

HP Application Automation Tools Add-on for Bamboo

Software Version: 1.2

User Guide



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Overview

Welcome to the HP Application Automation Tools Add-on for Bamboo User Guide.

This guide is designed to help users who deploy and manage the HP Application Automation Tools Add-on for Atlassian Bamboo build servers.

This add-on enables you to run UFT tests as part of a product build process on an Atlassian Bamboo server.


What's New

This release of the Bamboo add-on has added the following new features:

- Ability to upload applications to Mobile Center for a test run as part of a build job
- Integration with the Mobile Center wizard to select devices and apps for a mobile test and set the test options
- Ability to view results in the Artifacts tab when running the test via ALM

Installation

Before you can run UFT tests as part of your build processes, you have to install the add-on on your Bamboo server machine. To install the add-on, do the following:

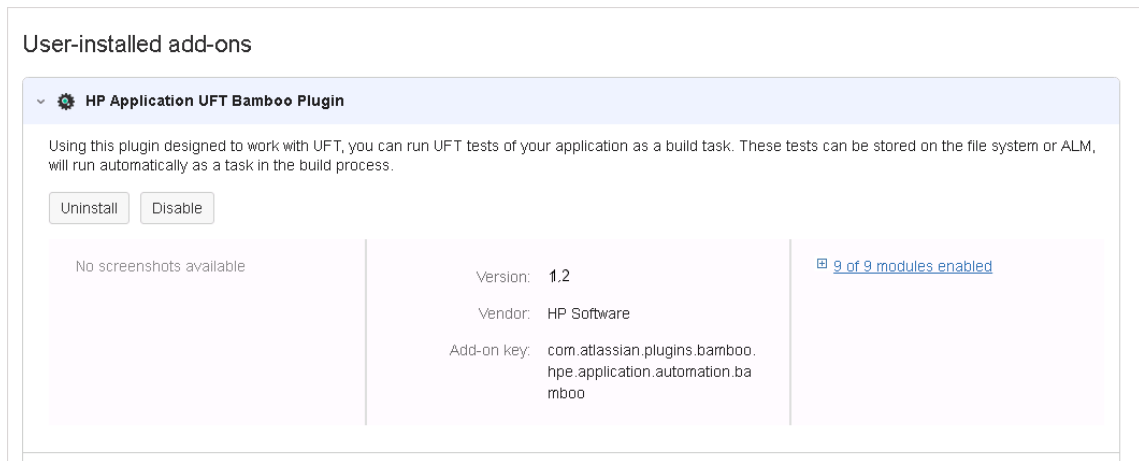
1. Install UFT on the machine that hosts the Bamboo server.
2. From the main Bamboo page (Build Dashboard), in the upper right corner of the window, click the **Administration** button  and select **Add-ons**. The add-ons list is displayed in the Administration screen.
3. **Upload the add-on:**
 - a. In the **Manage Add-ons** section of the Administration window, click **Upload add-on**. A dialog opens enabling you to select the location of the .jar file for the add-on.
 - b. In the Upload Add-on window, in the **From my computer section**, do one of the following:
 - Click the **Browse** button and navigate to the location of your .jar file.
 - Enter the URL of your .jar file.



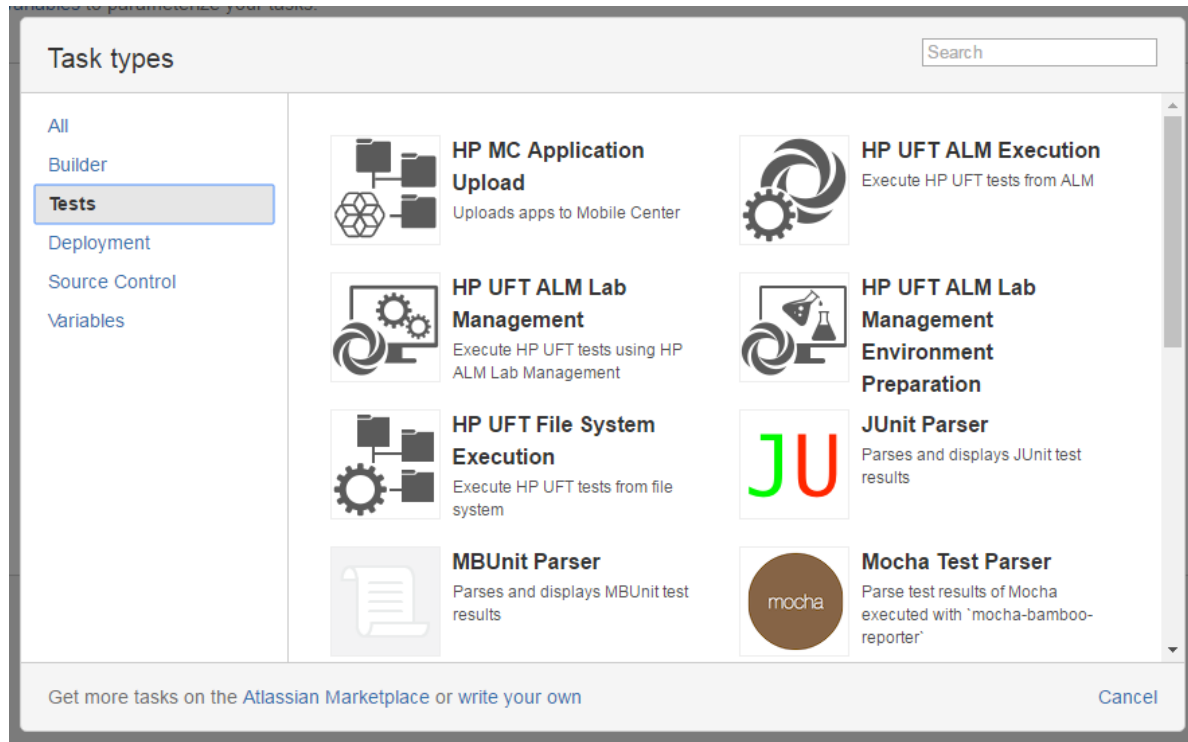
Note: This URL must be an absolute URL.

- c. Click **Upload**. Bamboo uploads and displays the installation progress in the Administration window.


After the installation is finished, Bamboo displays a message describing the add-ons.

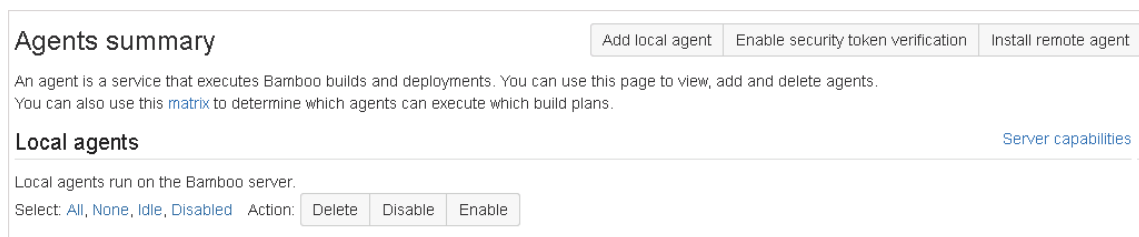


- d. Close the installation window, and you are ready to set up build tasks to run UFT tests.
- After you successfully install the add-on, UFT-related tasks are available in the **Tests** tab of the **Tasks types** window:



4. Enable the Agent.

- a. From the main Bamboo page (Build Dashboard), in the upper right corner of the window, click the **Administration** button  and select **Agents**. The Agents list is displayed.



- b. From the right column of the Agents list, click the **Server capabilities** link. The list of currently active server capabilities is displayed.
- c. From the right side of the server capabilities list, click the **Detect server capabilities** button. The server pauses for a moment, and detects the ability to work with UFT. When the detection is finished, UFT should be displayed in the list of executables:

Note: UFT is displayed in the list of executables only if UFT is installed on the server machine.

If you plan on running a test on a remote host, you must restart the Bamboo remote agent on the remote computer after installing UFT to detect the new capabilities of the remote agent on

the machine.

Server capabilities

Detect server capabilities

You can use this page to view, add and delete server capabilities. These capabilities will be inherited by all local agents.

Executable

'executable' capabilities define the executables which are available to your build plans.

Executable label	Path	Operations
A label to uniquely identify this executable	Please enter the path to your executable	
HP Unified Functional Testing (HP)	C:\Program Files (x86)\HP\Unified Functional Testing\bin\UFT.exe	View Edit Delete
MSBuild v2.0 (32bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework\v2.0.50727\MSBuild.exe	View Edit Delete
MSBuild v2.0 (64bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework64\v2.0.50727\MSBuild.exe	View Edit Delete
MSBuild v3.5 (32bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework\v3.5\MSBuild.exe	View Edit Delete
MSBuild v3.5 (64bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework64\v3.5\MSBuild.exe	View Edit Delete
MSBuild v4.0 (32bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework\v4.0.30319\MSBuild.exe	View Edit Delete
MSBuild v4.0 (64bit) (MSBuild)	C:\Windows\Microsoft.NET\Framework64\v4.0.30319\MSBuild.exe	View Edit Delete
Visual Studio 2012 (Visual Studio)	C:\Program Files (x86)\Microsoft Visual Studio 11.0\Common7\IDE	View Edit Delete

Run UFT tests in a Bamboo server build

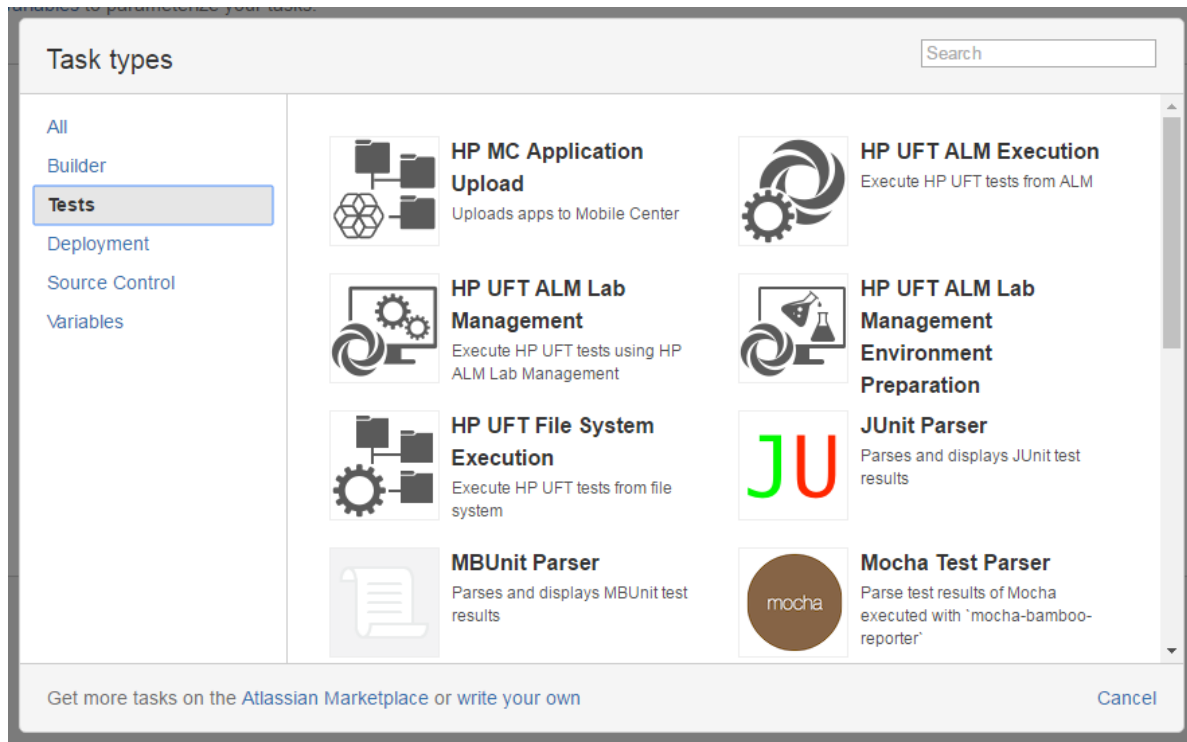
Add UFT tests to a Bamboo server build process by adding them as build tasks from the build job. Before you start you must have a build project, plan, and job already created.

This topic includes:

- "Run local UFT tests" below
- "Run UFT tests from ALM" on page 13
- "Run UFT tests from the ALM Test Lab" on page 15

Run local UFT tests

1. In your build plan, add an additional task.
2. In the task types window, open the **Tests** pane. A list of all available tasks is displayed:



- From the **Tests** pane, select the **HP UFT File System Execution** task. A new, empty task is added as part of your build plan:

- Provide the following information for your task:

Task description (optional)	A description to understand the purpose of the task.
Tests	The tests, test batch file, or folder containing tests to run. Each line in this field should contain the path to a test, test batch file (.MTB file name), or folder on the machine where the tests are to be run. You can enter multiple tests as needed.
Timeout	The amount of time (in seconds) to wait if there is a problem opening or running the test. If the field is left blank, there is no timeout.
Archive and publish HP test results	Instructs the server what to do with the test results after the test run is complete. Select one of the following: <ul style="list-style-type: none"> • Always archive HP test reports. Saves all test results, both for passed and failed tests. • Do not archive HP test reports: No test results are saved, regardless of the test status. • Archive HP test reports for failed tests: Only results for failed tests are saved.

- If you are running tests via Mobile Center (supported from Mobile Center versions 1.50), set up the integration as described in "[Set up server builds with Mobile Center](#)" on page 18.

Note: If you need to use the Mobile Center wizard to select devices, apps, and test options,

Mobile Center version 2.0 is required. For details, see ["Run the Mobile Center wizard" on page 18.](#)

6. Save the configuration.

When the build runs, the test will run as a build task with the specified settings. A new artifact is added in the **Artifacts** tab of the build project.

After the test run, the relevant build logs are saved in the **Logs** tab of the build execution results. You can view details about the test run and links to test results.

7. View the test results.

After a test run, UFT automatically saves the run results to a selected location. Specify run results specific settings in the **Run Sessions** pane of the UFT Options dialog box (**Tools > Options > General tab > Run Sessions** node).

To view the run results, do the following

- a. In the **Artifacts** tab, click the appropriate artifact link to download the report.
- b. Unzip and open the run results file, then do one of the following options:
 - Open the **run_results.html** file to view the run results.
 - In the HP Run Results Viewer select and open the **Results.xml** file.

If you added multiple test tasks, the different tasks are differentiated by their 3-digit ID at the beginning of the task. You can see these when you view the artifacts in the Artifacts tab. For example:

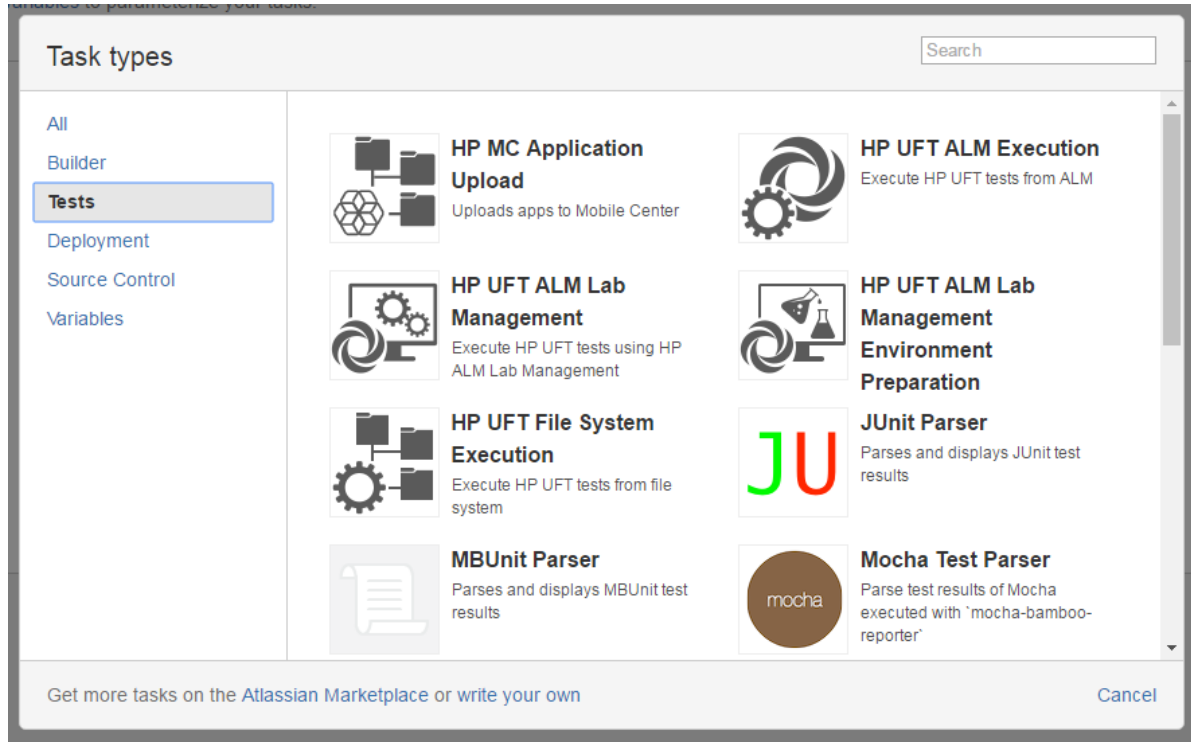
HP_UFT_Build_2

[Parent Directory](#)

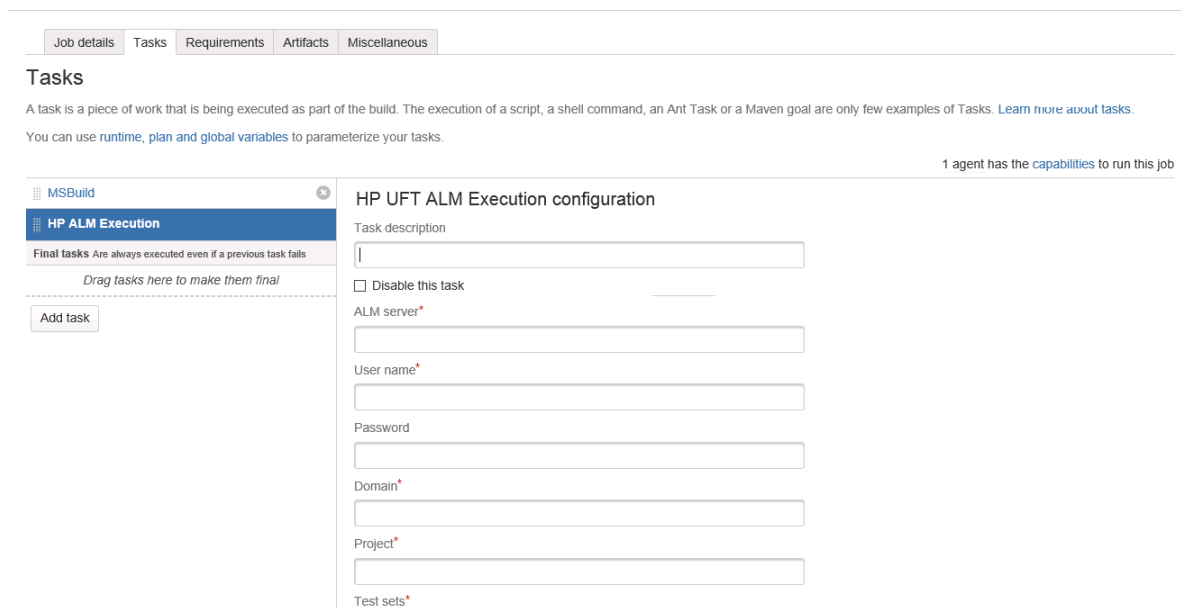
 [001 HP File System Execution](#) 0 bytes Oct 12, 2015 12:54:44 PM

Run UFT tests from ALM

1. In your build plan, add an additional task.
2. In the task types window, open the **Tests** pane. A list of all available tasks is displayed:



3. Select the **HP UFT ALM Execution** task. A new, empty task is added as part of your build plan:



4. **Provide the following information for your task:**

Task description (optional)	A description to understand the purpose of the task.
ALM Server	The ALM server from which to run the test. The ALM server address must be in the format: http://<ALM server name or IP>:<port>/qcbn.
User name	The ALM user name to use to access the server. Ensure that the ALM user specified in this task has the correct permissions to open and run the UFT tests. For details on permissions, see the <i>HP Application Lifecycle Management Administrator Guide</i> .
Password	The password for the ALM user specified above.
Domain	The domain in the ALM server where the project containing the tests is stored.
Project	The project containing the tests.
Test sets	The test sets to run with this build task. You should provide a full ALM path to these test sets. Each line in this field can contain a test name or folder.
Timeout	The amount of time (in seconds) to wait if there is a problem opening or running the test. If the field is left blank, there is no timeout.
Advanced Settings	<p>You can specify the Run mode in one of the following locations:</p> <ul style="list-style-type: none"> • Run locally: Runs the test on the same computer as the build • Run on planned host: Runs the test (as part of a scheduled test run) on a remote UFT computer • Run remotely: Runs the test on a remote UFT computer (not a scheduled run) <p>If you select one of the remote computer options, specify the host on which you want to run the test.</p> <p>In order to run on the remote computer, you must set the Allow other HP products to run tests and components option in the Test Runs pane of the Options dialog box (Tools > Options > GUI Testing tab > Test Runs tab).</p>

5. **Save the existing configuration.**

When the build runs, the test will run as a build task with the specified settings.

After the test run, the build logs relevant to the test run task can be found in the **Logs** tab of the build execution results. You can view details about the test run and links to test results.

6. **View the test results.**

After a test run, UFT automatically saves the run results to your Bamboo server. In the Build Artifacts, you can view a html file with a link to the test run in your ALM project:

HP_UFT_Build_7

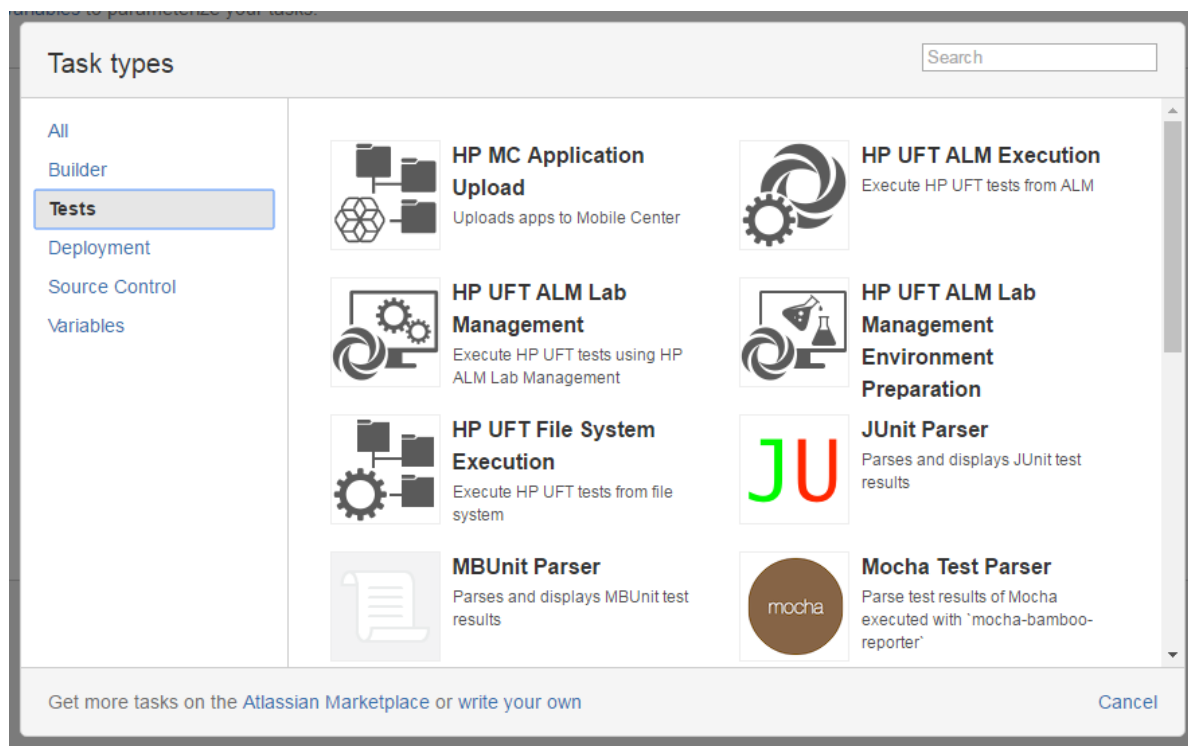
[Parent Directory](#)

 [002_HP_ALM_Execution](#) 0 bytes Nov 4, 2015 4:42:34 PM

Run UFT tests from the ALM Test Lab

Note: If you want to set the environment configuration for the application being tested before this task, you can add an additional build task to your build plan. For details on how to do this, see ["Configure the application environment" on page 21](#).

1. In your build plan, add an additional task.
2. In the task types window, open the **Tests** pane. A list of all available tasks is displayed:



3. Select the **HP UFT ALM Lab Management** task. A new, empty task is added as part of your build plan:

The screenshot shows the Bamboo build plan configuration interface. At the top, there are tabs for 'Job details', 'Tasks', 'Requirements', 'Artifacts', and 'Miscellaneous'. The 'Tasks' tab is selected. Below the tabs, there is a 'Tasks' section with a description: 'A task is a piece of work that is being executed as part of the build. The execution of a script, a shell command, an Ant Task or a Maven goal are only few examples of Tasks. [Learn more about tasks.](#) You can use [runtime](#), [plan](#) and [global variables](#) to parameterize your tasks.' On the right, it says '1 agent has the [capabilities](#) to run this job'.

On the left side, there is a sidebar with a list of tasks. The 'HP UFT ALM Lab Management' task is selected and highlighted in blue. Below it, there is a note: 'Final tasks Are always executed even if a previous task fails' and a dashed line with the text 'Drag tasks here to make them final'. There is also an 'Add task' button.

The main configuration area for the 'HP UFT ALM Lab Management' task is shown on the right. It has a title 'HP UFT ALM Lab Management configuration'. Below the title, there is a 'Task description' field. A checkbox labeled 'Disable this task' is present. A purple box contains the text: 'Use this build step to run ALM server-side functional test sets and Build Verification Suites.' Below this, there are several input fields: 'ALM server*', 'User name*', 'Password', 'Domain*', and 'Project*'. At the bottom, there is a 'Run type' dropdown menu with 'Test Set' selected.

4. Provide the following information for your task:

Task description (optional)	A description to understand the purpose of the task.
ALM Server	The ALM server from which to run the test. The ALM server address must be in the format: <code>http://<ALM server name or IP>:<port>/qcbn</code> .
User name	The ALM user name to use to access the server. Ensure that the ALM user specified in this task has the correct permissions to open and run the UFT tests. For details on permissions, see the <i>HP Application Lifecycle Management Administrator Guide</i> .
Password	The password for the ALM user specified above.
Domain	The domain in the ALM server where the project containing the tests is stored.

Project	<p>The project containing the tests.</p> <p>The selected project should be enabled for Server Side Execution of UFT tests.</p> <p>For details on Server Side Execution, see the <i>HP Application Lifecycle Management User Guide</i>.</p>
Run type	<p>Select one of the following types of runs:</p> <ul style="list-style-type: none">• Test set• Build verification suite <p>For more details about test steps and build verification suites, see the <i>HP Application Lifecycle Management User Guide</i>.</p>
Test Set/Build Verification Suite ID	<p>The ALM ID of the selected test set or the build verification suite ID.</p> <p>If you select a test set, your test set should be a functional test set, and must be prepared for Server Side Execution.</p> <p>For details, see the <i>HP Application Lifecycle Management User Guide</i></p>
Description	<p>The description of the test set or build verification suite (as entered in ALM).</p>
Timeslot Duration	<p>The duration of the slot reserved for a scheduled run of the test set or build verification suite.</p>
Environment Configuration ID	<p>The ID of your application environment configuration, as entered in ALM.</p> <p>To find this ID, in ALM, right-click the entity, copy the URL, and paste it to a text editor.</p> <p>Use the number associated with the EntityID at the end of the URL.</p>

5. Save the configuration.

When the build runs, the test will run as a build task with the specified settings.

After the test run, the relevant build logs are saved in the **Logs** tab of the build execution results. You can view details about the test run and links to test results.

Set up server builds with Mobile Center

You can integrate your server builds with Mobile Center. This integration lets you access devices and apps residing on the Mobile Center server.

Integration is supported for Mobile Center versions 1.50 and later. Integrations with the Mobile Center wizard, as described below, is supported for Mobile Center version 2.0 and later.

This topic includes:

- ["Configure the Mobile Center server settings" below](#)
- ["Run the Mobile Center wizard" below](#)
- ["Upload Mobile Center apps" on page 20](#)

Configure the Mobile Center server settings

1. Create an **HP UFT File System Execution** task as described in ["Run UFT tests in a Bamboo server build" on page 10](#).
2. In the tasks configuration page, select **Mobile Center Settings**.
3. Enter the following:

Mobile Center URL	The URL of your Mobile Center server. This information is also saved in the Mobile pane of the UFT Options dialog (Tools > Options > GUI Testing tab > Mobile node).
Mobile Center User Name and Password	The user name and password used to access Mobile Center. This information is also saved in the Mobile pane of the UFT Options dialog (Tools > Options > GUI Testing tab > Mobile node).

4. If your connection to the Mobile Center server is secure, enable the **Use SSL** option.
5. If your connection to the Mobile Center server is through a proxy, select **Use Proxy** and provide the proxy information.

Run the Mobile Center wizard

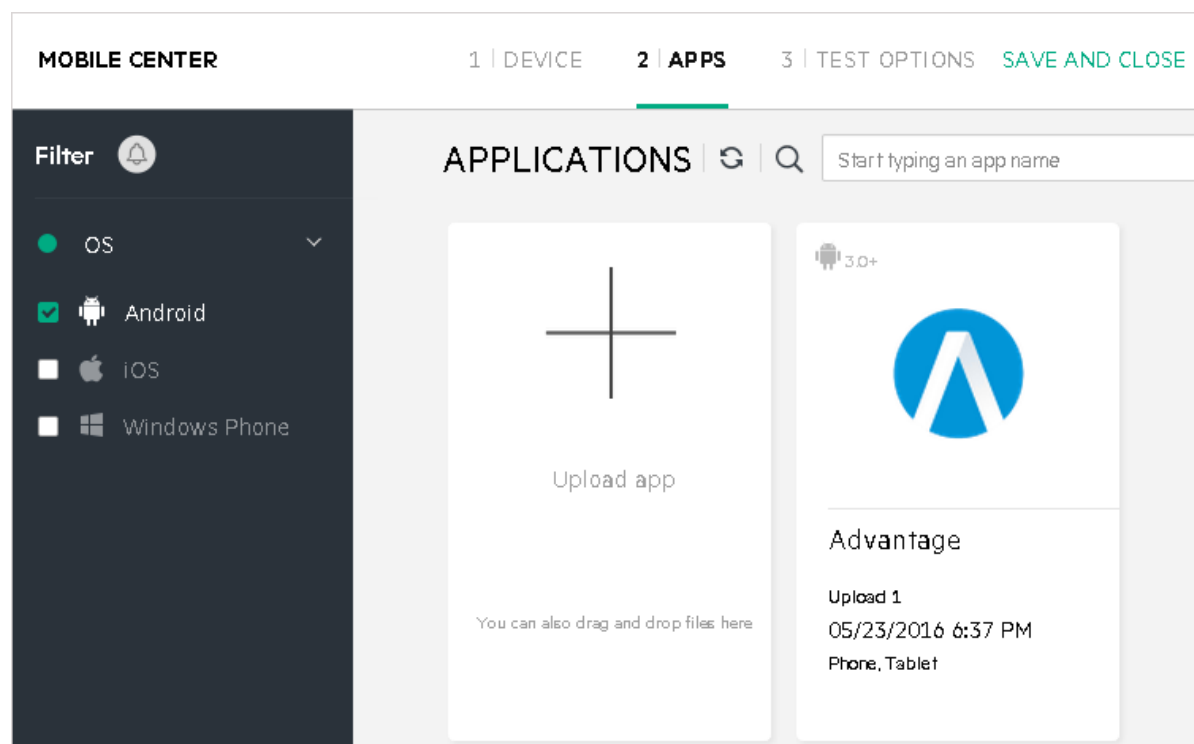
1. Set up your Bamboo build for Mobile Center integration as described in ["Configure the Mobile Center server settings" above](#).
2. On the configuration page, click the **Open Wizard** button. The Mobile Center windows opens, as long as you have provided the correct server credentials in the previous step.
3. When prompted, enter your credentials and click Login. The wizard opens to the **Device** tab.
4. **To select a specific device:** If you want to run your test on a specific device, select **Choose Specific Device** in the left panel, to view the filter. For details about using the filters, see [View and Manage Devices](#).
5. **To select a device by its capabilities:** If you do not need to test a specific device, you create a rule

that finds devices that meet your criteria. For example, if you need to test Android version 4.1 and higher, on any device, you create a rule that only requires 4.1 and higher. Mobile Center will only show the devices that match the criteria.

In the left panel, select **Choose Capabilities** to access the **Create Rule** page. Choose the desired capabilities. You can use a wildcard (*) to specify an OS subversion, when using the "Equals" enumerator, for example, **4.***.

Click the **More information** button *** in a device's row to access the auto-fill option, create a reservation, or see device information. For details, see [View and Manage Devices](#).

6. Click the **Apps** tab to view the available apps. Select one or more apps. If the app you want to test is not visible, make sure your filter is not hiding it. You can also add new apps with the **Upload app** button.



Tip: It is best to upload at least one app manually, as described in ["Upload Mobile Center apps" on the next page](#).

7. Click the **Test Options** tab to set up the behavior of the apps and the device metrics that you want to generate during the test. For details, see [Wizard - Test Options](#).
8. Click **Save and Close** in the Mobile Center wizard's top right corner.
9. Save the configuration.
10. Run and view the test as described in ["Run UFT tests in a Bamboo server build" on page 10](#).

Upload Mobile Center apps

To select apps to run during your test, you can upload the app package files directly to the Mobile Center server, instead of using the wizard.

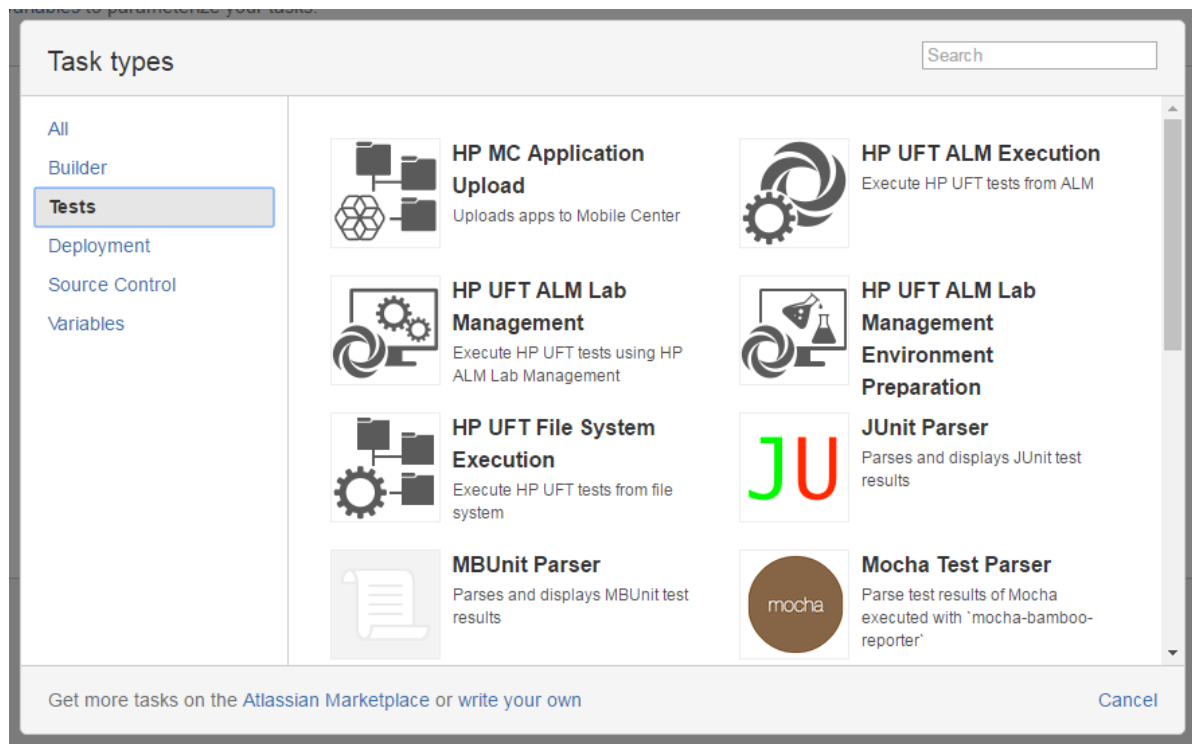
1. Copy the app package files, for example a file with an **.apk** extension, to the Bamboo server machine.
2. Set up your Bamboo build for Mobile Center integration as described in ["Configure the Mobile Center server settings" on page 18](#).
3. On the **Tests** pane of the **Tasks type** page, click the **HP MC Application Upload** task.
4. For each application you want to add, specify the full path of the app package file on the Bamboo server.
5. Save the configuration.

Configure the application environment

If you are running UFT tests saved in ALM, as part of a test set or build verification suite from the Test Lab module in ALM, you can prepare the environment configuration for the test and the application being tested as a separate build task. This task can be used before the task to run the test.

To set this configuration, do the following:

1. In your build plan, add an additional task.
2. In the task types window, open the **Tests** pane. A list of all available tasks is displayed:



3. Select the **HP UFT ALM Lab Management Environment Preparation** task. A new, empty task is added as part of your build plan:

The screenshot shows the 'Tasks' tab in the Bamboo interface. The task is titled 'HP UFT ALM Lab Management Environment Preparation'. The left sidebar shows a list of tasks, with the current task selected. The main area contains the configuration for the task, including a task description, a checkbox to 'Disable this task', and input fields for 'ALM server', 'User name', 'Password', and 'Domain'. A note at the bottom of the configuration area states: 'Use this build step to assign values to AUT Environment Configuration in ALM.' The bottom of the page has a footer: 'Powered by a free Atlassian Bamboo evaluation license. Please consider purchasing it today.'

4. If necessary, add a task description for the task.
5. Enter the ALM login credentials for the ALM server, including:

- **ALM server**
- **User name**

Note: Ensure that the ALM user specified in this task has the correct permissions to open and run the UFT tests. For details on permissions, see the *HP Application Lifecycle Management Administrator Guide*.

- **Password**
- **Domain** in which the project containing the tests is saved
- **Project** in which the tests are saved

Note: The selected project should be enabled for Server Side Execution of UFT tests. For details on Server Side Execution, see the *HP Application Lifecycle Management User Guide*.

6. Enter the ID of the environment for which you want to create/update a configuration. To find this ID, in ALM, right-click the entity, copy the URL, and paste it to a text editor. Use the number associated with the EntityID at the end of the URL.
7. Select one of the following options:
 - **Create a new configuration named:** Enter a name for the new configuration.
If you select this option, enter a string variable in the **Assign AUT Environment Configuration ID to:** field. (Bamboo will save an ID for this variable for use in future tasks.)

- **Use an existing configuration with ID:** Enter the ID of your AUT Environment Configuration in ALM.
8. (Optional) Enter a path for a JSON file that contains values for the AUT Environment parameters for the relevant configuration.
 9. Add the AUT Environment parameters that you want to update for the configuration.
 - a. Click the **Add Parameters** button.
 - b. For each parameter, select the type of the parameter from the drop-down menu (**Manual**, **Environment**, or **From JSON**).
 - c. Enter the full path of the parameter as it appears in ALM. For example, you could enter `Parameters/my_param1`.
 - d. Enter the value you want to assign to this parameter.
 10. Save the existing configuration.


This configuration will be applied as build step when building the entire build process.

Known issues

If you have trouble with the HP Application Automation Tools Add-on for Bamboo, see the following details for troubleshooting and limitations:

- In the Security and Permission options for the server, you must clear the **Enable XSRF protection option** before running tests on your Bamboo server.
- If you are using the **HP ALM Lab Management Environment Preparation Configuration** task, the ALM server should be accessible from server machine.
- **When using the HP ALM Execution task:**
 - If you receive an error the first time you run a test with this task, you need to install the TD connectivity tool. The link to install this tool can be found in the build log.
 - If the same error occurs on subsequent test runs, you must reregister the ALM client on the server machine.

For details on how to install the TD connectivity tool or register the ALM client, see your ALM documentation.

- If you are running a test on a remote host, you must restart the Bamboo remote agent on the remote computer after installing UFT to detect new capabilities of the remote agent machine.
- If your build failed to create the **HP UFT File System Execution** or **HP MC Application Upload** tasks, try to disable the XSRF protection in the following way:
 - Click the **Administration** button  and select **Overview**.
 - Select **Security Settings** under the **SECURITY** section.
 - Click **Edit** and clear the **Enable XSRF protection** option.

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Let us know how we can improve your experience with the User Guide.

Send your email to: docteam@hpe.com

