

# HP Operations Orchestration

for the Windows and Linux operating systems

Software Version: OO Content Pack 7

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## Citrix XenApp Integration Guide

for the Windows operating systems

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# 1 Introduction

This section includes the following topics:

- [Purpose of the Citrix XenApp Integration](#)
- [Audience](#)
- [Prerequisites](#)
- [Supported Versions](#)
- [Downloading OO Releases and Documents on HP Live Network](#)
- [Related Documents](#)

## Purpose of the Citrix XenApp Integration

With this integration, administrators can create HP Operations Orchestration (OO) flows that are integrated with Citrix XenApp.

To learn how to create OO flows, see the *Studio Guide to Authoring Operations Orchestration Flows* (Studio\_AuthorsGuide.pdf) in the documentation set for the current OO release.

The Citrix XenApp integration uses the Citrix XenApp 6 PowerShell SDK API to integrate with OO.

This document explains how this integration has been implemented, and how the integration's operations and flows communicate between OO and Citrix XenApp.

## Audience

This guide is intended for system administrators who establish and maintain the implementation of the integration between Citrix XenApp and HP OO. This guide assumes that you have administrative access to both systems.

## Prerequisites

To use this integration successfully, you should have administrator-level knowledge of the Citrix XenApp, the Web service or services used by the integration, and the Citrix XenApp 6 PowerShell SDK API to integrate with OO.

## Supported Versions

**Table 1 Supported Versions**

Operations Orchestration Version	Citrix XenApp Version
OO Content Pack 7	6.0

## Downloading OO Releases and Documents on HP Live Network

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To download OO releases and documents, visit the following site:

**<https://hpln.hp.com/>**

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Or click the **New users - please register** link on the HP Passport login page.

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1. On the left-hand side, click **Operations Orchestration Content Packs**.
2. In the **Operations Orchestration Content Packs** box, click **Content**. The HP Passport and sign-in page appears.
3. Enter your user ID and Password to access to continue.
4. Click **HP Operations Orchestration 9.00**.
5. Search for HP Operations Orchestration Content Pack 7

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## 2 Getting Started with the Citrix XenApp Integration

This section includes the following topics:

- [Installing and Configuring the Integration](#)
- [Citrix XenApp – OO Architecture](#)
- [Citrix XenApp Use Cases](#)

# Installing and Configuring the Integration

On a system that can access Citrix XenApp server, install the Operations Orchestration RAS component.

## Configuration requirements for Citrix XenApp server

- 1 Citrix XenApp 6 PowerShell SDK must be installed. You can download it from <http://community.citrix.com/display/xa/XenApp+6+PowerShell+SDK>.
- 2 The following software is required to install XenApp 6 SDK:
  - MSI 3.0
  - PowerShell 2.0
  - .Net 3.5 SP1
- 3 Run the **Enable-XAPSRemoting.ps1** script to set up for remoting on the XenApp server. This script is included in Citrix XenApp 6 server SDK install package.
- 4 The username required to connect to Citrix XenApp must be a Citrix Administrator and also in the Citrix XenApp server Administrators group.

## Configuration requirements for RAS machine

Windows PowerShell 2.0 with WinRM2.0 must be installed. You can download the kit from <http://support.microsoft.com/kb/968930>.

# Citrix XenApp — OO Integration Architecture

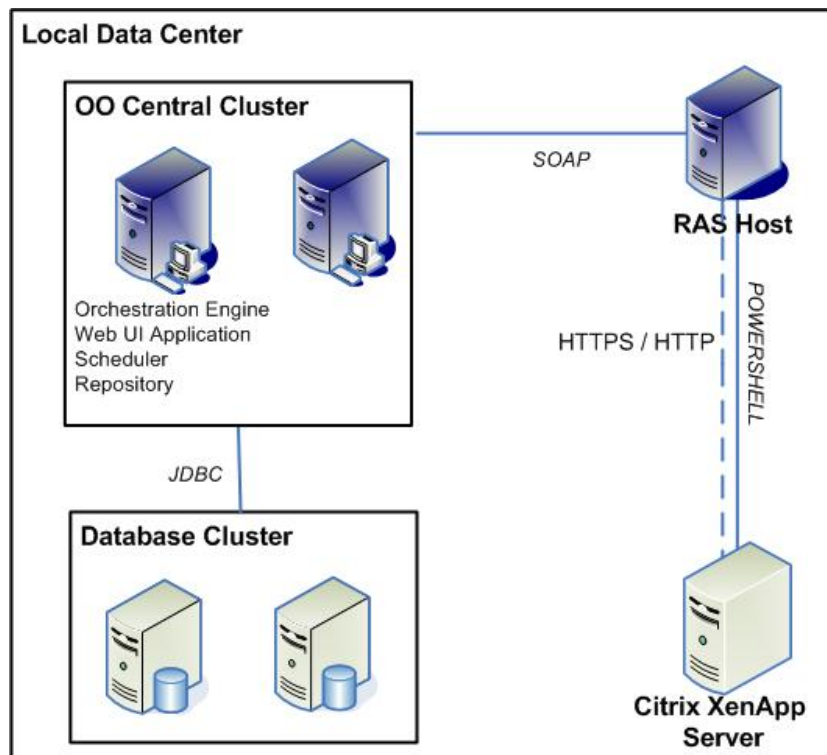


Figure 1 - Citrix XenApp Architecture

## Citrix XenApp Use Cases

Following are the major use cases for the Citrix XenApp integration, and the operations and flows that you can use to implement them.

- 1 Manage applications:
  - Add Application to Server operation
  - Get Applications operation
  - Get List of Applications flow
  - Modify Application flow
  - Modify Application operation
  - Query Application flow
  - Query Application operation
  - Remove Application from Server operation
- 2 Manage sessions:
  - Get Sessions flow
  - Get Sessions operation

- Query Session operation
- Stop Session by SessionId operation
- Stop User Session by Application operation
- 3 Manage users:
  - Add User to Application flow
  - Add User to Application operation
  - Add User to All Applications flow
  - Get All Users flow
  - Query User operation
  - Remove User from Application flow
  - Remove User from Application operation
  - Remove User from All Applications flow
- 4 Manage XenApp farm and servers:
  - Get Farm Name flow
  - Get Farm Name operation
  - Get Servers flow
  - Get Servers operation
  - Query Server operation
- 5 Manage Health Check
  - Load Analysis
- 6 Miscellaneous
  - Run XenApp Cmdlets
  - Close Runspace Session
  - Close RunspacePool Session

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## 3 Using the Citrix XenApp – OO Integration

This section includes the following topics:

- [Location of Citrix XenApp Integration Operations and Flows in OO Studio](#)
- [Common Inputs in the Integration](#)
- [Descriptions of Citrix XenApp Integration Operations and Flows](#)

## Location of Citrix XenApp Integration Operations and Flows in OO Studio

The Citrix XenApp integration includes the following operations and flows in the OO Studio Library/Operations/Application Servers/Citrix XenApp/ and Library/Accelerator Packs/Application Servers/Citrix XenApp/ folders.

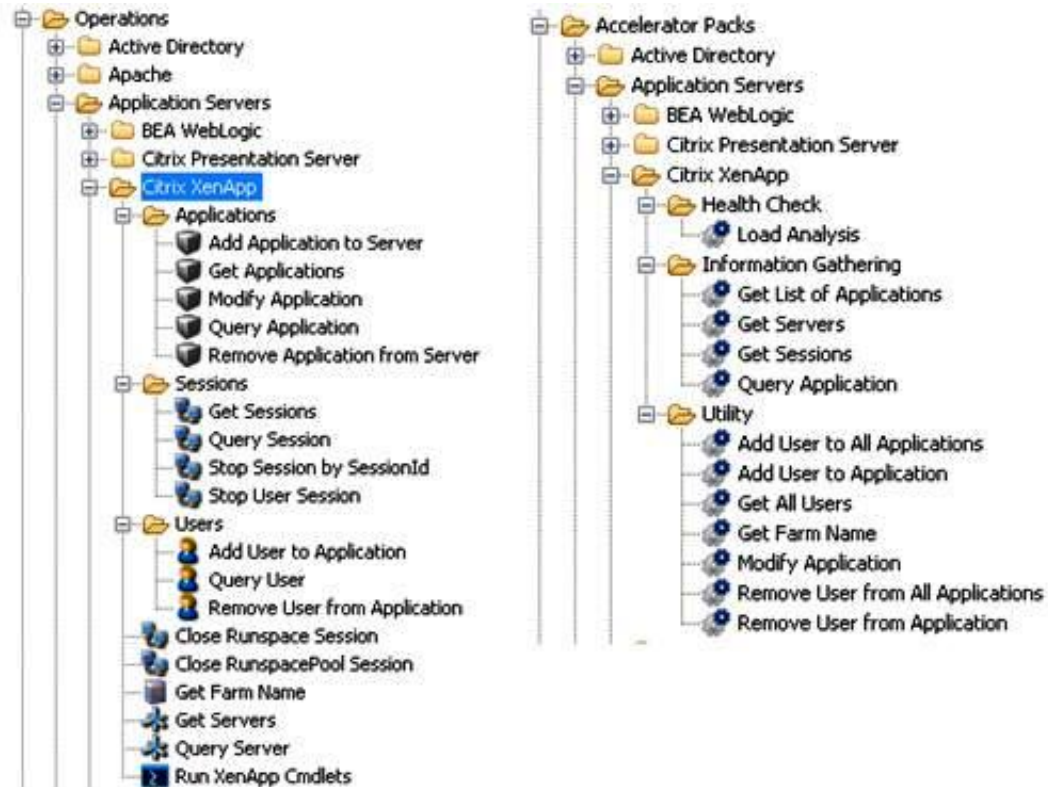


Figure 2 – Location of Citrix XenApp Integration Operations and Flows

## Common Inputs in the Integration

OO operations and flows use inputs to specify how they obtain the data that they need and when the data is obtained. The following inputs are used consistently throughout the Citrix XenApp integration's operations and flows.

**host**

The Citrix XenApp server host (for example, **ctxs-xa1.domain**).

**username**

The username to use when connecting to the server.

**password**

The password to use when connecting to the server.

#### protocol

The protocol to use. The valid values are **http** and **https**. The default value is **https**.

#### port

The port number to use. The default value for https is **5986**. The default value for http is **5985**.

#### closeSession

Close the internally kept runspacepool session at completion of operation. The valid values are **true** and **false**. The default value is **true**.

#### server

The Citrix XenApp server (for example, **ctxs-xa1**).

#### application

The name of the application (for example, **Mozilla FireFox**).

## Descriptions of Citrix XenApp Integration Operations and Flows

This section describes the Citrix XenApp integration's operations and flows, including their inputs, results, responses, examples, and other important information.

The operations are grouped by their basic functionality:

- Applications
- Sessions
- Users
- Other (Citrix XenApp root-level operations)

The flows are grouped by their basic functionality:

- Health Check
- Information Gathering
- Utility

## Applications

### Add Application to Server

The **Add Application to Server** operation adds a published application to a server from XenApp.



## Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

## Results

The operation returns the following results:

`returnResult`

A success or failure message.

## Responses

The operation returns one of the following responses:

`success`

The application was added successfully or it already exists on the server.

`failure`

The operation failed to add the application to the server.

## Get Applications

The **Get Applications** operation gets a list of published applications from the XenApp server.

## Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

## Results

The operation returns the following results:

`returnResult`

The list of applications or a failure message.

## Responses

The operation returns one of the following responses:

`success`

The list of applications was retrieved.

`failure`

The operation failed to get the list of applications.

## Modify Application

The **Modify Application** operation allows you to change one or more properties of a specific application.

### Inputs

All of the operation's inputs except the following are described in [Common Inputs in the Integration](#):

#### description

The new description of this application.

#### enabled

Specifies whether this application is enabled. The valid values are **true** and **false**. If the application is not on any servers, then by default the status is **false** (disabled).

#### anonymousConnectionsAllowed

Specifies whether to allow anonymous user connections for the application.

The valid values are **null** (" "), **true**, and **false**. If you specify a value of **false**, it set to configured users.

The default value is **null** (" ").

#### multipleInstancesPerUserAllowed

Specifies whether to allow multiple session instances by the same user.

The valid values are **null** (" "), **true**, and **false**. If you specify a value of **true**, you can create multiple user sessions else can create only one session.

The default value is **null** (" ").

#### addToClientStartMenu

Specifies whether to add the published application to client system's Windows **Start** menu.

The valid values are **null** (" "), **true**, and **false**.

The default value is **null** (" ").

#### addToClientDesktop

Specifies whether to add a shortcut to the client's desktop.

The valid values are **null** (" "), **true**, and **false**.

The default value is **null** (" ").

#### sslConnectionEnabled

Specifies whether to enable SSL connections for this application.

The valid values are **null** (" "), **true**, and **false**. If you specify a value of **true**, you cannot open an application session without actual SSL.

The default value is **null** (" ").

## Results

The operation returns the following results:

### `returnResult`

A success or failure message.

## Responses

The operation returns one of the following responses:

### `success`

The application was successfully modified, the optional inputs were not specified, or the specified optional inputs already exist.

### `failure`

The operation failed to modify the application.

## Query Application

The **Query Application** operation retrieves information about a specific application.

## Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

## Results

The operation returns the following results:

### `returnResult`

The name of the application or a failure message.

### `allowOtherConnections`

Specifies whether other connections are allowed. The valid values are **true** and **false**.

### `Description`

The description of the application.

### `displayName`

The display name of the application.

### `browser`

The browser name of the application.

### `enabled`

Specifies whether this application is enabled. The valid values are **true** and **false**.

#### folderPath

The parent folder of this application.

#### applicationType

The type of this application (for example, **ServerInstalled**).

#### servers

A comma-delimited list of servers serving this application.

#### sessions

A comma-delimited list of active sessions using this application.

#### users

A comma-delimited list of the users of this application.

### Responses

The operation returns one of the following responses:

#### success

The information about the application was retrieved.

#### failure

The operation failed to retrieve the information about the application.

## Remove Application from Server

The **Remove Application from Server** operation removes a published application from a server. The operation remains published in XenApp.

### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

### Results

The operation returns the following results:

#### returnResult

A success or failure message.

### Responses

The operation returns one of the following responses:

#### success

The application was removed successfully or it does not exist on the server.

failure

The operation failed to remove the application from the server.

## Sessions

### Get Sessions

The **Get Sessions** operation gets a list of sessions in a farm.

#### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

#### Results

The operation returns the following results:

returnResult

The list of sessions in a farm or a failure message.

#### Responses

The operation returns one of the following responses:

success

The list of sessions was retrieved.

failure

The operation failed to get the list of sessions.

### Query Session

The **Query Session** operation gets detailed information about a session.

#### Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*:

sessionID

The session ID of the session.

#### Results

The operation returns the following results:

returnResult

The session name of the session or a failure message.

#### applications

The applications in use by the session.

#### accountName

The username for this session.

#### sessionId

The session ID of this session.

#### sessionName

The session name of this session.

#### serverName

The server name for this session.

#### clientName

The client name of this session.

#### state

The current state of this session.

### Responses

The operation returns one of the following responses:

#### success

The detailed information about the session was retrieved.

#### failure

The operation failed to retrieve the detailed information about the session.

## Stop Session by SessionId

The **Stop Session by SessionId** operation resets/ends an active session.

### Inputs

All of the operation's inputs except the following are described in [Common Inputs in the Integration](#).

#### sessionId

The session ID of the session.

### Results

The operation returns the following results:

**returnResult**

A success or failure message.

## Responses

The operation returns one of the following responses:

**success**

The session was stopped successfully or it was already stopped.

**failure**

The operation failed to stop the session.

## Stop User Session

The **Stop User Session** operation resets/ends multiple users' sessions.

## Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*.

**targetUser**

The users for which to stop the session (for example, **domain\user1, domain\user2**).

## Results

The operation returns the following results:

**returnResult**

A success or failure message.

## Responses

The operation returns one of the following responses:

**success**

The session was stopped successfully, there is no user session for the specific application, or it was already stopped.

**failure**

The operation failed to stop the session.

## Users

### Add User to Application

The **Add User to Application** operation adds multiple users to an application.

## Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*.

### targetUser

A comma-delimited list of users to add to the application (for example, **domain\user1, domain\user2**). The valid format is **domain\user1, domain\user2**.

### application

The name of the application to which to add the users (for example, **Mozilla FireFox**).

## Results

The operation returns the following results:

### returnResult

A success or failure message.

## Responses

The operation returns one of the following responses:

### success

The users were added to the specified application or already existed in the application user list.

### failure

The operation failed to add the users to the specified application.



In the Citrix Delivery Services Console on the Citrix XenApp server, the added users show in the configured user list of the specified application only if the application's Users property is set to "Allow only configured users".

## Query User

The **Query User** operation gets assorted information about a Citrix XenApp user.

## Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*.

### targetUser

The user to query.

## Results

The operation returns the following results:



**returnResult**

The user name or a failure message.

**aaName**

The user's account authority (Windows domain name).

**applications**

A comma-delimited list of applications this user uses.

**sessions**

A comma-delimited list of this user's active application sessions.

## Responses

The operation returns one of the following responses:

**success**

The information about the specified Citrix XenApp user was retrieved.

**failure**

The operation failed to get the information about the specified Citrix XenApp user.

## Remove User from Application

The **Remove User from Application** operation removes multiple users from an application.

### Inputs

All of the operation's inputs except the following are described in [Common Inputs in the Integration](#).

**targetUser**

A comma-delimited list of the users to remove from the application (for example, **domain\user1, domain\user2**). The valid format is **domain\user1, domain\user2**.

**application**

The name of the application from which to remove the users (for example, **Mozilla FireFox**).

### Results

The operation returns the following results:

**returnResult**

A success or failure message.

## Responses

The operation returns one of the following responses:

#### success

The users were removed from the specified application or were not in the application user list.

#### failure

The operation failed to remove the users from the specified application.

## Other

### Close Runspace Session

The **Close Runspace Session** operation closes the remote runspace session created using the **Run XenApp Cmdlets** operation.

#### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

#### Results

The operation returns the following results:

##### returnResult

A success or failure message.

#### Responses

The operation returns one of the following responses:

##### success

The remote runspace session was closed or does not exist.

##### failure

The operation failed to close the remote runspace session.

### Close RunspacePool Session

The **Close RunspacePool Session** operation closes a runspacepool session.

#### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

#### Results

The operation returns the following results:

`returnResult`

A success or failure message.

## Responses

The operation returns one of the following responses:

`success`

The runspacepool session was successfully closed or the runspacepool was not found in the session.

`failure`

The operation failed to close a runspacepool session.

## Get Farm Name

The **Get Farm Name** operation gets the name of the current farm.

### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

### Results

The operation returns the following results:

`returnResult`

The name of the current farm or a failure message.

## Responses

The operation returns one of the following responses:

`success`

The name of the current farm was retrieved.

`failure`

The operation failed to retrieve the name of the current farm.

## Get Servers

The **Get Servers** operation gets a list of all servers in the current farm.

### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

### Results

The operation returns the following results:

#### returnResult

A list of all servers in the current farm or a failure message.

### Responses

The operation returns one of the following responses:

#### success

A list of servers in the current farm was retrieved.

#### failure

The operation failed to retrieve the list of all servers in the current farm.

## Query Server

The **Query Servers** operation gets information about a Citrix XenApp server.

### Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

### Results

The operation returns the following results:

#### returnResult

The server name or a failure message.

#### ip

The IP address of the server.

#### zoneName

The name of the zone the server is in.

#### folderPath

The name of the parent folder containing this server.

#### logonsEnabled

Specifies whether logon is enabled for this server. The valid values are **true** and **false**.

#### sessionCount

The number of sessions active on this server.

#### applications

A comma-delimited list of applications installed on this server.

#### sessions

A comma-delimited list of sessions active on this server.

### Responses

The operation returns one of the following responses:

#### success

The information about the specified Citrix XenApp server was retrieved.

#### failure

The operation failed to get the information about the specified Citrix XenApp server.

### Run XenApp Cmdlets

The **Run XenApp Cmdlets** operation runs Citrix XenApp cmdlets using Windows PowerShell.

### Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*.

#### cmdlets

The XenApp commands to execute (for example, **Add-XAApplicationaccount -browsername winrar -accounts domain\user1**).

#### delimiter

The delimiter used to separate each property name from the property value in the output table. The default value is a colon (":").

#### colDelimiter

The delimiter used to separate columns in the output table. The default value is a comma (",").

#### rowDelimiter

The delimiter used to separate rows in the output table. The default value is a new line.

### Results

The operation returns the following results:

#### [returnResult](#)

A table containing a row for each PSObject that the cmdlets emit. The table's columns represent the properties of these PSObjects, in the [propertyName:propertyValue](#) format.

#### [warnings](#)

A list of warnings that the cmdlets emit. If the cmdlets were executed without warnings, this result is an empty string.

### Responses

The operation returns one of the following responses:

#### [success](#)

The cmdlets were executed successfully.

#### [failure](#)

The cmdlets could not be executed.

## Health Check

### Load Analysis

The **Load Analysis** flow analyses the load on a given server.

#### Inputs

All of the flow's inputs except the following are described in [Common Inputs in the Integration](#).

#### [notifyMethod](#)

The method to use to notify the user.

### Responses

The flow returns one of the following responses:

#### [success](#)

The flow completed successfully.

#### [failure](#)

The flow completed unsuccessfully.

#### [diagnosed](#)

There is statistically significant variance in a data.

## Information Gathering

### Get List of Applications

The **Get List of Applications** flow gets a list of applications.

#### Inputs

All of the flow's inputs are described in *Common Inputs in the Integration*.

#### Responses

The flow returns one of the following responses:

##### success

The flow completed successfully.

##### failure

The flow completed unsuccessfully.

### Get Servers

The **Get Servers** flow gets a list of all servers in the current farm.

#### Inputs

All of the flow's inputs are described in *Common Inputs in the Integration*.

#### Responses

The flow returns one of the following responses:

##### success

The flow completed successfully.

##### failure

The flow completed unsuccessfully.

### Get Sessions

The **Get Sessions** flow gets a list of sessions in a farm.

#### Inputs

All of the flow's inputs are described in *Common Inputs in the Integration*.

#### Responses

The flow returns one of the following responses:

#### success

The flow completed successfully.

#### failure

The flow completed unsuccessfully.

## Query Application

The **Query Application** flow retrieves information about a specific application.

### Inputs

All of the flow's inputs are described in *Common Inputs in the Integration*.

### Responses

The flow returns one of the following responses:

#### success

The flow completed successfully.

#### failure

The flow completed unsuccessfully.

## Utility

## Add User to All Applications

The **Add User to All Applications** flow adds multiple users to all applications on a Citrix XenApp farm.

### Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

#### targetUser

The users to add to the application (for example, **domain\user1**, **domain\user2**).

### Responses

The flow returns one of the following responses:

#### success

The flow completed successfully.



failure

The flow completed unsuccessfully.

## Add User to Application

The **Add User to Application** flow adds multiple users to an application.

### Inputs

All of the operation's inputs except the following are described in *Common Inputs in the Integration*.

targetUser

The users to add to the application (for example, **domain\user1**, **domain\user2**).

### Responses

The flow returns one of the following responses:

success

The flow completed successfully.

failure

The flow completed unsuccessfully.

## Get All Users

The **Get All Users** flow generates a list of all users of a Citrix farm.

### Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

notifyMethod

The method to use to notify the user.

### Responses

The flow returns one of the following responses:

success

The flow completed successfully.

failure

The flow completed unsuccessfully.

## Get Farm Name

The **Get Farm Name** gets the name of the current farm.

## Inputs

All of the flow's inputs are described in *Common Inputs in the Integration*.

## Responses

The flow returns one of the following responses:

### success

The flow completed successfully.

### failure

The flow completed unsuccessfully.

## Modify Application

The **Modify Application** flow changes one or more properties of a specific application.

## Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*:

### Description

The new description of this application.

### Enabled

Specifies whether or not this application is enabled. The valid values are **true** and **false**. If the application is not on any servers, by default the status is **false** (disabled).

## Responses

The flow returns one of the following responses:

### success

The flow completed successfully.

### failure

The flow completed unsuccessfully.

## Remove User from All Applications

The **Remove User from All Applications** removes multiple users from all applications and ends specified users' sessions.

## Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

`targetUser`

The users to remove from the applications (for example, **domain\user1**, **domain\user2**).

## Responses

The flow returns one of the following responses:

`success`

The flow completed successfully.

`failure`

The flow completed unsuccessfully.

## Remove User from Application

The **Remove User from Application** flow removes multiple users from an application.

## Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

`targetUser`

The users to remove from the application (for example, **domain\user1**, **domain\user2**).

## Responses

The flow returns one of the following responses:

`success`

The flow completed successfully.

`failure`

The flow completed unsuccessfully.

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## 4 Launching Integration Flows From Citrix XenApp

This section includes the following topics:

- [Ways of Launching Integration Flows From Citrix XenApp](#)
  - [Using Wget](#)
  - [Using RSFlowInvoke and JRSFlowInvoke](#)
  - [Using the WSCentralService SOAP API](#)

# Ways of Launching Integration Flows From Citrix XenApp

You can launch an integration flow from Citrix XenApp if it has a console or interface that can accept a command. In order to launch an integration flow, you must obtain its URL.

## To obtain a flow's URL

- 1 Open OO Central.
- 2 Click the **Flow Library** tab.
- 3 Click the flow in the **Flow Library** tab, and then copy the **Guided Run** or **Run All** URL in the **Execution Links** pane.

There are a number of ways to launch a flow from Citrix XenApp:

- Use the REST service to launch a flow from a command line. The REST command-line tools you can use are:
  - Wget
  - RSFlowInvoke.exe or the Java version JRSFlowInvoke.jar
- Use the WSCentralService SOAP API to access Central features programmatically.



For instructions on using these methods, see the *OO Software Development Kit Guide* (SDKGuide.pdf) in the documentation set for the current OO release.

## Using Wget

Wget is a command-line tool that you can use to download and run flows from the Internet. You can download Wget from the **GNU Wget** Web page. Wget runs the flow you specify in the URL contained on the command line. It can use the HTTP, HTTPS, and FTP protocols.

## Using RSFlowInvoke or JRSFlowInvoke

RSFlowInvoke (RSFlowInvoke.exe) or the Java version JRSFlowInvoke (JRSFlowInvoke.jar) is a command-line utility that allows you to start a flow without using OO Central (although the Central service must be running). These tools are available in the Operations Orchestration home directory under the Studio\tools\ folder.

## Using the WSCentralService SOAP API

Use the WSCentralService SOAP API to launch and control the execution of integration flows programmatically. This allows you to control the flow execution—including running, pausing, resuming, and canceling a flow, and viewing the status of a flow run.

The WSCentralService SOAP API Java and .NET classes and interfaces are located in the OO SDK home directory, in the lib\ folder. The certificates, keystore, WSDL, and sample code are located in the OO SDK home directory, in the samples\ folder.

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## 5 Creating Custom Citrix XenApp Integration Operations

This section includes the following topics:

- [Ways of Creating Citrix XenApp Integration Operations](#)
  - [Using the Web Services Wizard](#)
  - [Using OO IActions](#)
  - [Using Third-Party Tools](#)

# Ways of Creating Citrix XenApp Integration Operations

If you need to perform tasks that are not currently supported by the Citrix XenApp integration's operations, you can use one of the following to create new operations:

- OO Web Service Wizard (wswizard.exe)
- OO IActions
- Third-party tools such as Microsoft PowerShell

All of these require that you have knowledge of the Citrix XenApp API.

## Using the Web Services Wizard to Create OO Operations for a Web Service

The Web Services Wizard creates OO operations based on the API described in the Web Service Definition Language (WSDL) of the Web service that you specify when you run the wizard.

This tool is available in the OO SDK home directory. For instructions on using the Web Services Wizard, see the *Guide to Authoring Operations Orchestration Flows* (Studio\_UsersGuide.pdf) in the documentation set for the current OO release.

## Using OO IActions to Create OO Operations

An IAction is the code that implements an OO operation through a RAS (Remote Action Service). To create custom operations using IActions, you need knowledge of the Citrix XenApp API as well as Java or a .NET language.

For information on creating custom IActions, see the *OO Software Development Kit Guide* (SDKGuide.pdf) in the documentation set for the current OO release.

## Using Third-Party Tools to Create OO Operations

You can also use any of the options that Citrix XenApp provides for integrations. One method is to use PowerShell wrappers to script the Citrix XenApp APIs. You can leverage PowerShell from OO by remotely executing commands through RAS operations.

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## 6 Troubleshooting

This section includes the following topics:

- [Troubleshooting Overview](#)
- [Error Messages](#)



# Troubleshooting Overview

This section provides a list of the error messages you may receive while using the integration and offers descriptions and possible fixes for the errors.

## Error Messages

This section lists the error messages you may receive while using this integration. Each error message includes possible causes and fixes for the error.

### Connecting to remote server failed

The connection to the remote Citrix XenApp server cannot be made. Make sure the values for the host, username, and password inputs are valid. The user needs to be a Citrix Administrator and in the Administrators group on Citrix XenApp server.

### Cannot process argument because the value of argument "userName" is invalid.

The username input was null or empty for remote access to Citrix XenApp server. For remote access, make sure the value for the **username** input is valid.

Connecting to remote server failed with the following error message : The WS-Management service cannot process the request. This user is allowed a maximum number of 5 concurrent shells, which has been exceeded. Close existing shells or raise the quota for this user.

To raise the limit, run the following commands: "winrm set winrm/config/winrs '@{MaxShellsPerUser="number of concurrent shells"}'" or close existing shells.

### Unable to locate application: "..."

The application specified was not found. Make sure that the application is on the Citrix XenApp servers or on the farm.

### Cannot find app with browser name "..."

The browser name of the application was not found. Make sure that the application's browser name is correct.

### String was not recognized as a valid Boolean.

The enabled input was an invalid value. The valid values are true/false.

### Cannot find server with name "..."

The server name was not found. Make sure that the server exists on the farm.

### Unable to locate session ID: "..."

No session with the specified session ID was found. Make sure a session with this session ID exists on the farm.

### The specified session id could not be found.

The session ID could not be found on the Citrix XenApp server or on the farm.

Error resolving account "..."

The specified user does not have an account. Make sure that the user account exists.

targetUser "... is not found in application.

The targetUser specified is not a user of this application.

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## 7 Security

This section includes the following topics:

- [About Citrix XenApp Security](#)

## About Citrix XenApp Security

This section describes how security is handled by the Citrix XenApp integration.

Citrix XenApp servers are accessed via PowerShell over HTTPS or HTTP. The Citrix administrator provides logon credentials for connection. The PowerShell client requires the username and password to connect to Citrix XenApp server. The client sessions are established using the PowerShell runspace or runspace pool.

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## 8 OO Tools

This section includes the following topic:

- [OO Tools You Can Use with the Citrix XenApp Integration](#)

## OO Tools You Can Use with the Citrix XenApp Integration

Following are OO tools that you can use with the Citrix XenApp integration:

- RSFlowInvoke.exe and JRSFlowInvoke.jar

RSFlowInvoke (RSFlowInvoke.exe or the Java version, JRSFlowInvoke.jar) is a command-line utility that allows you to start a flow without using Central (although the Central service must be running). RSFlowInvoke is useful when you want to start a flow from an external system, such as a monitoring application that can use a command line to start a flow.

These tools are available in the Operations Orchestration home folder in /Studio/tools/.