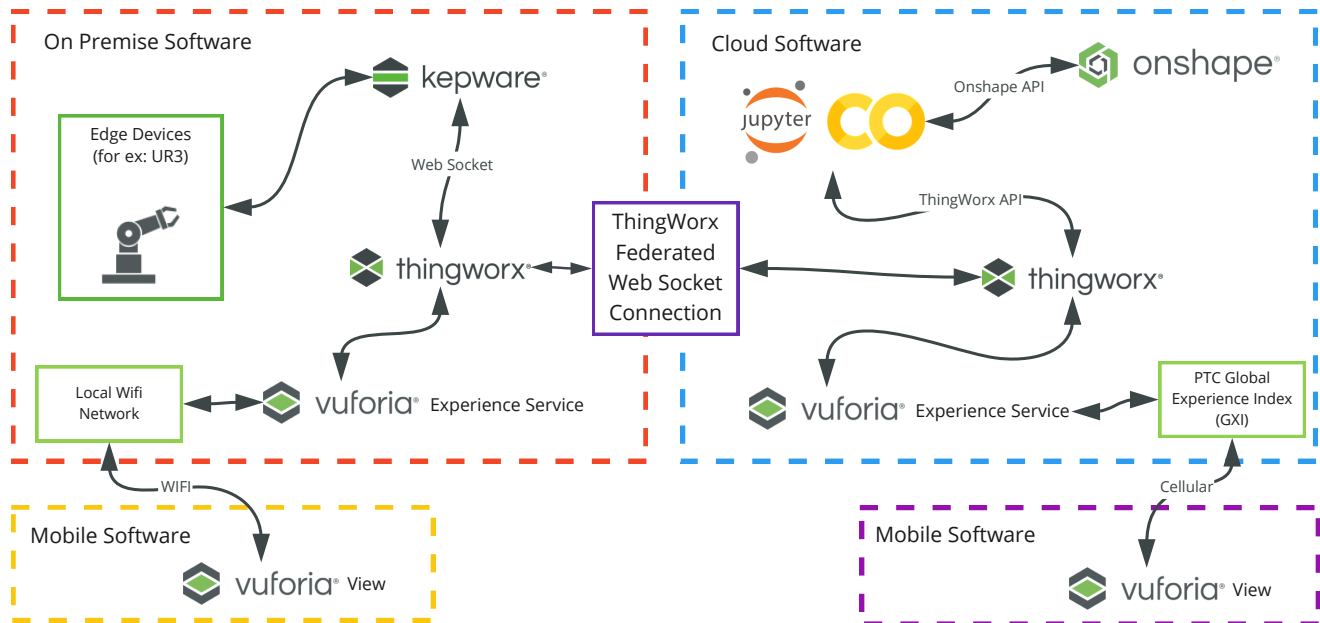
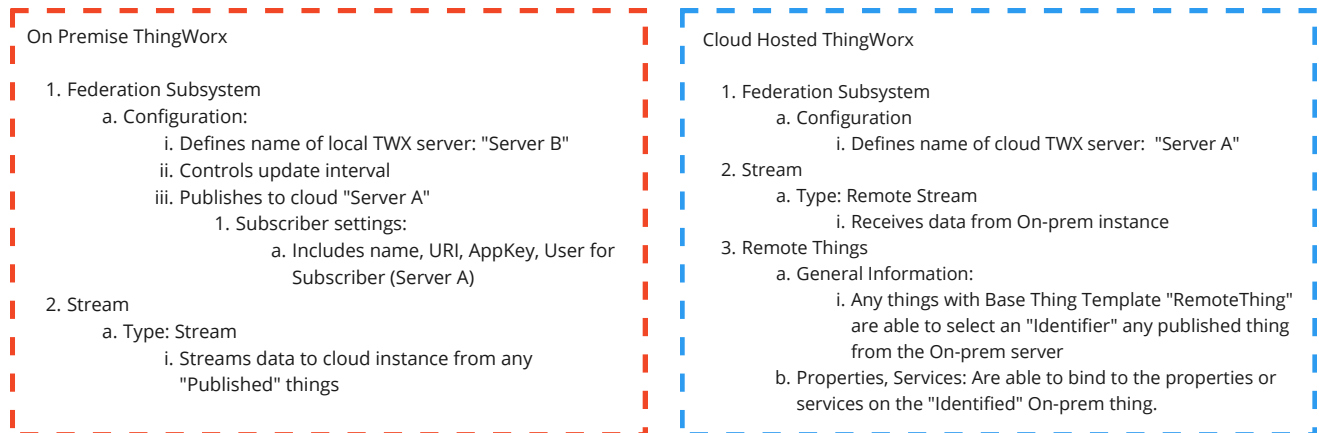


Overall Architecture & Example Integrations



ThingWorx Federation Details (specific to PTC Education Collaboration partners)



Federated Settings, Things on On-Prem/Local "Server B"

"FederationSubsystem" is found in Browse > Subsystems

Subsystem: FederationSubsystem To Do Save Cancel

Running | Refresh | Stop | Restart

General Information | Services | Configuration | Permissions | Change History

Configuration

Server Settings

Update Interval
100

Server Identification

My Server Name
ServerB

My Server Description
Federated ServerB

Federation subscribers this server publishes to

Subscribers (1)	+ Add	
Actions	Logical Server Name	Logical Server Description
	ServerA	Federated ServerA

Clicking "+Add" opens the Subscriber settings:

Include:

- The URI of the Cloud-hosted server
- A valid AppKey and a specific user

FederationSubsystem: Subscribers

Subscribers

Subscribers (1)

Logical Server Name
ServerA

Logical Server Description
Federated ServerA

Enable Publishing

Server URI
wss:// | :443/Thingworx/WS

Application Key

Publish As User
[User Icon] X

Pipe Count
10

Reconnection Interval (seconds)
60

Request Timeout (milliseconds)
60000

Set Cancel

Stream: ServerB-Federated-Stream Edit More

General Information | Properties and Alerts | Services | Events | Subscriptions

General Information

Name
ServerB-Federated-Stream

Description

Project
UR3 Digital Twin

Tags
Model Tag not selected

Base Thing Template
Stream

Implemented Shapes
Thing Shape not selected

Value Stream
Value Stream not selected

Data Shape
DataShape

Persistence Provider
ThingworxPersistenceProvider

Active

Published

Identifier

In the Stream Thing:


- "Project" must be selected, but can be any project
- "Published" must be checked, so that this stream thing is available to the cloud-hosted/remote server.

Federated Settings, Things on On-Prem/Local "Server B"

Industrial Thing:UR_Robot1 To Do Save Cancel More

General Information Properties and Alerts Services Events Subscriptions

General Information

 **Name**
 UR_Robot1
 [Change](#)

Description
 UR3e Robot with wrist camera gripper

Project (required)
 UR3 Digital Twin
 [Set as project context](#)

Tags
 Search Model Tags

Base Thing Template
 RemoteThing

Implemented Shapes
 Search Thing Shapes
 IndustrialThingShape

Value Stream
 Search Value Streams

Active
 Published

To "share" the properties and services of a thing with a federated subscriber, check the "Published" box

Industrial Thing:UR_Robot1 To Do Save Cancel

General Information Properties and Alerts Services Events Subsc

Properties Alerts

Filter Choose category

My Properties + Add Duplicate Delete Manage Bindings

Name	Actions	Source	Default
<input type="checkbox"/> # joint1Amp			
<input type="checkbox"/> # joint1Angle			
<input type="checkbox"/> # joint2Amp			
<input type="checkbox"/> # joint2Angle			
<input type="checkbox"/> # joint3Amp			
<input type="checkbox"/> # joint3Angle			
<input type="checkbox"/> # joint4Amp			
<input type="checkbox"/> # joint4Angle			
<input type="checkbox"/> # joint5Amp			
<input type="checkbox"/> # joint5Angle			
<input type="checkbox"/> # joint6Amp			
<input type="checkbox"/> # joint6Angle			
<input type="checkbox"/> -T- move1Script			
<input type="checkbox"/> -T- move2Script			
<input type="checkbox"/> -T- move3Script			
<input type="checkbox"/> -T- move4Script			

This list of things, shown here for example, will be visible to Server A.

Federated Settings, Things on Cloud-Hosted/Remote (Subscribed) "Server A"

"FederationSubsystem" is found in Browse > Subsystems

The screenshot shows the configuration page for the 'FederationSubsystem'. At the top, there are tabs for 'ServerA-Federated-Stream', 'FederationSubsystem', and 'UR_Robot1'. Below the tabs, there are buttons for 'To Do', 'Save', and 'Cancel'. The page is titled 'Subsystem: FederationSubsystem' and has a status of 'Running'. There are navigation links for 'General Information', 'Services', 'Configuration', 'Permissions', and 'Change History'. The 'Configuration' section is expanded, showing 'Server Settings' and 'Server Identification'. Under 'Server Settings', there is a field for 'Update Interval' with the value '100'. Under 'Server Identification', there are fields for 'My Server Name' (ServerA) and 'My Server Description' (Federated ServerA). At the bottom, there is a section for 'Federation subscribers this server publishes to' with a table that currently has no data.

Actions	Logical Server Name	Logical Server Description	Enable Publishing
No data			

The screenshot shows the configuration page for the 'Stream: ServerA-Federated-Stream'. At the top, there are tabs for 'ServerA-Federated-Stream', 'FederationSubsystem', and 'UR_Robot1'. Below the tabs, there are buttons for 'Edit' and 'More'. The page has navigation links for 'General Information', 'Properties and Alerts', 'Services', 'Events', 'Subscriptions', 'Mashup', and 'Configuration'. The 'General Information' section is expanded, showing various configuration options. A blue box highlights the 'Project' and 'Identifier' fields with the following text:

In the Stream Thing:

- "Project" must be selected, but can be any project
- "Identifier" is the Server B Stream, selected from the list of published Server B Things

The configuration options shown are:

- Name: ServerA-Federated-Stream
- Description: (empty)
- Project: UR.Robot
- Tags: Model Tag not selected
- Base Thing Template: RemoteStream
- Implemented Shapes: Thing Shape not selected
- Value Stream: Value Stream not selected
- Data Shape: DataShape
- Active: (checked)
- Published: (unchecked)
- Identifier: ServerB-Federated-Stream@ServerB
- Home Mashup: StreamMashup

Federated Settings, Things on Cloud-Hosted/Remote (Subscribed) “Server A”


A remote Thing can have any name, or the same name as the local thing. The “Identifier” should be the published local thing that has the properties/services desired in this thing.

On the properties of the subscribed remote thing, the properties of the published local thing area available:


Thing: UR_Robot1 To Do Save Cancel More

General Information | Properties and Alerts | Services | Events | Subscriptions


General Information

 **Name** ⓘ
UR_Robot1 ⓘ
[Change](#)

Description ⓘ

Project ⓘ (required)
 UR_Robot ×
[Set as project context](#) ⓘ

Tags ⓘ
 +

Base Thing Template ⓘ


Implemented Shapes ⓘ
 +

Value Stream ⓘ
 +

Active ⓘ

Published ⓘ





Identifier ⓘ
 ✎

Home Mashup ⓘ
 +

Manage Bindings

Local | Remote

↻

Property	
# joint2Angle	+
123 UR_Robots_UR_Robot1_Wrist2_Current	+
-F- move4Script	+
 isReporting	+
123 UR_Robots_UR_Robot1_WRIST1_JOINT	+
# joint3Amp	+
 reportingLastChange	+
123 UR_Robots_UR_Robot1_Shoulder_Temp	+
# joint3Angle	+
-F- move1Script	+
123 UR_Robots_UR_Robot1_Wrist3_Sign	+
# joint6Amp	+
# joint2Amp	+
123 UR_Robots_UR_Robot1_Elbow_Temp	+
123 UR_Robots_UR_Robot1_Shoulder_Sign	+
123 UR_Robots_UR_Robot1_Elbow_Sign	+
-F- move3Script	+
123 UR_Robots_UR_Robot1_WRIST3_JOINT	+
 reportingLastEvaluation	+
# joint1Angle	+
123 UR_Robots_UR_Robot1_BASE_JOINT	+
123 UR_Robots_UR_Robot1_Wrist1_Sign	+
 IndustrialThing	+

+ Add all properties