Network port requirements

HCI

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You might need to allow the following ports through your datacenter's edge firewall so that you can manage the system remotely, allow clients outside of your datacenter to connect to resources, and ensure that internal services can function properly. Some of these ports, URLs, or IP addresses might not be required, depending on how you use the system. All ports are TCP unless stated otherwise.

> The NetApp Hybrid Cloud Control web UI and API download software packages from the NetApp online software repository, which uses JFrog Bintray as a distribution hub and Akamai Technologies for file hosting. Because of this, some URLs or IP addresses might resolve to other URLs or IP addresses based on the content delivery network. If possible, you should work with a network engineer to add these URLs or IP addresses to the firewall rules, using the following general steps:
>
> *Steps*
>
> 1. Use the Wget or cURL utilities to access a URL (repo.netapp.com, for example).
> 2. Receive a failure to access the URL (different from repo.netapp.com).
> 3. Edit the firewall rules to allow the new URL.
> 4. Repeat the above steps until the access attempt succeeds.

The following abbreviations are used in the table:

- MIP: Management IP address, a per-node address
- SIP: Storage IP address, a per-node address
- MVIP: Management virtual IP address
- SVIP: Storage virtual IP address

All ports in the table are TCP unless stated otherwise.

Source	Destination	Port	Description
iSCSI clients	Storage cluster MVIP	443	(Optional) UI and API access
iSCSI clients	Storage cluster SVIP	3260	Client iSCSI communications
iSCSI clients	Storage node SIP	3260	Client iSCSI communications

Source	Destination	Port	Description
Compute node BMC	Management node	111 TCP/UDP	NetApp Hybrid Cloud Control API communication
Compute node BMC	Management node	445	NetApp Hybrid Cloud Control API communication
Compute node BMC	Management node	2049 TCP/UDP	NetApp Hybrid Cloud Control API communication
Compute node BMC	Management node	137-138 UDP	NetApp Hybrid Cloud Control API communication
Management node	Compute node BMC	139	NetApp Hybrid Cloud Control API communication
Management node	Compute node BMC	443	NetApp Hybrid Cloud Control HTTPS communication
Management node	VMware vCenter	5988-5989	NetApp Hybrid Cloud Control HTTPS communication
Management node	VMware vCenter	443	NetApp Hybrid Cloud Control HTTPS communication
Management node	sfsupport.solidfire.com	22	Reverse SSH tunnel for support access
Management node	Storage node MIP	22	SSH access for support
Management node	DNS servers	53 TCP/UDP	DNS lookup
Management node	Storage node MIP	442	UI and API access to storage node and Element software upgrades
Management node	Storage node MVIP	442	UI and API access to storage node and Element software upgrades

Source	Destination	Port	Description
Management node	repo.netapp.com/api/repos/netapp-downloads, repo.netapp.com/bintray/dl/, repo.netapp.com/bintray/api/package, netapp-downloads.bintray.com, bintray.com, repo.netapp.com, library.netapp.com	443	Management node service upgrades
Management node	monitoring.solidfire.com	443	Storage cluster reporting to Active IQ
Management node	Storage cluster MVIP	443	UI and API access to storage node and Element software upgrades
Management node	Baseboard management controller (BMC)	443	Hardware monitoring and inventory connection (Redfish and IPMI commands)
Management node	23.32.54.122, 216.240.21.15	443	Element software upgrades
Management node	Witness Node	9442	Per-node configuration API service
Management node	vCenter Server	9443	vCenter Plug-in registration. The port can be closed after registration is complete.
SNMP server	Storage cluster MVIP	161 UDP	SNMP polling
SNMP server	Storage node MIP	161 UDP	SNMP polling
Storage node MIP	DNS servers	53 TCP/UDP	DNS lookup
Storage node MIP	Management node	80	Element software upgrades
Storage node MIP	Management node	443	Element software upgrades
Storage node MIP	S3/Swift endpoint	80	(Optional) HTTP communication to S3/Swift endpoint for backup and recovery

Source	Destination	Port	Description
Storage node MIP	NTP server	123 UDP	NTP
Storage node MIP	Management node	162 UDP	(Optional) SNMP traps
Storage node MIP	SNMP server	162 UDP	(Optional) SNMP traps
Storage node MIP	LDAP server	389 TCP/UDP	(Optional) LDAP lookup
Storage node MIP	Remote storage cluster MVIP	443	Remote replication cluster pairing communication
Storage node MIP	Remote storage node MIP	443	Remote replication cluster pairing communication
Storage node MIP	S3/Swift endpoint	443	(Optional) HTTPS communication to S3/Swift endpoint for backup and recovery
Storage node MIP	Management node	10514 TCP/UDP, 514 TCP/UDP	Syslog forwarding
Storage node MIP	Syslog server	10514 TCP/UDP, 514 TCP/UDP	Syslog forwarding
Storage node MIP	LDAPS server	636 TCP/UDP	LDAPS lookup
Storage node MIP	Remote storage node MIP	2181	Intercluster communication for remote replication
Storage node SIP	S3/Swift endpoint	80	(Optional) HTTP communication to S3/Swift endpoint for backup and recovery
Storage node SIP	S3/Swift endpoint	443	(Optional) HTTPS communication to S3/Swift endpoint for backup and recovery
Storage node SIP	Remote storage node SIP	2181	Intercluster communication for remote replication
Storage node SIP	Remote storage node SIP	4000 through 4020	Remote replication node-to-node data transfer

Source	Destination	Port	Description
Storage node SIP	Compute node SIP	442	Compute node API, configuration and validation, and access to software inventory
System administrator PC	Storage node MIP	80	(NetApp HCI only) Landing page of NetApp Deployment Engine
System administrator PC	Management node	442	HTTPS UI access to management node
System administrator PC	Storage node MIP	442	HTTPS UI and API access to storage node, (NetApp HCI only) Configuration and deployment monitoring in NetApp Deployment Engine
System administrator PC	Management node	443	HTTPS UI and API access to management node
System administrator PC	Storage cluster MVIP	443	HTTPS UI and API access to storage cluster
System administrator PC	Storage node MIP	443	HTTPS storage cluster creation, post-deployment UI access to storage cluster
System administrator PC	Witness Node	8080	Witness Node per-node web UI
vCenter Server	Storage cluster MVIP	443	vCenter Plug-in API access
vCenter Server	Management node	8443	(Optional) vCenter Plug-in QoSSIOC service.
vCenter Server	Storage cluster MVIP	8444	vCenter VASA provider access (VVols only)
vCenter Server	Management node	9443	vCenter Plug-in registration. The port can be closed after registration is complete.

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