

CloudShell Sandbox Plugin

Plugin Information

View CloudShell Sandbox [on the plugin site](#) for more information.

Introduction

The **CloudShell Sandbox Jenkins Plugin** provides an easy way to consume CloudShell sandboxes through Jenkins for a variety of use cases. The plugin allows you to build jobs that create on demand sandboxes in CloudShell based on pre-defined blueprints.

Requirements

This plugin requires CloudShell 8.0 or later and Jenkins 2.0 or later. (Note that if you are upgrading to a **Certified** version of the plugin, you may experience some issues. Contact us for details.)

Depending on the plugin version, some features may require a specific version of CloudShell. For more details, see the *Features* section below.

Installation

The **CloudShell Sandbox Jenkins Plugin** is available for download directly from Jenkins **Plugin Manager** (Manage Jenkins > Plugin Manager) in the Jenkins UI.

Filter:

Updates Available Installed Advanced

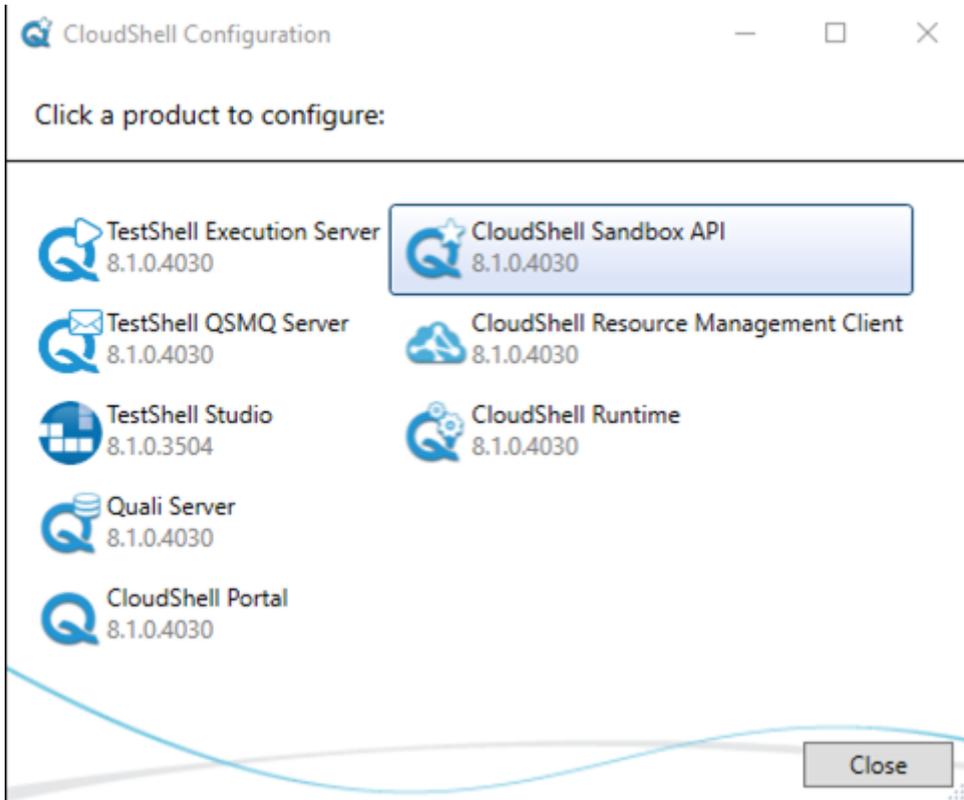
Install ↓	Name	Version
<input type="checkbox"/>	CloudShell Sandbox Plugin CloudShell Sandbox Plugin for Jenkins CI	1.6.3

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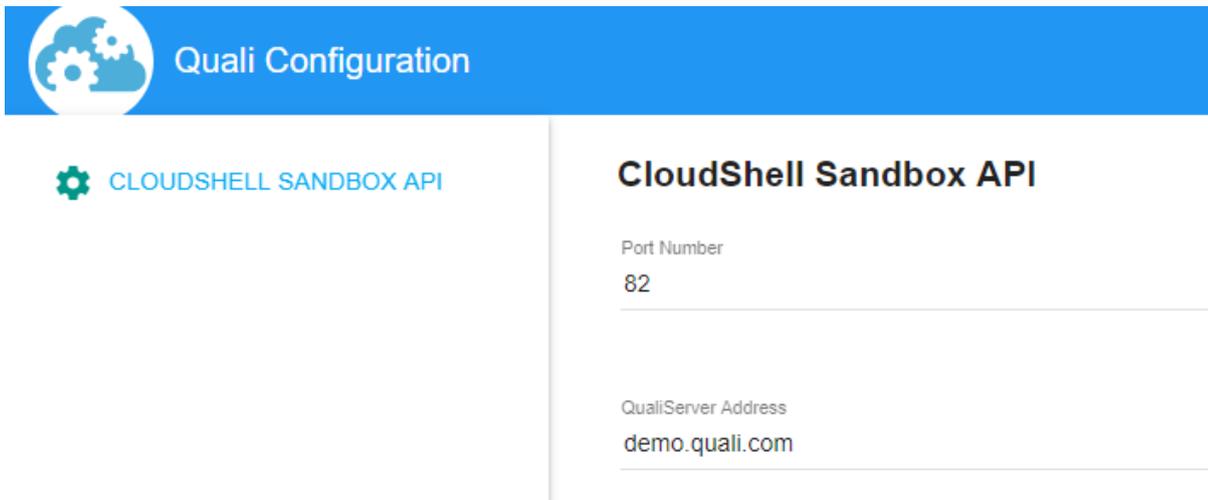
Architecture

The **CloudShell Sandbox Jenkins Plugin** leverages CloudShell Sandbox API to perform operations in CloudShell. CloudShell Sandbox API comes out of the box with the CloudShell Suite installation and should be fully installed and configured for the plugin functionality. **Note that the Jenkins plugin only interacts with public blueprints.**

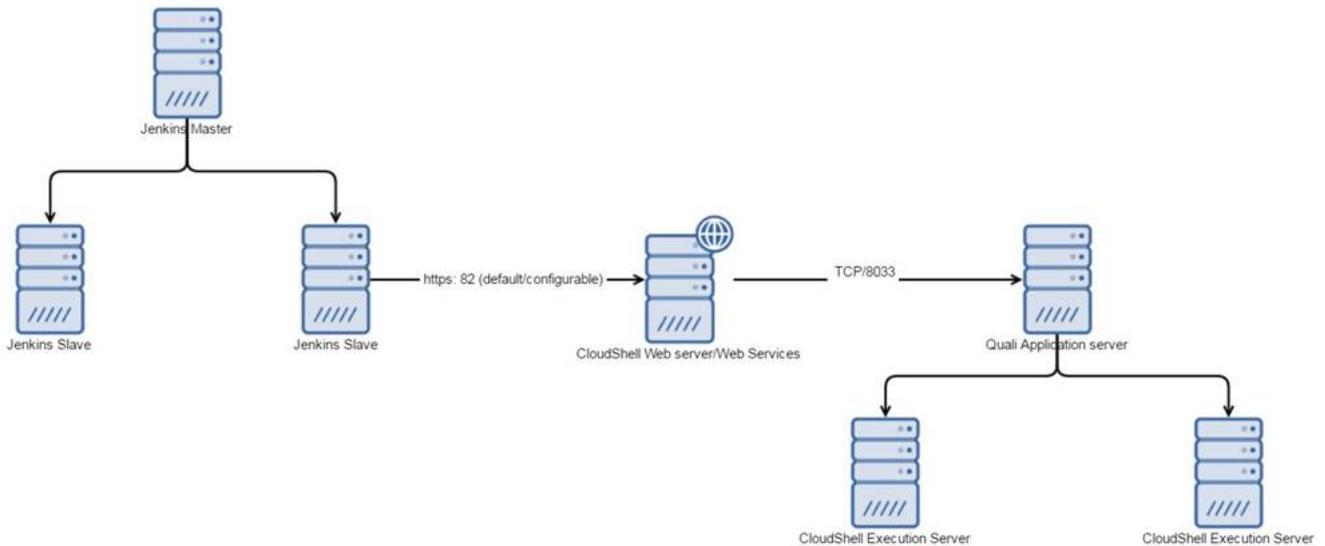
When configuring the CloudShell Sandbox API, you will need to set the API port (82 by default). To see the port, open the **CloudShell Configuration** application and click **CloudShell Sandbox API**.



The **Quali Configuration** web interface is displayed, showing the Sandbox API configurations.



Distributed architecture:



Configuration

After installing the plugin, perform the following steps:

1. Navigate to the main Jenkins configuration page (**Manage Jenkins > Configure System**) and configure the plugin according to your CloudShell installation.
2. Set the **CloudShell Sandbox API Host Address** to the machine where CloudShell Sandbox API is installed.
Note that this may be a different machine than the Quali Server.
3. Specify the credentials (user, password, domain) of the CloudShell user you would like to use for CloudShell operations.
We recommend creating a new CloudShell admin user for Jenkins.
4. To verify your configurations, click the **Test Connection**.

Jenkins interacts with CloudShell to validate connectivity and credentials.

CloudShell Sandbox

Sandbox API Host Address	<input type="text" value="http://localhost:443"/>	?
User Name	<input type="text" value="admin"/>	?
Password	<input type="password" value="....."/>	?
Domain	<input type="text" value="Global"/>	
Ignore SSL certificate	<input checked="" type="checkbox"/>	?

Test completed successfully

Freestyle Steps

The plugin adds several new steps to Jenkins to streamline interactions with CloudShell sandboxes.

CloudShell Build Step is a generic step that contains CloudShell Actions you can execute. Each action contains several inputs. Currently, the action **Start sandbox** is provided and we plan to support others in the future.

The **Start Sandbox** action creates a new CloudShell sandbox based on the selected public blueprint and restricts interaction with the sandbox while it is running Setup. This ensures the sandbox Setup process completes successfully without any outside interference. When the sandbox is active, the sandbox's Id and additional information become available in `$$SANDBOX_ID` and `$$SANDBOX_DETAILS`, respectively. These environment variables can be used in other steps in the build.

`$$SANDBOX_DETAILS` is a JSON format string containing the sandbox's metadata like the sandbox name, start time, expected end time, state and associated blueprint, as well as a list of all the sandbox components with their name, type, address and more.

Note that the **Sandbox duration in minutes** field specifies the maximum duration of the sandbox. If the build does not end before the specified duration, CloudShell will tear down the sandbox.

The **Timeout if sandbox unavailable** field indicates the number of minutes to wait until the sandbox becomes available in case any of the sandbox's resources are unavailable for the specified sandbox duration (conflicts). If the timeout period is reached, the build will be interrupted.

The **Blueprint parameters** field allows you to specify user inputs, which can be used for resource selection (if the blueprint contains abstract resource requirements), as additional information to drive the provisioning, or as general information. For more information, see [CloudShell Help](#).

For more information about a field, click that field's help icon on the right.

The screenshot shows a configuration window titled "CloudShell Build Step" with a red close button in the top right. The "CloudShell Action" dropdown is set to "Start Sandbox". Below this, a note states: "Newly created Sandbox Id will be available under \$\$SANDBOX_ID environment variable. Sandbox information will be stored under \$\$SANDBOX_DETAILS environment variable." There are five input fields, each with a help icon on the right:

- Blueprint name: empty
- Sandbox duration in minutes: 30
- Timeout if sandbox unavailable: 10
- Blueprint parameters: in1=tomer a;in2=3
- Sandbox name: this is my unique name \${JOB_NAME} %JOB_NAME% \$JOB_NAME

We recommend using the "Start Sandbox" action as a pre-run step to ensure the sandbox is created before the actual build steps are executed.

Here is an example of how to print the sandbox information for future use:

The screenshot shows a configuration window titled "Execute Windows batch command" with a red close button and a help icon in the top right. The "Command" field contains the following text:

```
echo %SANDBOX_ID%
echo %SANDBOX_DETAILS%
```

Below the command field is a link: [See the list of available environment variables](#)

To end the sandboxes that have been created in the build, use the **Stop CloudShell sandboxes** post-build action. Since this is a post-build action, it can be used only once per build and will end all sandboxes created by that build. This step ensures that the sandbox Teardown process completes successfully and checks the sandbox's Activity Feed to validate that there are no errors in the sandbox activity log.

Post-build Actions

Stop CloudShell sandboxes



Pipeline Steps and Syntax

The plugin installation adds the following pipeline steps to the Jenkins pipeline:

- **startSandbox** – Initiates a new sandbox in CloudShell and waits for the sandbox to complete its Setup process. The method returns the sandbox Id.
- **stopSandbox** – Stops an active sandbox, waits for the teardown process to end and checks the sandbox's Activity Feed for errors.

Here is an example of how to use the pipeline syntax to execute a Python test that requires the use of a sandbox that is based on a "Performance" blueprint:

1. First, the Performance blueprint is reserved using the parameters passed from Jenkins.
2. The sandbox runs the Setup process.
3. When this process completes successfully, Jenkins runs the Python code (downloaded from the build VCS) with the sandbox Id.
4. At the end of the test, the plugin initiates the sandbox's Teardown process using the **stopSandbox** method.

```
stage ('Performance Testing'){
    Id = startSandbox duration: 13, name: 'Performance', params:
    'os=Win; server=4'
    sh 'python .\Perf2.py --sandbox_id Id'
    stopSandbox Id
}
```

Note: The **WithSandbox** step implements the same logic as in **startSandbox** and **stopSandbox** but in a contextual syntax. This step is recommended for demos but not suitable for production.

We recommend using the Jenkins pipeline's **Snippet Generator** which allows you to compose pipelines with an easy-to-use UI instead of having to write code. For example:

Steps

Sample Step

Blueprint Name 

Sandbox duration in minutes 



```
startSandbox duration: 10, name: 'Performance', params: "", sandboxName: "", timeout: 10
```

Features

This table lists the plugin features that are supported per CloudShell version:

Plugin feature	CloudShell version
Blueprint parameters	8.0 and up
Activity Feed Teardown validation	8.1 and up

Contributing and issues

The plugin is an open source project under the MIT License. We encourage users to contribute, add pull requests and open issues.