



Network Port Diagram - vSphere 5.x - Reference Sheet

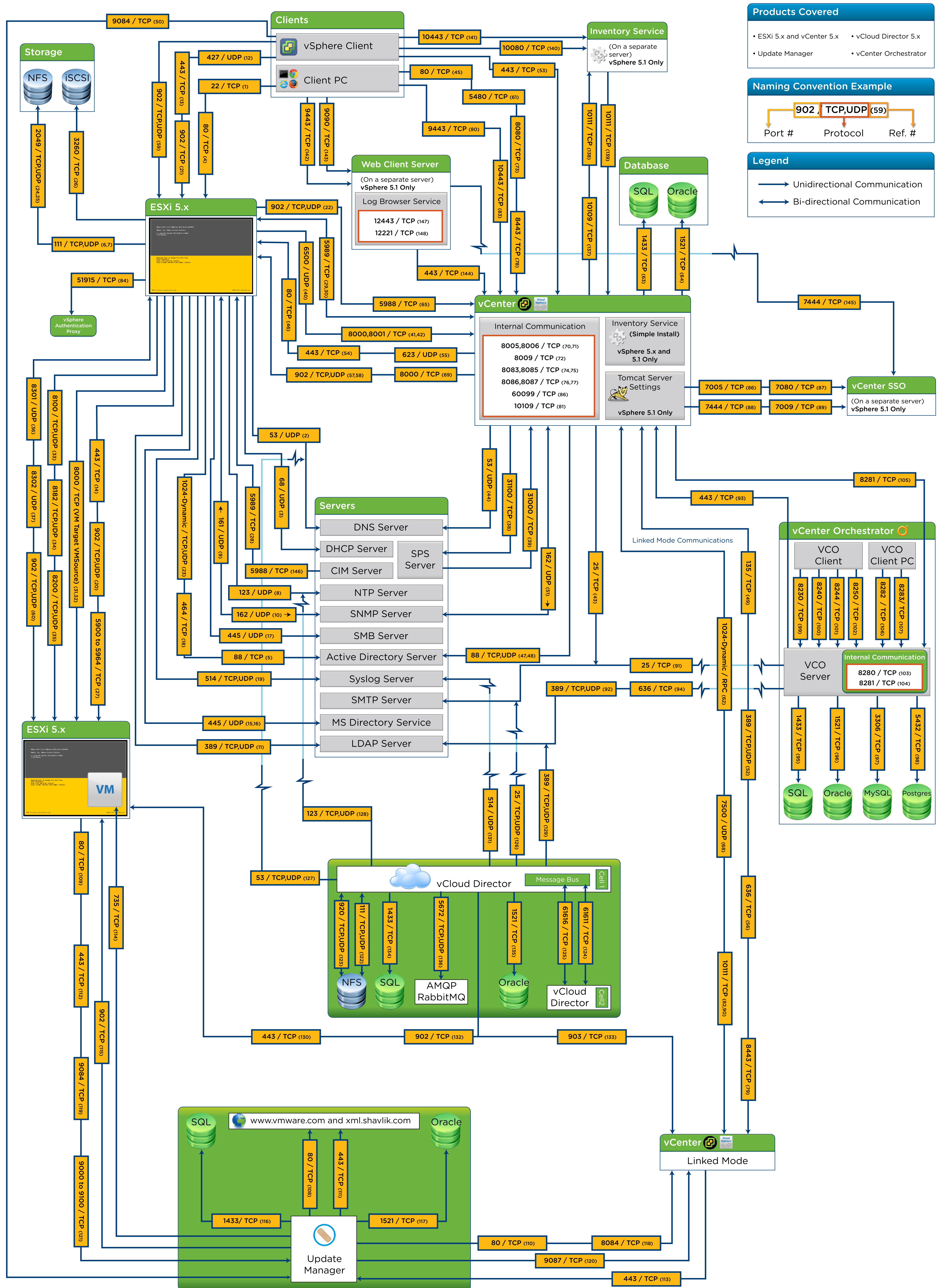
Updated July 2013

Source: VMware KB 1012382, KB 1030816, KB 2031843, KB 2039095

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Version: 2.0



Products Covered

- ESXi 5.x and vCenter 5.x
- vCloud Director 5.x
- Update Manager
- vCenter Orchestrator

Naming Convention Example

902 TCP,UDP (59)

Port # Protocol Ref. #

Legend

- Unidirectional Communication
- ↔ Bi-directional Communication

Reference for Port Diagram

Ref. No.	Port	Protocol	Source	Target	Purpose
1	22	TCP	Client PC	ESXi 5.x	SSH Server
2	53	UDP	ESXi 5.x	DNS Server	DNS Client
3	68	UDP	ESXi 5.x	DHCP Server	DHCP Client
4	80	TCP	Client PC	ESXi 5.x	Redirect Web Browser to HTTPS Service (443)
5	88	TCP	ESXi host	Active Directory Server	PAM Active Directory Authentication - Kerberos
6	111	TCP	ESXi/ESX Host	NFS Server	NFS Client – RPC Portmapper
7	111	UDP	ESXi/ESX Host	NFS Server	NFS Client – RPC Portmapper
8	123	UDP	ESXi/ESX Host	NTP Time Server	NTP Client
9	161	UDP	SNMP Server	ESXi 4.x Host	SNMP Polling. Not used in ESXi 3.x
10	162	UDP	ESXi Host	SNMP Collector	SNMP Trap Send
11	389	TCP/UDP	ESXi host	LDAP Server	PAM Active Directory Authentication - Kerberos
12	427	UDP	VI / vSphere Client	ESXi/ESX Host	CIM Service Location Protocol (SLP)
13	443	TCP	VI / vSphere Client	ESXi/ESX Host	VI / vSphere Client to ESXi/ESX Host management connection
14	443	TCP	ESXi/ESX Host	ESXi/ESX Host	Host to host VM migration and provisioning
15	445	UDP	ESXi host	MS Directory Services Server	PAM Active Directory Authentication
16	445	TCP	ESXi host	MS Directory Services Server	PAM Active Directory Authentication
17	445	TCP	ESXi host	SMB Server	SMB Server
18	464	TCP	ESXi host	Active Directory Server	PAM Active Directory Authentication - Kerberos
19	514	UDP/TCP	ESXi 5.x	Syslog Server	Remote syslog logging
20	902	TCP/UDP	ESXi 5.x	ESXi 5.x	Host access to other hosts for migration and provisioning
21	902	TCP	vSphere Client	ESXi 5.x	vSphere Client access to virtual machine consoles (MKS)
22	902	TCP/UDP	ESXi 5.x	vCenter Server	(UDP) Status update (heartbeat) connection from ESXi to vCenter Server
23	1024 (dynamic)	TCP/UDP	ESXi Host	Active Directory Server	Bi-directional communication on TCP/UDP ports is required between the ESXi host and the Active Directory Domain Controller (via the netlogond process on the ESXi host). See Active Directory and Active Directory Domain Services Port Requirements and MS article 179442.
24	2049	TCP	ESXi 5.x	NFS Server	Transactions from NFS storage devices
25	2049	UDP	ESXi 5.x	NFS Server	Transactions from NFS storage devices
26	3260	TCP	ESXi 5.x	iSCSI storage server	Transactions to iSCSI storage devices

Ref. No.	Port	Protocol	Source	Target	Purpose
27	5900 to 5964	TCP	ESXi 5.x	ESXi 5.x	RFB protocol, which is used by management tools such as VNC
28	5989	TCP	CIM Server	ESXi 5.x	CIM transactions over HTTP
29	5989	TCP	vCenter Server	ESXi 5.x	CIM XML transactions over HTTPS
30	5989	TCP	ESXi 5.x	vCenter Server	CIM XML transactions over HTTPS
31	8000	TCP	ESXi 5.x (VM Target)	ESXi 5.x (VM Source)	Requests from vMotion
32	8000	TCP	ESXi 5.x (VM Source)	ESXi 5.x (VM Target)	Requests from vMotion
33	8100	TCP/UDP	ESXi 5.x	ESXi 5.x	Traffic between hosts for vSphere Fault Tolerance (FT)
34	8182	TCP/UDP	ESXi 5.x	ESXi 5.x	Traffic between hosts for vSphere High Availability (vSphere HA)
35	8200	TCP/UDP	ESXi 5.x	ESXi 5.x	Traffic between hosts for vSphere Fault Tolerance (FT)
36	8301	UDP	ESXi 5.x	ESXi 5.x	DVS Port Information
37	8302	UDP	ESXi 5.x	ESXi 5.x	DVS Port Information
38	31100	TCP	vCenter	SPS Server	Internal Communication Port
39	31000	TCP	SPS Server	vCenter	Internal Communication Port
40	6500	UDP	ESXi	vCenter Server	Network coredump server
41	8000	TCP	ESXi	vCenter Server	Network coredump web port
42	8001	TCP	ESXi	vCenter Server	Network syslog server
43	25	TCP	vCenter Server	SMTP Server	Email notifications
44	53	UDP	vCenter Server	DNS Server	DNS lookups
45	80	TCP	Client PC	vCenter Server	vCenter Server requires port 80 for direct HTTP connections.
46	80	TCP	vCenter Server	ESXi 5.x	DPM with IPMI (iLO/BMC) ASF Remote Management and Control Protocol
47	88	UDP	vCenter Server	Active Directory Server	AD Authentication
48	88	TCP	vCenter Server	Active Directory Server	AD Authentication
49	135	TCP	vCenter Server	vCenter Server	Linked Mode
50	9084	TCP	vSphere Client	Update Manager	Download of VUM client binary from VUM server machine to the VI client machine.
51	162	UDP	vCenter Server	SNMP Server	SNMP Trap Send
52	389	TCP/UDP	vCenter Server	Linked vCenter Servers	This is the LDAP port number for the Directory Services for the vCenter Server group. The vCenter Server system needs to bind to port 389, even if you are not joining this vCenter Server instance to a Linked Mode group. If another service is running on this port, you can run the LDAP service on any port from 1025 through 65535.
53	443	TCP	vSphere Client	vCenter Server	vCenter Server system uses to listen for connections from the vSphere Client.
54	443	TCP	vCenter Server	ESXi 5.x	vCenter Agent. Host DPM with HP iLO Remote Management and Control Protocol

Ref. No.	Port	Protocol	Source	Target	Purpose
55	623	UDP	vCenter Server	ESXi 5.x	DPM with IPMI (iLO/BMC) ASF Remote Management and Control Protocol
56	636	TCP	vCenter Servers	Linked vCenter Servers	vCenter Server Linked Mode, this is the SSL port of the local instance.
57	902	TCP	vCenter Server	ESXi 5.x	vCenter Server system uses to send data to managed hosts. This port must not be blocked by firewalls between the server and the hosts or between hosts.
58	902	UDP	vCenter Server	ESXi 5.x	Managed hosts send a regular heartbeat to the vCenter Server system. This port must not be blocked by firewalls between the server and the hosts or between hosts.
59	902	TCP/UDP	vSphere Client	ESXi 5.x	vSphere Client uses this ports to display virtual machine consoles.
60	902	TCP/UDP	ESXi 5.x	ESXi 5.x	Host access to other hosts for migration and provisioning
61	5480	TCP	Client PC	vCenter Server	Only applicable for vCenter Server Virtual Appliance - used for accessing VAMI page of vCenter Server Appliance over HTTPS
62	1024 (dynamic)	RPC	Linked vCenter Servers	Linked vCenter Servers	Bi-directional RPC communication on dynamic TCP ports is required between all vCenters that need to replicate (via ADAM). A VIC still needs a direct connection to all vCenters that own an object it needs to manage.
63	1433	TCP	vCenter Server	Microsoft SQL Server	For vCenter Microsoft SQL Server Database
64	1521	TCP	vCenter Server	Oracle Database Server	For vCenter Oracle Database
65	5988	TCP	ESXi 5.x	vCenter Server	CIM transactions over HTTP
68	7500	UDP	vCenter Server	vCenter Server	Linked Mode, Java Discovery Port
69	8000	TCP	vCenter Server	ESXi 5.x	Requests from vMotion
70	8005	TCP	vCenter Server	vCenter Server	Internal Communication Port
71	8006	TCP	vCenter Server	vCenter Server	Internal Communication Port
72	8009	TCP	vCenter Server	vCenter Server	AJP Port
73	8080	TCP	Client PC	vCenter Server	Web Services HTTP. Used for the VMware VirtualCenter Management Web Services.
74	8083	TCP	vCenter Server	vCenter Server	Internal Service Diagnostics
75	8085	TCP	vCenter Server	vCenter Server	Internal Service Diagnostics/SDK
76	8086	TCP	vCenter Server	vCenter Server	Internal Communication Port
77	8087	TCP	vCenter Server	vCenter Server	Internal Service Diagnostics
78	8443	TCP	Client PC	vCenter Server	Web Services HTTPS. Used for the VMware VirtualCenter Management Web Services.
79	8443	TCP	vCenter Server	vCenter Server	Linked Mode
80	9443	TCP	Client PC	vCenter Server	vSphere Web Client Access
81	10109	TCP	vCenter Server	vCenter Server	vCenter Inventory Service Service Management
82	10111	TCP	vCenter Server	vCenter Server	vCenter Inventory Service Linked Mode Communication
83	10443	TCP	Client PC	vCenter Server	vCenter Inventory Service HTTPS

Ref. No.	Port	Protocol	Source	Target	Purpose
84	51915	TCP	ESXi	vSphere Authentication Proxy	This is a web service, which is used to add host to Active Directory domain.
85	60099	TCP	vCenter Server	vCenter Server	Web Service change service notification port
86	7005	TCP	vCenter Server (Tomcat Server settings)	vCenter Single Sign On	Base shutdown port. For more information, see Configuring VMware Tomcat Server Settings in vCenter Server 5.1.
87	7080	TCP	vCenter Server (Tomcat Server settings)	vCenter Single Sign On	HTTP Port
88	7444	TCP	vCenter Server (Tomcat Server settings)	vCenter Single Sign On	HTTPS Port
89	7009	TCP	vCenter Server (Tomcat Server settings)	vCenter Single Sign On	AJP Port
90	10111	TCP	vCenter Inventory Service	vCenter Server	vCenter Inventory Service Linked Mode Communication
91	25	TCP	VCO Server	SMTP Server	Email notifications
92	389	TCP/UDP	VCO Server	LDAP Server	LDAP Authentication
93	443	TCP	VCO Server	vCenter Server	Used to obtain virtual infrastructure and virtual machine information from orchestrated vCenter Server(s) through the vCenter API
94	636	TCP	VCO Server	LDAP Server	VCO uses LDAP authentication and group membership to determine role authorization in LCM and access to VMs/requests. This is the SSL secured LDAP protocol LDAPS (the SSL port of 389). This is used for secured LDAP authentication
95	1433	TCP	VCO Server	Microsoft SQL Server	vCenter Orchestrator Server to Microsoft SQL Server for VCO Database
96	1521	TCP	VCO Server	Oracle Database Server	vCenter Orchestrator Server to Oracle for VCO Database
97	3306	TCP	VCO Server	MySQL Server	vCenter Orchestrator Server to MySQL Server for VCO Database
98	5432	TCP	VCO Server	PostgreSQL Server	vCenter Orchestrator Server to PostgreSQL Server for VCO Database
99	8230	TCP	VCO Client	VCO Server	Lookup port – The main port to communicate with Orchestrator Configurator server (JNDI port). All other ports communicate with the Orchestrator Configurator smart client through this one. It is part of the JBoss Application server infrastructure
100	8240	TCP	VCO Client	VCO Server	Command port – The application communication port (RMI container port), it is used for remote invocations. It is part of the JBoss Application server infrastructure.
101	8244	TCP	VCO Client	VCO Server	Data port used to access all Orchestrator data models, such as workflows and policies. It is part of the JBoss application server infrastructure.
102	8250	TCP	VCO Client	VCO Server	Messaging port – The Java messaging port used to dispatch events. It is part of the JBoss Application server infrastructure
103	8280	TCP	VCO Server	VCO Server	Port used by VCO Server to connect to the Web front-end via HTTP
104	8281	TCP	VCO Server	VCO Server	Port used by VCO Server to connect to the Web front-end via HTTPS

Ref. No.	Port	Protocol	Source	Target	Purpose
105	8281	TCP	vCenter Server	VCO Server	Port used by VCO Server to connect to vCenter Server to communicate with the vCenter API
106	8282	TCP	VCO Client PC	VCO Server	HTTP server port – Port used by the HTTP connector to connect to the Web frontend.
107	8283	TCP	VCO Client PC	VCO Server	HTTPS server port – Port used by HTTP connector to connect to the Web frontend. Requires Jetty to be configured for SSL.
108	80	TCP	Update Manager Server	www.vmware.com and xml.shavlik.com	To obtain metadata for the updates, Update Manager must be able to connect to http://www.vmware.com and http://xml.shavlik.com
109	80	TCP	ESXi/ESX Host	Update Manager Host	ESXi/ESX Host to Update Manager Server. The reverse proxy forwards the request to port 9084
110	80	TCP	Update Manager Server	vCenter Server	Update Manager to vCenter Server communication
111	443	TCP	Update Manager Server	www.vmware.com and xml.shavlik.com	To obtain metadata for the updates, Update Manager must be able to connect to http://www.vmware.com and http://xml.shavlik.com
112	443	TCP	ESXi/ESX Host	Update Manager Server	ESXi/ESX Host to Update Manager Server . The reverse proxy forwards the request to port 9084
113	443	TCP	vCenter Server	Update Manager Server	vCenter Server to Update Manager Server. The reverse proxy forwards the request to port 8084
114	735	TCP	Update Manager Server	Virtual Machines	Update Manager listener port (rdevServer.exe) part of the Remote Device Server used for virtual machine patching.
115	902	TCP	Update Manager Server	ESXi/ESX Host	To push patches and updates from Update Manager to the ESXi/ESX Hosts to be updated
116	1433	TCP	Update Manager Server	Microsoft SQL Server	Update Manager to Microsoft SQL Server connectivity (for UM Database)
117	1521	TCP	Update Manager Server	Oracle Database Server	Update Manager to Oracle connectivity (for UM Database)
118	8084	TCP	Update Manager Server	vCenter Server	SOAP between components of Update Manager Server and the vCenter Update Manager client plug-in. Configurable at install.
119	9084	TCP	ESXi/ESX host	Update Manager Server	ESXi/ESX hosts connect to the VUM (VMware Update Manager) webserver listening for updates. Configurable at install.
120	9087	TCP	Update Manager Server	vCenter Server	Port used for uploading host update files. Configurable at install.
121	9000 to 9100	TCP	ESXi/ESX Host	Update Manager Server	This is the recommend port range from which to choose ports for Update Manager if ports 80 and 443 are already in use. Update Manager automatically opens these ports for ESX Host scanning and remediation.
122	111	TCP, UDP	vCloud Director Cell	NFS Server	NFS portmapper used by transfer service
123	920	TCP, UDP	vCloud Director Cell	NFS Server	NFS rpc.statd used by transfer service

Ref. No.	Port	Protocol	Source	Target	Purpose
124	61611	TCP	vCloud Director Cell (Message Bus)	vCloud Director Cell	ActiveMQ
125	61616	TCP	vCloud Director Cell (Message Bus)	vCloud Director Cell	ActiveMQ
126	25	TCP, UDP	vCloud Director Cell	SMTP Server	SMTP
127	53	TCP, UDP	vCloud Director Cell	DNS Server	DNS
128	123	TCP, UDP	vCloud Director Cell	NTP Time Server	NTP
129	389	TCP, UDP	vCloud Director Cell	LDAP Server	LDAP
130	443	TCP	vCloud Director Cell	ESXi / vCenter	vCenter Server and ESXi connections
131	514	UDP	vCloud Director Cell	Syslog Server	Optional, enables syslog use
132	902	TCP	vCloud Director Cell	ESXi / vCenter	vCenter Server and ESXi connections
133	903	TCP	vCloud Director Cell	ESXi / vCenter	vCenter Server and ESXi connections
134	1433	TCP	vCloud Director Cell	SQL Server Database	Default Microsoft SQL Server database port
135	1521	TCP	vCloud Director Cell	Oracle Database Server	Default Oracle database port
136	5672	TCP, UDP	vCloud Director Cell	AMQP RabbitMQ	Optional, AMQP messages for task extensions.
137	10109	TCP	vCenter Server	vCenter Server	vCenter Inventory Service Management
138	10111	TCP	vCenter Server	vCenter Server	vCenter Inventory Service Linked Mode Communication
139	10111	TCP	vCenter Inventory Service	vCenter Server	vCenter Inventory Service Linked Mode Communication
140	10080	TCP	vSphere Client	vCenter Server	vCenter Inventory Service HTTP
141	10443	TCP	vSphere Client	vCenter Server	vCenter Inventory Service HTTPS
142	9443	TCP	Client PC	Web Client Server	Web Client Server HTTPS connection
143	9090	TCP	Client PC	Web Client Server	Web Client Server HTTP connection
144	443	TCP	Web Client Server	vCenter Server	Web Client Server to vCenter Server connection
145	7444	TCP	Web Client Server	vCenter SSO	SSO Lookup service connection
146	5988	TCP	CIM Server	ESXi 5.x	CIM transactions over HTTP (only used in case of loopback – for the applications running locally)
147	12443	TCP	Web Client Server	Log Browser Service	For accessing the logs
148	12221	TCP	Log Browser Proxy	Log Browser Service	Internal port for Log Browser administration page. It opens a socket (only bound to localhost) to accept admin commands.