

# OPENSAN CITRIX REFERENCE GUIDE: HOW TO USE CITRIX CONTEXTS

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This guide describes how to setup OpenSpan Runtime on the Citrix server and how to create OpenSpan Studio solutions that run in a Citrix environment. OpenSpan Studio can be used 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 on Citrix software; however, the user interface and the functionality of the software are available on the client machine as if installed there.

This guide shows how to create basic solutions that run applications on both the Citrix server and Citrix client desktop. By using the OpenSpan Studio Context project item, you can create solutions that run and integrate applications that run in two different environments - one on the Citrix server and one on the local desktop. The following topics are discussed in this document.

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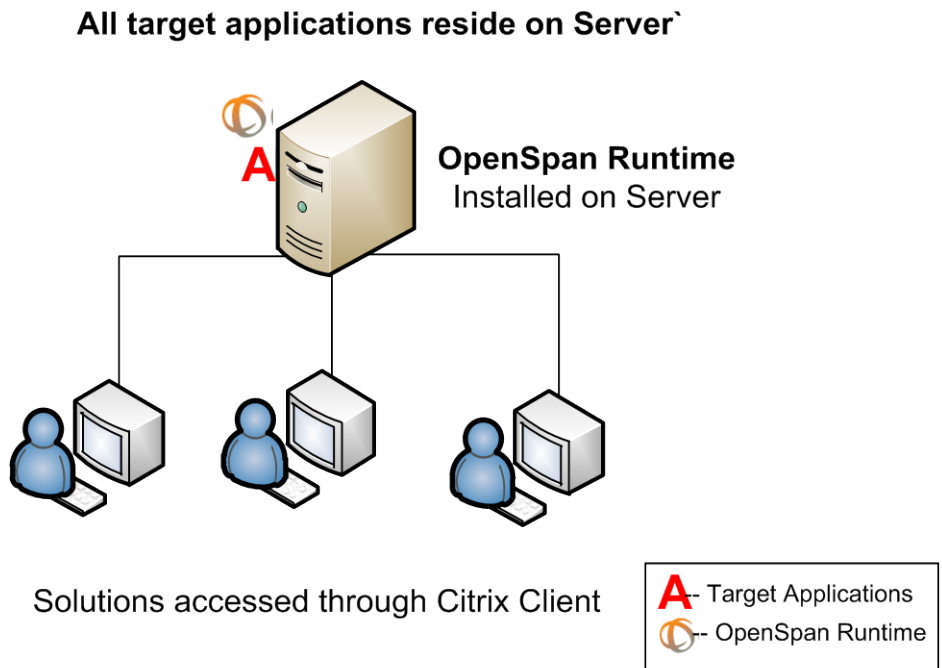
## Prerequisites

This document is intended for readers familiar with Citrix 4.0 Server application setup and OpenSpan Studio design to create solutions. The document also assumes that you are familiar configuring and deploying solutions for use with OpenSpan Enterprise.

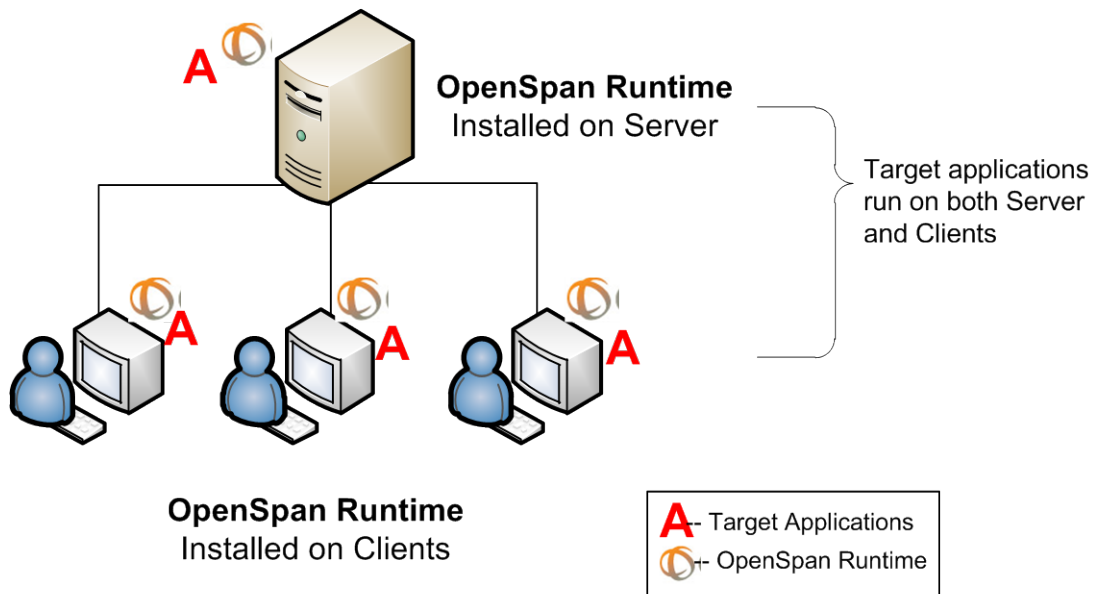
## Background Information

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 may contain a stand-alone 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 may reside entirely on the Citrix server or distributed between the two as depicted in the following illustrations:



## Target applications distributed between Server and Clients



## Project Outline

This tutorial demonstrates solutions which load and run applications from both the Citrix Server and local desktop. In order to design these solutions, you will need access to all of the applications to be included in the solutions.

### Solution:

**Calculator** running on local context, **Notepad** running in Citrix server

**Concepts:** [Creating a Citrix context](#), [setting-up notepad.exe to run in Citrix context](#), [testing solution running locally](#), [deploying to Citrix server](#).

### Project Contexts

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

There are three types of Contexts:

- Citrix
- Process
- Local

Definitions of the Contexts follow.

**Citrix:** 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. When enabled, a dialog appears the first time you run the solution to remind the user that all applications are running locally. The dialog appears again if the project is reloaded or is run with Run Local set to **False**. If a project is deployed to the Citrix server with Run Local set to **True** in the Citrix context configuration, it is ignored.

**Note:** Ensure that when installing OpenSpan Runtime on the server, check **Yes on Install OpenSpan.sys Driver -or- manually run InstallDriver.exe** after the installation of the Runtime package.

**Process:** All applications reside on the same machine but the applications are running in separate OpenSpan Runtime sessions. This type of context is used primarily for debugging solutions.

**Local:** A single OpenSpan Runtime session is running on the local machine; however, applications are run in separate contexts. This type of context is used primarily for debugging solutions.

### Configuration Settings

Install OpenSpan Runtime on the Citrix server(s) and the client workstations. Following installation, you need to make changes to the OpenSpan Runtime and OpenSpan Studio configuration parameters when using Citrix Context solutions. These parameters suppress deserialization error display. Deserialization errors are triggered when running a solution containing 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 following key:  

```
<add key="IgnoreRuntimeDeserializationErrors" value="false" />
```
3. Change the key to "true". The result looks like the following:  

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

## **Virtual Channel Installation**

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) provided by OpenSpan which adds the OpenSpan drivers to the Citrix Independent Computing Architecture (ICA) virtual channel directory. 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, this 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: It is very important that the OpenSpan files are in the same directory as the wfica32.exe file.**

## **Registry or INI Settings Performed by Setup.exe**

For 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.

### **Citrix Client V9 (module.ini)**

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

### **Citrix Client V10 (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"
```

## Solution – CTXCalcNOTEPAD

This simple solution demonstrates integrating two Windows applications with one application, Notepad.exe, running in the Citrix Server environment and the other, Calc.exe, running in the local environment. The logic of the solution is as follows:

1. User clicks the M+ key on the calculator.
2. The text within the results Textbox is sent to the Notepad document.

### **Create the Solution and Add 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

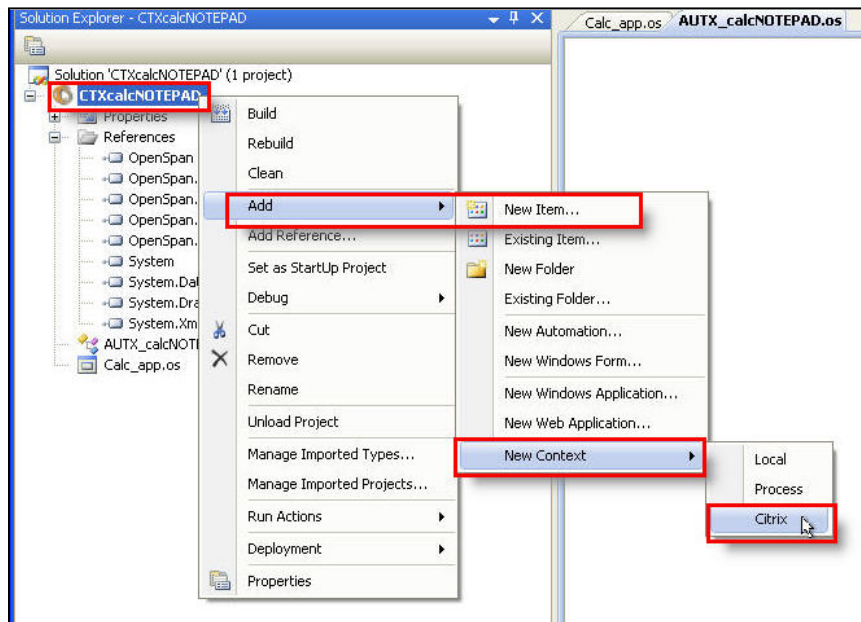
The Calc.exe application runs in the default or Local context. The local context also contains the automation which causes the text to move from the Calculator to Notepad.

**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.

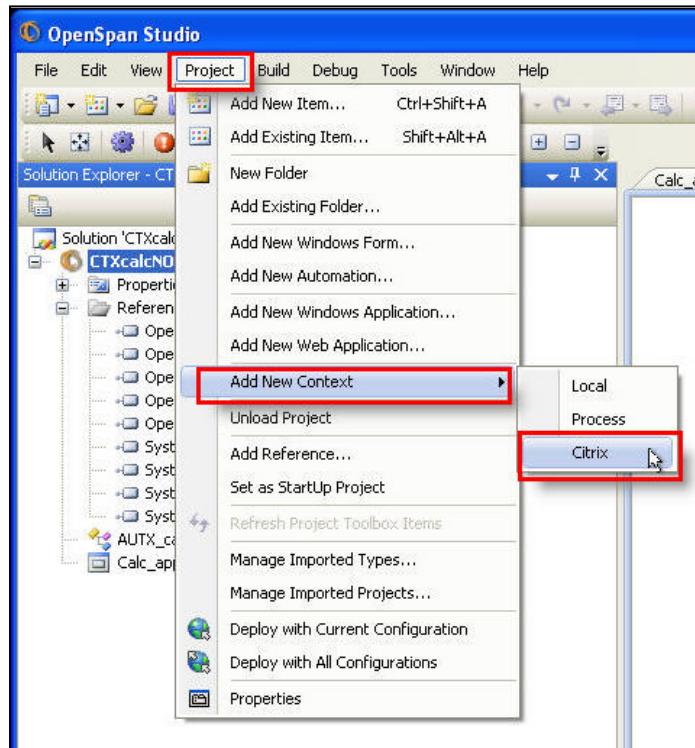
Create the solution and add the project items as follows:

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 Calc\_app.
3. Add an automation to the local context. Rename the automation: AUTX\_calcNOTEPAD.

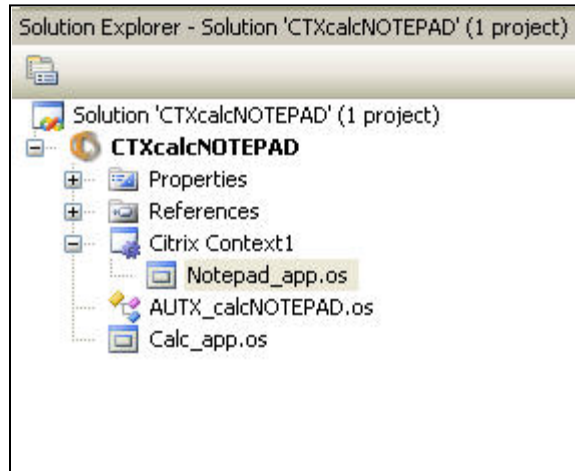
4. Add a Citrix context by either right-clicking the CTXcalcNOTEPAD solution and selecting **Add | New Context | Citrix** or from the OpenSpan Studio **Project** menu, selecting **Add New Context | Citrix**.



- Or -



5. Highlight the Citrix Context item in the Solution Manager and then add a new Project Item to the context – Windows application named Notepad\_app.
6. Your completed Solution Manager should look like the following:



7. **Save** the solution.

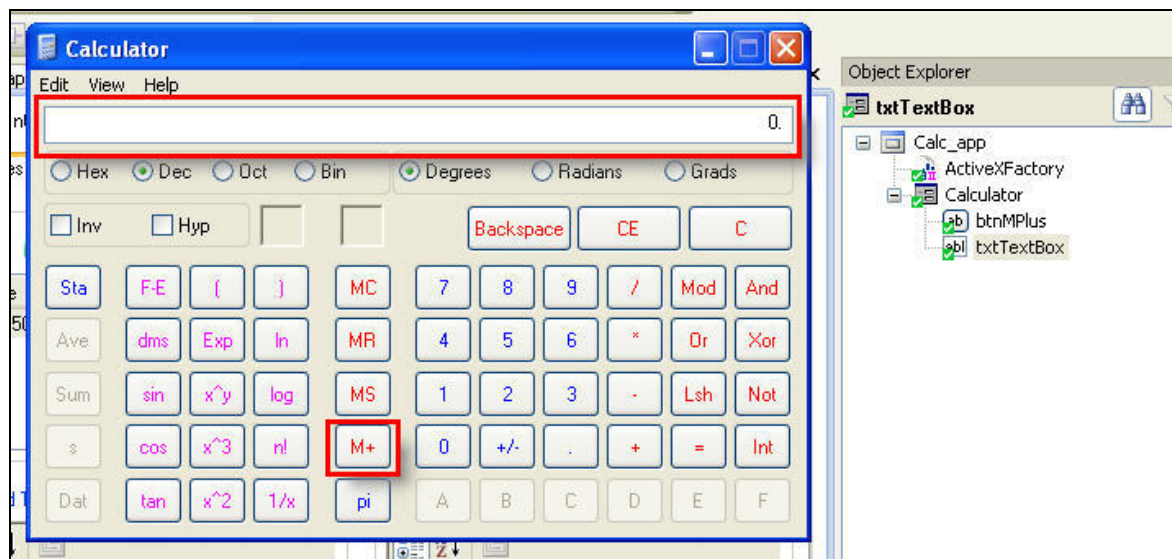


### **Interrogate the Local Application**

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. For example:

C:\WINDOWS\system32\calc.exe

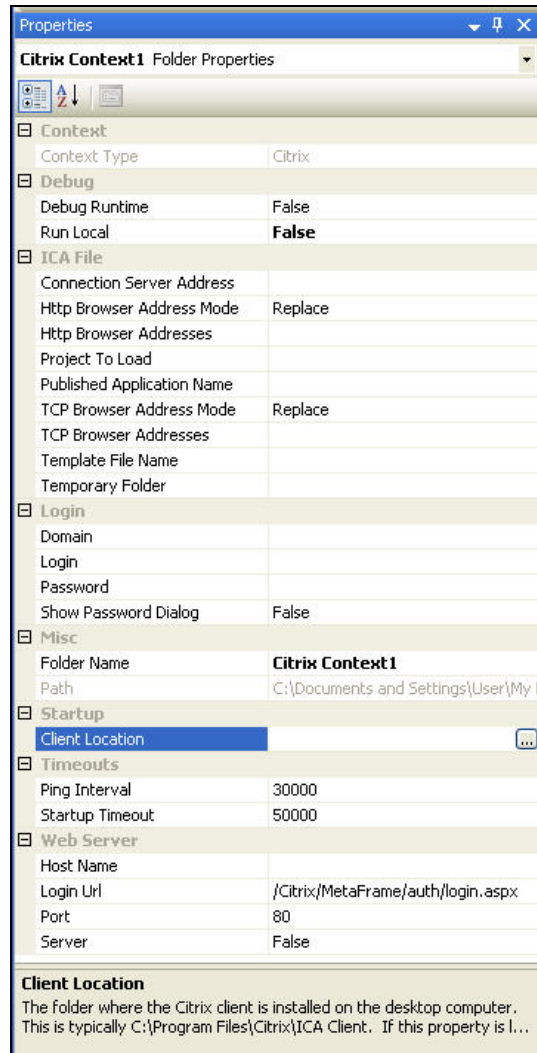
2. Interrogate the **Calc.exe** application to include the following targets in the solution.
  - M+ Button
  - Results Textbox



3. **Stop** the interrogation for this application.

**Set Citrix Context Properties**

OpenSpan Studio requires that you specify information about the Citrix host for the solution. The Citrix Context contains properties for defining the host and project information, see the example at right. For definitions of these properties, refer to the on-line Help topic: [Citrix Context Properties](#).



## **Notes Regarding Parameters**

### **Run Local Parameter**

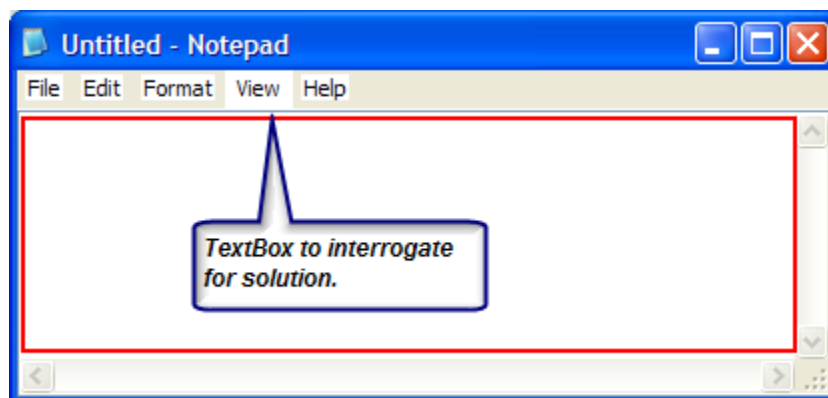
Make sure to set the Run Local parameter to **True**. This enables you to run the solution through OpenSpan Studio to test functionality and ignores all other Citrix Context properties. This will only work if all the applications are installed and working locally on the development workstation. Before completing the solution deployment, set the Run Local parameter to **False** to allow the project to connect across the Citrix Channel to the server.

### **Interrogate the Notepad.exe 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. For example:

C:\WINDOWS\system32\notepad.exe

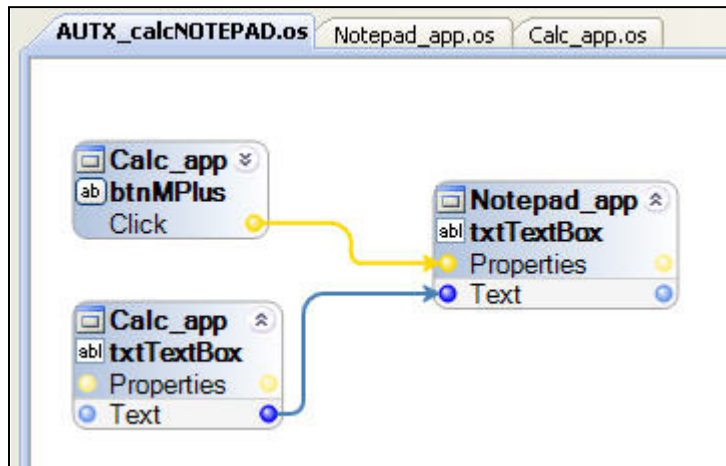
2. Interrogate the Notepad.exe application to include the main Textbox in the solution.



3. Stop the interrogation for this application.

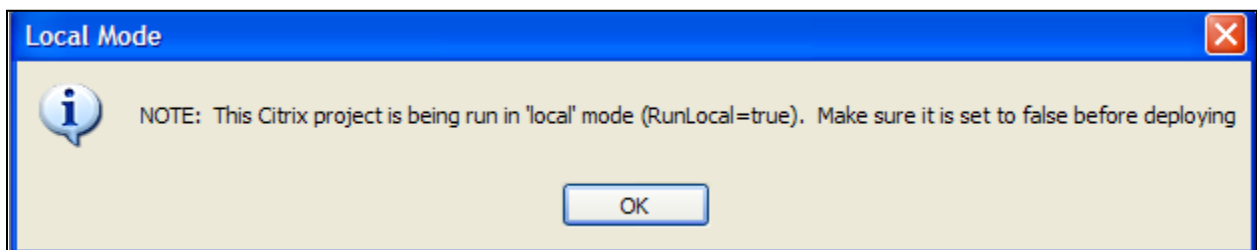
### Complete the AUTX calcNOTEPAD

1. The logic of this solution is to push the text from the Calc.exe results box to the Textbox in Notepad.exe when the user clicks the M+ button on the calculator. Drag the following connection blocks to the automation:
  - CalcbtnMPlusButton.Click event
  - CalcTextBox.Text property
  - NotepadTextBox.Text property
2. Connect the blocks as follows:

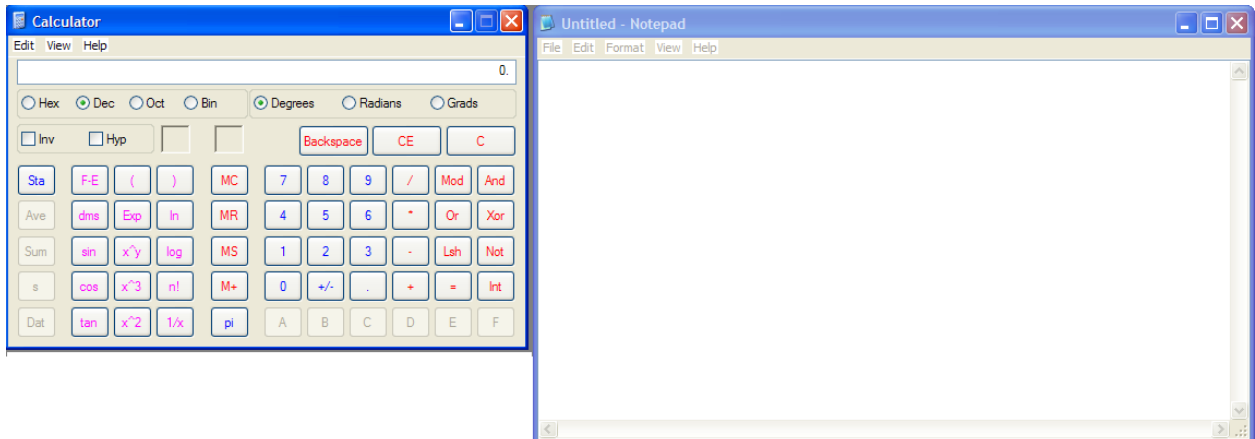


### Save and Run the solution

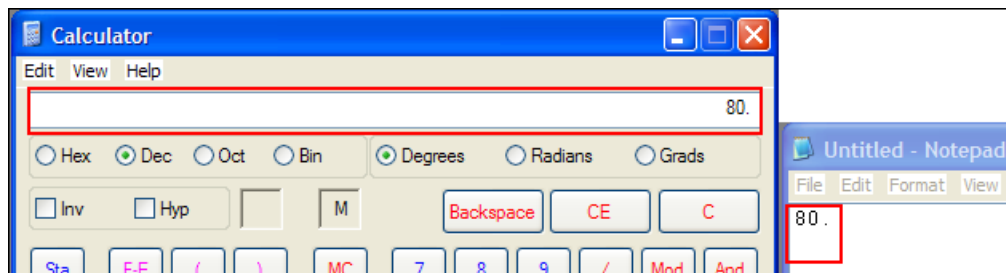
1. **Save** and then **Run** solution. A message dialog displays informing you that the solution is being run in **Local** mode.



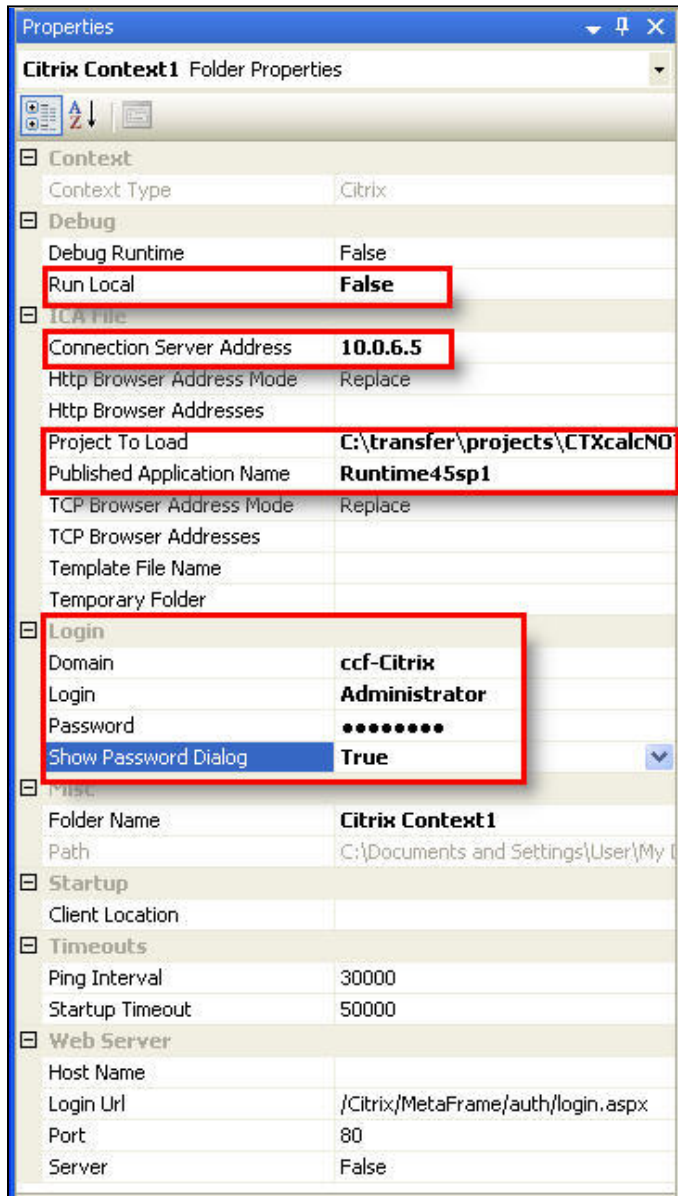
2. Click **OK** to dismiss the dialog. Next, the **Calc** and **Notepad** applications display.



3. Use the calculator to **enter text** in the **Results** textbox. Click the **M+** button to send the text from Calc to Notepad.



- Close the runtime solution. Once the solution works properly on the OpenSpan Studio workstation, modify the Context parameters as follows:



#### Run Local

Set this property to **False** which will allow the project to use the virtual channel and communicate to the Citrix farm.

#### Connection Server Address

Set the Connection Server Address to the Name or the IP address of the specific Citrix server you are testing against. This will allow a direct connection between the client and the specific server. This is normally done during development and testing. For Production the FindCitrixServer process is normally followed. FindCitrixServer will apply the Citrix load balancing for the applications.

### Project To Load

Set the Project To Load parameter 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 (e.g., C:\transfer\Projects\CTXcalcNOTEPAD.openspan).

### Published Application Name Parameters

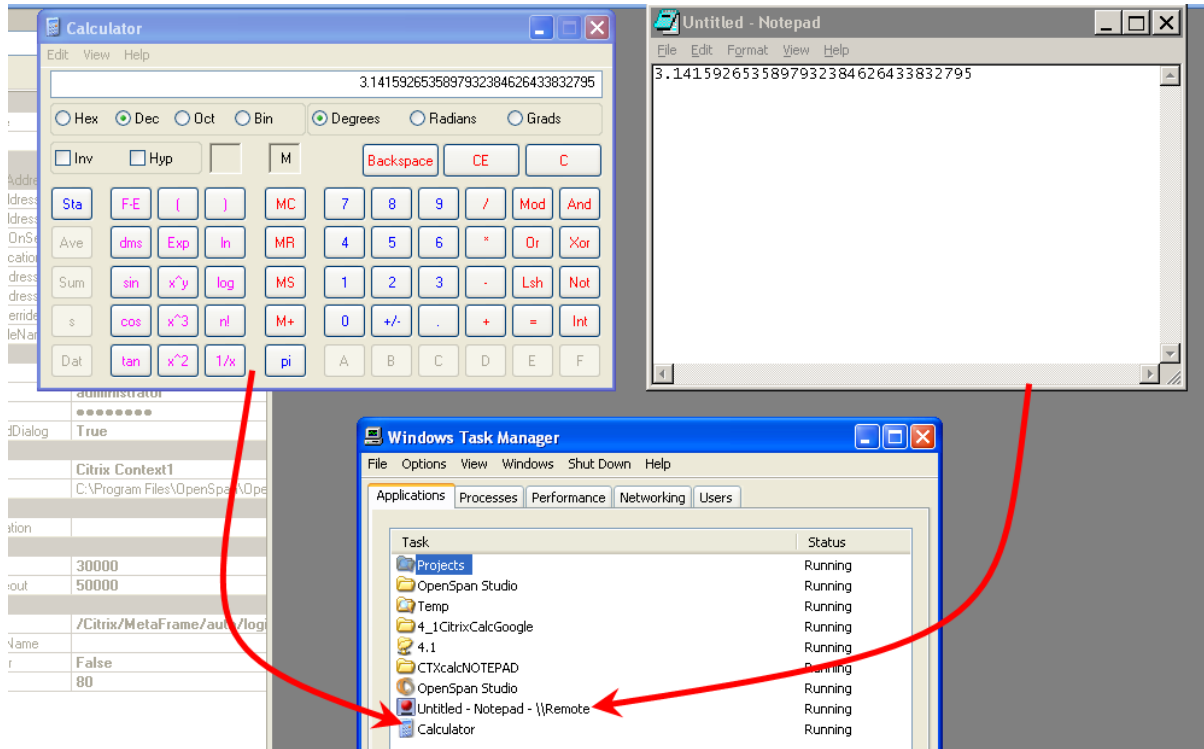
Set the Published Application Name to the name provided by your Citrix server administrator. This name will point to the Runtime on the Citrix farm. More details on setting this up in your environment are available in Appendix A at the end of the document.

### Login

The login parameters are typically only used at design time. For the runtime solution, leave the Username and Password blank, and set the Show Password Dialog to **False** so that pass-through authentication can be used. Refer to Appendix A for more information on setting up Pass-through Authentication. If you are using a different User ID and Password other than your NT workstation ID you may enter it in the login section for testing.

5. **Save** the solution and create a deployment package. Copy the deployment package to the specified folder on the Citrix server.
6. Within OpenSpan Studio, run the solution.
7. Calc will display on the workstation, followed by Notepad. Browse the Task Manager. Note that the Notepad.exe application is listed as remote. This application is being run on the Citrix server.

8. Enter text into the Calculator and press M+ to send the text to the Notepad application. When finished, stop the project.





### **Solution Summary**

Solution CTXCalcNOTEPAD 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:

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

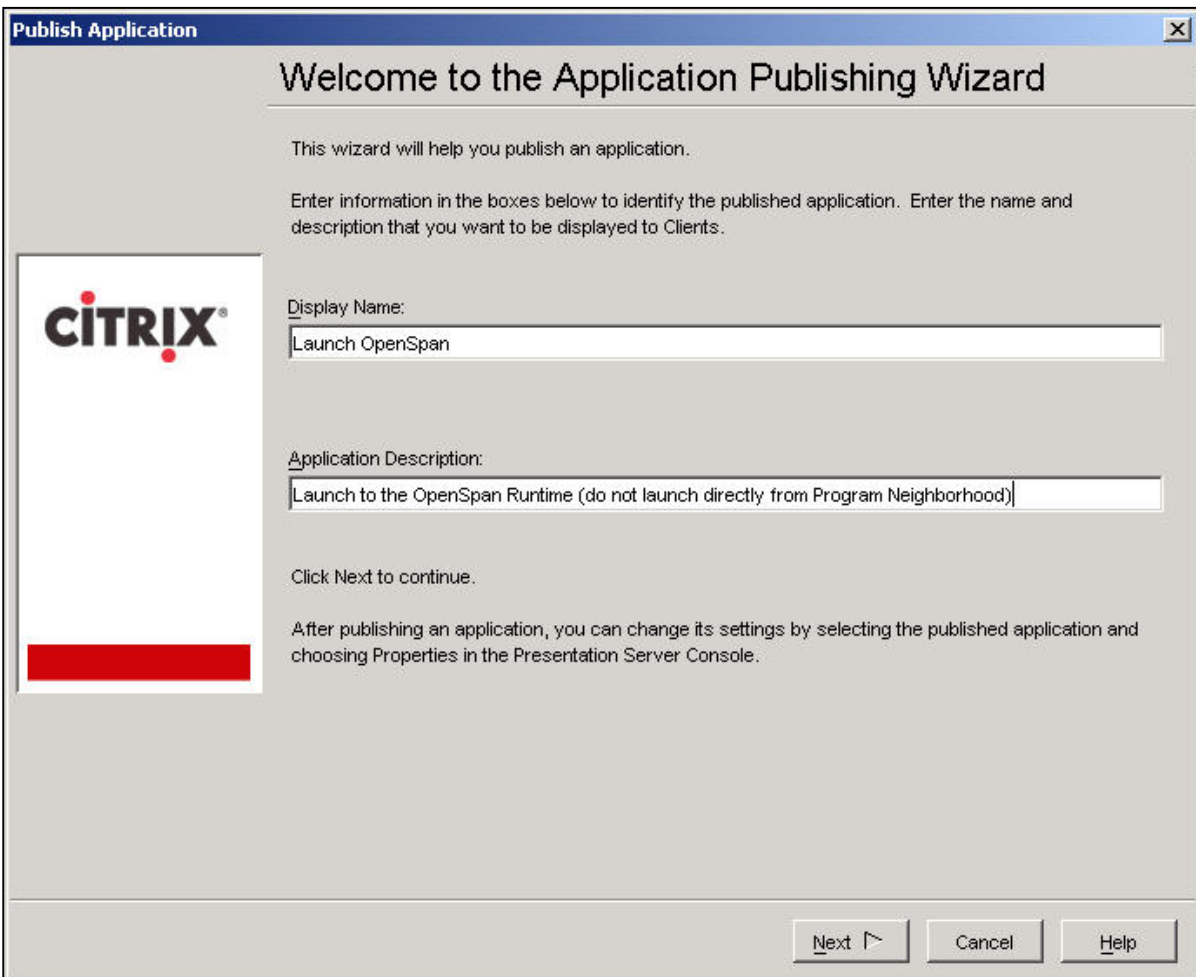
## APPENDIX A: CONFIGURING OPENSPAN RUNTIME ON THE CITRIX SERVER

### Creating a Citrix Application Entry

To create a Citrix application entry for Runtime, perform the following steps:

1. Open the Presentation Server Console on the Citrix server by selecting **Start | All Programs | Citrix | Management Consoles | Presentation Server Console**.
2. Do one of the following:
  - Press **Ctrl** and **P**.
  - Click the **Application Publishing Wizard** button on the toolbar.

The **Publish Application** dialog containing the Application Publishing Wizard opens.



3. Type the Display Name and Application Description, and then click Next. The Publish Application - Launch OpenSpan dialog appears.

**Publish Application - Launch OpenSpan**

### Specify What to Publish

Application Type

Application  
 Desktop  
 Content

This application type grants users access to a single application installed on your servers.

Enter the command line for the application you want to publish. You can also specify a default working directory for users.

Command Line:  
"C:\Program Files\OpenSpan\OpenSpan Runtime\OpenSpan.Runtime.exe"

Working Directory:  
C:\Program Files\OpenSpan\OpenSpan Runtime

Isolate Application

Settings...

< Back   Next >   Cancel   Help

4. Click Browse, and then navigate to the Runtime installation folder.
5. Select OpenSpan.Runtime.exe. The Working Directory field is automatically populated.

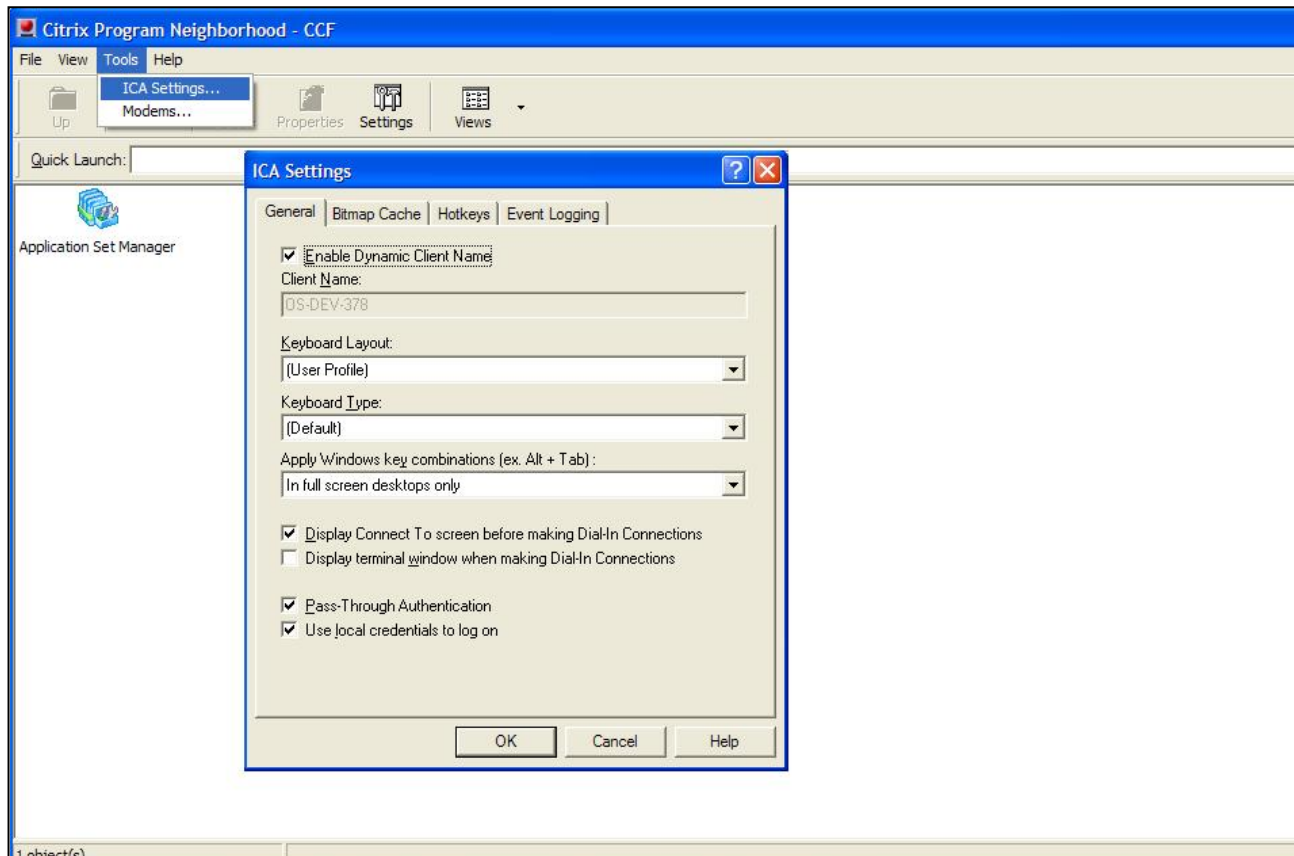
**Note:** You must add the characters "%\*" (without the quotation marks and with a space before them) at the end of the Command Line. Refer to the example above. These allow command line arguments to be passed to the Runtime when it launches.

There are several more configuration screens after the one above. They contain options such as color depth, which Citrix server to run on, and so forth. Each Citrix Administrator can complete these fields.

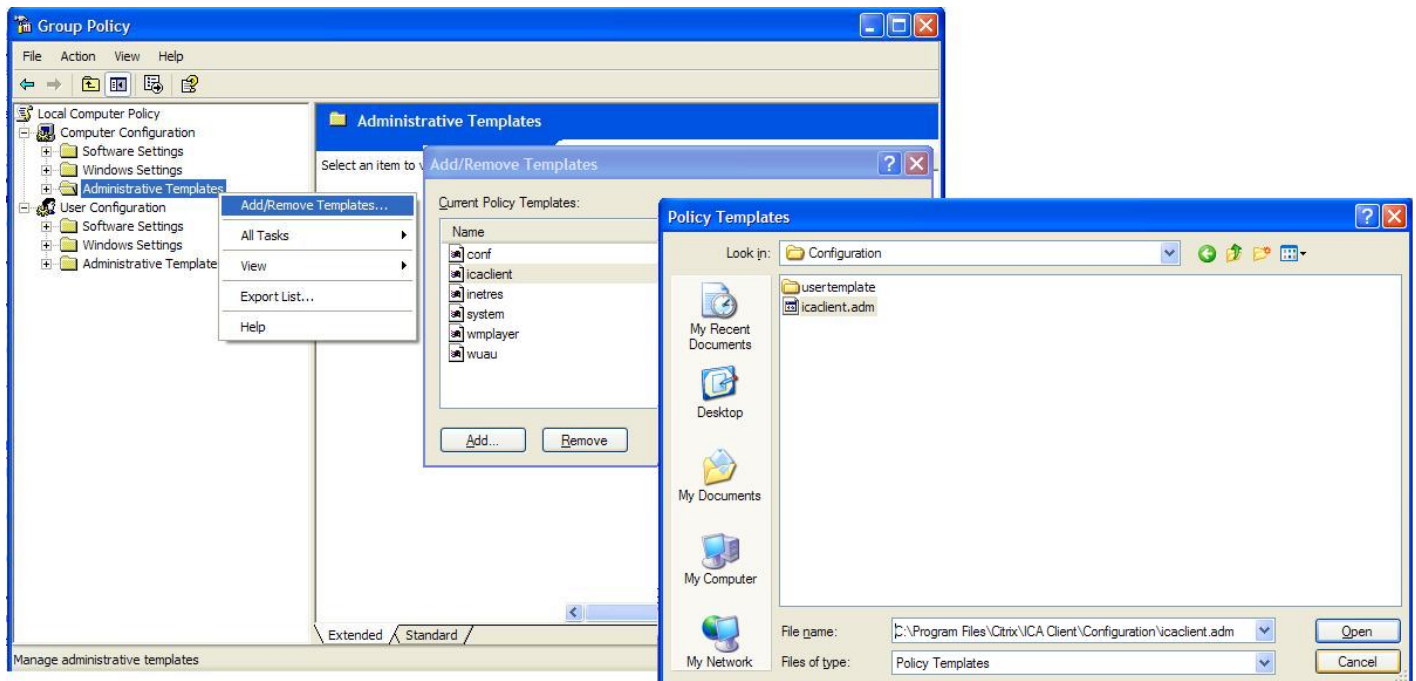
## APPENDIX B: SETTING UP CITRIX PASS-THROUGH AUTHENTICATION

### On Citrix Client

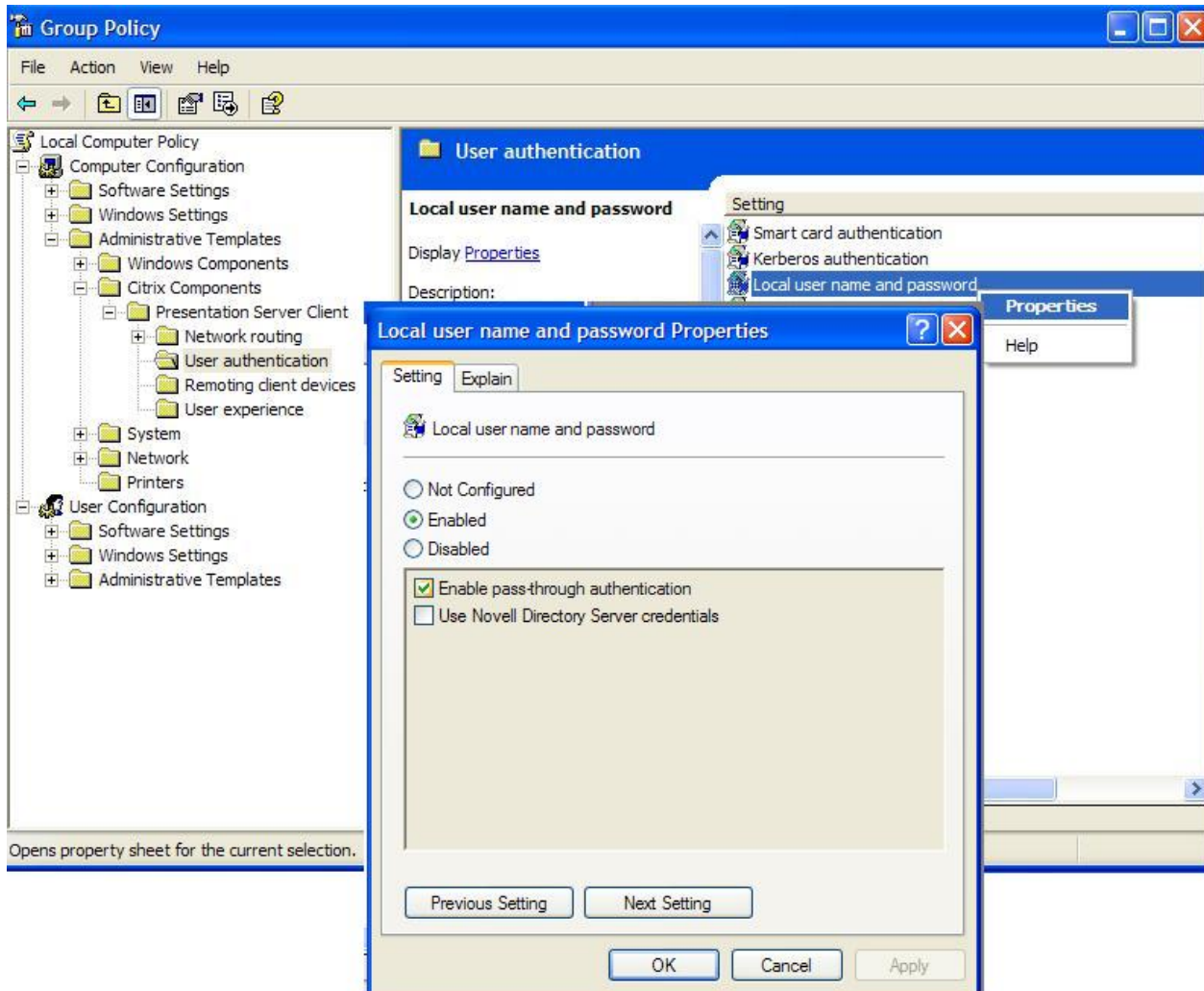
1. Enable pass-through in Citrix Program Neighborhood: select **Tools | ICA Settings**. Check the boxes **Pass-Through Authentication** and **Use local credentials to log on**.



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

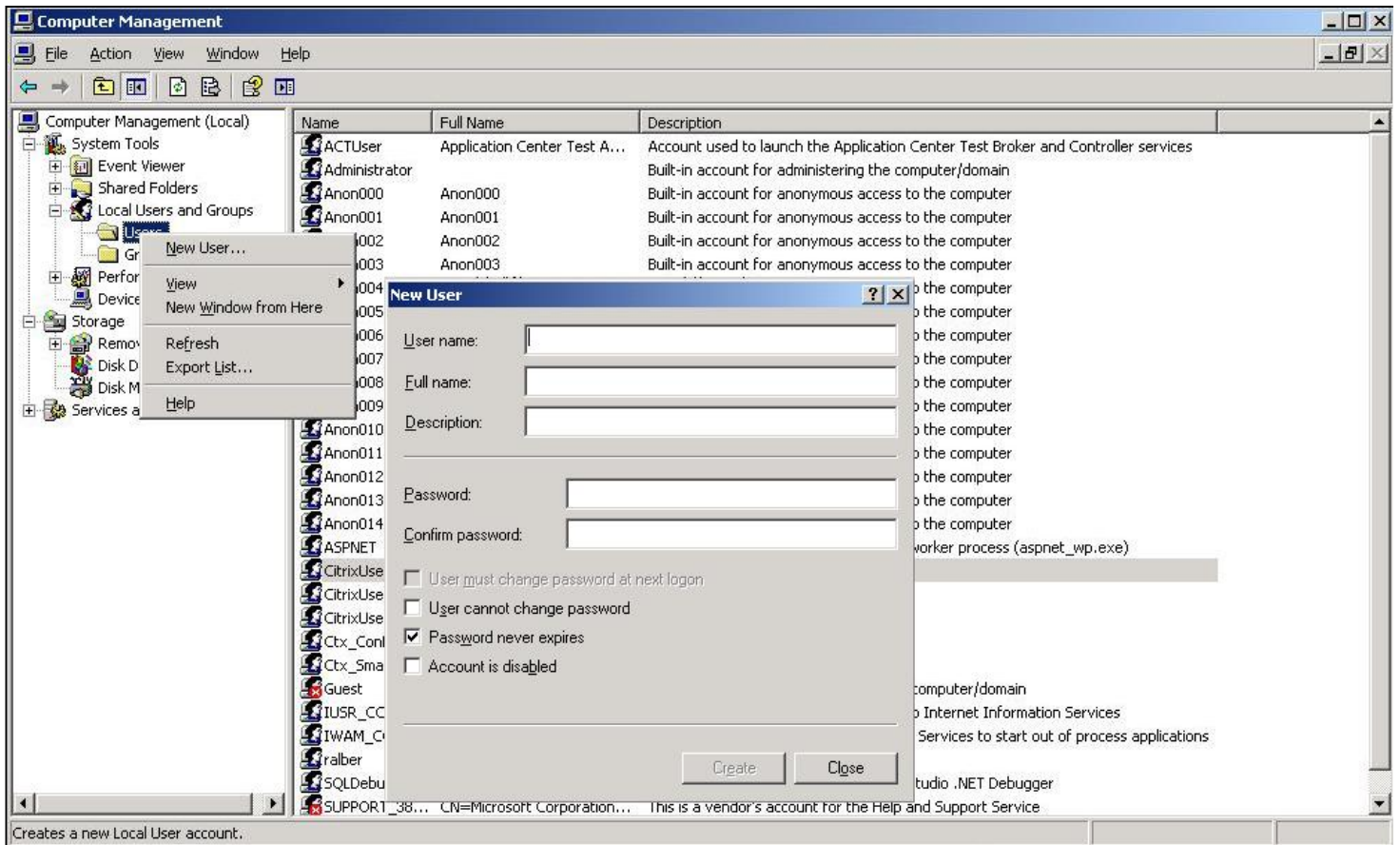


6. A new folder called **Citrix Components** will be added to **Administrative Templates**.
7. Navigate to the folder: **Citrix Components/Presentation Server Client/User authentication**.
8. Double-click the **Local user name and password** setting.
9. Select the **Enabled** radio button.

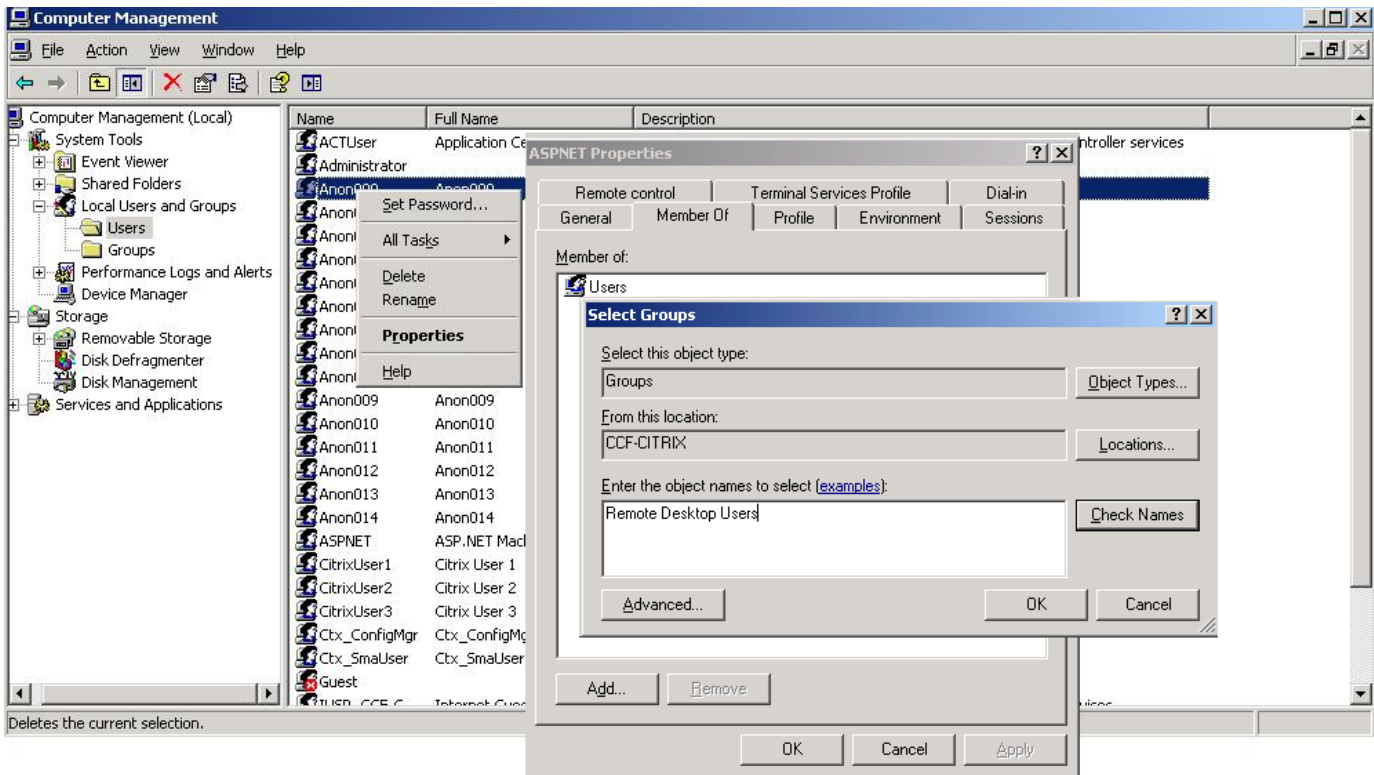


## On Citrix Server

1. Add new user to Citrix Server: **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.**

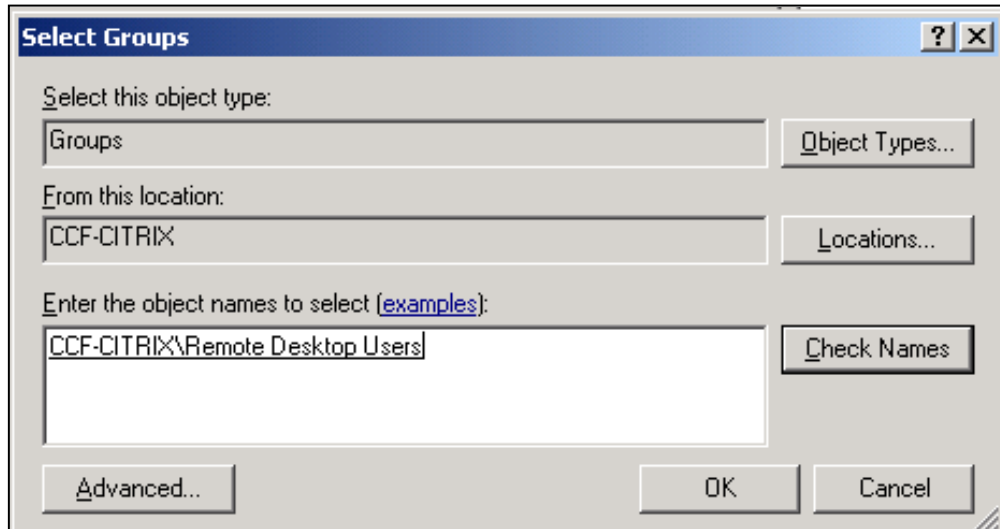


5. To add a new user to the Remote Desktop Users group: right-click the **user name** and select **Properties**. Select the **Member Of** tab, and enter **Remote Desktop Users**.





6. Select **Check Names**.



7. If the information is correct, click **OK** to close.

