

Getting Started

Load Manager

**Application-Based Load Management
for MetaFrame XP™ for Windows, Feature Release 2**

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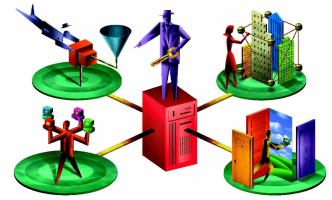
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Welcome



Citrix Load Manager is a component of Citrix MetaFrame XPa and MetaFrame XPe. With Load Manager, you can optimize server resources throughout your server farm. To accommodate routine application and database maintenance, you can use Load Manager to schedule the availability of published applications on your MetaFrame XP servers.

Because of product enhancements, new software architecture, and portability, Load Balancing Services has evolved into Load Manager—a load management component that complements MetaFrame XP.

Load Manager provides:

Maximized system efficiency. Load Manager balances published application loads across your Citrix server farm based on server or published application load limits set in load evaluators. This feature allows more efficient data flow in your enterprise server farm environment.

Citrix default load evaluators. Load Manager includes two load evaluators that work well in most server farm environments, simplifying your current load configuration without modification until you learn more about Load Manager.

Customization. Load Manager includes a set of rules that you can use to create your own load evaluators, increasing server and published application performance in your server farm.

Real-time monitoring. The Load Manager Monitor tool, available from the Citrix Management Console, lets you view the statistics monitored by your load evaluators after you attach them to a server or published application.

This chapter describes what Load Manager is, the documentation provided with Load Manager, and includes additional resources to find more information about Load Manager and related Citrix products.

Important Please read the Readme.txt file for Load Manager in the Docs directory of the MetaFrame XP CD-ROM. This file contains important information that includes last-minute documentation updates and corrections.

Citrix provides a variety of information resources online, including a complete product documentation library, documentation updates, and technical articles on the Citrix Web site at <http://www.citrix.com>.

How Does Load Manager Enhance MetaFrame XP?

MetaFrame XP provides a high-performance, cost-effective, secure way to deploy business-critical applications throughout the enterprise regardless of client device or network connection. MetaFrame XP provides the best level of application service in multi-server farms where applications are published on as many servers as needed. Load Manager assigns the least-loaded server to run each published application. This process keeps loads lower for greater server and published application speed and efficiency. Information Services professionals find Load Manager to be an invaluable tool, because it identifies servers with high loads and provides increased server and network performance by spreading out loads more evenly.

The Load Manager Monitor tool makes it easier for you to view trouble spots on servers in the server farm so you can change load thresholds easily if bottlenecks occur.

How Does Load Manager Perform in a Mixed MetaFrame Environment?

If you use MetaFrame 1.8 and MetaFrame XP servers in the same server farm (in *interoperability mode*), MetaFrame XP assumes the master ICA Browser function for an existing MetaFrame 1.8 server farm. This blending allows load management and license pooling among server farms to function correctly.

MetaFrame XP and Load Manager rely on the Independent Management Architecture (IMA) for server connections. Because MetaFrame 1.8 uses the ICA Browser, in a mixed MetaFrame environment, MetaFrame XP reverts to using Load Balancing Services 1.0 to manage loads. Load evaluators created with MetaFrame XP do not recognize MetaFrame 1.8 servers.

See the *MetaFrame XP Administrator's Guide* for information about IMA and interoperability mode.

Citrix Management Console

The main management interface for the server farm, including Load Manager, is the Citrix Management Console, an extensible, Java-based tool that operates in the framework of IMA. The console communicates with Citrix servers using the IMA protocol over TCP/IP.

Citrix Management Console and IMA allow management of server farms from any location. TCP/IP is required for IMA communication. Authorized administrators can run the console on MetaFrame XP servers and on Windows NT 4.0 and Windows 2000 workstations.

When you install Citrix Management Console, Setup also installs the files necessary for IMA protocol communication on any supported workstation or server. MetaFrame XP Setup installs the Citrix Management Console on every MetaFrame XP server.

Important If you install Citrix Management Console on separate workstations and deploy a feature release in your server farm, be sure to update the console with the corresponding service pack. For instructions on updating the console, see the *MetaFrame XP Administrator's Guide*.

Features of Citrix Load Manager

With Load Manager, you can set up, monitor, and adjust the server and published application loads in a server farm so that users can run the published applications they need quickly and efficiently.

Load Manager allows you to:

Optimize resource usage in a server farm. When a user launches a published application, you can configure Load Manager to route the ICA connection to the published application on the server with the lightest load in the farm. By balancing published application and server loads, you can maximize the efficiency with which a server farm operates, reduce latency, and increase response time to the user.

Set the date and time for load management. Using Citrix Management Console, you can define the availability of a server or published application based on the date and time.

Monitor application loads across Citrix server farms. Using Citrix Management Console, you can chart the loads on servers that host published applications.

Check disk data. Load Manager can check processes such as disk operations and disk input and output on servers that contain published applications.

Span subnets. Load Manager runs efficiently in enterprises that contain multiple server farms within a single network or multiple subnets. Load Manager can improve the performance of an enterprise server farm by providing increased scalability across MetaFrame XP servers.

Log on from remote clients. You can log on to a MetaFrame XP server from an Independent Computing Architecture (ICA) Client device or any machine that contains the Citrix Management Console on another subnet.

Understanding Load Management

Load Manager calculates the load on a server using *load evaluators* and *rules*. Each load evaluator contains one or more rules. Each rule defines an operational range for the server or published application to which its evaluator is assigned.

Rules

A rule queries specific conditions and performance metrics for servers or published applications. Each rule has its own unique set of parameters. In many rules, you can set two thresholds: full load or no load. Other rules specify IP ranges for ICA Clients, schedule the availability of a server or published application, or define upper limits for ICA connections based on the number of users connected or licenses in use.

The rules included in Load Manager are:

- **Application User Load.** Limits the number of users allowed to connect to a selected published application.
- **Context Switches.** Defines a range of context switch frequency for a selected server.
- **CPU Utilization.** Defines a range of processor utilization for a selected server.
- **Disk Data I/O.** Defines a range of data throughput for a selected server.
- **Disk Operations.** Defines a range of disk operation frequency for a selected server.
- **IP Range.** Defines a range of allowed or denied ICA Client IP addresses for a published application. This rule must be used in conjunction with another.
- **License Threshold.** Sets the upper limit for assigned or pooled connection licences in use on a server.
- **Memory Usage.** Defines a range of memory usage by a server.
- **Page Fault.** Defines a range of page fault frequency for a selected server.
- **Page Swap.** Defines a range of page swap frequency for a selected server.

- **Scheduling.** Schedules the availability of selected servers or published applications.
- **Server User Load.** Limits the number of users allowed to connect to a selected server.

Load Evaluators

A load evaluator consists of one or more rules and can be applied to a server or published application. Each rule is a component of how your total load configuration works. The threshold of a rule reflects a specific server parameter.

Load Manager includes two Citrix-provided load evaluators:

Default. This load evaluator is attached to every server by default. It contains one rule, Server User Load, that reports a full load when 100 users log on to the attached server.

Advanced. This load evaluator contains the CPU Utilization, Memory Usage, and Page Swaps rules.

Note The Citrix-provided load evaluators, Default and Advanced, cannot be modified or deleted.

You can copy the Citrix load evaluators to a new load evaluator if you want to change rules or settings.

Load evaluators can vary on each server and each load evaluator can contain any combination of rule types and values. This gives you added flexibility when calculating loads for each server in the server farm.

How Load Manager Balances Loads

When an ICA Client user selects a published application to run, the ICA Client contacts the server farm to locate the address of a server that hosts the published application. Load Manager maintains a list of available host servers within the server farm. Upon receiving the client's request, Load Manager selects the server with the lowest load and returns its address to the ICA Client. The ICA Client starts a session on that server and launches the published application.

Load Manager calculates a server load using the load evaluators attached to a server or published application. When the thresholds of a rule are met or exceeded, Load Manager continues to manage the server load using the other rules included in the load evaluator. When all the rules for a load evaluator report full load or exceed their threshold, Load Manager drops the load-managed server from the internal list of available servers. The next request for an ICA connection to a published application is routed to the next available load-managed server in the list.

Every MetaFrame XP server is included in the load calculation regardless of the network protocol unless the server reports full load. If a server reports full load, it is no longer available for load management until its load is reduced (for example, users log off the server or server processes consume less CPU time). After the load is reduced, the server is automatically added to the list. Servers are continuously added to and removed from the list as server and user load activity fluctuate.

Load Manager Documentation

The Citrix Load Manager documentation includes electronic manuals and online application help.

The documentation included with Load Manager is available in the DOC directory on the MetaFrame XP CD-ROM. Documentation for Feature Release 2 is in the \Docs directory on the Feature Release 2 CD-ROM.

Important additional documentation for Citrix products is available from the Product Documentation page in the Support area of the Citrix Web site at www.citrix.com/support. For example, the *Advanced Concepts Guide* for MetaFrame XP is a manual that provides system sizing, deployment, configuration, optimization, and troubleshooting information, which supplements the *Administrator's Guide* for MetaFrame XP.

On a MetaFrame XP server, documentation is installed in a Documentation folder. You can display the contents of this folder by choosing **Programs > Citrix > Documentation** from the **Start** menu.

The following documentation is included with Load Manager:

- This manual, the Load Manager *Getting Started Guide*, provides conceptual information and procedures for system administrators who install, configure, and maintain Load Manager. To get the most out of the guide, review the table of contents to familiarize yourself with the topics included in the book.
- The Load_Manager_Readme.txt file contains last minute updates, corrections to the documentation, and a list of known problems. This file is in the Docs directory of the MetaFrame XP Feature Release 2 CD-ROM.

This manual is available in the following locations:

- In the \Docs directory of your MetaFrame XP Feature Release 2 CD-ROM
- Installed in the Documentation folder of your MetaFrame XP server. From the **Start** menu, choose **Programs > Citrix > Documentation**.
- On the Citrix Web site at <http://www.citrix.com/support>; select Product Documentation. You can check the Product Documentation area of the Web site at any time for the latest updates to Citrix technical manuals. Any updates to this manual published after the release of this product will be posted there.

Using PDF Documentation

To access the Citrix documentation that is provided in PDF files, use Adobe Acrobat Reader 4 or later. Acrobat Reader lets you view, search, and print the documentation.

You can download Acrobat Reader for free from Adobe System's Web site (<http://www.adobe.com>). The self-extracting file includes installation instructions.

Documentation Conventions

Load Manager documentation uses the following typographic conventions for menus, commands, keyboard keys, and items in the program interface:

Convention	Meaning
Boldface	Commands, names of interface items such as text boxes and option buttons, and user input.
<i>Italics</i>	Placeholders for information or parameters that you provide. For example, <i>filename</i> in a procedure means you type the actual name of a file. Italics also are used for new terms and the titles of books.
UPPERCASE	Keyboard keys, such as CTRL for the Control key and F2 for the function key that is labeled F2.
Monospace	Text displayed at a command prompt or in a text file.
%SystemRoot%	The Windows system directory, which can be WTSRV, WINNT, WINDOWS, or other name specified when Windows is installed.
{ braces }	A series of items, one of which is required in command statements. For example, { yes no } means you must type yes or no . Do not type the braces themselves.
[brackets]	Optional items in command statements. For example, [/ping] means that you can type /ping with the command. Do not type the brackets themselves.
(vertical bar)	A separator between items in braces or brackets in command statements. For example, { /hold /release /delete } means you type /hold or /release or /delete .
... (ellipsis)	You can repeat the previous item or items in command statements. For example, /route:devicename[...] means you can type additional <i>devicenames</i> separated by commas.
►	Step-by-step procedural instructions

Using Online Help

Online help is available for the Citrix Management Console, the centralized management tool from which you implement all the features of Load Manager. It is provided in JavaHelp format and requires the Java Run-Time Environment (JRE), which MetaFrame XP installs by default on the server.

The Load Manager online help provides steps, conceptual information, and examples about how to use Load Manager. Click the Help button or press F1 in the Citrix Management Console to access Load Manager help information. When you open Help, the Load Manager entries appear at the bottom of the Table of Contents under a Load Manager folder.

Providing Feedback About This Guide

We strive to provide accurate, clear, complete, and usable documentation for Citrix products. If you have any comments, corrections, or suggestions for improving our documentation, we want to hear from you.

You can send e-mail to the documentation authors at documentation@citrix.com. Please include the product name and version number, and the title of the document in your message.

Finding Information About Windows Servers

Most compatibility guidelines for Windows NT Server 4.0, Terminal Server Edition, and Windows 2000 Servers can be applied to Citrix Load Manager because Load Manager is designed to run with these products.

For example, Load Manager supports the deployment of Win32, Win16, DOS, OS/2 1.x (text only), and POSIX applications. The ICA technology included in Load Manager extends the capabilities of Windows servers and, in some cases, requires additional setup and configuration for best application performance.

- For Windows 2000, information about application compatibility and deployment issues is available at the Microsoft Web site at <http://www.microsoft.com/Windows2000>
- For Windows NT 4.0, Terminal Server Edition, information about application compatibility and deployment issues is available at <http://www.microsoft.com/ntserver>

For instructions on installing and using Windows servers, see the Microsoft documentation included in your Windows package and the Microsoft Web site (<http://www.microsoft.com>).

Citrix on the World Wide Web

The Citrix Web site is at <http://www.citrix.com>. The site offers a variety of information and services for Citrix customers and users.

From the Citrix home page, you can access Citrix technical support services and other information designed to assist Load Manager administrators.

The following are some of the resources available on the Citrix Web site:

Citrix Product Documentation Library. The library, which contains the latest documentation for all Citrix products, is at <http://www.citrix.com/support> (select Product Documentation). You can download updated editions of the documentation that ships with Citrix products, as well as supplemental documentation that is available only on the Web site.

Citrix ICA Clients. Downloadable Citrix ICA Clients for all supported platforms are available from <http://www.citrix.com/download>.

Support options. Program information about Citrix Preferred Support Services options is available from the Support area of the Citrix Web site at <http://www.citrix.com/support>.

Software downloads. An FTP server provides access to the latest service packs, hotfixes, utilities, and product literature for download.

Online knowledge base. The online Solution Knowledge Base contains an extensive collection of application notes, technical articles, troubleshooting tips, and white papers.

Discussion forums. The interactive online Solution Forums provide outlets for discussion of technical issues with other Citrix users.

FAQs. Frequently Asked Questions (FAQ) pages provide answers to common technical and troubleshooting questions.

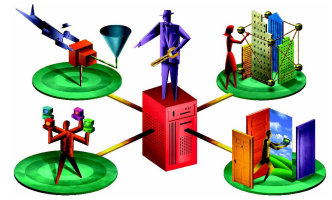
Education. Information about programs and courseware for Citrix training and certifications is available from <http://www.citrix.com/training/>.

Contact information. The Web site provides contact information for Citrix offices, including the worldwide headquarters and headquarters for European, Asia Pacific, and Japan operations.

Developer network. The Citrix Developer Network (CDN) is at <http://www.citrix.com/cdn>. This open-enrollment membership program provides access to developer toolkits, technical information, and test programs for software and hardware vendors, system integrators, ICA licensees, and corporate IT developers who incorporate Citrix computing solutions into their products.

SDKs. The Citrix Server Software Development Kit (SDK) is available for free from www.citrix.com/cdn. Most of the operations that you can perform through Citrix GUI tools can be scripted by using the Citrix Server SDK. The SDK also lets programmers customize most aspects of MetaFrame XP.

Using Load Manager



This chapter explains how to install and enable Load Manager. It also lists the system requirements for Load Manager and provides an overview of the tasks you can perform with Load Manager.

The topics in this chapter include:

- Load Manager Requirements
- Installing and Activating Load Manager
- Working with Load Evaluators
- Configuring Load Manager
- Uninstalling Load Manager

Load Manager Requirements

This section lists the requirements and recommended configurations for Load Manager on MetaFrame XP servers. For information about the system requirements of MetaFrame XP servers, refer to the *MetaFrame XP Administrator's Guide*.

To implement Load Manager you must have:

- MetaFrame XPa or MetaFrame XPe installed on every load-managed server in your farm.
- Available Load Manager licenses for each Load Manager-enabled server.
- Published applications that you want to load manage. All the applications you plan to use with Load Manager must first be published using MetaFrame XP.
- Citrix administrator rights. You must be a Citrix administrator to run MetaFrame XP and Load Manager.
- The same protocol stack (such as TCP/IP or IPX) on each MetaFrame XP server in the server farm.

Determining which servers you want to load manage depends on how critical the performance of those servers is in your server farm.

Issues to consider:

- A published application that is unique to a small group of users does not need to be load managed.
- Published applications that require significant resources from your servers can be configured to report full loads at a lower threshold than the actual server limit.
- With the Scheduling rule, you can remove one or more servers and published applications from the list of available servers maintained by Load Manager; for example, to shut down servers and run a disk repair utility over a weekend.

Installing and Activating Load Manager

Load Manager is installed with MetaFrame XP by default. The functionality of Load Manager is not enabled until the required license is added and activated. After you add your MetaFrame XPa or MetaFrame XPe license, the default load evaluator is attached to each server automatically.

The main management interface for the server farm, including Load Manager, is the Citrix Management Console. All actions related to the management of your server farm, including the licensing and configuration of Load Manager, are performed using Citrix Management Console.

Note If you want to use the disk performance monitor counters with Load Manager, run **diskperf -y** at a command prompt.

Activating the License

Every licensed Citrix product has an associated *serial number*. During installation, or after you install the software, you enter the serial number and a *license number* is generated. You use this license number to get an *activation code* to activate the license.

Important If you do not activate your licenses, all functionality associated with the license expires after a grace period of approximately 90 days.

During MetaFrame XP installation, the Setup wizard prompts for Citrix licenses and product codes. If you entered your licenses and product codes during Setup, you must activate them before all the features of MetaFrame XP and Load Manager are enabled.

Important Citrix licenses can be added to a server farm once only. If you attempt to add a license twice, an error message appears.

For more information about Citrix licensing, refer to the *MetaFrame XP Administrator's Guide*.

► To add a MetaFrame XP license

1. Get the license serial number from your MetaFrame XP product packaging.
2. Start Citrix Management Console by selecting **Start > Programs > Citrix > Citrix Management Console**, or clicking the Citrix Management Console button on the MetaFrame XP toolbar.
3. Log on to your server farm using your Citrix administrator credentials.
4. In the Citrix Management Console tree, right-click **Licenses** and click **Add License**.
5. In the **Add License** dialog box, add the MetaFrame XP serial number and click **OK**.
6. Click **Yes** to confirm.
7. Go to Step 6 in the next procedure if you want to activate your MetaFrame XP license now.

► **To activate Citrix licenses**

1. Start Citrix Management Console by selecting **Start > Programs > Citrix > Citrix Management Console**, or clicking the Citrix Management Console button on the MetaFrame XP toolbar.
2. Log on to your server farm using your Citrix administrator credentials.
3. Click **Licenses** in the left pane of Citrix Management Console. License information for the farm appears in the right pane.
4. From the **License Numbers** tab, select the license you want to activate.
5. Right-click and select **Activate**. The **Activate License** dialog box appears.
6. Click **Copy to Clipboard** to copy the license number. Do not close the Citrix Management Console window.
7. In a Web browser, go to the Citrix Activation System (CAS) Web page at <http://www.citrix.com/activate>. Logon to the system, paste the license number into the text box, and then copy the activation code you receive for the license.
8. Enter the activation code in the **Activate License** dialog box and click **OK** to activate the license. Check the **License Numbers** tab to be sure you activate all licenses.

After you enter and activate licenses, MetaFrame XP pools all license counts in the server farm. Through IMA, license counts are allocated from the pool to MetaFrame XP servers in the server farm that require product and connection license counts.

► **To set a MetaFrame product code for one Citrix server**

1. In the left pane of the Citrix Management Console, select the required server.
2. From the **Actions** menu, select **Server > Set MetaFrame Product Code** or right-click the server and select the command. The **Set MetaFrame Product Code** dialog box appears.
3. Enter the MetaFrame product code you want to apply to the Citrix server and click **OK**. You can confirm the change to the MetaFrame product code by viewing the **Information** tab in the server **Properties** dialog box.

► **To set a MetaFrame product code for multiple Citrix servers**

1. In the left pane of the Citrix Management Console, select **Servers** or the folder in which the servers are grouped.
2. Select all the servers for which you want to change the MetaFrame product code.

3. From the **Actions** menu, select **Server > Set MetaFrame Product Code** or right-click the selected servers and select the command. The **Set MetaFrame Product Code** dialog box appears.
4. Enter the MetaFrame product code you want to apply to every selected server and click **OK**. You can confirm the change to the MetaFrame product code by viewing the **Information** tab for each server's properties.

Working with Load Evaluators

Load Manager attaches the Default load evaluator to each server after you add your MetaFrame XPa or MetaFrame XPe license to the server farm. It contains one rule, Server User Load, that reports a full load when 100 users log on to the attached server. You can create new load evaluators based on the 12 rules available in Load Manager. After you create your customized load evaluators, you can attach them to one or more servers, or published applications, in your farm.

Important Each server or published application can have only one load evaluator attached to them.

You can attach one load evaluator to a server and one load evaluator to each published application on the same server. For example, you can keep the Default load evaluator attached to your server and attach another load evaluator to each of your published applications on that server.

Creating New Load Evaluators

The two load evaluators provided with Load Manager may not meet all your load management needs. The Default and Advanced load evaluators provided by Citrix are intended for servers. You can create your own load evaluators with the 12 rules available in Load Manager and attach them to your servers or published applications.

For example, with the Default load evaluator attached to a server, the server reports a full load when 100 users connect to it. If you find the number of user connections to the server consistently causes the server to report full load, you can either increase the limit using a new load evaluator on each server hosting the published application or publish the application on more load-managed servers.

► **To create a new load evaluator**

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. From the **Actions** menu, select **Load Manager > New Load Evaluator** or click the **New Load Evaluator** button on the toolbar. The **New Evaluator** dialog box appears.
3. Enter a **Name** and **Description** for the new load evaluator.
4. Select one or more rules from the **Available Rules** list and add them to the **Assigned Rules** list.
5. Select each rule in the **Assigned Rules** list and configure it as required.
6. Click **OK** to close the **New Evaluator** dialog box and save your new load evaluator.

Attaching Load Evaluators

To participate in load management, each server or published application must have a load evaluator attached to it. The rules and their settings determine how a particular server's or published application's load is managed.

For example, if you have a published application that uses a significant percentage of a server's memory and processing capabilities, you can attach the Advanced load evaluator (included with Load Manager) to every server hosting the application. By doing so, Load Manager distributes the available memory and processor demand across the load-managed servers.

Important Each server or published application can have one load evaluator only attached to it.

► **To attach a load evaluator to a server**

1. In Citrix Management Console, select the server to which you want to attach a load evaluator.
2. From the **Actions** menu, select **Load Manager > Load Manage Server**. The **Load Manage Server** dialog box appears.
3. Select the required load evaluator and click **OK**.

► **To attach a load evaluator to a published application**

1. In Citrix Management Console, select the published application to which you want to attach a load evaluator.
2. From the **Actions** menu, select **Load Manager > Load Manage Application**. The **Load Manage Application** dialog box appears.
3. Select one or more servers from the **Available Servers** list and add them to the **Selected Servers** list.
4. Select the required load evaluator and click **OK**.

Updating Load Evaluator Properties

As you monitor the server and published application loads across your farm, you may want to change the settings or even the rules included in a load evaluator.

For example, you created a load evaluator using the License Thresholds rule that reports full load when 150 pooled licenses are in use. After attaching the load evaluator to a set of servers, you realize that the limit is too high. You can edit the License Thresholds rule to report full load when less pooled licenses are in use.

Important The Default and Advanced load evaluator properties cannot be edited.

► **To change the properties of a load evaluator**

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Select the load evaluator that you want to edit.
3. From the **Actions** menu, select **Load Manager > Load Evaluator Properties** or click the **Load Evaluator Properties** button on the toolbar. The **Evaluator Properties** dialog box appears.
4. Make your required changes and click **OK**.

From the **Evaluator Properties** dialog box you can:

- Change the name of the load evaluator
- Change the description for the load evaluator
- Change the rules assigned to the load evaluator
- Change the settings for each rule

Copying and Deleting Load Evaluators

As you become more familiar with the use of Load Manager, you may develop a range of rule parameters that you may want to apply to multiple load evaluators. For example, you may have set up a load evaluator with four rules but you want the settings for the rules to be different. Load Manager allows you to copy an existing load evaluator rather than create a new one each time you want to change the properties of a load evaluator or one of its rules.

► To copy a load evaluator

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Select the load evaluator that you want to copy.
3. From the **Actions** menu, select **Load Manager > Duplicate Load Evaluator** or click the **Duplicate Load Evaluator** button on the toolbar. The **Duplicate Evaluator** dialog box appears.
4. Edit the name, description, and rules for the new load evaluator and click **OK**.

If you accumulate a large number of load evaluators and find that some of them are no longer required, you can remove them from the Citrix Management Console.

Important You cannot delete a load evaluator that is attached to a server. If you want to delete a load evaluator that is in use, you must attach another load evaluator to the server first.

► To delete a load evaluator

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Select the load evaluator that you want to remove.
3. From the **Actions** menu, select **Load Manager > Delete Load Evaluator(s)** or click the **Delete Load Evaluator** button on the toolbar.
4. Click **Yes** to delete the selected load evaluator.

Note The Default and Advanced load evaluators cannot be deleted from the Citrix Management Console.

Configuring Load Manager

The features of Load Manager extend beyond the manipulation of rules and load evaluators. You can keep track of the loads on a server using the real-time graphing capabilities of Load Manager Monitor. The frequency with which Load Manager data is transmitted within the farm can also be customized to your communication needs. For more information about relationships among your load evaluators, published applications, and load-managed servers, you can view usage reports generated by Load Manager.

To review all ICA connection requests made to load managed servers, you can enable logging for Load Manager and save the contents of the log as separate text files.

Monitoring Server Loads

The Load Manager Monitor checks recent loads for load managed servers and displays them as a graph of load against time. The reported evaluator loads continuously change, based on the rules you set in a load evaluator and how much load activity there is.

► To view the Load Manager Monitor for a server

1. In Citrix Management Console, select the server that you want to monitor.
2. Click the **Load Manager Monitor** tab.

You can open Load Manager Monitor in a separate window, allowing you to keep track of the loads on a server while you perform other administrative tasks.

► To view the Load Manager Monitor in a separate window

1. In Citrix Management Console, select the server that you want to monitor.
2. From the **Actions** menu, select **Load Manager Monitor** or click the **View Monitor In Separate Window** button on the toolbar. The **Load Manager Monitor** dialog box appears.
3. Click the **Clear Monitor Display** button on the toolbar to restart monitoring for the selected server.

Using the Load Manager Log

The Load Manager log records ICA connection requests to load managed servers in the server farm and can store up to 16KB of text messages.

Note Message logging for Load Manager is disabled by default.

► **To enable the Load Manager log**

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Click the **Log** tab.
3. From the **Actions** menu, select **Log > Enable Logging** or click the **Enable Logging** button on the toolbar.

The Load Manager log is not populated with information until an ICA Client user attempts to launch a published application on a load managed server.

► **To view the Load Manager log**

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Click the **Log** tab.

You can save the contents of the Load Manager log by clicking the **Save Log** button on the toolbar. You can also empty the Load Manager log by clicking the **Clear Log** button.

Setting the Frequency of Information Updates

The information displayed in the Load Manager Monitor and the loads reported by servers are updated at defined intervals—every minute for the Load Manager Monitor and every five minutes for load evaluator data. You can change the frequency with which information is updated to meet your requirements.

► **To set the update frequency for Load Manager**

1. From the **Actions** menu, select **Load Manager > Load Manager Settings**. The **Load Manager Settings** dialog box appears.
2. Click and drag the slider bars to set your required update frequency.
3. Click **OK** to save your new Load Manager settings and close the dialog box.

Viewing Usage Reports

With Load Manager, usage reports provide quick and easy access to the distribution of load evaluators in use across your Citrix server farm. While viewing a particular report, you can easily change the properties of a selected load evaluator or change the load evaluator assigned to a server or published application.

► To view the usage reports for load evaluators

1. In Citrix Management Console, select **Load Evaluators** in the left pane of the console.
2. Click the **Usage Reports** tab.
3. Select the type of report you want to view:
 - **By Server.** The default view lists each server in the farm and the load evaluator attached to it.
 - **By Application.** This option lists the published applications, including published desktops, the load evaluators attached to them, and the servers on which they are installed.
 - **By Evaluator.** This option lists each load evaluator, the published applications, including published desktops, and the servers to which they are attached.
4. To change the load evaluator attached to a server or published application, double-click the server or published application.
5. To change the properties of a load-evaluator, double-click it.

Uninstalling Load Manager

Load Manager is a component of MetaFrame XPa or MetaFrame XPe and is installed with the MetaFrame XP core by default. Removal of Load Manager can be achieved only by uninstalling MetaFrame XP.

See the *MetaFrame XP Administrator's Guide* for information about uninstalling MetaFrame XP.

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