400` to refer to any storage router product in the SN 5400 family (SN 5420, SN 5428, or SN 5428–2).

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Ethernet Jumbo Frame Configuration Procedure

You do not need to make any configuration changes in the iSCSI driver or in the Solaris operating system to support jumbo frames. Instead, you must make configuration changes in the Network Interface Card (NIC), through the use of the configuration interface and tools that the NIC manufacturer provides. Not all NICs support jumbo frames, so check with your manufacturer to verify whether the manufacturer supports this feature. Also, you must configure the network equipment, such as, Ethernet switches and routers between the host and the SN 5400 to accept jumbo frames, because most equipment does not support this capability by default.

Performance Improvement Techniques

These are the most likely reasons that iSCSI network performance is lower than expected:

- Flow control is not enabled on the NIC card in the host.
- Flow control is not enabled on one or more of the switches in the Ethernet network that is between the host and the SN 5400.

In order to identify these problems, observe either the `retransmit timeout` or the `data packets retransmitted` counters in the SN 5400. You can also issue the `netstat -s` command in Solaris to observe the `TCP segments retransmitted` counter.

Many NICs and switches are shipped with pause frames (flow control) disabled. If you enable pause frames on all Gigabit Ethernet interfaces (the host system and all network switches), you can reduce dropped packets, which are a source of significant performance degradation. By default, pause frames are enabled on the SN 5400 and you cannot configure them.

If your server uses a Sun Gigabit Ethernet adapter NIC, use this procedure to enable flow control (by default, receive flow control is disabled for the Sun adapter):

1. Add this line to the `/kernel/drv/ge.conf` file (by default, this file does not exist):

```
adv_pauseTX=1;
```

2. Reboot the Solaris host.
3. Issue the `ndd/dev/ge adv_pauseTX` command to verify whether `adv_pauseTX` is set properly.

The NIC must respond with a value of 1.

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Related Information

- [Cisco iSCSI Drivers Documentation](#)
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 - [Storage Networking Product Support](#)
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