Oracle® Enterprise Manager Ops Center

Ports and Protocols

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Overview of ports and URLs used by Oracle Enterprise Manager Ops Center.

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.

Ports and Protocols

Lists each port required by Oracle Enterprise Manager Ops Center.

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 11175. Table 1-1 describes all the required ports and their protocols.

Table 1-1   Required Ports and Protocols

Required Ports and Protocols

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

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Table 1-1   (Cont.) Required Ports and Protocols

From	To	Protocol and Port	Purpose
Proxy Controllers	Enterprise Controller	HTTPS, TCP: Port 443	• Proxy Controller uploads data about assets. • Proxy Controller downloads data for jobs, updates, Agent Controllers, OS images, and OCDoctor.
Proxy Controllers	Enterprise Controller	HTTP: Port 8004	WAN boot traffic
Proxy Controllers	Enterprise Controller	ICMP ping: Type 0 Code 0 (echo reply)	Duration of upgrades of Proxy Controllers
Remote Proxy Controller, outside firewall	Enterprise Control through an SSH Tunnel	SSH: Port 21161	The SSH Tunnel and Port 21161 change the direction of communication so that the remote Proxy Controller does not initiate communication.
Proxy Controller	ALOM Service Processors	SSH, TCP: Port 22 or Telnet, TCP: Port 23 SNMP, UDP: Port 161 ICMP, Type 8 Code 0	Proxy Controller discovers, manages, and monitors the service processor.
Proxy Controller	ILOM Service Processors	SSH, TCP: Port 22 SNMP, UDP: Port 161 IPMI, TCP, UDP: Port 623 TCP, UDP: Port 6481 (for discovery by service tags) ICMP, Type 8 Code 0	Proxy Controller discovers, manages, and monitors the service processor.
Proxy Controller	ALOM or XCSF Service Processor	FTP, TCP: Port 21	Proxy Controller provisions firmware by transferring the firmware image on Port 21. A transient random port is opened for the duration of the operation.
ILOM 3.x Service Processor	Proxy Controller	HTTP: Port 8003	To be updated, targets that use ILOM 3.0 or later transfer the firmware image.

Table 1-1   (Cont.) Required Ports and Protocols

From	To	Protocol and Port	Purpose
ILOM 2.x Service Processor	Proxy Controller	TFTP, UDP: Port 69	To be updated, targets that use ILOM versions prior to 3.0 transfer the firmware image. A transient random port is opened for the duration of the operation. For T5220, T5210, or Sun Blade X6220 targets, the error `load: Invalid protocol. Use TFTP protocol.` indicates the target's firmware is not able to use the TFTP protocol. Upgrade the firmware manually to ILOM v3.0 or later so that subsquent updates succeed.
Service Processor	Proxy Controller	SNMP, UDP: Port 162 ICMP ping: Type 0 (echo reply)	For monitoring, the service processor sends SNMP traps.
Service Processor	Proxy Controller	ICMP ping Type 3 (destination unreachable).	Indicates a failed connection.
Proxy Controller	OS Host	SSH, TCP: Port 22 or Telnet, TCP: Port 23 TCP, UDP: Port 6481 (for discovery and monitoring by service tags) ICMP, Type 8 Code 0 (heartbeat)	Proxy Controller discovers, manages, and monitors an OS asset.
Proxy Controller	OS Host: Oracle Solaris 11 for x86, Oracle Solaris 10, Linux	DHCP, UDP: Port 67	Proxy Controller provisions the operating system.
OS Host: Oracle Solaris 11	Proxy Controller	HTTP: Port 8003	OS Host downloads images and packages for boot.
OS Host	Proxy Controller	HTTP, TCP: Port 8004	OS Host reports status of OS updates and status of Agent Controller installation. OS Host downloads Agent Controller archive file.

Table 1-1   (Cont.) Required Ports and Protocols

From	To	Protocol and Port	Purpose

OS Host: Oracle Solaris 11	Proxy Controller	Automated Installer Web Server: Port 5555
		• 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.
			To change the port that WAN boot uses, use the following commands on the Proxy Controllers:
			`svccfg -s system/install/ server:default setprop all_services/port = portID`
			`svccfg refresh system/ install/server:default`
			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	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	Proxy Controller	HTTPS, TCP: Port 21165	• Agent Controllers upload asset data. • Agent Controllers download job data.
Agent Controller	Proxy Controller	HTTPS, TCP: Port 8002	Agent Controllers download updates.
Agent Controller on Oracle Solaris OS Agent Controller on Oracle hardware	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.

Table 1-1   (Cont.) Required Ports and Protocols

From	To	Protocol and Port	Purpose
Java client	Public APIs	TLS: Port 11172	To give access using JMX
WMI client on Proxy Controller	Agent Controller on Windows assets	Port 11162	WMI client on the Proxy Controller communicates with the WMI server on the Agent Controller. 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.
Proxy Controller	NFS server	Use an NFS server that is on the same side of the firewall as the Proxy Controller. See OS documentation to set up the NFS server.	Proxy Controller downloads provisioning images from NAS software library.
Global Zones or Oracle VM Servers	NFS server	Use an NFS server that is on the same side of the firewall as the Proxy Controller. See OS documentation to set up the NFS server.	Global Zones and Oracle VM Servers upload their metadata and virtual host images to NAS storage libraries.
Oracle VM Servers	iSCSI targets	iSCSI: Port 3260	Oracle VM Servers upload their metadata and virtual host images to iSCSI volumes.
OCDoctor	`java.net`	HTTPS, TCP: Port 80	OCDoctor acquires product updates.
OCDoctor, v4.38 Run `./OCDoctor.sh --update` manually on Proxy Controller or an Agent.	Enterprise Controller	HTTP: Port 8003	Proxy Controller downloads latest OCDoctor.zip file from the Enterprise Controller.
Proxy Controller with Storage Connect plug-in	Oracle ZFS Storage Appliance	SSH: Port 215 TCP, UDP: Port 6481 (for discovery by service tags)	• Discovery of iSCSI volumes. • Discovery of NFS shares

From	To	Protocol and Port	Purpose
Proxy Controller	Cisco switch	SSH version 2: Port 22	Discovery of switch
Proxy Controller	Cisco switch	Telnet: Port 23 SNMP: Port 161	Proxy Controller manages the switch
Cisco switch	Proxy Controller	SNMP: Port 162	For monitoring, the switch sends SNMP traps to the Proxy Controller.
Proxy Controller	Power Distribution Unit (PDU)	For PDU v1, HTTP: Port 80 For PDU v2, HTTPS: Port 443	Discovery of PDU
Proxy Controller	PDU	SNMP: Port 161	Proxy Controller manages the PDU
PDU	Proxy Controller	SNMP: Port 162	For monitoring, the PDU sends SNMP traps to the Proxy Controller.

Ports for Oracle SuperCluster

Ports and protocols used by Oracle SuperCluster.

The Proxy Controller for an Oracle SuperCluster engineered system does not have unique ports or protocols. Table 1-2 summarizes the set of ports and their protocols used by an Oracle SuperCluster system as a convenience.

Table 1-2   Required Ports and Protocols for Oracle SuperCluster Engineered Systems

Required Ports and Protocols for Oracle SuperCluster Engineered Systems

From	To	Protocol and Port	Purpose
Proxy Controller	Exadata's Service Processors	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623 TCP, UDP: Port 6481 (for discovery by service tags)	Proxy Controller discovers and manages the service processor.
Proxy Controller	Exadata cells	SSH, TCP: Port 22	Proxy Controller discovers and manages the compute nodes.
Proxy Controller	Oracle ZFS Storage Appliance's Service Processor	SSH, TCP: Port 22 IPMI, TCP, UDP: Port 623 TCP, UDP: Port 6481 (for discovery by service tags)	Proxy Controller discovers and manages the service processor.

Table 1-2   (Cont.) Required Ports and Protocols for Oracle SuperCluster Engineered Systems

From	To	Protocol and Port	Purpose
Proxy Controller	Oracle ZFS Storage Appliance's shared storage	SSH: Port 215	Proxy Controller discovers the projects of the storage appliance: • iSCSI volumes. • NFS shares
Proxy Controller	Cisco switch	SSH version 2: Port 22 SNMP: Port 161 TCP, UDP: Port 6481 (for discovery by service tags)	Proxy Controller discovers and manages the switch.
Proxy Controller	InfiniBand switch	SSH: Port 22 IPMI: Port 623 TCP, UDP: Port 6481 (for discovery by service tags)	Proxy Controller discovers and manages the switch.
Proxy Controller	Power Distribution Unit (PDU)	For PDU v1, HTTP: Port 80 For PDU v2, HTTPS: Port 443 TCP, UDP: Port 6481 (for discovery by service tags)	Discovery of PDU
Proxy Controller	PDU	SNMP: Port 161	Proxy Controller manages the PDU
PDU	Proxy Controller	SNMP: Port 162	For monitoring, the PDU sends SNMP traps to the Proxy Controller.

Firewall Rules

Lists each URL that Oracle Enterprise Manager Ops Center uses and its purpose.

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 1-3.

Table 1-3   URLs and Port Requirements

URLs and Port Requirements

Site	Port	Purpose
`updates.oracle.com/OCDoctor/OCDoctor-latest.zip`	443	Updates to OCDoctor utility
`login.oracle.com`	443	Logging into Oracle sites Validates MOS user
`updates.oracle.com`	443	Access to Oracle Knowledge Base for OS updates

Table 1-3 (Cont.) URLs and Port Requirements

Site	Port	Purpose
`inv-cs.oracle.com`	443	Product registration ASR
`hs-ws1.oracle.com`	443	Product registration ASR
`support.oracle.com`	443	My Oracle Support Some alerts direct users to this site to confirm CSI and other information.
`aru-akam-secure.oracle.com`	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. Download of Oracle Solaris 10 updates. Download of firmware updates.
`pkg.oracle.com/solaris/support`	443	Download of Oracle Solaris 11 updates and SRUs.
`linux.oracle.com`	443	Access to Oracle Knowledge Base for OS updates
`public-yum.oracle.com`	80	Access to Oracle Knowledge Base for OS updates
`download.novell.com`	80	Access to Oracle Knowledge Base for OS updates
`nu.novell.com`	443	Access to Oracle Knowledge Base for OS updates
`www.oracle.com`	80	Online Help

Related Articles and Resources

List of supporting information for specifying ports and protocols.

For more information, see the Oracle Enterprise Manager Ops Center Documentation Library at http://docs.oracle.com/cd/E59957_01/index.htm.

The following documents contain references to ports and protocols:

* *Oracle Enterprise Manager Ops Center Installation for Oracle Solaris Operating System*

* *Oracle Enterprise Manager Ops Center Installation for Linux Operating Systems*

- *Oracle Enterprise Manager Ops Center Security*