



thingworx<sup>®</sup> analytics<sup>™</sup>

## **Extension Installation Guide**

**52.1**

**August 2016**



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# Document Revision History

Revision Date	Version	Description of Change
August, 2016	1.0	Initial document version.

# Contents

Overview .....	7
Prerequisites.....	9
Download the Zip File .....	11
Import the Extension.....	13
Configure the Extension in ThingWorx .....	17
Run the Configuration Service .....	18
Configure the User Management Subsystem .....	19
Set a Home Mashup .....	20
Configure Communication Settings in the Analytics Builder .....	23
Install the Upload Thing .....	25



# 1

## Overview

This guide provides instructions for installing and configuring the ThingWorx Analytics Extension, which is implemented to extend the functionality available in ThingWorx Core.

An extension is a zip archive that contains the files for an extension and related metadata files. To install the contents of an extension into ThingWorx, the extension zip file must be imported and configured. This process involves the following steps, each of which is explained in more detail in subsequent sections of this guide.

1. Download the extension zip file.
2. Import the extension into ThingWorx
3. Configure the extension in ThingWorx.
4. Configure communication settings.
5. Install the Upload Thing so that data files can be uploaded.

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### Note

ThingWorx must be installed and configured properly on your system before importing Analytics Extension. For more information, see the [ThingWorx Installation Guide](#).

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# 2

## Prerequisites

The following must be installed prior to installing the ThingWorx Analytics Extension:

- ThingWorx 7.2
- Tomcat 8
- Java 8
- ThingWorx Analytics 52.1 (does not have to be installed on the same server as ThingWorx)



# 3

## Download the Zip File

1. Log into the [PTC ThingWorx & Axeda eSupport](#) page.
2. On the **ThingWorx & Axeda** tab, find the **Software Downloads** section, and click **PTC Software Downloads**.

The **Order or Download Software Updates** page opens.

3. Click the first subheading, **Order or Download Software Updates**. Enter your **Customer Name** and **Customer Number** and click **Next**.

The **PTC Software Download** page opens.

4. Under **Step 1: Select the Product Family**, scroll to **ThingWorx Machine Learning** and select it.
5. Under **Step 2: Choose Release & Download**, navigate to the download links by expanding each of the following successive options:

- **Release 52.0**
- **ThingWorx Analytics**
- **Most Recent Datecode**

6. Next to **ThingWorx-Analytics-Extensions-52-1**, click **HTTPS** or **Download Manager** to download the zip file and extract its contents.

The zip file includes the following:

File Name	Description
ThingWorx-Analytics-52-1-Extensions.zip	<p>An installable zip file that contains all of the files necessary to import the following components into ThingWorx:</p> <ul style="list-style-type: none"> <li>• Analytics Console extension</li> <li>• Analytics Builder extension</li> <li>• Analytics Server extension</li> </ul> <p>Do not manually extract the contents of this zip file. It is an installable zip file that will be imported as is into ThingWorx.</p>
UploadThing_Install-52-1.zip	<p>A zip file that must be extracted and installed only if data files will be uploaded into ThingWorx Analytics via the Analytics Builder.</p>
ThingWorx-Analytics-Extension-Installation-Guide-52.1.pdf	<p>A pdf version of this guide for installing and configuring the Analytics Extension for use.</p>

7. Continue with [Import the Extension](#).

# 4

## Import the Extension

### Import Process

After you have downloaded the Analytics Extension, follow the steps below to import the extension into ThingWorx.

1. Log into ThingWorx Composer as an administrator.
2. Choose **Import/Export** ► **EXTENSIONS** ► **Import**.

The **Import Extensions** window opens.

3. Click **Browse** and navigate to the extension zip file, ThingWorx-Analytics-52-1-Extensions.zip, which you downloaded in [Downloading the Zip File](#).
4. Click **Validate**.

**Validation Results** are displayed.

5. Click **Import**.

The extension file is imported and **Installation Results** are displayed.

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### **Note**

If any import failure messages are displayed, use the information provided in the message to resolve the error before proceeding. You might need to delete the imported files and restart the import process.

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6. Click **Close** to close the import window. You will be prompted to refresh Composer.
7. Click **Yes**.

The extension import is complete.

- 
- To verify that the import was successful, choose **Import/Export ► Manage** and ensure that the following imported components appear in the **Installed Extension Packages** table:

- ThingWorx\_Analytics\_Server\_Extension, package version 1.52.1
- ThingWorx\_Analytics\_Builder\_Extension, package version 1.52.1
- ThingWorx\_Analytics\_Console\_Extension, package version 1.52.1

The following supporting files should also be listed:

- ROCChart\_ExtensionPackage, package version 1.0.0
- Distributionbar\_ExtensionPackage, package version 1.0.0
- Rangeslider\_ExtensionPackage, package version 1.0.0
- LogoutButton, package version 1.0.1
- FileUploadExt\_ExtensionPackage, package version 1.0.1

- Continue with [Configure the Extension in ThingWorx](#).

## Removal Process

In the event that you want to remove the Analytics Extension from ThingWorx, follow the steps below.

- Log into ThingWorx Composer as an administrator.
- Choose **Import/Export ► EXTENSIONS ► Manage**.

The **Installed Extension Packages** window opens.

- Select the extension files you want to delete. To remove the Analytics Extension completely, make sure you select all of the following:
  - Extension files:
    - ThingWorx\_Analytics\_Server\_Extension, package version 1.52.1
    - ThingWorx\_Analytics\_Builder\_Extension, package version 1.52.1
    - ThingWorx\_Analytics\_Console\_Extension, package version 1.52.1
  - Supporting files:
    - ROCChart\_ExtensionPackage, package version 1.0.0
    - Distributionbar\_ExtensionPackage, package version 1.0.0
    - Rangeslider\_ExtensionPackage, package version 1.0.0
    - LogoutButton, package version 1.0.1
    - FileUploadExt\_ExtensionPackage, package version 1.0.1
- When all the relevant extensions and supporting files are selected, click on **Delete Extension** at the top of the window.

- 
- You will be prompted to confirm the deletion before the extension is deleted.
5. When you are prompted to confirm the deletion, click **Yes**.

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 **Note**

If any extension entities are in use, the extension package will not be deleted and an error message will be displayed. To correct the error, delete the affected entities from the Explorer page.

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# 5

## Configure the Extension in ThingWorx

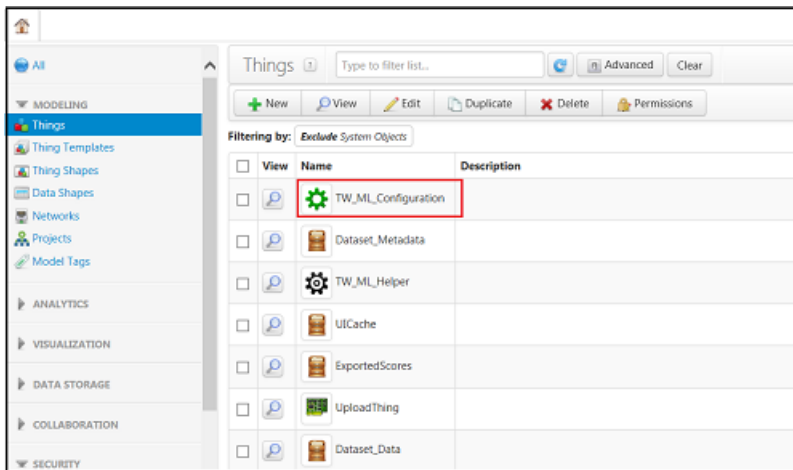
Run the Configuration Service .....	18
Configure the User Management Subsystem.....	19
Set a Home Mashup .....	20

After you have imported the Analytics Extension into ThingWorx, the configuration steps outlined in the following subsections must be completed:

- [Run the Configuration Service](#)
- [Configure the User Management Subsystem](#)
- [Set a Home Mashup](#)

## Run the Configuration Service

1. In ThingWorx Composer, click the Explorer icon (🏠).
2. In the left navigation panel, choose **Things**.  
The **Things** panel is displayed on the right.
3. In the list of Things, find **TW\_ML\_Configuration** and click the View icon next to it (🔍).




The TW\_ML\_Configuration tab opens.

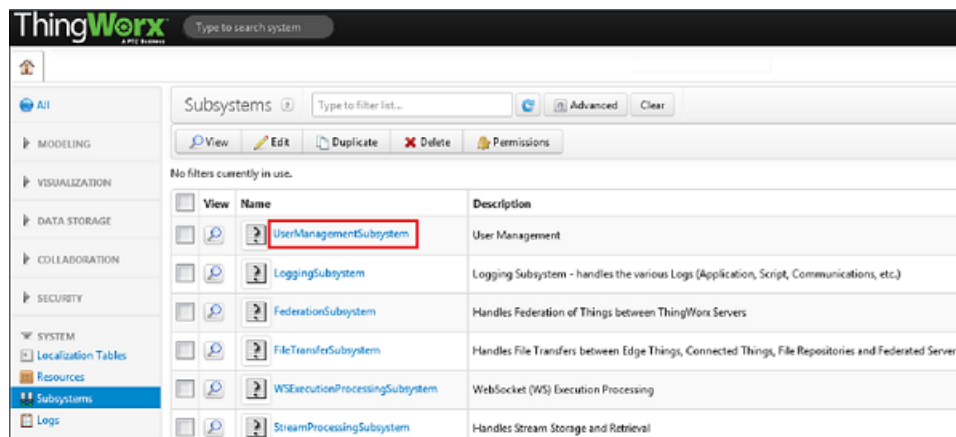
4. In the left navigation panel, click **Services**.  
The Services panel opens on the right.
5. In the **setConfiguration** service row, click **Test**.


A Test Service window opens

6. Click **Execute Service** to launch the configuration service.  
All permissions for non-administrator users are configured and a blank Results pane is displayed.
7. Click **Close**  
The Test Service window closes.
8. Close the TW\_ML\_Configuration tab and continue with [Configure the User Management Subsystem](#).

# Configure the User Management Subsystem

1. In ThingWorx Composer, click the Explorer icon ()
2. In the left navigation panel, choose **SYSTEM ► Subsystems**.  
The **Subsystems** panel is displayed on the right.
3. In the list of subsystems, find and click **UserManagementSubsystem**.



- The **UserManagementSubsystem** tab opens.
4. In the left navigation panel, click **Configuration**.  
The **Configuration** panel is displayed on the right.
  5. In the **User session shape settings** section, click **Add**.  
A new row is added to the ThingShape table.
  6. In the new row, click the magic picker icon () next to the text field.  
The **Search Results** window opens.
  7. Find **TW\_ML\_Session\_Variables** in the list of ThingShapes and click on it to select it.  
The **Search Results** window closes and the ThingShape is listed in the **User session shape settings** section of the Configuration page.
  8. Click **Save** at the top of the tab.
  9. Close the **UserManagementSubsystem** tab and continue with [Set a Home Mashup](#).

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## Set a Home Mashup

ThingWorx Composer provides a hierarchical structure for configuring users, user groups, and organizations. The structure is highly configurable. You can create new users, add users to user groups, and add user groups to organizations. Whatever configuration you choose for your user/organization hierarchy, you must at least add users to one of the ready-made user groups provided by the Analytics Extension. Only users who are added to one of these groups will be able to access the components of the Analytics Extension:


- TW\_AnalyticServer\_Admin (for administrator users)
- TW\_AnalyticServer\_Users (for non-administrator users)

For information about creating and managing organizations and users, consult the [ThingWorx Help Center](#). Then decide how you want to configure your environment.

One of the main advantages to setting up organizations or users is that you can assign them a Home Mashup that will launch automatically when a user, or member of a particular organization, logs in. ThingWorx Analytics Extension provides the following application home mashups:

- ThingWorx Analytics Builder (**TW\_ML\_Landing\_Page\_v1**) — launches the Analytics Builder application directly
- ThingWorx Analytics Console (**TW.Analytics.ConsoleMainMashup**) — opens the Analytics Console, from which you can launch other Analytics Extension components


In ThingWorx Composer, you can only assign a Home Mashup to a user or an organization. If you want to assign one of the above Home Mashups to a user or an organization, follow the steps below. Depending on how you've configured your user/organization environment, your exact procedure may vary.

1. In ThingWorx Composer, click the Explorer icon (.
2. In the left navigation panel, choose **SECURITY** and then select **Organizations** or **Users**, depending on who you are setting the Home Mashup for.

The **Organizations** or **Users** panel is displayed on the right.

3. In the panel, create or select an organization or user.

A tab opens for the organization or user.

4. On the right side of the tab, click the magic picker icon () next to the **Home Mashup** text field.

The **Search Results** window opens.

5. In the results list, locate one of the Home Mashups listed above and click on it to select it.

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The **Search Results** window closes and the selected mashup is listed in the **Home Mashup** field.

6. Click **Save** at the top of the tab.
7. To test your Home Mashup assignment, log into your newly installed Analytics Extension component via the default login form at the following path: <server name>/Thingworx/FormLogin/<Organization Name>

(Example: <http://192.168.56.101:8080/Thingworx/FormLogin/Everyone>)

The Login form will open. When you have logged in, the newly assigned Home Mashup will launch.

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 **Note**

If you want to customize the login form, see the [ThingWorx Help Center](#).

8. To log out of ThingWorx Composer, click **Administrator** in the top right of the window and choose the **Log Out** option.
9. Continue with [Configure Communication Settings in ThingWorx Analytics](#).



# 6

## Configure Communication Settings in the Analytics Builder

To ensure that the Analytics Builder can communicate with your instance of ThingWorx Analytics (via the Analytics Extension you installed), follow the steps below.

1. Log into ThingWorx Analytics Builder as an administrator via a web browser. (Login URL: <server name>/Thingworx/FormLogin/<Organization Name> (Example: http://192.168.56.101:8080/Thingworx/FormLogin/Everyone))

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### Note

The administrator login name you use must be in the **TW\_AnalyticServer\_Admin** or **Administrators** group.

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When the Analytics Builder opens for the first time, the following message will be displayed: **Please configure a ThingWorx Analytics Server instance.**

2. On the left, choose **Settings**.  
The settings window opens.

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3. Enter values in each of the following fields:

- **Application ID** — an alpha-numeric identifier (using lower case letters) for your access to ThingWorx Analytics.
- **Application Key** — a string value that unlocks access to your Application ID
- **Endpoint Host** — IP address (including a port designation) or URL that points to your instance of ThingWorx Analytics.

If your ThingWorx Analytics instance is secured using https, select the **Use SSL** checkbox.

4. Click **Verify Configuration**.

The ThingWorx Analytics version is displayed in a panel on the right, along with information about any existing datasets it includes.

5. Click **Save** to save the new configuration.

The settings configuration is complete and a completion status message will display briefly.

6. If you plan to upload data via the Analytics Builder, continue with [Install the Upload Thing](#).



# 7

## Install the Upload Thing

If you plan to upload data to the ThingWorx Analytics Server via the ThingWorx Analytics Builder, one additional step is necessary before the Analytics Builder is ready for use. You will need to extract and install the Upload Thing from the zip file that was downloaded in [Download the Zip File](#).

Depending on whether you are working in a Linux or Window environment, follow one of the procedures below to install the Upload Thing.

### Install Upload Thing in a Linux Environment

1. Locate the UploadThing\_Install-52-1.zip file where you placed it during the [Download the Zip File](#) procedure.
2. Log into the ThingWorx server via a Linux command line and unzip the UploadThing\_Install-52-1.zip file. (The /tmp directory of the server is a good place to put the extracted contents.)
3. Execute the install script with the following command:

```
sudo sh ./install.sh
```

4. When prompted, supply a location for the UploadThing file. (Suggested location: /opt)

The Upload Thing installation is complete.

5. To check that the Upload Thing is active, follow the procedure below to [Check the Status of Upload Thing](#).

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## Install Upload Thing in a Windows Environment

1. Locate the UploadThing\_Install-52-1.zip file where you placed it during the [Download the Zip File](#) procedure.
2. Log into the ThingWorx server and unzip the UploadThing\_Install-52-1.zip file. (The extracted contents can be placed anywhere.)
3. Run the `install.bat` script (either from a command prompt that has Administrator privileges, or by right-clicking the file in a Windows Explorer and selecting the **Run as administrator** option).



The command line window will open.

4. When prompted, supply a location for the UploadThing file (it can be placed anywhere) and click **Yes** if a security message is displayed.

The Upload Thing installation is complete.

5. To check that the Upload Thing is active, follow the procedure below to [Check the Status of Upload Thing](#).

### Check the Status of Upload Thing

1. To check that the Upload Thing is active, log into ThingWorx Composer and click the Explorer icon () .
2. In the left navigation panel, choose **Things**.  
The **Things** panel is displayed on the right.
3. In the list of Things, find **UploadThing** and click the View icon next to it  .  
The UploadThing tab opens.
4. In the left navigation panel, click **Properties**.  
The Properties panel opens on the right.
5. In the Connectable grid, find the `isConnected` property and check the Value column. If Upload Thing is active, the value will be **true**.