



Using Citrix Contexts

With OpenSpan versions 5.3, 6.1, and higher

18 August 2014

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OpenSpan, Inc.
Suite 200
11175 Cicero Drive
Alpharetta, Georgia 30022

Phone (International) +1 (678) 527-5400
Phone (US and Canada) (877) 733-1136
Email: sales@openspan.com

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Chapter 1: Using Citrix Contexts

This guide describes how to set up OpenSpan Runtime on the Citrix server and how to create OpenSpan Studio solutions that run in a Citrix environment.

These topics are discussed in this document:

- “Overview” on page 2
- “Project Outline” on page 4
- “Creating the CTXCalcNOTEPAD Solution” on page 7
- “Configuring OpenSpan Runtime on the Citrix Server” on page 17
- “Setting Up Citrix Pass-Through Authentication” on page 19

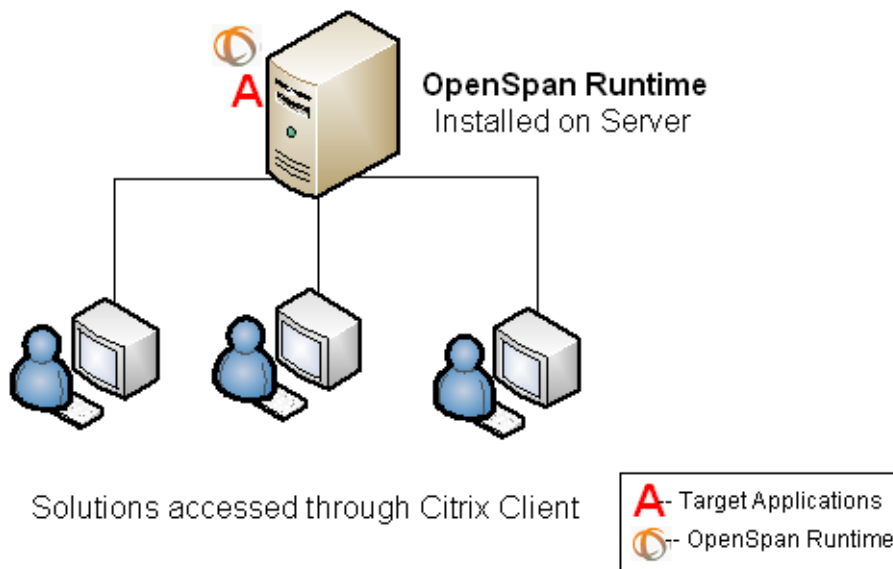
Overview

You can use OpenSpan Studio to create solutions that run in the Citrix 4.0 environment. Using custom Citrix contexts within OpenSpan solutions, you can use adapters to applications that run on the Citrix server and on the Citrix client machine. The program physically runs Citrix software, however, the user interface and the functionality of the software are available on the client machine as if installed there.

How you use OpenSpan Studio within a Citrix environment depends on the Citrix configuration and where the target applications (the applications you want to include in OpenSpan solutions) reside. The Citrix environment in which OpenSpan is deployed can contain a standalone Citrix server or a farm of servers. When configuring OpenSpan, you need to provide either the host address or IP address for the single Citrix server or for the router of the Citrix server farm.

Target applications can reside entirely on the Citrix server or can be distributed between the two as shown in these illustrations:

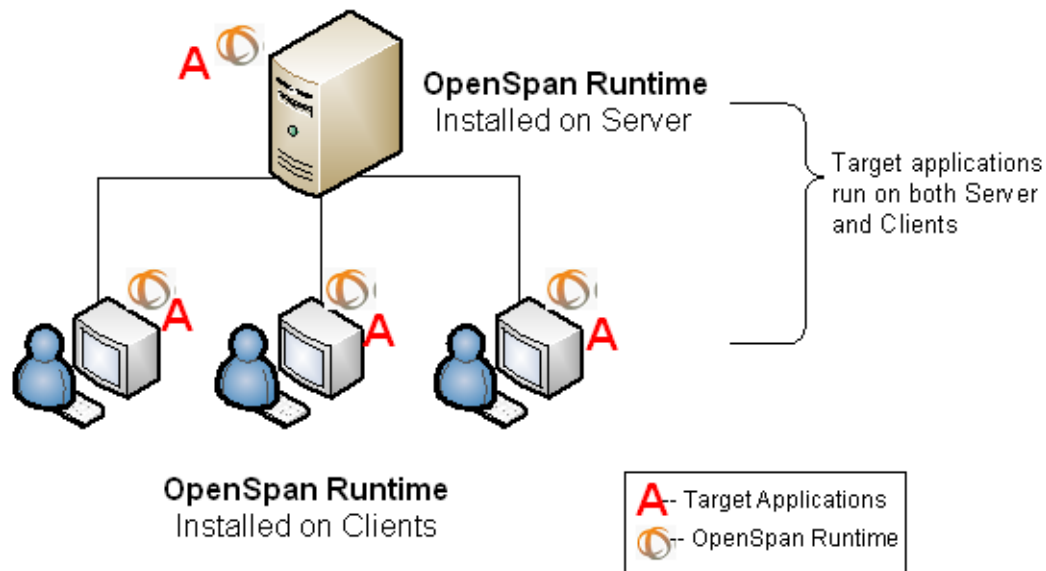
All target applications reside on Server *



OpenSpan Runtime is designed to work with Citrix in two scenarios:

- All of the applications under OpenSpan control reside on Citrix
- Some of the applications under OpenSpan control reside on Citrix and some reside on the local desktop. This is called *mixed-mode*. Keep in mind...
 - OpenSpan Management Console (OMC) does not support mixed-mode.
 - If you are running in mixed-mode, all of the solution must be created in a single project.
 - Neither Agile Desktop nor any appbar solution will work when using published applications. This is because the remote session has no way of know the desktop size and location.

Target applications distributed between Server and Clients



This guide shows you how to create solutions that run applications on both the Citrix server and Citrix client desktop.

Note This document is intended for readers familiar with a Citrix 4.0 server application setup and using OpenSpan Studio to create solutions. The document also assumes you are familiar with configuring and deploying OpenSpan solutions.

Project Outline

This steps in this guide show you how to create solutions which load and run applications from both the Citrix server and local desktop. To design these solutions, you need access to all of the applications to be included in the solutions.

Solution	Calculator runs in the local context. Notepad runs on the Citrix server.
Concepts	Creating a Citrix context. Setting up notepad.exe to run in Citrix context. Testing the solution running locally. Deploying on a Citrix server.

Assigning Project Contexts

Use the Context project item to designate which adapters, automations, and Windows forms are to be launched from the Citrix server and not on a local machine. A *context* is a location that can be added to a project. Items attached to it reside in the context location.

There are these types of contexts:

Context	Description
Citrix	<p>Project items reside in the Citrix server. The Citrix context project item contains a property, Run Local, which when set to True enables all applications to be run from the local desktop while creating and testing the solution.</p> <p>When enabled, a dialog appears the first time you run the solution to remind you that all applications are running locally. The dialog appears again if the project is reloaded or is run with the Run Local property set to False.</p> <p>If a project is deployed to the Citrix server with the Run Local property set to True in the Citrix context configuration, it is ignored.</p>
Process	<p>All applications reside on the same machine but the applications are running in separate OpenSpan Runtime sessions.</p> <p>This type of context is used primarily for debugging solutions.</p>
Local	<p>A single OpenSpan Runtime session is running on the local machine; however, applications are run in separate contexts.</p> <p>This type of context is used primarily for debugging solutions.</p>

Note While it is possible to handle multiple Citrix contexts, OpenSpan *strongly* recommends that you avoid doing so as it adds complexity and impedes performance. For more information, contact your OpenSpan Support representative.

Changing Configuration Settings

Install OpenSpan Runtime on the Citrix servers and the client workstations. Once installed, you must make changes to OpenSpan Runtime and OpenSpan Studio configuration parameters when using Citrix context solutions. These parameters suppress deserialization error display. Deserialization errors are triggered when you run a solution that contains Citrix contexts locally.

1. On the client machine, open the RuntimeConfig.xml file in the C:\Program Files\OpenSpan\OpenSpan Runtime directory.
2. Locate the IgnoreRuntimeDeserializationErrors key and change the value to True, as shown here:

```
<add key="IgnoreRuntimeDeserializationErrors" value="true" />
```
3. Save and close the RuntimeConfig.xml file. Make the same change to the RuntimeConfig.xml file on the Citrix server.
4. On the machine on which you will run OpenSpan Studio to develop the solution, repeat this process in the StudioConfig.xml file in the C:\Program Files\OpenSpan\OpenSpan Studio directory.
5. Start OpenSpan Studio on your workstation.

Installing the Virtual Channel

OpenSpan is compatible with versions 9.2 through 11 of the Citrix client. For these versions you must run a special virtual channel setup program (setup.exe) which adds the OpenSpan drivers to the Citrix Independent Computing Architecture (ICA) virtual channel directory. This program is provided by OpenSpan. Contact your OpenSpan Support Engineer for more information.

Copy the setup.exe file provided by OpenSpan to each Citrix client. Run the setup.exe file and specify the path to wfica32.exe. By default, the path is:

```
C:\Program Files\Citrix\ICA Client
```

Installing these drivers adds the functionality required to run OpenSpan solutions between Citrix servers and clients. The installed drivers are:

- CTXOPSP.dll
- OpenSpan.Native.dll
- OpenSpan.SuperTrace.dll

The OpenSpan icon file is also installed.

Note Make sure the OpenSpan files are located in the same directory as the wfica32.exe file.

Registry or INI Settings Created by Setup.exe

For Citrix version 9, OpenSpan adds itself to the module.ini file. For version 10, OpenSpan adds a key and a name to the registry, which should be done with the OpenSpan Virtual Channel Setup.

For a Citrix client version 9 (module.ini):

OpenSpan adds itself to the VirtualDriver option in the module.ini file:

```
[ICA 3.0]
    VirtualDriver = (Add "OpenSpan" to the end of the field)
[VirtualDriver]
    OpenSpan =
```

For a Citrix client version 10:

OpenSpan adds a key and a name to the Windows registry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\ICA
Client\Engine\Configuration\Advanced\Modules\ICA 3.0]
"VirtualDriver"=(Add "OpenSpan" to the end of the field)
[HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\ICA
Client\Engine\Configuration\Advanced\Modules\OpenSpan]
"DriverName"="CTXOPSP.dll"
"DriverNameWin16"="CTXOPSP.dll"
"DriverNameWin32"="CTXOPSP.dll"
```

Creating the CTXCalcNOTEPAD Solution

This solution shows how to integrate two Windows applications. One application, Notepad.exe, runs in the Citrix server environment and the other, Calc.exe, runs in the local environment. The logic of the solution is as follows:

- The user clicks the M+ key on the calculator
- The text in the Results text box is sent to the Notepad document

Creating the Solution and Adding Project Items

This solution is comprised of two contexts: Local and Citrix. There are two applications integrated through this solution:

- Calc.exe, which resides on the local desktop
- Notepad.exe, which resides on the Citrix server

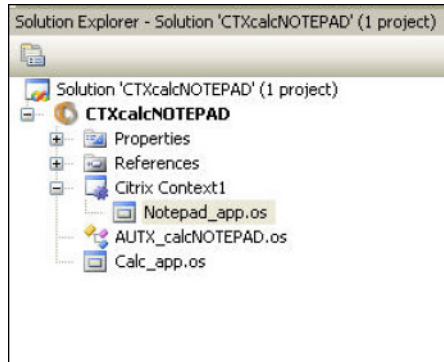
The Calc.exe application runs in the default or local context. The local context also contains the automation which causes the text to move from the Calculator to Notepad.

Note It is very important to place the automation in the context which contains the initiating action. In this case, the user clicks the M+ button to initiate the text movement to the Citrix context – Notepad application. Because the Calculator and the associated M+ button click event reside in the local context, the automation is in the local context.

Create the solution and add the project items as follows:

1. Create a new solution named CTXCalcNOTEPAD. OpenSpan Studio automatically adds the first project for you when you create a new solution.
2. Add a Windows adapter to the local context and rename it to **Calc_app**.
3. Add an automation to the local context. Rename the automation to **AUTX_calcNOTEPAD**.
Add a Citrix context by right-clicking the CTXcalcNOTEPAD solution and selecting Add | New Context | Citrix or from the OpenSpan Studio Project menu, by selecting Add New Context | Citrix.
4. Highlight the Citrix context item in the Solution Manager and then add a new project item to the context – a Windows application named *Notepad_app*.

Your completed solution should look like the following in Solution Manager:



5. Save the solution.

Interrogating the Local Application

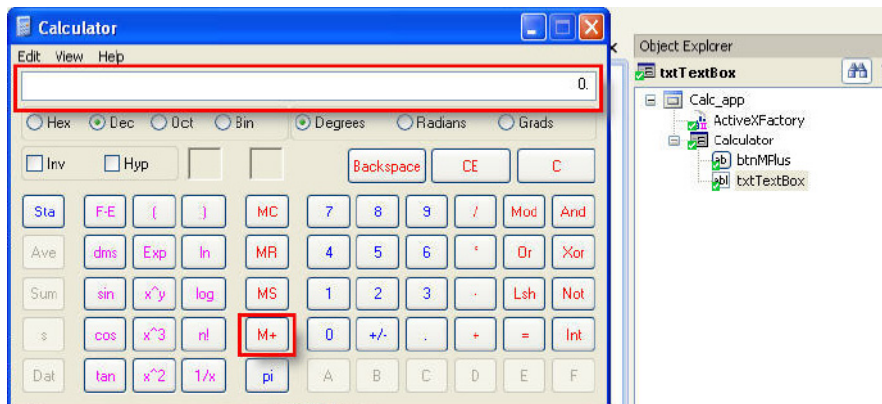
Follow these steps to interrogate the Calculator application:

1. Open the Calc_app project item and set the Path property for the application to the path on the local desktop in which the executable file resides. Here is an example:

C:\WINDOWS\system32\calc.exe

2. Interrogate the Calc.exe application to include these targets in the solution.

- M+ button
- Results text box



3. Stop the interrogation for this application.

Setting Citrix Context Properties

OpenSpan Studio requires you to specify information about the Citrix host for the solution. The Citrix context contains properties for defining this host and project information.

Set the Run Local property to True. This lets you run the solution through OpenSpan Studio to test functionality and ignore all other Citrix context properties. This will only work if all the applications are installed and working locally on the development workstation.

The screenshot shows the 'Properties' dialog box for 'Citrix Context1'. The 'Debug' section is expanded, showing 'Run Local' set to 'True'. Other sections include 'Context', 'ICA File', 'Login', 'Misc', 'Startup', 'Timeouts', and 'Web Server'.

Section	Property	Value
Context	Context Type	Citrix
	Run Local	True
ICA File	Connection Server Address	
	Http Browser Address Mode	Replace
	Http Browser Addresses	
	Project To Load	
	Published Application Name	
	TCP Browser Address Mode	Replace
	TCP Browser Addresses	
	Template File Name	
	Temporary Folder	
	Login	Domain
Login		
Password		
Show Password Dialog		False
Misc	Folder Name	Citrix Context1
	Path	C:\Documents and Settings\User\My
Startup	Client Location	
Timeouts	Ping Interval	30000
	Startup Timeout	50000
Web Server	Host Name	
	Login Uri	/Citrix/MetaFrame/auth/login.aspx
	Port	80
	Server	False

Client Location
The folder where the Citrix client is installed on the desktop computer. This is typically C:\Program Files\Citrix\ICA Client. If this property is l...

Note For definitions of these properties, refer to this Help topic: Citrix Context Properties. You can access OpenSpan Help at this web site:

<http://help.openspan.com/>

Before completing the solution deployment, set the Run Local property to False to allow the project to connect across the Citrix channel to the server.

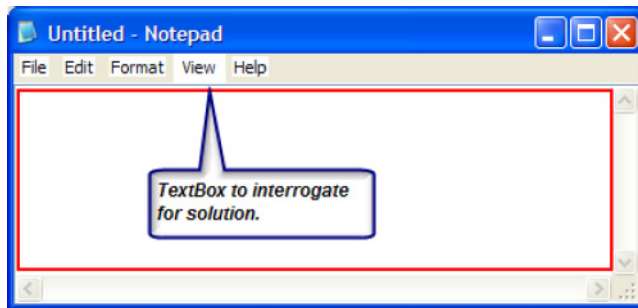
Interrogating Notepad

Follow these steps to interrogate the Notepad application:

1. Open the Notepad_app project item and set the Path property for the application to the path on the local desktop in which the executable file resides. Here is an example:

`C:\WINDOWS\system32\notepad.exe`

1. Interrogate the Notepad.exe application to include the main text box in the solution.

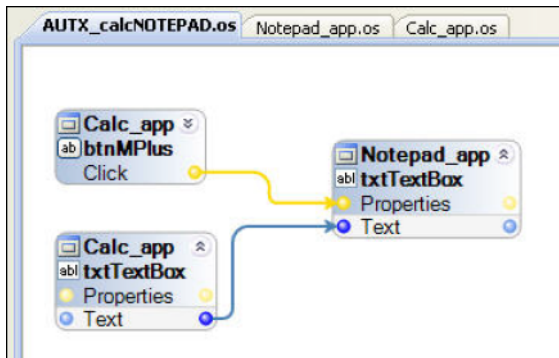


2. Stop the interrogation for this application.

Completing the AUTX_calcNOTEPAD Solution

This solution pushes the text from the Calc.exe results box to the text box in Notepad.exe when the user clicks the M+ button on the Calculator. Follow these steps to complete your solution:

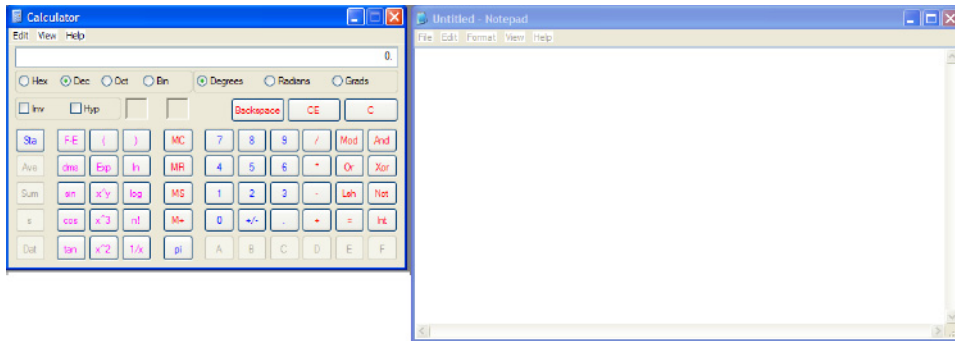
1. Drag these connection blocks to the automation:
 - CalcbtnMPlusButton.Click event
 - CalcTextBox.Text property
 - NotepadTextBox.Text property
2. Connect the blocks as shown here:



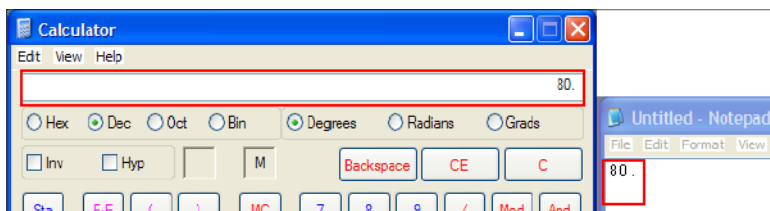
Saving and Running the Solution

The next steps are to save and run your solution:

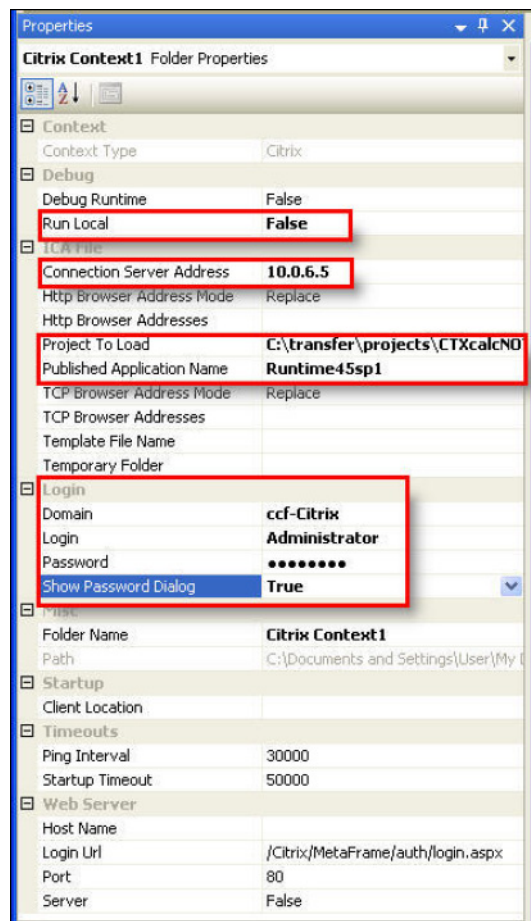
1. Save and then run the solution. A message tells you the solution is being run in local mode. Click OK. The Calculator and Notepad applications appear.



2. Use the Calculator to enter text in the Results text box. Click the M+ button to send the text from Calc to Notepad.



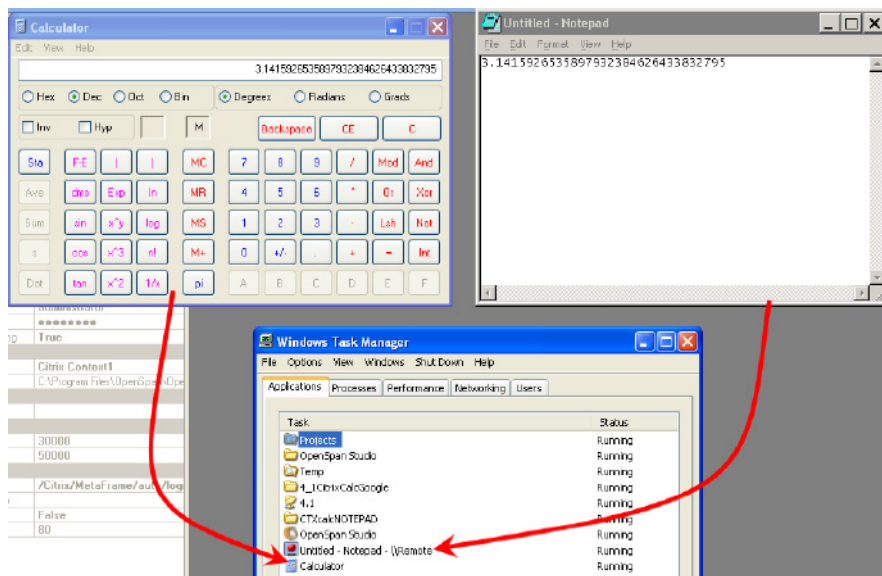
3. Close the Runtime solution. Once the solution works properly on the OpenSpan Studio workstation, modify the Context properties as follows:



Property	Description
Run Local	Set this property to False which lets the project use the virtual channel and communicate to the Citrix server farm.
Connection Server Address	<p>Set this property to the name or the IP address of the specific Citrix server you are testing against. This allows a direct connection between the client and the specific server.</p> <p>This is normally done during development and testing. For production, the FindCitrixServer process is normally followed. The FindCitrixServer process will apply the Citrix load balancing for the applications.</p>
Project To Load	<p>Set this property to the name including full path of the deployment package. Note that while you are testing the project (running locally) this parameter is ignored. After testing locally, make sure to deploy the solution on the Citrix server exactly as it is entered in this parameter. Here is an example:</p> <p style="text-align: center;">C:\transfer\Projects\CTXcalcNOTEPAD.openspan</p>
Published Application Name	<p>Set this property to the name provided by your Citrix server administrator. This name will point to the OpenSpan Runtime on the Citrix server farm.</p> <p>For more information, see "Configuring OpenSpan Runtime on the Citrix Server" on page 17.</p>

Property	Description
Login (Domain, Login, Password, Show Password Dialog)	<p>The Login properties are typically only used at design time. For the OpenSpan Runtime solution, leave the user name and password blank, and set the Show Password Dialog property to False so pass-through authentication can be used.</p> <p>See “Setting Up Citrix Pass-Through Authentication” on page 19 for more information. If you are using a different user ID and password than your NT workstation ID, you can enter it in the login section for testing.</p>

4. Save the solution and create a deployment package. Copy the deployment package to the specified directory on the Citrix server.
5. Within OpenSpan Studio, run the solution. The Calculator will display on the workstation, followed by Notepad.
6. Browse the Task Manager. Note that Notepad.exe is listed as remote. This tells you it is being run on the Citrix server.
7. Enter text in the Calculator and press M+ to send the text to Notepad. When finished, stop the project.



Summary

The CTXCalcNOTEPAD solution shows the basics of creating a Citrix context and deploying an OpenSpan Studio solution that runs a local Windows application and a Citrix Windows application. The key concepts are listed here:

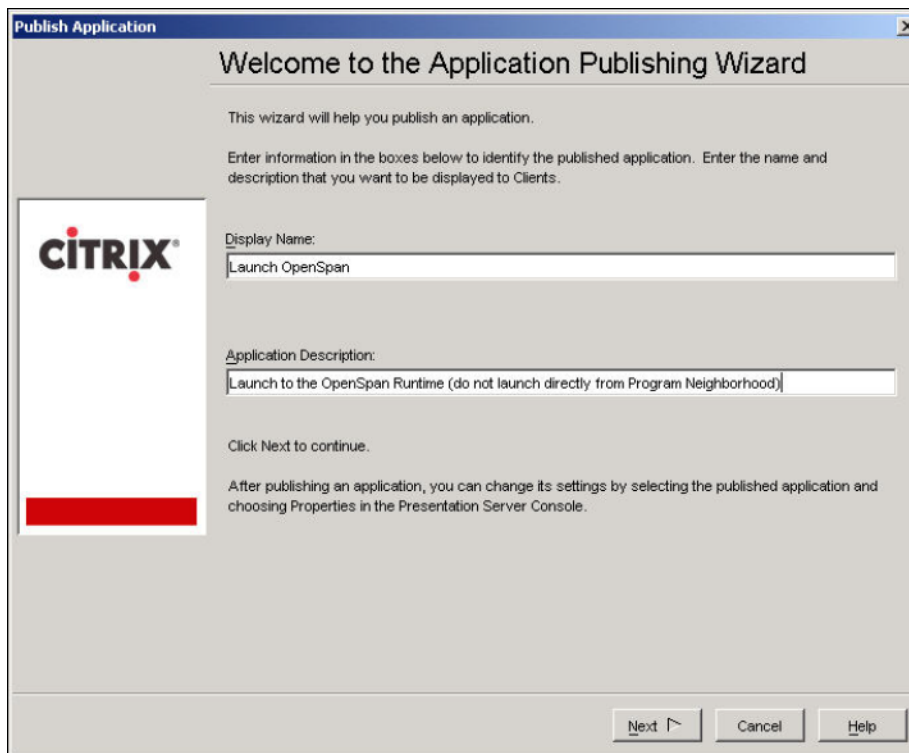
- Adding a Citrix context to a solution
- Setting Citrix context parameters for testing the solution in OpenSpan Studio
- Changing context parameters for the deployment
- Deploying the solution

Configuring OpenSpan Runtime on the Citrix Server

Creating a Citrix Application Entry

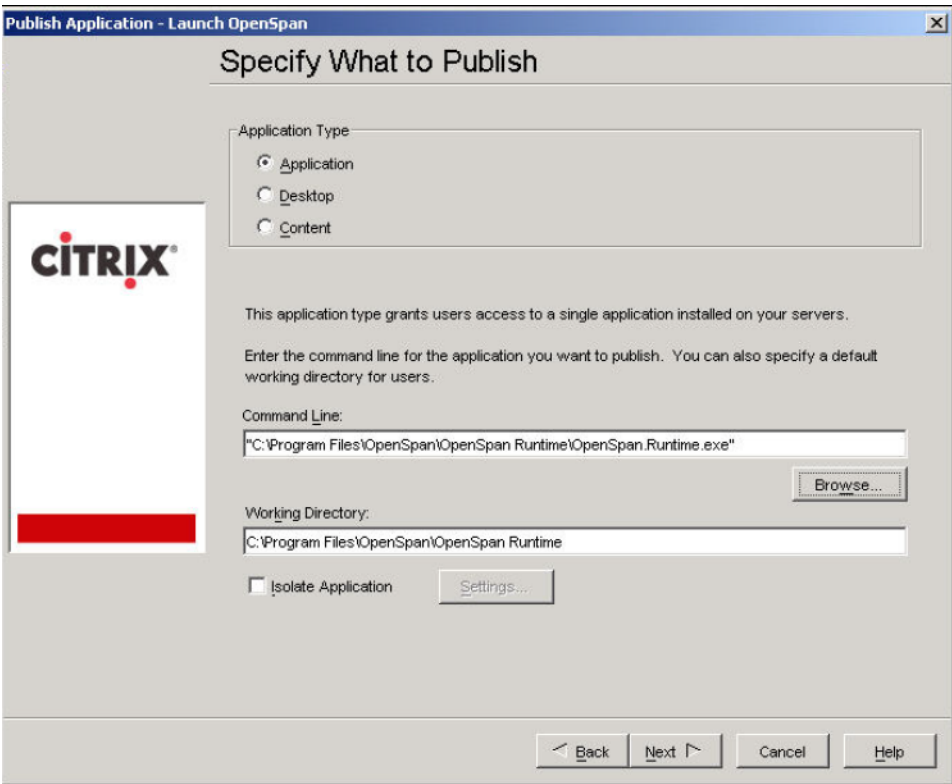
To create a Citrix application entry for OpenSpan Runtime, perform these steps:

1. Open the Presentation Server Console on the Citrix server by selecting Start | All Programs | Citrix | Management Consoles | Presentation Server Console.
2. Click the Application Publishing Wizard button on the toolbar. The Publish Application dialog, which contains the Application Publishing wizard, appears.



3. Type the Display Name and Application Description and then click Next.

The Publish Application - Launch OpenSpan dialog appears.



- 4. Click Browse and then go to the OpenSpan Runtime installation directory.
- 5. Select OpenSpan.Runtime.exe. The Working Directory field is automatically filled for you.

Note You must add a percent sign and an asterisk (%*) preceded by a space, at the end of the command line. Here is an example:

“C:\Program Files\OpenSpan\OpenSpan Runtime\OpenSpan.Runtime.exe” %*

This allows command line arguments to be passed to OpenSpan Runtime when it launches.

There are additional configuration screens that contain options such as color depth, which Citrix server to run on, and so on. Each Citrix administrator can complete these fields. This table shows you the command line commands for each server version:

Server	Command Line
Xenapp v6.0	%**
Xenapp v5.0	%**
Presentation Server v4.5	%*

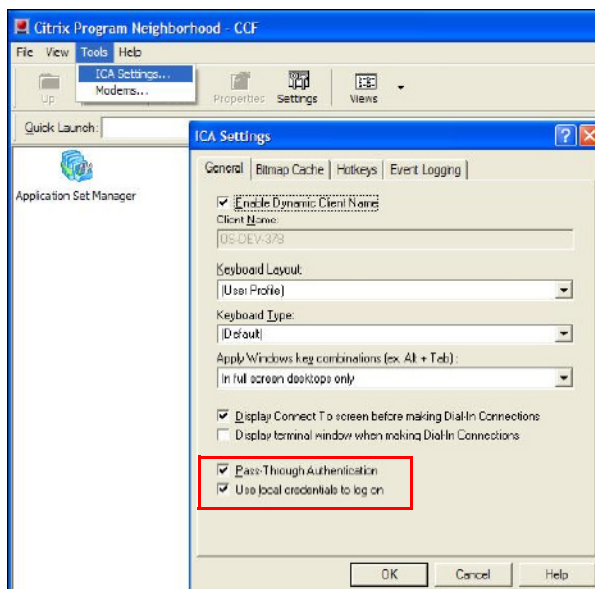
Setting Up Citrix Pass-Through Authentication

Follow these steps to set up Citrix pass-through authentication on a Citrix Client. For information on setting up pass-through authentication on a server, see “On a Citrix Server” on page 20.

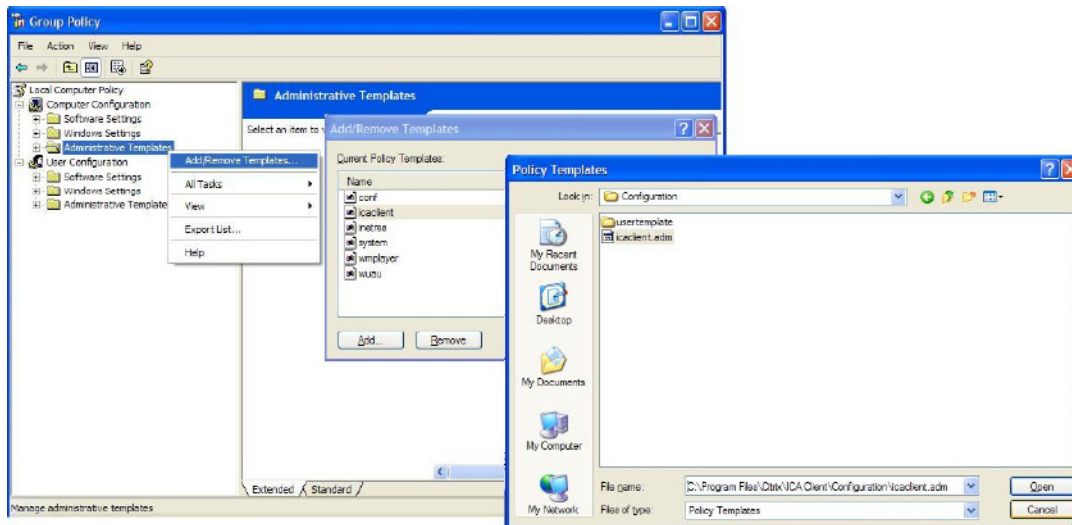
On a Citrix Client

To enable pass-through in a Citrix Program Neighborhood, follow these steps:

1. Select Tools | ICA Settings.
2. Check these boxes:
 - Pass-Through Authentication
 - Use local credentials to log on

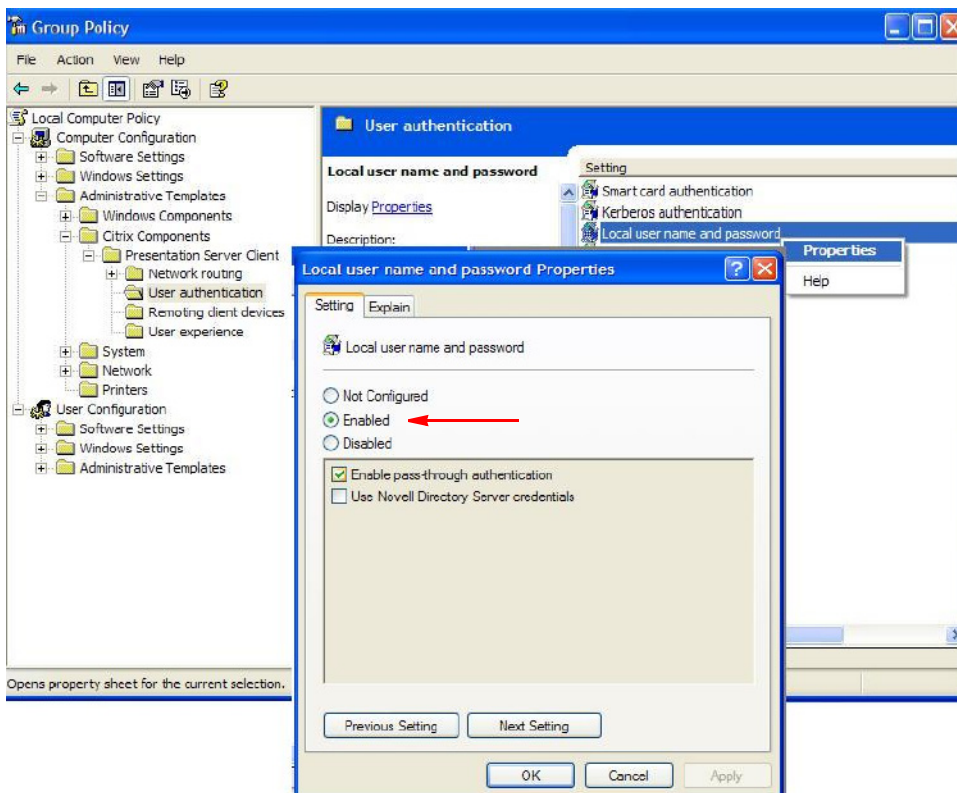


3. Import the group policy by choosing Start | Run | gpedit.msc.
4. Right-click and select Administrative Templates | Add/Remove Templates.
5. Click Add and go to the C:\Program Files\Citrix\ICA Client\Configuration directory.
6. Select icaclient.adm.



A directory named Citrix Components is added to Administrative Templates.

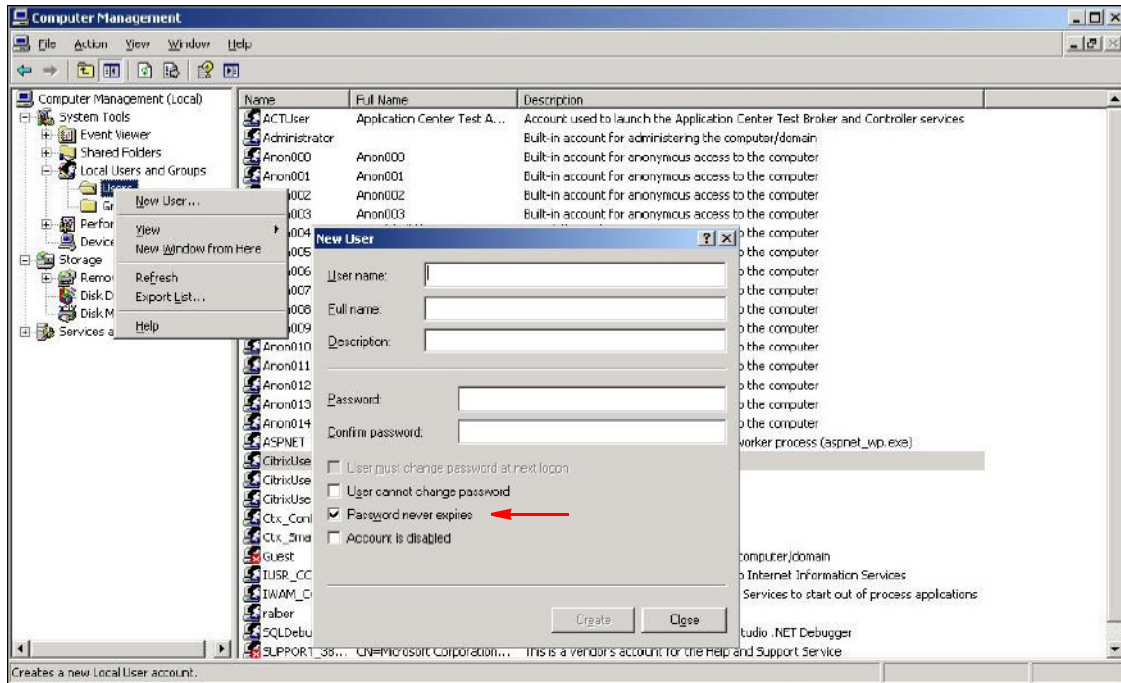
7. Go to the Citrix Components/Presentation Server Client/User authentication directory.
8. Double-click the local user name and password setting.
9. Click the Enabled radio button.



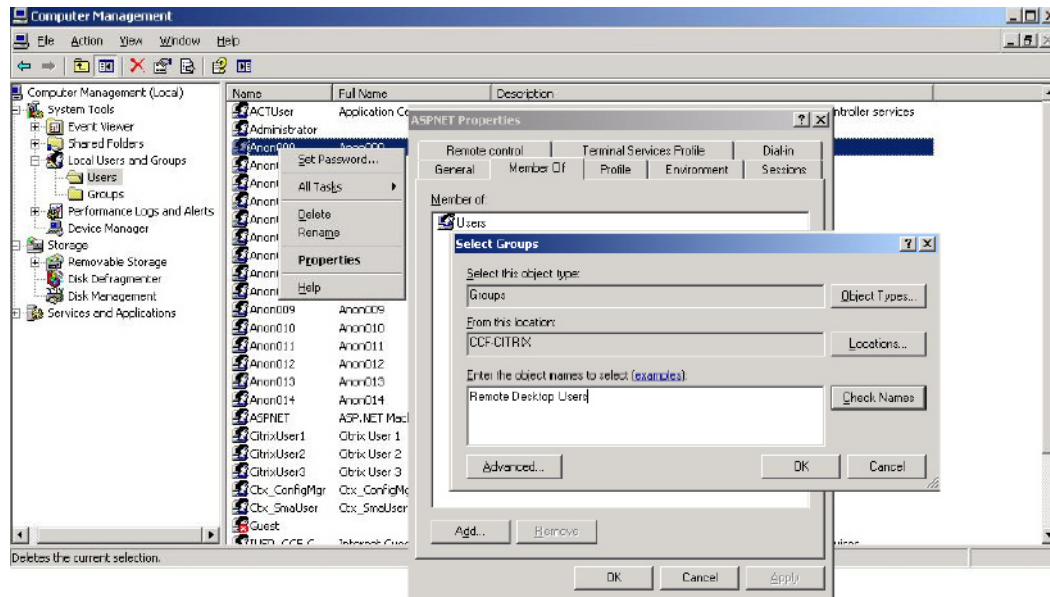
On a Citrix Server

To add a new user to a Citrix server, follow these steps:

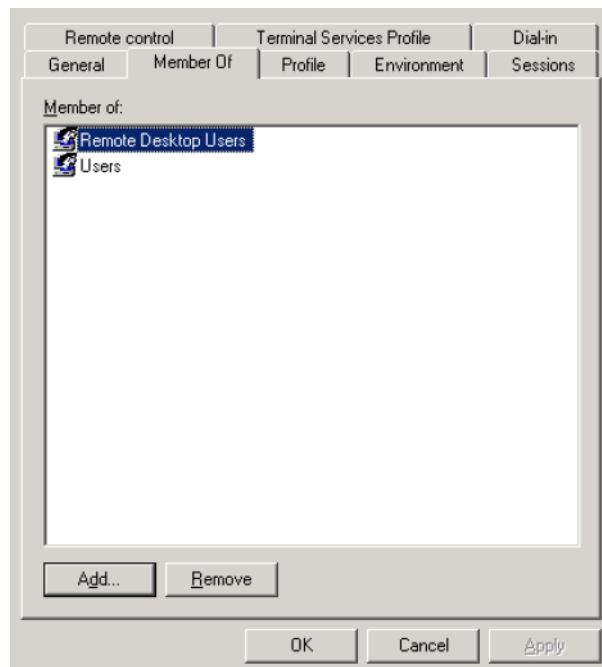
1. Choose Start | Run | compmgmt.msc.
2. Expand System Tools | Local Users and Groups.
3. Right-click Users and select New User.
4. Enter a user name and password. Uncheck all boxes except Password never expires.



- To add a new user to the Remote Desktop Users group, right-click the user name and select Properties. Click the Member Of tab and enter **Remote Desktop Users**.



- Click the Check Names button. If the information is correct, click OK to close.



This completes the authentication setup process.

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