

**Chapter
2**

**ADMINISTRATION
TOOLS AND MMC**

*Get on the
Fast Track!*



TM

**SYS-ED/
COMPUTER
EDUCATION
TECHNIQUES, INC.**

Objectives:

You will learn:

- C Graphical administrative tools.
- C Command line utilities.
- C Windows 2000 Support Tools.
- C Runas command.
- C MMC: Microsoft Management Console.
- C Computer Management Console.



1 Administrative Tools

The tools most frequently used for administering Windows XP are:

Category/Type	Description
Control Panel	The key tools for managing network computers and their resources. These tools can be accessed by selecting them individually on the Administrative Tools submenu or by double-clicking Administrative Tools in the Control Panel.
Graphical Administrative Tools	These tools are designed for managing network computers and their resources. These tools are accessed from the Administrative Tools submenu or by double-clicking Administrative Tools in the Control Panel.
Command-line Utilities	These utilities are launched from the command line.
Administrative Wizards	Administrative Wizards are designed to automate key administrative tasks. There is no central place for accessing wizards. Wizards are accessed either by selecting them individually in the Administrative Tools submenu or by double-clicking Administrative Tools in the Control Panel.

1.1 Control Panel

A collection of tools for managing Windows XP Professional.

These tools can be accessed by selecting them individually on the Administrative Tools submenu or by double-clicking Administrative Tools in the Control Panel.

Utility	Function
Accessibility Options	Provides alternative keyboard, sound, display, mouse and assorted options for tailoring the Windows XP interface for individuals who have disabilities.
Add/Remove Hardware	Used to add hardware, troubleshoot hardware problems, and uninstall hardware.
Add/Remove Programs	Used to install programs and automatically remove all components of software that support this utility.
Date/Time	Used to view or set a system's date, time, and time zone.
Display	Used to configure backgrounds, screen savers, video display mode, and video settings. Also can be used to specify desktop icons and to control visual effects.
Fonts	Add and remove fonts.
Folder Options	Used to set a variety of folder and file options.
Games Controllers	Configures the game controllers installed on this computer.

Utility	Function
Internet Options	Controls the Internet configuration and browser configuration settings.
Keyboard	Controls the keyboard properties.
Licensing	On a workstation, this utility is used to manage licenses on the local system. On a server, it also allows the client-licensing mode of installed products to be changed.
Mail	Controls the set-up and configuration of the e-mail accounts, data files, and profiles.
Mouse	Controls the buttons, pointers, pointer options, wheel, and hardware mouse settings.
Network Connections	Used to view network identity information, to add network components and to establish network connections. It is also used to change a system's computer name and domain.
Phone and Modem Options	Configuration of the telephone and modem properties.
Power Option Properties	Configures the Power Schemes, Advanced, Hibernate, and UPS options.
Printers and Faxes	Used for managing printers and faxes on a system.
QuickFinder Manager	Used to configure the Standard Fast Search Setup and QuickFinder Configuration
Regional and Language Options	Provides for the customization and selection of regional and language options.
Scanners and Cameras	Used for configuring scanners and cameras.
Scheduled Tasks	Used for viewing and adding scheduled tasks.
System	Used to display and manage system properties for startup/shutdown, environment, hardware profiles, and user profiles.
Sound Effect Manager	Contains Sound Effects and Equalizer options.
Sounds and Audio Devices	Configures and tailors volume, sounds, audio, voice, and hardware.
Speech	Controls the voice properties, speed, and other options for text-to-speech translation.
System	Alternative way for accessing the following tabbed pages - General, Computer Name, Hardware, Advanced, System Restore, Automatic Updates, and Remote.

1.2 Graphical Administrative Tools

Graphical Administrative Tools are used for managing the currently logged on system, as well as systems throughout Windows 2000 domains.

Administrative Tool	Purpose
Active Directory Domains and Trusts	Manage the trust relationships between domains.
Active Directory Sites and Services	Create sites to manage the replication of information used for Active Directory.
Active Directory Users and Computers	Manage users, groups, computers, and other objects in Active Directory.
Component Services	Configure and manage COM+ applications; manage events and services.
Computer Management	Start and stop services, manage disks and access other system management tools.
Configure Your Server	Add, remove, and configure Windows services for the network.
Data Sources (ODBC)	Add, remove, and configure Open Database Connectivity (ODBC) data sources and drivers.
DHCP	Configure and manage the Dynamic Host Configuration Protocol (DHCP) service.
Distributed File System	Create and manage distributed file systems that connect shared folders from different computers.
DNS	Manage the Domain Name System (DNS) service.
Domain Controller Security Policy	Create and manage security policies on the current domain controller.
Domain Security Policy	Create and manage security policies in the domain.
Event Viewer	Manage events and logs.
Internet Authentication Service	Manage authentication, authorization, and accounting of remote Internet users.
Internet Services Manager	Manage Web, FTP, and SMTP servers.
Licensing	Manage client access licensing for server products.
Local Security Policy	Manage security policies on the local computer.
Microsoft Network Monitor	Monitor network traffic and troubleshoot networking problems.
Performance	Display graphs of system performance and configure data logs and alerts.
QoS Admission Control	Manage the Quality of Service (QoS) Admissions Control service, which provides resource and bandwidth management for network traffic.

Administrative Tool	Purpose
Remote Storage	Manage the Remote Storage service, which automatically transfers data from infrequently used files on the hard disk to tape libraries.
Routing and Remote Access	Configure and manage the Routing and Remote Access service, which controls routing interfaces, dynamic IP routing, and remote access.
Server Extensions Administrator	Manage server extensions, such as the FrontPage Server extensions for Internet Information Server (IIS).
Telephony	Integrate the IP protocol suite over Public Switched Telephone Network (PSTN).
Terminal Services Licensing	Manage client access licensing for Terminal Services.
WINS	Manage the Windows Internet Name Service, which resolves NetBIOS names to IP addresses and is needed for backward compatibility with Windows NT.

These tools can be installed on a Windows XP Professional workstation.

2 Windows 2000 Administrative Tools

The Windows 2000 Server CD contains the Windows 2000 Administrative Tools which can be installed onto the Windows 2000 Professional client.

1. Log on to the workstation using an account with administrator privileges.
2. Go to the Control Panel and invoke Add or Remove Programs.
3. Invoke the Add New Programs.
4. To install administrative tools for the first time, select the To add a program from a CD-ROM or floppy disk, click CD or floppy.
5. In the Run Installation Program dialog box, click Browse. In the Browse Dialog box, double-click I386 and then select AdminPak.MSI. Click Open and then select Finish from the Run Installation Program Dialog.
6. You should now see the Windows 2000 Administrative Tools Setup Wizard. Click Next.
7. Select Install All Of the Administrative Tools and then click Next again.

Caveat

The version of the Administrators Tools Pack (ATP) included with Windows 2000 can not be used on a computer running Windows XP Professional.

Remove this version of ATP before upgrading to Windows XP Professional. To remotely manage Windows 2000 servers from a Windows XP Professional based computer, use Terminal Services to connect to a Windows 2000 based computer running the Administrators Tools Pack.

2.1 Command Line Utilities

The following command line options will be frequently used:

Command	Description
ARP	Displays and manages software-to hardware address mappings used by Windows XP to send data on the local network.
AT	Schedules programs to run automatically.
FTP	Starts the built in FTP client.
HOSTNAME	Displays the computer name of the local system.
IPCONFIG	Displays the TCP/IP properties for network adapters.
NBTSTAT	Displays statistics and current TCP/IP connections and protocol statistics.
NETSTAT	Displays current TCP/IP connections and protocol statistics.
NSLOOKUP	Checks the status of a host or IP address when used with DNS.
PING	Tests the connection to a remote host.
ROUTE	Manages the routing tables on the system.
TRACERT	During testing, determines the network path taken to a remote host.

Typing the command name at the command prompt will provide an overview of the command.

The complete list of the net command line utilities can be obtained by typing net help from the command line.

Help for individual commands can be obtained from NET HELP command.

NET HELP command

-or-

NET command /HELP

Commands available are:

```

NET ACCOUNTS          NET HELP              NET SHARE
NET COMPUTER         NET HELPMMSG         NET START
NET CONFIG           NET LOCALGROUP      NET STATISTICS
NET CONFIG SERVER    NET NAME             NET STOP
NET CONFIG WORKSTATION NET PAUSE            NET TIME
NET CONTINUE        NET PRINT            NET USE
NET FILE             NET SEND             NET USER
NET GROUP           NET SESSION          NET VIEW

```

NET HELP SERVICES lists the network services you can start.

NET HELP SYNTAX explains how to read NET HELP syntax lines.

NET HELP command | MORE displays Help one screen at a time.

3 Windows Support Tools

Windows Support Tools are optional tools that will be helpful for both troubleshooting and providing additional functionality. Setup does not install these tools; instead, use the Support Tools setup program.

To install Support Tools:

1. While Windows XP Professional is running, insert the Windows XP Professional operating system CD into your computer.
2. Click No if you are prompted to reinstall Microsoft Windows.
3. When the Welcome screen appears, click Perform Additional Tasks, and then click Browse this CD.
4. Navigate to the drive:\Support\Tools folder on the Windows XP Professional CD and double-click Setup.exe.
5. The variable drive represents the drive letter assigned to the CD-ROM.

Follow the instructions that appear on the screen.

- C If Support Tools Setup detects an older version of Support Tools, there will be a prompt for uninstalling them. It is recommended that all previous versions of Support Tools be removed before proceeding with the installation.
- C If there is no Windows XP Professional operating system CD available, or for network-based installations, Support Tools can be installed by running \\server\share\i386\Support\Tools\Setup.exe on the network distribution share.

The Support Tools setup program adds Windows Support Tools to the Start menu.

4 Runas Command for Administrative Tasks

The Runas command can be used for performing administrative tasks with the administrative tools with administrative rights and permissions while being logged on as a normal user.

Runas provides the capability for programs (*.exe), saved MMC consoles (*.msc), shortcuts to programs and saved MMC consoles, and Control Panel item to be executed. They can be run as an administrator while being logged on to a computer as a member of another group, such as the Users or Power Users group.

A property on shortcuts can be set to programs and MMC consoles in order that the logged on user will always be prompted for alternate credentials when using the shortcut. To set the property, right-click the shortcut, click Properties, and then click Runas different user.

Runas can be used to start any program, MMC console, or Control Panel item as long as the following requirements are met:

- C The appropriate user account and password information is provided.
- C The user account has the ability to log on to the computer.
- C The program, MMC console, or Control Panel item is available on the system and to the user account.

Runas is usually used to run programs as an administrator, although it is not limited to administrator accounts. Any user with multiple accounts can use Runas to run a program, MMC console, or Control Panel item with alternate credentials.

Microsoft recommends that an administrator not log on with a user account which has administrative rights. Their suggestion is to log on as a normal user and use the Runas command when performing administrative tasks. To accomplish this without logging off and back on, log on with a regular user account and use the runas command to run the tools that require the broader permissions.

4.1 Command Line Syntax

runas [/profile] [/env] [/netonly] /user:UserAccountName program

/profile	Specifies the name of the user's profile, if it needs to be loaded.
/env	Specifies that the current network environment be used instead of the user's local environment.
/netonly	Indicates that the user information specified is for remote access only.
/user:UserAccountName	Specifies the name of the user account under which to run the program. The user account format should be user@domain or domain\user.
program	Specifies the program or command to run using the account specified in /user.

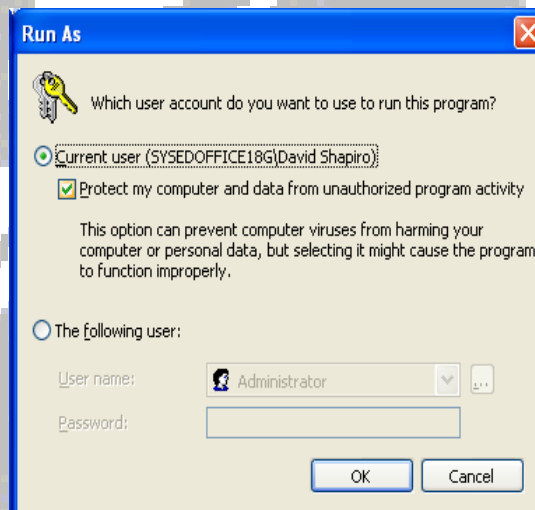
Examples:

- C To use the Administrator account on your computer, for the /user: parameter, type:
`/user:AdministratorAccountName@ComputerName`
or `/user:ComputerName\AdministratorAccountName`.
- C To use this command as a domain administrator, type:
`/user:AdministratorAccountName@DomainName`
or `/user:DomainName\AdministratorAccountName`.
- C The Runas command provides the capability for administering a server in another forest.

4.2 Runas for Starting a Program as an Administrator

In Windows Explorer, click the program, Microsoft Management Console (MMC) tool, or Control Panel item that is to be opened.

Press SHIFT and right-click the program, and then click Run as. Click Run the program as the following user.



Type the user name, password, and domain of the administrator account that is to be used.

- C To use the Administrator account on a computer, in Domain type the name of the computer.
- C To run as a domain administrator, in Domain type the name of the domain.
- C In User name, Password, and Domain, you can type up to 256 characters in each field.

Examples:

To start an instance of the Windows 2000 command prompt as an administrator on the local computer, type:

```
runas /user:localmachinename\administrator cmd
```

When prompted, type the administrator password.

To start an instance of the Computer Management snap-in using a domain administrator account called companydomain\domainadmin, type:

```
runas /user:companydomain\domainadmin "mmc %windir%\system32\compmgmt.msc"
```

When prompted, type the account password.

To start an instance of Notepad using a domain administrator account called user in a domain called domain.sysed.com, type:

```
runas /user:user@domain.sysed.com "notepad my_file.txt"
```

When prompted, type the account password.

To start an instance of a command prompt window, saved MMC console, Control Panel item, or program that will administer a server in another forest, type:

```
runas /netonly /user:domain\username "command"
```

domain\username must be a user with sufficient permissions to administer the server.

When prompted, type the account password.

4.3 Situations When Runas Will Not Run

When attempting to start a program, MMC console, or Control Panel item from a network location using Runas, it might fail because the credentials used to connect to the network share are different from the credentials used to start the program. The credentials used to run the program may not be able to gain access to the same network share.

Some items, such as Windows Explorer, the Printers folder, and desktop items, are launched indirectly by Windows XP. These items cannot be started with Runas. Runas and the RunAs service accept only password authentication. If policies require smart card logon for special accounts or for all users, then Runas will not work.

If the Runas command fails, the RunAs Service may not be running or the user account being used may not be valid.

- C To check the status of the RunAs Service, in Computer Management, click Services and Applications, and then click Services.
- C To test the user account, try logging on to the appropriate domain using the account.

5 MMC: Microsoft Management Console

Microsoft Management Console is an independent extensible, common console framework for management applications.

MMC itself does not supply any management behavior, but instead provides a common environment for Snap-Ins, written by both Microsoft and independent software vendors (ISVs).

Snap-Ins define the actual management behavior. Snap-Ins are administrative components integrated into a common host (aka MMC). The MMC environment provides for seamless integration between Snap-Ins - even those provided by different vendors.

Microsoft's goals with MMC were:

- C To provide a single host for all management tools.

MMC does not replace existing enterprise console and management applications; it allows them to be packaged as Snap-Ins so that they can be accessed from a single interface.

- C To facilitate task delegation.

Using MMC, a system administrator can group subsets of administrative tasks into tools, and forward those tools to other administrators or to subordinates for task completion.

- C To lower total cost of ownership for the desktop.

Task delegation, logical grouping of tools and processes, and management through a single interface allows systems administrators to better organize their tools and tasks and simplify remote administration.

A system administrator can:

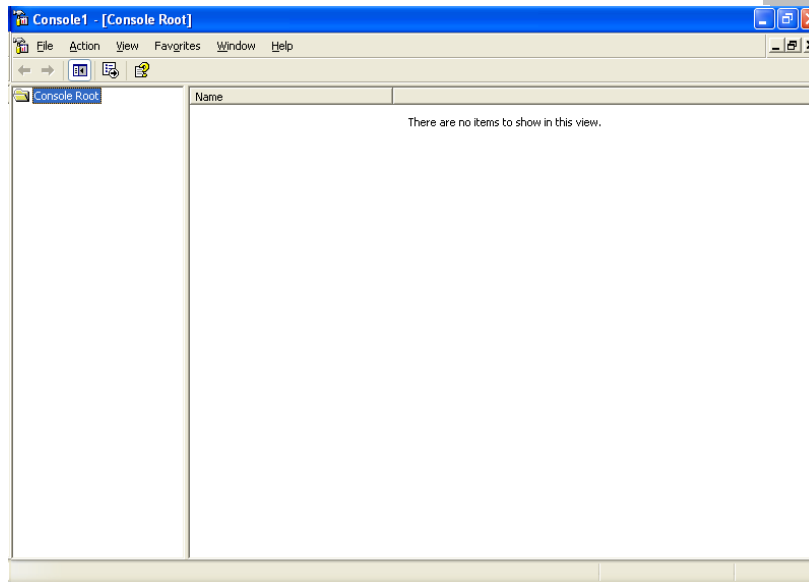
- C create tools from various Snap-Ins, and then save these tools for later use or for sharing with other administrators.

- C combine simple tasks into one tool, and then give that tool to a subordinate or trainee.

- C create shortcuts in the console to the non-MMC tools. These shortcuts will be saved when the MMC tool (or document) file is saved.

6 The MMC User Interface

A MMC user interface looks and feels much like an MDI version of Microsoft Explorer.



The MMC parent frame has a master menu and toolbar. The master menu offers what is typical of an MDI parent - file and window management, along with Help.

The MDI child windows offer many differing views of a single console document. Each of these child views includes a command bar, a scope pane, and a result pane. The command bar contains both pop-down menus and buttons. The scope pane (the left pane) is a tree control that displays the tool's namespace - the tree-formatted listing of all visible nodes, each of which represents a manageable object, task, or view. The scope pane need not be visible in all views - in this example, it is visible in only the top left child window.

Each child window's result pane (the right pane) displays the result of selecting a node in the scope pane. In many cases it lists the contents of a folder, but in other cases it provides a management-related view (such as the performance graph in this example), which can be Web- or ActiveX control-based.

MMC can be configured to provide management tools. MMC is also designed to offer a scaled-down view that is more approachable to less-experienced administrators. In its most simple form, it can appear as a task-oriented set of icons. The interface can be condensed to a single tool.

Because MMC permits customization, systems administrators can create and save multiple tools, and can use these tools to delegate specific tasks.

For example, each of the views in the preceding examples can be saved to separate files as different tools. When one of these files is sent to another person, that person can open the file, and the corresponding tool is loaded.

An administrator can use the GUI Snap-In Manager to load and unload Snap-Ins on the fly.

7 How MMC Works

The MMC console is a Windows-based MDI application that makes extensive use of Internet technologies.

The console itself has no management behavior; it is a host that contains other software - Snap-Ins - that extends the console to offer the actual management capabilities.

7.1 MMC Architecture

The MMC model - the console tool (.MSC file) interacts with the Snap-In Manager to retrieve the appropriate Snap-Ins and present the UI elements.

The Snap-In Manager allows a system administrator or Snap-In developer to add, remove, and modify Snap-Ins. In addition, the Snap-In Manager allows the administrator to specify whether a particular Snap-In behaves autonomously or has dependencies on other Snap-Ins.

The Snap-In Manager saves settings into a tool or document (a .MSC file).

- C The items at the top of the picture (the .MSC file and the UI elements) are all that a user of a given tool interacts with.
- C The items at the bottom are the elements that developers and administrators work with.

When a MMC document is loaded one or more Snap-Ins are initialized.

The Snap-Ins are integrated to create the tool's namespace - the ordered collection of nodes that appears in the tree view in the scope pane. The namespace is a master tree that represents what the tool can do. It resembles a tree view of the files and folders on a hard drive. The namespace can include all manageable aspects of a network - computers, users and groups, and so on. It can include objects, views, and tasks.

MMC child windows are views into this master namespace. This is similar to having multiple instances of Explorer looking at the same hard drive. Each view can be rooted at a different portion of the tree, but they all point to the same master data source. If data is displayed in multiple child windows and that data is deleted in one view, it will disappear from the other views also.

8 Snap-Ins

Each MMC tool is built of a collection of instances of smaller tools called MMC Snap-Ins.

One Snap-In represents one unit of management behavior. A Snap-In is the smallest unit of console extension.

A Snap-In is an OLE In-proc server that executes in the process context of MMC. The Snap-In may call on other supporting controls and DLLs to accomplish its task.

Snap-Ins extend MMC by adding and enabling management behavior. This behavior can be added in a number of ways; for example, a Snap-In might add elements to the viewable node namespace or it might simply extend a tool by adding context menu items, toolbars, property pages, wizards, or Help to an existing Snap-In.

8.1 Tools: Creating from Snap-Ins

An administrator can assemble multiple Snap-Ins from multiple sources or vendors into a tool; this could also be called a document. The tool is what the administrator actually uses to manage the network.

After a tool has been assembled from various Snap-Ins, the administrator saves the tool in a Management Saved Console (.MSC) file. The administrator then reloads the file to recreate the tool. The administrator can also mail the .MSC file to another administrator, who can then load the file and use the resulting tool.

MMC permits total customization by the user; an administrator can construct the ideal tool from any available Snap-Ins. An administrator can create multiple tools, and load and unload them when needed. Although it is possible to run multiple tools simultaneously on one computer, each tool requires its own instance of MMC.

With MMC, a single "tool" does not necessarily have only a single purpose or function. It is more likely that a regularly used tool will contain management functionality for several aspects of a network - the Directory, replication topology, file sharing, and so on. It is called a "tool" because it runs in one instance of MMC, and can be saved in one .MSC file.

Administrators of large systems will most likely need more than one tool, most likely arranged by categories of tasks they perform. This facilitates delegation and simplifies maintenance should the network change or grow.

8.2 Obtaining Snap-Ins

To create a tool from Snap-Ins, an administrator must first obtain the Snap-Ins.

If the administrator is working in a Windows NT/ Windows 2000/XP environment and the Snap-Ins are available on the network, the administrator can use the Directory Service to download them with a pre-existing .MSC file, and can then regroup them into a new tool or he can download them one by one.

In a non-Directory Service environment, vendors need to supply individual installation programs.

8.3 Types of Snap-Ins

Every Snap-In provides some external functionality to administrators. In addition, each Snap-In supports one or both of the following internal modes.

These modes are transparent to the user except in Snap-In Manager, where the user will be asked to decide which mode the particular Snap-In will have.

Stand-Alone Snap-In

A stand-alone Snap-In provides management functionality even if there are no other supporting Snap-Ins.

Snap-Ins designed for this mode cannot rely on any other Snap-Ins being present.

Extension Snap-In

An extension Snap-In provides functionality only when invoked by a parent Snap-In.

An extension Snap-In can extend given node types only. It declares itself as being a subordinate to nodes of certain types, and then for each occurrence of those node types, the console automatically adds the related Snap-In extensions.

Extension Snap-Ins can provide a variety of functionality. Some Snap-Ins can extend the console namespace.

For example, a Snap-In that provides system information about computers would add that information to the namespace under each computer in the namespace, while others simply extend context menus or specific wizards.

Dual Mode Snap-In

Many Snap-Ins will support both modes of operation, offering some stand-alone functionality and also extending the functionality of other Snap-Ins.

For example, the event log Snap-In reads the event logs of computers.

- C If the computer management Snap-In's computer object exists in the console, the event log Snap-In automatically extends each instance of that computer object and provides the appropriate event logs.
- C Alternatively, the event log can also operate in stand-alone mode, in which case an administrator must manually provide a computer name when the Snap-In is opened, and the Snap-In simply provides the event logs of this one computer.

8.4 Console Extensibility Mechanisms

Every Snap-In must provide at least one of the following types of functionality.

Mechanism	Description
Namespace Enumeration	Participates in the enumeration of elements within a container. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Context Menu Extension	Adds items to the context menu of a node or object. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Create New Menu	Extension Adds items to the Create New menu structure on the context menu of a node or object. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Tasks Menu Extension	Adds items to the Tasks menu structure on the context menu of a node or object. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Toolbar and Toolbar	Buttons Extension Adds an entire toolbar or button (if a toolbar already exists) on the window hosting the node. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Property Page Extension	Adds one or more property sheets to a Property page. Multiple Snap-Ins can register to extend behavior in this way for a given node. Note that Property sheets are of a fixed size.
View Menu Extension	Adds views to the View menu for the primary Snap-In. The primary Snap-In can provide multiple views.
Wizard Chaining	Adds one or more wizard pages to a Wizard frame. Multiple Snap-Ins can register to extend behavior in this way for a given node.
Help Extension	This will be based on HTML Help.

In all cases, the Snap-In has the option of altering the returned enumeration based on the context information passed to it at Open time. This permits a Snap-In to register as an extension and offer conditional behavior.

Other than the Create New and Tasks menu extensions, all others are general user interface extension mechanisms. The Create New and Tasks menu extensions are used to group operations in a way that permits integrated, task-oriented command structures.

In MMC each node will have a Create New menu and a Tasks menu. Through this extension registration mechanism, all of these menu items and corresponding functionality are collected into a single UI point of usage.



9 MSC Tool

The MSC tool is a definition of a console configuration.

Selecting Save or Save As creates MSC consoles from the Console menu in the parent MDI menu.

- C The default save folder is the Administrative Tools menu for the current user.
- C Saving the files to the Default User Administrative Tools menu folder will enable all users on that machine to have access.

The Options item in the Console menu configures the icon, console mode, and optional user mode settings.

The Console mode has four choices:

Console Mode	Description
Author Mode	Full access to modify rights, add snap-ins, create taskpads, view the console tree, and create windows.
User Mode	Full access to window management and viewing the console tree. It will not be possible to add snap-ins, change properties, or create windows.
User Mode	Limited access with a multiple window view on only the console items visible when the file was saved. It will also be possible to create windows.
User Mode	Limited access to a single window with the ability to view only the console tree items visible when the file was saved.

The three user mode choices have additional settings at the bottom of the Options dialog.

The right-click context menu can be removed from taskpad lists. This further simplifies operation for novice users by restricting them to predefined tasks.

Changes to the console configuration will then be restricted. This will maintain the console layout planned by the tool author. View creation can also be restricted.

9.1 MSC Administrative Tools: Shortcuts and Executables

Shortcut/Link	Description	Executable
Component Services.Ink	Configures and manages COM+ applications	C:\WINNT\system32\Com\comexp.msc
Computer Management.Ink	Manages disks and provides access to other tools to manage local and remote computers.	%SystemRoot%\system32\compmgmt.msc /s
Configure Your Server.Ink	Sets up and configures Windows services for your network	%SystemRoot%\system32\mshta.exe res:/srvwiz.dll/default.hta
Connection Manager Administration	Use the Connection Manager Administration Kit to build Connection Manager Service Profiles.	"C:\Program Files\Cmak\cmak.exe"
Data Sources (ODBC).Ink	Adds, removes, and configures Open Database Connectivity (ODBC) data sources and drivers.	%SystemRoot%\system32\odbcad32.exe
DHCP.Ink	Use DHCP to configure and manage the Dynamic Host Configuration Protocol (DHCP) service.	%SystemRoot%\System32\dhcpmgmt.msc /s
Distributed File System.Ink	Creates and manages distributed file systems that connect shared folders from different computers.	%SystemRoot%\system32\dfsgui.msc /s
DNS.Ink	Manages the Domain Name System (DNS) service, which translates DNS computer names to IP addresses.	%SystemRoot%\System32\dnsmgmt.msc /s
Event Viewer.Ink	Displays monitoring and troubleshooting messages from Windows and other programs.	%SystemRoot%\system32\eventvwr.msc /s
Internet Authentication Service.Ink	Configures IAS, which performs authentication, authorization and accounting of dial-up and VPN users. IAS supports the RADIUS protocol.	%SystemRoot%\System32\ias.msc /s
Internet Services Manager.Ink	Manages IIS, the web server for Internet and intranet web sites.	%SystemRoot%\System32\inetrv\iis.msc
Licensing.Ink	Manages client access licensing for a server product.	%SystemRoot%\system32\llsmgr.exe

Shortcut/Link	Description	Executable
Local Security Policy.Ink	View and modify local security policy, such as user rights and audit policies.	%SystemRoot%\system32\secpol.msc /s
Network Monitor.Ink	Captures frames of network data to help you detect and analyze network problems	%SystemRoot%\System32\NETMON\netmon.exe
Performance.Ink	Displays graphs of system performance and configures data logs and alerts.	%SystemRoot%\system32\perfmon.msc /s
QoS Admission Control.Ink	Manages the Quality of Service (QoS) Admissions Control service, which provides end-to-end resource and bandwidth management for network traffic.	%SystemRoot%\System32\acssnap.msc /s
Remote Storage.Ink	Manages the Remote Storage service, which automatically transfers data from infrequently used files on the hard disk to a tape library.	%SystemRoot%\System32\RsAdmin.msc
Routing and Remote Access.Ink	Use Routing and Remote Access to configure and manage the Routing and Remote Access service.	%SystemRoot%\System32\rrasmgmt.msc /s"
Server Extensions Administrator.Ink	Server Extensions Administrator	"C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\40\bin\FPMMC.MSC"
Services.Ink	Starts and stop services.	%SystemRoot%\system32\services.msc /s
Telnet Server Administration.Ink	View and modify telnet server settings and connections.	%SystemRoot%\system32\Tlntadm.exe
Windows Media Performance.Ink	Displays processor, disk, and Unicast information.	"C:\WINNT\system32\Windows Media Server\wmtperf.msc"
Windows Media.Ink	Enables you to manage and configure local and remote computers that are running Windows Media Services.	"C:\WINNT\system32\Windows Media\Server\wsadmin.exe"
WINS	Manages the Windows Internet Name Service (WINS), which translates NetBIOS computer names to IP addresses.	%SystemRoot%\System32\winsmgmt.msc /s

10 Computer Management Console

The Computer Management Console is the central tool for managing Windows 2000 servers and workstations.

Computer Management Console can be used to:

- C obtain summary information on system hardware, components, and software.
- C manage user sessions and connections.
- C manage file, directory, and share usage.
- C set administrative alerts.
- C manage applications and network services.
- C configure hardware devices.
- C view and configure disk drives and removable storage devices.

The System Utility is used to:

- C configure application performance, virtual memory, and registry settings.
- C manage system and user environment variables.
- C set system and recovery options.
- C manage hardware and user profiles.

11 Managing Network Systems

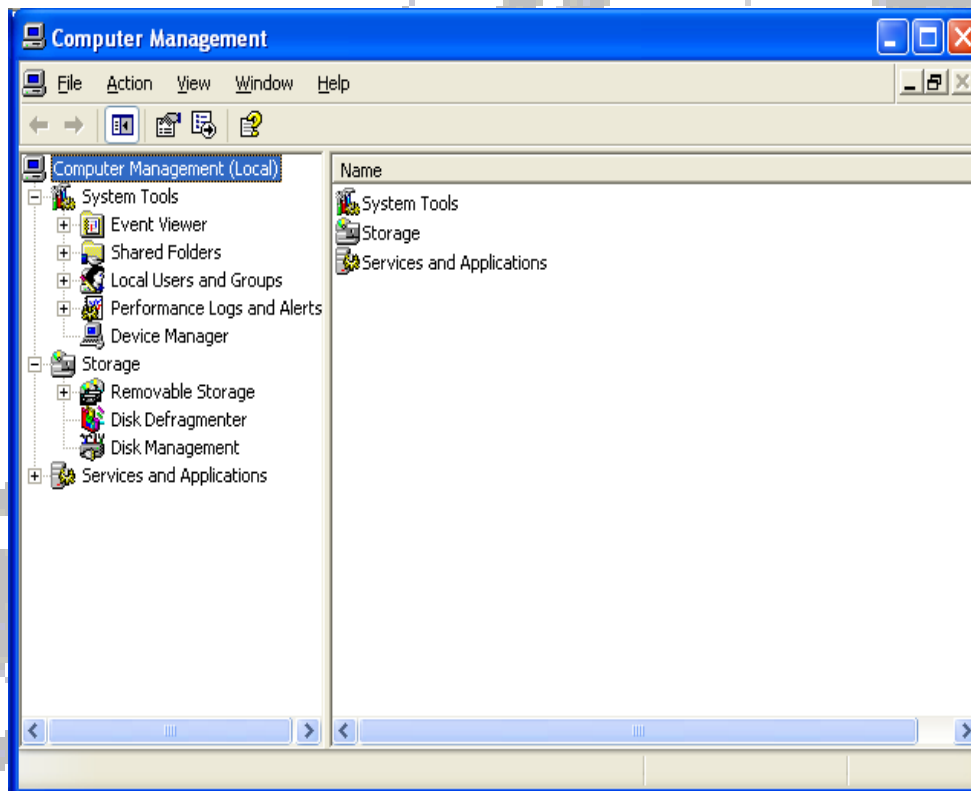
The Computer Management console is designed to handle core system administration tasks on local and remote systems.

The Computer Management console is accessed by either:

- C Choosing Start, then Programs, then Administrative Tools, and Computer Management.
- C Select Computer Management from the Administrative Tools folder.

The main window has a two-pane view.

The console tree in the left pane is used for navigation and tool selection.



Tools are divided into three categories:

System Tools	General purpose tools for managing systems and viewing system information.
Storage	Displays information on removable and logical drives and provides access to drive management tools.
Services and Applications	View and manage the properties of services and applications installed on the server.

The tools available through the console tree provide the core functionality for the Computer Management console.

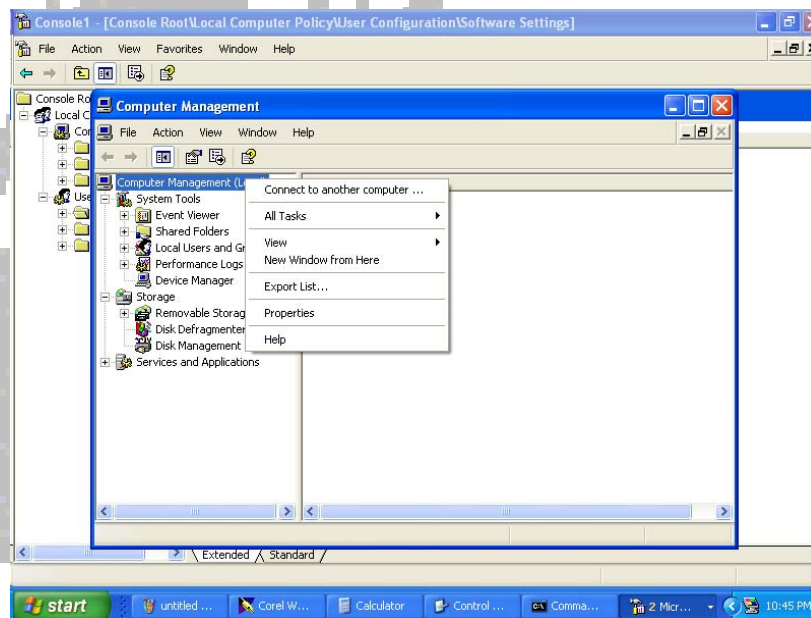
When Computer Management is selected in the console tree, three important tasks can be performed:

- C Connecting to other computers.
- C Sending console messages.
- C Exporting information lists.

11.1 Connecting to Other Computers

The Computer Management console is designed to be used with local and remote systems.

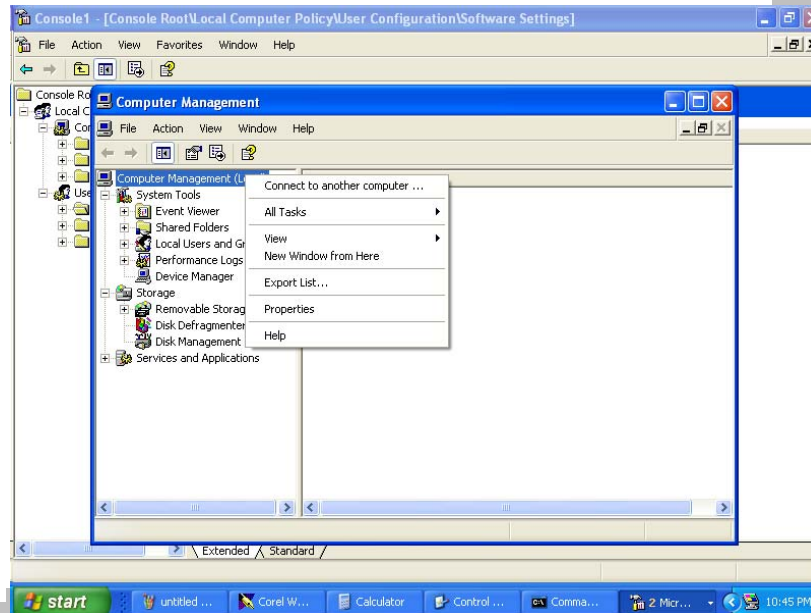
To select a computer to be managed right-click the Computer Management entry in the console tree and then select Connect To Another Computer on the shortcut menu. The Select Object dialog box then opens.



To choose the system that is to be worked with complete the following steps:

1. Use the Look in selection list to choose the domain you want to work with.

By default, the current domain will be selected.



2. In the object list, choose a computer or simply type the computer name in the Name field.
3. Click OK.

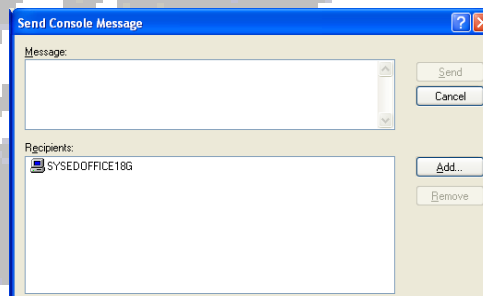
11.2 Sending Console Messages

The Computer Management console can be used for sending messages to users logged on to remote systems. These messages appear in a dialog box that the user must click to close.

Messages are sent to remote users by completing the following steps:

1. In the Computer Management console, right-click the Computer Management entry in the console tree. Then, on the shortcut menu select All Tasks and then choose Send Console Message.

This opens the Send Console Message dialog box.



2. Type the text of the message in the Message area.

In the Recipients area there will be the name of the computer that is currently connected to.

3. To send a message to users of this system, click Send.

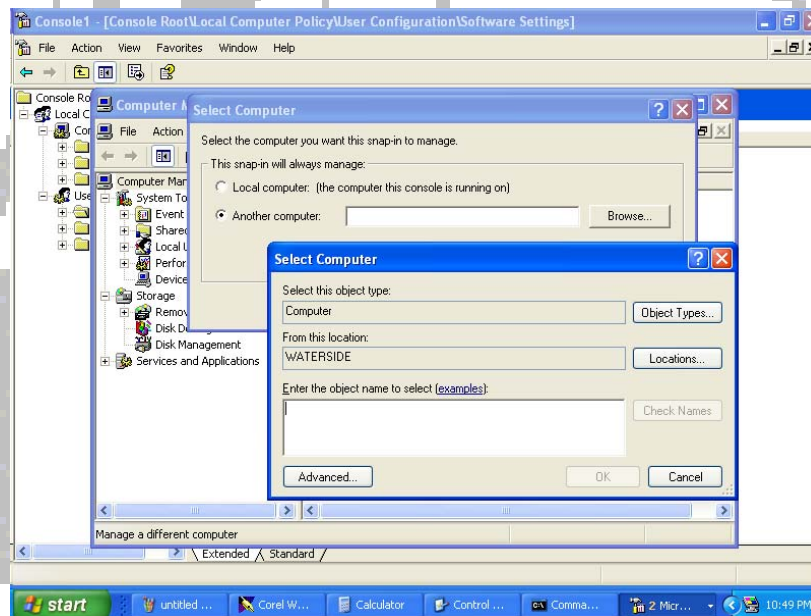
Otherwise, use the Add button to add recipients or the Remove button to delete a selected recipient. Then, when the message is ready, click Send.

Only users logged on to the selected system will receive the message.

Windows XP, 2000, and NT systems must be running the Messenger service to send and receive console messages.

Windows 95 and Windows 98 systems running the WinPopup utility can also send and receive console messages.

In relation to Windows 2000, there now also is an Advanced Search op



11.3 Exporting Information Lists

The export list allows textual information to be displayed in the right pane to a tab or comma-delimited text file.

To save detailed information on all the services running on the system perform the following steps:

1. In the Computer Management console, click the plus sign (+) next to the Services And Applications node.
This expands the node to display its tools.
2. Right-click Services, and then from the shortcut menu select Export List.
This opens the Save As dialog box.
3. Use the Save In selection list to choose the save location and then enter a name for the export file.
4. Use the Save As Type selection list to set the formatting of the export file.
Separate columns of information with tabs or commas and save as ASCII text or Unicode text.
5. Click Save to complete the export process.

This procedure can also be used for exporting lists of other information displayed in the Computer Management console Using Computer Management System Tools.

11.4 Computer Management System Tools

The Computer Management system tools are designed to manage systems and view system information.

Performance Logs and Alerts	Monitor system performance and create logs based on performance parameters. This tool can also be used to notify or alert users of performance conditions.
Local Users and Groups	Manage local users and local user groups on the currently selected computer. Local Users and Groups aren't part of the Active Directory and are managed instead through the Local Users and Groups view. Domain controllers don't have these entries in the Local Users and Groups view.
System Information	Display system configuration information for hardware resources, components, and software environment.
Services	Manage services and service properties.
Shared Folders	Manage the properties of shared folders, user sessions, and open files.
Event Viewer	View the event logs on the selected computer.
Device Manager	Use as a central location for checking the status of any device installed on a computer and for updating the associated device drivers. It can also be used for troubleshooting device problems.

11.5 Computer Management Storage Tools

Removable Storage	Manages removable media devices and tape libraries. Tracks work queues and operator requests related to removable media devices.
Disk Defragmenter	Corrects drive fragmentation problems by locating and combining fragmented files.
Local Drives	Display and manage logical drives on the system.
Disk Management	Manages hard disks, disk partitions, volume sets, and RAID arrays.

11.6 Working with Services and Applications

The Computer Management services and applications are used to manage services and applications installed on a server.

Any application or service-related task that can be performed in a separate tool can be performed through the Services And Applications node as well.

12 Administrative Tools Comparison

12.1 Windows 2000/XP Professional Snap-in vs Windows NT 4 Utilities

Windows 2000/XP Snap-In	Description	Windows NT 4 Tool
ActiveX Control	Display OCX'94-compliant controls	NA
Certificates	Browse certificates for users, services, and computers	Internet Explorer
Component Services	COM+ management	NT Option Pack, Transaction Server, DCOMCnfg
Computer Management	Container node for other tools	NA
Device Manager	List and configure hardware devices.	Control Panel Devices
Disk Defragmenter	Disk defragmenter	Diskeeper
Disk Management	Dynamic disk and volume management	Disk Administrator*
Event Viewer	Event logs	Event Viewer
Fax Service Management	Fax management	NA
Folder	Create node containers	NA
Front Page Extensions	FrontPage Web security	NA
Group Policy	Edit Group Policy Objects	System Policy Editor
Indexing Service	Index service	NT Option Pack
IP Security Policy Management	Manager Internet Protocol Security	NA
Link to Web Address	Display Web pages	NA
Local Users and Groups	Manage local user and group accounts	User Manager
Performance Logs and Alerts	Performance data logs and alerts	Performance Monitor
Removable Storage Management	Hierarchical storage management	NA
Security Configuration and Analysis	Security analysis based on templates	NA
Security Templates	Edit security templates	User Manager Policies Menu

Windows 2000/XP Snap-In	Description	Windows NT 4 Tool
Services	Start, stop, and configure services	Control Panel Services, Server Manager
Shared Folders	Display shared folders, sessions and files	Server Manager
System Information	Display system information for troubleshooting	Windows NT Diagnostics

12.2 Windows 2000 Server vs Windows NT 4 Server Utilities

Windows 2000 Server Snap-In	Description	Windows NT 4 Tool
Active Directory Domains and Trusts	Configure trusts to other domains	User Manager for Domain Trust menu
Active Directory Sites and Services	Configure directory replication and routing	NA
Active Directory Users and Computers	Manage domain computer, user, and group accounts	User Manager for Domains, Server Manager
DNS	Domain Naming Service	DNS Manager
QoS Admission Control	Network Quality of Service Configuration	NA
Routing and Remote	Protocol routing configuration	NA