

Installing Flash Communication Server

Macromedia Flash™ Communication Server MX 1.5



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CHAPTER 1

Introducing Flash Communication Server

Welcome to Macromedia Flash Communication Server MX 1.5—a powerful server platform that lets you create rich communication applications in Macromedia Flash MX. Flash Communication Server lets two or more people participate in a real-time conversation using text, audio, or video. For example, you can use Flash Communication Server for meetings, online communities, customer support, sales support, training, remote presence, or instant messaging. Flash Communication Server is a platform for streaming live data across networks for delivery to the Internet, PDAs, interactive TV, and more, and it is part of Macromedia's complete solution for database connectivity, directory systems, and presence services. Flash Communication Server can also be used for personal projects such as a home intercom, a pet camera, or video publishing. This manual contains information to help you install Flash Communication Server and the Flash Communication Server authoring extensions. It tells you where to find all the other manuals and help systems, provides system requirements and instructions for installing the software, and tells you where to go for additional support and resources.

About the Flash Communication Server documentation

The Flash Communication Server documentation is designed to be used with the Flash MX documentation, namely *Using Flash MX* and the Flash MX online ActionScript Dictionary.

All Flash Communication Server documents are available in PDF format (viewable and printable with Adobe Acrobat Reader) and as HTML help.

For the best experience with Flash Communication Server Help, Macromedia strongly recommends that you use a browser with Java player support, such as Microsoft Internet Explorer 6.0 or later. Flash Help also supports Netscape 6.1 or later on Microsoft Windows and the Macintosh. Running Flash MX and Flash Communication Server Help simultaneously on a Macintosh may require up to 32 MB of memory, depending on your browser's memory needs.

Flash Communication Server includes the following documentation:

- This manual, *Installing Flash Communication Server*, describes system requirements and explains how to install the server and the Flash authoring extensions.
- *Developing Communication Applications* explains how to set up your development environment, and how to use the Flash MX authoring environment and the Flash Communication Server application programming interface (API) to create communication applications. This manual also describes the Flash communication components and how to use them.

You can find the PDF version of this manual on the Flash Communication Server CD (FlashCom_Developing.pdf). To view this manual as HTML help within Flash MX, select Help > Welcome to FlashCom; click Developer, and click Developing Communication Applications.

- *Managing Flash Communication Server* explains the details of configuring and maintaining the server and using the Administration Console.

If you're an administrator, you can use the PDF version of this manual on the Flash Communication Server CD (FlashCom_Managing.pdf). Administrators also have access to HTML help within Flash MX and through the Help button on the Administration Console.

- The *Client-Side Communication ActionScript Dictionary* documents the ActionScript you can use to create client-side functionality.

You can find the PDF version of this manual on the Flash Communication Server CD (FlashCom_CS_ASD.pdf). To view this manual as HTML help within Flash MX, select Help > Welcome to FlashCom; click Developer, click the right arrow, and click Client-Side Communication ActionScript Dictionary. You can also read this information by clicking the Reference button in the Flash MX Actions panel.

- The *Server-Side Communication ActionScript Dictionary* documents the ActionScript you can use to create server-side functionality.

You can find the PDF version of this manual on the Flash Communication Server CD (FlashCom_SS_ASD.pdf). To view this manual as HTML help within Flash MX, select Help > Welcome to FlashCom; click Developer, click the right arrow, and click Server-Side Communication ActionScript Dictionary. You can also read this information by clicking the Reference button in the Flash MX Actions panel.

- The *Server Management ActionScript Dictionary* documents advanced ActionScript methods that you can use to extend the Administration Console or to make your own administration and monitoring tools.

You can find the PDF version of this manual on the Flash Communication Server CD (FlashCom_Management_ASD.pdf).

Flash Communication Server support

You may want to explore these other sources of support for Flash Communication Server:

- The Flash Communication Server Support Center at www.macromedia.com/go/flashcom_support provides TechNotes and up-to-date information about Flash Communication Server.
- The Flash Communication Server DevNet site at www.macromedia.com/go/flashcom_desdev provides tips and samples for creating Flash Communication Server applications.
- The Flash Communication Server Online Forum at www.macromedia.com/go/flashcom_forum provides a place for you to chat with other Flash Communication Server users.
- For late-breaking information and a complete list of issues that are still outstanding, read the Flash Communication Server release notes at www.macromedia.com/go/flashcom_mx_releasenotes.

Third-party resources

Macromedia recommends several websites with links to third-party resources on Flash Communication Server, including the following:

- Macromedia Flash community sites
- Macromedia Flash books
- Object-oriented programming concepts

You can access these websites at www.macromedia.com/go/flashcom_resources.

Flash Communication Server editions

Flash Communication Server is available in a variety of editions. For a description of each edition, see the Flash Communication Server website at www.macromedia.com/go/flashcom_mx. The information in the Flash Communication Server documentation applies to all Flash Communication Server editions.

Typographical conventions

The following typographical conventions are used in this manual:

- `Code font` indicates ActionScript statements, HTML tag and attribute names, and literal text used in examples.
- *Italic* indicates placeholder elements in code or paths. For example, `attachAudio(source)` means that you should specify your own value for *source*; `\settings\myPrinter\` means that you should specify your own location for *myPrinter*.
- Directory paths are written with forward slashes (/). If you are running Flash Communication Server on a Windows operating system, replace the forward slashes with backslashes. When a path is specific to the Windows operating system, backslashes (\) are used.

CHAPTER 1

Installing the Server

Macromedia Flash Communication Server MX 1.5 is a development framework and a deployment environment for rich communication applications. A developer uses Macromedia Flash MX and Flash Communication Server MX to write a communication application, and then uses Flash Communication Server to deploy the application and its scripts. Macromedia Flash Player 6 is the end user's interface.

This chapter provides system requirements, installation instructions, and an overview of files installed during installation.

System requirements for Flash Communication Server

The following table shows a high-level view of which systems are supported and what's required to develop, run, and administer Flash Communication Server applications:

	Macintosh	Windows	UNIX
Author applications	Flash MX for Macintosh	Flash MX for Windows	--
Administer the server	Flash Player	Flash Player	Flash Player for Linux
Install and run the server	--	Flash Communication Server for Windows (NT, 2000, XP)	Flash Communication Server for Linux

You can set up your software in one of a few configurations:

- You can install the Flash Communication Server software on the same computer that is running Flash MX. You can do this only if you are running the server on a Microsoft Windows computer.
- You can install the Flash Communication Server software on one computer and use another computer for Flash MX. An example of this configuration is to run the server on a UNIX system and author applications on a Macintosh computer.

System requirements for developing applications

You can author Flash Communication Server applications on a computer running either the Windows operating system or the Mac OS. You can author and run the server on a Windows computer. The requirements for Windows computers (authoring or running the server or both) and Macintosh computers are as follows:

- For Windows: Macromedia Flash MX; an Intel Pentium 200 MHz or equivalent processor running Windows XP Professional, Windows XP Home, Windows 2000 Professional, or Windows NT 4.0 Workstation SP6 or later (Windows 98 and Windows ME are supported for application authoring, but not deployment); 64 MB of available RAM (128 MB recommended); 50 MB of available disk space; a 16-bit color monitor capable of 1024 x 768 resolution; and a CD-ROM drive
- For the Macintosh (application authoring only): Macromedia Flash MX; a Power Macintosh running Mac OS 9.1 (or later) or Mac OS X version 10.1 (or later); 64 MB of available RAM (128 MB recommended); 10 MB of available disk space; a 16-bit color monitor capable of 1024 x 768 resolution; and a CD-ROM drive

System requirements for production computers

Flash Communication Server can be deployed on the following systems:

- Windows 2000 Server or Windows NT 4.0 Server (SP6 or later), running on a Pentium III 500 MHz processor or greater (dual Pentium 4 or better recommended)
- Red Hat Linux 7.3 or 8.0 running on a Pentium III 500 MHz processor or greater (dual Pentium 4 or better recommended)

Your deployment system for Flash Communication Server applications also requires a minimum of 256 MB of available RAM (512 MB recommended), 50 MB of available disk space, and a CD-ROM drive for installation. Depending on your applications, your requirements might be greater than outlined here.

If you install Flash Communication Server on a UNIX computer, you need Flash MX and the Flash Player installed on a separate Windows or Macintosh computer to develop your Flash applications. You'll also want to install Flash Player for Linux and the Mozilla web browser on the server computer to run the sample applications and administration and help tools provided with Flash Communication Server. You can download the Flash Player from the Macromedia website (www.macromedia.com).

System requirements for the Flash Player

Because the client side of a Flash Communication Server application runs in Flash Player 6, you (and your users) need to run one of the following operating systems and browsers.

Platform	Browser
Microsoft Windows 95, 98, ME	Microsoft Internet Explorer 4.0 or later Netscape Navigator 4 or later Netscape 6.2 or later, default installation America Online 7 Opera 6
Microsoft Windows NT, 2000, XP, or later	Microsoft Internet Explorer 4.0 or later Netscape Navigator 4 or later Netscape 6.2 or later, default installation CompuServe 7 (Windows 2000 and XP only) America Online 7 Opera 6
Mac OS 8.6, 9.0, 9.1, 9.2	Netscape Navigator 4.5 or later Netscape 6.2 or later Microsoft Internet Explorer 5.0 or later Opera 5
Mac OS X version 10.1 or later	Netscape 6.2 or later Microsoft Internet Explorer 5.1 or later Opera 5
Red Hat Linux 7.3 or 8.0	Mozilla 1.x

Installing the server

Installing the server is easy. Be prepared to choose an administrator user name and password during the installation; you'll need them to use the server's administration, monitoring, and debugging tools. You can change them later if necessary using the Administration Console.

During installation, you determine where your client-side application files are installed. Server-side application files are installed in a default location. You should understand the difference between these files:

- Client-side application files are SWF and HTML files. The installer installs SWF and HTML files for the Macromedia Flash Communication Server MX 1.5 sample applications in either the web publishing directory of your choice or the installation directory. However, when you begin developing applications, you can store the client-side files for your applications anywhere.

- Server-side application files include script files (ASC files), stream files (such as FLVs), and shared object files (FSOs) and must always remain on the server computer. By default, the installer installs server-side files for the sample applications in C:\Program Files\Macromedia\Flex Communication Server MX\applications in Windows, and /opt/macromedia/fcs/applications on UNIX. (This directory is referred to as the applications directory.) The location of the applications directory is written to the <AppsDir> tag in the Vhost.xml file. The server will therefore always look for server-side application files in the location specified in <AppsDir>.

When you begin developing applications, you must create a registered application directory for your application in the applications directory with the name of the application and keep the application's server-side files there. For example, for your application called my_app, create a my_app subdirectory in the applications directory and put the server-side files for my_app in that subdirectory (.../applications/myapp).

During development, you can keep client-side and server-side application files together, if you want. When you deploy applications on a public server, you'll need to separate client files from your server-side source files. Your SWF and HTML files should be accessible through a web server, if you're using a web server. Your server-side ASC files, your audio/video FLV files, FSO files, and your ActionScript FLA source files should not be accessible to a user browsing your website.

In addition to installing the server files on your server computer, you install authoring extensions on your authoring computer, to help you write and manage communication applications in Macromedia Flash. The authoring extensions, such as the NetConnection Debugger and the Communication App inspector, are packaged with Flex Communication Server but can be accessed through the Flex MX authoring tool. If your authoring computer is the same as your server computer, you can install the authoring extensions when you install the server. If your authoring computer is different, see "Installing Flex authoring extensions on the Macintosh" or "Installing Flex authoring extensions in Windows" on page 16.

To install Flex Communication Server in Windows:

- 1 Locate the installation file, FlexComInstaller.exe.

This file is on your installation CD, or you may have downloaded it.

- 2 Double-click the installer icon.

The installer launches.

- 3 Follow the prompts in the installation wizard.

The following steps offer tips for selected steps.

- 4 Enter a valid serial number, if you have one. If you want, you can enter it later using the Administration Console.
- 5 If you plan to author on the Flex Communication Server computer using Flex MX, it is recommended that you choose a Complete install, which installs the server, authoring extensions, and sample applications and documentation.

If this computer is your production computer, you might want to choose a Custom install and choose exactly what you install.

- 6 If you have a web server installed, you can install the client-side files for the sample applications in the web root directory of your choice. If you don't have a web server installed, the files are automatically installed in C:\Program Files\Macromedia\Flex Communication Server MX\samples.
- 7 Enter a user name and password for the first valid server administrator. These values are written to the Server.xml file. You can add other administrators later using the Administration Console.
- 8 The final installation step provides a summary that details your chosen installation locations. Review your choices.

The installation is complete. If you configured it to start automatically, the Flex Communication Server service starts. To start the server manually, select Start > Programs > Macromedia > Flex Communication Server > Start Service. To open the Administration Console, select Administration Console from the same menu, or open admin.swf in a Flex Player-enabled browser.

If you're authoring on a separate computer, you'll want to install the authoring extensions on your authoring computer. See "Installing Flex authoring extensions on the Macintosh" on page 16 or "Installing Flex authoring extensions in Windows" on page 16.

To install Flex Communication Server on UNIX systems:

- 1 Log in as a root user (required to install Flex Communication Server).
- 2 Locate the installation file.
This file is on your installation CD, or you may have downloaded it.
- 3 Copy the file to a directory on your local disk.
- 4 Open a shell window and change to the directory with the installation file.
- 5 Unzip the installation file:

```
gunzip filename.tar.gz
```
- 6 Untar the installation file:

```
tar -xf filename.tar
```


A directory with the installation program is created.
- 7 Change to this directory:

```
cd installation_directory
```
- 8 Start the installation program with the following command:

```
./installFCS
```


The installation program starts and displays a welcome message.
- 9 Press Enter to start the installation.
- 10 Follow the installation instructions on your screen.
The following steps offer tips for selected steps in the installation process.
- 11 Enter a valid license number, if you have one. If you want, you can enter it later using the Administration Console.

- 12 If this computer is your production computer, you might want to install only the server and not the authoring extensions.
- 13 You can install the client-side files for the sample applications in the web server publishing directory of your choice. If you don't have a web server installed, the files are automatically installed in the root directory.
- 14 Enter a user for Flash Communication Server processes to run as. The default is the "nobody" user. (The user you select is also the owner of the Flash Communication Server files.)
Your choices are written to the Server.xml file; you can edit the Server.xml file to modify this and other security properties later, if needed.
- 15 The installer displays a summary of the installation options you have chosen. Review your choices.

The installation is complete. If you configured it to start automatically, the Flash Communication Server service starts. To start the server manually, type `fcsmgr server start`.

To log on to the Admin Service and perform administrative functions, open the Administration Console by opening `admin.swf` in a Flash Player-enabled browser.

To install the help files and application-management tools in Flash MX, such as the NetConnection Debugger and the Communication App inspector, see "Installing Flash authoring extensions on the Macintosh" on page 16 or "Installing Flash authoring extensions in Windows" on page 16.

About the installed files

When the server has been installed, it's a good idea to become familiar with the files placed in the Flash Communication Server directory and, if applicable, your web root directory.

Files in the installation directory

If you chose the default directory in the installer, the Flash Communication Server MX installation directory is located at `C:\Program Files\Macromedia\Flash Communication Server MX\` (Windows) or `/opt/macromedia/fcs/` (UNIX).

The Flash Communication Server directory contains these items:

- `FlashCom.exe` (Windows) or `fcsserver` (UNIX) is the server application.
- `FlashComAdmin.exe` (Windows) or `fcadmin` (UNIX) is the server's administration controller. When administrators connect to the server with the Administration Console, they are actually connected to the Admin Service, which communicates with the server to perform administration tasks.
- The tools directory contains BAT files that can be used to start and stop the server (Windows only).
The tools directory contains scripts used to manage the server and the administration services (UNIX only).
- `License.htm` (Windows) and `license.txt` (UNIX) contain the text of the Flash Communication Server license agreement.
- `Js32.dll` contains the server's Server-Side Communication ActionScript engine (Windows only).

- TcSrvMsg.dll, xmlparse.dll, and xmltok.dll are additional components of the server (Windows only).
- tcSrvMsg is a component of the server (UNIX only).
- The conf directory contains the server's hierarchy of XML configuration files.
- The applications directory contains registered application directories for the sample applications, which you can use to experiment with the server.

The applications directory is also the directory in which you create registered application directories for your communication applications. For example, create a my_app subdirectory in the applications directory; put your server-side application files for the my_app application in that subdirectory.

At installation time, the location of the applications directory is written to the <AppsDir> tag in the Vhost.xml configuration file.

- The samples directory contains SWF and HTML files for the sample applications. (If specified during installation, this directory might be installed in your web root directory instead.)
- The flashcom_help directory contains documents related to help, including FLA files described in *Developing Communication Applications*.
- Within the flashcom_help directory is the admin directory. This directory contains the Administration Console (admin.swf) and the Communication App Inspector (app_inspector.swf), both of which can be used remotely to connect to the server. You use the Administration Console to monitor and control server activity. You use the Communication App Inspector to monitor and control running applications.
- The scriptlib directory contains the ASC files for the communication components and NetServices (used with Macromedia Flash Remoting).

At installation time, the location of the scriptlib directory is written to the <ScriptLibPath> tag in the Application.xml file.

- (Windows only) If you have Macromedia Flash MX installed on the same computer, the Flash Communication Server installer adds the new Communication App inspector and the NetConnection Debugger windows to Flash MX. These features provide support for creating and debugging communication applications within Flash MX. For more information on using these features, see *Developing Communication Applications*.

If you installed the server on a UNIX system, install the authoring components installer on your Flash MX computer to get the Communication App inspector and the NetConnection Debugger menu options in Flash MX, along with the communication components and the Flash Communication Server help.

Files in the web root directory (optional)

If you have a web server installed and you chose to install the Flash Communication Server sample applications there, you can find SWF and HTML files for the sample applications in a subdirectory of the web root directory. (If you didn't specify a web root directory, the SWF and HTML files are installed in a subdirectory of the installation directory.)

Installing Flash authoring extensions on the Macintosh

You can install Flash Communication Server on a Windows or UNIX computer and use Flash MX on the Macintosh to author communication applications. The server comes with authoring extensions that you'll need to install on the computer running Flash MX.

To install the authoring extensions—the Communication App inspector, NetConnection Debugger, communication components, and related help files—into an existing copy of Macromedia Flash MX for the Macintosh, you use the authoring extensions installer for the Macintosh.

To install the authoring extensions on the Macintosh:

1 Log on as an administrative user.

2 Locate the authoring extensions installer.

This file is on your installation CD, or you may have downloaded it from the Macromedia website.

3 Double-click the installer icon.

The installer launches. The installer locates your existing copy of Flash MX automatically.

4 Click Install to install the authoring components and help system.

The installer copies files to the Configuration, First Run, and Help directories in the Flash MX directory.

When the installation is complete, you can start Flash MX and select the new options in the Flash MX Window menu to help you create communication applications:

- Select Communication App Inspector to monitor running applications.
- Select NetConnection Debugger to debug faulty connections in applications.
- Select Components and, from the pop-up menu, select Communication Components to begin using communication components.

For more information on creating communication applications, see *Developing Communication Applications*.

Installing Flash authoring extensions in Windows

You can install Flash Communication Server on a Windows or UNIX computer and use Flash MX on a separate Windows computer to author communication applications. The server comes with authoring extensions that you'll need to install on the computer running Flash MX. (If you are running the server and authoring in Flash MX on the same Windows computer, you can skip this step. If you installed the server for Windows on a different computer than your Flash MX authoring computer, you need to install the authoring extensions.)

To install the authoring extensions—the Communication App inspector, NetConnection Debugger, communication components, and related help files—into an existing copy of Macromedia Flash MX for Windows, you run the Flash Communication Server installation file and select Custom installation.

If you installed Flash Communication Server for Windows on the same computer where Flash MX for Windows is installed, you can skip this step.

To install the authoring extensions in Windows:

- 1 Locate the Flash Communication Server installation file.

This file is on your installation CD, or you may have downloaded it from the Macromedia website.

- 2 Double-click the installer icon.

The installer launches. The installer locates your existing copy of Flash MX automatically.

- 3 Select Custom installation.

- 4 Select Authoring Extensions.

- 5 Click Install.

The installer copies files to the Configuration, First Run, and Help directories in the Flash MX directory.

When the installation is complete, you can start Flash MX and select the new options in the Flash MX Window menu to help you create communication applications:

- Select Communication App Inspector to monitor running applications.
- Select NetConnection Debugger to debug faulty connections in applications.
- Select Components and, from the pop-up menu, select Communication Components to begin using communication components.

For more information on creating communication applications, see *Developing Communication Applications*.

