| Server | vMotion Network IP Addresses (configured using the post_install script) |
|---|---|
| Server 2 | |
| Server 3 | |
| Subnet mask | |
| Gateway | |

### Port Requirements

☞

**Important**    Ensure that the following port requirements are met in addition to the prerequistes listed for Intersight Connectivity.

If your network is behind a firewall, in addition to the standard port requirements, VMware recommends ports for VMware ESXi and VMware vCenter.

- CIP-M is for the cluster management IP.

- SCVM is the management IP for the controller VM.

- ESXi is the management IP for the hypervisor.

Verify that the following firewall ports are open:

### Time Server

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 123 | NTP/UDP | Each ESXi Node<br><br>Each SVCM Node<br><br>CIMC<br><br>HX Data Platform Installer | Time Server | Bidirectional |

**HX Data Platform Installer**

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 22 | SSH/TCP | HX Data Platform Installer | Each ESXi Node | Management addresses |
| | | | Each SVCM Node | Management addresses |
| | | | CIP-M | Cluster management |
| | | | CIMC | CIMC addresses |
| 80 | HTTP/TCP | HX Data Platform Installer | Each ESXi Node | Management addresses |
| | | | Each SVCM Node | Management addresses |
| | | | CIP-M | Cluster management |
| | | | CIMC | CIMC addresses |
| 443 | HTTPS/TCP | HX Data Platform Installer | Each ESXi Node | Management addresses |
| | | | Each SVCM Node | Management addresses |
| | | | CIP-M | Cluster management |
| | | | CIMC | CIMC addresses |
| 8089 | vSphere SDK/TCP | HX Data Platform Installer | Each ESXi Node | Management addresses |
| 902 | Heartbeat/UDP/TCP | HX Data Platform Installer | vCenter | |
| 7444 | ICMP | HX Data Platform Installer | ESXi IPs  CVM IPs | Management addresses |
| 9333 | UDP/TCP | HX Data Platform Installer | CIP-M | Cluster management |
| 2400 | TCP | HX Data Platform Installer | CIMC SoL | Direct Serial over LAN port that allows you to by-pass the Cisco IMC shell to provide direct access to SoL. |

### Mail Server

Optional for email subscription to cluster events.

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 25 | SMTP/TCP | Each SVCM Node CIP-M CIMC | Mail Server | Optional |

### Monitoring

Optional for monitoring UCS infrastructure.

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 161 | SNMP Poll/UDP | Monitoring Server | CIMC | Optional |
| 162 | SNMP Trap/UDP | CIMC | Monitoring Server | Optional |

### DNS Server

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 53 (external lookups) | DNS/TCP/UDP | Each ESXi Node | DNS | Management addresses |
| | | Each SVCM Node | DNS | Management addresses |
| | | CIP-M | DNS | Cluster management |
| | | Each CIMC Address | DNS | |

### vCenter

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 80 | HTTP/TCP | vCenter | Each SCVM Node CIP-M | Bidirectional |
| 443 | HTTPS (Plug-in)/TCP | vCenter | Each ESXi Node Each SVCM Node CIP-M | Bidirectional |

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 7444 | HTTPS (VC SSO)/TCP | vCenter | Each ESXi Node<br>Each SVCM Node<br>CIP-M | Bidirectional |
| 9443 | HTTPS (Plug-in)/TCP | vCenter | Each ESXi Node<br>Each SVCM Node<br>CIP-M | Bidirectional |
| 5989 | CIM Server/TCP | vCenter | Each ESXi Node | |
| 902 | Heartbeat/TCP/UDP | vCenter | HX Data Platform Installer<br>ESXi servers | This port must be accessible from each host. Installation will result in errors if the port is not open from the HX Installer to the ESXi hosts. |

**User**

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 22 | SSH/TCP | User | Each ESXi Node | Management addresses |
| | | | Each SVCM Node | Management addresses |
| | | | CIP-M | Cluster management |
| | | | HX Data Platform Installer | |
| | | | Each CIMC Address | Each CIMC Address |
| | | | vCenter | |
| | | | SSO Server | |

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 80 | HTTP/TCP | User | Each SVCM Node | Management addresses |
| | | | CIP-M | Cluster management |
| | | | CIMC | |
| | | | HX Data Platform Installer | |
| | | | vCenter | |
| 443 | HTTPS/TCP | User | Each SVCM Node | |
| | | | CIP-M | |
| | | | Each CIMC Address | Each CIMC Address |
| | | | HX Data Platform Installer | |
| | | | vCenter | |
| 7444 | HTTPS (SSO)/TCP | User | vCenter SSO Server | |
| 9443 | HTTPS (Plug-in)/TCP | User | vCenter | |

**SSO Server**

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 7444 | HTTPS (SSO)/TCP | SSO Server | Each ESXi Node Each SCVM Node CIP-M | Bidirectional |

**Replication**

Required only when configuring native HX asynchronous cluster to cluster replication.

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 9338 | Data Services Manager Peer/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |

| Port Number | Service/Protocol | Source | Port Destinations | Essential Information |
|---|---|---|---|---|
| 9339 | Data Services Manager/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 3049 | Replication for CVM/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 4049 | Cluster Map/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 4059 | NR NFS/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 9098 | Replication Service | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 8889 | NR Master for Coordination/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 9350 | Hypervisor Service/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |
| 443 | HTTPS/TCP | Each CVM Node | Each CVM Node | Bidirectional, include cluster management IP addresses |

**Tip** If you do not have standard configurations and need different port settings, refer to Table C-5 Port Literal Values for customizing your environment.

### Hypervisor Credentials

| *root* **username** | root |
|---|---|