

## Chapter 12: Installing and Deploying ICA Clients

In the preceding chapter, you learned all about installing and deploying the RDP client. In this chapter, you will learn the same for the Citrix ICA client. Although the majority of the deployment methods you used in the preceding chapter will work just as well for the ICA client, the features you can set up on the ICA client differ significantly. This chapter discusses both the details of the client deployment and client setup that you need to know for your Citrix MetaFrame users.

### Installing the Citrix ICA Client

The Citrix ICA client has more features and has been ported to a much wider variety of operating systems than has the Microsoft Terminal Server client. Although you will learn how to install the ICA client only on Windows 32-bit and 16-bit operating systems in this section, the client is available and can be run on all the following operating systems:

- Windows NT 3.51, NT 4.0, 2000 and XP
- Windows 95/98/Me
- Windows for Workgroups 3.11
- Windows CE (built in to many thin client terminals)
- Internet Explorer using the ActiveX-based Terminal Services Advanced Client
- Macintosh Client 68030/040 and Power PC-based systems
- Most flavors of UNIX including HP-UX, Sun Solaris/x86 and Solaris/Sparc, SunOS, Compaq Tru64, HP/UX, SGI, SCO, IBM AIX, and Linux
- DOS 4.0 and above
- OS/2 v2.1/3.0/4.0
- EPOC/Symbian OS
- Java applet version, which will run on any platform that supports the Java SDK 1.1 and above
- Netscape Navigator and Communicator using a downloadable plug-in
- Microsoft Internet Explorer using an ActiveX client

#### Author's Note

For administrators who are already familiar with the basic installation process, skip ahead to the ["Customizing the Installation of the ICA Client"](#) section.

## Choosing and Installing the Network Protocol

If you are connecting to MetaFrame across a network, you should make sure the correct protocol is loaded and functional before you begin installing the ICA client. Because the ICA client supports more protocols than the Microsoft Terminal Server client does, you have a lot of choices to make in terms of which protocol is best for your clients.

Both the 32-bit and 16-bit ICA clients support TCP/IP, IPX, SPX, and NETBIOS. Your choice of protocol depends mainly on your network and your clients. Most often the best protocol to use will be TCP/IP. TCP/IP is routable and is therefore an excellent choice for both large and small networks. Most routers support TCP/IP out of the box, making WAN connections relatively easy. TCP is also the most widely supported protocol across the various Terminal Server clients. It is also the only protocol supported by the Macintosh, Microsoft RDP, UNIX, and web clients.

If you have a network that consists mainly of Novell NetWare servers running IPX/SPX, and if most of your clients already have IPX/SPX loaded, it might be better for you to stick with the IPX/SPX protocol set for your ICA clients. This is the case especially if you intend to install the ICA client on your DOS or Windows 3.x workstations that already have the IPX/SPX protocol stack set up. Whereas it is relatively easy to add new protocols to Windows 95/NT, adding new protocols to DOS or Windows 3.x clients can be tedious. Like TCP, IPX/SPX is routable.

NetBIOS is the simplest of the protocol choices. NetBIOS can run on top of other protocol transports, such as TCP/IP and IPX/SPX; however, with the Citrix ICA clients, NetBIOS runs only on top of NetBEUI. NetBIOS over NetBEUI has very little overhead, in part because NetBEUI is not routable. Because of the simplicity and low overhead of NetBIOS, you might find that it has a slight performance advantage over the other protocols. NetBIOS over NetBEUI can be a good choice on small networks, test networks, or on other networks where the inability to route the NetBEUI protocol is not an issue.

### 32-Bit Windows Protocol Setup

No matter what protocol you will be using to connect to the server, the steps to setting it up are very simple with Windows 32-bit platforms. All the listed protocols are included on the installation CD for Windows 95, 98, Me, NT, and 2000. To install the desired protocol, add the protocol through the network Control Panel for your operating system.

### Windows for Workgroups Protocol Setup

With Windows for Workgroups, support for both IPX and NetBEUI protocols is included; however, TCP/IP support is not included. To get TCP/IP you need to install it from the Windows NT 4.0 Terminal Server CD-ROM. (You can find it in the `d:\clients\tcp32wfw` directory.) The network driver and protocol software are installed through the Network Setup program. For further instructions, refer to the "Installing the WFW TCP/IP Stack" section in Chapter 11, "Installing RDP Clients for Windows."

The steps for installing the NetBEUI and IPX protocols are similar to the steps for installing TCP/IP. Instead of selecting Unlisted Protocol, as you would with TCP/IP, just select either NWLink IPX/SPX or NetBEUI from the protocol list when adding the protocol.

### Obtaining the Client Install Files

Now that the protocol has been installed, it is time to install the client. The first thing you need to do when installing the client is to get access to the installation files. One of the simplest methods is to use the Client Install CD that comes with MetaFrame XP. This CD contains the following client versions:

- ICA Win32 Client Version 6.01
- ICA Win16 Client Version 6.01
- ICA UNIX Client Version 6.0
- ICA Macintosh Client Version 6.0
- ICA Java Client Version 6.0
- ICA WinCE Client Version 6.0
- ICA DOS32 Client Version 4.21

You will find a copy of the full 32-bit ICA client install under [cd]:\ icainst\en\ica32.

Like Terminal Server, there is an alternative way to obtain the client install files on disk by using the ICA Client Creator utility. You will find this utility in the Program menu under the Citrix MetaFrame XP folder. Just run the utility, select the client type you want to install, and click OK. You will need to have three disks available to hold the Windows 95/98 and NT version (32-bit version) of the client.

The next option is to just use the ICA client install source on the server. If you select to install ICA clients during the installation of MetaFrame XP, it will create an ICA folder under the %systemroot%\system32\clients folder, which contains installation folders for all the listed clients on the Client Install CD. You might want to share this folder on the network and access the client install from it.

The final and most up-to-date source of client install files is from the Citrix web site. From their web site, you can download the latest client files and use them to update your clients. If this is a new install, it is highly recommended to download the latest version of the clients and deploy them to your workstations instead of using those available on the CD. You can access the Citrix download site at <http://www.citrix.com/download>.

### **MSI Version of the ICA Client**

In the preceding chapter on installing the RDP client, there was much discussion about the MSI (Microsoft Installer) version of the Terminal Services client. Using an .MSI file, you can more easily automate the deployment of a piece of software using the automated installation functionality that is built in to Windows 2000 and Windows XP Professional.

Starting with version 6.2 of the 32-bit ICA client, Citrix now makes an MSI version available of the client. One big reason why this is important is that using the .MSI file, you can easily deploy the client using Windows 2000 policies. For more information on how to use policies to deploy applications, see Chapter 14, "Policies and Desktop Management." You also can refer to Microsoft Technical Article Q236573.

### **Web Version of the ICA Client**

In addition to the full client install, Citrix has now made available a version optimized for the web. This version of the client includes only the files necessary to run an ICA settings file from a web page or to work with an NFuse web site. It does not include the Citrix Program Neighborhood. The download size is much smaller than the full-featured ICA client and, therefore, takes much less time to download across slow connections. You will learn more about this version of the client in Chapter 19, "Deploying Applications over the Web Using NFuse and Wireless Technologies." In this chapter, and for most of the book, the focus is on the full-featured client.

## **Installing the ICA 32-Bit Client (.EXE Version)**

The installation of the 32-bit client is very simple. To install it, just follow these steps:

1. Run SETUP.EXE from the install directory for the client.
2. Click Next past the Intro screen and license agreement.
3. Browse to the location where you want to install the client and click Next.
4. Select the program folder for the shortcuts for the ICA client and click Next.
5. Select the client name and click Next. By default this is the workstation name that is the recommended setting.
6. Select whether you want to use the local username and password and then click Next.

After the client files are copied to your computer, the installation program will create shortcuts for the client in the Citrix ICA Client folder in the Program menu.

## **Using Pass-Thru Authentication with Citrix**

Version 6.01 of the ICA client now has the capability to pass-thru a user's initial logon credentials to the Citrix server. This is a very welcome feature for both users and administrators. By enabling the client for pass-thru authentication in step 6, users no longer have to enter their username and password when logging on to Citrix. Having to enter the username and password once during logon to the workstation and then again every time users connect to Citrix was tedious for many. As an administrator this feature is very beneficial because you can easily standardize your user authentication scheme for your enterprise, instead of having to manage a separate authentication scheme for Citrix. In addition, users do not have to enter their password twice, which reduces calls to the help desk for incorrect passwords or locked accounts. This is a feature that can be turned on or off for an organization depending on their security needs.

## **Installing the 16-Bit ICA Client on WFW**

You can find the 16-bit client on the MetaFrame CD in d:\icaclient\ ica16. As with the 32-bit client, you will find two disk images under this directory. These can be copied to a location on your network or to two formatted high-density floppy disks. The simple installation of the client itself can be done as follows:

1. Run SETUP.EXE from the installation source.

2. Follow the onscreen instructions. The client installs into the `c:\ica16` directory by default.
3. When you are prompted for a connection name, enter something unique.

The install program will copy the client files to your computer and create an icon for the Citrix Program Neighborhood in Program Manager.