



System Requirements

CloudShell 7.1 GA

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Overview

This document describes the system requirements for CloudShell 7.1 GA 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.

Note: Due to Microsoft limitations, in order to use CloudShell in a production environment, it is recommended to install it on a Windows Server machine.

Topics include:

[Servers](#)

[Client Applications](#)

[CloudShell Required Ports](#)

[3rd Party Software](#)

[Database Prerequisites](#)

[Software and Utilities Recommendations](#)

[Network Recommendations](#)

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Servers

Quali Server requirements

Requirements	Description
Software	
Windows	<p>Any one of the following (including all variants):</p> <ul style="list-style-type: none">• 7 32 bit or 64 bit• Server 2008 R2 64 bit (Service Pack 1 is required for CloudShell 7.1 GA Patch 2 and above)• Server 2012 64 bit• Server 2012 R2 64 bit• 8.0 and 8.1• 10 <hr/> <p>Note: Windows Server 2012 Standard and Datacenter edition (and above) support High Availability (HA) solutions.</p>
SQL Server	<p>Any one of the following:</p> <ul style="list-style-type: none">• SQL Server 2008 R2 SP2• SQL Server 2012 Standard edition• SQL Server 2014 Standard edition• SQL Server 2016 Standard edition <hr/> <p>Note: SQL Server 2012 Enterprise, SQL Server 2014 Enterprise or SQL Server 2016 Standard Edition support High Availability (HA) solutions.</p>
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 8.0 and 8.1• 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 8.0 and 8.1• 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.

The following table describes the required ports for each server or machine on which the port needs to be made available.

Server/Machine	Protocol/ Port	Description
SQL Server	TCP/1433	Used by Quali server to request the store and retrieve information. For more info: https://msdn.microsoft.com/en-us/library/cc646023.aspx .
Licensing Server	UDP/5093	Used by Quali Server, CloudShell Resource Management Client, CloudShell Authoring, TestShell Studio, TestShell Runner, TestShell Execution Server
Quali Server	TCP/8028	Used by all CloudShell components to communicate with the Quali Server.
	TCP/8029 TCP/9000	Used by API clients to communicate with the Quali Server.
	HTTP/8034	Used by the Sandbox API Web server (internal)
	TCP/8031 TCP/8029	Used by Execution Servers to communicate with the Quali Server.
	HTTP/8030 TCP/8023	Used by Studio and Runner
CloudShell Portal	HTTP – TCP/80	Used by browsers to access the CloudShell Portal
Sandbox API Web Server	HTTP/82 HTTPS/3443	Used by the API clients to connect and communicate with the API
Remote Runner	TCP/8101	Used by Studio to request test execution.

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 4.0-4.5.2
- 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 7.1 GA 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

- Virtualization: VMware vCenter. The supported ESXi version is 5.5-6.0.
- Source control: CloudShell 7.0 has been tested with TortoiseSVN Version 1.7/1.7.9
- BI tools: Sisense 6.2.2 (supported for this version of CloudShell and 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

For initial CloudShell installation, provide Windows users and the NT AUTHORITY\SYSTEM user with the following SQL server roles:

- bulkadmin
- dbcreator
- public
- sysadmin - for the NT AUTHORITY\SYSTEM user only

When running CloudShell after installation, make sure your Windows users and the NT AUTHORITY\SYSTEM user have the following SQL server roles:

- bulkadmin
- dbowner
- public

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.

Component	Installation instructions
	<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>
Quali Server	<ul style="list-style-type: none">• The Quali Server can be located anywhere on the organization's network.• 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.

Additional requirements

The **Distributed Transaction Coordinator** service must be running on the database server with specific configurations, as detailed in the *Troubleshooting* section of the *CloudShell Suite Installation Guide*.

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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