

Oracle® Enterprise Manager Ops Center

Ports and Protocols Guide

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This document contains the latest information on the ports and protocols that Oracle Enterprise Manager Ops Center uses and web sites that the product accesses.

Use this document to open specific ports in your corporate network and to allow access to specific web sites.

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Ports and Protocols

Oracle Enterprise Manager Ops Center requires the use of specific ports and protocols.

The Enterprise Controller's default port is 443. If port 443 is in use, the Enterprise Controller uses Port 11165. [Table 1](#) describes all the required ports and their protocols.

Table 1 *Required Ports and Protocols*

Communication Direction	Protocol and Port	Purpose
Enterprise Controller	Port 443, then Port 11165 Port 8005	Enterprise Controller in Disconnected mode
Enterprise Controller	Port 443, then Port 11165	Enterprise Controller in Connected mode
Browser to Enterprise Controller	HTTP, TCP: Port 80	Redirects to port 9443
Browser to Enterprise Controller	HTTPS, TCP: Port 9443	Web interface
Enterprise Controller to Local Database	Port 11176	Oracle Listener port
Enterprise Controller to Proxy Controller	SSH, TCP: Port 22 ICMP ping: Type 8 Code 0 (echo request)	Enterprise Controller installs or upgrades a Proxy Controller through the UI.

Table 1 (Cont.) Required Ports and Protocols

Communication Direction	Protocol and Port	Purpose
Proxy Controllers to Enterprise Controller	HTTPS, TCP: Port 443	<ul style="list-style-type: none"> ■ Proxy Controller pushes data about assets to Enterprise Controller. ■ Proxy Controller pulls data for jobs, updates, Agent Controllers, and OS images from the Enterprise Controller.
Proxy Controllers to Enterprise Controller	HTTP: Port 8004	WAN boot traffic
Proxy Controllers to Enterprise Controller	ICMP ping: Type 0 Code 0 (echo reply)	During upgrades, Proxy Controllers use ICMP ping.
Remote Proxy Controller to Enterprise Control through an SSH Tunnel	SSH: Port 21161	When a Proxy Controller is deployed on a network outside of the firewall, the SSH Tunnel and Port 21161 change the direction of communication so that the remote Proxy Controller does not initiate communication with the Enterprise Controller.
Proxy Controller to ALOM Service Processors	SSH, TCP: Port 22 or Telnet, TCP: Port 23 SNMP, UDP: Port 161 UDP: Port 6481 (for discovery by service tags) ICMP, Type 8 Code 0	Proxy Controller discovers, manages, and monitors the service processor.
Proxy Controller to ILOM Service Processors	SSH, TCP: Port 22 SNMP, UDP: Port 161 IPMI, TCP, UDP: Port 623 UDP: Port 6481 (for discovery by service tags) ICMP, Type 8 Code 0	Proxy Controller discovers, manages, and monitors the service processor.
Proxy Controller to ALOM or XCSF Service Processor	FTP, TCP: Port 21	Proxy Controller provisions firmware on an ALOM service processor. Port 21 transfers the firmware image. A transient random port is opened for the duration of the operation.
ILOM 3.0 Service Processor to Proxy Controller	Targets that use ILOM 3.0 or higher transfer the images: HTTP on Port 8003.	Proxy Controller provisions firmware on an ILOM service processor.
Service Processor to Proxy Controller	SNMP, UDP: Port 162 ICMP ping: Type 0 (echo reply)	<p>For monitoring, the service processor sends SNMP traps to the Proxy Controller.</p> <p>For a failed connection, Proxy Controller receives ICMP ping Type 3 (destination unreachable).</p>

Table 1 (Cont.) Required Ports and Protocols

Communication Direction	Protocol and Port	Purpose
Proxy Controller to OS Host	SSH, TCP: Port 22 or Telnet, TCP: Port 23 UDP: Port 6481 (for discovery and monitoring by service tags) ICMP, Type 8 Code 0 (heartbeat)	Proxy Controller discovers, manages, and monitors an asset.
Proxy Controller to OS Host	DHCP, UDP: Port 67	Proxy Controller provisions Oracle Solaris 11 for x86, Oracle Solaris 10, and Linux OS.
Proxy Controller to OS Host	HTTP: Port 8003	Proxy Controller provisions Oracle Solaris 11 for SPARC.
OS Host to Proxy Controller	HTTP, TCP: Port 8004 Oracle Solaris 11 Automated Installer Web Server: Port 5555 to accept requests from the OS Host during provisioning: <ul style="list-style-type: none"> ■ For WAN boot, open the port on the Enterprise Controller and Proxy Controllers. ■ For DHCP, open the port on the Proxy Controllers. 	OS Host reports status of OS updates and status of Agent Controller installation. OS Host downloads Agent Controller archive file. On Oracle Solaris 11 systems, you can change the port that WAN boot uses, using the following commands on the Proxy Controllers: <code>svccfg -s system/install/server:default setprop all_services/port = portID</code> <code>svccfg refresh system/install/server:default</code> To ensure that WAN boot downloads the miniroot, the OS profile, and the OS manifest from the same server, the multicastDNS service is disabled on the Proxy Controller.
OS Host to Proxy Controller	DHCP, UDP: Port 68 TFTP, UDP: Port 69 TCP+UDP: Port 37 HTTP, TCP: Port 8004	OS Host responds to Proxy Controller inquiries during bare-metal OS provisioning
Agent Controller to Proxy Controller	HTTPS, TCP: Port 21165	<ul style="list-style-type: none"> ■ Agent Controllers push asset data to Proxy Controller. ■ Agent Controllers pull data for jobs.
Agent Controller to Proxy Controller	HTTPS, TCP: Port 8002	Agent Controllers pull updates from Proxy Controller.

Table 1 (Cont.) Required Ports and Protocols

Communication Direction	Protocol and Port	Purpose
Agent Controller on Oracle Solaris OS or on Oracle hardware to co-located Proxy Controller	SNMP: Port 1162, or a port in the range of 1100 through 1200	For monitoring assets, the Agent Controller sends trap notifications and fault management alerts (FMA) to the Proxy Controller as local traffic. Because the Proxy Controller is using Port 162, a co-located Agent Controller uses Port 1162, if it is available, or a port in the range of Ports 1100 through 1200.
Java client to public APIs	TLS: Port 11172	JMX access from clients
WMI client on Proxy Controller to Agent Controller	Port 11162	<p>WMI client resides on the Proxy Controller and communicates with the WMI server on the Agent Controller.</p> <p>The Proxy Controller uses the DCOM protocol to monitor a Windows system. The Proxy Controller opens a TCP connection to the Windows DCOM registry port, TCP 135, which provides a lookup service to the WMI scripting DCOM object. The Proxy Controller connects to the DCOM object. The port number for this connection is allocated by the Windows system.</p>
Proxy Controller to NFS server	<p>Use an NFS server that is on the same side of the firewall as the Proxy Controller.</p> <p>Refer to your OS documentation to set up the NFS server.</p>	Proxy Controller pulls provisioning images from NAS Library
Global Zones or Oracle VM Servers to NFS server	<p>Use an NFS server that is on the same side of the firewall as the Proxy Controller.</p> <p>Refer to your OS documentation to set up the NFS server.</p>	Global Zones and Oracle VM Servers push their metadata and virtual host images to NAS storage libraries.
Oracle VM Servers to iSCSI targets	iSCSI: Port 3260	Oracle VM Servers push their metadata and virtual host images to iSCSI volumes
OCDDoctor to java.net	HTTPS, TCP: Port 80	OCDDoctor acquires product updates.
Proxy Controller to Oracle ZFS Storage Appliance using a Storage Connect plug-in	SSH: Port 215	<ul style="list-style-type: none"> ■ Discovery of iSCSI volumes. ■ Discovery of NFS shares

Table 1 (Cont.) Required Ports and Protocols

Communication Direction	Protocol and Port	Purpose
Proxy Controller to Cisco switch	SSH version 2: Port 22	Discovery of switch
Proxy Controller to Cisco switch	Telnet: Port 23 SNMP: Port 161	Proxy Controller manages the switch
Cisco switch to Proxy Controller	SNMP: Port 162	For monitoring, the switch sends SNMP traps to the Proxy Controller.

Ports for Oracle SuperCluster

The Proxy Controller for an Oracle SuperCluster engineered system does not have unique ports or protocols. [Table 2](#) summarizes the set of ports and their protocols used by an Oracle SuperCluster system.

Table 2 Required Ports and Protocols for Oracle SuperCluster Engineered Systems

Communication Direction	Protocol and Port	Purpose
Proxy Controller to Exadata's ILOM Service Processors	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623	Proxy Controller discovers, manages, and monitors the service processor of Exadata.
Proxy Controller to Exadata cells	SSH, TCP: Port 22	Proxy Controller discovers, manages, and monitors the compute nodes.
Proxy Controller to Oracle ZFS Storage Appliance	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623	Proxy Controller discovers, manages, and monitors the service processor of the storage appliance.
Proxy Controller to Oracle ZFS Storage Appliance	SSH: Port 215	Proxy Controller discovers the projects of the storage appliance: <ul style="list-style-type: none"> ■ iSCSI volumes. ■ NFS shares
Proxy Controller to Cisco switch	SSH version 2: Port 22 SNMP: Port 161	Proxy Controller discovers and manages the switch
Proxy Controller to InfiniBand switch	SSH: Port 22 IPMI: Port 623	Proxy Controller discovers and manages the switch.

Firewall Rules

The Enterprise Controller must reach some external sites. If you have explicit firewall rules enabled to allow access to these services from your Enterprise Controller, you must update these rules to maintain access to the sites in [Table 3](#).

Table 3 URLs and Port Requirements

Site	Port	Purpose
https://java.net/projects/oc-doctor/downloads	443	Updates to OCDoctor utility
https://java.net/projects/oc-cluster-profiles	443	Access to Oracle Solaris Cluster profiles and scripts.
login.oracle.com	443	Logging into Oracle sites

Table 3 (Cont.) URLs and Port Requirements

Site	Port	Purpose
updates.oracle.com	443	Access to Oracle Knowledge Base for OS updates
inv-cs.oracle.com	443	Product registration
hs-ws1.oracle.com	443	Product registration
support.oracle.com	443	My Oracle Support
www.oracle.com	80	Online Help
aru-akam.oracle.com	80	Provides local IP addresses to optimize download speed. Use nslookup to resolve the IP address, add the address to the /etc/hosts file, and open the firewall for the address.
a248.e.akamai.net	443	Provides local IP addresses to optimize download speed. Use nslookup to resolve the IP address, add the address to the /etc/hosts file, and open the firewall for the address.

Related Articles and Resources

The following documents contain references to ports and protocols:

- *Oracle Enterprise Manager Ops Center Installation Guide for Oracle Solaris Operating System Guide*
- *Oracle Enterprise Manager Ops Center Installation Guide for Linux Operating Systems Guide*
- *Oracle Enterprise Manager Ops Center Security Guide*
- *Oracle Enterprise Manager Ops Center Feature Reference Guide*

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