



System Requirements

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Overview

This document describes the system requirements for CloudShell 7.0 components.

The requirements listed are those for a typical small installation with up to three active environments. For system requirements for other installation sizes, contact your Quali Technical Account Manager.

Topics include:

[Servers](#)

[Client Applications](#)

[CloudShell Required Ports](#)

[3rd Party Software](#)

[Database Prerequisites](#)

[Software and Utilities Recommendations](#)

[Network Recommendations](#)

[Security Recommendations](#)

[Performance Considerations](#)

Servers

Quali Server requirements

Requirements	Description
Software	
Windows	Any one of the following (including all variants): <ul style="list-style-type: none">• 7 32 bit or 64 bit• Server 2008 R2 64 bit• Server 2012 64 bit• Server 2012 R2 64 bit• 8.0 and 8.1• 10
SQL Server	Any one of the following: <ul style="list-style-type: none">• SQL Server 2008 R2 SP2• SQL Server 2012 Standard edition• SQL Server 2014 Standard edition <hr/> <p>Note: Either SQL Server 2012 Enterprise or SQL Server 2014 Enterprise is required for the High Availability (HA) solution.</p> <hr/>
Hardware	
CPU	4 quad cores
RAM	A minimum of 8 GB
Hard Drive	An SSD drive is recommended for the database server Consult Quali support about the amount of required storage.
Network cards	1/10 GB, according to network load

TestShell Execution Server minimum requirements

Requirements	Description
Software	
Windows	Any one of the following: <ul style="list-style-type: none">• 7 32 bit or 64 bit• Server 2008 R2 64 bit• Server 2012 64 bit• Server 2012 R2 64 bit• 8.0 and 8.1• 10
Hardware	
CPU	4 quad cores
RAM	2 GB
Hard Drive	Minimum of 60GB for execution server only. HDD with a page-file capacity of 200 MB.

Note: TestShell Execution Server requirements vary according to the required usage. For example, in a scenario where 16 CPU intensive tests are run at any given time, an optimal environment would be a machine with 32 CPU cores, with capacity set to 16, or 2 machines with 16 CPU cores, with capacity set to 8 for each machine. In another scenario where 8 memory intensive tests are run at any given time, an optimal environment would be a machine with 16GB RAM, with capacity set to 8.

Client Applications

This section lists the requirements for the following client applications.

CloudShell Authoring

Requirements	Description
Operating System	Any one of the following: <ul style="list-style-type: none">• Windows 7 (32/64 bit)• Windows Server 2008 R2• Windows Server 2012 R2 64 bit• Windows 8.0 and 8.1• Windows 10
Hardware	<ul style="list-style-type: none">• CPU - dual core minimum• RAM - at least 4 GB

CloudShell Resource Management Client

Requirements	Description
Operating System	Any one of the following: <ul style="list-style-type: none">• Windows 7 (32/64 bit)• Windows Server 2008 R2• Windows Server 2012 R2 64 bit• Windows 8.0 and 8.1• Windows 10
Hardware	<ul style="list-style-type: none">• CPU - dual core minimum• RAM - at least 4 GB

Automation clients

Requirements	Description
Operating System	Any one of the following: <ul style="list-style-type: none">• Windows 7 (32/64 bit)• Windows Server 2008 R2• Windows Server 2012 R2 64 bit• Windows 10
Hardware	<ul style="list-style-type: none">• CPU - dual core minimum• RAM - at least 4 GB

CloudShell Remote Runner

Requirements	Description
Operating System	Any one of the following: <ul style="list-style-type: none">• Windows Vista• Windows 7 (32/64 bit)• Windows Server 2003• Windows Server 2008 R2• Windows Server 2012 R2• Windows 10• Red Hat Enterprise• Linux 5.x (32-bit)• Fedora 7-9• Ubuntu 6.06-8.04
Hardware	No special requirements

CloudShell Required Ports

This section describes the ports that are required by CloudShell.

CloudShell required ports (available for use, but not configurable)

The following table describes the required ports that are available for use, but not configurable.

Port	Server app (inbound)	Client app (outbound)	TCP/UDP	Description
8023	Quali Server	Studio, Runner	TCP	Upload/download files/reports from the service
8027	Quali Configuration	Quali Configuration	TCP	Used to configure the CloudShell Sandbox API Gateway
8028	Quali Server	All CloudShell clients	TCP	For user administration via Studio, Runner, Resource Management Client, TestShell API
8030	Quali Server	Studio, Runner	TCP	Handles Studio HTTP requests
8031	Quali Server	Execution Server	TCP	Opened for incoming connections on the Quali Server. Used by Execution Servers to communicate with the Quali Server.
8033	CloudShell Server	Quali Proxy	TCP	Provides access to

CloudShell Required Ports

Port	Server app (inbound)	Client app (outbound)	TCP/UDP	Description
	Proxy		(HTTP)	the proxy via HTTP protocol, used by CloudShell Portal
8034	Quali REST API	Quali Server	TCP (HTTP)	Provides access to the Quali Server via HTTP protocol, used by the CloudShell Server Proxy
9300	Elastic Search	None	TCP	For communication with other nodes in the cluster
9200	Search	None	TCP	For Quali Server searches
Any	Prism web	None	TCP (HTTP)	For communication with the Prism web
5093	License Server	All CloudShell products	UDP	License Server computer
49263 to 65535	Studio, Runner	None	TCP	Used by Studio HTTP server, handles report attachments
8101	Remote Runner	Studio, Runner	TCP	Allows Studio/Runner to send scripts to CloudShell Remote Runner
8050 to 65535	Runner	API	TCP	For Runner API requests (when in external control)

CloudShell required ports (configurable)

The following tables ([Quali Server](#), [CloudShell Portal](#), and [Sisense/CloudShell Insight](#)) list the required ports that are configurable. Most of these ports can be configured in the CloudShell Configuration Wizard (unless stated otherwise).

Quali Server

Port	Server app (inbound)	Client app (outbound)	Configuration	TCP/UDP	Description
9000	REST	Quali API	Use the QualiApi.Port key in the Server's customer.config file	TCP	For Quali REST API requests
8029	XMLRPC	CloudShell API	Use the APIHostPort key in the Server's customer.config file	TCP	For CloudShell XMLRPC and TCL API requests.
25	External SMTP mail server	Quali Server	Use the CloudShell Configuration Wizard	TCP	Allows the Quali Server to send mail notifications

CloudShell Portal

Port	Server app (inbound)	Client app (outbound)	Configuration	TCP/UDP	Description
82	CloudShell Sandbox API	Browsers	Use the CloudShell Configuration Wizard	TCP (HTTP)	Provides access to the CloudShell Sandbox API using HTTP

CloudShell Required Ports

Port	Server app (inbound)	Client app (outbound)	Configuration	TCP/UDP	Description
81	CloudShell Portal	None	Use the CloudShell Configuration Wizard	TCP (HTTP)	Provides access to CloudShell Portal using HTTP protocol, when using IIS Express
80	CloudShell Portal	None	Use the IIS Manager	TCP (HTTP)	Provides access to CloudShell Portal using HTTP protocol
443	CloudShell Portal	None	Use the IIS Manager	TCP (HTTPS)	Provides access to CloudShell Portal using HTTPS protocol

Sisense/CloudShell Insight

Port	Server app (inbound)	Client app (outbound)	Configuration	TCP/UDP	Description
8083	Insight	None	Use the BiHost key in the CloudShell Portal customer.config file	TCP (HTTP)	BI integration

3rd Party Software

This section describes the 3rd Party software that is required, optional, and supported by CloudShell.

Note: Administrator-level permission is necessary when installing 3rd Party software that is required by CloudShell.

Required

- IIS Express v8.0 (Required for using CloudShell Portal)
- Microsoft .NET Framework 4.0
- Microsoft Visual C++ Runtime 9.0
- Microsoft Visual C++ Runtime 10.0
- Microsoft Windows Installer 4.5
- Python 2.7
- VCTools++ (For all users. Required for compiling Python dependencies)

If any of the above 3rd Party components are missing from your computer, the CloudShell installation wizard installs them before installing the CloudShell application.

Optional

- Studio, Driver Builder: LabView runtime and LabView tools are available as a separate installation.
- Insight: CloudShell 7.0 Insight is available as a separate installation.
- Microsoft PowerShell version 2: Install this when using the command shell tool.
- Ranorex version 5.1.3: Install this when using the GUI Automator.

Note: When using Ranorex with certain browsers, you might have to install a plugin. For example, the Ranorex plugin for Chrome is available at this [link](#).

Supported

- Source control: CloudShell 7.0 has been tested with TortoiseSVN Version 1.7/1.7.9
- BI tools: Sisense 5.7.x (supported only on 64-bit operating systems)

- Quality control:
 - HP Quality Center QC10. For deployment information, see CloudShell knowledge base > Automation execution > Integration with Quality Center > QC 10 > Integrating CloudShell with QC10.
 - HP Quality Center QC11. For deployment information, see CloudShell knowledge base > Automation execution > Integration with Quality Center > QC 11 > Installing the CloudShell plugin.

Database Prerequisites

CloudShell applications can work with SQL database.

SQL database user permissions

Provide Windows users with the following SQL server roles:

- bulkadmin
- dbcreator
- processadmin
- public
- setupadmin

In addition, also provide a specific permission to "Connect to SQL" that is granted manually in the "Securables" section of the user's login properties.

Installation requirements for SQL databases

The required components must be installed in the following order:

Component	Installation instructions
Standard edition of one of the following: <ul style="list-style-type: none">• SQL Server 2008• SQL Server 2012• SQL Server 2014-or-• SQL Server 2008 Express• SQL Server 2012 Express	<ul style="list-style-type: none">• Where there is an existing SQL server installed on the organization's network, it is recommended that this is used• For a standalone installation, if the CloudShell installer cannot find Microsoft SQL Server or Microsoft SQL Server Express on the destination environment, Microsoft SQL Server Express is installed automatically as part of the installation procedure. <hr/> <p>Note: There is a limitation of the maximum database size, per database, of 4 GB for SQL Server 2008 Express and 10 GB in SQL Server 2012. For further information, see SQL Server Express Overview and FILESTREAM Compatibility with Other SQL Server Features.</p> <hr/>

Component	Installation instructions
Quali Server	<ul style="list-style-type: none"><li data-bbox="737 268 1386 352">• The Quali Server can be located anywhere on the organization's network.<li data-bbox="737 369 1370 487">• For a standalone installation, the Quali Server is installed on the same machine as the clients and the database.
CloudShell applications	Quali Server, SQL server or SQL Express, and the CloudShell applications can be installed on the same machine, or on separate machines in the same network.

Software and Utilities Recommendations

For working with the automation applications

The 64-bit version of CloudShell is recommended (requires a 64-bit version of Windows).

For working with elastic search

The 64-bit version of Java is required when using a 64-bit version of Windows.

For the SNMP manager tool

An external MIB browser is recommended.

For working with the traffic libraries

Appropriate traffic generator applications must be installed.

For working with CloudShell Portal

Browser	Minimum	Maximum
Microsoft Edge	20.10240.16384.0	20.10240.16384.0
Microsoft IE	10.0.8400	11.0.19
Chrome	43.02357.81	48.0.2564.116
Firefox	38.05	44.0.2
Safari	5.1.7	5.1.7

Network, Security, Performance

Network Recommendations

Switches/Routers/LANS	A 1GB connection is highly recommended.
WAN	Network bandwidth with high quality of service is required for VPN connectivity and multi-site implementations.

Security Recommendations

User permissions	Administrator access is required for all test stations/servers.
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Performance Considerations

CPU usage	CPU usage by external applications may impact CloudShell performance.
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