



DABCC.com Tech Tips

How to Install Citrix® Presentation Server 4.0 (Excerpts from Methodology in a Box 4.0)

December 21, 2005

**Written by:
Douglas A. Brown**

Copyright © 2002 - 2005 DABCC, Inc., All Rights Reserved

Notice:

The information in this publication is subject to change without notice.

THIS PUBLICATION (Tech Tip) IS PROVIDED "AS IS" WITHOUT WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. DABCC, INC. ("DABCC, INC."), SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN, NOR FOR DIRECT, INCIDENTAL, CONSEQUENTIAL OR ANY OTHER DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS PUBLICATION, EVEN IF DABCC, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES IN ADVANCE.

DABCC, Inc does not warrant products other than its own.

Citrix®, MetaFrame® is a registered trademark or trademarks of Citrix Systems, Inc. in the U.S. and other countries.

Windows® is a trademark of Microsoft Corporation in the U.S. and/or other countries. All other trademarks and registered trademarks are property of their respective owners.

© Copyright 2005 DABCC, Inc.

All rights reserved.

WARNING: The information is provided for informational purposes only. The authors assume no responsibility for its usage. Use common sense in applying these concepts and tips. Screen shots may vary from environment to environment. Please verify correctness and applicability in a test environment first and then deploy to your production environment(s). Throughout this document, you will be required to manually edit the registry of a Terminal Server or Windows 2000 Server. Use appropriate caution before editing the registry including having a backup of your system and registry. Using Registry Editor incorrectly can cause serious system-wide problems that may require you to reinstall Windows NT or Windows 2000 to correct. Microsoft cannot guarantee that any problems resulting from the use of Registry Editor can be solved.

Use the information found in this document at your own risk.

Implementation Phase

IMPORTANT! This document is created by taking excerpts from the upcoming Methodology in a Box 4.0. MIAB4.0 is due to be released in late January. If you find any typos then please let me know. This is not a complete document yet, still in draft!

1. Implementation Phase Overview

Now that we have created a vision / scope, defined the project plan and developed a project design we are ready to start building our Citrix Presentation Server environment.

By following your project plan, you will install and configure a scaled down version of the proposed environment. What I mean by this is that if you are planning for five Presentation Server 4.0 servers with Web Interface as the client access point, then you will only want to install a few Presentation Server servers, Web Interface and any additional servers required for Secure Gateway. Throughout the installation, you will need to document all installation steps used.

During this phase, you might need to modify the Project Scope and or the Project Plan. This is called scope creep and if you allow additional items to be added without making a project scope / plan change then you run the risk of running over budget and over time. Keeping with the goal of a successful project it is necessary for you to present any changes to your customer and have them “sign off” on them.

Once you have documented the steps necessary to deploy the Presentation Server you will be ready to move to the Readiness phase where you test, pilot and rollout any remaining servers to complete the installation of your new Presentation Server environment but before that you will be presented with another checkpoint.

The Implementation phase is broken down into the following segments.

- Prepare the Network Environment.
- Install Presentation Server 4.0 Server Data Store
- Install Windows 2000 or Windows Server 2003
- Install Presentation Server 4.0
- Tune Presentation Server 4.0
- Install Image Applications
- Image Server
- Deploy Image
- Install Remaining Application
- Install Citrix Conferencing Manager
- Configure Presentation Server Client Updates
- Configure Server Reboots
- Configure Presentation Server Administrators
- Configure Presentation Server policies
- Configure Content Redirection
- Publish Applications
- Configure Presentation Server Printing Environment
- Install ,Configure and Secure Web Server
- Install and Configure Web Interface 4.0
- Install and Configure Secure Gateway.
- Install and Configure Remote Administration

- Install and Configure Presentation Server Clients
- Install and Configure Microsoft Terminal Services Licensing
- Install and Configure Windows System Policies

Over the following pages, you will find basic installation procedures for a typical small to medium size environment. I have formatted them in the flow that your project will take, one-step at a time.

2. Prepare the Network Environment

The first thing you will need to accomplish to successfully implement the Citrix Presentation Server is to prepare the network environment. This is very important and very much an overlooked area that if not completed could wreak habit on your deployment.

Preparing the environment includes making any necessary changes to the existing network infrastructure as documented in the **Existing Infrastructure Modifications** section of the design document. Once completed with any modifications required from the Infrastructure Assessment you will be able to start in with building the required Presentation Server infrastructure that includes the following:

- Create required network shares
- Firewall modifications
- Throttling Port Speed and Duplex Settings
- Add Users to a Terminal Services Environment
- Configuring Terminal Server Home Directory
- Configuring Terminal Server Profile Path
- Create required Citrix Specific User Groups

2. 1. Create Required Network Shares

You will now need to create any network shares that were documented during the **File Storage** section of the Design phase.

The following shares are required for a successful deployment.

- **Terminal Services User Home Directory:** If a user will be logging in to a Presentation Sever farm then a unique user home directory is required to store user specific data.
(\\servername\TSUsers\$\%username%)
- **Terminal Services User Profiles share:** If a user will be logging in to a Presentation Server farm then a unique user profile share is required to store user specific data.
(\\servername\TSProfiles\$\%username%)
- **ICA client update database:** Required for a central location for all the ICA clients installation packages that will be distributed through the ICA Client Update Configuration Utility.
(\\servername\ICAClientDB\$)
- **Installation Manager Package share:** In order to distribute IM packages to all Presentation Server servers in your environment you will need the packages to be centrally located and accessible to all servers. This is required for installations that utilize Installation Manager. (\\servername\IMApps\$)
- **System Policies share:** If you will be implementing Presentation Server servers in a Windows NT 4.0, workgroup and or Novell Netware environment then you will be required to create a network share to store the System Policy. (\\servername\TSPolicies\$)

2. 2. Firewall Modifications

If end-users will be connecting to the Citrix Presentation Server via the Internet, firewall modification might be necessary.

If you will be using Secure Gateway then TCP port 443 is the only port required to be open for client-to-server communications on any of the firewalls in your environment. Please refer to the Secure Gateway section of this document for more information on what ports might be required to be open in a DMZ environment.

If the SSL Relay service is used for ICA connections then TCP port 443 is the only port that is required to be open.

If during the Design Phase you assigned someone other than yourself with the responsibility for firewall modifications then you will need to get with the appropriate party to verify the appropriate modifications have taking place. After all, it is your project and you are ultimately responsible to the overall outcome. You will also be required to document any changes made that affect the Presentation Server deployment and include them with the complete project documentation.

The following is a list of Citrix-related TCP and UDP ports that may need to be opened on firewalls and routers:

Port	Description
TCP - 80	Default port for unsecured Web Interface web servers and or TCP+HTTP browsing (XML port) and or Secure Gateway Secure Ticket Authority (STA) unsecured port.
TCP - 443	Default port for Secure Gateway, SSL Relay Service, ICA connections using SSL+HTTPS browsing and secure connections to a Web Interface web server) This is the only port that is needed to be open on an external firewall for secure connections to a Presentation Server environment utilizing the Secure Gateway technology.
TCP - 1494	Default ICA port, this can be changed if necessary. This port is not necessary to be open on the external firewall if you will be utilizing Secure Gateway for Windows.
UDP - 1604	This port is very rarely used today and only used if you will not be utilizing Web Interface or TCP+HTTP browsing. (highly not recommended)
TCP - 2512	Citrix Independent Management Architecture (IMA) server to server communications. This port only needs to be open on a firewall if you will be communicating from server to server across a WAN. In this case you would secure the traffic with a point to point VPN or equivalent WAN security mechanism.
TCP - 2513	Management Console for Presentation Server 4.0 communication to the IMA Data Store. It is recommended to publish the Management Console in a Presentation Server 4.0 session if you will be crossing into unsecured wires.
TCP - 8082	Citrix License Management Console
TCP - 27000	Presentation Server Licensing
TCP - 2598	ICA session w/ Session Reliability enabled

For more information regarding commonly used TCP/IP ports numbers, please refer to the following support articles.

Windows NT, Terminal Server, and Microsoft Exchange Services Use TCP/IP Ports: (Q150543)

<http://support.microsoft.com/default.aspx?scid=kb;en-us;150543>

Information About TCP/IP Port Assignments (Q174904)

<http://support.microsoft.com/default.aspx?scid=kb;en-us;174904>

TCP Ports and Microsoft Exchange: In-depth Discussion (Q176466)

<http://support.microsoft.com/default.aspx?scid=kb;EN-US;176466>

2. 3. Throttling Port Speed and Duplex Settings

When I was a little boy my Dad taught me that if I want something done right then I should do it manually. With this in mind, another thing I have learned about building networks is something so inconspicuous that it is hardly ever thought of, but it has a direct impact on end-user perception in a way bigger than you would ever imagine. In fact, in doing an infrastructure assessment at a major corporation, I noticed this problem, scheduled to have it corrected and after the change, we received email after email wanting to know what we did to speed up the network. It made that big of a difference! What am I talking about? Something we call, Ethernet duplex mismatch. This problem affects all Ethernet based devices and therefore can be very widespread on even the best maintained networks.

Duplex mismatch is caused by having different duplex settings on each side of a connection. To sum up the differences in full vs. half duplex; in full duplex both sides of the connection can send data at once whereas in half duplex mode only one end of the connection can send data. If these rules are broken then you experience duplex mismatch.

Basically what happens is that a device auto-detects or is hard-coded to connect at one speed (let's say 100Mbps/Full Duplex) and the other end of the connection is connected at a different speed (100Mbps/Half Duplex) then you experience duplex mismatch and a network collision occurs. In the event of a collision, all devices on an Ethernet network pause for a randomly determined period before attempting to send data again. This drastically affects network performance and can make or break your MetaFrame deployment.

The solution to duplex mismatching is to always manually configure network devices for full or half duplex, not allowing for any type of auto-negotiation. From my experiences, auto-negotiation is not reliable enough to run in production. I highly recommend going through the entire environment to verify duplex settings and if needed, manually setting the duplex setting on every Ethernet device and switch port. You will even want to verify the Internet Service Provider's duplex settings and set your routers appropriately.

I **cannot** stress this point enough, addressing duplex mismatch will cure huge performance problems and spending the time to configure both the connection speeds and duplex settings on both the device and switch will leave you and your end-users with optimum performance.

2. 4. Add Users to a Terminal Services Environment

Now that you have created the necessary user profile and home directory shares, you will need to create and configure any new and or existing users to take advantage of profiles that roam from server to server and a terminal specific user home directory. If you are going to be deploying more than one server, you will be required to make changes to the User Property form to run users in a Terminal Services environment.

2. 4. 1 Terminal Server Home Directory

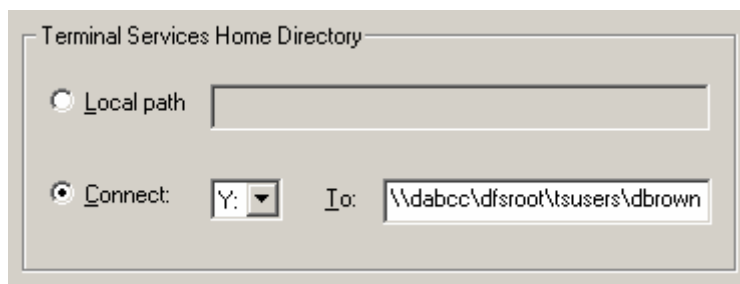
Because Presentation Server supports multiple simultaneous users, a separate copy of any application-specific .INI files is maintained for each user. Any .INI files associated with Windows applications are searched for in the user-specific home directory. If a user installs a Windows application, .INI files are created or modified in that directory. If you want multiple users to use the same Windows application, you must use the change user /install command to install all application .INI and .DLL files into the Presentation Server system directories during software installation, or manually copy and merge the appropriate information into each user's .INI files in their respective home directories. As described in the **Install Application** section of this document.

Citrix Presentation Server requires a user to have a home directory to store application settings informational files.

When adding a user to the Presentation Server farm you must add a **Terminal Server Home Directory**, which is located by clicking the profile button in the user's properties box.

- Click the **Connect** radio button and select the drive letter you assigned for exclusive use for the user's Citrix home directory and then type *\\servername\ts user's home directory\%username%* in the Terminal Services Home Directory text box.

The following is a screen shot of the user's Terminal Services Profile tab in Windows 2000's Users and Computers utility:



Important! You will want to hide this drive from the user's view, as described in **Implement Windows System Policies** section of this document. The home directory does not need to be seen by or used by the end-user and it only causes support calls so I have always recommend you hide it.

2. 4. 2 Terminal Server Profile Path

A User Profile contains the configuration for a specific user, including the user's environment and preference settings. For example, those settings and configuration options specific to the user—such as installed applications, desktop icons, color options, and so forth—are contained in a User Profile. Profile settings are applied to the user during logon and updated each time a user logs off properly.

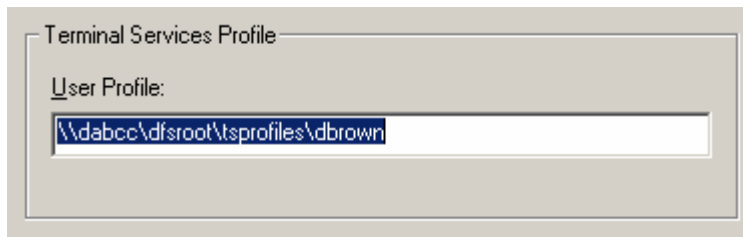
A word to the wise, you need to keep your eye on the size of the profile folder. This can be done in multiple ways; you can set disk quotas via group policies and I recommend excluding the Internet Temporary Files from the user profile via group policies. I will discuss policies in more detail later on in the document. I also recommend utilizing folder redirection to redirect the contents of users My Documents, Desktop and other important folders to a network share to cut down on the size of the user's profile thus speeding up login times. To learn more about folder redirection please refer to the Folder Redirection section of the **Implement Windows System Policies** section of this document

A profile path is used to store the look and feel of your workspace environment.

When adding a user to the Presentation Server farm, you must add a **Terminal Server Profile Path** located by clicking the profile button in the user's properties box

- Type: \\servername\profiles share\%username% in the Terminal Server Profile Path text box as show below.

The following is a screen shot of the user's terminal services profile tab in Windows 2000's Users and Computers utility.



2. 5. Create Required Citrix Specific User Groups

You will now need to create any user groups that were defined in the design section. I recommend that at minimum you create the following user groups for use in a Presentation Server environment.

User / Group Name	Purpose
CTX Admin	Presentation Server Full task administrators
CTX Admin (Read-Only)	Presentation Server view-only administrators
CTX Users	All Presentation Server Users
CTX Outlook Users	Presentation Server Outlook Users
Disable Client Drive Mapping	Used to enable autocreation of local client drives – This is the global group you will add the Everyone group to.
Enable Client Drive Mapping	Used to enable autocreation of local client drives – This is the global group you will add the desired users / groups whom you would like access local client drives.
Disable Client Printing	Used to enable autocreation of local client printers – This is the global group you will add the Everyone group to.
Enable Client Printing	Used to enable autocreation of local client printers – This is the global group you will add the desired users / groups whom you would like to have the ability to print to local auto-created printers.
Enable Server to Client Redirection	Server to Client Content Redirection Users Group
CTX IM	Installation Manager Service Account

3. Install Operating System(s) for Presentation Server 4.0

Presentation Server 4.0 ships with support for Microsoft Windows 2000 Server and Windows Server 2003. The following section defines how to install the operation system of choice.

3. 1. Installing Microsoft Windows 2000

If the project plan depicts to install Microsoft Windows 2000 Server then you are now ready to get down and dirty and break out that new hardware and install the OS. For the first server you will want to document every step you take in order to create installation procedure documentation. This documentation will be the blue print for all future server builds and serve as a portion of a basic disaster recovery plan.

The following is an example of the installation procedures needed for Windows 2000 Server:

Step	Description
1.	Install and configure server hardware <ul style="list-style-type: none"> • Unpackaged and prep hardware • Update the firmware to latest versions
2.	If you will be using hardware like HP / Dell servers, you will need to run the appropriate configuration software. i.e., SmartStart
3.	Press F6 if you need to install 3 rd party SCSI or RAID driver(s) that are not currently on the Windows 2000 CDROM
4.	Press Enter to continue with the installation
5.	Press F8 to agree with the license agreement
6.	Follow on screen prompts to create the appropriate partitions.
7.	Select to format the partition using the NTFS file system. Setup will format the partition and copy installation files. When completed, it will reboot the system and continue to the GUI setup
8.	Click Next to continue
9.	Select the regional settings and click Next
10.	Enter a name and company name and click Next
11.	Select the appropriate license settings and click Next
12.	Select a computer name, enter the administrator password and click Next Note: Windows 2000 allows passwords of up to 127 characters. I recommend that the Administrator account password is at least nine characters long and that it includes at least one punctuation mark or non-printing ASCII character in the first seven characters. In addition, the Administrator account password should be unique from server to server.

Step	Description
13.	<p>You are now prompted to select the Windows 2000 Components to be installed. I recommend selecting only what is needed. I personally remove the following:</p> <ul style="list-style-type: none"> • Accessories and Utilities – remove Multimedia, Games, and Chat, in Communications I remove Chat and Phone Dialer and I remove the Accessibility Wizards. • Indexing Service – I highly recommend removing the Indexing Service • Internet Information Services (IIS) – I highly recommend removing the IIS service. If you leave it checked then you will have the option of installing Web Interface during the install. I do not recommend this; I try to keep Web Interface separated from my application servers. If you must install Web Interface on a Presentation Server 4.0 Server then do it from the control server. • Script Debugger – I recommend removing the script debugger unless you or your customer requires it. <p>You will want to check the Terminal Services checkbox to enable Terminal Services.</p>
14.	Select the Date and Time settings and click Next
15.	Select Application Server Mode and click Next
16.	<p>Select the default permissions for application compatibility</p> <ul style="list-style-type: none"> • Permissions compatible with Windows 2000 Users – This setting gives default terminal services users the same permissions as a member of the Users group and could cause issues with some legacy applications. • Permissions compatible with Terminal Server 4.0 Users – This setting gives default Terminal Services users full access to critical registry and file system locations thus enabling support for legacy applications while creating a possible security hole and more importantly, gives the end-user the ability to affect the stability of the system. <p>Click Next</p>
17.	You are now prompted to configure the network settings. I highly recommend configuring the network adapter cards now. Select Custom and click Next .
18.	<p>Double click on Internet Protocol (TCP/IP) – enter the appropriate TCP/IP address information documented during the design phase. Note: It is recommended to enter the FQDN for the domain the server is a part of in the DNS Suffix for this connection area of the DNS tab, located behind the Advanced button.</p> <p>Click Next</p>
19.	<p>The next screen you will see asks you if you would like to join a domain or stay a part of a workgroup. Select the appropriate setting and click Next</p> <p>Setup continues by copying system files and registers system components.</p>
20.	Click Finish to reboot and logon for the first time

Step	Description
21.	<p>Install any drivers necessary. Microsoft recommends that you place the system into install mode if you will be installing any hardware or hardware drivers. Refer to “How to install applications” section later in this document for more information on install mode.</p> <p>Click Start → Run → type: change user /install → click OK</p> <p>When you have completed the install of the new hardware you will need to place the system back in to Execute mode.</p> <p>Click Start → Run → type: change user /execute → click OK</p>
22.	<p>If you will need to install the Novell Client, you will need to do so now.</p> <p>Once installed you will need to set the following value in the [386Enh] section of the System.Ini file:</p> <p>FileSysChange=off</p> <p>Make this change in System.ini for all users. If this parameter is not set correctly, Presentation Server Setup reports that the FileSysChange parameter is not valid. For more information please refer to: http://support.novell.com/cgi-bin/search/searchtid.cgi?10058117.htm</p>
23.	<p>Install Microsoft Service Pack 4 http://www.microsoft.com/windows2000/downloads/servicepacks/sp4/default.asp</p>
24.	<p>Run Microsoft Windows Update and install all Critical Updates and Service Packs, Root Certificates, Windows Compatibility Updates.</p> <p>http://www.microsoft.com/windowsupdate</p> <p>Note: Remember to use change user /install mode for any updates. For more information on change user /install mode please refer to Installing Applications later on in this section.</p>
25.	<p>Set the media type, duplex setting, and the speed that the NIC is required to use within the environment. Verify that the switch or managed switch is configured to the preferred setting. Never allow the NIC to “Auto detect” the settings as described in section Throttling Port Speed and Duplex Settings</p> <ul style="list-style-type: none"> Click Start → click Settings → click Control Panel → click Network and Dial-Up Connections → right click on Local Area Network → click Properties → click Configure → click the Advanced Tab
26.	<p>Disable any additional Network Interface Cards or implement NIC Teaming per the supplied vender installation procedures.</p> <ul style="list-style-type: none"> Click Start → click Settings → click Control Panel → click Network and Dial-Up Connections → Right click on any additional NICs and click Disable
27.	<p>Create and format any additional hard disk drives and partitions.</p>

Step	Description
28.	<p>Move the page file to another faster drive or the second partition if available and set the PAGEFILE to two times the total amount of physical RAM installed on the server. (4095 MB max)</p> <ul style="list-style-type: none">• Click Start → click Settings → click Control Panel → double click the System applet → click on the Advanced tab → click Performance Options → click Change
29.	<p>Increase the Registry Size. 256 MB should be sufficient.</p> <ul style="list-style-type: none">• Click Start → click Settings → click Control Panel → double click on the System applet → click Advanced tab → click Performance Options → click Change

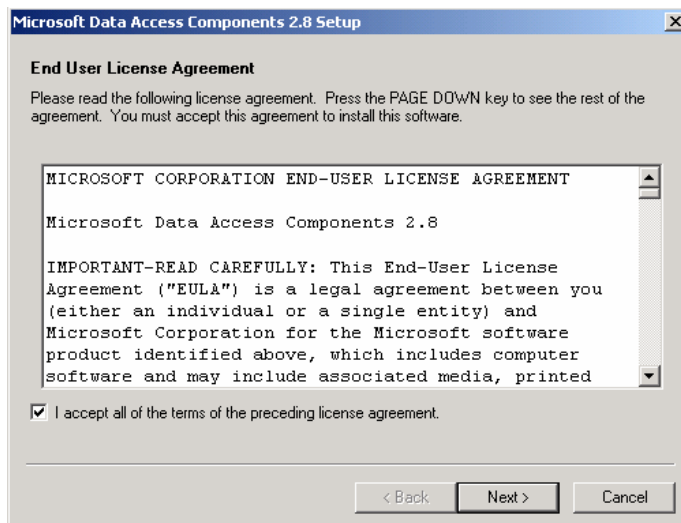
3. 1. 1 How to Install the Microsoft Data Access Components (MDAC 2.8 SP1)

In order to keep current with the latest version of Microsoft's Data Access Components and to guarantee the IMA service runs at peak performance I recommend you install MDAC version 2.8 SP1 and servers running Microsoft Windows 2000 Server.

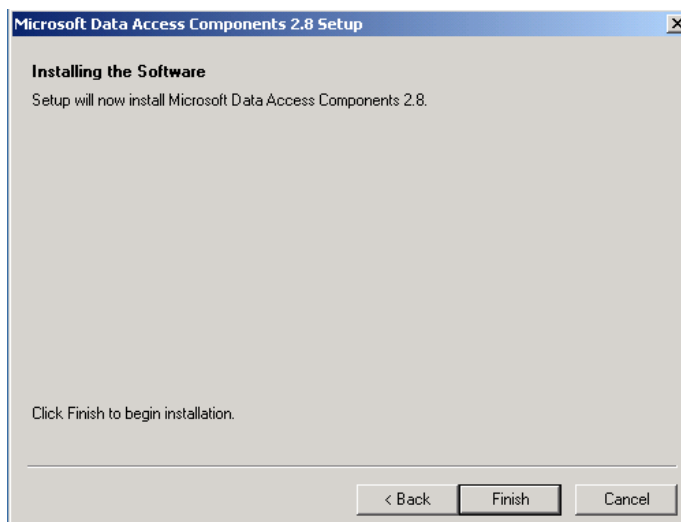
The current version of MDAC is 2.8 SP1. You can download and install MDAC 2.8 SP1 from <http://www.microsoft.com/downloads/details.aspx?familyid=78cac895-efc2-4f8e-a9e0-3a1afbd5922e&displaylang=en>

Note: Before installing, an updated MDAC version, be sure to stop the MS Terminal Services Licensing service and the Independent Management Architecture service Restart the server before beginning Presentation Server installation.

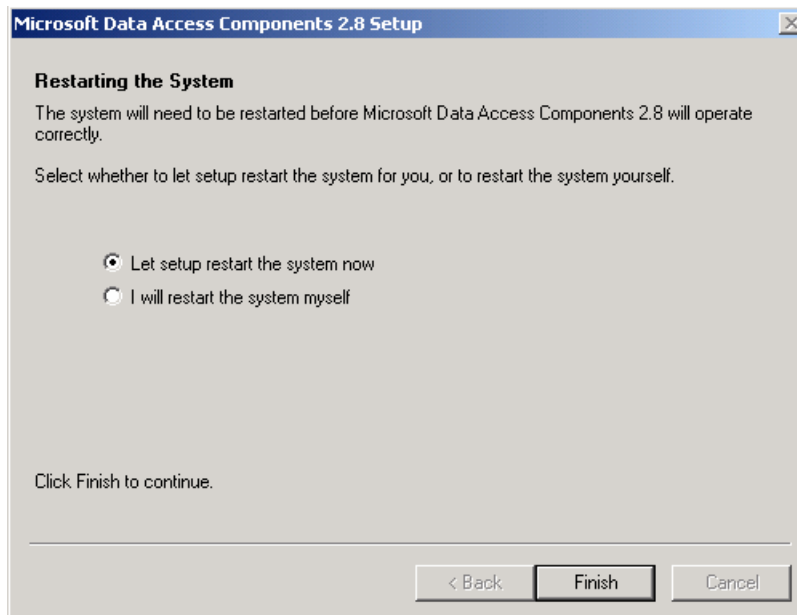
1. Click **Start** → **Run** → type: **change user /install** click **OK**.
2. Double click on **MDAC_TYP.EXE**
3. Click to check **I accept all of the terms of the preceding license agreement** and click **Next**.



4. Click **Finish**



5. Click **Finish** to reboot the server.



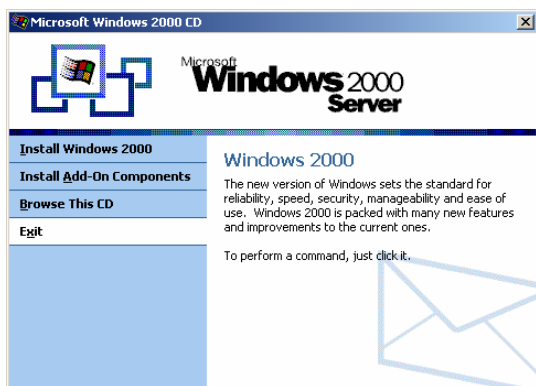
3. 1. 2 How to Install the Windows 2000 Recovery Console

To aid in troubleshooting and to gain access to a command prompt Microsoft has developed the Recovery Console.

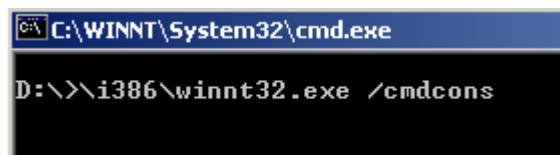
Note: It can be argued that if you are using a rapid server and application deployment mechanism then it is quicker to just “reimage” the server and not even mess with troubleshooting issues. I agree with this argument but from time to time it is nice to have the capabilities of the recovery console. Just don’t let the engineering ego get in the way in troubleshooting issues that can easily be overcome by a “reimage”.

The following procedures define how to install the Recovery Console as a start up option.

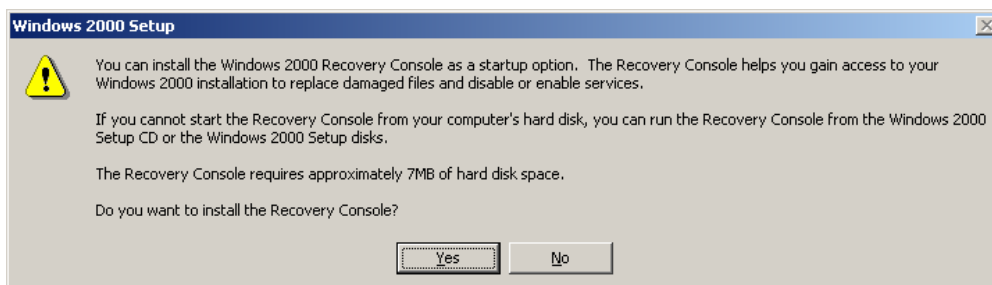
1. With Windows running, insert the **Windows 2000 Server CD** into your CD-ROM drive.
2. Click **Exit** when prompted with this Auto run screen:.



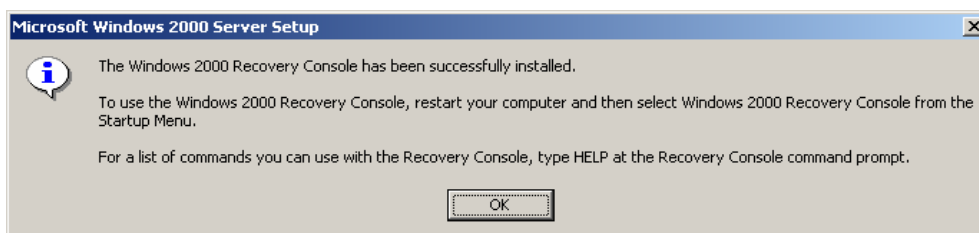
3. Click **Start** → **Run** → Type: CMD and click **OK** → switch to the CD-ROM drive, and type the following:



4. Click **Yes** to install the Recovery Console.



5. Click **OK**



The Windows 2000 Recovery Console will now appear as a choice during start up.

3. 2. Installing Microsoft Windows Server 2003

If during the design phase you documented to take advantage of the awesome benefits of Windows Server 2003 then we are finally ready to get down and dirty and break out that new hardware and install some software. For the first server you will want to document every step you take in order to create installation procedure documentation. This documentation will be the blue print for all future server builds and serve as a portion of a disaster recovery plan.

The following is an example of the installation procedures needed for Windows Server 2003:

1. From the desired server insert the Microsoft Windows Server 2003 CDROM and press any key to boot from it.
2. Hit the **Enter** button on the keyboard to continue.

```
Windows Server 2003, Enterprise Edition Setup

Welcome to Setup.

This portion of the Setup program prepares Microsoft(R)
Windows(R) to run on your computer.

• To set up Windows now, press ENTER.
• To repair a Windows installation using
  Recovery Console, press R.
• To quit Setup without installing Windows, press F3.

ENTER=Continue  R=Repair  F3=Quit
```

3. Hit the **F8** key to agree to the license and continue.

```
Windows Licensing Agreement

END-USER LICENSE AGREEMENT FOR
MICROSOFT SOFTWARE

MICROSOFT WINDOWS SERVER 2003, STANDARD EDITION
MICROSOFT WINDOWS SERVER 2003, ENTERPRISE EDITION

PLEASE READ THIS END-USER
LICENSE AGREEMENT ("EULA") CAREFULLY. BY
INSTALLING OR USING THE SOFTWARE THAT
ACCOMPANIES THIS EULA ("SOFTWARE"), YOU AGREE
TO THE TERMS OF THIS EULA. IF YOU DO NOT
AGREE, DO NOT USE THE SOFTWARE AND, IF
APPLICABLE, RETURN IT TO THE PLACE OF
PURCHASE FOR A FULL REFUND.

THIS SOFTWARE DOES NOT TRANSMIT ANY
PERSONALLY IDENTIFIABLE INFORMATION FROM YOUR
SERVER TO MICROSOFT COMPUTER SYSTEMS WITHOUT
YOUR CONSENT.

1. GENERAL. This EULA is a legal agreement between you (either
an individual or a single entity) and Microsoft Corporation
("Microsoft"). This EULA governs the Software, which
includes computer software (including online and electronic
documentation) and any associated media and printed
materials. This EULA applies to updates, supplements, add
-on components, and Internet-based services components of

F8=I agree  ESC=I do not agree  PAGE DOWN=Next Page
```

4. Select the drive you want to create the system partition on and hit **Enter** to continue or **C** to create a partition and save the remaining space for a “data” partition.

```
Windows Server 2003, Enterprise Edition Setup

The following list shows the existing partitions and
unpartitioned space on this computer.

Use the UP and DOWN ARROW keys to select an item in the list.

  • To set up Windows on the selected item, press ENTER.
  • To create a partition in the unpartitioned space, press C.
  • To delete the selected partition, press D.

8190 MB Disk 0 at Id 0 on bus 0 on atapi [MBR]
  Unpartitioned space 8189 MB

ENTER=Install C=Create Partition F3=Quit
```

5. Select **Format the partition using NTFS file system (Quick)** and hit **Enter** to continue.

```
Windows Server 2003, Enterprise Edition Setup

A new partition for Windows has been created on
8190 MB Disk 0 at Id 0 on bus 0 on atapi [MBR].
This partition must now be formatted.

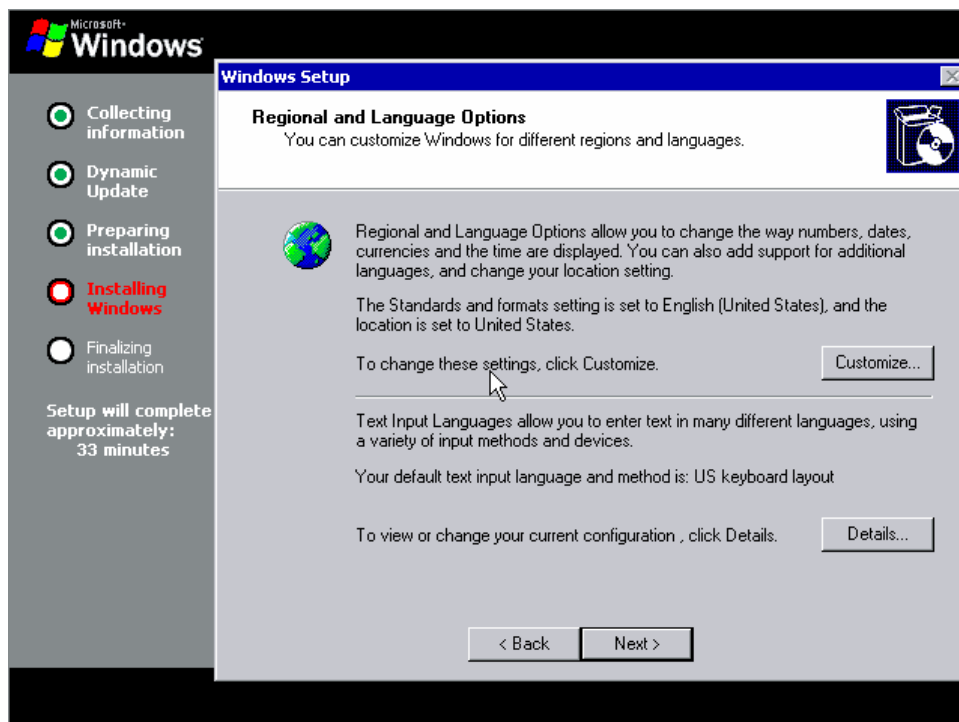
From the list below, select a file system for the new partition.
Use the UP and DOWN ARROW keys to select the file system you want,
and then press ENTER.

If you want to select a different partition for Windows,
press ESC.

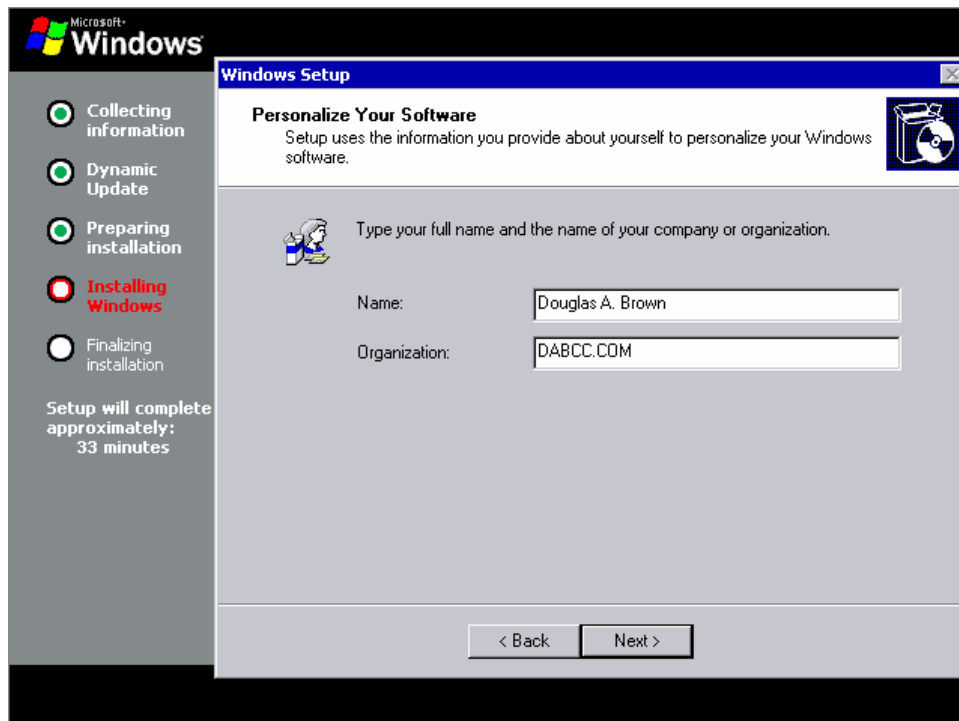
Format the partition using the NTFS file system (Quick)
Format the partition using the FAT file system (Quick)
Format the partition using the NTFS file system
Format the partition using the FAT file system

ENTER=Continue ESC=Cancel
```

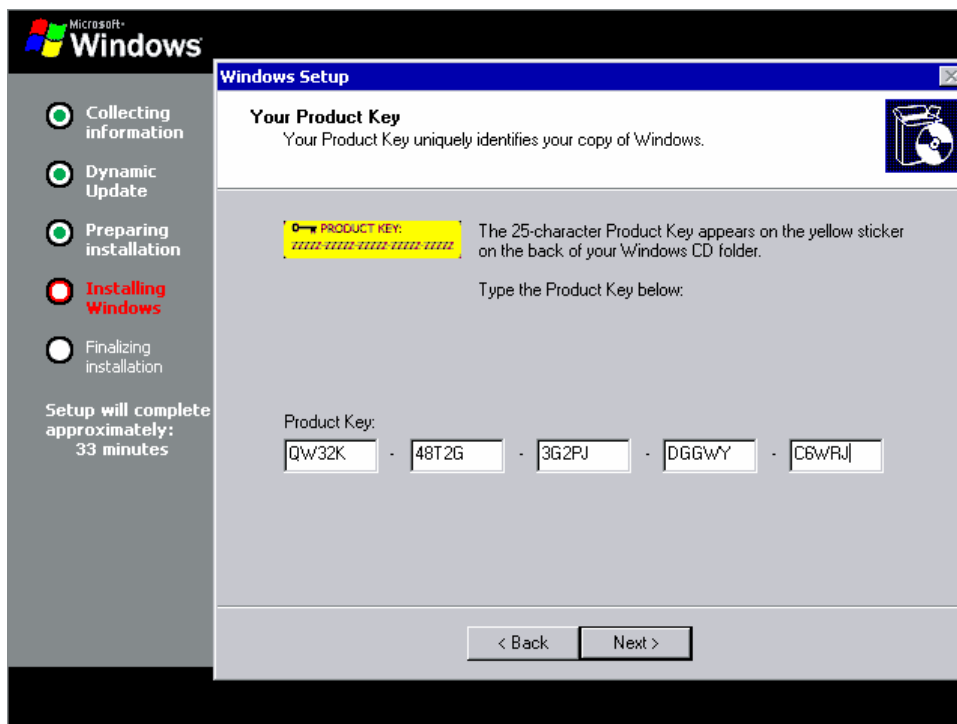
6. Click **Next** to continue.



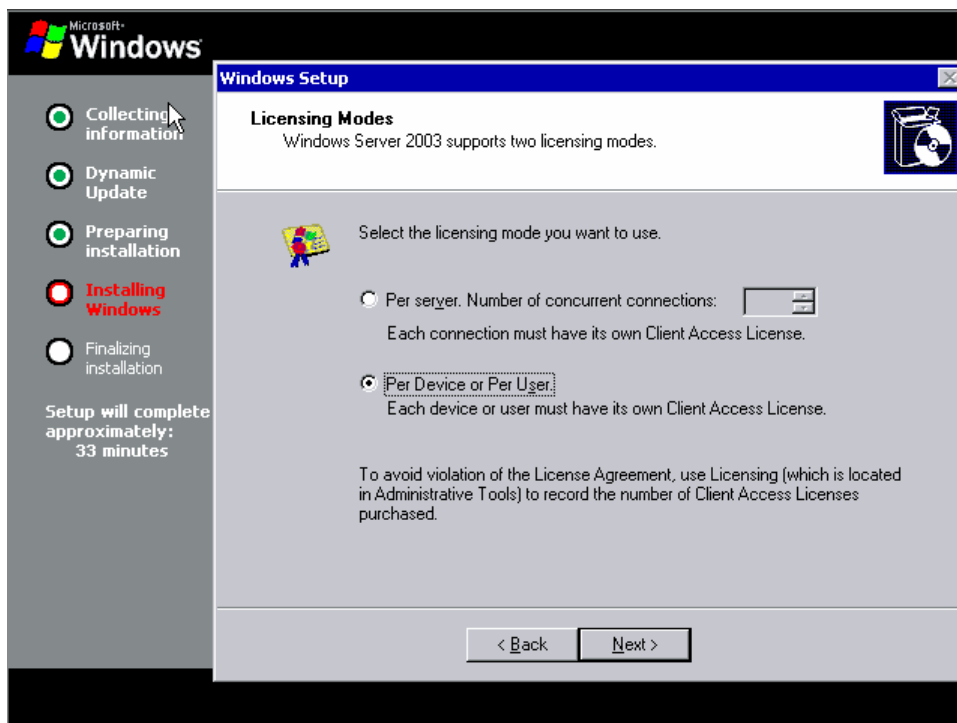
7. Enter your name and organization and click **Next** to continue.



8. Enter the product key and click **Next** to continue.



9. Select the appropriate licensing mode and click **Next** to continue.

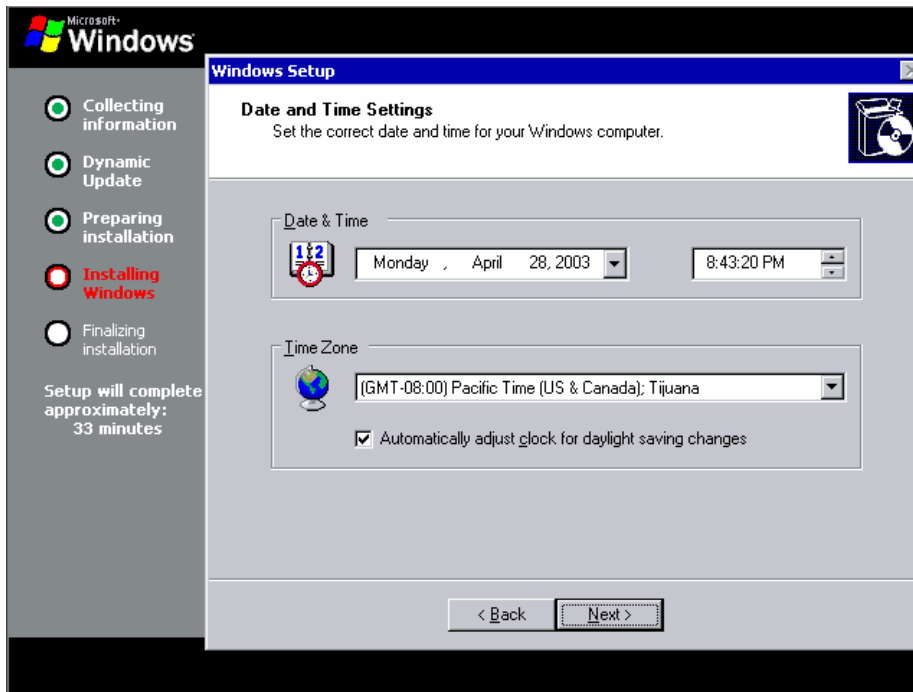


10. Enter the computer name and administrator password and click **Next** to continue.

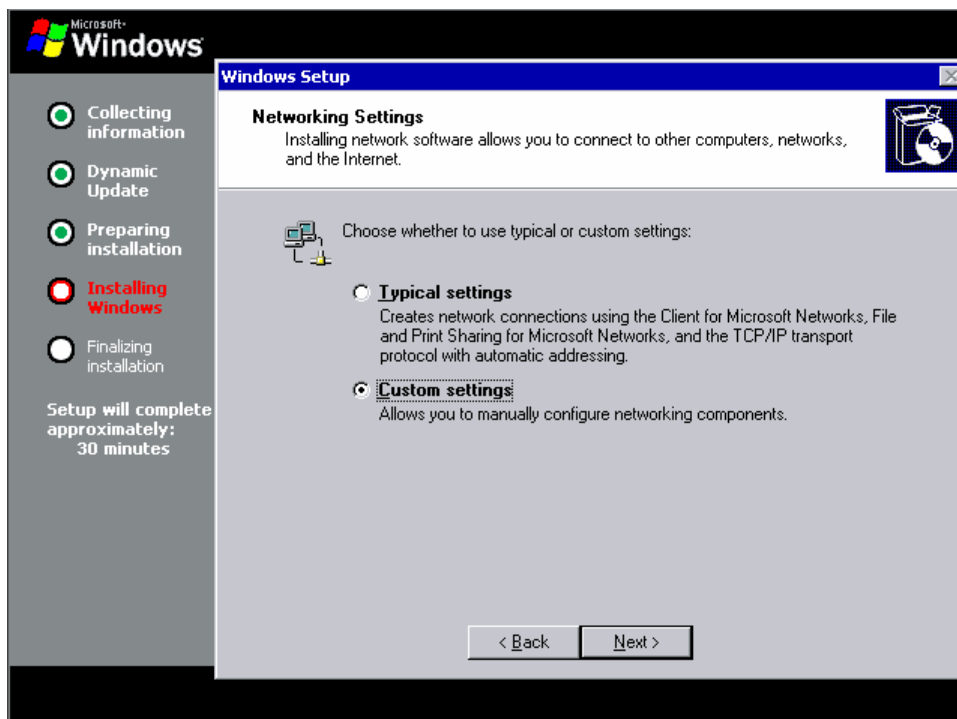
Note: I recommend that the Administrator account password is at least nine characters long and that it includes at least one punctuation mark or non-printing ASCII character in the first seven characters. In addition, the Administrator account password should be unique from server to server.



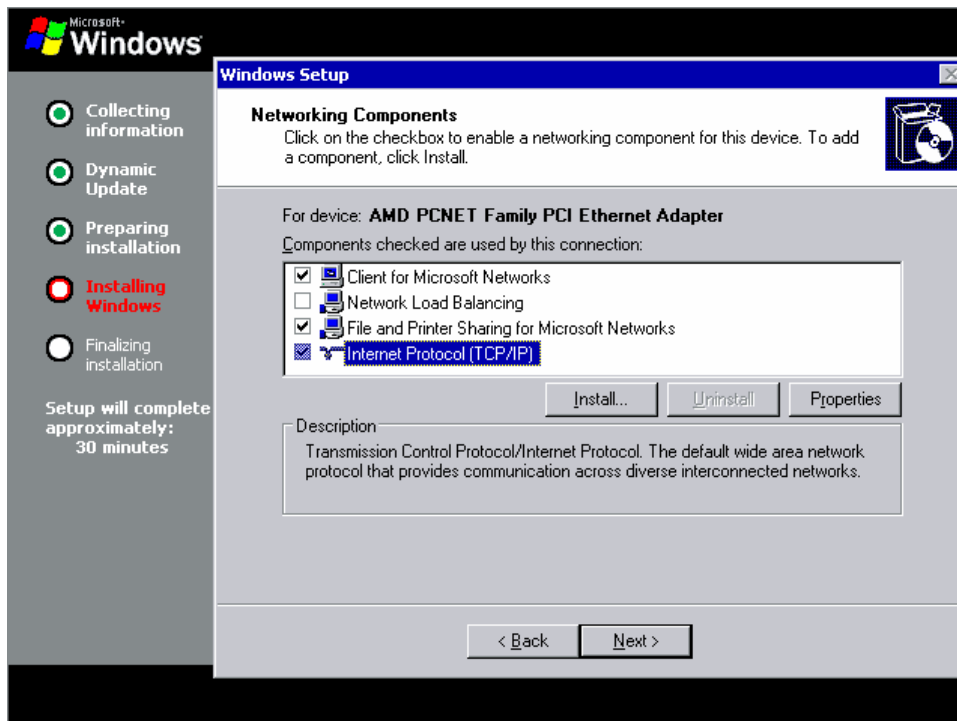
11. Enter the appropriate date, time and time zone and click **Next** to continue.



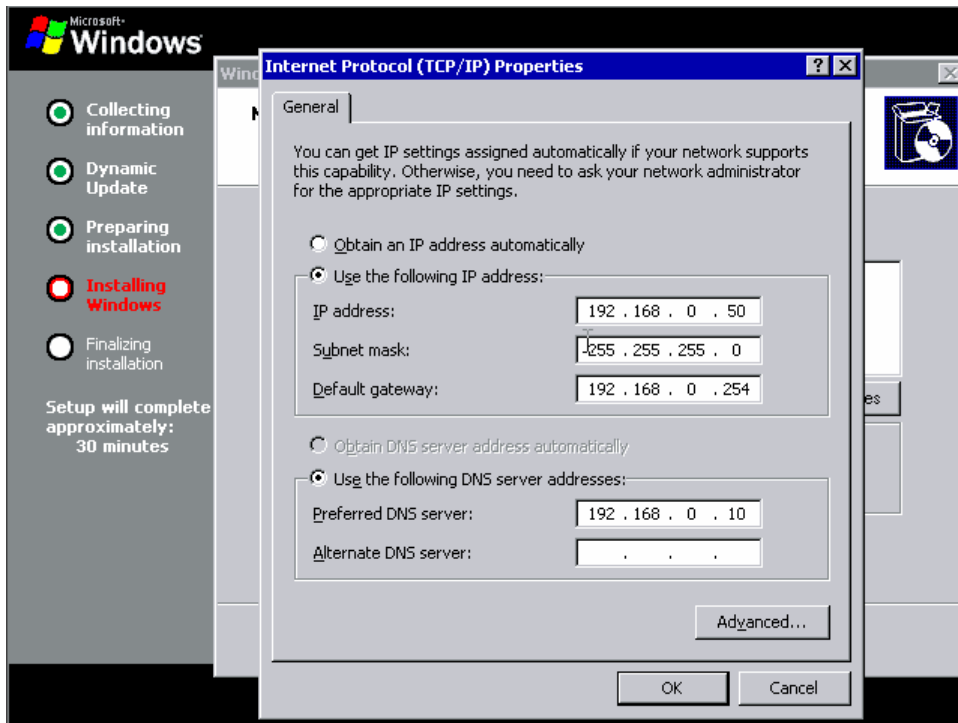
12. Click to select the **Custom settings** radio button and click **Next** to continue.



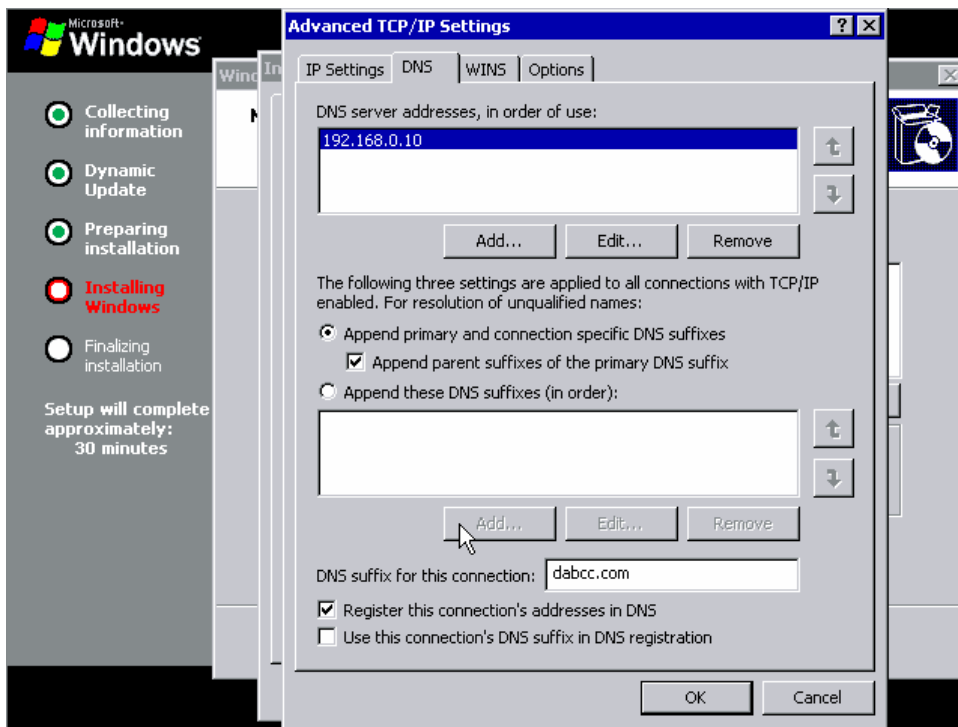
13. Double click on **Internet Protocol (TCP/IP)**



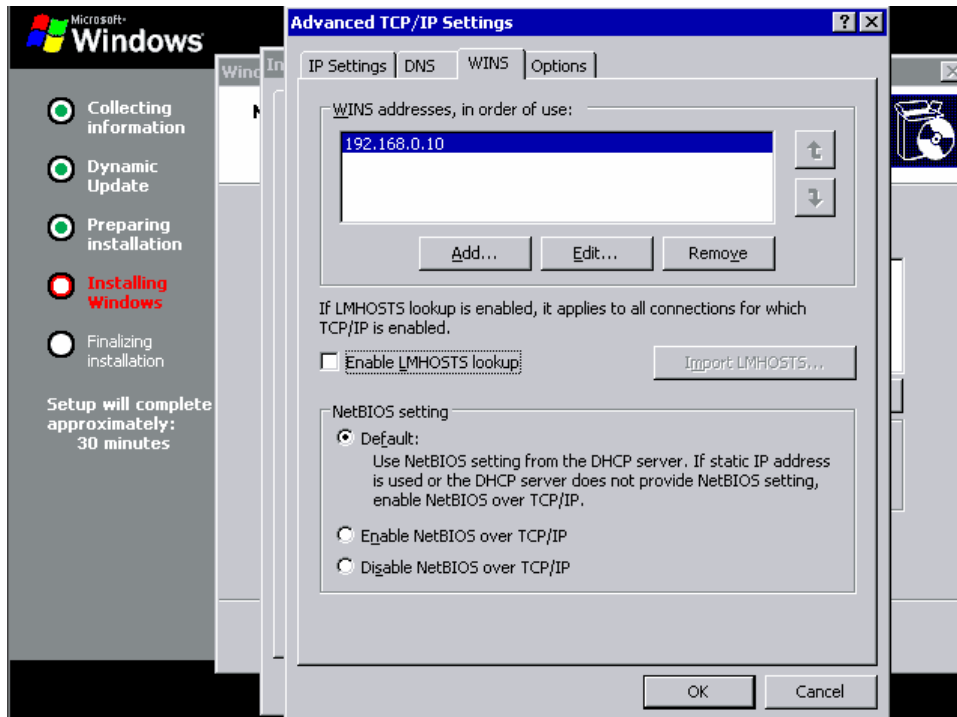
14. Enter the appropriate TCP/IP address information documented during the design phase. Click the **Advanced** button.



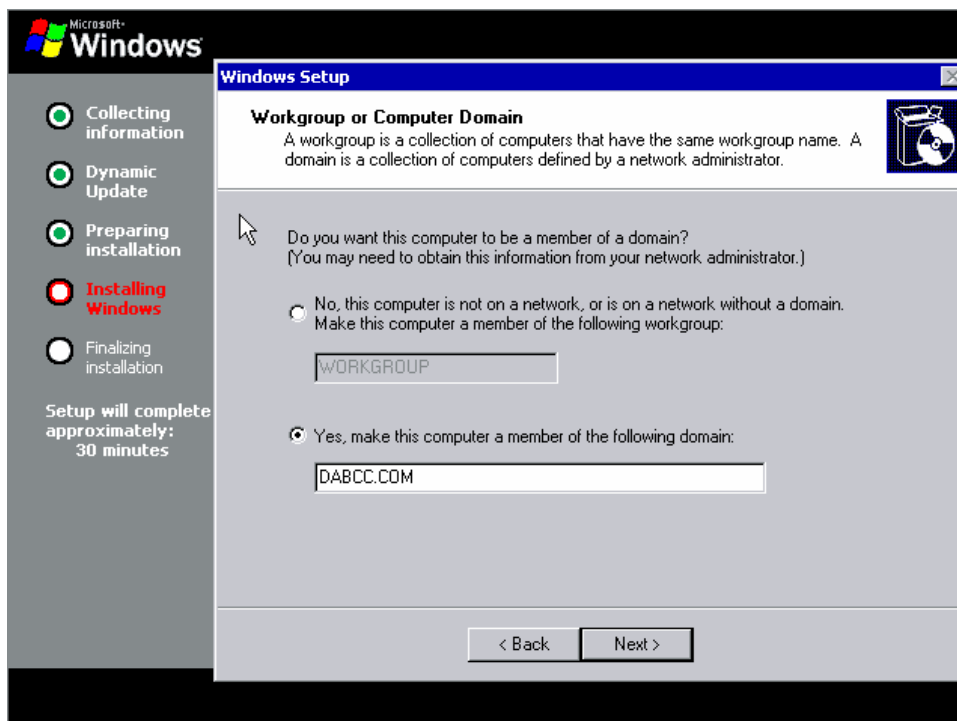
15. Click the **DNS** tab. It is required to enter the FQDN for the domain the server is a part of in the **DNS Suffix for this connection** text box.



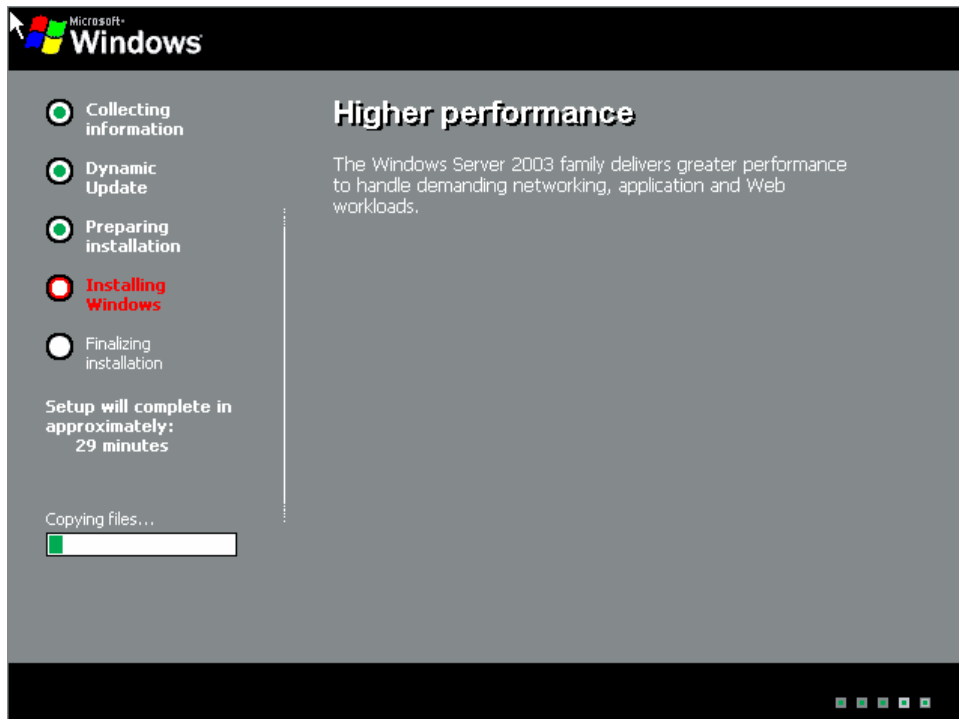
16. Click the **WINS** tab. Click the unselect the **Enable LMHOSTS lookup** checkbox. Click **Add** to enter any WINS servers on the network. When finished click **OK** to continue.



17. If the server will be joining a domain then enter the domain name and click **Next** to continue.

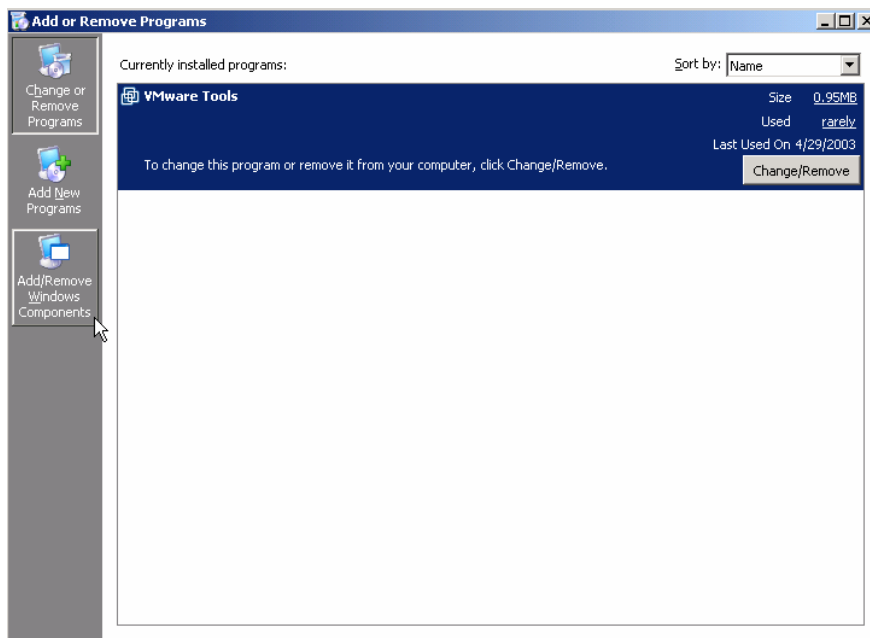


18. Setup will now continue with the installation and it will reboot the server when finished.

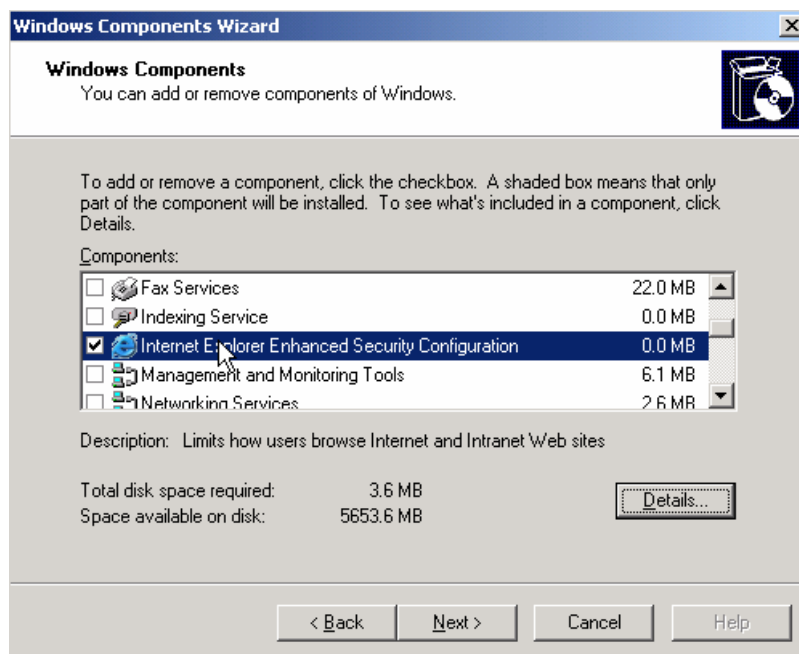


19. When installation is completed, login to the server.

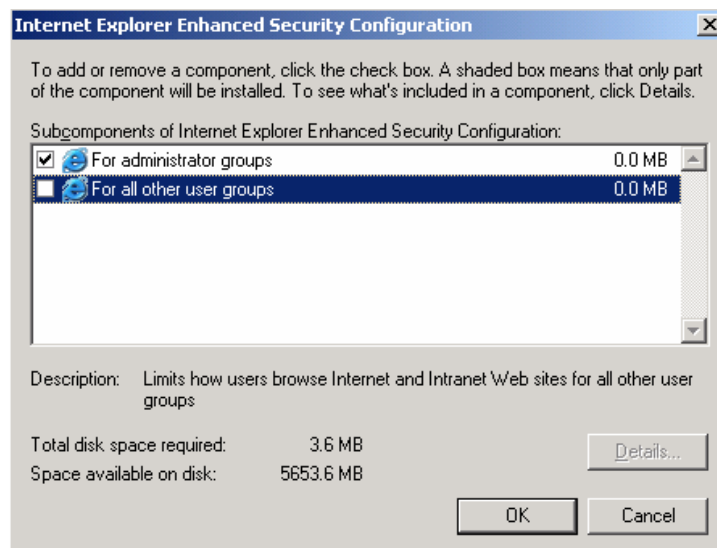
20. Click **Start** → click **Control Panel** → click **Add or Remove Windows Components**.



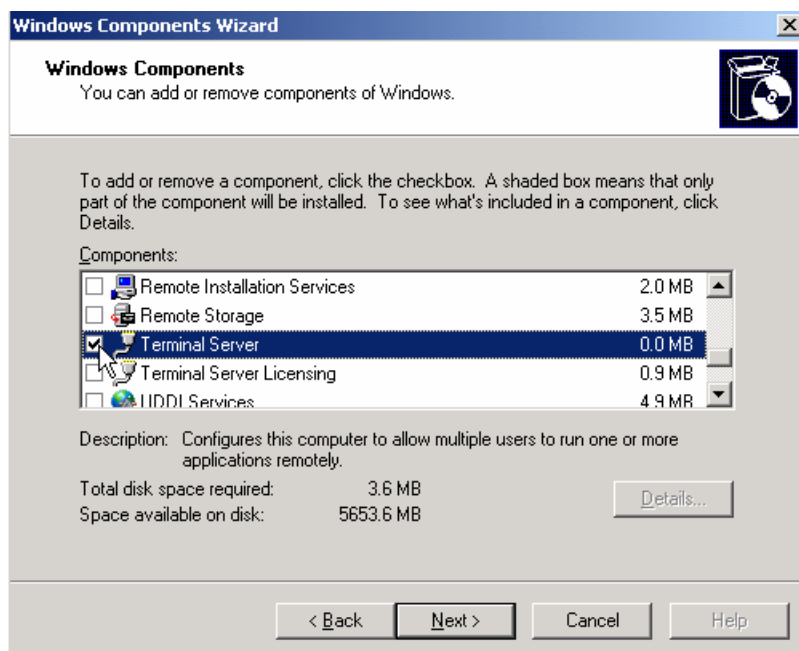
21. You are now prompted to select the components that Windows Server 2003 will use. For a Terminal Services environment I recommend making a few modifications.
22. Double click **Internet Explorer Enhanced Security Configuration**.



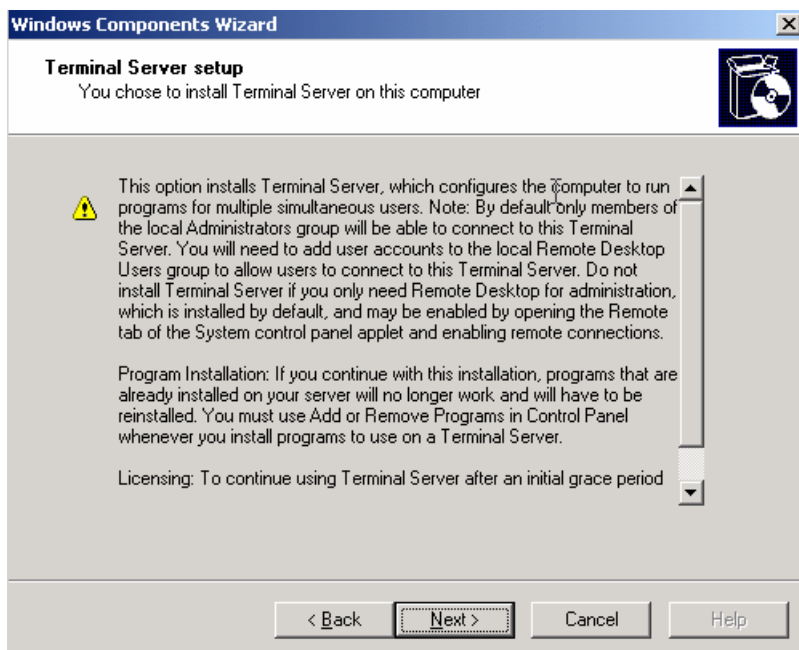
23. If you would like the ICA users to be able to browse the web then it is required to unselect **For all other user groups** checkbox. I would also uncheck the **For administrator groups** checkbox but do beware of malicious content. Click **OK** when finished.



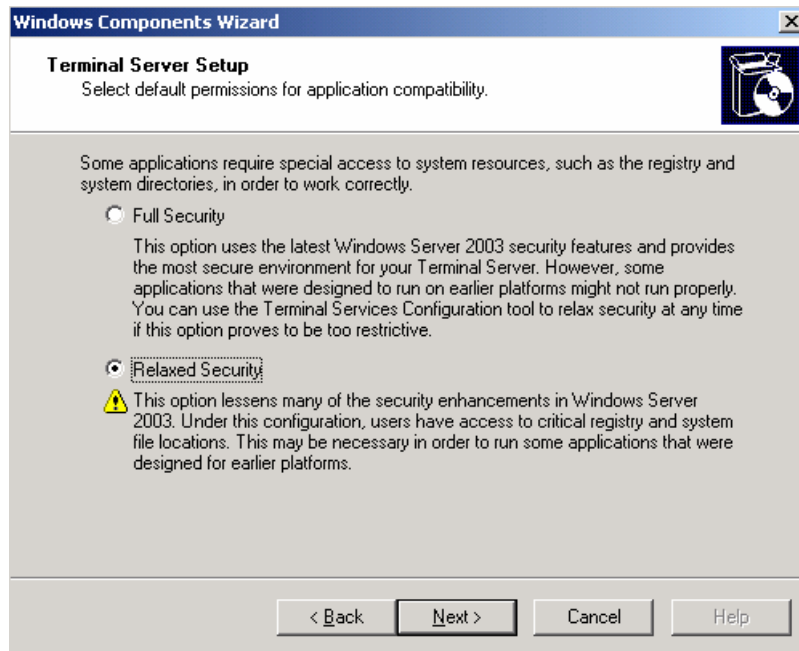
24. Click to select **Terminal Server** checkbox and click **Next** to continue.



25. Read the following and click **Next** to continue.



26. The next screen asks you to set the Windows Server 2003 security default permissions. If you will be installing legacy applications, and at this time most are, then you will really need to test your apps under the Full Security. (Q298372) Permissions Mode Behavior Under Terminal Services - <http://support.microsoft.com/default.aspx?scid=kb;en-us;298372>

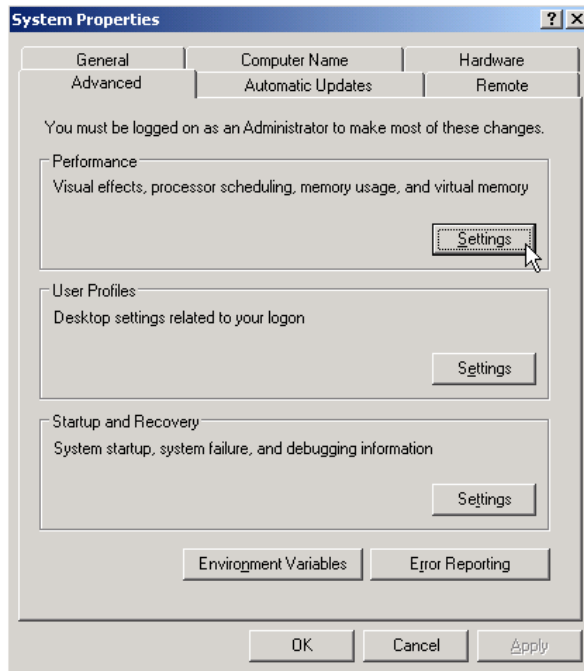


27. Click **Finish** to continue.

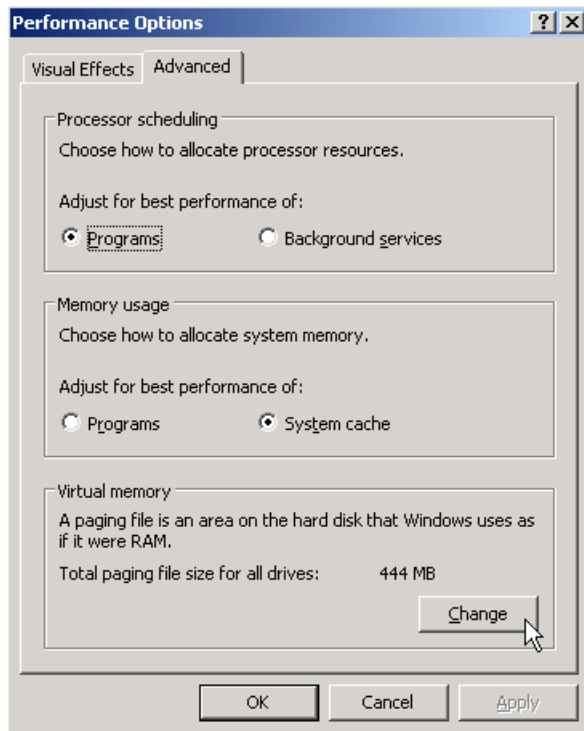


28. Click **Yes** to reboot to apply system changes.

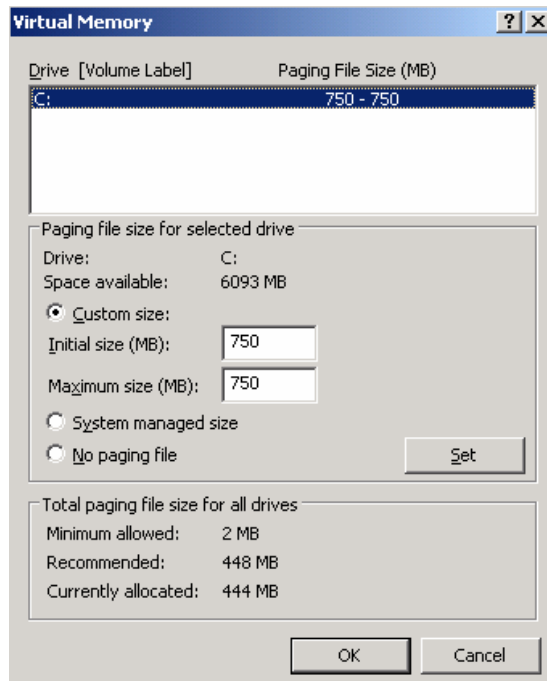
29. Login as administrator and click **Start** → click **Control Panel** → click on the **System** applet icon → click the **Advanced** tab and then click the **Settings** button.



30. Click to select the **Advanced** tab and then click the **Change** button.



31. In the **Initial size** and **Maximum size** text boxes you will want to set them to 2.5 times the amount of physical memory. Click the **Set** button to commit changes.



32. Click **OK** to accept the reminder to reboot for change to take affect and then click OK, click OK and click **Yes** to restart the system.
33. Install and configure and drivers. Microsoft recommends that you place the system into install mode if you will be installing any hardware or hardware drivers. Refer to "How to install applications" section later in this document for more information on install mode.

Click **Start** → click **Run** → then type: **change user /install** → click **OK**.

When you have completed the install of the new hardware you will need to place the system back in to Execute mode.

Click **Start** → click **Run** → then type: **change user /execute** → click **OK**.

34. Install Windows Server 2003 Service Pack 1.
<http://www.microsoft.com/downloads/details.aspx?amp;displaylang=en&familyid=22CFC239-337C-4D81-8354-72593B1C1F43&displaylang=en>
35. Run Microsoft Windows Update and install all Critical Updates and Service Packs, Root Certificates, Windows Compatibility Updates. <http://www.microsoft.com/windowsupdate>
- Note:** Remember to use change user /install mode for any updates. For more information on change user /install mode please refer to Installing Applications later on in this section.
36. Set the media type, duplex setting, and the speed that the NIC is required to use within the environment. Verify that the switch or managed switch is configured to the preferred setting. Never allow the NIC to "Auto detect" the settings as described in section **Throttling Port Speed and Duplex Settings**
- Click **Start** → click **Settings** → click **Network Connections** → right click on the LAN connection → click **Properties** → click **Configure** → click the **Advanced** Tab

The server is now ready for a clean installation of Citrix Presentation Server 4.0.

4. Citrix IMA Data Store Installation & Configuration

During the design phase of the project plan, you decided which server would act as the data store.

Below I have documented the following:

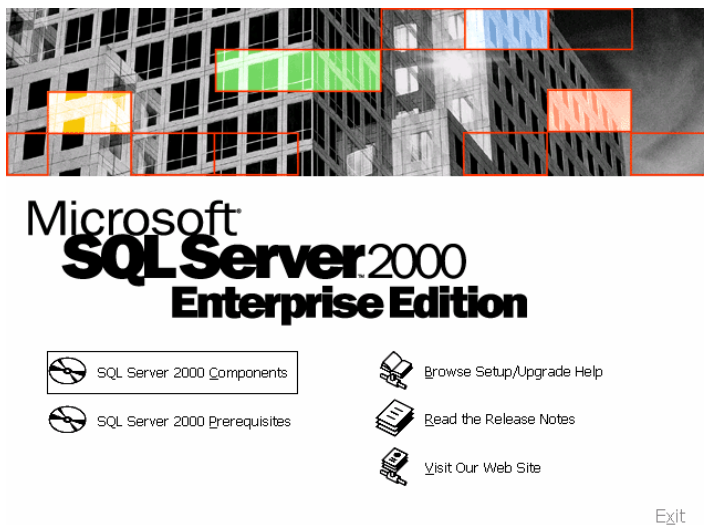
- If you will be utilizing a Microsoft SQL solution, follow the steps documented below.
- If you will be utilizing an Oracle solution, please refer to the Presentation Server 4.0 Server Advanced Concepts guide. (<http://support.citrix.com/article/CTX107059&searchID=12598738>)
- If you will be utilizing a Microsoft MSDE solution, follow the steps documented below.
- If you will be utilizing a Microsoft Access data store solution please refer to the Presentation Server 4.0 Server installation instructions below as the MS Access data store will be installed by the Presentation Server 4.0 Server installation on the first server in the farm.

4. 1. How to Install & Configure Microsoft SQL Server 2000

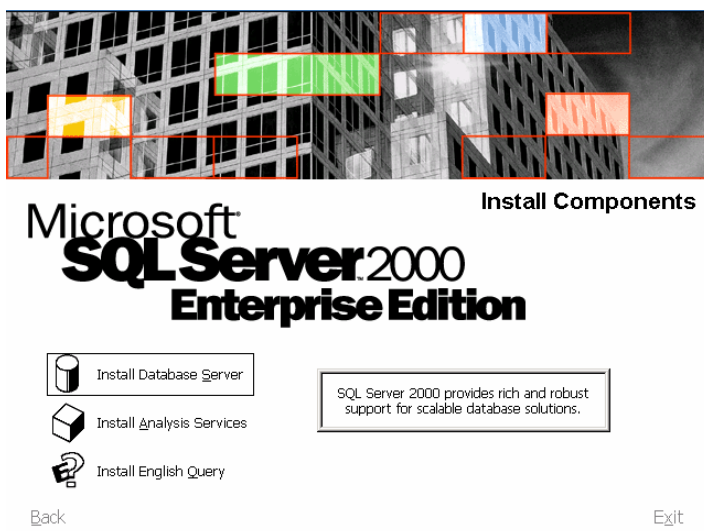
If you will be utilizing the Resource Manager summary database feature of Feature Release 2 and above, you will need to create a database on a SQL Server and of course, Presentation Server 4.0 Server itself requires a Data Store and thus SQL Server is a prime candidate. Knowing this, I recommend utilizing the following procedures to install Microsoft SQL Server 2000.

Note: As of publication of this document Microsoft SQL Server 005 Database has not been fully tested and supported as a valid database platform.

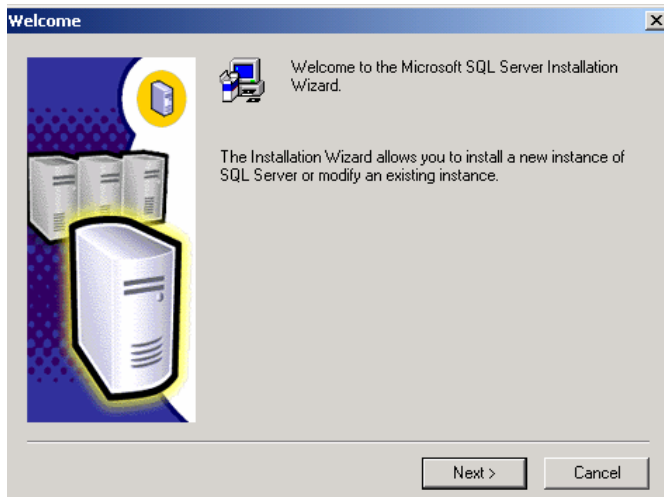
1. Insert the Microsoft SQL Server 2000 Standard or Enterprise Edition CD and click the **SQL Server 2000 Components** button.



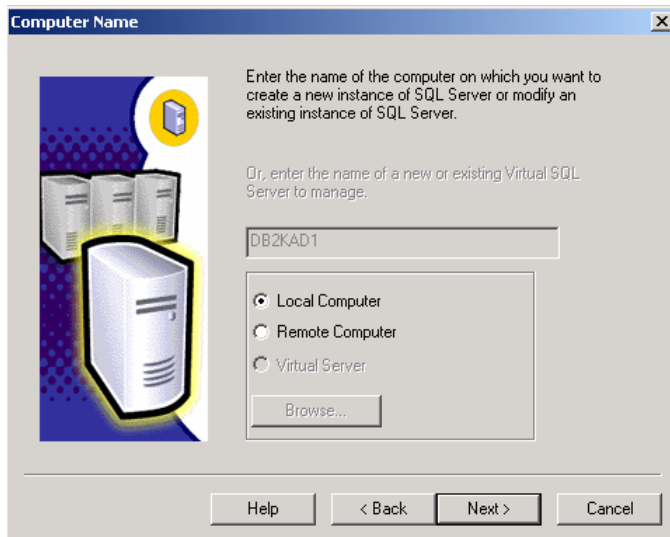
2. Click the **Install Database Server** button to continue.



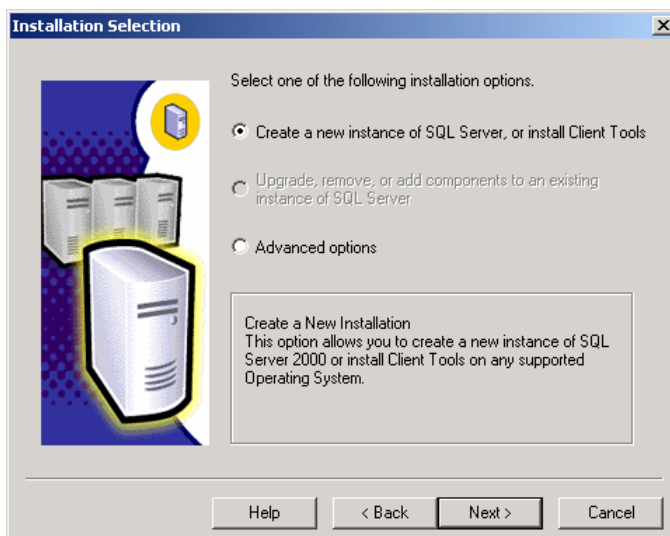
3. Click Next



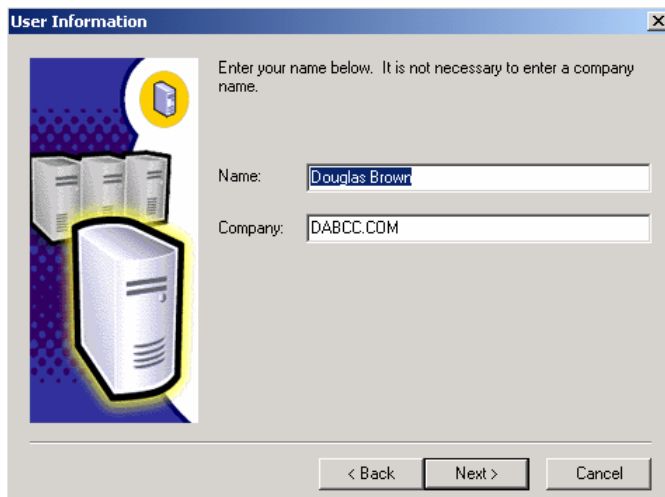
4. Click Next



5. Click Next to continue

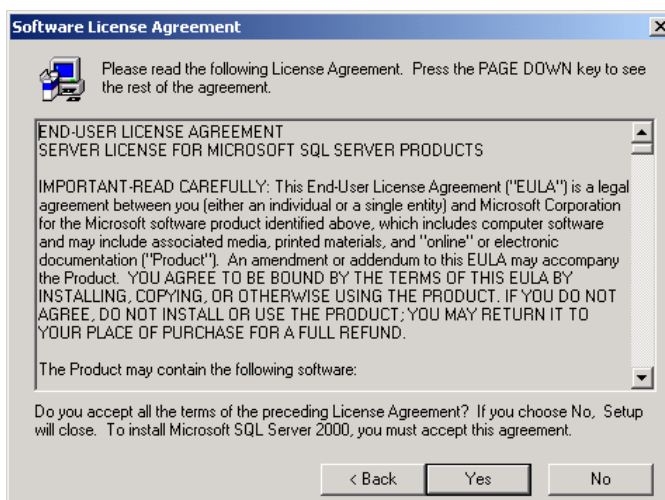


6. Enter your name and company and click **Next**.



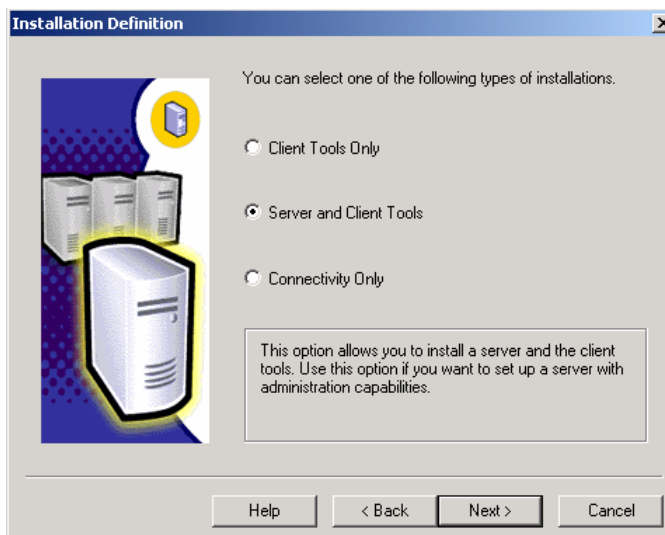
The "User Information" dialog box has a blue title bar. On the left is a graphic of server racks. The main area contains the text: "Enter your name below. It is not necessary to enter a company name." Below this are two text input fields. The "Name:" field contains "Douglas Brown" and the "Company:" field contains "DABCC.COM". At the bottom are three buttons: "< Back", "Next >", and "Cancel".

7. Click **Yes** to agree to the license agreement.

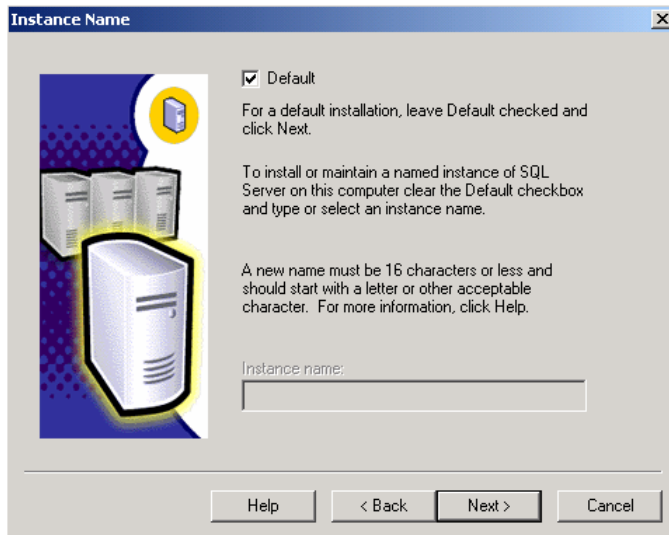
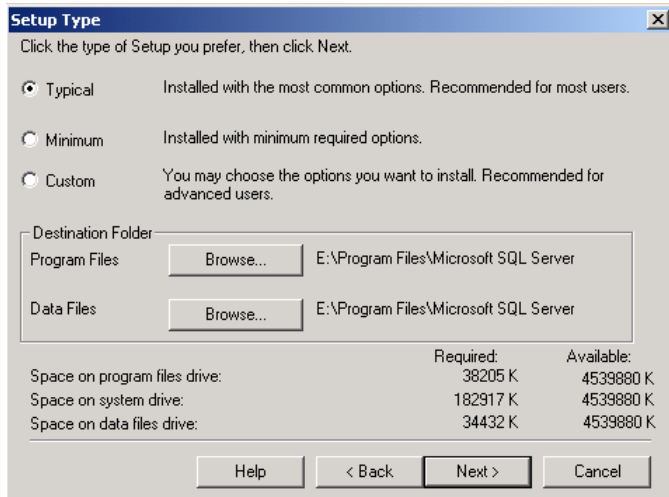
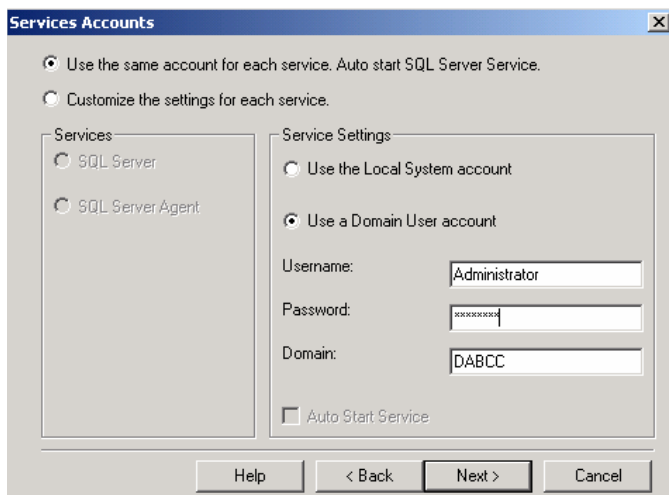


The "Software License Agreement" dialog box has a blue title bar. It contains a scrollable text area with the following text: "END-USER LICENSE AGREEMENT
SERVER LICENSE FOR MICROSOFT SQL SERVER PRODUCTS
IMPORTANT-READ CAREFULLY: This End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Microsoft Corporation for the Microsoft software product identified above, which includes computer software and may include associated media, printed materials, and "online" or electronic documentation ("Product"). An amendment or addendum to this EULA may accompany the Product. YOU AGREE TO BE BOUND BY THE TERMS OF THIS EULA BY INSTALLING, COPYING, OR OTHERWISE USING THE PRODUCT. IF YOU DO NOT AGREE, DO NOT INSTALL OR USE THE PRODUCT; YOU MAY RETURN IT TO YOUR PLACE OF PURCHASE FOR A FULL REFUND.
The Product may contain the following software:
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install Microsoft SQL Server 2000, you must accept this agreement." At the bottom are three buttons: "< Back", "Yes", and "No".

8. Click to select the **Server and Client Tools** radio button and click **Next**.

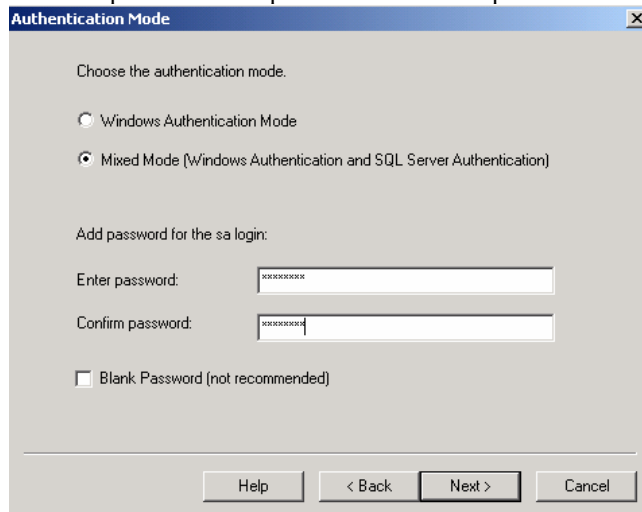


The "Installation Definition" dialog box has a blue title bar. On the left is a graphic of server racks. The main area contains the text: "You can select one of the following types of installations." Below this are three radio buttons: "Client Tools Only", "Server and Client Tools" (which is selected), and "Connectivity Only". Below the radio buttons is a text box with the text: "This option allows you to install a server and the client tools. Use this option if you want to set up a server with administration capabilities." At the bottom are four buttons: "Help", "< Back", "Next >", and "Cancel".

9. Click **Next**10. Click the **Browse** button(s) to change the destination folder for SQL Server and its databases.11. Click the **Use a Domain User Account** radio button and enter a username and password for the associated service account. Click **Next** when finished.

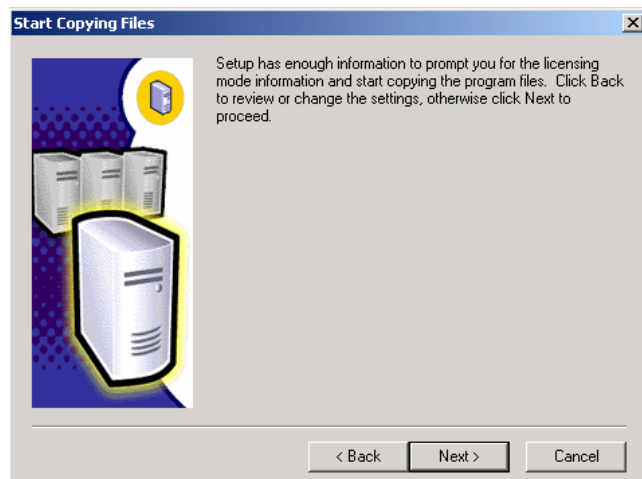
12. Click to select the **Mixed Mode** radio button and enter a password for the SA account. Click **Next** when finished.

Note: A password is required in order to keep with basic security best practices



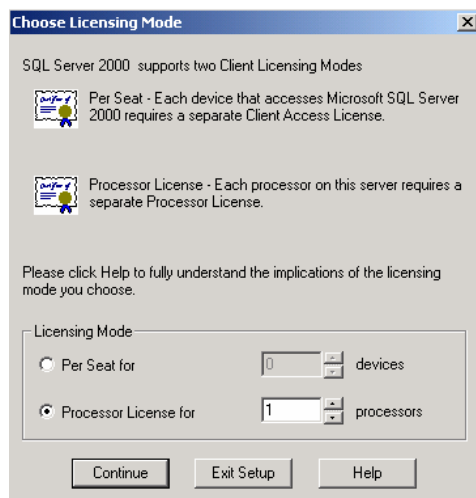
The 'Authentication Mode' dialog box has a title bar with a close button. The main area contains the text 'Choose the authentication mode.' followed by two radio buttons: 'Windows Authentication Mode' (unselected) and 'Mixed Mode (Windows Authentication and SQL Server Authentication)' (selected). Below this is the text 'Add password for the sa login:' followed by two text boxes labeled 'Enter password:' and 'Confirm password:', both containing masked characters. At the bottom left is a checkbox labeled 'Blank Password (not recommended)' which is unchecked. At the bottom right are four buttons: 'Help', '< Back', 'Next >', and 'Cancel'.

13. Click **Next**.



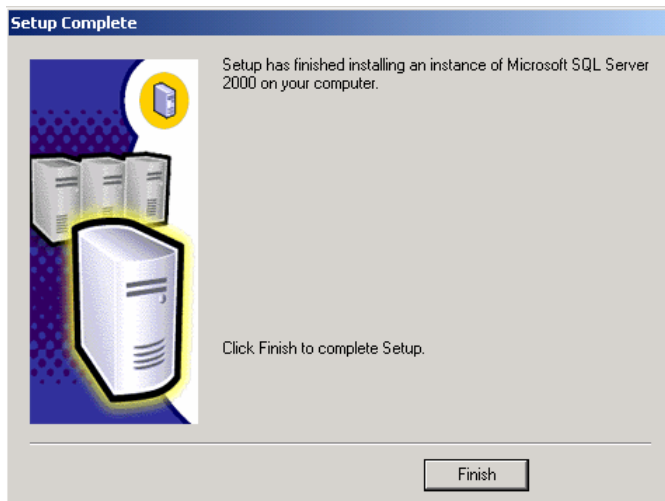
The 'Start Copying Files' dialog box has a title bar with a close button. On the left is a graphic showing several server racks. On the right is a text box with the message: 'Setup has enough information to prompt you for the licensing mode information and start copying the program files. Click Back to review or change the settings, otherwise click Next to proceed.' At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

14. Enter the appropriate Microsoft SQL Server licenses and Click **Continue** when finished.



The 'Choose Licensing Mode' dialog box has a title bar with a close button. The main area contains the text 'SQL Server 2000 supports two Client Licensing Modes'. Below this are two options, each with a small icon and a description: 'Per Seat - Each device that accesses Microsoft SQL Server 2000 requires a separate Client Access License.' and 'Processor License - Each processor on this server requires a separate Processor License.' Below these is the text 'Please click Help to fully understand the implications of the licensing mode you choose.' At the bottom is a section titled 'Licensing Mode' containing two radio buttons: 'Per Seat for' (unselected) and 'Processor License for' (selected). The 'Per Seat for' option has a text box with '0' and the word 'devices'. The 'Processor License for' option has a text box with '1' and the word 'processors'. At the bottom are three buttons: 'Continue', 'Exit Setup', and 'Help'.

15. Click **Finish**



You have now successfully installed Microsoft SQL Server 2000 and are ready to apply any service packs (SP4) and create the Presentation Server IMA database.

4. 1. 1 How to Install Service Pack 4 for Microsoft SQL Server 2000

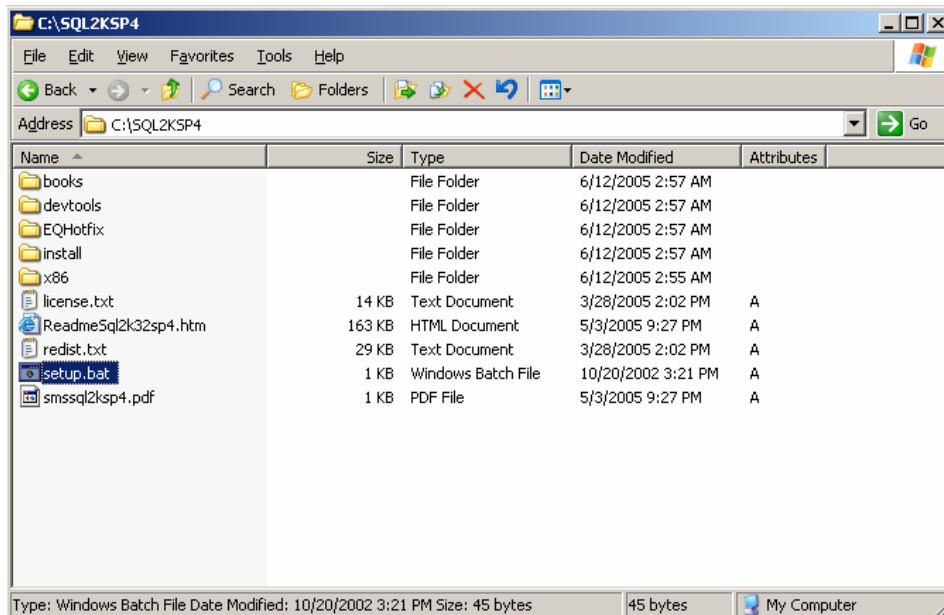
For security, stability and functionality reasons I recommend keeping current with the latest SQL Server service pack level.

To download the latest service pack please visit:

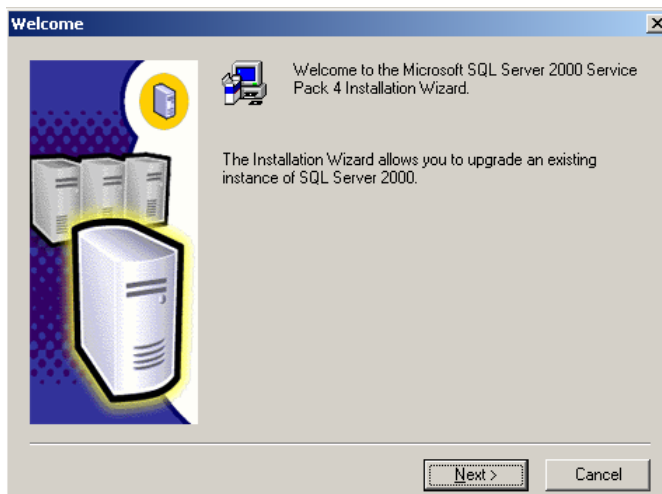
<http://www.microsoft.com/downloads/details.aspx?FamilyID=8E2DFC8D-C20E-4446-99A9-B7F0213F8BC5&displaylang=en>

The following details how to install Service Pack 4 for Microsoft SQL Server 2000

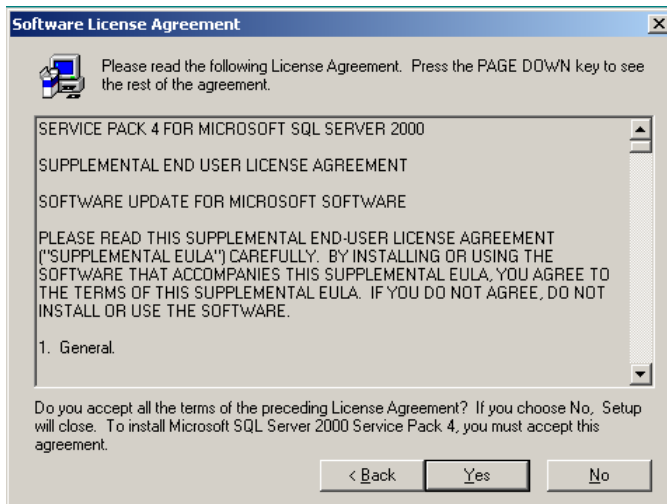
1. Extract the contents of the download and double click on **setup.bat** to install Service Pack 4.



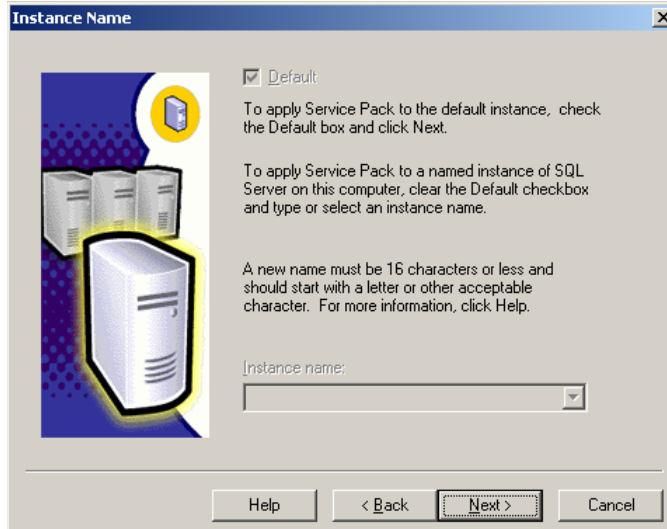
2. Click **Next** to continue.



3. Click **Yes** to agree to the license agreement.



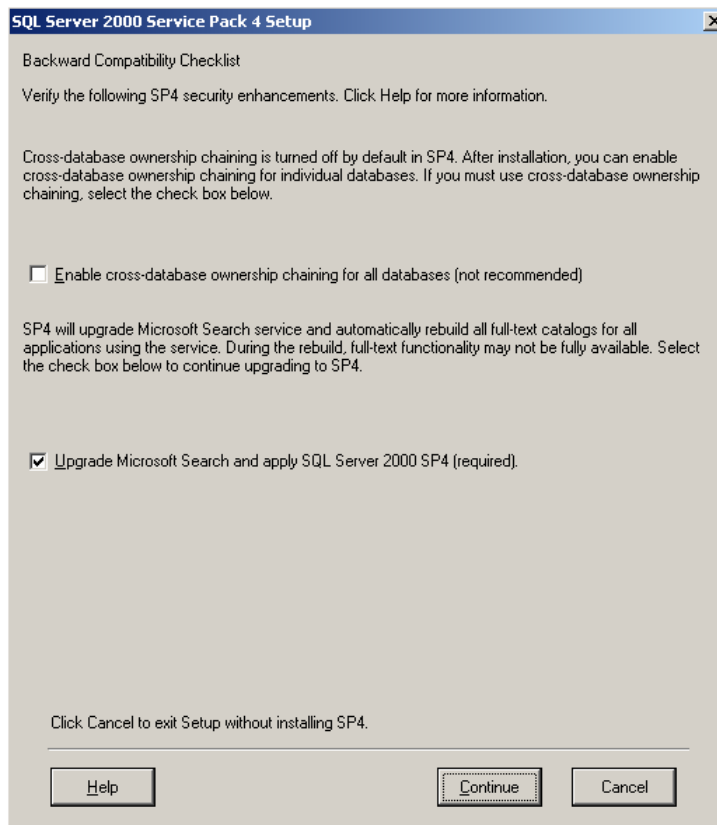
4. Select the instance you want to apply the service pack to and click **Next**.



5. Select the account that has access to update the SQL server and click **Next**.

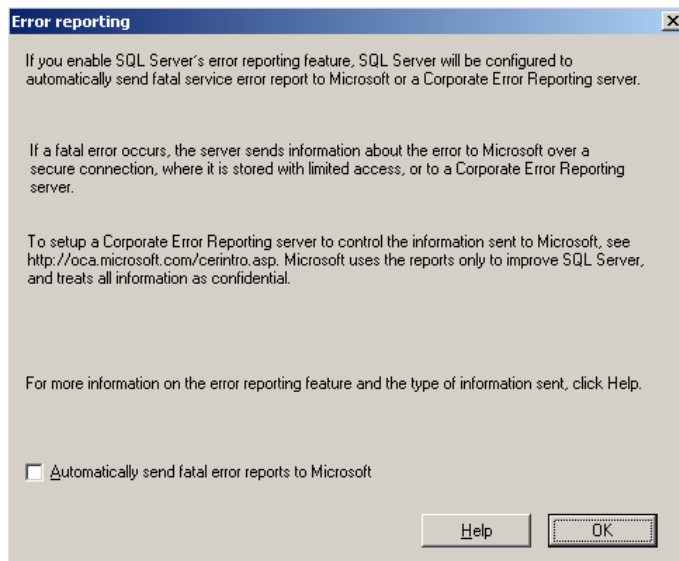


6. Verify the **Upgrade Microsoft Search and apply SQL Server 2000 SP4 (required)** check box is checked and click **Continue**.

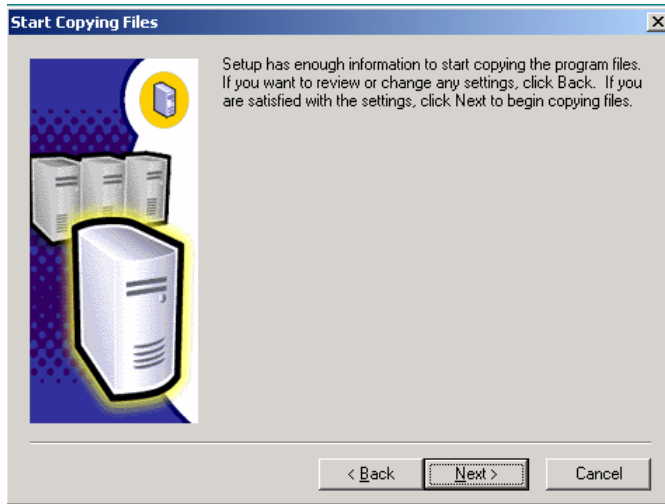


7. Click the **OK** button to continue.

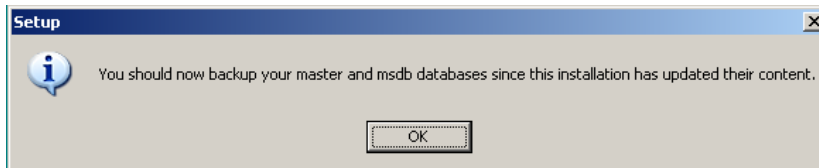
Note: I also recommend keeping the check box enabled so any possible issues you run in to will be sent to Microsoft so they can begin to addresses their bugs.



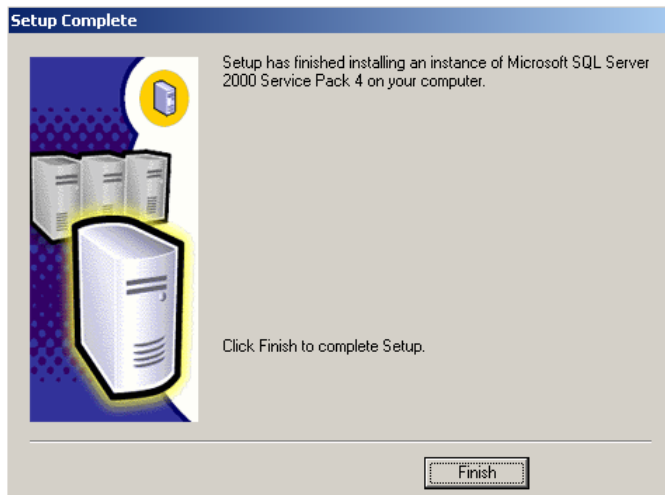
8. Click **Next** to start the installation.



9. Setup reminds you to backup the databases and prompts you to click **OK** to continue.



10. Click **Finish** to complete the installation of Microsoft SQL Server Service Pack 4.



4. 1. 2 How to Change the Default Login Authentication Mode

If you installed Microsoft SQL Server 2000 using the **Typical** installation option or via unattended installation procedures (sqlins.iss file) then you will need to set the default SQL authentication mode. By default Windows Authentication is the default security model therefore, when you try to connect a Presentation Server server to the newly created data store by using a standard SQL login like system administrator (SA), you will receive the following error message:

```
Unable to connect to server SERVER_NAME:
```

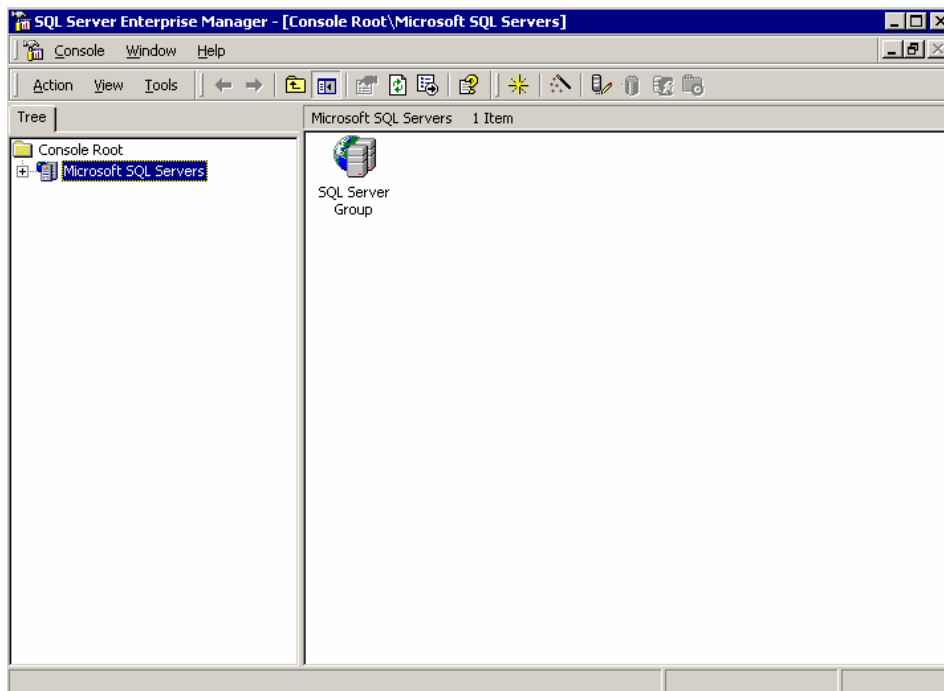
```
Server: Msg 18452, Level 16, State 1 [Microsoft][ODBC SQL Server Driver][SQL Server]  
Login failed for user 'sa'. Reason: Not associated with a trusted SQL Server connection.
```

Note: This behavior is different from Microsoft SQL Server 2000 and above. In SQL Server 2000, the default authentication mode is Mixed (Windows NT Authentication Mode and SQL Server Authentication).

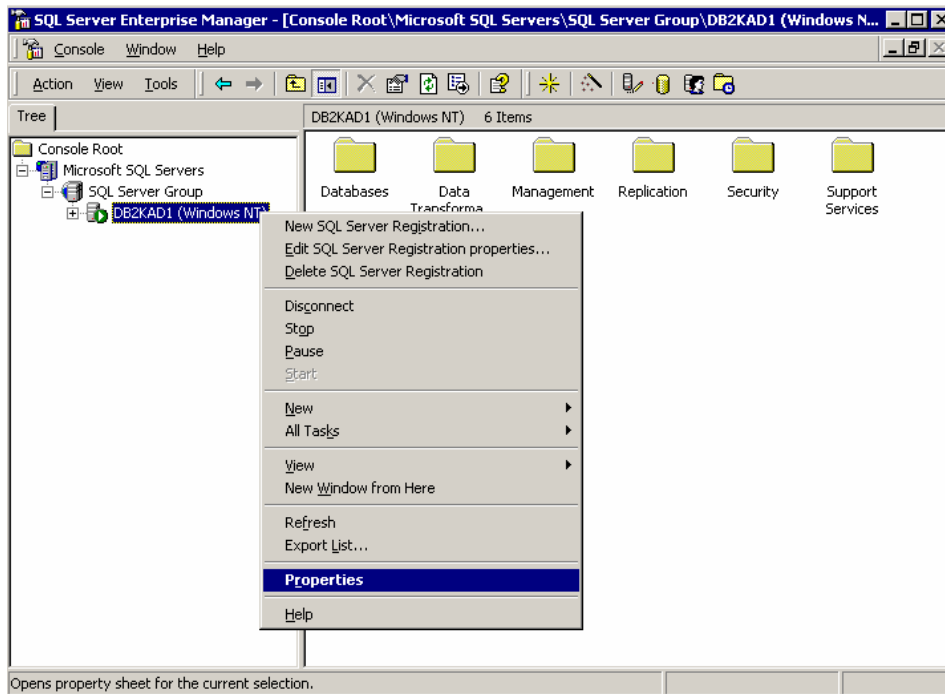
To prevent this behavior you will need to change the authentication mode to Mixed.

To change the authentication mode from Windows NT Authentication Mode (only) to Mixed Mode, use the following steps:

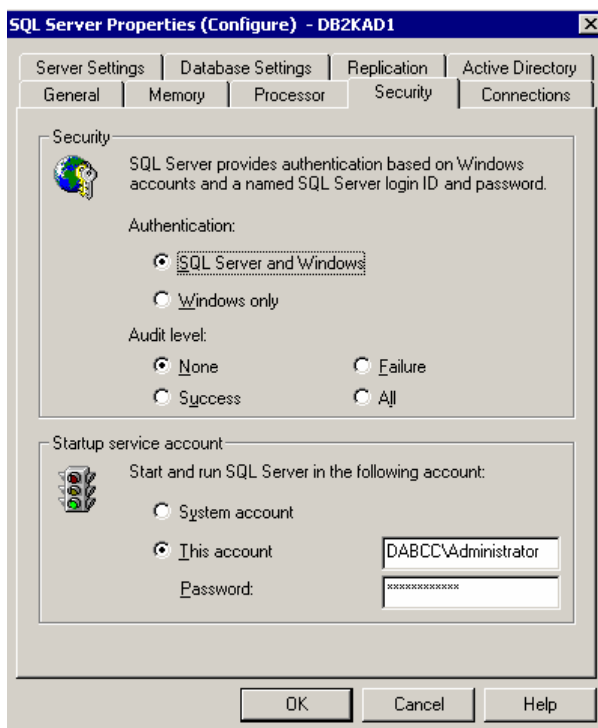
1. Run SQL Enterprise Manager on your SQL server (**Start → Programs → Microsoft SQL Server 2000 Server → Enterprise Manager**)



- Expand a **Server** group and right click a server name, and then click **Properties**.



- Click the **Security** tab and under Authentication, click the **SQL Server and Windows** radio button.



- Restart SQL Server in order for the changes to take effect.

Note: For additional information, please refer to the following Microsoft support articles:

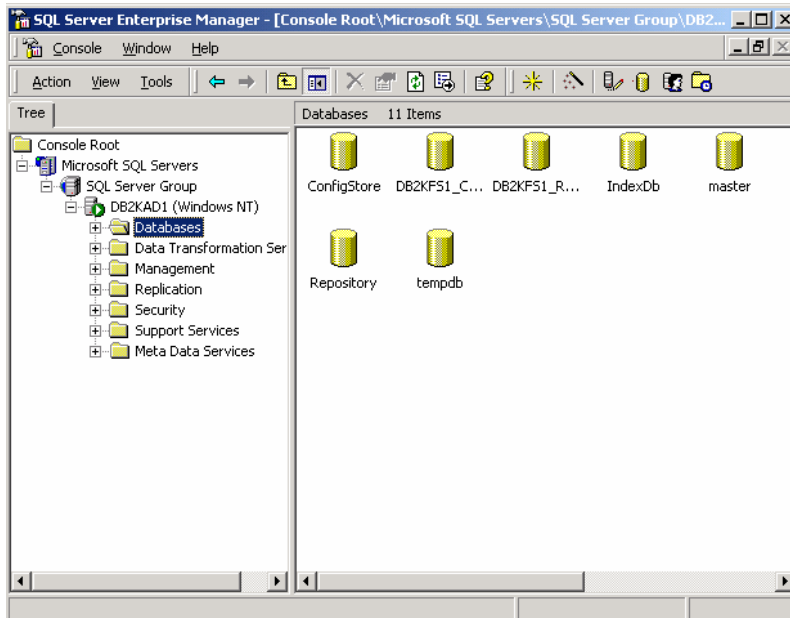
How to Change the Default Login Authentication Mode to SQL While Installing SQL Server 2000 Desktop Engine by Using Windows Installer (Q285097)

<http://support.microsoft.com/default.aspx?scid=kb;en-us;Q285097>

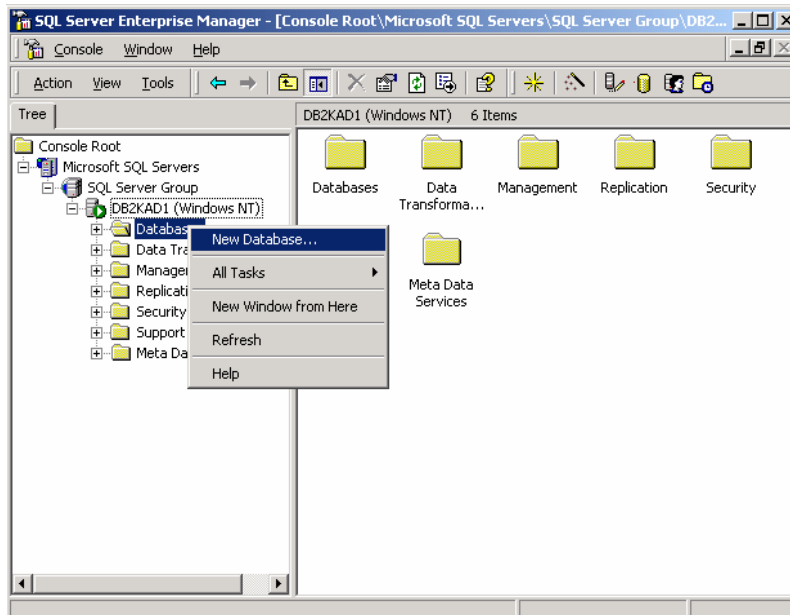
4. 1. 3 How to Create the Presentation Server Data Store with SQL Server 2000

The following table documents how to create a data store database with Microsoft SQL Server 2000

1. Click **Start** → click **Programs** → click **Microsoft SQL Server** → click **Enterprise Manager**).
2. In the Enterprise Manager's left pane, expand the tree until you reach the folder level.



3. Right-click the **Databases** folder and choose **New Database**



4. A dialog box appears. In the **Name** box, enter a name and click **OK**.

The screenshot shows the 'Database Properties - PSDB' dialog box with the 'General' tab selected. The 'Name' field contains 'PSDB'. Below it, the 'Database' section lists various properties, all of which are '(Unknown)'. The 'Backup' section shows 'Last database backup' and 'Last transaction log backup' as 'None'. The 'Maintenance' section shows 'Maintenance plan' as 'None' and 'Collation name' as '(Server default)'. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

Database	
Status:	(Unknown)
Owner:	(Unknown)
Date created:	(Unknown)
Size:	(Unknown)
Space available:	(Unknown)
Number of users:	(Unknown)

Backup	
Last database backup:	None
Last transaction log backup:	None

Maintenance	
Maintenance plan:	None
Collation name:	(Server default)

5. Click the Data Files tab and click the Space allocated (MB) text field associated with the new XP Datastore database and enter the space needed for the IMA database. For more information on IMA datastore file usage please refer to the Citrix MetaFrame Advanced Concepts guide found at <http://support.citrix.com/kb/entry!default.jspa?categoryID=619&externalID=CTX107059&fromSearchPage=true>

The screenshot shows the 'Database Properties - PSDB' dialog box with the 'Data Files' tab selected. The 'Database files' section contains a table with one row: 'PSDB_Data' at 'C:\Program Files\Micros...' with an 'Initial size (MB)' of 50 and 'Filegroup' 'PRIMARY'. Below the table is a 'Delete' button. The 'File properties' section has 'Automatically grow file' checked. Under 'File growth', 'By percent' is selected with a value of 10. Under 'Maximum file size', 'Unrestricted file growth' is selected. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

File Name	Location	Initial size (MB)	Filegroup
PSDB_Data	C:\Program Files\Micros...	50	PRIMARY

File properties

☒ Automatically grow file

File growth

☐ In megabytes: 1

☒ By percent: 10

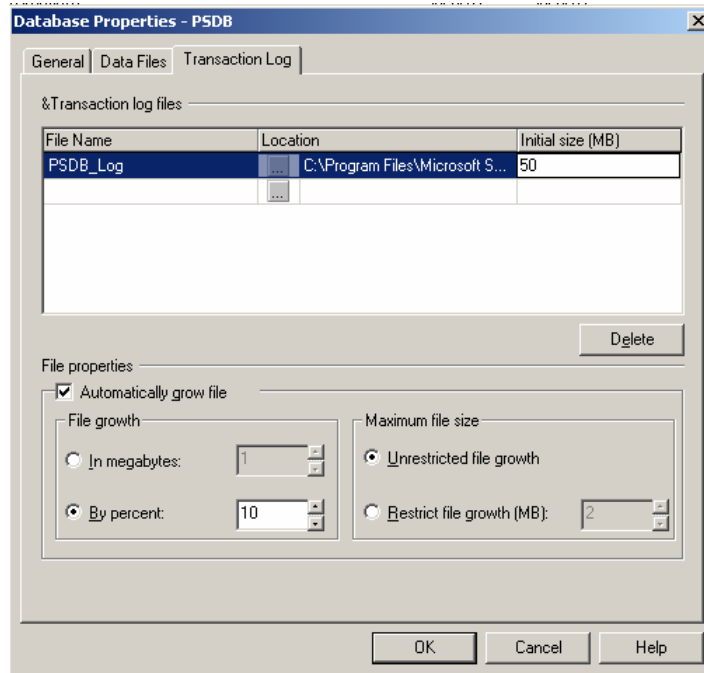
Maximum file size

☒ Unrestricted file growth

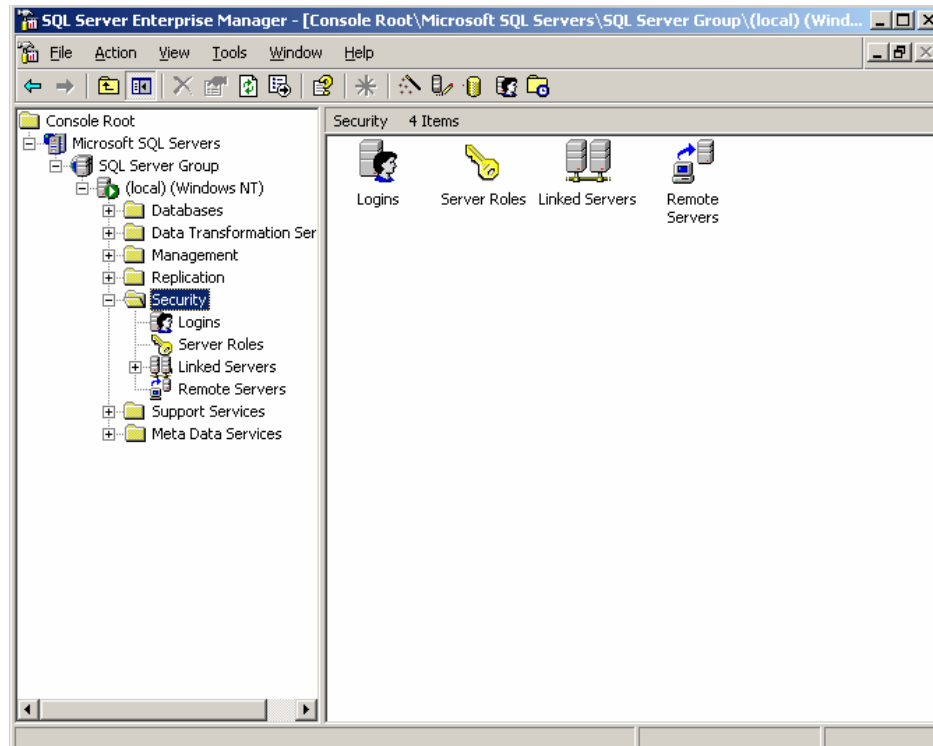
☐ Restrict file growth (MB): 2

- Click the **Transaction Log** tab and click the **Space allocated (MB)** text field associated with the new Presentation Server Datastore database and enter the space needed for the IMA database.

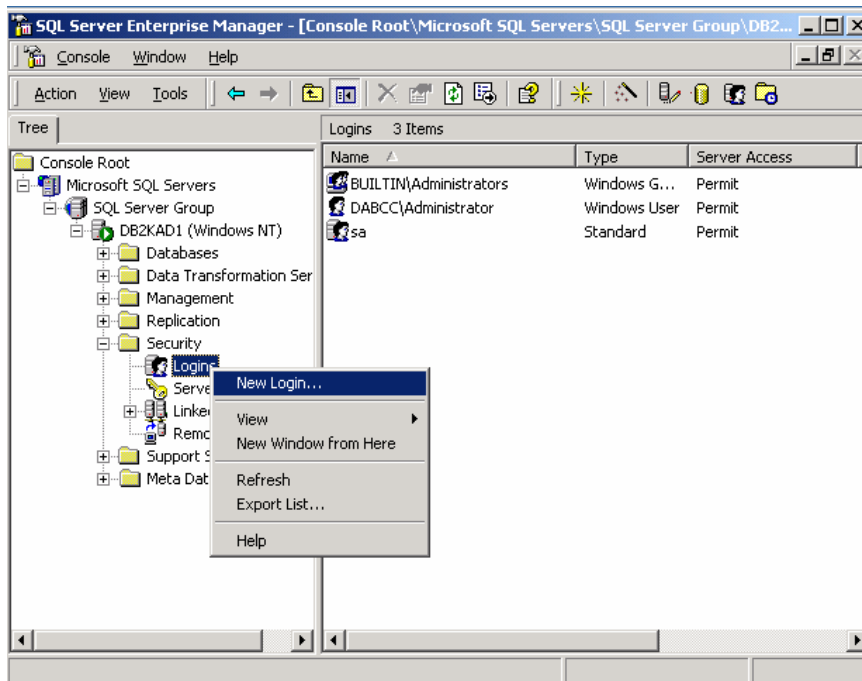
Note: For more information on IMA datastore file usage please refer to the Citrix MetaFrame Advanced Concepts guide found on www.citrix.com.



- Expand the **Security** folder



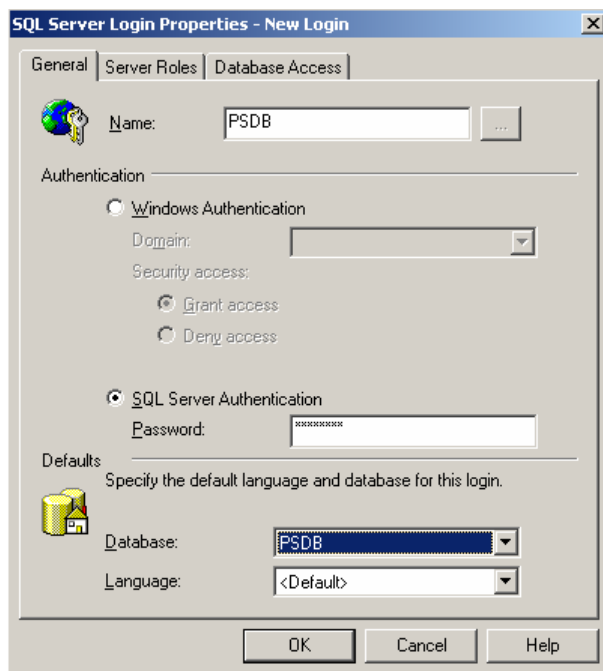
8. Right-click **Logins** and choose **New Login**.



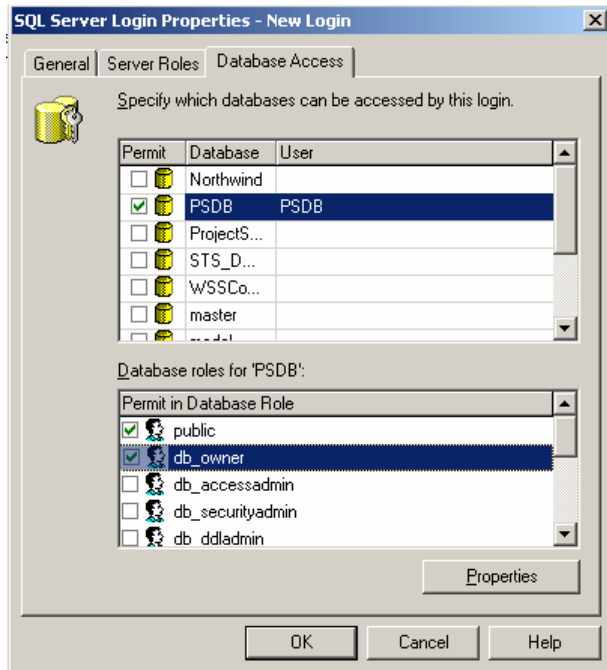
9. A dialog box appears with the General tab displayed. In the **Name** box, enter a name. Make note of the name because you will need to enter it during the Presentation Server 4.0 installation.

In the **Authentication** section of the **General** tab, click **SQL Server authentication** and enter a password. Remember the password. You will also want to document the username and password you choose as you must enter it during the Presentation Server 4.0 installation and any future installations.

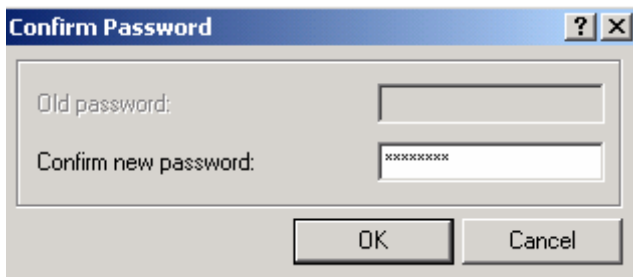
In the **Defaults** area of the **General** tab, change the **Database** to the name you specified in Step 4.



10. Click the **Database Access** tab. In the **Database** list, select the **database** name specified in Step 4. In the **Database Roles** list, select **DB_Owner**. Leave other selected roles checked.



11. Click **OK**. You are prompted to confirm your password. Doing so completes database creation.



4. 2. How to Install and Configure Microsoft SQL Desktop Edition (MSDE)

With the release of Feature Release 3 for Presentation Server 4.0 Server, Citrix has added the ability to utilize Microsoft SQL Server Desktop Edition (MSDE) for your server farm's data store. It is required to install and configure MSDE prior to running the Presentation Server 4.0 Setup program.

The following minimum requirements apply to the Presentation Server 4.0 server that hosts the MSDE database.

- Approximately 50MB of disk space for every 100 servers and 25 applications in the farm
- 32MB of additional RAM if the Presentation Server server will also host connections
- 70MB of disk space for the MSDE database

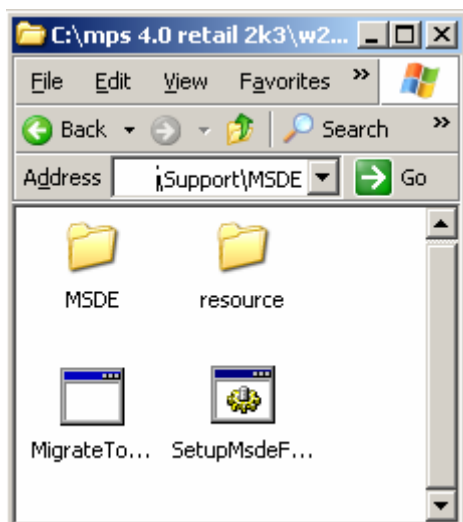
Note: Presentation Server 4.0 configures MSDE to use Windows NT authentication for the MSDE database. For security reasons, Microsoft SQL Server authentication is not supported.

MSDE can be installed with either one of the following methods:

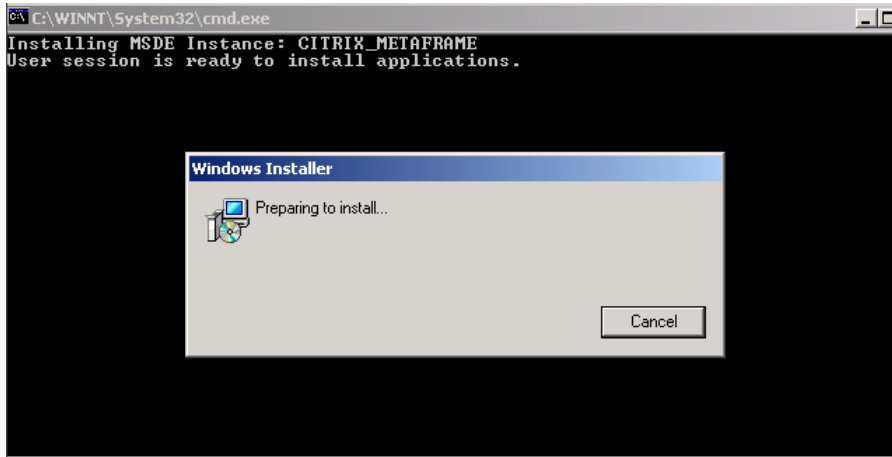
- **SetupMsdeForMetaFrame.cmd** - Use this method if you do not have an instance of MSDE already installed on the Presentation Server 4.0 server and you want to use the default MSDE instance name and password values. (Recommended)
- **Run the MSDE Setup program.** This method is used if you are not able to use the default instance name and or password. For more information please refer to the Citrix Presentation Server 4.0 Server Administrator Guide. To keep with the scope of this guide I do not recommend steering away from the default settings.

The following steps defines how to install MSDE 2000 with Service Pack 3 using the default MetaFrame options.

1. Insert the Citrix Presentation Server 4.0 Server – Server CD in the CDROM and browse to **\Support\MSDE** directory.
2. Change to server to installation mode. Click **Start** → click **Run** → type: **Change User /install** and click **OK**.
3. Double click to execute the **SetupMsdeForMetaFrame.cmd**, batch file.



4. The batch file will then install MSDE 2000 with Service Pack 3 and the required default instance of CITRIX_METAFRAME. It sets the MSDE administrator (“SA”) password to “CITRIX.”



5. Change to server to installation mode. Click **Start** → click **Run** → type: **Change User /execute** and click **OK**.
6. Reboot the system for MSDE to take affect.

Note: The MSDE SA password is required to be set. SQL authentication is not enabled by default when you install MSDE using SetupMsdeForMetaFrame.cmd thus the SA password is not used. Setting the password to “CITRIX” is not a security risk unless you are using SQL authentication.

4. 2. 1 How to Migrate an Access Data Store to MSDE

If you using the Microsoft Access data store then I highly recommend you migrate the data store to Microsoft Access to MSDE 2000 with Service Pack 3. Citrix has made this very easy with the help of the MigrateToMsde utility. If you experience any issues from the migration you can use the MigrateToMsde utility to automatically roll back any changes that it makes to the system.

You can find the MigrateToMsde utility on the Presentation Server 4.0 Server CD in the Support\MSDE folder.

The following is the syntax for the MigrateToMsde utility:

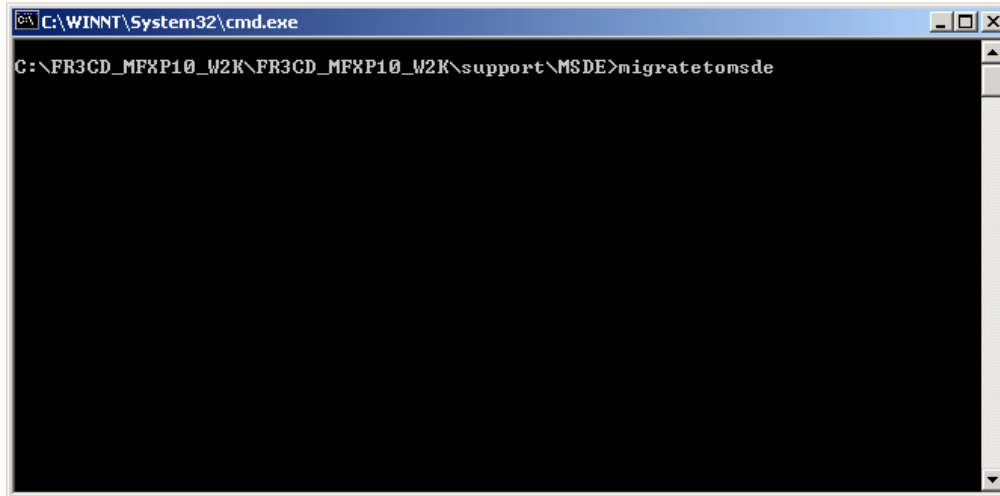
```
migratetomsde [/instancename:instancename | /dbname:dbname |  
/accessuser:user | /accesspwd:pwd | /revert | [/?]
```

The following parameters can be used with migratetomsde.exe at a command line.

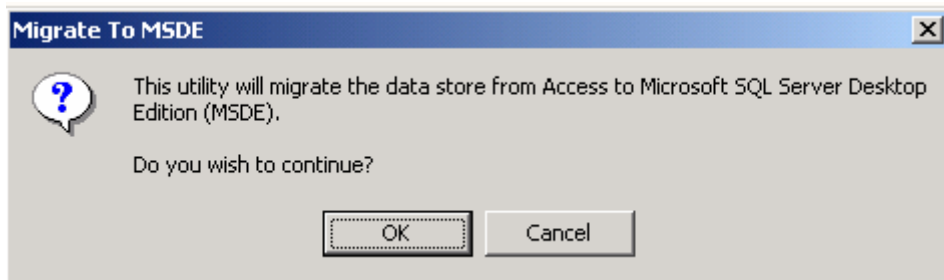
Option	Description
/instancename: <i>instancename</i>	Specify a named instance of MSDE other than the default value of CITRIX_METAFRAME.
/dbname: <i>dbname</i>	Specify a database other than the default value of MF20.
/accessuser: <i>user</i>	Specify the username for your Access database if you changed them using the Dsmaint Config utility.
/accesspwd: <i>pwd</i>	Specify the password for your Access database if you changed them using the Dsmaint Config utility.
/revert	Reverts to the Access database originally used as the server farm's data store. Running this command restores backups that were made when the migration was initially done. Any changes made to the farm since the migration from Access to MSDE are lost.
/?	Displays the syntax for the utility and information about the utility options.

The following defines how to use the **migratetomsde.exe** utility to migrate the Microsoft Access data store to Microsoft's SQL Desktop Edition that ships with Feature Release 3.

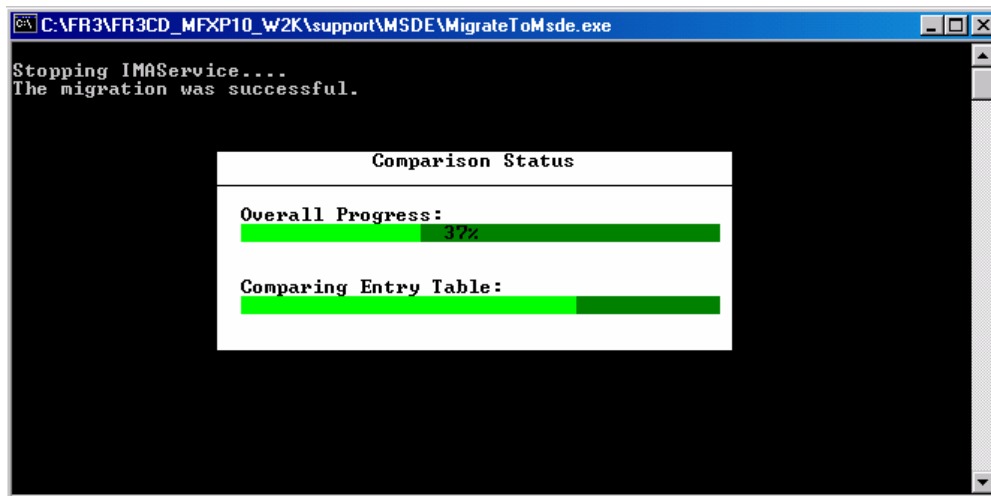
1. First we need to install and configure MSDE as described above.
2. Click **Start** → type **CMD** and click the **OK** button. Browse to the location of the Citrix Presentation Server 4.0 installation files and type **CD \support\MSDE** folder located on the Citrix Presentation Server 4.0 folder
3. Type **migratetomsde** and add any of the above options, detailed above, if required. Note: If you have not changed the Access data store settings then you are not required to add any options.



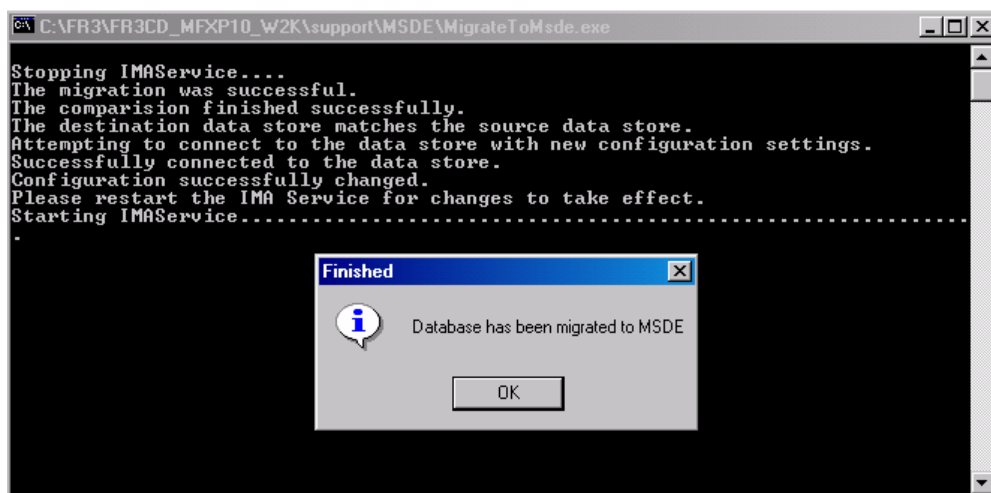
4. Click **OK** to proceed with data store migration.



- The data store is migrated and you are presented with the overall progress in the Comparison Status window.



- Click **OK** to finish.



You have now successfully migrated the Presentation Server 4.0 data store to MSDE.

5. Install Access Suite Licensing

NOTE: This section is not complete yet.

Servers Running MetaFrame Access Suite License Server

- Operating systems: Windows 2000 Server (Server, Advanced Server, or Datacenter Server) or Windows Server 2003 (Standard, Enterprise, or Datacenter Edition)
- Disk space requirements: 30MB
- Java Runtime Environment Version 1.4.2_06. (Will be installed during installation if using you start the installation of Presentation Server 4.0 from the autorun.exe executable)

Servers Running License Management Console

- MetaFrame Access Suite License Server
- Microsoft Internet Information Services (IIS) Version 5.0 or Apache 2.0.52.

6. How to Remap Presentation Server 4.0 Server Driver Letters

If you will be remapping server drives on a Presentation Server 4.0 Server you will need to run the DriveRemap.exe utility located on the root of the Presentation Server 4.0 CDROM.

If you will be remapping drives then it is highly recommended to do so before you install Presentation Server 4.0. If you remap server drive letters after installing, then you will be required to do so before installing any application or run the risk of server instability or worse.

Beware! If the server is a member of a Windows 2000 Active Directory Domain, driveremap.exe will hang. Move the server into a workgroup, remap the drives, and then rejoin the Active Directory domain.

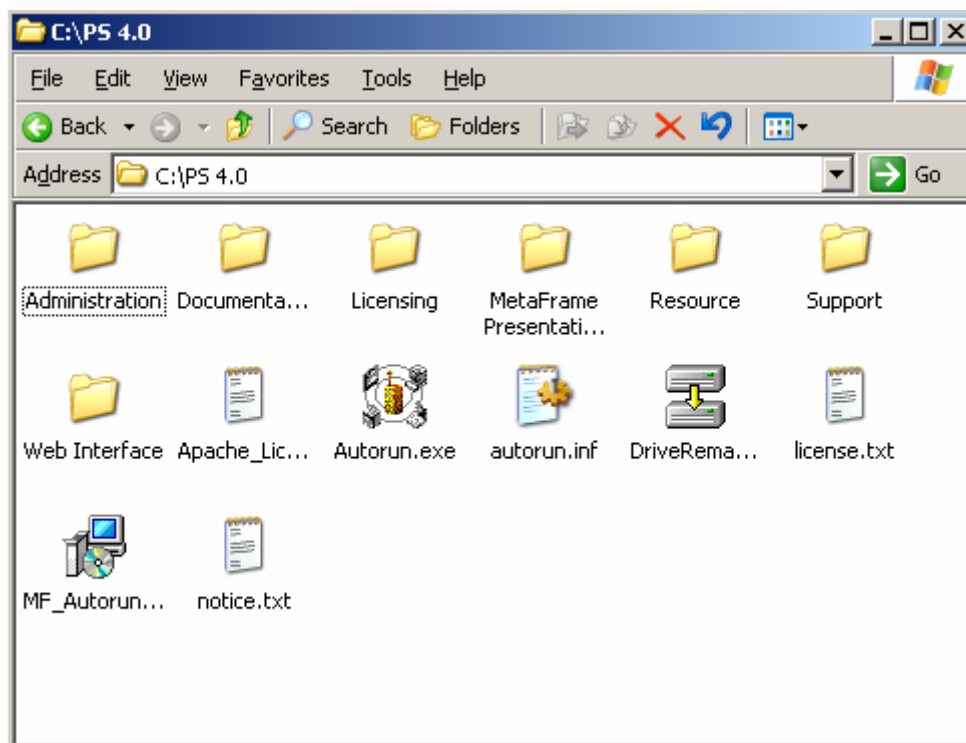
Note: In my opinion, I would be careful remapping drives. As discussed in the Analysis phase of this document, we don't want to plan for today but for tomorrow and with this in mind, I have always taken the mindset that I don't know what applications or system service/devices that might need to be installed in the future which might requires the server drives to start with C:. Granted there are a few workarounds, I still tend to believe in training my users once, vs. running the risk of needing to change configurations in the future which would require end-user re-education.

Note: It is highly not recommended to run the Drive Remap utility after installing Presentation Server 4.0.

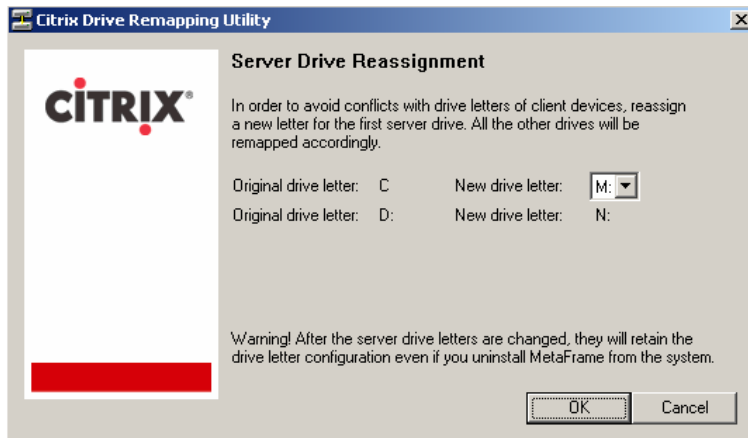
Note: The DriveRemap.exe utility might fail to run if the server drives are not consistent. i.e., C:, G: and F: then it will fail to run

The following defines how to remap server drive letters.

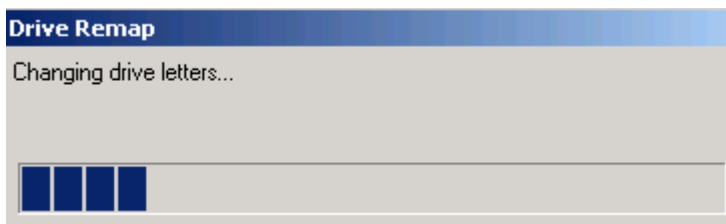
1. Insert the **Presentation Server 4.0 Server CD** and open to the root of the CDROM in Windows Explorer and double click on the **DriveRemap.exe** utility.



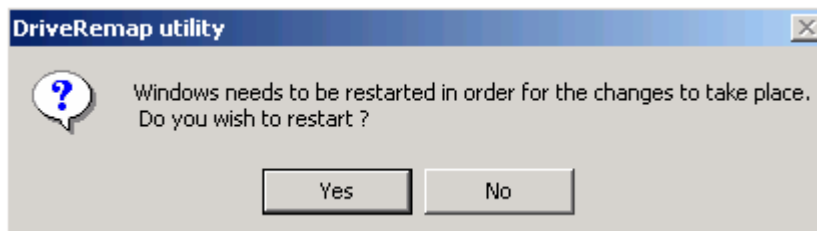
2. Select the the drive letter you want to remap the C: drive to in the **New drive letter** drop down box and click **OK**.



3. The drives with now be remapped and links reconfigured.



4. Click **Yes** to restart the server in order for the drive remapping to take page.



Note: If you intend to change the server's drive letters, it is required to do so before you install Presentation Server 4.0. If you change server drive letters after installing Presentation Server 4.0 then you run the risk of the applications not functioning properly and a server rebuild would be required to remedy the issue.

Important! Cloning Presentation Server 4.0 Servers with remapped drives can be tricky and hence another great reason why I recommend against remapping drives.

7. Install Presentation Server 4.0

Once you have configured your environment and installed and patched Windows you ready to install Citrix Presentation Server 4.0.

The following are the system requirements for Presentation Server 4.0

- Windows 2000 Server (Server, Advanced Server, or Datacenter Server) with Service Pack 4
- Windows Server 2003 (Standard, Enterprise, or Datacenter Edition)
- 400MB for MetaFrame Presentation Server, Enterprise Edition
- 50MB for the Management Console for MetaFrame Presentation Server
- 25MB for the Management Console for the MetaFrame Access Suite
- 35MB for the Document Center
- Java Runtime Environment Version 1.4.2_06. (Will be installed during installation if using you start the installation of Presentation Server 4.0 from the autorun.exe executable)
- Microsoft Windows Installer (MSI) 3.0. (Will be installed during installation if using you start the installation of Presentation Server 4.0 from the autorun.exe executable)

The following are the system requirements for Citrix Document Center

- Disk space requirements: 2MB
- Adobe Acrobat Reader 5.0.5 with Search or Adobe Reader 6.0 through 7.0.

The following are the system requirements for the Management Console for Presentation Server

- Disk space requirements: 50MB
- Java Runtime Environment Version 1.4.2_06. (Will be installed during installation if using you start the installation of Presentation Server 4.0 from the autorun.exe executable)

The following are the system requirements for the Citrix Access Suite Console MMC Snap-in

- Windows 2000 Server (Server, Advanced Server, or Datacenter Server) with Service Pack 4
- Windows Server 2003 (Standard, Enterprise, or Datacenter Edition)
- Windows XP Professional
- Windows 2000 Professional
- Disk space requirements: 25MB
- .NET Framework Version 1.1 with Service Pack 1. (Will be installed during installation if using you start the installation of Presentation Server 4.0 from the autorun.exe executable) image.

NOTE: Do not install .NET Framework Version 2.0 on systems you wish to run the Access Suite Console.

The following steps detail how to install Presentation Server 4.0

7. 1. Installing Presentation Server 4.0

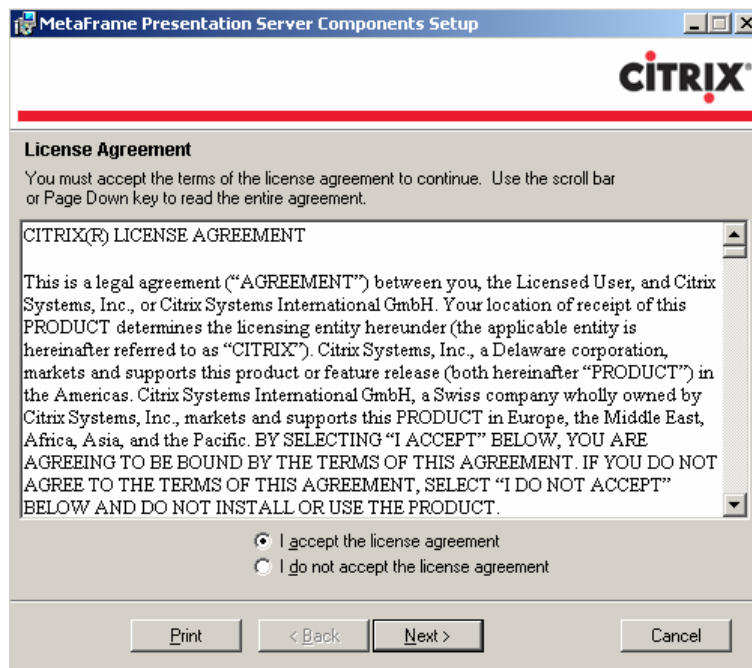
Now that we have prepared the network, installed and configured the data store, and remapped the drives, if required, we are ready to install Presentation Server 4.0.

To install Presentation Server 4.0 perform the following installation instructions.

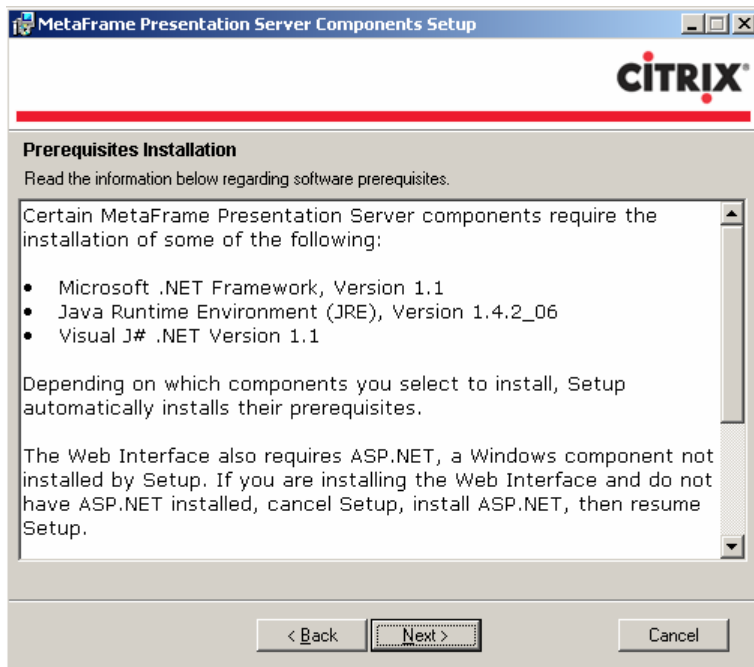
7. 1. 1 How to Create a New Presentation Server 4.0 Farm

The following defines how to create a new Presentation Server 4.0 farm. If you will be using MSDE or Microsoft Access as the data store then the server will act as the “host server”.

1. Insert the **Presentation Server 4.0 Server CD** and click the **Product Installation and updates** button.
2. Click the **Install MetaFrame Presentation Server 4.0 and its components** button to launch the setup program.
3. Scroll to the bottom of the license agreement and click the **I accept the license agreement** radio button and click **Next** to continue.

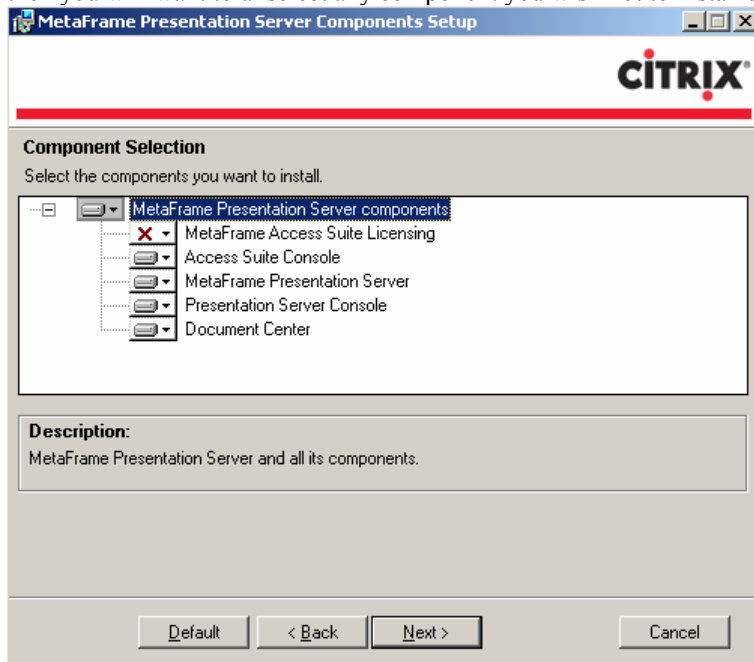


4. Installation will now analyze the server for the Presentation Server required components and will present you with a list of which ones will be installed next. Click **Next** to continue.

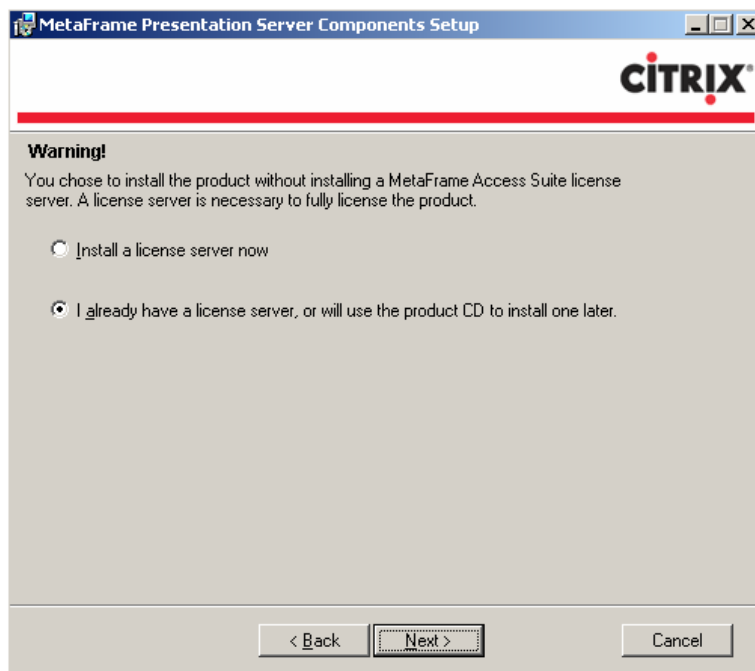


You are now prompted to select the Presentation Server products that will be installed during installation. This is a bit different than what was found in previous versions of MetaFrame/Presentation Server.

Since we have already installed the MetaFrame Access Suite Licensing component in a previous step then you will want to unselect any component you wish not to install and click **Next** to continue.



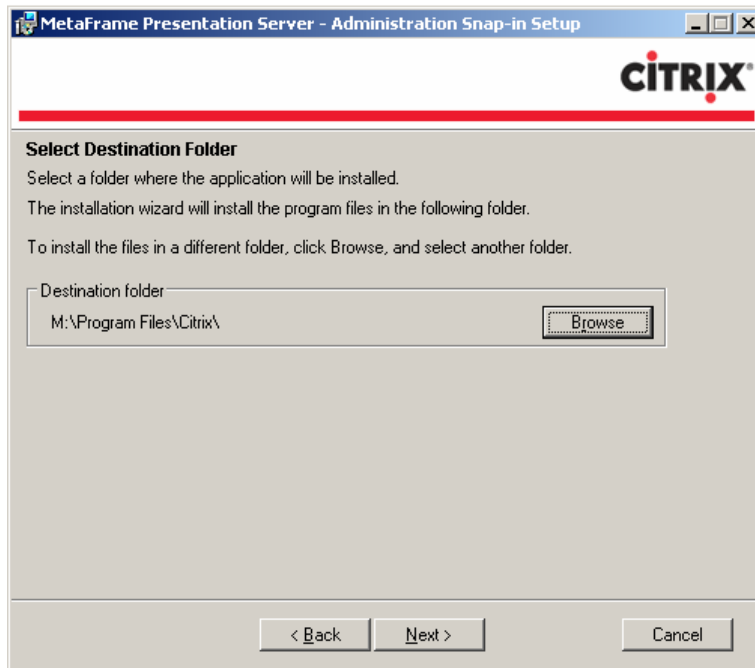
5. You are now prompted that you have chosen not to install a license server. Disregard this warning as we have already installed a license server and will be configuring Presentation Server to point to it in a future step. Click **Next** to continue.



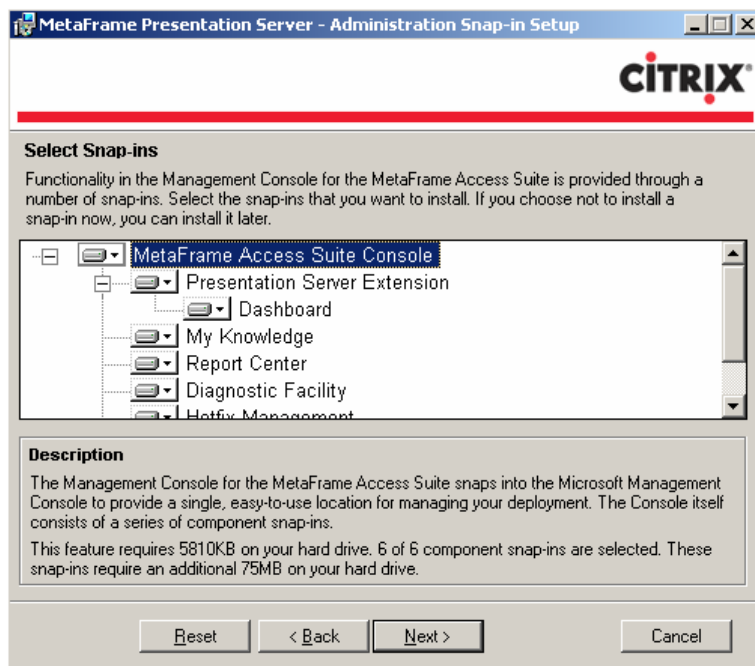
6. Setup is now ready to install the Access Suite Console. Click **Next** to continue.



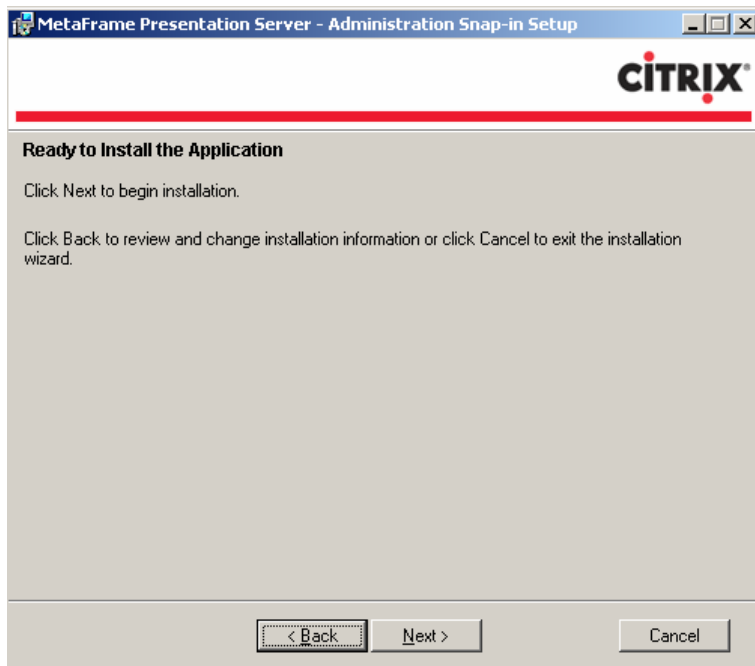
7. Select the folder you wish to install the Access Suite Console snap-in and click **Next** to continue.



8. You are now presented with the ability to select the components of the Access Suite Console. It is recommended to select the default of installing all components and then click **Next** to continue.



9. Click **Next** to begin installation of the Access Suite Console MMC snap-in.



10. Click **Finish** to continue the installation of Presentation Server 4.0.

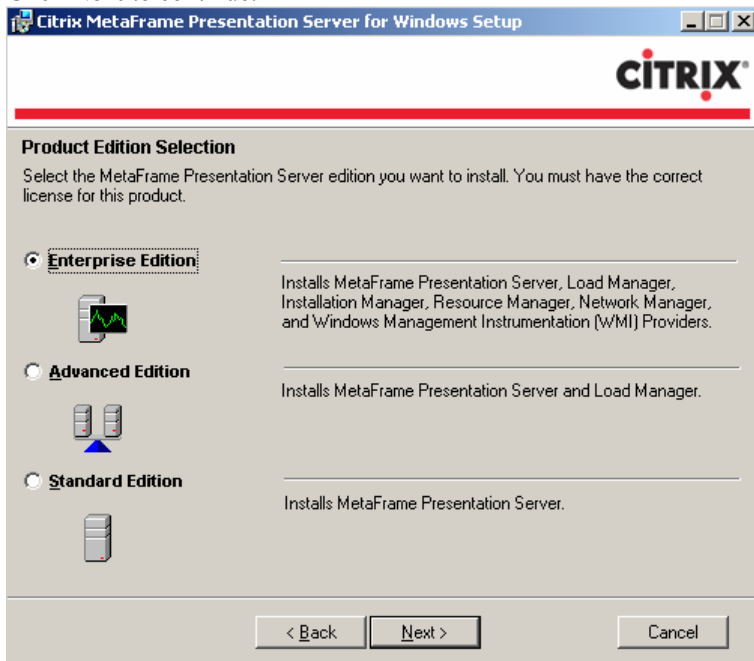


11. You are now ready to install Presentation Server 4.0. Click **Next** to continue.



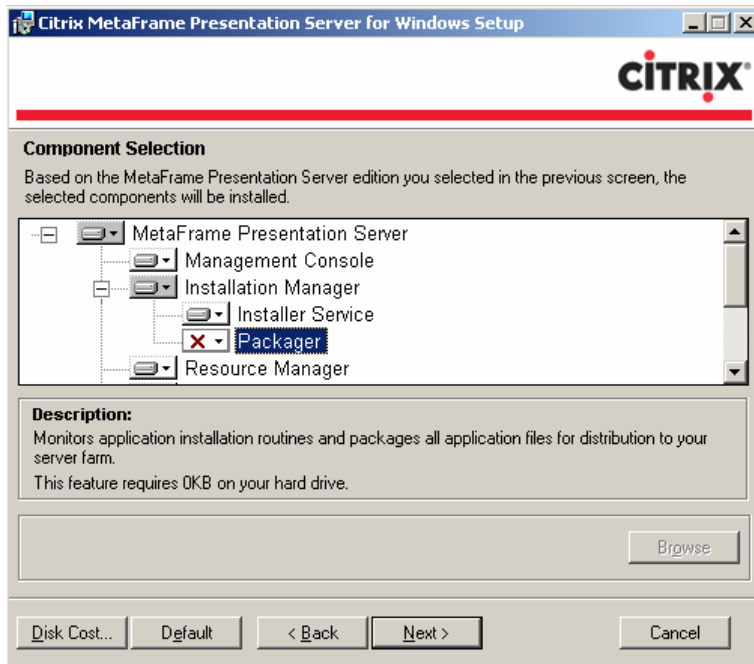
12. You are now prompted to select the correct Product Edition you are licensed for. It is important you select the correct product edition that corresponds to the license you have added to the Access Suite license server earlier.

Click **Next** to continue.

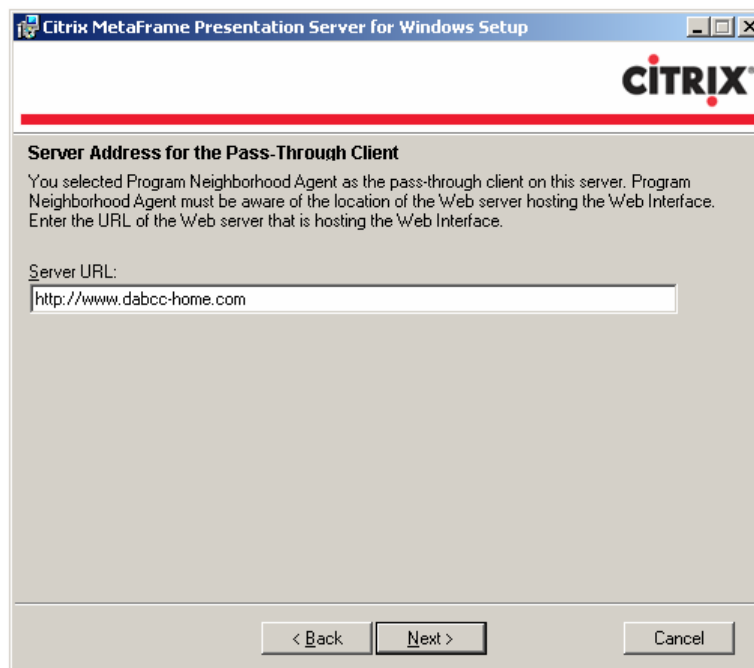


13. You are now prompted to select the components you will be installing. If you will be installing Installation Manager, I highly recommend removing the Packager component. Open the **Installation Manager** Key and right click on **Packager** and click **X** **Entire feature will be unavailable**.

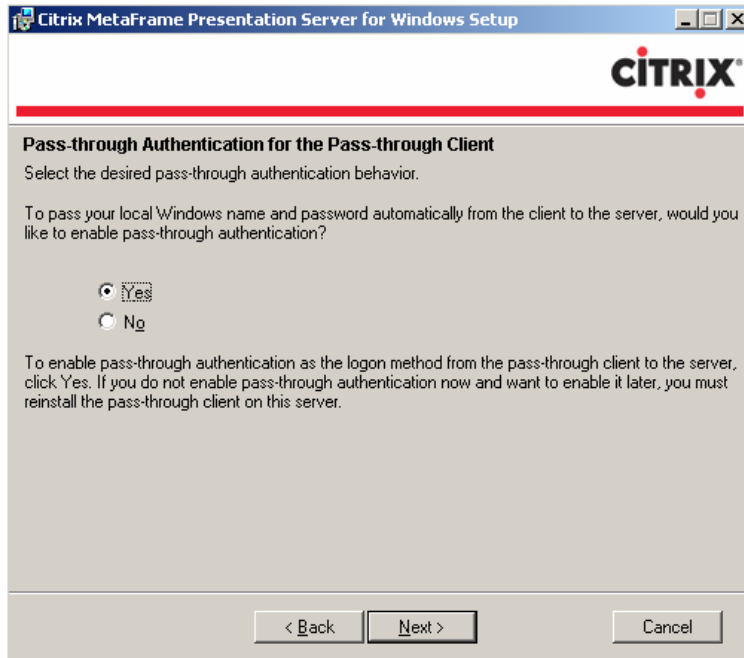
Note: If you would like to utilize the Program Neighborhood Agent ICA Client as the pass-through client then you will need to enable it for installation.



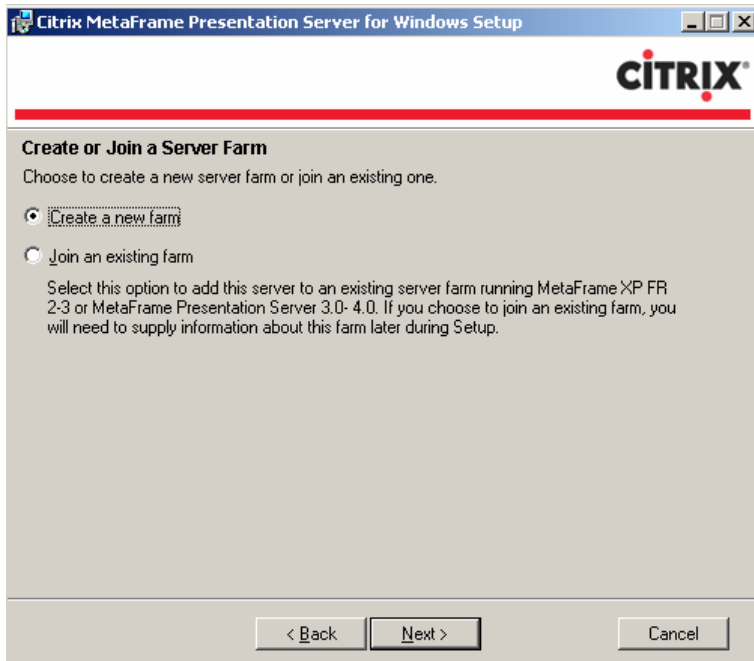
14. If you have selected to utilize the Program Neighborhood Agent as the pass-through client then you will be presented with the following screen asking you to enter the FQDN name of the Web Interface 4.0 web server.



15. Click to select the **Yes** radio button to give the end-users the ability to utilize Pass-Through authentication. Click **Next** to continue.



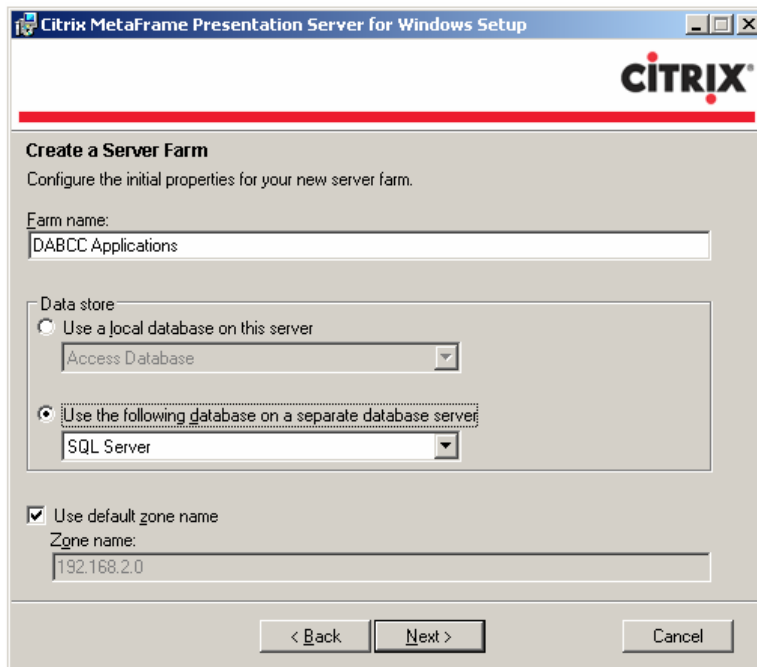
16. You are now prompted to create or join a server farm. Click the **Create a new farm** radio button and click **Next**.



17. Enter a server farm name in the **Farm Name** text box and select what type of Data Store that will be used as documented in the Presentation Server 4.0 Farm Design section of the Design Phase Deliverable.

You also have the ability to select the Zone the new server will exist. For the first server in a farm I highly recommend using the default zone name.

Click **Next** when finished.



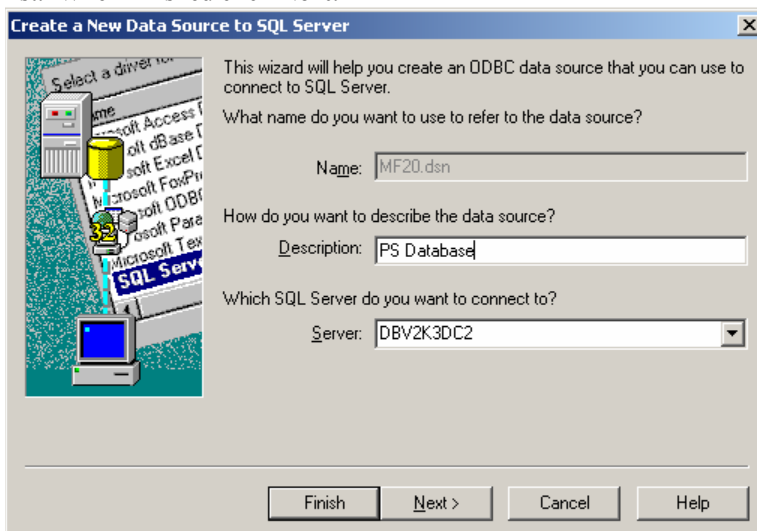
The screenshot shows the 'Create a Server Farm' window in the Citrix MetaFrame Presentation Server for Windows Setup. The window has a title bar with the Citrix logo and the text 'Citrix MetaFrame Presentation Server for Windows Setup'. Below the title bar is a red horizontal line. The main area is titled 'Create a Server Farm' and contains the following fields and options:

- Farm name:** A text box containing 'DABCC Applications'.
- Data store:** A section with two radio buttons:
 - ☐ Use a local database on this server (with a dropdown menu showing 'Access Database').
 - ☒ Use the following database on a separate database server (with a dropdown menu showing 'SQL Server').
- ☒ Use default zone name (with a text box for 'Zone name' containing '192.168.2.0').

At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

Note: For this example, I have chosen a SQL Server as my Data Store so the next screen will prompt you to create the ODBC connection to the Data Store.

18. Enter a description in the **Description** text box and select the SQL Server from the **Server** drop down list. When finished click **Next**.

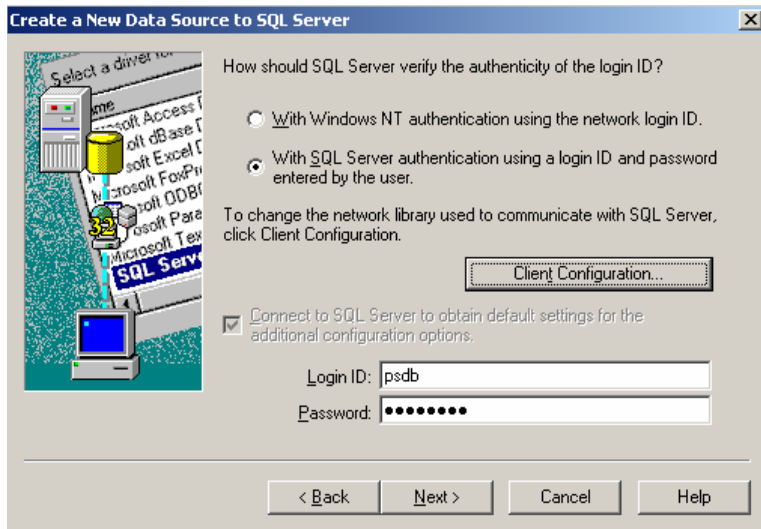


The screenshot shows the 'Create a New Data Source to SQL Server' wizard. The window has a title bar with the text 'Create a New Data Source to SQL Server'. The main area contains the following fields and options:

- Name:** A text box containing 'MF20.dsn'.
- Description:** A text box containing 'PS Database'.
- Which SQL Server do you want to connect to?:** A dropdown menu showing 'DBV2K3DC2'.

At the bottom are four buttons: 'Finish', 'Next >', 'Cancel', and 'Help'.

19. You are now prompted to select the authentication method. Click to select the **With SQL Server authentication using a login ID and password entered by the user** radio button. Enter the username and password that was entered in step 6 of the **How to Create a Presentation Server 4.0 Data Store with SQL Server 2000**. Click the **Next** to continue.



How should SQL Server verify the authenticity of the login ID?

☐ With Windows NT authentication using the network login ID.

☒ With SQL Server authentication using a login ID and password entered by the user.

To change the network library used to communicate with SQL Server, click Client Configuration.

Client Configuration...

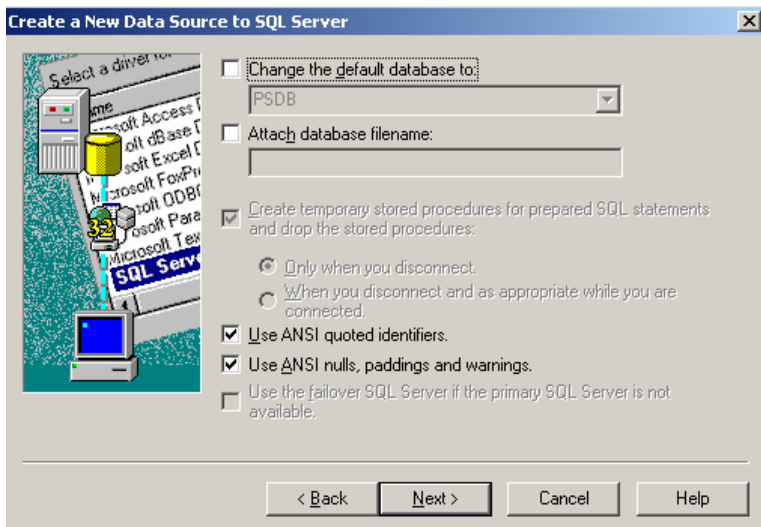
☒ Connect to SQL Server to obtain default settings for the additional configuration options.

Login ID: psdb

Password:

< Back Next > Cancel Help

20. Verify the database created above is selected as the default database and click **Next**. If it is not already selected then click to check the **Change the default database to** checkbox and select the Presentation Server Data Store database and click **Next**.



Change the default database to: PSDB

Attach database filename:

☒ Create temporary stored procedures for prepared SQL statements and drop the stored procedures:

☒ Only when you disconnect.

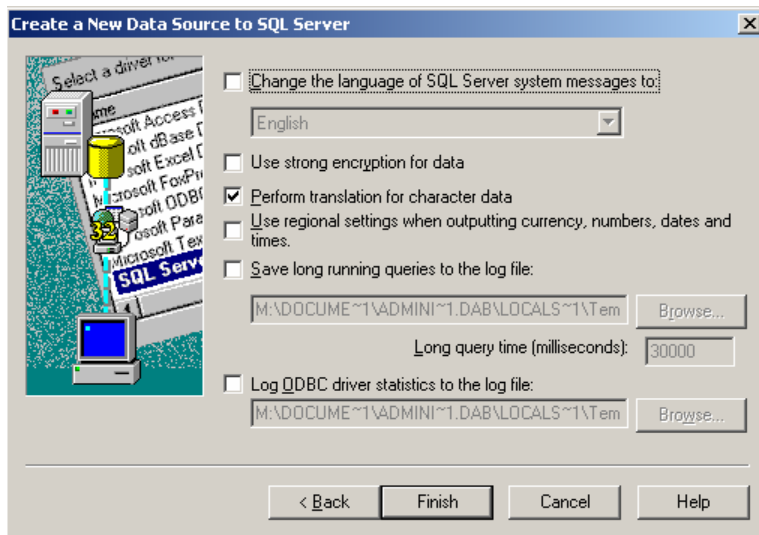
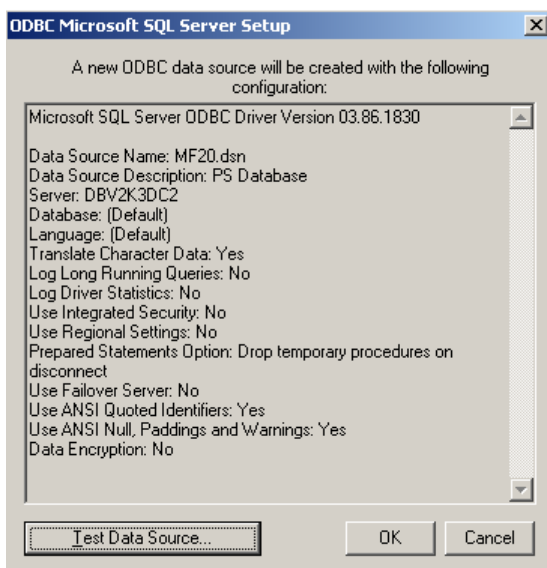
☐ When you disconnect and as appropriate while you are connected.

☒ Use ANSI quoted identifiers.

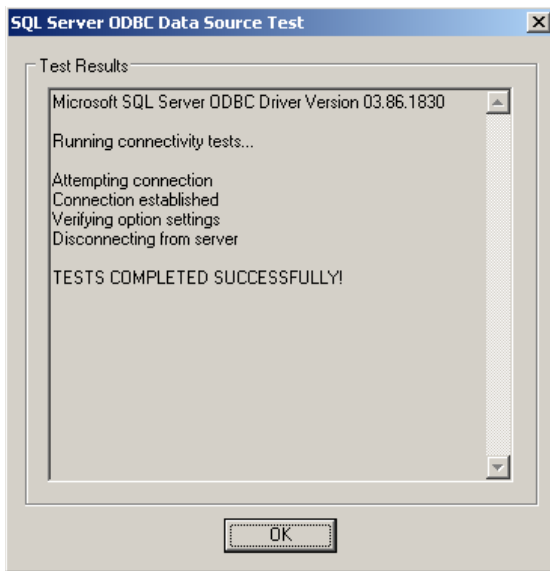
☒ Use ANSI nulls, paddings and warnings.

☐ Use the failover SQL Server if the primary SQL Server is not available.

< Back Next > Cancel Help

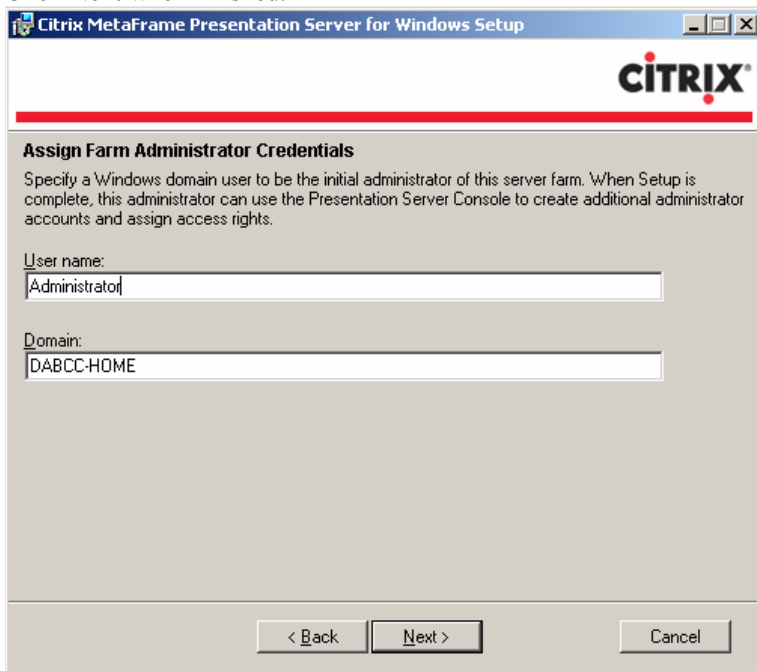
21. Click **Finish**22. Click the **Test Data Source** button.

23. Verify it reads TESTS COMPLETED SUCCESSFULLY and click **OK**.

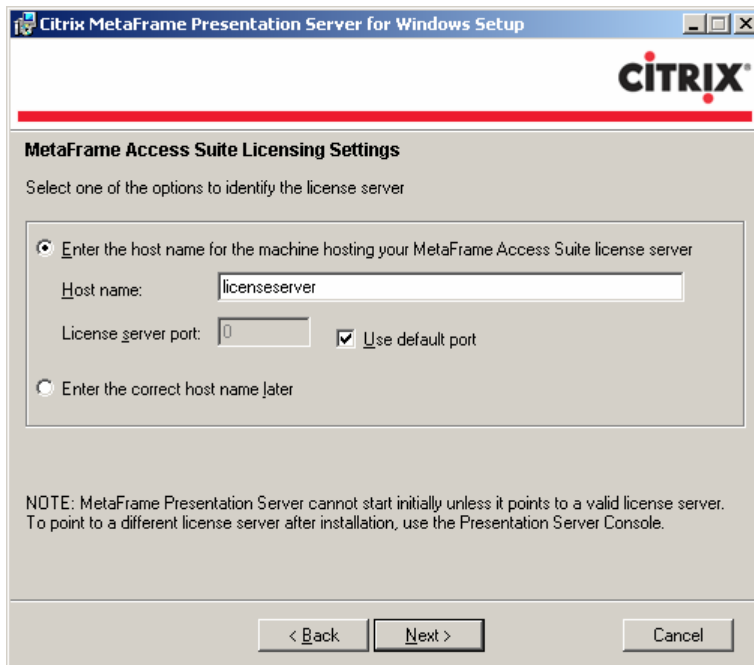


24. You are now prompted to enter a user account to assign Farm Administrator access. I recommend accepting the default and adding / editing Farm Administrators later. As documented in the MetaFrame Delegated Administration section.

Click **Next** when finished.



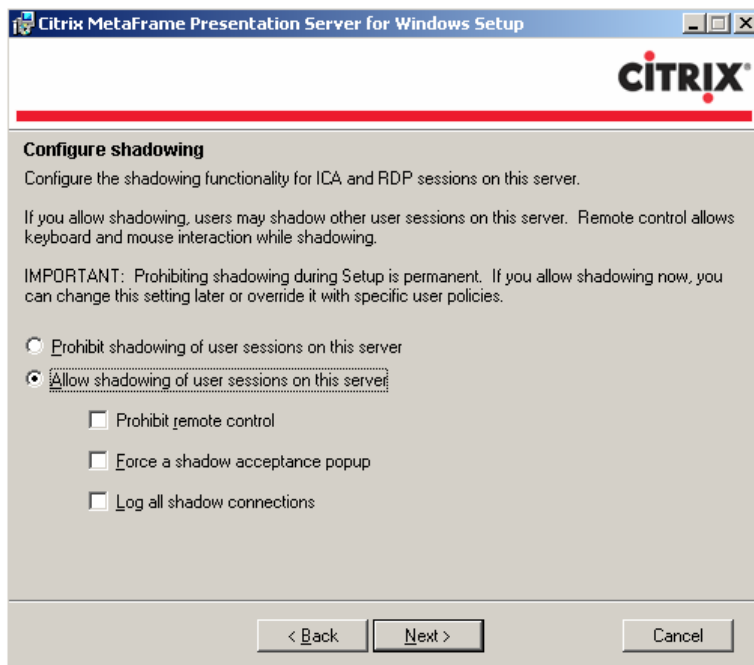
25. You are now prompted to enter the name of the license server you created in the **Install Access Suite Licensing** section above.



The screenshot shows the 'MetaFrame Access Suite Licensing Settings' window. It has a title bar 'Citrix MetaFrame Presentation Server for Windows Setup' and the Citrix logo. The main heading is 'MetaFrame Access Suite Licensing Settings'. Below it, the text says 'Select one of the options to identify the license server'. There are two radio button options. The first option, 'Enter the host name for the machine hosting your MetaFrame Access Suite license server', is selected. It includes a text box for 'Host name' containing 'licenseserver', a 'License server port' box with '0', and a checked 'Use default port' checkbox. The second option is 'Enter the correct host name later'. A note at the bottom states: 'NOTE: MetaFrame Presentation Server cannot start initially unless it points to a valid license server. To point to a different license server after installation, use the Presentation Server Console.' At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

26. You are now prompted to select how Presentation Server will deal with shadowing. Unless you require disabling Shadowing support I recommend to accept the defaults and click **Next** to continue.

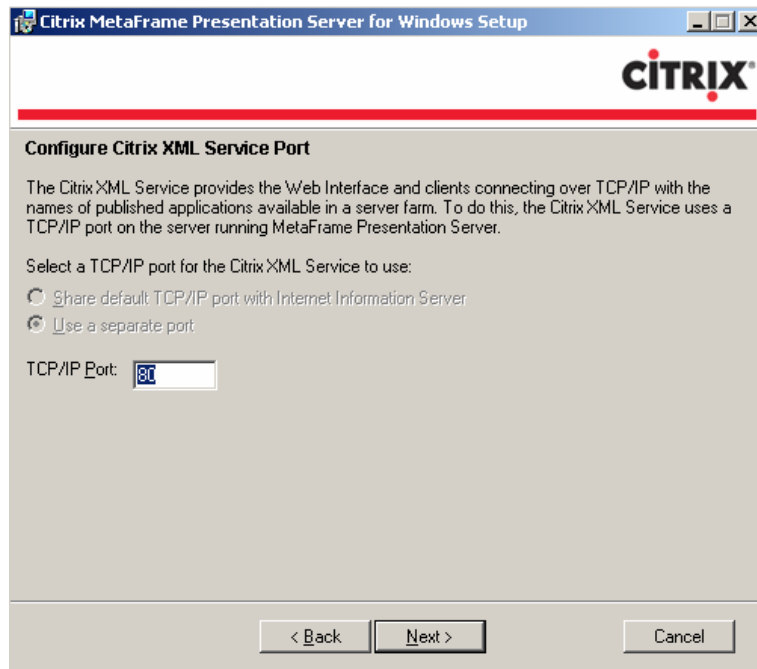
Note: I recommend accepting the default and with the use of policies, you will be able to assign shadowing rights on a user, group, computer, and IP address basis.



The screenshot shows the 'Configure shadowing' window. It has a title bar 'Citrix MetaFrame Presentation Server for Windows Setup' and the Citrix logo. The main heading is 'Configure shadowing'. Below it, the text says 'Configure the shadowing functionality for ICA and RDP sessions on this server.' and 'If you allow shadowing, users may shadow other user sessions on this server. Remote control allows keyboard and mouse interaction while shadowing.' An important note follows: 'IMPORTANT: Prohibiting shadowing during Setup is permanent. If you allow shadowing now, you can change this setting later or override it with specific user policies.' There are two radio button options. The first is 'Prohibit shadowing of user sessions on this server'. The second, 'Allow shadowing of user sessions on this server', is selected. Below the second option are three unchecked checkboxes: 'Prohibit remote control', 'Force a shadow acceptance popup', and 'Log all shadow connections'. At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

27. Enter the TCP/IP port that the Citrix XML Service will listen on and Click **Next**.

Note: The default is port 80 and unless you have a reason for doing so, I recommend that you stick with the default across all servers in the farm.

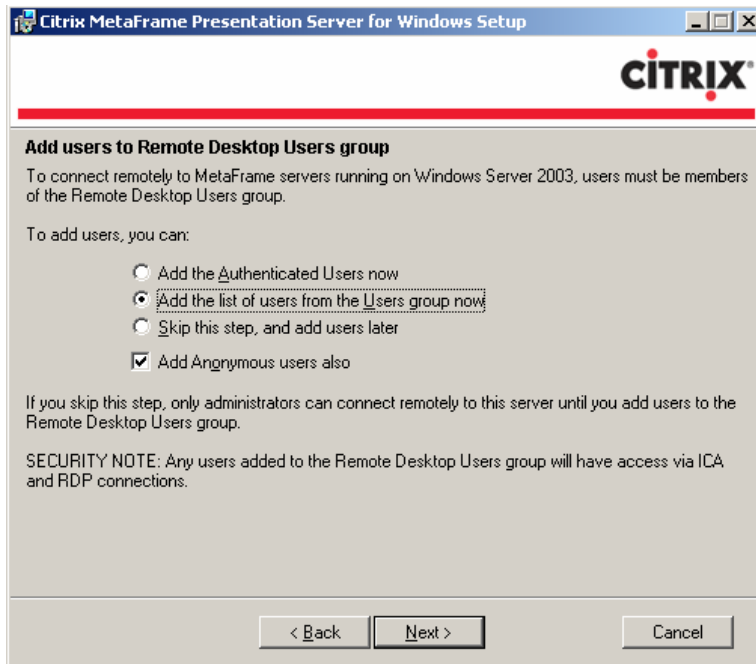


28. If you will be running Web Interface 4.0 on the same server as Presentation Server and or neglected to remove IIS during install then Web Interface 4.0 will automatically be installed during setup. This screen asks whether you want your users to be able to browse to the root of your server (<http://myserver>) instead of requiring adding the path. This requires that you will not be presenting other data on this web server via browsing this URL. When finished click **Next**.

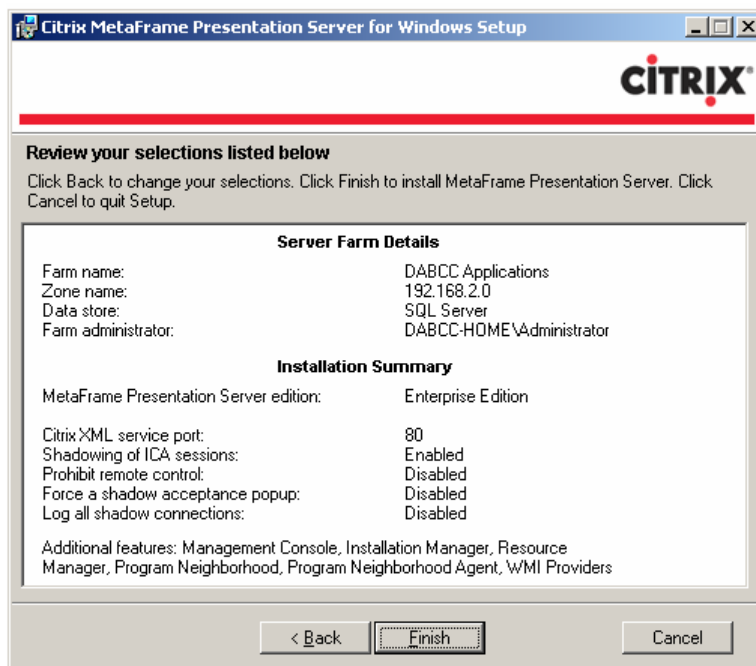
Important: In this example I have chosen not to install IIS. I'm a firm believer in leaving a Citrix Presentation Server to perform the actions of a Presentation Server and not double as a Web Server. If you are in a very small environment and have zero access to a web server then you can install IIS, otherwise I highly recommend deploying a dedicated web server for Web Interface and/or installing Web Interface on an existing web server. This is discussed in more detail in the Install Web Interface section of this document.

29. If you are installing Presentation Server 4.0 on a Microsoft Windows Server 2003 server then users will be required to members of the Remote Desktop Users group in order to login. Of this screen you are presented with the ability to have Presentation Server add the users group and/or anonymous users to the Remote Desktop Users group for you. Select the desired setting and click Next to continue.

Note: I recommend keeping with the default settings.



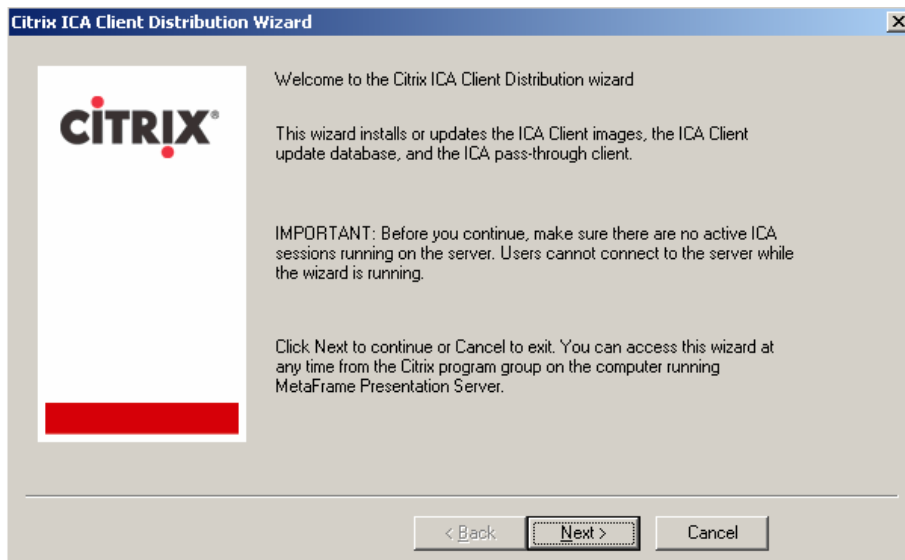
30. Verify the farm and installation settings are correct and click **Finish**.



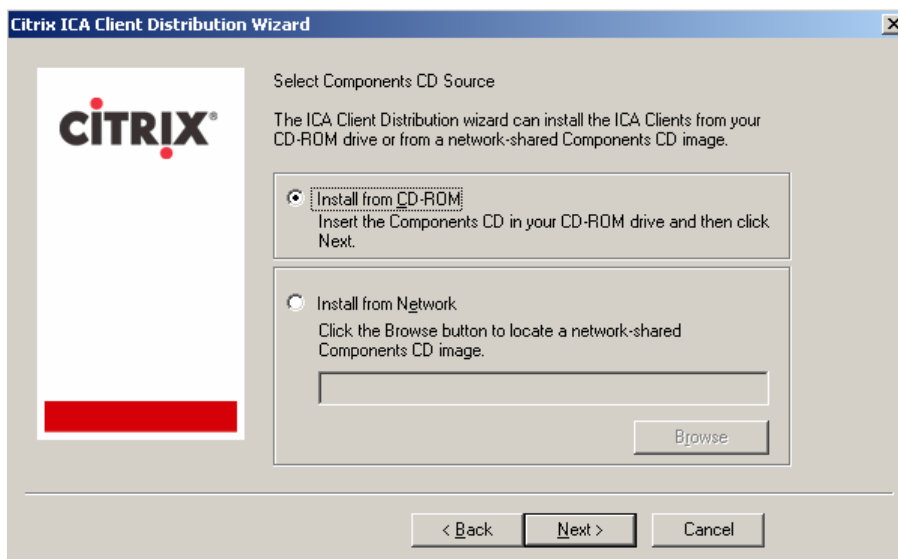
31. Uncheck the **View the Readme File** checkbox and select the **Launch the ICA Client Distribution wizard** and click **Close** to continue



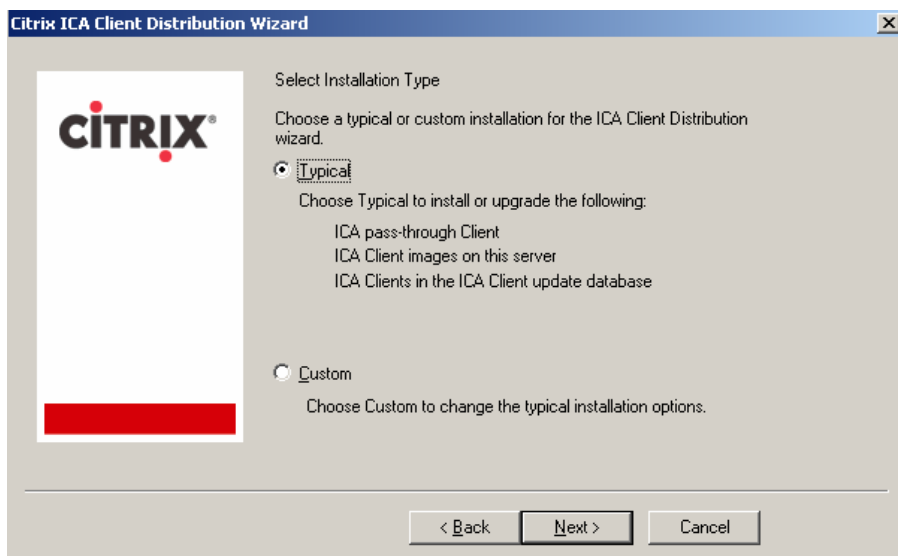
32. The ICA Client Distribution wizard opens. Click **Next** to continue.



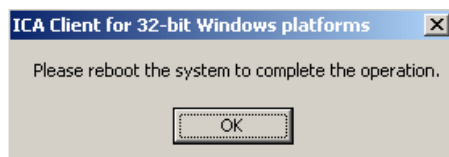
33. You will now need to select the location of the Presentation Server 4.0 Components CD image. Once finished click **Next** to continued.



34. You are now prompted to select if you would like to add all clients (typical) and or select which clients will be added to the ICA Client Distribution database (custom). Click the **Typical** radio button and then click **Next**.

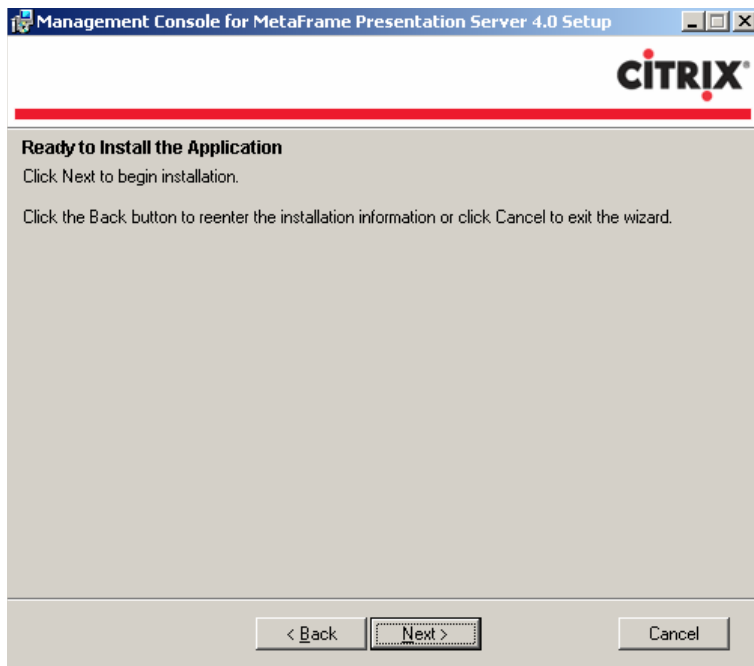


35. Click OK



36. Click **Finish**.37. Reinsert the **Citrix Presentation Server 4.0 CD**. You have now successfully installed Presentation Server 4.0 and you are ready to continue the installation and install the Management Console for Presentation Server 4.0. Click **OK** to continue.

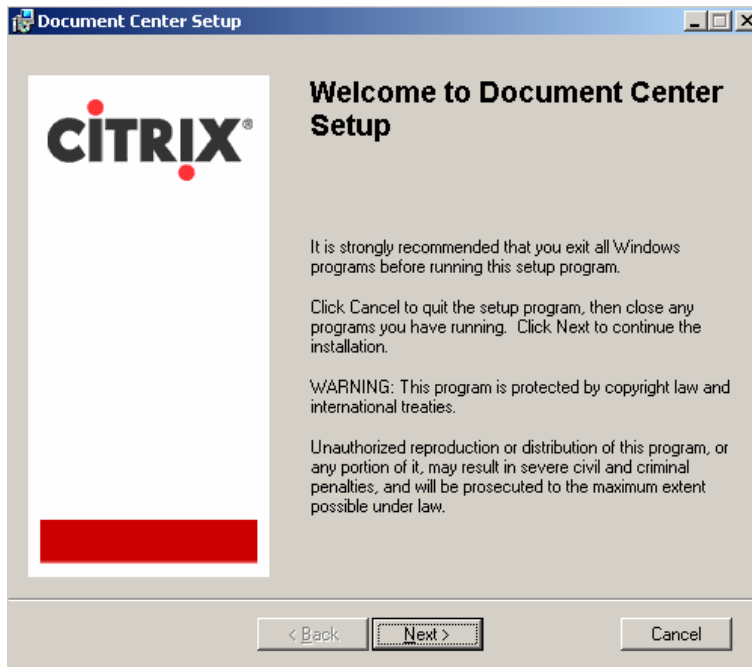
38. Click **Next** to continue.



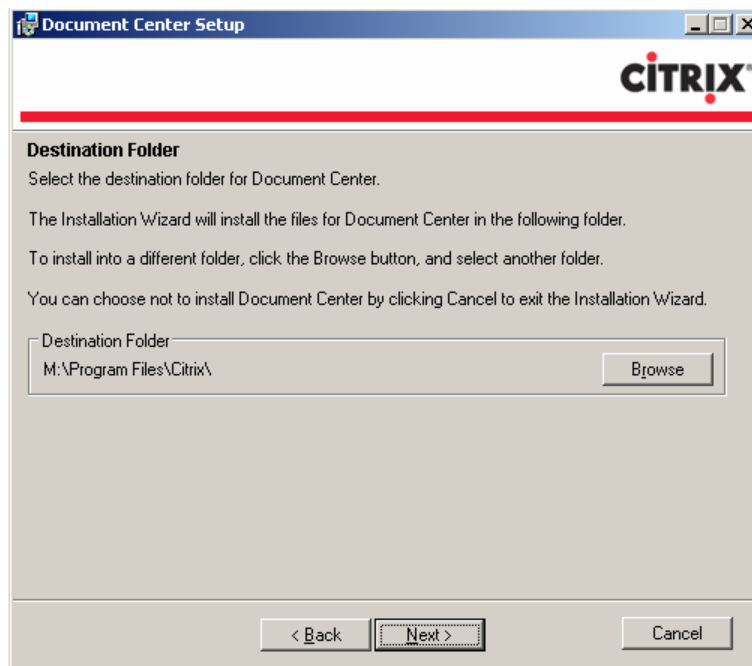
39. Click **Finish** to continue.



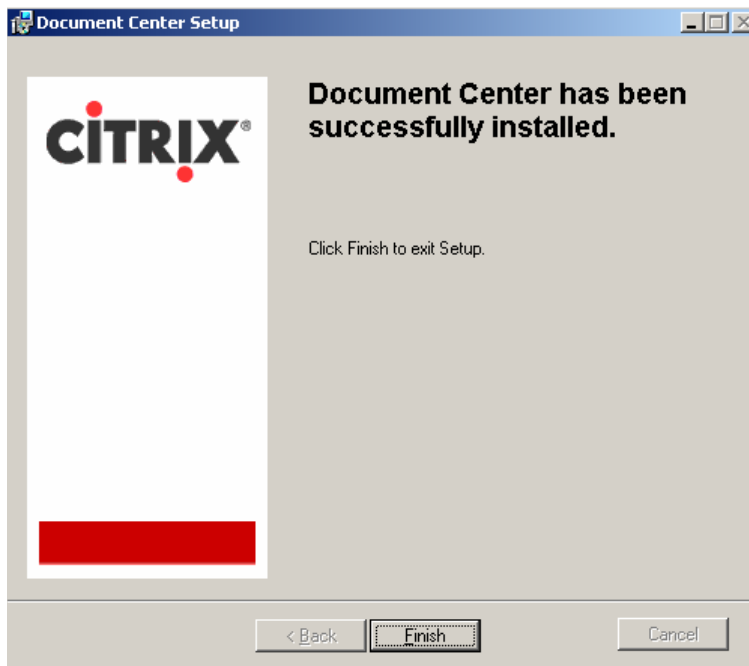
40. You are almost finished with the installation of Presentation Server 4.0. You are now ready to install the Document Center. Click **Next** to continue.



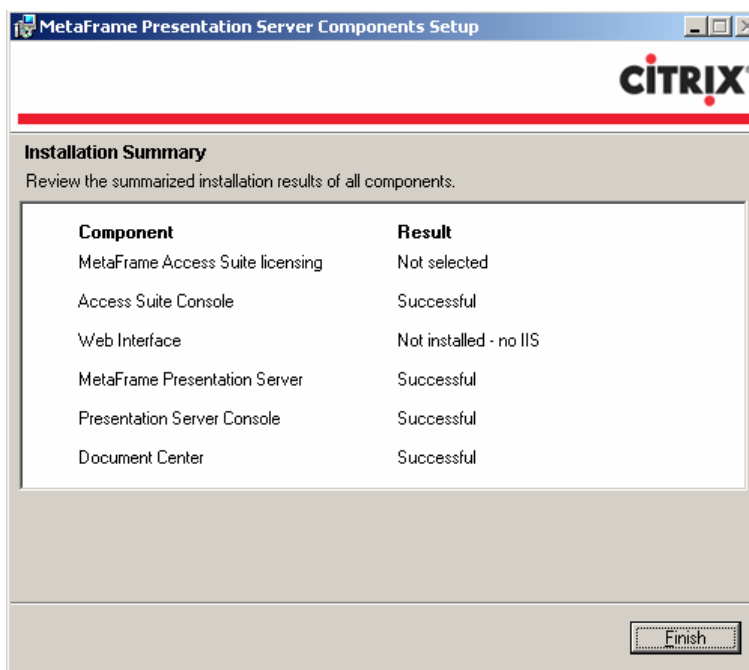
41. Enter the location you wish to store the document file and click **Next** to continue.



42. Click **Finish** to continue.



43. You are almost finished. Verify the desired components were successfully installed and click **Finish** to complete the installation.



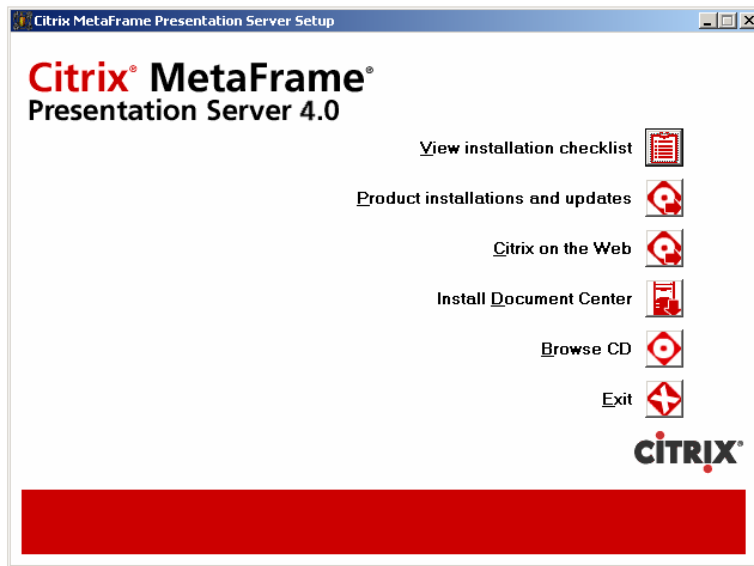
44. Click **Yes** to restart the server and complete the installation of Presentation Server 4.0

7. 1. 2 How to Upgrade to Presentation Server 4.0

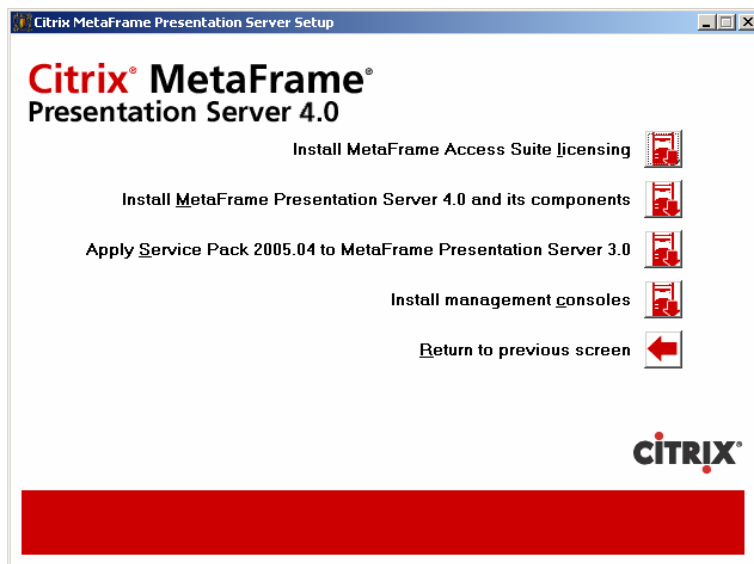
Citrix Presentation Server 4.0 supports upgrades from Citrix MetaFrame XP Feature Release 3 or MetaFrame Presentation Server 3.0. If you wish to upgrade from a Feature Release 2 or earlier then you will be required to first upgrade the system to Feature Release 3 and then upgrade to 4.0.

The following details how to upgrade the Presentation Server 4.0 server, hosting the Microsoft Access data store to Presentation Server 4.0.

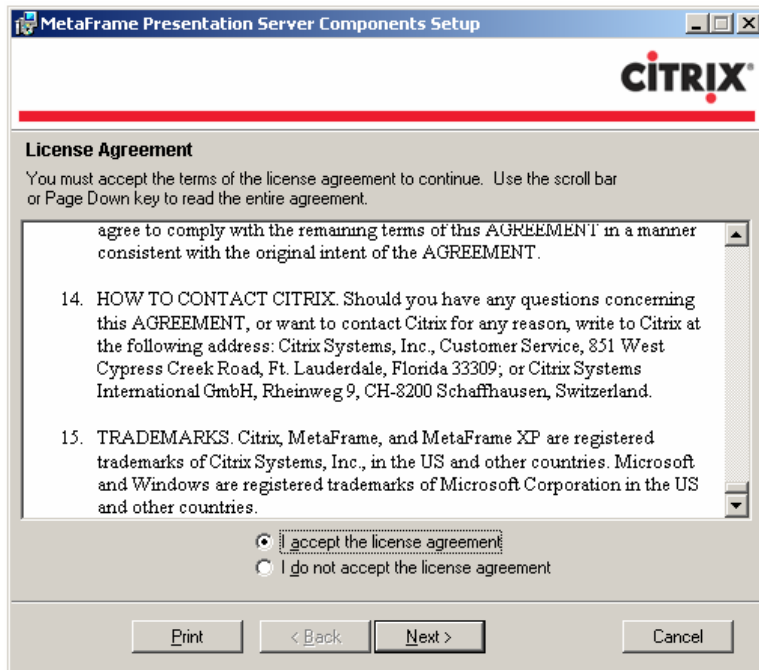
1. As a best practice, I recommend you disable any virus software that might be running.
2. Insert the **Presentation Server 4.0 Server CD** and click the **Product Installation and updates** button.



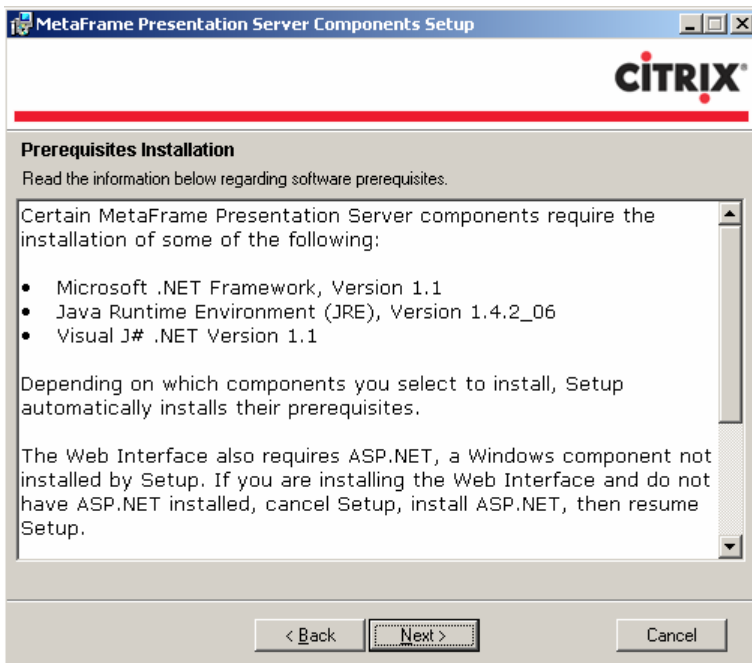
3. Click the **Install MetaFrame Presentation Server 4.0 and its components** button to launch the setup program.



4. Scroll to the bottom of the license agreement and click the **I accept the license agreement** radio button and click **Next** to continue.

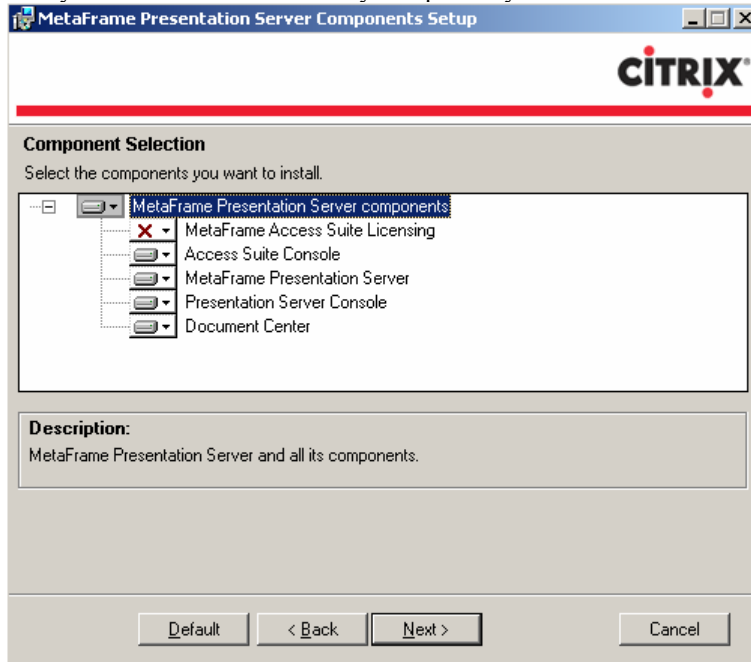


5. Installation will now analyze the server for the Presentation Server required components and will present you with a list of which ones will be installed next. Click **Next** to continue.

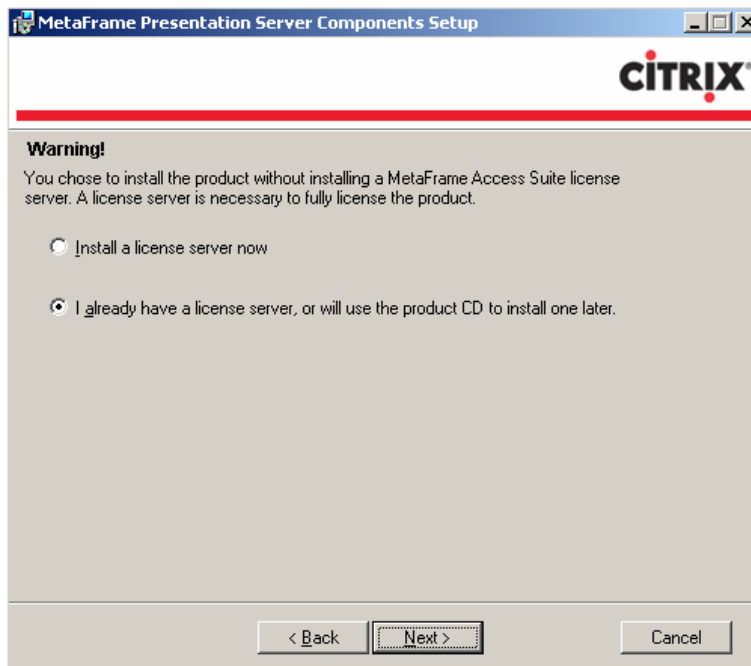


6. You are now prompted to select the Presentation Server products that will be installed during installation. This is a bit different than what was found in previous versions of MetaFrame/Presentation Server.

Since we have already installed the MetaFrame Access Suite Licensing component in a previous step then you will want to unselect any component you wish not to install and click **Next** to continue.



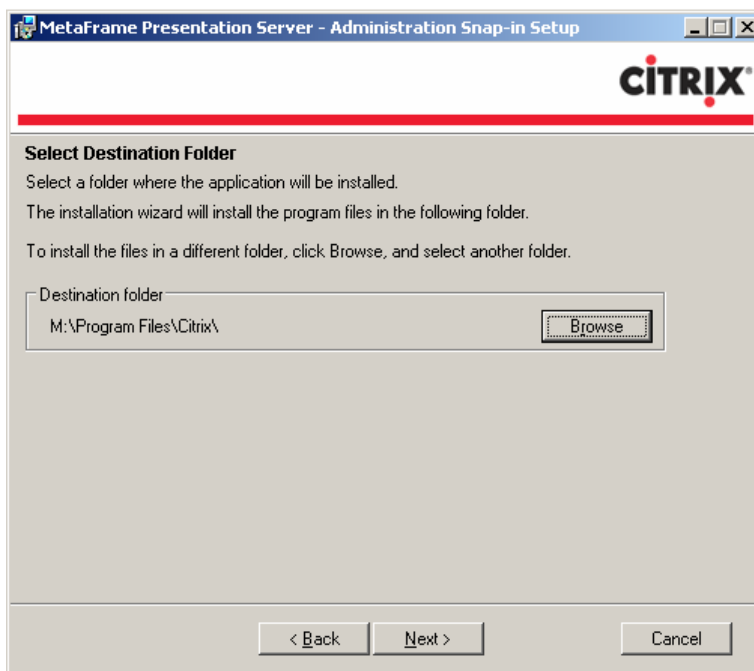
7. You are now prompted that you have chosen not to install a license server. Disregard this warning as we have already installed a license server and will be configuring Presentation Server to point to it in a future step. Click **Next** to continue.



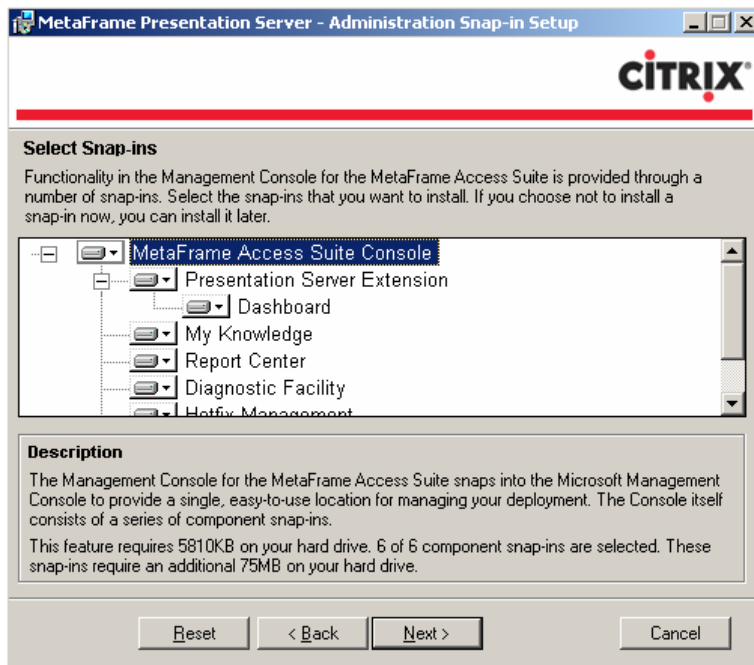
8. Setup is now ready to install the Access Suite Console. Click **Next** to continue.



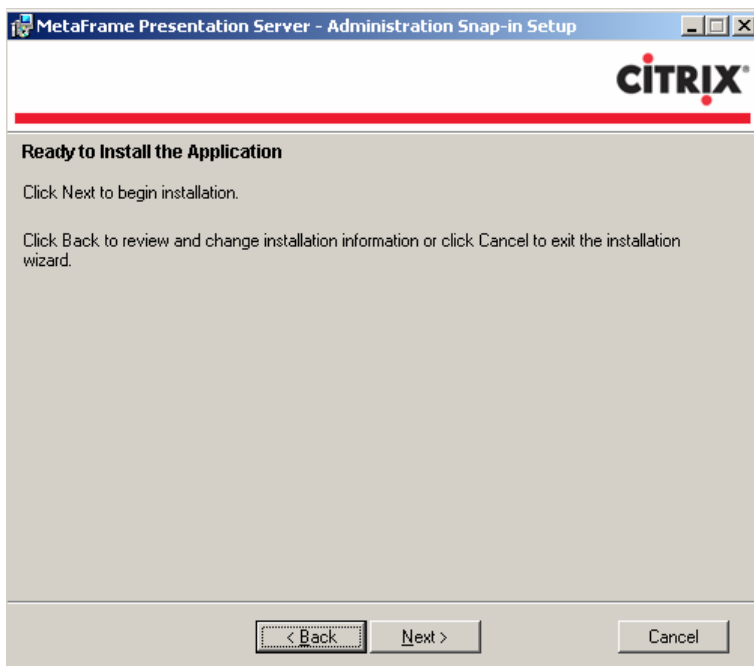
9. Select the folder you wish to install the Access Suite Console snap-in and click **Next** to continue.



10. You are now presented with the ability to select the components of the Access Suite Console. It is recommended to select the default of installing all components and then click **Next** to continue.



11. Click **Next** to begin installation of the Access Suite Console MMC snap-in.



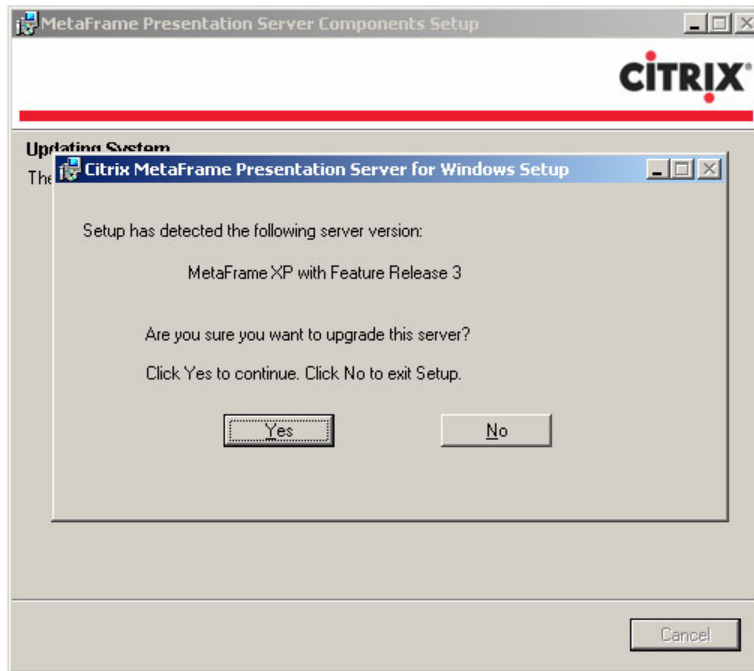
12. Click **Finish** to continue the installation of Presentation Server 4.0.



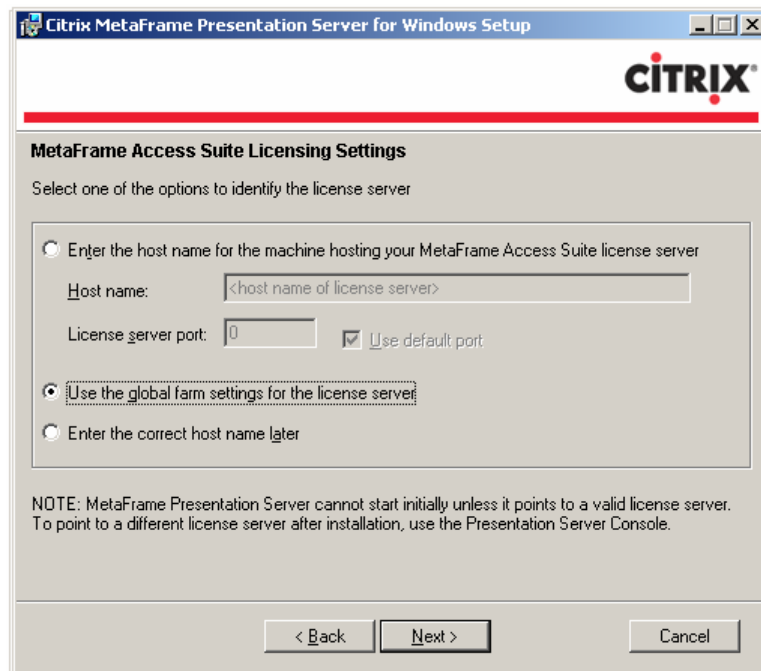
13. You are now ready to install Presentation Server 4.0. Click **Next** to continue.



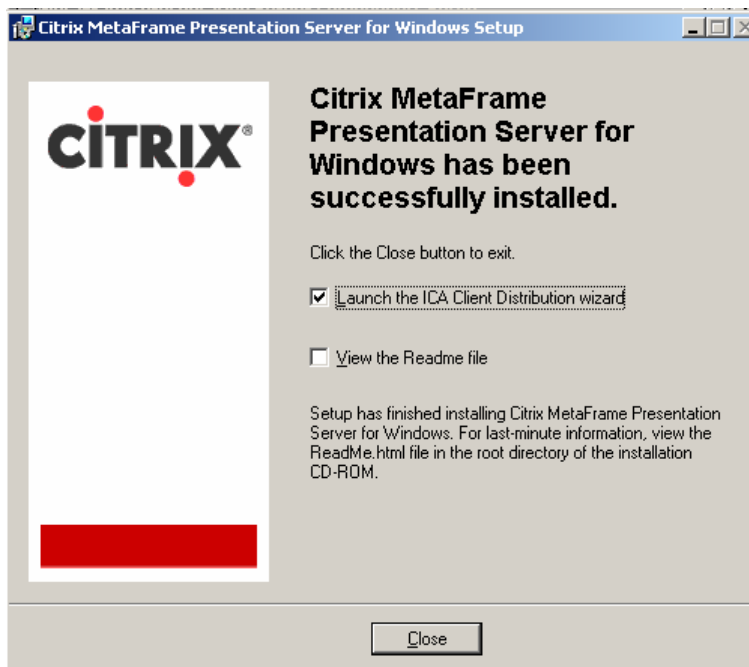
14. At this point Presentation Server installation recognizes you are performing an upgrade and prompts you acknowledge you wish to upgrade the system. Click **Yes** to upgrade and continue with installation of Presentation Server 4.0.



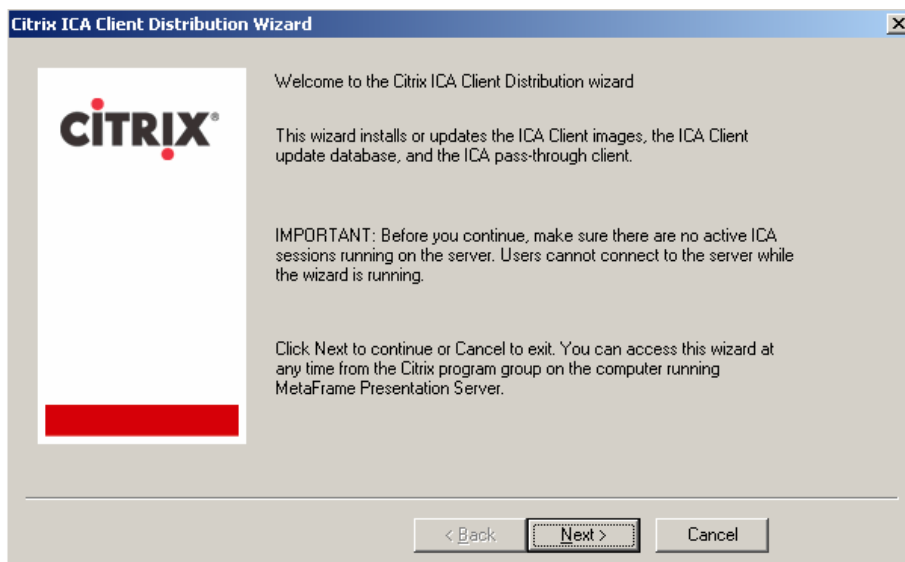
15. You are now prompted to enter the Citrix Access Suite License server that the new Presentation Server 4.0 will use. Click **Next** when finished.



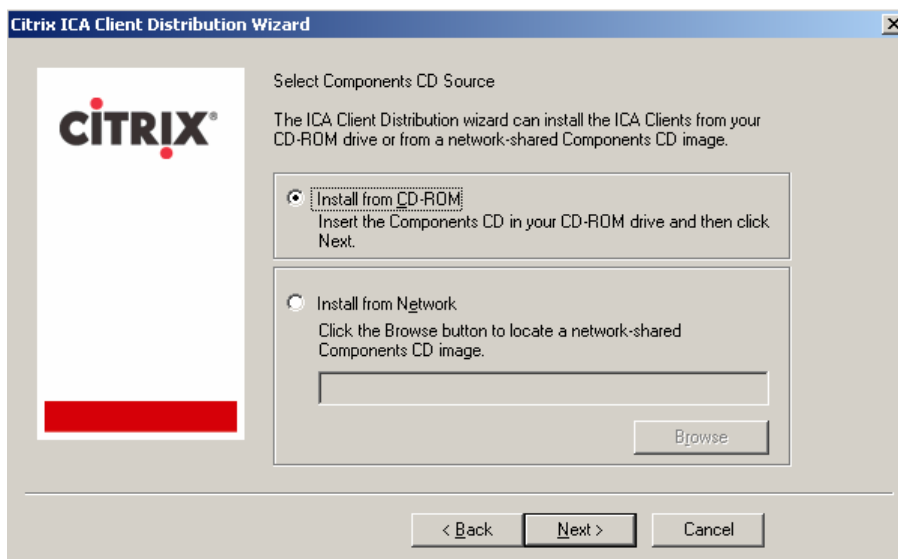
16. Uncheck the **View the Readme File** checkbox and select the **Launch the ICA Client Distribution wizard** and click **Close** to continue



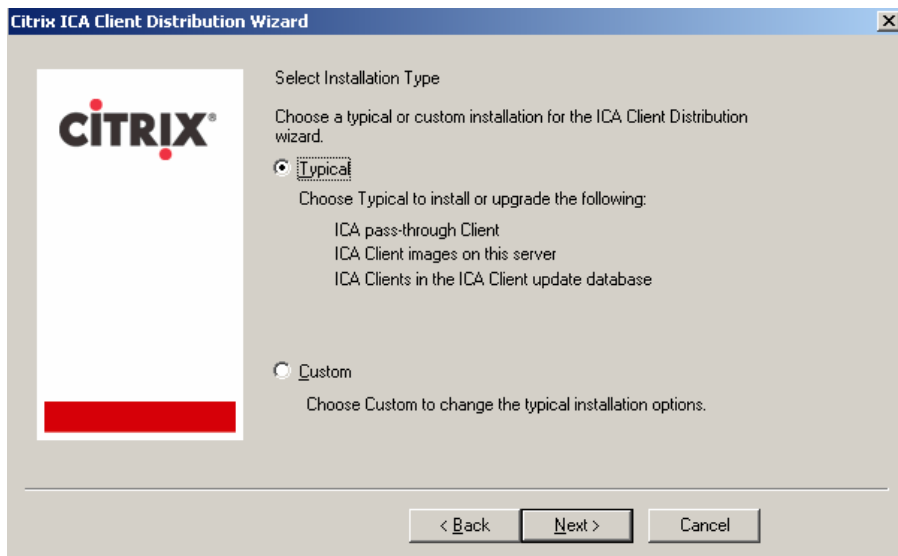
17. The ICA Client Distribution wizard opens. Click **Next** to continue.



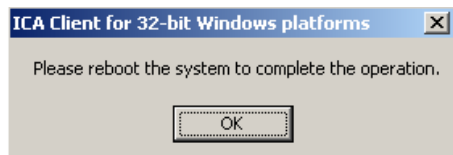
18. You will now need to select the location of the Presentation Server 4.0 Components CD image. Once finished click **Next** to continued.



19. You are now prompted to select if you would like to add all clients (typical) and or select which clients will be added to the ICA Client Distribution database (custom). Click the **Typical** radio button and then click **Next**.



20. Click OK



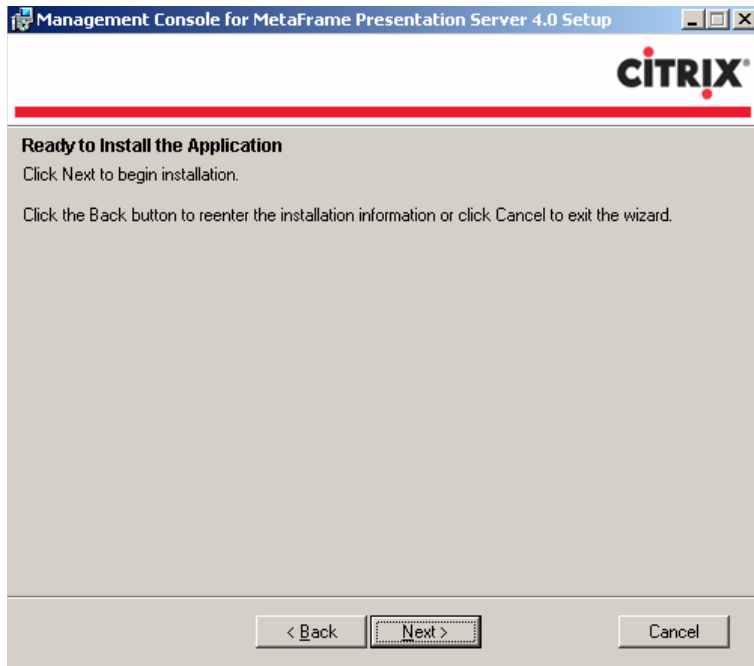
21. Click **Finish**.



22. Reinsert the **Citrix Presentation Server 4.0 CD**. You have now successfully installed Presentation Server 4.0 and you are ready to continue the installation and install the Management Console for Presentation Server 4.0. Click **OK** to continue.



23. Click **Next** to continue.



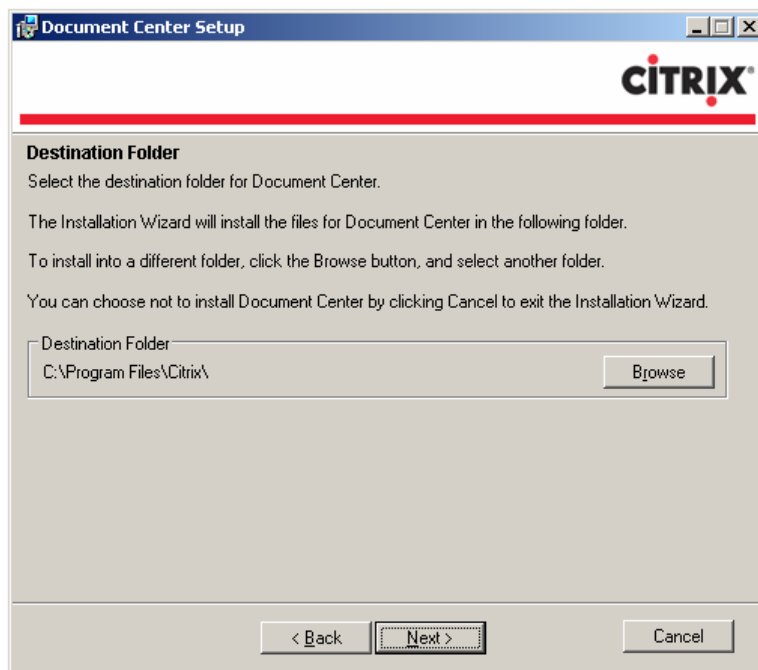
24. Click **Finish** to continue.



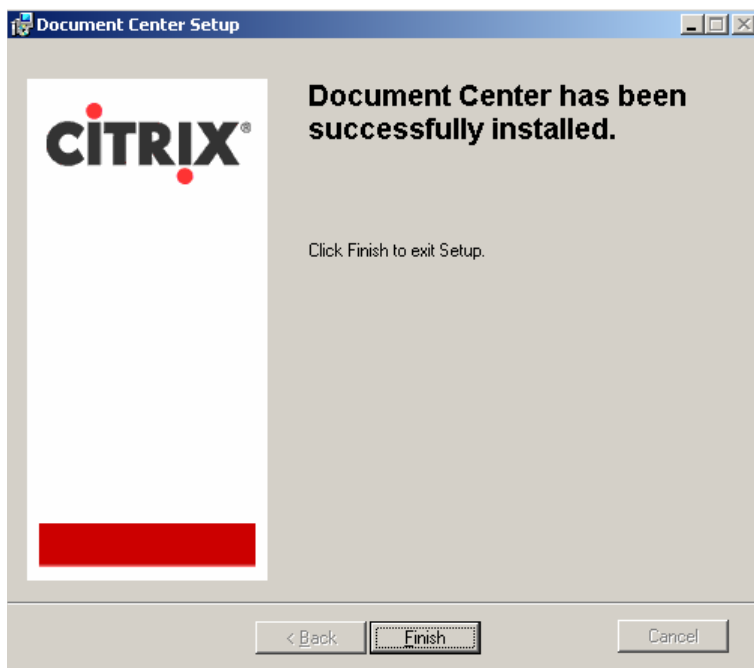
25. You are almost finished with the installation of Presentation Server 4.0. You are now ready to install the Document Center. Click **Next** to continue.



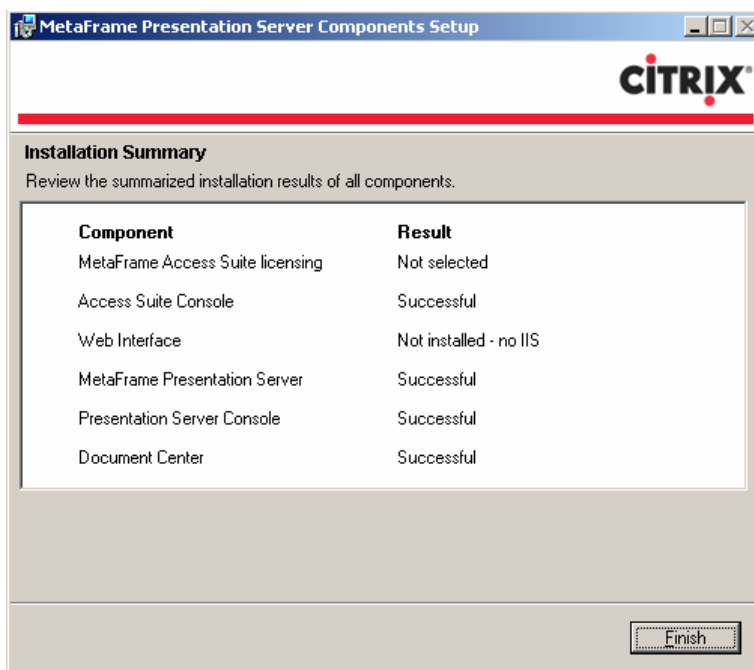
26. Enter the location you wish to store the document file and click **Next** to continue.



27. Click **Finish** to continue.



28. You are almost finished. Verify the desired components were successfully installed and click **Finish** to complete the installation.

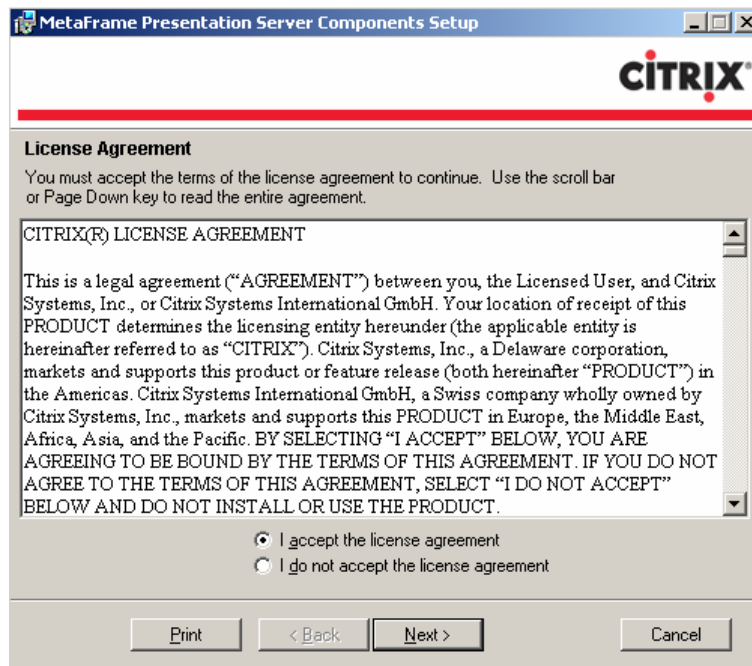


29. Click **Yes** to restart the server and complete the installation of Presentation Server 4.0

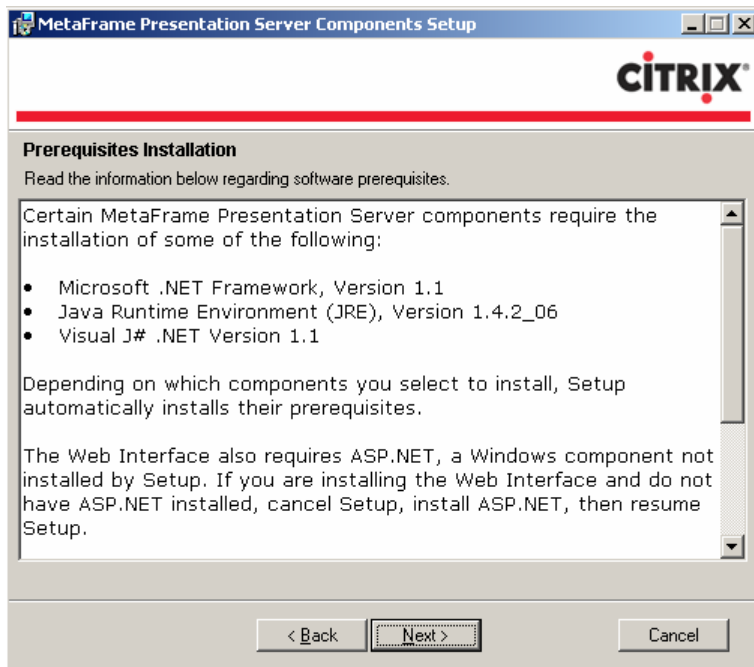
7. 1. 3 How to Install Additional Presentation Server 4.0 Servers to a Farm

The following details how to add additional Presentation Server 4.0 servers to an existing Farm.

1. Insert the **Presentation Server 4.0 Server CD** and click the **Product Installation and updates** button.
2. Click the **Install MetaFrame Presentation Server 4.0 and its components** button to launch the setup program.
3. Scroll to the bottom of the license agreement and click the **I accept the license agreement** radio button and click **Next** to continue.

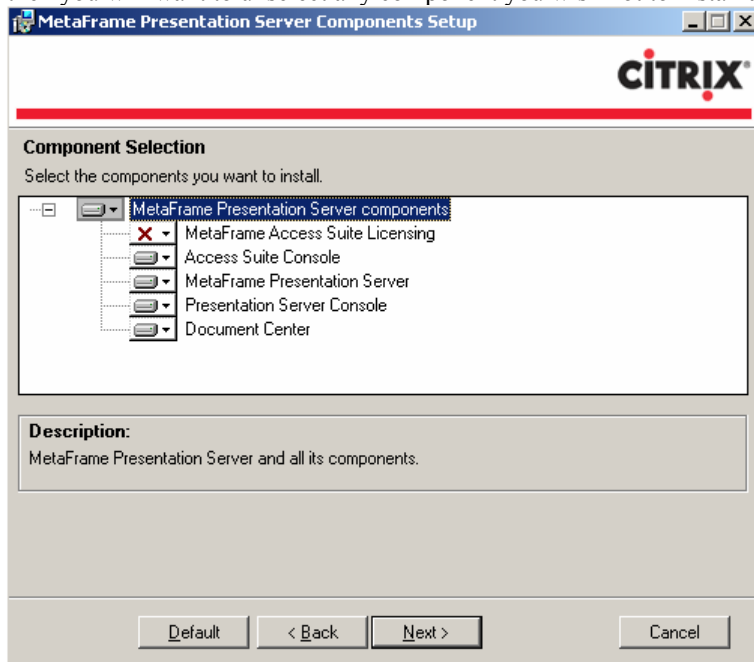


4. Installation will now analyze the server for the Presentation Server required components and will present you with a list of which ones will be installed next. Click **Next** to continue.

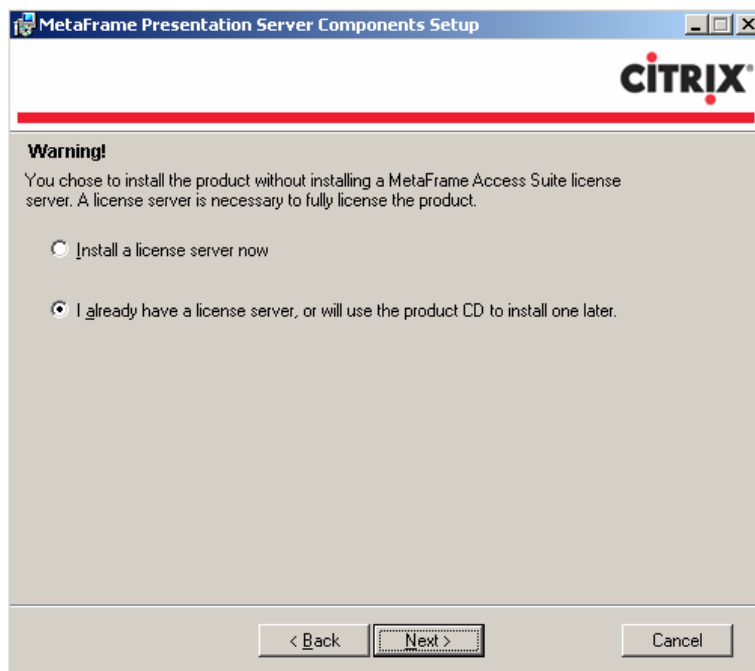


You are now prompted to select the Presentation Server products that will be installed during installation. This is a bit different than what was found in previous versions of MetaFrame/Presentation Server.

Since we have already installed the MetaFrame Access Suite Licensing component in a previous step then you will want to unselect any component you wish not to install and click **Next** to continue.



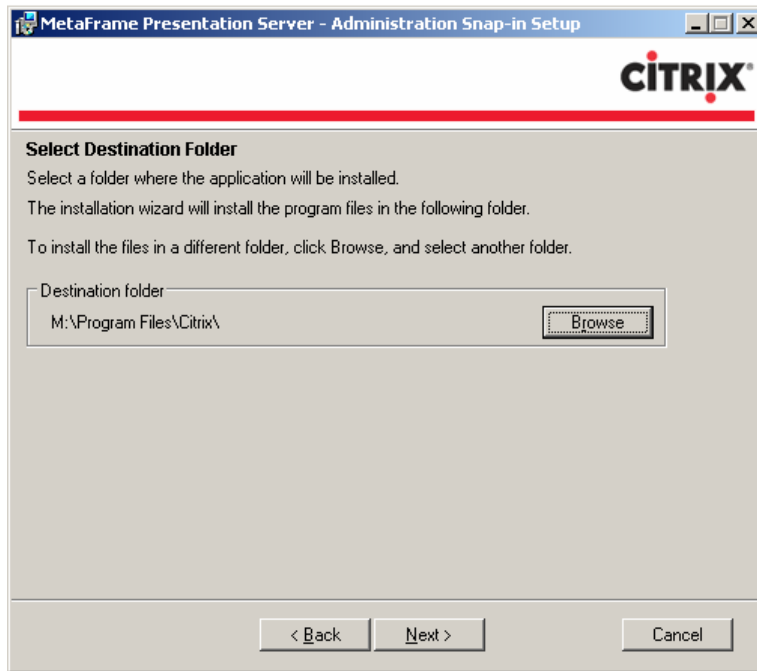
5. You are now prompted that you have chosen not to install a license server. Disregard this warning as we have already installed a license server and will be configuring Presentation Server to point to it in a future step. Click **Next** to continue.



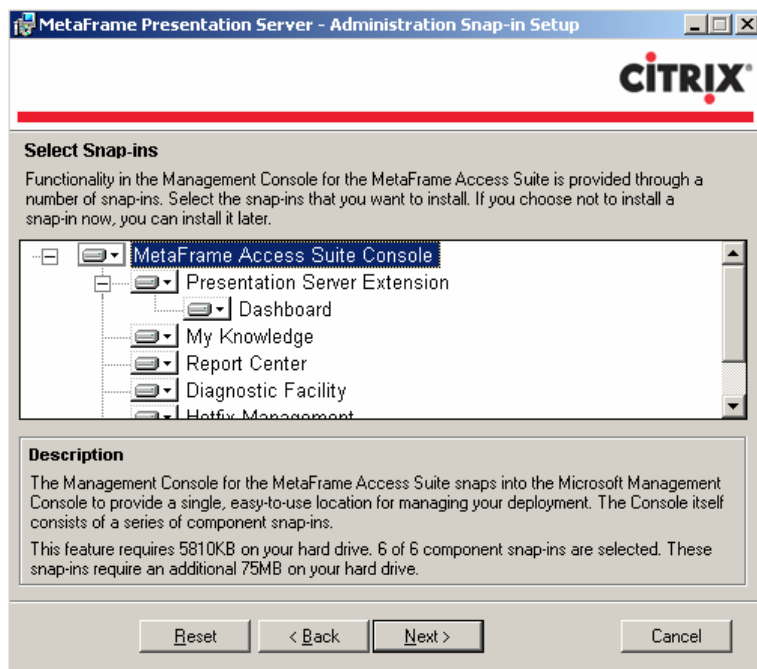
6. Setup is now ready to install the Access Suite Console. Click **Next** to continue.



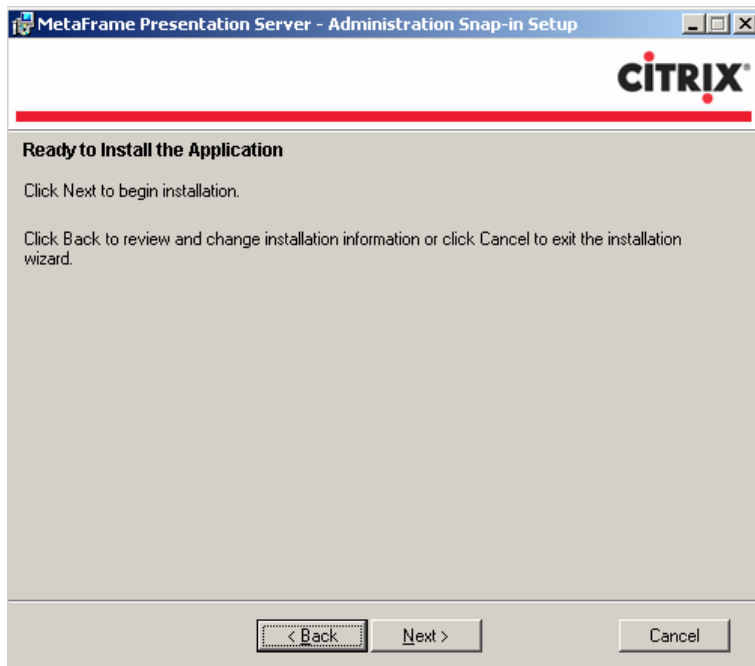
7. Select the folder you wish to install the Access Suite Console snap-in and click **Next** to continue.



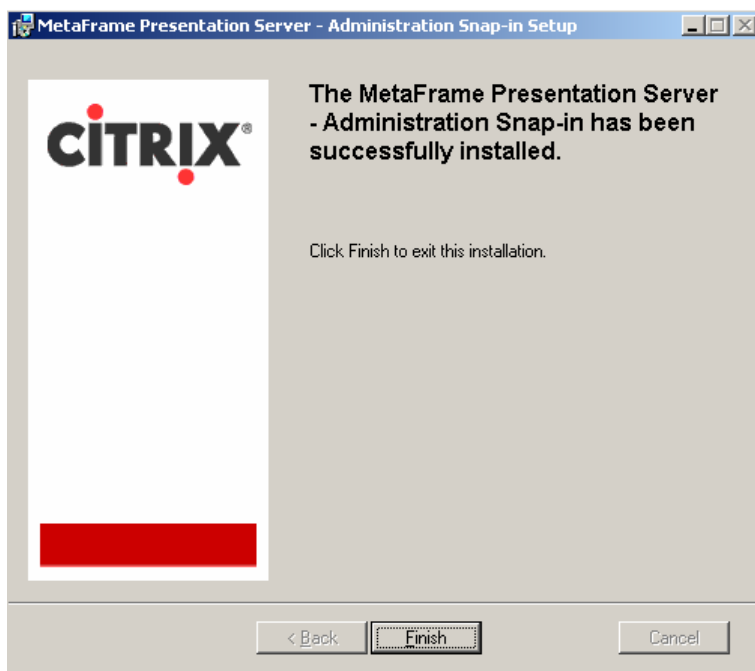
8. You are now presented with the ability to select the components of the Access Suite Console. It is recommended to select the default of installing all components and then click **Next** to continue.



9. Click **Next** to begin installation of the Access Suite Console MMC snap-in.



10. Click **Finish** to continue the installation of Presentation Server 4.0.

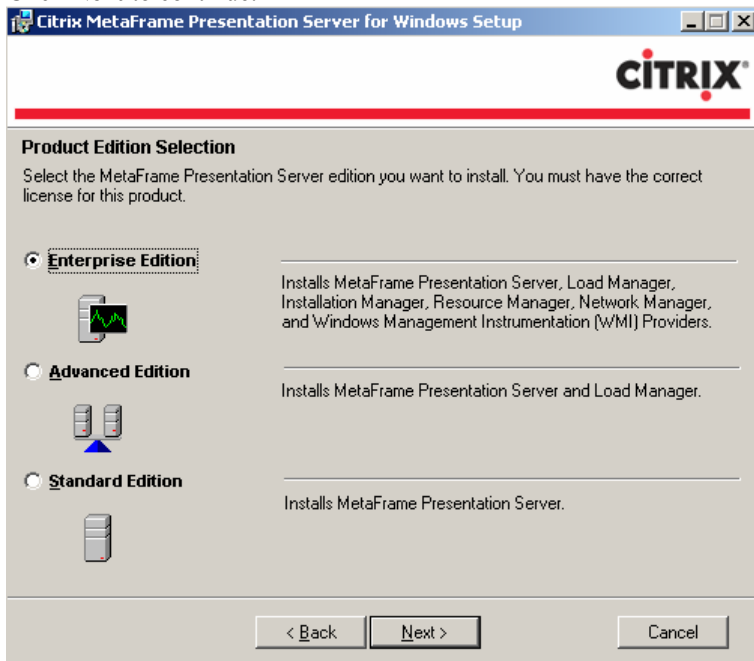


11. You are now ready to install Presentation Server 4.0. Click **Next** to continue.



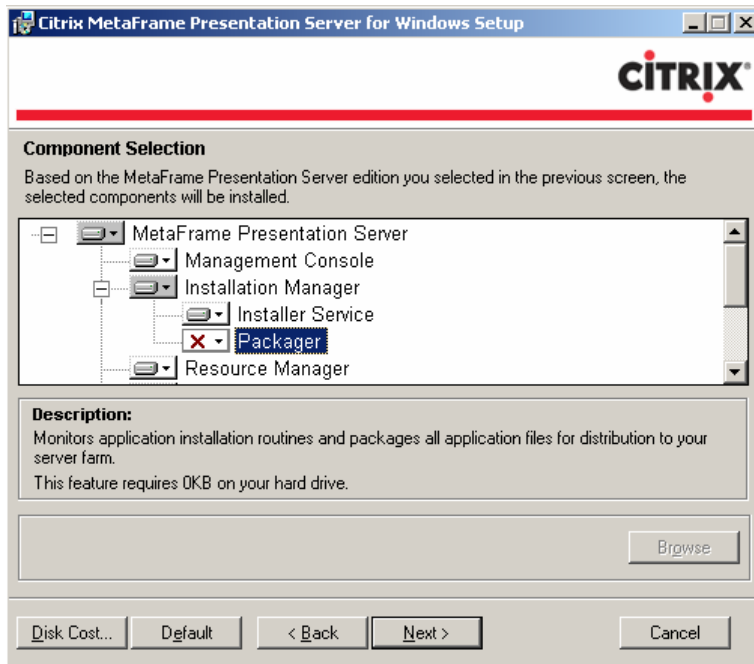
12. You are now prompted to select the correct Product Edition you are licensed for. It is important you select the correct product edition that corresponds to the license you have added to the Access Suite license server earlier.

Click **Next** to continue.

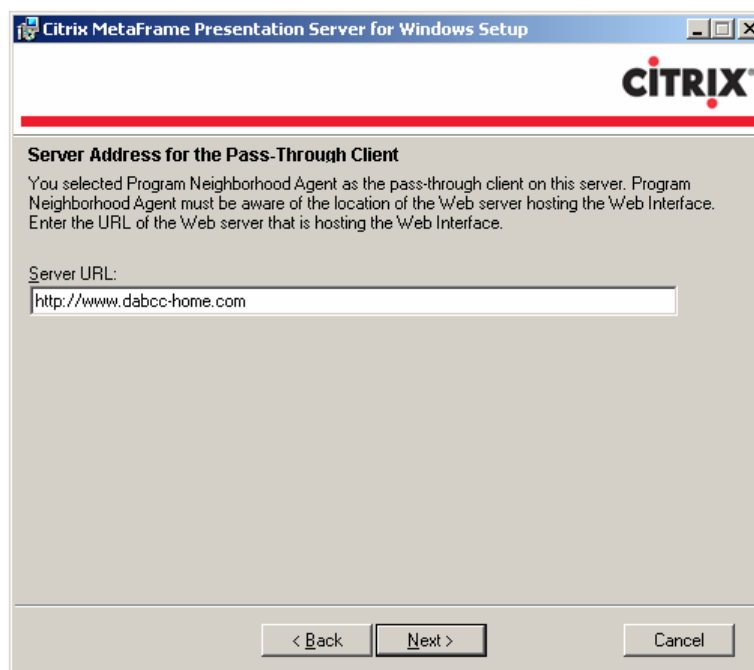


13. You are now prompted to select the components you will be installing. If you will be installing Installation Manager, I highly recommend removing the Packager component. Open the **Installation Manager** Key and right click on **Packager** and click **X** **Entire feature will be unavailable**.

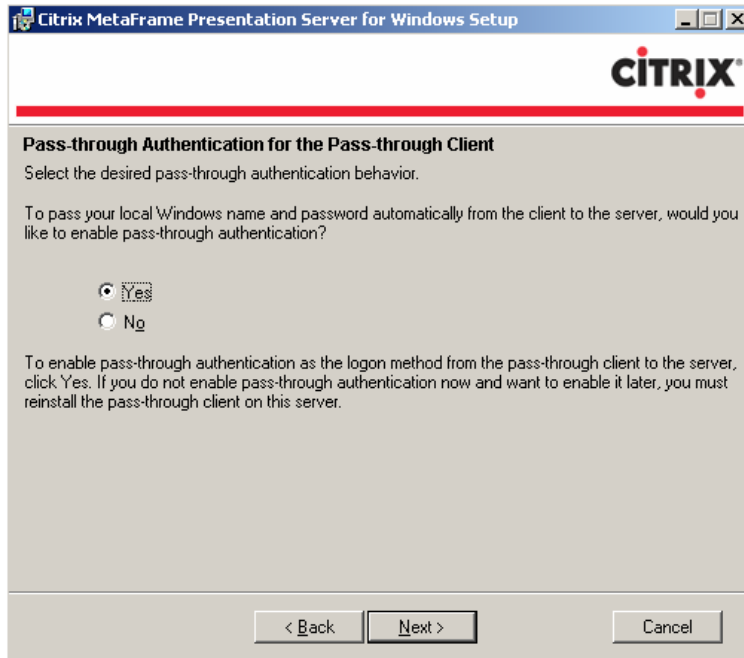
Note: If you would like to utilize the Program Neighborhood Agent ICA Client as the pass-through client then you will need to enable it for installation.



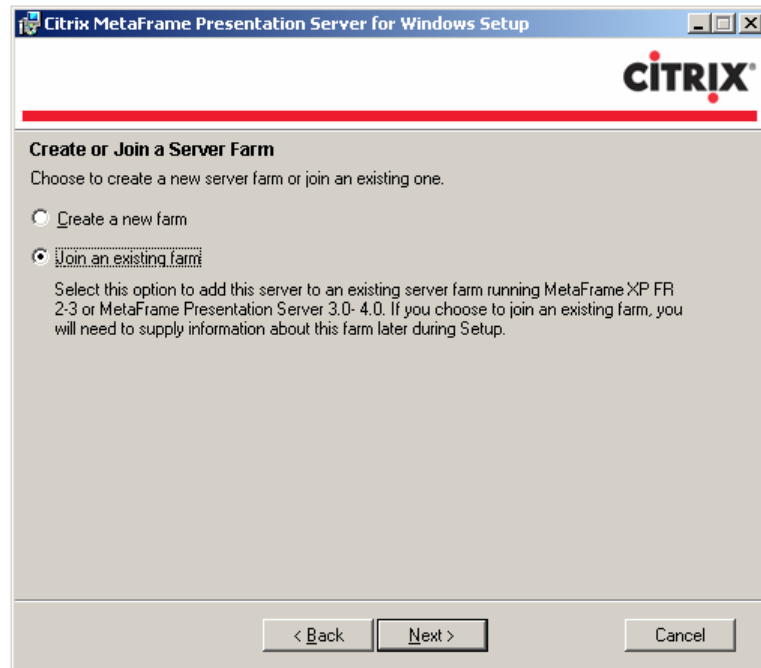
14. If you have selected to utilize the Program Neighborhood Agent as the pass-through client then you will be presented with the following screen asking you to enter the FQDN name of the Web Interface 4.0 web server.



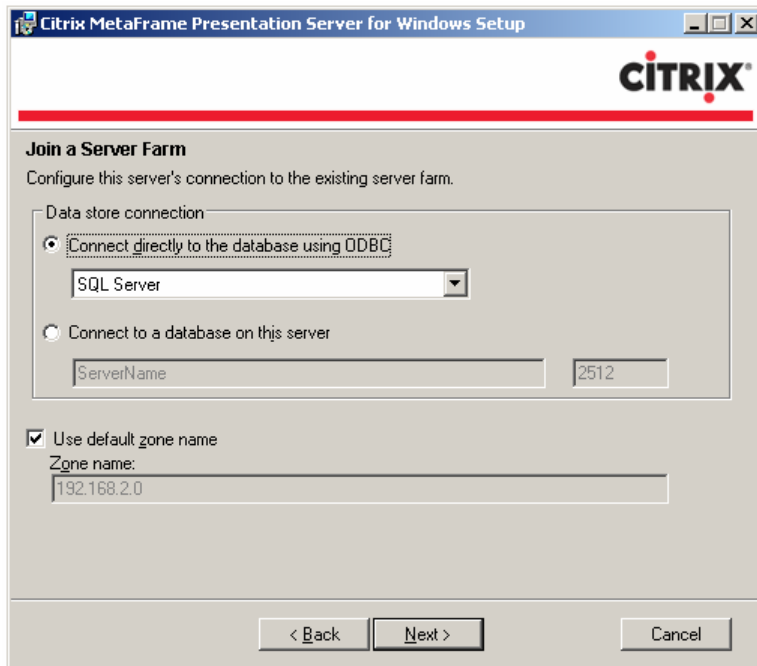
15. Click to select the **Yes** radio button to give the end-users the ability to utilize Pass-Through authentication. Click **Next** to continue.



16. You are now prompted to create or join a server farm. Click the **Join an existing farm** radio button and click **Next**.

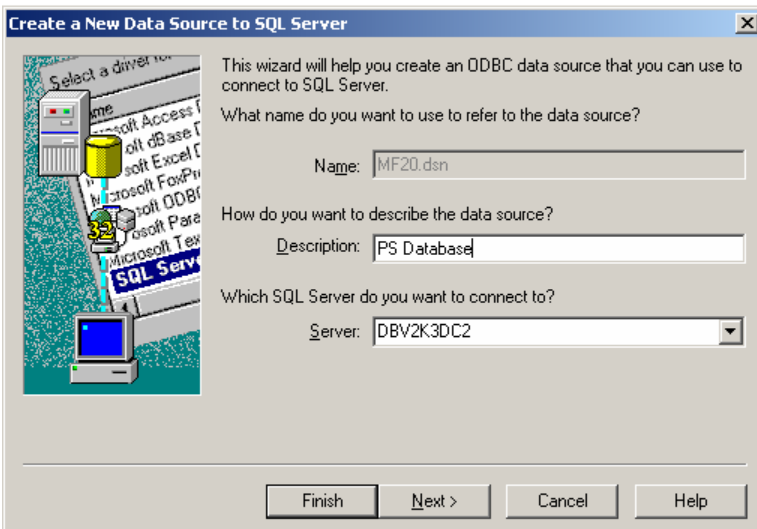


17. Select the type of Data Store that will be connecting to. You also have the ability to select the Zone the new server will exist. Click **Next** when finished.

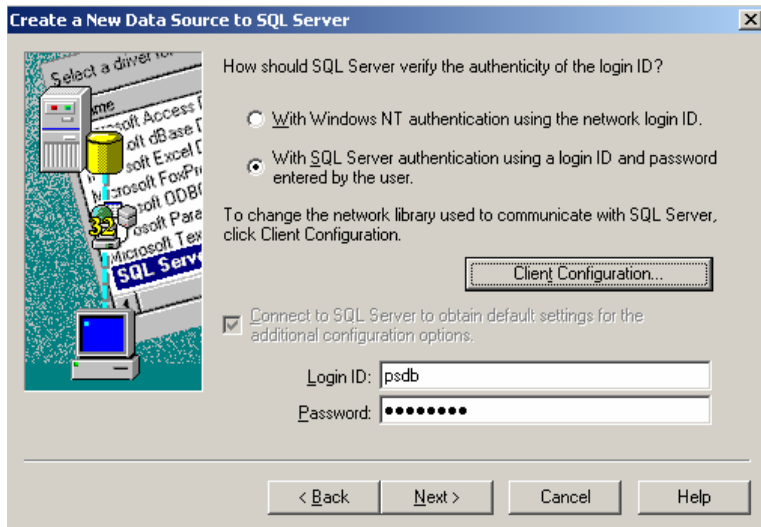


Note: For this example, I have chosen a SQL Server as my Data Store so the next screen will prompt you to create the ODBC connection to the Data Store.

18. Enter a description in the **Description** text box and select the SQL Server from the **Server** drop down list. When finished click **Next**.



19. You are now prompted to select the authentication method. Click to select the **With SQL Server authentication using a login ID and password entered by the user** radio button. Enter the username and password that was entered in step 6 of the **How to Create a Presentation Server 4.0 Data Store with SQL Server 2000**. Click the **Next** to continue.



How should SQL Server verify the authenticity of the login ID?

☐ With Windows NT authentication using the network login ID.

☒ With SQL Server authentication using a login ID and password entered by the user.

To change the network library used to communicate with SQL Server, click Client Configuration.

Client Configuration...

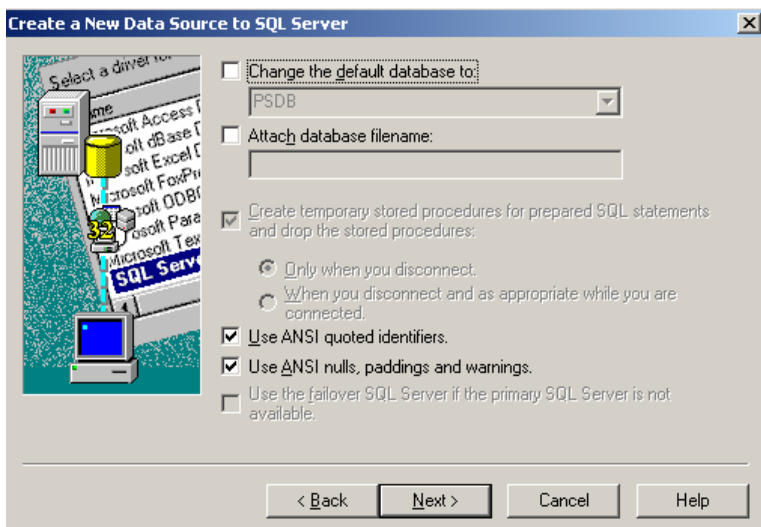
☒ Connect to SQL Server to obtain default settings for the additional configuration options.

Login ID: psdb

Password:

< Back Next > Cancel Help

20. Verify the database created above is selected as the default database and click **Next**. If it is not already selected then click to check the **Change the default database to** checkbox and select the Presentation Server Data Store database and click **Next**.



Change the default database to: PSDB

Attach database filename:

☒ Create temporary stored procedures for prepared SQL statements and drop the stored procedures:

☒ Only when you disconnect.

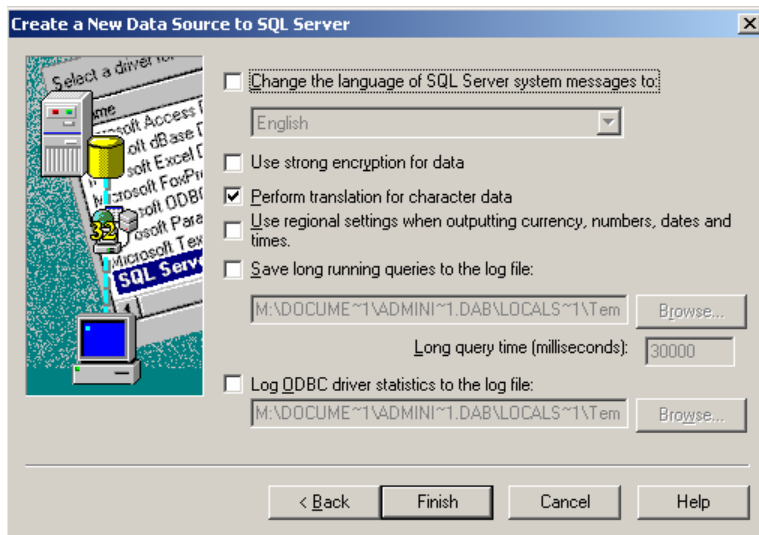
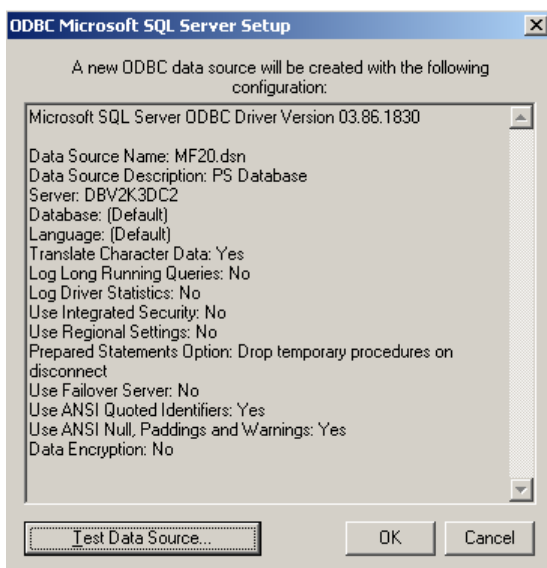
☐ When you disconnect and as appropriate while you are connected.

☒ Use ANSI quoted identifiers.

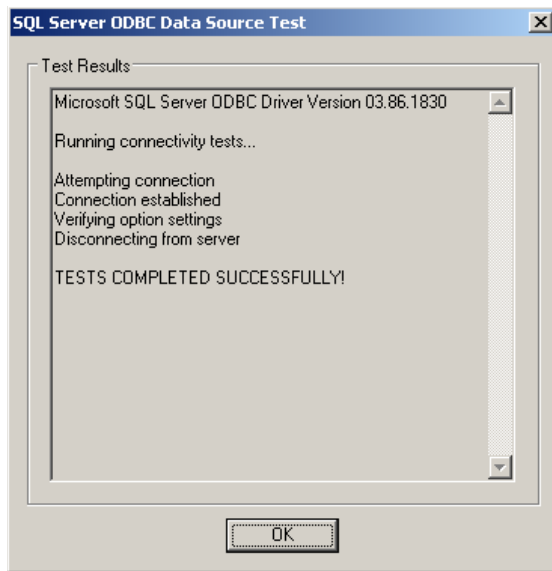
☒ Use ANSI nulls, paddings and warnings.

☐ Use the failover SQL Server if the primary SQL Server is not available.

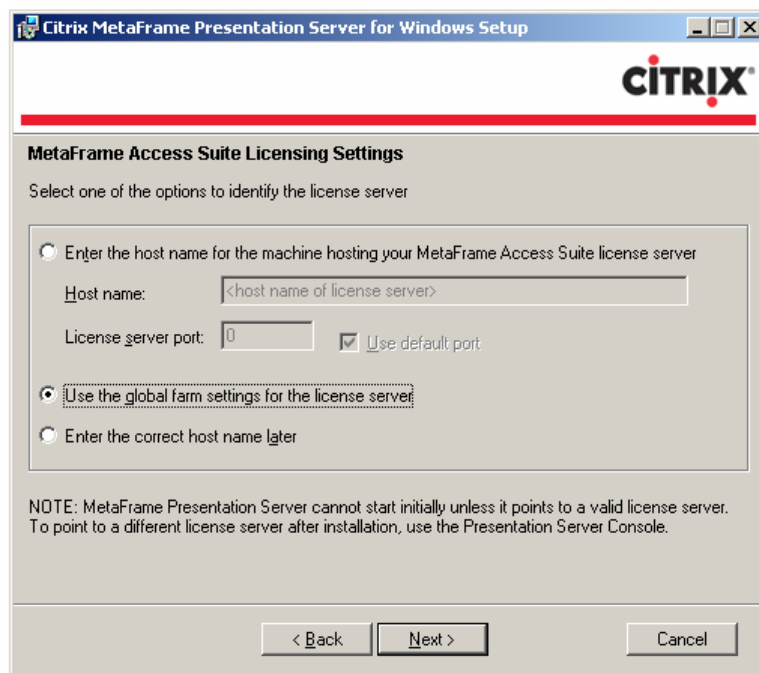
< Back Next > Cancel Help

21. Click **Finish**22. Click the **Test Data Source** button.

23. Verify it reads TESTS COMPLETED SUCCESSFULLY and click **OK**.

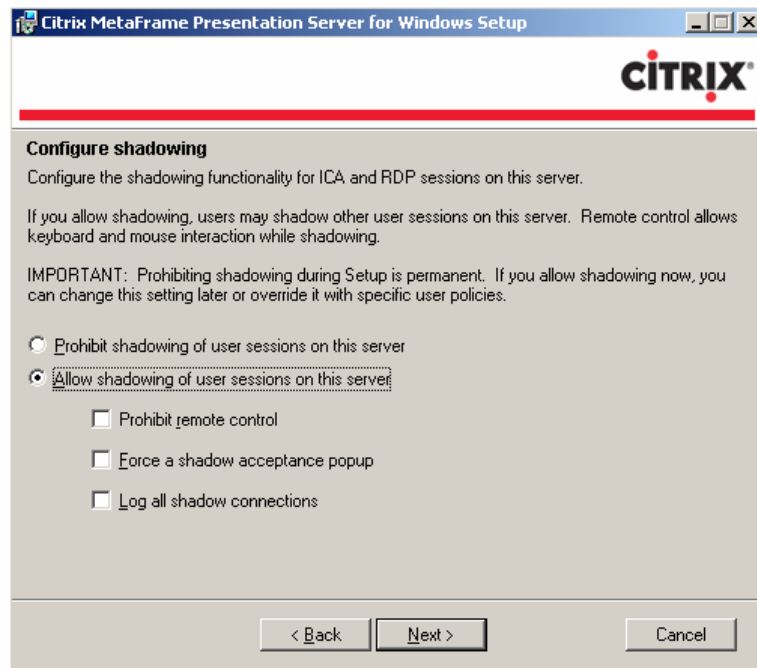


24. You are now prompted to enter the location of the license server the farm is using. Click to select **Use the global farm settings the license server** radio button and lick **Next** to continue.



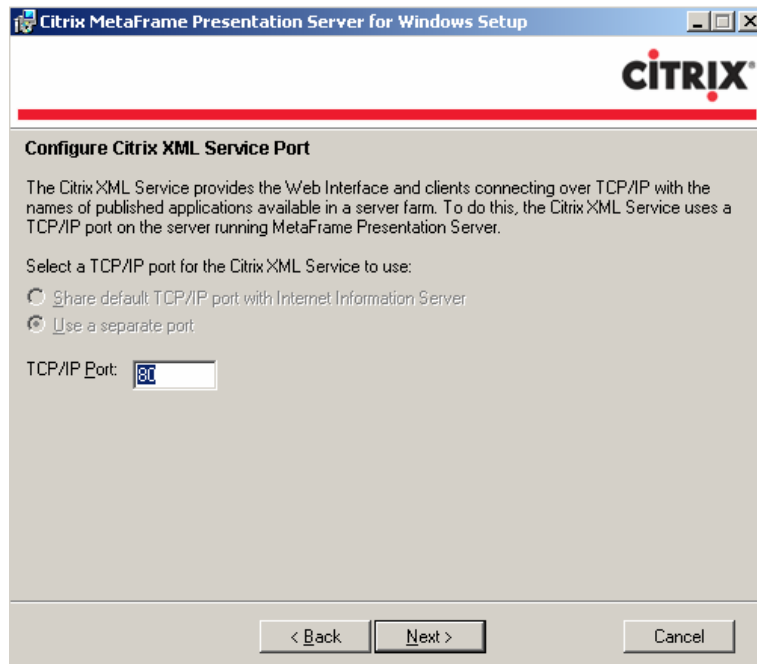
25. You are now prompted to select how Presentation Server will deal with shadowing. Unless you require disabling Shadowing support I recommend to accept the defaults and click **Next** to continue.

Note: I recommend accepting the default and with the use of policies, you will be able to assign shadowing rights on a user, group, computer, and IP address basis.



26. Enter the TCP/IP port that the Citrix XML Service will listen on and Click **Next**.

Note: The default is port 80 and unless you have a reason for doing so, I recommend that you stick with the default across all servers in the farm.

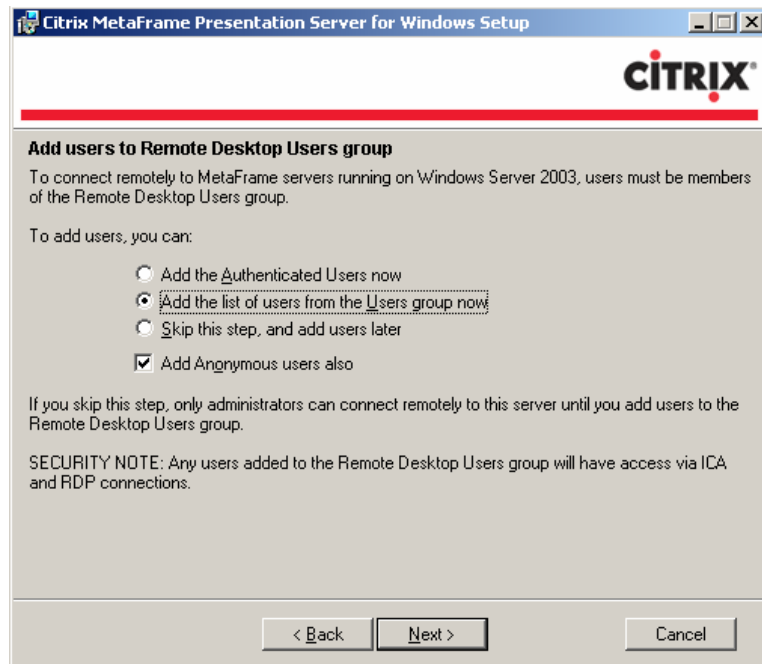


27. If you will be running Web Interface 4.0 on the same server as Presentation Server and or neglected to remove IIS during install then Web Interface 4.0 will automatically be installed during setup. This screen asks whether you want your users to be able to browse to the root of your server (<http://myserver>) instead of requiring adding the path. This requires that you will not be presenting other data on this web server via browsing this URL. When finished click **Next**.

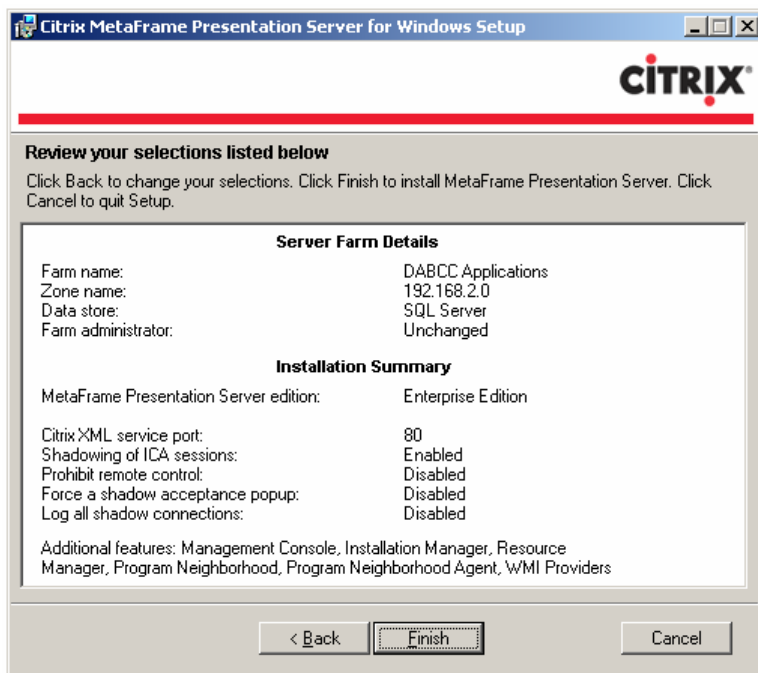
Important: In this example I have chosen not to install IIS. I'm a firm believer in leaving a Citrix Presentation Server to perform the actions of a Presentation Server and not double as a Web Server. If you are in a very small environment and have zero access to a web server then you can install IIS, otherwise I highly recommend deploying a dedicated web server for Web Interface and/or installing Web Interface on an existing web server. This is discussed in more detail in the Install Web Interface section of this document.

28. If you are installing Presentation Server 4.0 on a Microsoft Windows Server 2003 server then users will be required to members of the Remote Desktop Users group in order to login. Of this screen you are presented with the ability to have Presentation Server add the users group and/or anonymous users to the Remote Desktop Users group for you. Select the desired setting and click Next to continue.

Note: I recommend keeping with the default settings.



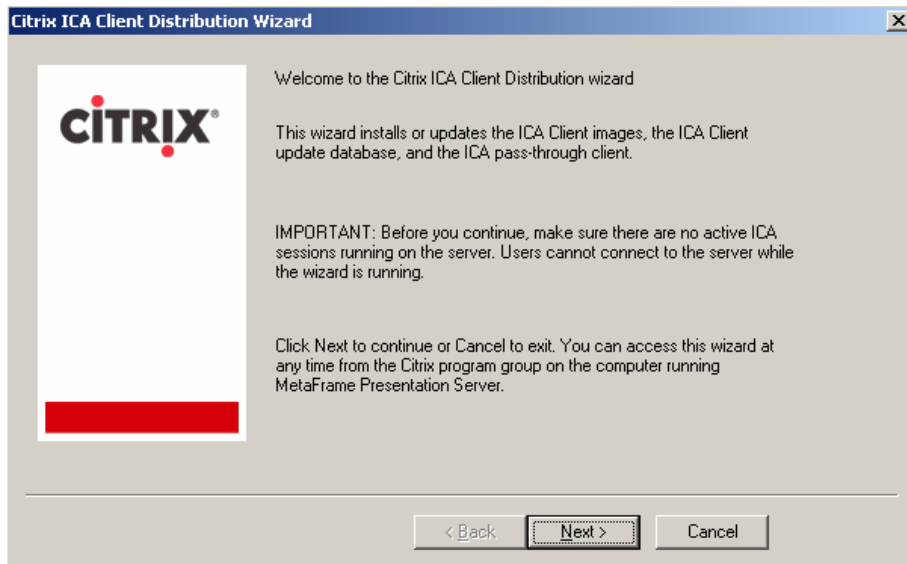
29. Verify the farm and installation settings are correct and click **Finish**.



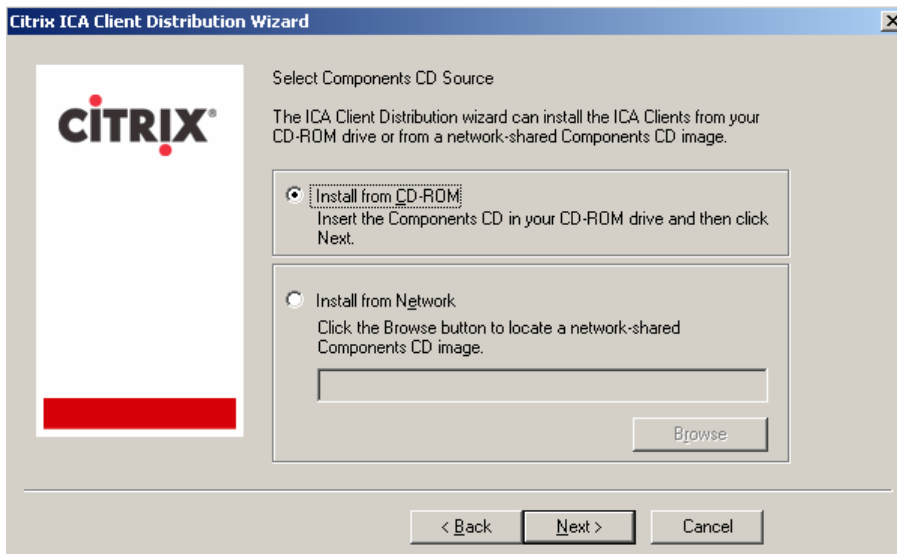
30. Uncheck the **View the Readme File** checkbox and select the **Launch the ICA Client Distribution wizard** and click **Close** to continue



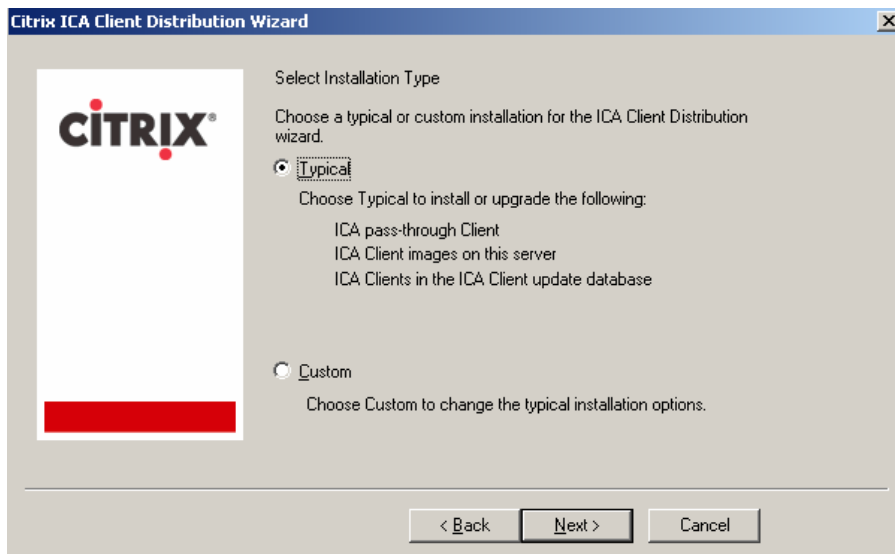
31. The ICA Client Distribution wizard opens. Click **Next** to continue.



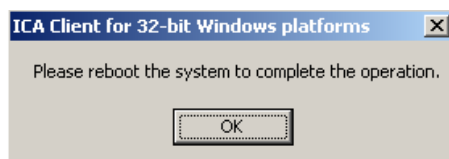
32. You will now need to select the location of the Presentation Server 4.0 Components CD image. Once finished click **Next** to continued.



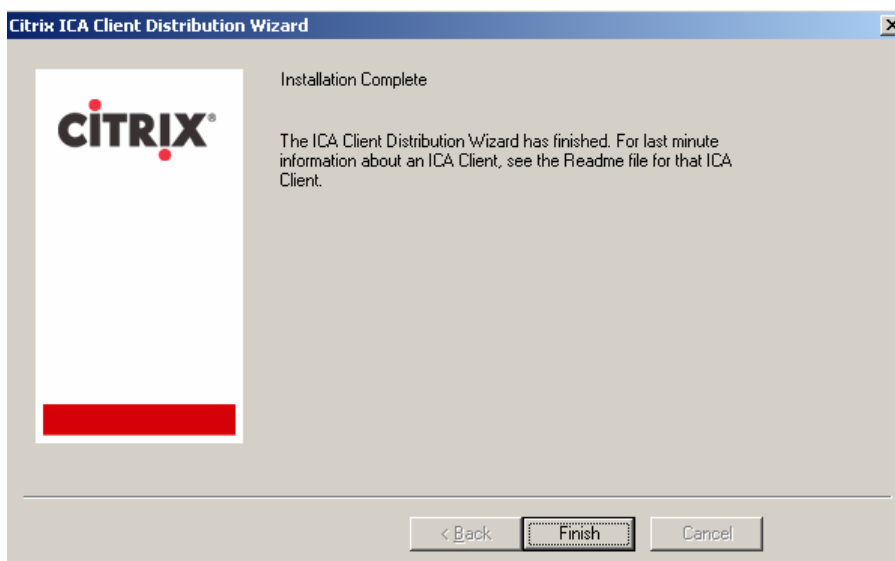
33. You are now prompted to select if you would like to add all clients (typical) and or select which clients will be added to the ICA Client Distribution database (custom). Click the **Typical** radio button and then click **Next**.



34. Click **OK**



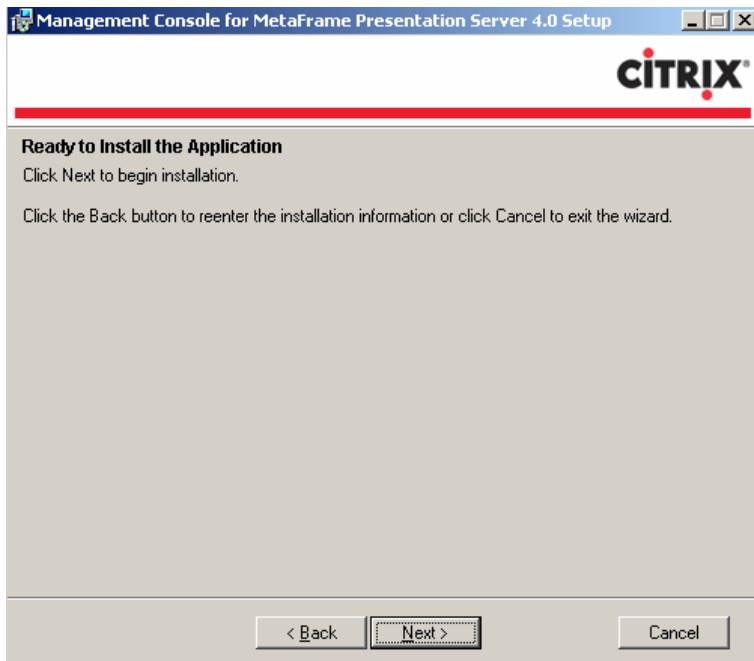
35. Click **Finish**.



36. Reinsert the **Citrix Presentation Server 4.0 CD**. You have now successfully installed Presentation Server 4.0 and you are ready to continue the installation and install the Management Console for Presentation Server 4.0. Click **OK** to continue.



37. Click **Next** to continue.



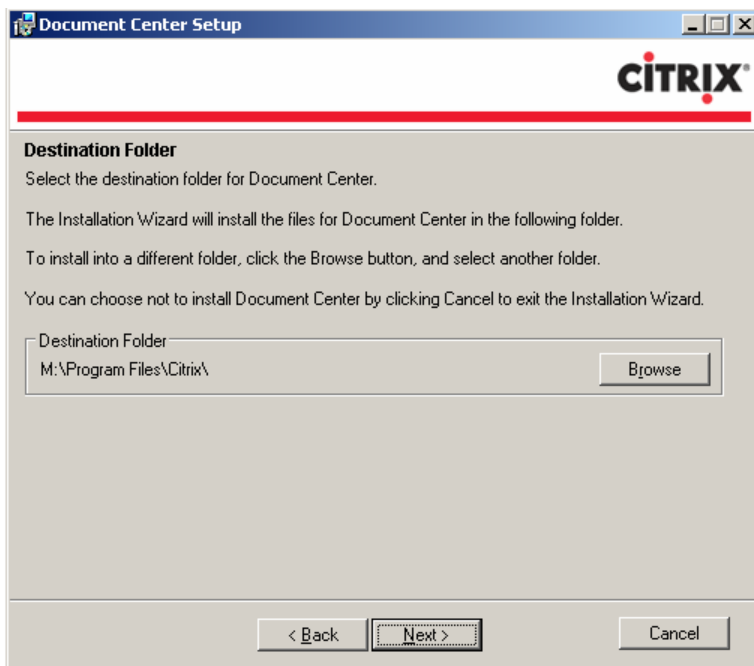
38. Click **Finish** to continue.



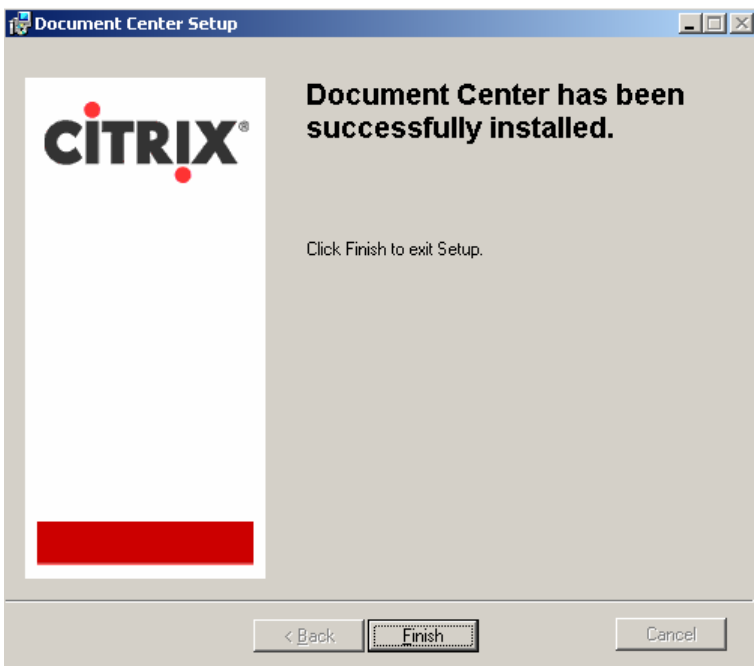
39. You are almost finished with the installation of Presentation Server 4.0. You are now ready to install the Document Center. Click **Next** to continue.



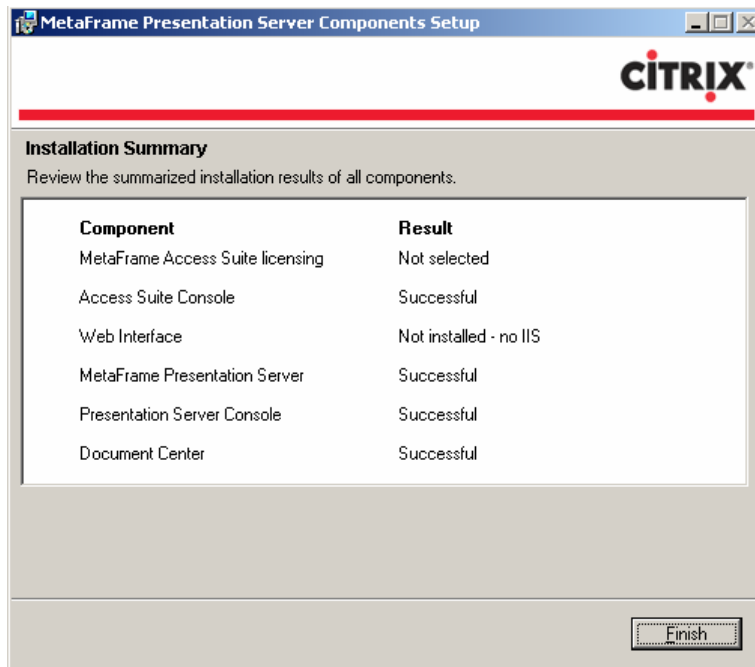
40. Enter the location you wish to store the document file and click **Next** to continue.



41. Click **Finish** to continue.



42. You are almost finished. Verify the desired components were successfully installed and click **Finish** to complete the installation.



43. Click **Yes** to restart the server and complete the installation of Presentation Server 4.0

You have now successfully added an additional Presentation Server 4.0 Server to the farm. Repeat the above steps until all implementation phase servers are installed.

Note: The first time any additional Presentation Server 4.0 Servers are added to a farm it could take a few minutes to log in. This only occurs on the first reboot.

