

# HP P4000 SAN

---

## Application Notes

### SANiQ TCP and UDP Port Usage

Document Release Date: 02/2011

Software Release Date: 11/2010



## Legal Notices

### Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

### Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

### Copyright Notices

© Copyright 2011 Hewlett-Packard Development Company, L.P.

# TCP/UDP Port Numbers Used by P4000 SAN

## Overview

A P4000 SAN uses the following list of well-known TCP/UDP ports to operate.

## Networking Best Practices With SAN/iQ

For information on networking best practices, see the document Application Note - Building High Performance High Availability IP Storage Networks with SANiQ at the following link on the Resource Center:

<http://bizsupport2.austin.hp.com/bc/docs/support/SupportManual/c01750150/c01750150.pdf>

### TCP/UDP PORTS USED FOR NORMAL SAN OPERATIONS WITH SAN/iQ

IP Protocol	Port(s)	Name	Description
TCP	22	SSH	Secure Shell access for SAN/iQ Support only. Not required for normal day-to-day operations.
TCP	25	SMTP	Outgoing from storage nodes for email-based alerts.
TCP, UDP	53	DNS	Outgoing from storage nodes for hostname resolution.
TCP, UDP	67, 68	bootps	Used only if DHCP is enabled.
UDP	123	NTP	Outgoing from storage nodes for time synchronization.

**TCP/UDP PORTS USED FOR NORMAL SAN OPERATIONS WITH SAN/iQ**

<b>IP Protocol</b>	<b>Port(s)</b>	<b>Name</b>	<b>Description</b>
UDP	161, 162	SNMP	SNMP Agent on the NSM. Incoming from SNMP clients. Outgoing from the storage nodes for SNMP Traps.
UDP	514	Syslog	Outgoing from the storage nodes for remote logging.
TCP, UDP	3205	iSNS	Outgoing from the storage nodes for iSNS services.
TCP	3260	iSCSI	iSCSI initiators connect on this port.
UDP	8453, 8454, 8455	SAN/iQ Internal	Used for internal SAN/iQ discovery.
TCP	11120	SAN/iQ Upgrade	Incoming to storage nodes. Used for upgrading the NSMs. Not required for normal day-to-day operations.
TCP, UDP	13838, 13841, 13843	SAN/iQ Internal	Outgoing from management applications. Incoming to storage nodes. Used for management and control.
TCP	13840, 13850, 13851	SAN/iQ Internal	Outgoing from management applications. Incoming to storage nodes. Used for management and control.
TCP	13846, 13850, 13946, 13847	SAN/iQ Support	Trace Ports for SAN/iQ Support only. Not required for normal day-to-day operations.
TCP	13847	SAN/iQ Internal	Used for Virtual Manager communication.
TCP	13848	SAN/iQ Internal	Used for internal data distribution and resynchronization.
TCP	13849	iSCSI	iSCSI initiators connect to this port when using the P4000 DSM for MPIO.
UDP	27491	Console Discovery	Outgoing from management applications. Incoming to storage nodes. Used by management applications to discover storage nodes.

**TCP/UDP PORTS USED FOR NORMAL SAN OPERATIONS WITH SAN/iQ**

<b>IP Protocol</b>	<b>Port(s)</b>	<b>Name</b>	<b>Description</b>
TCP HTTP/HTTPS	2003, 5988, 5989	CIM Server	Used for HTTP requests to the CIM gateway. Outgoing from management applications. Incoming to storage nodes. Used for management control. Ports used for Performance Dashboard, Global Config request to Mgmt Gateway.
TCP	13990 - 13999	CIM	Ports for CMC notifications for Alarms Events from Mgmt Gateway
UDP	13891, 13893	SAN/iQ Database	Used for heart-beating and distributing configuration changes between management nodes.
UDP	13888, 13889	SAN/iQ Control	Used for internal control communication.
UDP	14000 – 140xx	SAN/iQ Internal	Used as iSCSI targets where xx is the number of initiators
TCP	13887, 13892	Failover Manager	Communication to and from the Failover Manager, when applicable.
UDP	13947	Failover Manager	Communication to and from the Failover Manager, when applicable.
TCP	4443	SAN/iQ Diagnostics	Used by the SAN/iQ Diagnostic tool -DiagiQ that is run by P4000 Support to get advanced diagnostics information using a web interface.
TCP	2301, 2302, 2381, 2382	HP System Insight Manager	Used by the HP System Insight Manager tool to display configuration information of HP platforms like DL380, DL320S using a web interface.
SSH	16022		Ports used for connecting to the cliq

**TCP/UDP PORTS USED FOR REMOTE COPY OPERATIONS ONLY:**

<b>IP Protocol</b>	<b>Port(s)</b>	<b>Name</b>	<b>Description</b>
TCP	11120	SAN/iQ Upgrade	Incoming to storage nodes. Used for upgrading the NSMs. Not required for normal day-to-day operations.
TCP, UDP	13838, 13841, 13843	SAN/iQ Internal	Outgoing from management applications. Incoming to storage nodes. Used for management and control.
TCP	13840, 13850, 13851	SAN/iQ Internal	Outgoing from management applications. Incoming to storage nodes. Used for management and control.
UDP	27491	Console Discovery	Outgoing from management applications. Incoming to storage nodes. Used by management applications for node discovery.

## A Note Regarding Management Applications In SAN/iQ Software

Management applications include the Centralized Management Console and the scripting interface. These applications all use the ports described as management applications in the Description column.