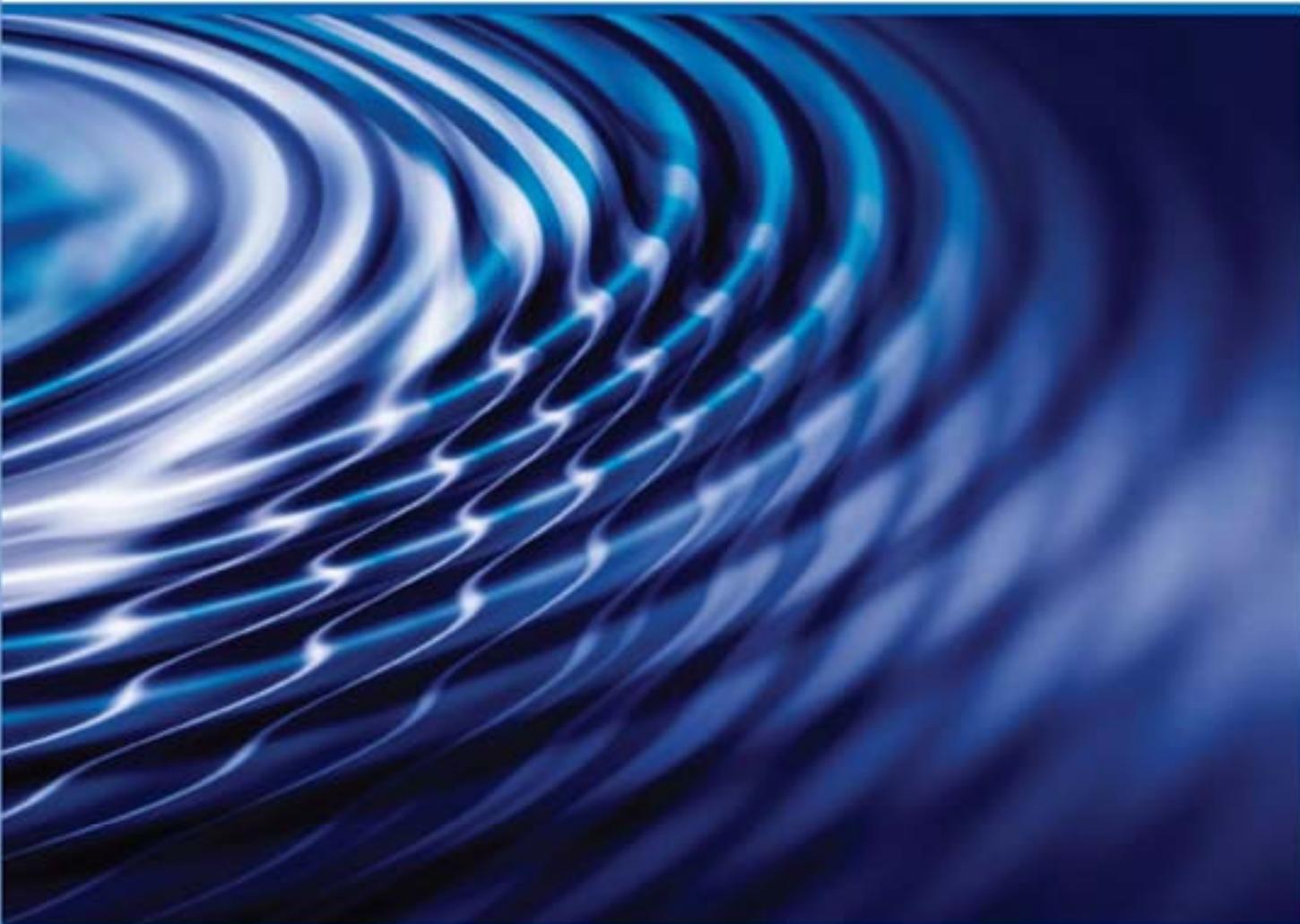


Evaluating Reflection X Advantage



Attachmate®
Reflection®



Evaluating Reflection X Advantage

Version 4.2



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Reflection X Advantage: The Next Generation X Server

Reflection X Advantage, the new X server from Attachmate, is optimized for today's geographically-dispersed organizations and IT environments. Reflection X Advantage is included in Reflection X 2011, Reflection Suite for X 2011, and is also available at no additional charge to maintained customers using Reflection X version 14.x.

Reflection X Advantage provides two modes of operation— standalone and domain mode, and this guide provides an opportunity for you to test both.

Reflection X Advantage Features

Standalone mode is provided by a single application—X Manager, which is installed by default. For users of earlier Reflection X products, Reflection X Advantage in standalone mode will be familiar territory: a bulletproof X server that provides reliable, seamless access to your mission-critical X applications.

Domain mode offers all the functionality of standalone mode and complements that power with additional features that enhance productivity without increasing costs. Domain mode consists of multiple components—X Manager for Domains, the X Administrative Console, and the Reflection X Service. These features are not installed by default; different systems within the domain require different components.

Whichever mode you choose, you'll have access to the following features:

- **Multiple platform support:** Using Reflection X Advantage, users can access X hosts and applications from a broader-than-ever array of desktop environments, including Windows 7, Windows Vista, Windows XP, Linux, Solaris, HP-UX, and Mac.
- **Real-time collaboration:** The session sharing and transfer features in Reflection X Advantage allow colleagues to look at the same applications concurrently, and even transfer control of the session from one user to another.
- **Improved performance options:** Using Reflection X Advantage, you can address problems with low bandwidth or high latency connections using remote session services. When you configure distributed Reflection X sessions, only the protocol required to update the display is sent over the network. This results in dramatically improved performance where high latency is a problem. Where low bandwidth is a problem, Reflection X automatically compresses the protocol sent to remote X servers.
- **Fully-integrated Secure Shell with FIPS 140-2 validation support:** With Reflection X Advantage, you get a single-vendor security solution that is integrated with the X server.
- **X11 Extension Support:** Reflection X Advantage provides support for key X11 extensions including GLX, Render, Damage, Shape, and XFixes.
- **Native IME support for input of double-byte characters:** Native IME support lets you use your workstation's input method editor (IME) to compose characters (including Japanese, Korean, and Chinese). The X11 Input Method (XIM) server provided by Reflection PKI Services Manager obtains the composed text from your IME and passes it to XIM-aware clients. You can work with varied X clients without having to learn new input techniques.

- **X.509 certificate authentication:** Secure Shell connections require both user and host authentication. In addition to supporting standard options for user authentication (passwords and public keys), Reflection X Advantage also supports authentication using X.509 certificates. Certificates can be stored in the Reflection X Advantage Store, a local directory, the Windows Certificate Store, or on a Smart Card or similar device. Also, by downloading and installing Reflection PKI Services Manager you can configure Reflection X Advantage to authenticate hosts that present X.509 certificates. Reflection PKI Services Manager is available as a separate download at no additional charge.

Additional features available in Domain mode include:

- **Centralized session configuration:** Reflection X Advantage domain features can help simplify session setup for end users. Administrators can create and maintain sessions in a single centralized location and provide users with access to these sessions. Users can get started quickly using these centrally configured sessions, and can also create and configure individual sessions on their own workstations.
- **Flexible, instant access to an established session from the office, at home, or on the road:** Leave a running session from one location and rejoin the same session from another location. No time is spent on reestablishing the client connection.
- **Session protection:** When you leave a session running, you can use fault tolerance to safeguard against losing the session. This option enables you to return to your work exactly where you left it, even after a network or hardware failure.
- **Domain authentication services:** Leverage your current authentication process to provide Reflection X Advantage domain authentication. Use any of these authentication methods: Windows, PAM (Pluggable Authentication Modules), LDAP (Lightweight Directory Access Protocol), or Reflection X Internal.
- **Load balancing:** In a distributed session environment, Reflection X Advantage is installed on more than one computer, and sessions can run on multiple domain nodes. When a user initiates a session, the session is run on the least-loaded domain node.

Feature comparison

	Standalone Mode (X Manager)	Domain Mode (X Manager for Domains)
Launch and interact with an X client application	X	X
XDMCP	X	X
X session sharing	X	X
X11 Extensions support	X	X
Improved performance over slow networks	X	X
Integrated Secure Shell	X	X
FIPS 140-2 support	X	X
X.509 certificate authentication	X	X
Centralized configuration of X sessions		X
Leave and rejoin X sessions		X
Fault tolerance for X sessions		X

See it for yourself!

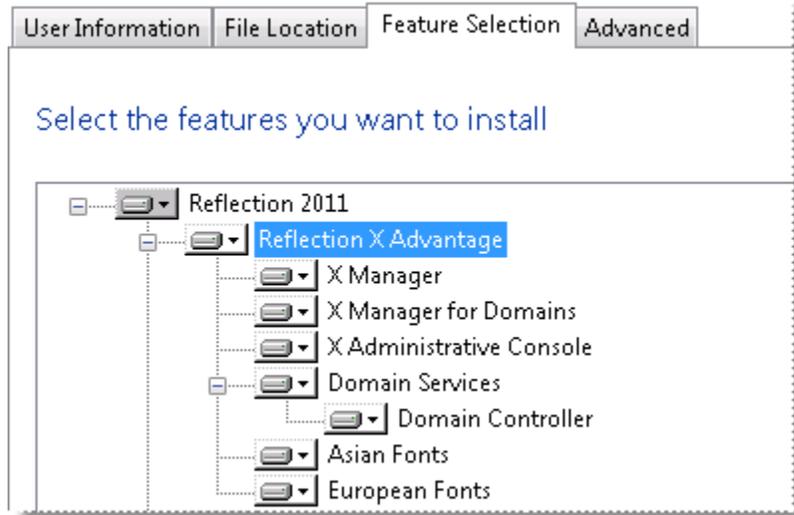
Reflection X Advantage is included with the following products. You can download and install an evaluation copy at no charge.

- Reflection X 2011
- Reflection Suite for X 2011

To supplement the information in this guide, you can access complete product documentation from the Reflection X Advantage documentation page.
(<http://support.attachmate.com/manuals/rxa.html>)

To download and install an evaluation copy

- 1 Request an evaluation copy from the PC X Server product page. (<http://www.attachmate.com/Products/PC+X+Server/pcxserver.htm>) After you've filled in the product request form, you'll receive an email with a link to the download library.
- 2 Click the email link. This takes you to the download library, which you can use to download the Reflection X 2011 evaluation package.
- 3 After you download and run the package, you'll be prompted for a location to unzip the installer files. (This is not the final program files location.) Select a location for these files, and then click **Next**. This extracts the files to the specified location and the Reflection installer starts automatically.
- 4 The installer checks your system for required software prerequisites. If these are not present, the installer installs these packages before running the product installation.
- 5 *For this evaluation, install all Reflection X Advantage features on this computer.* From the **Features Selection** tab, click the feature selection button next to **Reflection X Advantage** and select "Feature will be installed on local hard drive." This automatically selects all features for installation.



Note: To get connected to your X clients using the standalone X Manager, this computer is all you'll need. If you decide to evaluate the full set of features in this guide, you will install some Reflection X Advantage features on a additional systems. Details are included in the procedures.

Using X Manager in Standalone Mode

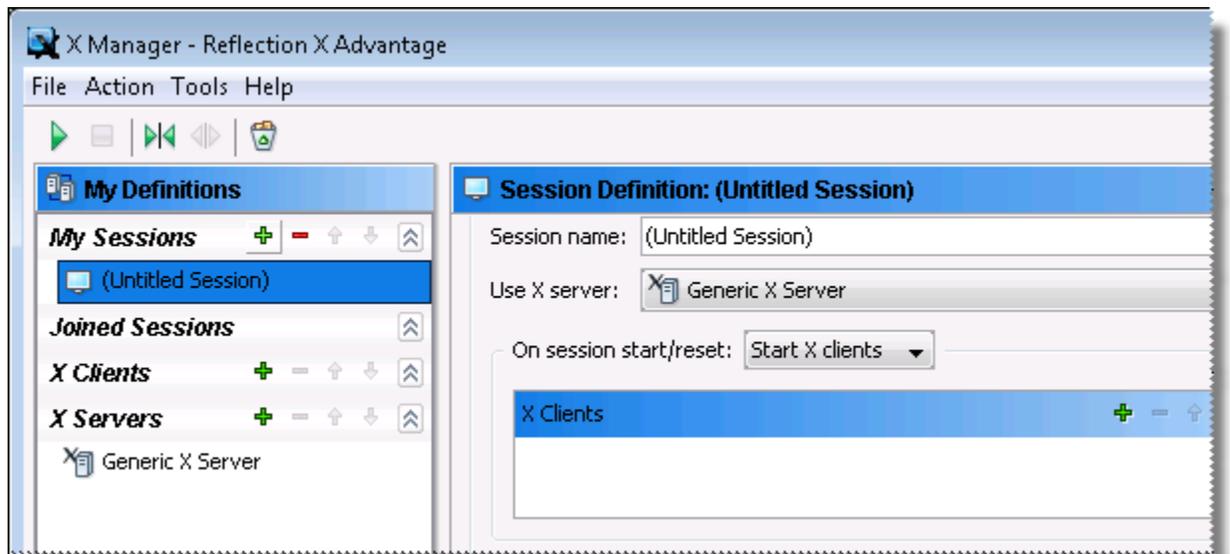
The quickest way to get connected to an X client is to use the standalone X Manager. This is an easy-to-use tool for configuring and starting X sessions.

To start X Manager

- From the Windows Start menu, go to:
All Programs > Attachmate Reflection > X Manager - Reflection X Advantage

Note: If you have an earlier version of Reflection installed and see the **Migrate Settings** dialog box, click **Cancel**. This will give you a chance to work with the default configuration for your evaluation. You can easily import migrated settings later. For more information, see [Migrating Reflection X Settings](#). (page [28](#))

When X Manager opens, you'll see that it is divided into two main areas: a navigation pane on the left, and a definition pane on the right. Choosing an entry in the left pane brings up the corresponding definition in the right pane:



The default session name—(Untitled Session)—is selected in the navigation pane. This is the starting point for creating your first *session definition*.

Think of a session definition as a way to specify everything you need to establish a session: X server settings, an XDMCP connection, or a list of X clients to start.

Starting an XDMCP session

These steps use XDMCP to access your host desktop. Not all X hosts support XDMCP connections. See [Starting an X Client Session \(page 9\)](#) for steps to start a session that launches a specific X client.

To start an XDMCP session

- 1 In X Manager, under **My Sessions** on the left, select “(Untitled Session).”

Note: if you've already modified the default session, click  to create a new session.

- 2 In the **Session Definition** pane on the right, edit the **Session name** field. For this walkthrough, call it “Test Session.”

The name you enter is saved automatically.

- 3 Confirm that **Use X server** is set to **Generic X Server**. This is the *server definition* that's used by the session definition you are creating. A server definition contains the settings for the X server instance that is used for the session.

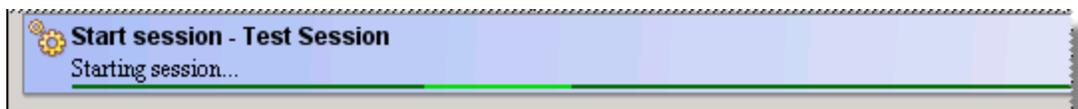
- 4 From **On session start/reset**, select **Initiate XDMCP**.

- 5 From the **Type** box, select **Direct**.

- 6 In the **Host name** box, enter the name of your X host.

- 7 With your session still selected under **My Sessions**, click  (or select **Action > Start**).

While the connection is being established, you can monitor connection status messages in the display area that appears at the bottom of the Reflection X Manager window.



- 8 Enter your host logon credentials. When the connection is successful, a full-screen desktop from your X host appears.

Starting an X Client Session

These steps configure a session that launches an X client application.

Note: As you work, your changes are saved automatically.

The first step creates a new server definition. You can use server definitions to configure your display preferences. The following procedure creates a server definition that displays each client window directly on your Windows desktop. You can reuse this definition for all your client sessions.

Step 1: Create a server definition

- 1 From X Manager, on the left pane, click  next to **X Servers**.
- 2 In the **General** area, for the **Name** field call this server "Clients on desktop."
- 3 In the **Server Definition** pane on the right, open the **Windowing** area and select **Show clients on my desktop**.

The next step creates a client definition that identifies the host you want to connect to, how you want to make the connection, and which X client application (or applications) you want to run.

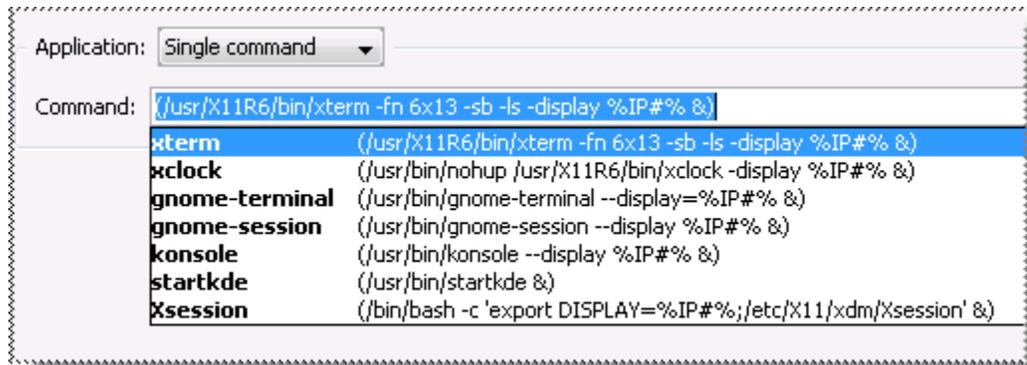
Step 2: Create a client definition

- 1 From X Manager, in the left pane, click  next to **X Clients**.
- 2 In the **Client Definition** for Name, call this client "xterm".
- 3 For **Host name**, specify the name or IP address of the computer that hosts your X client application.
- 4 Select a **Host type** from the drop-down list.

Note: Changing the host type changes the list of sample client commands available in the **Command** drop-down list.

- 5 The default value for **Connection method** is **Secure Shell**. Leave this option selected.
- 6 For **User name**, enter your user name for this host.
- 7 The default value for **Application** is **Single command**. Leave this option selected.

- In the **Command** text box, use the drop-down list to select the sample **xterm** command.



The last step creates a session definition that specifies which X server to use and which client (or clients) to start whenever you run this session. In this example, we'll also configure the session to stop automatically when you close the client application.

Step 3: Create and launch a session

- In the left pane, click **+** next to **My Sessions**. For **Session name** use "Test xterm Session".
- From the **Use X server** list, select the "Clients on desktop" server definition that you created earlier.
- The default value for **On session start/reset** is **Start X clients**. Leave this option selected.

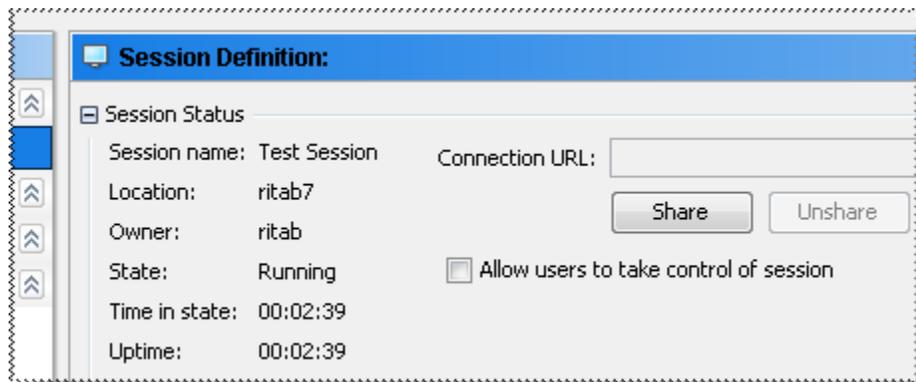
Note: The next step configures the session to start your client automatically. If you omit this step, you can also start the client manually after the session is running.

- Under **On session start/reset**, click **+** to add a client to the **X Clients** list. From the **Add Clients** dialog box, select the "xterm" client definition you just created, and then click **OK**.
- From the **On last client** list, select **Stop session**. (When this option is selected, your session stops automatically when you close your client application.)
- From the toolbar, click **▶** to start your session. (You can also start a session by right-clicking the session name and clicking **Start** in the context menu, or by selecting the session name then clicking **Action > Start**, or by double-clicking the session name.)

Note: The first time you connect to a host using Secure Shell, you see a **Host Key Unknown** dialog box. This indicates that the key required to authenticate this host is not yet included in your host key database. The administrator of the host can use the fingerprint displayed in this dialog box to help you confirm that you are connecting to the correct host. If you click **Always** in response to this prompt, the key is added to your known host key database and you won't see this prompt again.

Monitoring Session Status

When you establish an X session, status for that session appears in the **Session Definition** area on the right-hand side of the Reflection X Manager window:



Sharing a Session with Another User

Imagine that you have just received a call from a colleague who wants to collaborate with you on a project. The peer-to-peer session sharing feature in Reflection X Advantage makes this easy.

To share a session in standalone mode, both users need to run the Reflection X Advantage standalone X Manager on their computers.

Configure a second computer to test session sharing

- 1 Run the installation on a second computer.
- 2 Install using defaults. This installs the standalone X Manager, which is all you need for this test.

To set up your shared session

- 1 Start X Manager on your first computer (the one on which you created the first test session).
- 2 Under **My Sessions**, select your session ("Test Session" or "Test xterm Session" in our examples), then click  (or select **Action > Start**) to start the session.
- 3 After the session is established, make some changes in the X window. For example, if you're using XDMCP, launch an application in your X desktop session. If you've launched an xterm window, enter a command, such as **ls**, in the terminal window.
- 4 Return to the Reflection X Manager window. From the **Session Status** area on the right-hand side of the Reflection X window, click **Share** below the **Connection URL** field. This shares the session and generates a unique connection URL.
- 5 For this walkthrough, select **Allow users to take control of session**.
- 6 Click **Copy URL** to copy the connection URL to the clipboard.

- 7 Paste the URL into an email message and send this to an email account you can receive on your second system.

Other users can now join and control your session using the procedures described next. The session remains available until you shut down the session or until you choose Unshare to stop sharing the current session and disconnect external users that joined it.

To join the session as the second user

- 1 Start X Manager on your second computer.
- 2 Click the green double-arrowed Join button from the toolbar:



(Or, select **Action > Join**.)

This opens the Join Session dialog box.

- 3 Enter the connection URL you created in the previous exercise and click OK.

The session window opens on this computer with the started application visible. As the second user, you can now view everything in the first user's session. Because you configured the session with **Allow users to take control of session** selected, the second user can take control of the shared session. Here's how:

To take control of the shared session as the second user

- 1 Under **Joined Sessions** in the left navigation pane, find the name of your joined session and right-click the session name.
- 2 Select **Take Control**. You now have control of the keyboard and mouse in the shared session.
- 3 The session owner, or any other allowed user, can regain control by doing the same thing: right-click the session name, and then select **Take Control**.

Note: Only the session owner can start, stop, or unshare a session, regardless of who currently has control.

Improve Performance over a Slow Network

You can use the Reflection X Advantage **Remote Session Services** feature to improve performance if high latency or low bandwidth is a problem in your network. This configuration can also resolve problems using XDMCP when you are connecting through a VPN. To support this feature from the standalone X Manager, you can install the **Remote Session Services** feature on your X client host, as described below.

Note: The steps below use the standalone X Manager. You can also configure X Manager for Domains to address problems with high latency or bandwidth. Once you've set up a Reflection X Advantage domain, this support is available without the extra step of installing Reflection X Advantage on the X client host. For domain setup information, search on "Domain Setup: Improve Performance Over a Slow Network" in the Reflection X Advantage Help.

With remote session services enabled, when you start a session, Reflection X Advantage creates two X servers. An X server display runs on your workstation (shown on the left below) and a second "headless X server" runs on the X client host (shown on the right). In high latency networks, this configuration improves performance by short circuiting some of the data exchange over the network. With the headless X server running on the client host (or on a nearby host), client/server exchanges that aren't required to create the display pass between the client and the headless X server, but aren't sent over the network to the X server display on the workstation. This reduces the number of round trip network messages, and this can improve the response time you see on your workstation. In addition, if the network exhibits low bandwidth, the protocol is compressed between the remote session and the X server display.



To configure the X client host to support remote session services

- 1 Return to the Download library page, download the package for the UNIX system on which you run your X clients, and copy this file to the X client host.

- 2 Unzip the download file. For example:

```
unzip rx-advantage-4.2.0.6-eval-linux.zip
```

The expanded download file contains binary files (*.bin) for installing on different platforms. Locate the appropriate file for your UNIX platform.

- 3 Log on as root and navigate to the directory that contains the installation file.
- 4 Change the permissions of the installation package to give execute permissions to the file owner. For example:

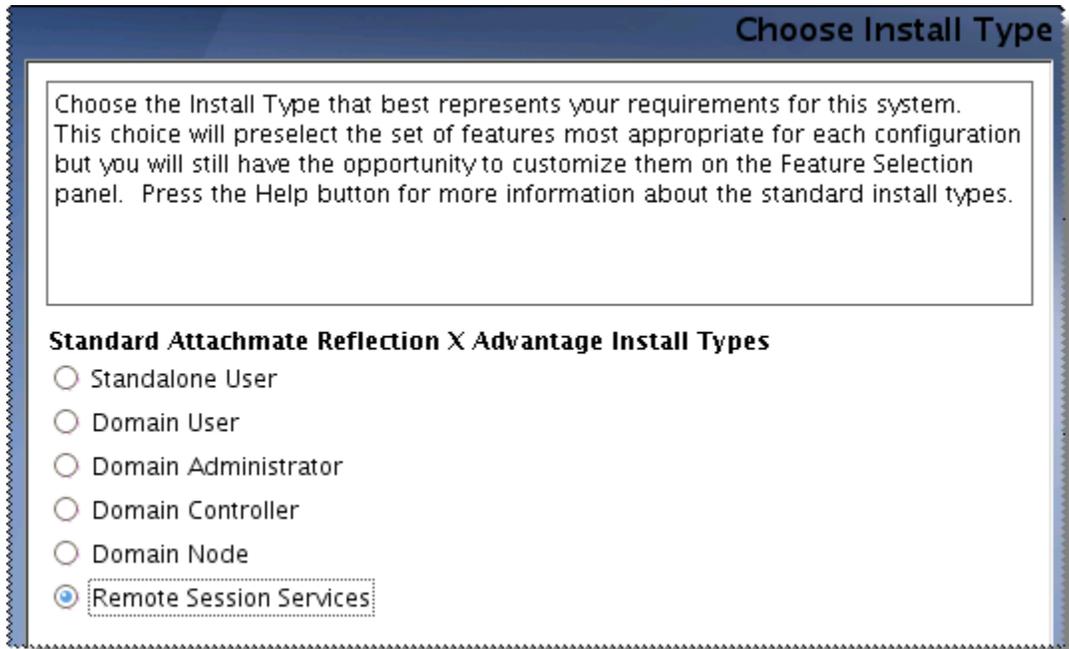
```
chmod 744 rxa-4.2.0.6-eval-i586-linux.bin
```

- 5 Start the installation program. For example:

```
./rxa-4.2.0.6-i586-linux.bin
```

Note: The command above launches the InstallAnywhere installation program which requires an X11 Windows display. If a graphical display is not available the installation will run in console mode.

- 6 When you reach the **Choose Install Type** screen, select **Remote Session Services**.



- 7 Complete the installation using defaults.

To configure and start a session that uses remote session services

- 1 Start X Manager on the computer on which you created your test session.
- 2 Under **My Sessions**, select your session definition.
- 3 In the **Session Definition** pane, under **Remote session services**:
 - Select **High-latency network performance**.
 - For **Host name**, specify the name of your X client host.
 - For **User name**, specify your user name on the X client host.
- 4 Start your session.

Note: If you have configured a session that launches an X client, you'll see multiple password prompts. The first prompt authenticates you to the remote session service. Additional password prompts allow you to launch the X client. You can use the next procedure to configure single sign-on.

- 5 In the **Session Status** area, under **X Servers**, you will see an entry for your workstation computer. If high latency is detected in your network connection, you'll see an additional entry for the headless X server running on your X client host.

These next steps configure a connection method called "Remote Session Services." This connection type lets you authenticate with a single logon prompt.

To configure single sign-on for X clients and remote session services

- 1 Under **X Clients**, select the X client definition you used above.
- 2 Set **Connection method** to "Remote Session Services."
- 3 Start your session.

You'll see a single logon prompt. The credentials you enter authenticate you to both the remote session service and the X client host.

Create Shortcuts

If you are running on Windows, you can create desktop shortcuts to launch your sessions.

To create a shortcut

- 1 In X Manager, under **My Sessions**, right-click your session and select **Create shortcut**.
A shortcut is created on your desktop.
- 2 Close the X Manager window.
- 3 Use your new shortcut to launch your session. (X Manager starts and runs in the background. You can use the icon that appears in the system tray to open the X Manager window.)

Note: Administrators can configure and deploy shortcuts to simplify startup for new users. The command line utilities for starting the standalone X Manager (`rxmgr.exe`) and X Manager for Domains (`rxmgrdomains.exe`) are documented in the Reflection X Help.

Using Domain Mode

You've seen how to use the X Manager in standalone mode to start and work with a session. Now, let's look at how your enterprise can benefit from some of the powerful features available when you run Reflection X Advantage in domain mode. You'll find features that benefit both administrators and individual users.

As an administrator, you can:

- Configure settings for X servers, clients, or sessions, and make them available to users in the domain. All of the session settings can be centrally controlled and managed.
- Configure distributed sessions, which can provide several advantages, including session persistence and improved performance in slow networks.
- Leverage an established authentication system to control access to the domain.
- Configure load balancing of the computers in the domain to make the best use of system resources.
- View the status of all of the sessions running in the domain, and view domain system resources.

As a user, you can:

- Start a session, leave it, close X Manager, and then join the session later from the same computer or from a different computer.
- Use public definitions provided by the administrator to run pre-defined sessions and/or create and run your own customized private sessions.
- Easily share sessions with other users in the domain. (In standalone mode, you send a URL to other users to share a session. In domain mode, no URL exchange is required.)

Setting up a Sample Domain

Step 1: Install Reflection X Advantage

For this evaluation, you'll use two computers.

- **Computer 1:** For this evaluation, Computer 1 is both the domain controller and the administrator's workstation. Install the complete set of Reflection X Advantage features on this computer. If you've done the previous exercises, this computer is already configured.

Make a note of the name of this computer; *this is your Reflection X domain name.*

- **Computer 2:** This is the user workstation. Install X Manager for Domains on this computer. (This feature is not installed by default.) If you already installed X Manager on a second computer to test session sharing, you can modify that installation to include X Manager for Domains.

Step 2: Identify user accounts

If you're testing in a Windows domain, we recommend that you evaluate using Windows user accounts. Valid Windows accounts can authenticate to the Reflection X domain using Windows credentials. To evaluate using this authentication option, you'll want to have access to two different Windows accounts, as follows:

- Sample administrator account: You can use your own Windows credentials to serve as the administrator account.
- Sample user account: For the sample user account, create a test user account in your Windows domain (or obtain the credentials of another user in your domain).

Note: If you don't have access to two different Windows domain accounts, an alternate procedure is provided below that shows you how to add and authenticate users using the Reflection X Internal Authentication option.

Step 3: Configure your firewall

If you are running a firewall, configure it for the ports used by Reflection X Advantage. For details, open the Reflection X Advantage Help and search on "firewall" in the Search tab.

The Administrative Console

In domain mode, all session information is maintained centrally on a domain controller. For this evaluation, the domain controller is already up and running on Computer 1 (the computer on which you installed all features).

Start the Administrative Console and log on

- 1 From Computer 1, open the X Administrative Console:

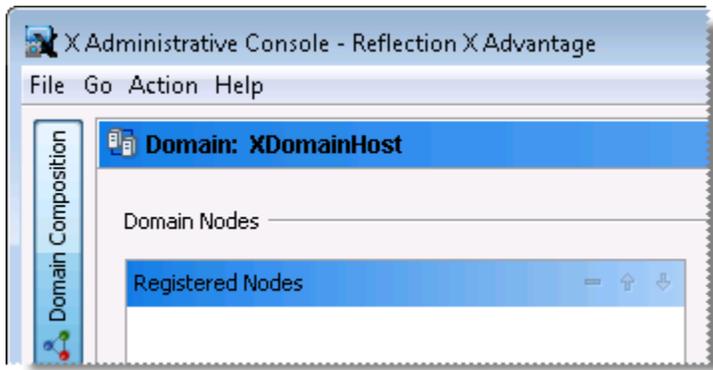
Start > All Programs > Attachmate Reflection > X Administrative Console - Reflection X Advantage

You'll see a logon dialog box. When you're running Reflection X in domain mode, you always begin by logging onto the Reflection X domain.

- 2 In the logon dialog box, for **User name** and **Password**, enter the same name and password that you use to log onto your computer. In the **Domain** field, enter the computer's name.

Note: The Reflection X domain name is always the name of the computer running the domain controller.

Once you're successfully logged onto the domain, you'll see your domain name displayed at the top of the console window:



Authentication

A quick tour of the Authentication tab will help you understand how easy it is to manage users in the Reflection X domain. Two authentication exercises follow - to test using the first option you should have access to logon credentials for two different Windows domain users. If you don't have access to multiple domain credentials, you can use Reflection X Internal Authentication.

Using Windows credentials for authentication

Use this procedure if you are running on Windows and have access to two Windows domain accounts. (If you don't have access to multiple accounts, see Using Reflection X Internal Authentication. (page [19](#)))

When you install Reflection X on a computer in a Windows domain, the only requirement for users to access the Reflection X domain is a successful logon using their Windows credentials. In this exercise, you'll see how this works by testing authentication for a sample user. In an actual installation, subsequent users would be added automatically whenever they log on successfully to your Reflection X domain using their Windows credentials.

To test authentication using Windows credentials

- 1 From the tabs located along the left-hand side of the Administrative Console, click **Authentication**. Note the following:
 - Your name is already added to the list of user accounts and the checkbox under **Administrator** is selected. By default, the first user to log on is set as a Reflection X domain administrator.
 - On a Windows system, **Authentication system** is set to "Windows" by default.
- 2 Click **Configure** to see the currently configured Windows domain. Click **Cancel** to close the dialog box without making any changes. When **Automatically create user account after successful logon** is selected (the default), any user who can authenticate to this Windows domain can automatically authenticate to the Reflection X domain.

- 3 Click **Test Authentication**. In the **Test User Authentication** dialog box, enter the name and password of your sample user account (this can be any user account that has access to the current Windows domain), then click **Test**.

If authentication is successful, Reflection X Advantage adds the user automatically to the User Accounts list.

To continue the evaluation, go to Creating and Using Public Session Settings (page [20](#)).

Using Reflection X Internal Authentication

You can use Reflection X Internal Authentication to test in any environment. For this authentication option, you need to manually add users and set passwords.

Note: An administrator account was created when you first logged onto the domain, but the internal authentication database has no record of your password for this account because authentication was handled by Windows (or PAM for UNIX or Mac).

To configure an administrator and user account using the Internal authentication system

- 1 From the tabs located along the left-hand side of the Administrative Console, click **Authentication**.
- 2 Set **Authentication** system to “Internal.”
- 3 Select your existing account name and click  (or select **Action > Set User's Password**) and enter a password for this account. This is saved in the internal authentication database. (The checkbox under **Administrator** should already be selected for this account.)
- 4 Click  (or select **Action > New User**) and enter a name and password for an additional sample user for this exercise.
- 5 Before you close the console, confirm that you can log on using your administrative account. To do this, click **Test Authentication**, enter the name and password for the administrator account, and then click **Test**.

You should see a message that says “Authentication successful.”

Creating and Using Public Session Settings

As an administrator, you can use the Reflection X domain to create public session settings. This means that users are up and running quickly and easily, and you spend less time and money on training and support.

You'll use two computers:

- **Computer 1** (the computer on which you installed all features) is the administrative workstation and the domain controller. On this computer, you'll use X Manager for Domains to configure and test your settings and you'll use the Reflection X Administrative Console to make these settings available to other domain users.
- **Computer 2** (the computer on which you installed only X Manager for Domains) is the user workstation. On this computer, you'll use X Manager for Domains to connect using the public session.

Creating Sessions Using X Manager for Domains

To configure public session definitions, we'll start with X Manager for Domains. Because you've already seen the standalone X Manager, this will be familiar territory.

To create a new session using X Manager for Domains

- 1 From Computer 1 (the computer on which you installed all features), start X Manager for Domains.

Start > All Programs > Attachmate Reflection > X Manager for Domains - Reflection X Advantage

- 2 Log on using the credentials of your administrator account. (If you're testing with Windows authentication, use your own Windows name and password. If you configured Reflection X Internal authentication, use the user name and password you set for the administrator account.) In the **Domain** field, enter your computer name.

Note: If you have an earlier version of Reflection installed and see the **Migrate Settings** dialog box, click **Cancel**. This will give you a chance to work with the default configuration for your evaluation. You can easily import migrated settings later. For more information, see [Migrating Reflection X Settings](#). (page [28](#))

- 3 Unlike the standalone X Manager, Reflection X Manager for Domains doesn't include any pre-configured server definitions. In this step, you'll configure a default X server (which is equivalent to the "Generic X Server" in the standalone application).

To the right of **X Servers**, click . This creates a new server definition using default values. By default this server is called "New X Server." In the **Server Definition** pane on the right side of your window, edit the **Name** field. For this exercise, call it "Default X Server." This change is saved automatically.

- To the right of My Sessions click . This creates a new session definition with the default name “New Session 1.” In the **Session Definition** pane which is now displayed on the right side of your window, edit the **Session name** field. For this exercise, call it “Eval Session.”

Note: Steps 5-7 configure an XDMCP connection. If you prefer to create a session to connect to an X client application, replace these steps with the steps described in Starting an X Client Session (page 9).

- From **On session start/reset**, select **Initiate XDMCP**.
- From the **Type** box, select **Direct**.
- In the **Host name** box, enter the name of your X host.
- With “Eval Session” selected, click  (or select **Action > Start**) and log on to confirm your settings.
- To end the session click  in the X Manager for Domains toolbar.

In the next procedure, you'll learn how to use the Administrative Console to share this session with other users.

Note: You can also create new sessions using the Administrative Console. You may prefer to use that approach when you don't need to test your connection. Using X Manager for Domains, as described above, lets you test the connection before you make your session public.

Making your Settings Public

Now that you've configured your settings, you're ready to make these settings available to any user in the domain. To do this, you'll use the Administrative Console.

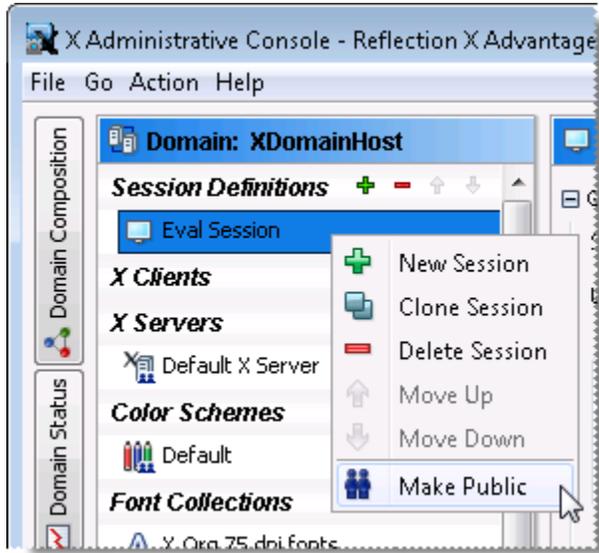
Note: You need to make both the session definition and the server definition public.

To make your settings public

- From the same computer you used to create your session (Computer 1) start the X Administrative Console:
Start > All Programs > Attachmate Reflection > X Administrative Console - Reflection X Advantage
- Log on using your administrator's credentials.
- Click the **Domain Definitions** tab. Under **Session Definitions**, find the session you just created.

For now, this session is still private. A private session definition can be viewed, used, and modified only by the user who created it. Private sessions are identified with the following symbol: 

- 4 Right-click on the session name (“Eval Session” for this example) and select **Make Public**.



A public session is available to everyone who is logged into the domain, but only the administrator can modify it. Public sessions are identified with the following symbol: 

Your "Eval Session" should show that this session is public, as shown here:



- 5 Under **X Servers**, right-click the server definition (“Default X Server” for this example) and make this definition public. This step is required because when you created your session definition, you based it on this server definition. Users will need access to both the session and server definitions.

The server definition icon changes to indicate that it is now public, as shown here:



Getting a New User Started with Your Public Session

Now that you have everything set up, imagine that you have just received a call from a new user who needs to get started with your host application. The public session you just created makes this easy.

All the new user needs to know is the name of your domain, the name of a session, and his or her logon credentials.

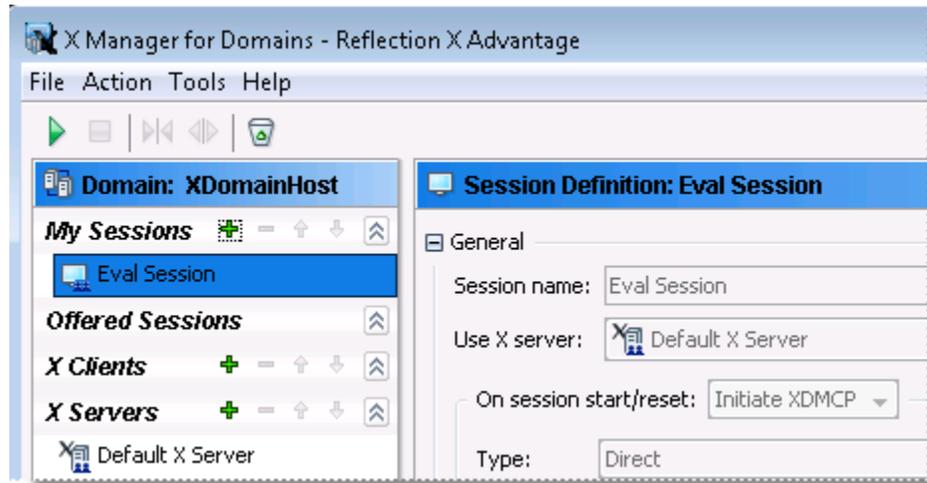
To get a user started with a public session

- 1 From the user’s computer (Computer 2), launch X Manager for Domains. (**Start > All Programs > Attachmate Reflection > X Manger for Domains - Reflection X Advantage.**)

- 2 Log on with the test user's credentials.

Note: For this first log on, the user needs to know the name of your X domain. After the first successful logon, the domain name appears in the list of available domains.

- 3 Under **My Sessions**, find the public session ("Eval Session" in this example). Note that this user can't modify any of the settings for this session.



- 4 Select "Eval Session" and click  (or select **Action > Start**).

Because this is the connection you've already configured and tested, your sample user is up and running immediately.

Sharing Sessions in Domain Mode

In the previous exercise, you learned how to provide users with easy access to new sessions on your host. Now imagine that your sample user is already hard at work and ready to show you something he's working on. Any user running X Manager for Domains can easily share a session with any other user in the same domain.

The next procedures demonstrate how session sharing works in domain mode.

Making Your Session Available to Other Users

In this example you'll see how your sample user can share his running session with another user. To share a running session in domain mode, all you need to do is add one or more users to your **Allowed Users** list.

To share a session from X Manager for Domains

- 1 On the user computer (Computer 2), launch X Manager for Domains and start your public "Eval Session" or configure a new session that launches any X client you work with. (Sessions do not need to be public to be shared.)

- 2 In the X Manager for Domains window, find the **Session Status** area for your running session. In addition to information about the active session, you'll find a configurable area called **Allowed Users**.



- 3 Click the green plus sign (+) to the right of Allowed Users.
- 4 In the **Share with Users** dialog box, you'll see the name of your administrative user (and other users if you have tested with additional user accounts). Select your administrative user name in this list and click **OK**.

The selected name shows up in the **Allowed Users** list.

Now you're ready to join the session from your administrative workstation (Computer 1).

Joining an Offered Session

In the preceding exercise, your sample user offered you a shared session. Here's how to view this session.

To join an offered session

- 1 From Computer 1, launch Reflection X Manager for Domains and log into your domain using your administrator's credentials.
- 2 Under **Offered Sessions**, find the "Eval Session" that was shared from the user's computer. Right-click the offered session and select **Join**.



- 3 A new session window opens. As the second user, you can now view everything in the first user's session.

Taking Control of a Session

As long as the session owner adds a user to a session with **Allow users to take control of session** selected, all the user has to do to take control of a session is right-click the session name under **Offered Sessions**, and select **Take Control**.

The session owner, or any other allowed user, can regain control by doing the same thing: right-click the session name, and then select **Take Control**.

Using Remote Session Services in Domain Mode

When you use remote session services in domain mode, Reflection X creates a distributed session, which means that some session components run on a remote domain node, not on the workstation running X Manager for Domains. This configuration enables some features that are not available in a basic session including:

- The ability to suspend and resume sessions.
- Improved performance in high latency or low bandwidth networks
- Fault tolerance to ensure that a session remains running even if a workstation is disconnected due to a power or network failure.

To support any of these options, you need to configure a domain node, as described in the next procedure.

Setting up a Domain Node

To configure a domain node, you need to install the feature called **Domain Services**. For this evaluation, you will create a node on Computer 1, which already has this feature installed. When you plan your actual domain, you can create nodes on any supported system, including the UNIX hosts that run your X clients.

For this procedure:

- You must be logged into Computer 1 using an administrator account.
- You need to know the name of the computer running the domain controller (Computer 1 in our example) and the user name and password of the Reflection X domain administrator (these are the credentials you used when you first ran the X Administrative Console).

To configure a domain node

- 1 From Computer 1 (the computer on which you installed all features) open a Command Prompt window (**Start > All Programs > Accessories > Command Prompt**).

Note: On some Windows systems, you need to specify that you want to run the command prompt as an administrator. (This step is required even if you are already logged in as an administrator.) To do this, right click the **Command Prompt** shortcut in the Start menu, and select **Run as administrator**.

- 2 Enter the following command, where "domainname" is the name of the computer running the domain controller (Computer 1).

```
rxsconfig join domainname
```

- 3 You'll be prompted for Administrator credentials. Enter the user name and password of the Reflection X domain administrator. You'll see a message saying that node was successfully created, as shown in this example:

```
C:\>rxsconfig join domainname
Initializing crypto library...
Performing the join...
Administrative user for domain: joe
Password:
Created node 0.0.0.0:22001 for domain domainname.
```

- 4 On Computer 1, start the X Administrative Console and log on using your domain administrator credentials.
- 5 Click the **Domain Composition** side tab.

You should see the node you just created listed under **Registered Nodes**.

Working Remotely Using Remote Session Services

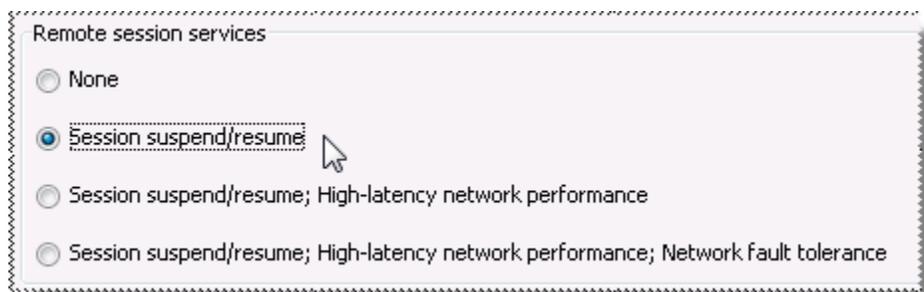
Even if you don't work with other users, you can benefit from Reflection X remote session services. Imagine that you want to use the same X session from both your home computer and your work computer. You'd like your transitions to be seamless, and you want to be able to shut down your home computer without terminating your session.

The steps that follow build on what you learned and created in the previous scenarios. This time we'll give different names to the two computers you're working with:

- Computer 1 (on which you installed all features and configured a domain node) is your "work" computer.
- Computer 2 (on which you installed X Manager for Domains) is your "home" computer.

To leave a session on one computer and rejoin it on another

- 1 On both computers stop any sessions you have running and close all Reflection X applications.
- 2 On your work computer (Computer 1), launch X Manager for Domains and log on to the domain using your administrator's credentials.
- 3 Select the "Eval Session" session you created in the previous exercise.
- 4 In the **Session Definition** pane, under **Remote session services**, select **Session suspend/resume**.



- 5 Start your session and launch any application you typically work with.
- 6 Without closing your session, click the **Leave** button on the X Manager for Domains toolbar.



- 7 Close X Manager for Domains.

Although your session is no longer visible, it is still actively running on the domain node and maintained by your domain controller.

- 8 Now, switch to your home computer (Computer 2) and start X Manager for Domains. Log on using the same user name, password, and domain name that you used when you logged onto your work computer.

You'll find the session you just left listed under **My Sessions**.

- 9 Select the session name and click the **Join** button to rejoin your session.



The application you left running is waiting for you — you don't need to spend any time reestablishing your connection or session.

- 10 Imagine that your task is still incomplete before you head back to work, click the **Leave** button on your home computer. Now you can shut down your home computer and you'll still be able to rejoin the session back at work.

Note: When you are running X Manager for Domains, you can configure any session to use remote session services — it can be a private session available only to you, or a public session you share with others.

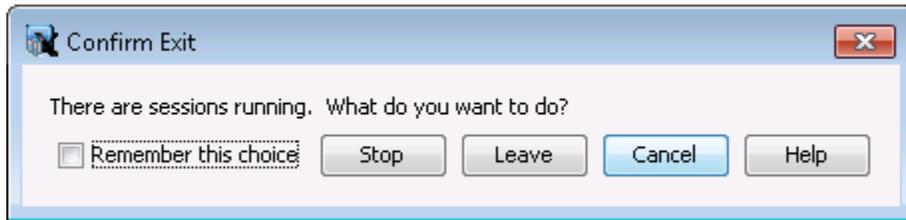
Enabling Extra Session Protection

The previous exercise demonstrated one way to suspend a session and resume work by running that session from another computer. The configuration demonstrated in that exercise requires that your work computer remain running, because your work computer is also the domain node. You can configure Reflection X Advantage to provide an even higher level of session protection that enables you to return to your session even if the computer you're working on loses network connectivity or shuts down unexpectedly.

To provide this level of session protection, Reflection X maintains your session on a remote domain node. To configure a remote domain node, run the Reflection X installer and select the feature called **Domain Services** (without including the **Domain Controller** feature), then use the rxconfig command line utility (page 25) to create a domain node on this computer. The remote node can be a Windows, UNIX or Mac system.

When a remote domain node is available, you can select the option under **Remote session services** called **Session suspend/resume; High-latency network performance; Network fault tolerance**.

With this option, if you close X Manager for Domains while the session is running, you'll see the following prompt:



If you choose **Leave**, the session remains active on the remote node even if you shut down this computer. You'll be able to join it again when you start X Manager for Domains from any computer with access to this Reflection X Advantage domain.

If your session is configured with **Network fault tolerance**, and your computer shuts down unexpectedly – so you don't have an opportunity to respond to the **Confirm Exit** prompt – the session remains active as long as the computer running the remote domain node has not shut down.

Optimizing Network Performance

Reflection X Advantage domain mode, like standalone mode, can be configured to significantly improve performance in networks where high latency or low bandwidth cause delays that make running a remote X client application difficult.

For detailed information, open the Reflection X Help. From the Contents tab, go to Using Reflection X Domains > Sample Domain Configurations > Domain Setup: Improve Performance Over a Slow Network.

Migrating Reflection X Settings

The first time that you start Reflection X Advantage (either the standalone X Manager or X Manager for Domains), local settings from legacy Reflection X products (v. 13 or 14) are migrated automatically and saved to a Reflection X definition file (*.rxd). Your legacy Reflection X files are not changed. A prompt appears asking if you want to import the migrated settings. You can import the settings when you first see the prompt or at a later time.

Importing Migrated Settings

If you choose not to import migrated settings from legacy Reflection X when you first start X Manager or X Manager for Domains, you can do this at a later time. Using this option gives you an opportunity to explore the default configuration before you import your migrated settings. Use the following procedure.

To import migrated settings

- 1 From X Manager or X Manager for Domains, click **File > Import**.
- 2 A definition file with migrated settings is created automatically when you first start X Manager or X Manager for Domains. Locate this file in your Windows profile folder. The file name identifies the product and version whose settings were migrated. For example, the path and filename on Windows 7 would be something like this:

```
C:\Users\Joe\.attachmate\rx\migration\Reflection X 14_0_7.rxd
```

Select the file and click **Open**.

- 3 In the **Import Definitions** dialog box, select all the available definitions.
- 4 Click **Import**.

After you import your legacy settings, you can use them as imported, or modify the imported settings to use new Reflection X Advantage features. Your legacy settings are not altered in any way.

Starting Migrated Sessions

Imported settings appear as a combination of session, client, and server definitions identified as "(RX migrated)" in X Manager. After you import the migrated settings, you'll see a migrated session for each migrated client.

To connect to a client using migrated session settings

- 1 Under **Sessions**, locate the session definition based on the client you want to start. For example, if you have a legacy Reflection X client called "myclient" you'll find this migrated session:

```
myclient session (RX migrated)
```

- 2 Double-click the session definition (or right-click and select **Start**).

Note: If you used more than one server instance with your legacy Reflection X client connections, or you typically run many X clients simultaneously, you may want to start your clients by starting a single session, then attaching additional clients to this session. For details, see *Upgrading from Legacy Reflection X* in the Reflection X Advantage Help.
