PARASOFT

Parasoft Environment Manager Plugin for Jenkins

Introduction

The Parasoft Environment Manager plugin for Jenkins lets you rapidly configure various actions needed for automated, continuous testing across your software delivery pipeline. You can configure build steps for:

- Provisioning environments into the specific states needed for automated testing
- Replicating environments and associated assets to different Virtualize servers, including servers dynamically-provisioned from Docker or other container technologies
- Executing Parasoft test scenario jobs (tests suites that execute vs. specific environment configurations)
- Destroying "dirtied" test environments to ensure that subsequent tests always begin with a clean slate
- Disconnecting a Virtualize server from Environment Manager to remove unnecessary connections

Prerequisites

- Environment Manager 2.7.4 or higher
- Virtualize 9.9.4 or higher

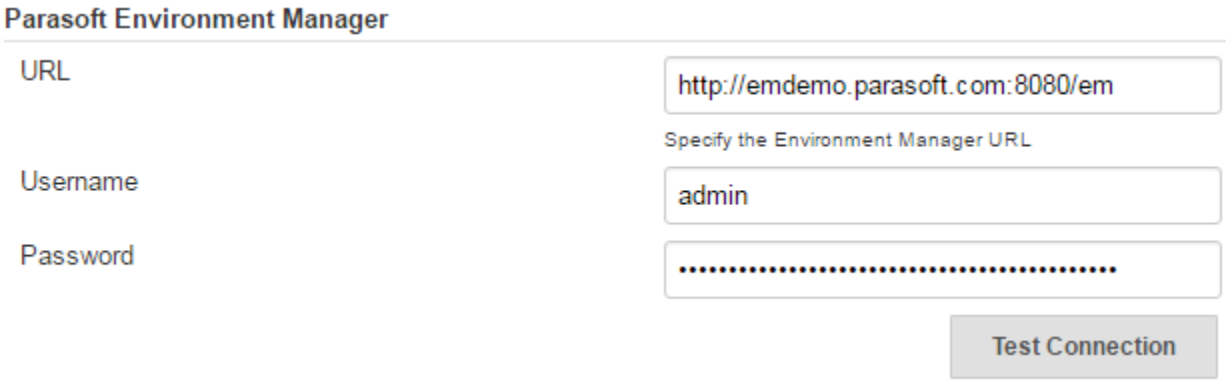
Installation

1. Download the Parasoft Environment Manager Plugin for Jenkins (from Parasoft Marketplace).
2. Go to **Manage Jenkins**.
3. Go to **Manage Plugins**.
4. In the **Advanced** tab, upload the plugin (the .hpi file).

Configuration

Each Jenkins server communicates with one Environment Manager. Multiple Jenkins servers can communicate with the same Environment Manager.

1. Go to **Manage Jenkins**.
2. Go to **Configure System**.
3. Scroll down to the Parasoft Environment Manager area and enter your Environment Manager URL, username, and password. You can click **Test Connection** to ensure that Jenkins is successfully communicating with Environment Manager.



Adding an Environment Manager Build Step to a Jenkins Job

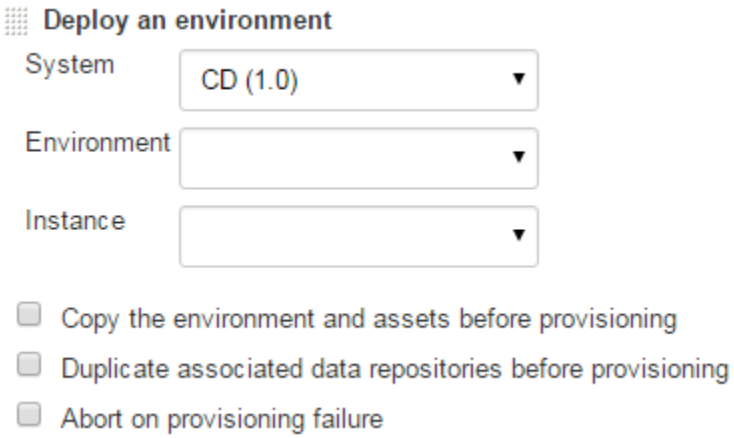
You can add any number of Environment Manager build steps to a Jenkins job.

1. Open the job you want to configure.
2. Go to **Configure.**
3. Scroll down to the Build area.
4. Click **Add build step**, then select one of the available Parasoft Environment Manager build steps:
    - **Deploy an environment:** Provisions environments into the specific states needed for testing and optionally replicates environments and associated assets to different Virtualize servers (including servers dynamically-provisioned from Docker or other container technologies).
    - **Execute a test scenario job:** Executes one of the test scenario jobs (tests suites that execute vs. specific environment configurations) available on the connected instance of Environment Manager.
    - **Destroy an environment:** Deletes "dirtied" test environments to ensure that subsequent tests always begin with a "clean" test environment.
    - **Disconnect a Virtualize server:** De-registers a specified Virtualize server from Environment Manager.

Configuring a "Deploy an Environment" Build Step

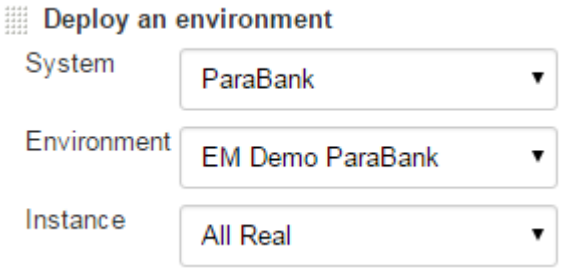
This build step provisions environments into the specific states needed for testing and optionally replicates environments and associated assets to different Virtualize servers (including servers dynamically-provisioned from Docker or other container technologies).

When you add a "Deploy an environment" build step, several new fields will display:



To configure this build step:

1. Specify the system, environment, and instance that you want to provision (and optionally replicate to a new Virtualize server).



2. If you want to replicate the environment and associated assets (virtual assets, proxies, JDBC controllers, etc.) to a new Virtualize server before provisioning:

    a. Check **Copy the environment and assets before provisioning**.

    b. (Optional) Specify a name for the new environment. If this field is empty, a name will be assigned automatically. You can also use variables—for example, Env${BUILD_NUMBER}

    c. Specify the target Virtualize server. See the guidelines below this procedure for help selecting and configuring one of the available options.

3. If you are copying an environment and you also want to duplicate the associated data repositories before provisioning:

    a. Check **Duplicate associated data repositories before provisioning**.

    b. Specify where you want the data repositories to be copied. Options are:

        - **On the current Data Repository server:** Creates a new copy on the same Data Repository server where the repositories currently exist. If you select this option, specify the Data Repository port, username, and password.

- **To a Data Repository server on the same host as the target Virtualize sever:** Creates a new copy on the target Virtualize server specified in the area above the **Duplicate associated data repositories before provisioning** check box. If you select this option, specify the Data Repository port, username, and password.

- **To a Data Repository server on a specific host:** Creates a new copy on the specified Data Repository. If you select this option, specify the Data Repository host, port, username, and password.

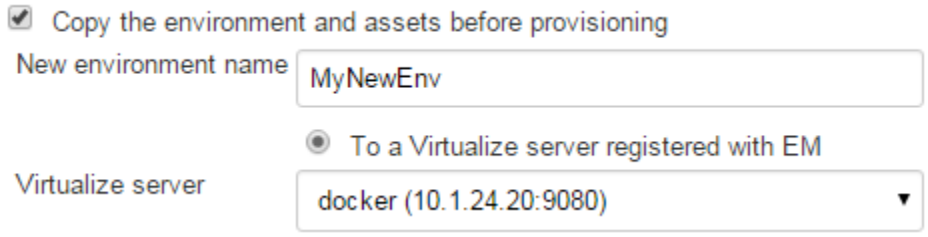
4. If you want the job to stop if the provisioning fails, check **Abort on provisioning failure**.

Choosing Between the Various Environment Copying Options

This plugin provides three different environment copying options to suit various needs. The first option requires the Virtualize server to be registered with Environment Manager when the job executes; the second and third will wait for the Virtualize server to be registered, and is thus the preferred option when you're dynamically deploying Virtualize servers via Docker or other container technologies.

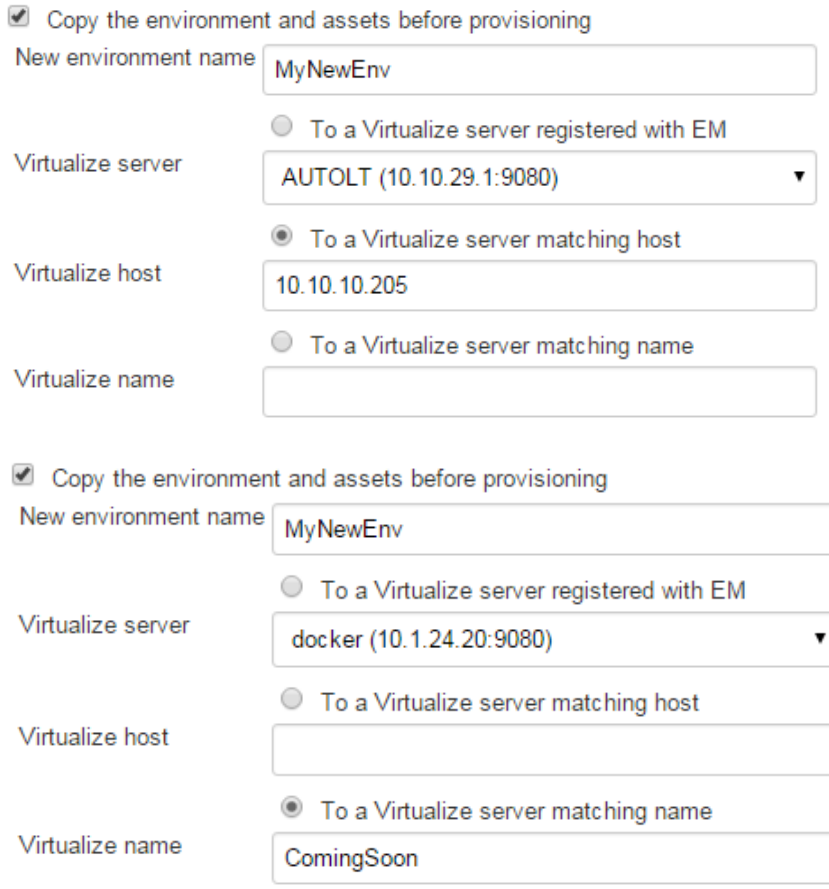
If the Virtualize server is already registered with Environment Manager

To copy to a Virtualize server that is already registered with Environment Manager, enable **To a Virtualize server registered with EM**, then select the desired server under **Virtualize server**. If this server is not registered with Environment Manager at the time the job executes, the job will fail.



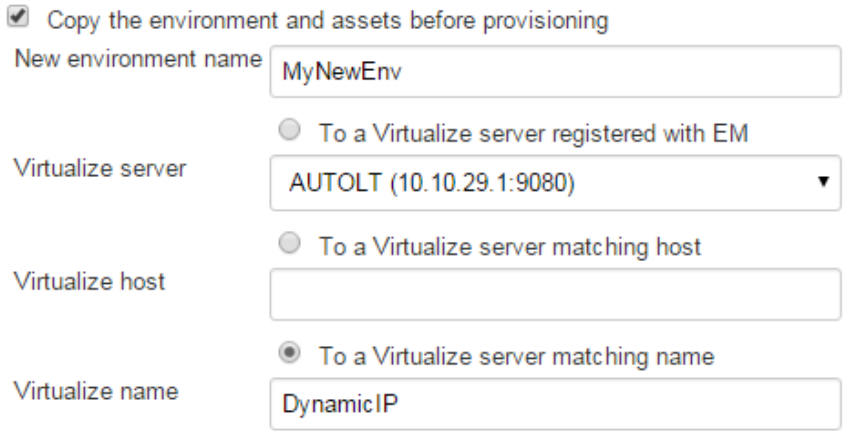
If the Virtualize Server is not yet registered with Environment Manager (e.g., it will be spun up via Docker or other automated processes)

In this case, you can configure the build step to wait for a Virtualize server with the specified host (IP) or Virtualize server name, then perform the copy operation once that server is registered with Environment Manager. To achieve this, select **To a Virtualize server matching host** or **To a Virtualize server matching name**, then specify the expected host IP or server name (the name it will use to register with Environment Manager).



If the Virtualize server has a dynamic IP

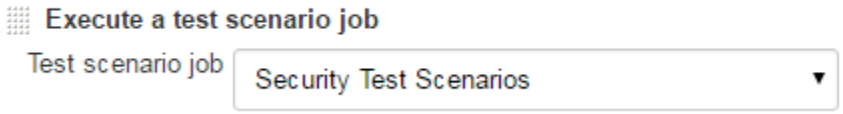
As long as the Virtualize server has a consistent name, you can configure the build step to copy to the Virtualize server with the specified name (e.g., the name it uses to register with Environment Manager). If the named Virtualize server is not yet registered with Environment Manager, the build step will wait for it, then perform the copy operation once that server is registered.



Configuring an "Execute a Test Scenario Job" Build Step

This build step executes one of the test scenario jobs (tests suites that execute vs. specific environment configurations) available on the connected instance of Environment Manager.

When you add an "Execute a test scenario job" build step, a new field will display:



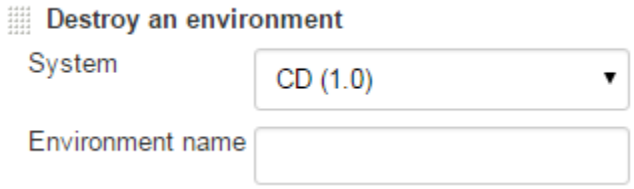
To configure this build step:

1. Select the test scenario job you want to execute. The drop-down shows all test scenario jobs currently on the connected instance of Environment Manager.

Configuring a "Destroy an Environment" Build Step

This build step deletes "dirtied" test environments to ensure that subsequent tests always begin with a "clean" test environment.

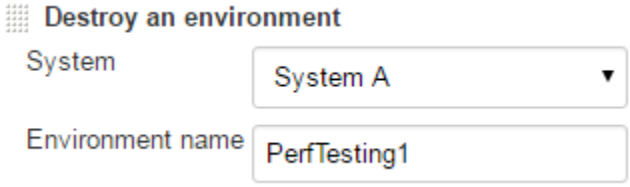
When you add a "Destroy an environment" build step, two new fields will display:



To configure this build step:

d. Select the system that includes the environment you want to destroy.

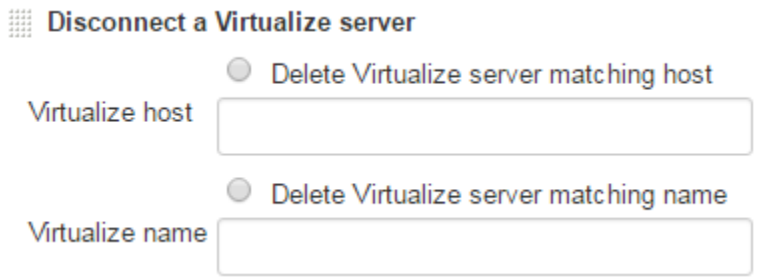
e. Type the name of the environment you want to destroy. You can enter the name of an environment that does not exist yet (e.g., an environment that will be spun up dynamically). You can also use variables—for example, Env${BUILD_NUMBER}



Configuring a "Disconnect a Virtualize Server" Build Step

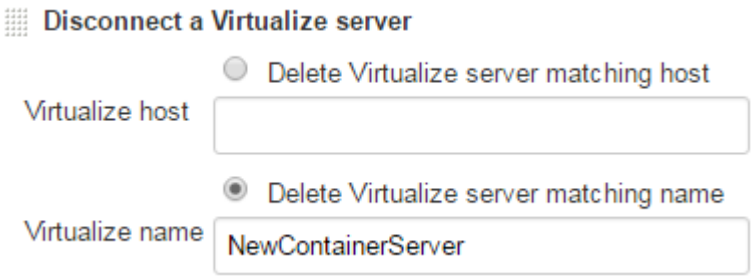
This build step de-registers a specified Virtualize server from Environment Manager.

When you add a "Disconnect a Virtualize server" build step, two new fields will display:



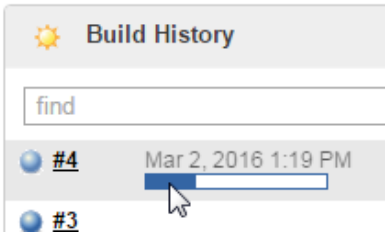
To configure this build step:

1. Do one of the following:
    - To disconnect a Virtualize server that matches a given host IP, select **Delete Virtualize server matching host**, then specify the host IP to match.
    - To disconnect a Virtualize server that matches a given name, select **Delete Virtualize server matching name**, then specify the name to match.

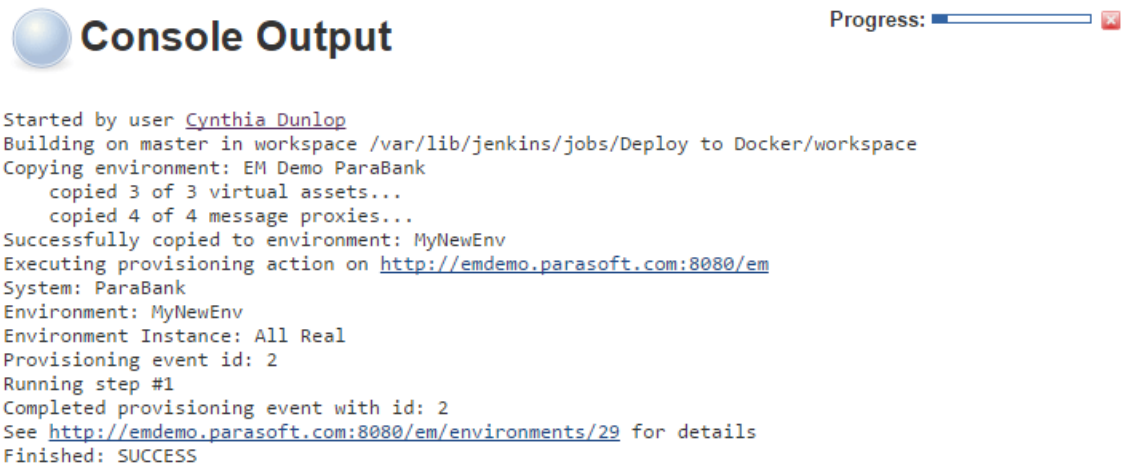


Reviewing a Build Step's Progress and Results

To view the console output for an in-progress job, click the progress bar in the Build History area.



This opens a page with status details and links to the associated Environment Manager host and environments.



To see details on a completed job, use the **Console Output** pull-down in the Build History area.