

## CounterSign Technology

This anti-virus software, containing the award-winning features of F-PROT has been re-engineered with the new modular CounterSign Technology™ architecture. This framework provides an API (application programming interface) for plugging in third-party modules, such as additional anti-virus detection engines.

- The File Management Module provides for extremely fast scanning inside ZIP, ARJ, LZH and other compressed file formats. The archive contents are seen as directories and files by the detection modules. The same applies for all sorts of compound documents like OLE files and mail server databases.
- The Network Management services provide a means of communicating detection engine alerts, reports and messages to the administrator. In addition, the administrator is provided with remote configuration and policy management services to the anti-virus utilities.

## Real-Time Scanning with Gatekeeper

- F-Secure Anti-Virus Gatekeeper real-time scanner technology now supports full detection and identification of file, boot sector and macro viruses, and features automatic transparent update functionality.
- Unobtrusive background operation for all major platforms, including Windows NT Server.

## **Web Club**

- The Data Fellows Web Club allows internet connections to the latest information directly from F-Secure Anti-Virus, including a large library of technical information for the administrator and continuously updated virus descriptions, updates and support for the end user.
- Uses an advanced heuristic analysis to detect previously unknown viruses therefore limiting the risk of false alarms.

## Administration

- Easy-to-use Wizard for automatic network installation installs desktop versions of F-Secure Anti-Virus automatically to multi-platform environments from a single workstation.
- Send updates to users with a single mouse click.
- Receive reports from workstations when a virus is found.
- Receive copies of infected files from workstations automatically.
- Receive copies of suspicious files from workstations automatically.
- Force the workstations to scan their hard disks in a centrally controlled fashion.
- Installation and updates supported under the Microsoft Systems Management Server (SMS) on Windows networks.
- Automatic alerting capabilities strengthened with industry standard Simple Network Management Protocol (SNMP) support.
- Advanced, network independent centralized management system.
- The new F-Secure Anti-Virus Service automatically manages updates on Windows NT, even if no one is using the computer.

## User Interface

- Clear and easy-to-use interface with Windows 95 look-and-feel on all Windows platforms.
- Customizable toolbar with instant Tool-Tips, which orient the new user to the F-Secure Anti-Virus interface.
- Extensive and easy-to-understand virus description database, explaining what all the common viruses actually do.
- Direct links to the Data Fellows Anti-Virus web services providing the most up-to-date information.
- Comprehensive F-Secure Anti-Virus collection of virus descriptions available online directly from the report window.
- Multi-language support enhanced, task and button names reflect language change.

## Creating a Rescue Disk

It is a good idea to create a diskette that contains copies of the most important system areas of your hard disk. If you have difficulty rebooting your computer as the result of a boot sector virus attack, you will be able to reboot with this Rescue Disk.

Depending on the configuration of the F-Secure Anti-Virus license you have received, the Rescue Disk may or may not have been created automatically during the installation. If you want to create a Rescue Disk manually, follow the instructions below.

For information about how to use the Rescue Disk and the Disinfection Disk to recover from problems, see Using the Rescue Disk.

### **More:**

[F-Secure Rescue Disk](#)

[Windows 95 Boot Disk](#)

[Windows NT Emergency Repair Disk](#)

[Disinfection Disk](#)

## F-Secure Rescue Disk

The F-Secure Anti-Virus CD-ROM contains F-Rescue, a utility that lets you create the Rescue Disk. Please note that you must be comfortable with working from the DOS command prompt to use F-Rescue. To create the Rescue Disk, format a clean floppy as a system diskette by inserting it into drive A:, opening an MS-DOS prompt and typing:

```
format a: /s
```

Next, open the F-Secure Anti-Virus CD-ROM, browse to Material\Utility\Dos\Rescue\. Copy F-RESCUE.EXE from the directory to the floppy diskette.

Then go back to the MS-DOS prompt and start F-Rescue by typing:

```
a:f-rescue
```

Follow the instructions on screen to copy the system areas from your hard disk to the floppy.

- F-Rescue will first ask whether you want to backup the system information, restore the system information or exit to DOS.
- After you have selected backing up (1), the program will ask you for a user name, the name of your computer and a password. This information is collected so that different backups can be distinguished from each other.
- F-Rescue will ask you which drive you want to make the backup to.
- After you have selected the appropriate drive, the program creates the rescue disk.
- You should test the rescue disk by booting the computer with the rescue disk in drive A:.

## Windows 95 Boot Disk

The F-Rescue utility is not compatible with all the releases of Windows 95. If you encounter a problem with the above procedure, follow these instructions to create a generic bootable floppy instead.

The easiest way of creating a windows 95 boot disk is to create a Startup Disk. If you haven't created a Startup Disk when you installed Windows 95, you should do so now. It is also recommended that you create a Startup disk every time you add or remove hardware on your PC.

You can create a Startup Disk by opening the Control Panel and clicking on Add/Remove Programs.

Click on the tab that says Startup Disk and Windows 95 will guide you through the process.

You can also create a boot disk by format a clean diskette as a system diskette. Insert the diskette into drive A:, open an MS-DOS prompt and type:

```
format a: /s
```

Then copy the following programs from your hard disk onto the Boot Disk:

```
FDISK.EXE
```

```
SYS.COM
```

```
FORMAT.COM
```

On MS-DOS and Windows 3.1 systems, these files are typically located in C:\DOS. On Windows 95 systems, they can usually be found in the C:\WINDOWS\COMMAND directory.



## Windows NT Emergency Repair Disk

The F-Rescue utility is not compatible with any versions of Windows NT. To create an NT Emergency Repair Disk (ERD), execute the NT utility RDISK (Repair Disk Utility). It is located in SYSTEM32 directory under Windows NT's own directory. When RDISK has started, choose option "Create Repair disk" and follow directions on screen. This diskette can be used to recreate your boot sectors on a Windows NT system.

## Disinfection Disk

The Rescue Disk allows you to boot an infected computer safely and lets you remove viruses from the Master Boot Record (MBR) and Boot Sector, but it does not let you disinfect programs or documents on the hard disk. For this, you need a Disinfection Disk.

To create the Disinfection Disk, format a floppy, open the F-Secure Anti-Virus CD-ROM, browse to Anti-Virus, and under your language folder find the DOS directory. Then copy everything from the directory to the floppy diskette. The actual files copied to the diskette vary depending on whether you are using the AVP or the F-PROT edition of the software.

Write-protect the Rescue Disk and the Disinfection Disk and keep them write-protected at all times.

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## **Scanning for Viruses**

The F-Secure Anti-Virus Gatekeeper device driver provides you with real-time protection from viruses as you access files. This shields your computer from all kinds of viruses automatically without manual intervention or configuration.

For additional protection, you can run the F-Secure Anti-Virus interactive virus scanner and search for viruses on the hard disk, floppy disks, CD-ROMs, and network disks. You can even automate the scanning by saving the necessary settings as a task and scheduling the task to run periodically.

## Launching F-Secure Anti-Virus

To start F-Secure Anti-Virus , double-click the F-Secure Anti-Virus icon in the taskbar which is available under Windows 95 and Windows NT 4.0.

If you're not running F-Secure Manager, choose F-Secure Anti-Virus from the Start menu.

In Windows 3.1 and NT 3.x, click the F-Secure Manager icon on the desktop and choose the Start F-Secure Anti-Virus for Windows command from the menu.

If you're not running F-Secure Manager, double-click the F-Secure Anti-Virus icon in the F-Secure Anti-Virus program group in Program Manager.

F-Secure Anti-Virus includes several ready-made tasks, to perform, for example, the following scans:

- Scan Diskette in Drive A:
- Scan Hard Disks
- Scan Folder
- Scan Network

F-Secure Anti-Virus toolbar contains buttons for starting these tasks. Clicking a button will start the corresponding task. Place the mouse pointer over a toolbar button to view the button's name.

These tasks can also be executed by selecting their corresponding icons from the F-Secure Anti-Virus program group or the Windows 95 and Windows NT 4.x Start menu.

You can also perform scans by dragging and dropping files and directories into the F-Secure Anti-Virus window, or on top of the F-Secure Anti-Virus or F-Secure Manager icon on the desktop. The dropped objects will be scanned automatically.

## Constant Guard with F-Secure Anti-Virus Gatekeeper

The F-Secure Anti-Virus Gatekeeper and F-Secure Manager modules provide consistently perpetual protection from macro viruses and other attackers, from the background, when files and diskettes are opened.

### **More:**

[F-Secure Anti-Virus Gatekeeper](#)

[F-Secure Manager](#)

## F-Secure Anti-Virus Gatekeeper

F-Secure Anti-Virus Gatekeeper functions transparently in the background, looking for viruses whenever you access diskettes or files. If you try to open, copy, or move an infected executable file, F-Secure Anti-Virus Gatekeeper will automatically display a warning:

To check whether F-Secure Anti-Virus Gatekeeper is active, open the F-Secure Manager menu. If the F-Secure Anti-Virus Gatekeeper... item on this menu is checked, then the Gatekeeper is active.

Click this command, if you would like to disable F-Secure Anti-Virus Gatekeeper or modify its settings.

This will open the "F-Secure Anti-Virus Gatekeeper Settings" dialog box. You can also open a dialog box for modifying the Gatekeeper settings by using the Protection Preferences of F-Secure Anti-Virus.

### **More:**

[F-Secure Anti-Virus Gatekeeper Settings](#)

[F-Secure Anti-Virus Gatekeeper Technical Information](#)

## **F-Secure Anti-Virus Gatekeeper Settings**

You can change the F-Secure Anti-Virus Gatekeeper settings by opening the F-Secure Manager menu in Windows and choosing the F-Secure Anti-Virus Gatekeeper command. The program will then display the F-Secure Anti-Virus Gatekeeper Settings dialog on the screen.

With the F-Secure Anti-Virus Gatekeeper settings, you may do the following, depending on your platform:

- Enable or disable F-Secure Anti-Virus Gatekeeper.
- Set the F-Secure Anti-Virus Gatekeeper's ability to identify viruses by name. Switching off this option saves memory and is useful in computers that are low in memory.
- Determine whether or not the user should confirm the program's actions after a virus has been detected.
- Determine what should be done to infected files. The options are renaming files, deleting files or leaving the files as they are.

## **F-Secure Anti-Virus Gatekeeper Technical Information**

F-Secure Anti-Virus Gatekeeper's functioning is based on Dynamic Virus Protection Technology. This technology employs a device driver which monitors the operating system services used in opening files and managing disk partitions.

This means that F-Secure Anti-Virus Gatekeeper is notified every time a file is opened. If the file happens to be an executable one or a document file containing macros, the program checks it automatically for viruses.

F-Secure Anti-Virus Gatekeeper monitors also disk operations. It checks the boot sectors of the diskettes used in the computer, first when a diskette is inserted in the diskette drive and subsequently each time something is read from the diskette or written to it.

F-Secure Anti-Virus Gatekeeper works both in Windows and in DOS sessions opened from Windows.



## F-Secure Manager

F-Secure Manager runs in the background mode to launch the scheduled F-Secure Anti-Virus tasks, thus eliminating the need for F-Secure Anti-Virus to remain active all the time. In case of a network installation, F-Secure Manager also provides communication between individual workstations and the F-Secure Anti-Virus administrator.

When F-Secure Manager is loaded, its icon is displayed on the desktop, in the taskbar status area under Windows 95 and Windows NT 4.x. Click the icon with the left mouse button in Windows 3.1 and with right mouse button in Windows 95 and Windows NT 4.x to view the F-Secure Manager menu.

Click Start F-Secure Anti-Virus for Windows to launch F-Secure Anti-Virus. In Windows 95 and Windows NT 4.x, F-Secure Anti-Virus can also be started by double-clicking the F-Secure Manager icon on the desktop.

If F-Secure Anti-Virus Gatekeeper is installed, the F-Secure Anti-Virus Gatekeeper... command of the F-Secure Manager menu can be used to enable F-Secure Anti-Virus Gatekeeper and change its settings. If the Gatekeeper is already active, this command will be marked with a check mark. In this case, the command can be used for disabling Gatekeeper, if needed.

Use the Load F-Secure Manager at Windows Startup command to have F-Secure Manager loaded at Windows start-up. If the command is checked, meaning that F-Secure Manager is loaded at start-up, the command can be used to disable loading, if needed. In both cases, you will be asked for confirmation. In case of a network installation, some of the above commands may be hidden by administrator.

## Using the Toolbar and Task List

The F-Secure Anti-Virus interface has two display modes: toolbar and task list.

**More:**

[Toolbar](#)

[Task List](#)

# Toolbar

In the toolbar mode, the window contains a number of buttons and menus, providing you with easy access to all the features of F-Secure Anti-Virus you need most often.

The default buttons on the toolbar give shortcuts for the following actions:

- Scan drive A:
- Scan the Hard Drive
- Scan Network Drives
- Scan a Folder
- Create a new task
- Duplicate, edit, execute, and delete scanning tasks
- Execute a pre-configured task
- Read results of a task
- Show the log file
- Modify F-Secure Anti-Virus settings
- Edit settings of F-Secure Anti-Virus Gatekeeper
- Connect to F-Secure Anti-Virus Web Club
- View virus descriptions
- Access online help
- Toggle between Toolbar and Task List modes

In addition, almost any F-Secure Anti-Virus feature can be linked to a newly created button. To see what a particular button does, place the mouse pointer over it and the name will appear in a small window.

## Task List

In the task list mode, the full-sized window shows the list of scanning tasks, in addition to the buttons and menus.

To toggle between the two display modes, click on the Enlarge/Shrink button.

The task list displays the name of each task; the next time it is scheduled to be executed, or its Next Run; and its Last Status, the result of the last execution. A task can be selected from the task list by clicking on it with the mouse or by using the arrow keys.

When you open the F-Secure Anti-Virus task list after installation, it already contains several tasks. The Default Task cannot be deleted, but its settings can be modified, including the name. In addition to the Default Task, F-Secure Anti-Virus includes several ready-made tasks, which perform, for example, the following scans:

- Scan Drive A:
- Scan Hard Disks
- Scan Network Drives
- Scan a Folder

The toolbar contains shortcut buttons for starting these tasks. Clicking a button will start the corresponding task.

## Working with Scanning Tasks

F-Secure Anti-Virus supports saving the scan settings to a scanning task to make it easy to run the scan again when needed. Each scanning task has a name and a set of parameters, which contain the information needed to execute that particular scanning task. The scanning parameters are stored on the hard disk as a file.

Tasks and parameters can be edited or removed. When F-Secure Anti-Virus is launched, it reads task files and shows them on the task list. When a scan of a new kind is needed, it is first created as a task, then executed according to parameters.

### **More:**

[Task Management](#)

[Task Properties and Scheduling](#)

[Executing a Task](#)

[Viewing Task Results](#)

# Task Management

F-Secure Anti-Virus contains one default task which is unremovable but whose parameters can be modified. F-Secure Anti-Virus also includes a number of ready-made tasks:

[Task List](#) These ready-made tasks are included for your convenience. They are in no way special compared with the tasks you can create yourself.

To customize tasks and create tasks, you may edit the parameters of a pre-configured task or create an entirely new task. To edit tasks or to create new tasks, first display the tasklist by either clicking Enlarge on the toolbar, or choosing Enlarge to Tasklist from the Edit menu.

## **More:**

[Editing Task Parameters](#)

[Copying Tasks](#)

[Creating New Tasks](#)

[Deleting Tasks](#)

## **Editing Task Parameters**

An existing task can be modified by double-clicking on it in the task list, or by selecting it on the task list and then either pressing Alt+Enter or clicking Edit settings button on the toolbar. Another option is to select the task on the task list and then to choose Settings from the Tasks menu or from the right-click-shortcut menu.

All the above actions open the Properties for Task dialog box, where the task properties can be edited. If the option Save Tasks Automatically in the General page of the Preferences for Task dialog box is not active, save the edited task by choosing Save All from the File menu.

## **Copying Tasks**

To make a new task by copying and modifying an old one, select the task to be copied on the task list. Then click the Make a Copy button on the toolbar. Alternatively, choose Duplicate from the Tasks menu or from the right-click-shortcut menu. F-Secure Anti-Virus will create a task, called "Copy of 'Source Task'", place it on the task list, and open the Properties for Task dialog box. In this dialog box you can set up properties of the new task.



## **Creating New Tasks**

To create an entirely new task, click Create a new task on the toolbar. Alternatively, choose New Task from either the Tasks menu or the right-click-shortcut menu. F-Secure Anti-Virus will create the task called "Untitled Task," place it on the task list, and open the Properties for Task dialog box.

When a task has been created, it must be saved before you exit F-Secure Anti-Virus. Save the new task by choosing Save All from the File menu. New and modified tasks can also be saved automatically on exit, if so defined in the General Preferences.

## **Deleting Tasks**

Any task can be deleted from the task list, except for the Default Task and, in case of a network installation, the tasks distributed by administrator. To delete a task, first select it on the task list using the mouse or the arrow keys. Then, delete the selected task by either pressing the delete key, or clicking the Delete button on the toolbar. Alternatively, choose Delete from the Tasks menu or from the right-clicking short-cut menu.

When a task is deleted, any corresponding report is also removed. Before removing the task from the task list and deleting the corresponding task file, F-Secure Anti-Virus will request a confirmation.

## Task Properties and Scheduling

Task parameters, or properties, are defined in the Properties for Task dialog box. This dialog box is automatically displayed whenever a new task is created. To modify parameters of an existing task, select the task on the task list and click the Edit Settings button on the toolbar. Alternatively, choose Settings from either the Tasks menu or the right-clicking shortcut menu. Selecting the task and pressing Alt+Enter, or double-clicking on the task name will also open the Properties for Task dialog box. The Properties for Task dialog box contains three pages: General, Advanced, and Scheduling.

### More:

[General Properties](#)

[Advanced Properties](#)

[Schedule Properties](#)

## **General Properties**

The General page of the Properties for Task dialog box specifies the task name, and the file, folder or disk to be scanned.

The Task Name is given in the upper box of the General page. If needed, delete the current entry and type in the task name of your choice.

In the Scan Target box, enter the name and the path of the file, folder, or disk to be scanned. It is more convenient to enter this information for disks and folders by selecting them from the list. Double-click on the disks drives and folders to view their contents.

## Advanced Properties

Use the Advanced page of the Properties for Task dialog box to set the following task properties: the scan method; viruses which F-Secure Anti-Virus should look for; files, folders, or disks to be searched; and the action to be taken on the infected files.

The first item to be defined is the Scan method. The menu normally includes the F-PROT and AVP options, both of which are very reliable tools in searching for known viruses and their new variants. Under Look for, you can specify the viruses which F-Secure Anti-Virus will be looking for. Both the Viruses and Trojan Horses check box and the Document macro viruses check box are selected by default. If needed, click a check box to clear it.

Viruses are basic pieces of malicious, self-replicating software. Unlike them, Trojan Horses, which are often confused with viruses, cannot replicate themselves. They are simple traps and time-bombs hidden inside other programs.

Under Look In, specify the type of files which should be scanned. The default option is Executables and document files. Selecting Executables and document files limits the search for viruses only to document files and the files containing executable code. F-Secure Anti-Virus uses file extensions specified in the Scanning Preferences to determine whether a file is an executable or a document file. The commonly used extensions for executable files are: .com, .exe, .sys, and .ov?. For document files, the commonly used extensions are: .do?, .xl? and RTF.

If you regularly use non-standard extensions for Word and Excel documents (such as .INVOICE or .BOB, add your extension to the list via Edit/Preferences setting.

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Use the Scanning Preference dialog box to re-define executable and document files, if needed.

All files means exactly what it says. If this option is selected, F-Secure Anti-Virus will search all the files, regardless of their extension: executables, documents, and others. This setting should not be used under normal conditions, because it slows down the scans by a factor of 10 and might generate false reports in some cases. However, if a virus has already been discovered, it is a good idea to do a one-time check on all files in the system.

Use the Archives option to scan inside several archive file formats such as files compressed with the ZIP, ARJ and LZH algorithms. In order to scan inside compressed files you must check the "Look in Archives" checkbox in the "Advanced" page of the task properties dialog. If "Look in Executables and document files" is selected (on the same page) then files with ZIP, ARJ and LZH extensions will be scanned along with those whose extensions are listed in the Scanning Preferences page (this also means that self-extracting archives with EXE extension will be scanned). If "Look in All files" is selected then files with all extensions will be scanned. The archive scanning is recursive, and will find viruses stored in archives within archives.

We constantly increase support for compressed file formats, with recursive scanning and other archive formats to be added in upcoming versions. Please see this web page for the latest information:

- <http://www.DataFellows.com/anti-virus/support/compressed-file-formats.htm>

If the Boot Sectors box is selected, F-Secure Anti-Virus will check the boot sectors of hard disks and diskettes for boot sector viruses. This check box is selected by default.

Under Action:, specify the action to be taken by F-Secure Anti-Virus on infected files when it finds a virus. The following four choices are available:

- **Report Only.** If this option is selected, F-Secure Anti-Virus reports the detected viruses, but does nothing to the infected files. You will be able to choose the required action after reading the task results report.
- **Disinfect.** F-Secure Anti-Virus will attempt removing viruses from the infected files or boot sectors. F-Secure Anti-Virus is able to disinfect most known viruses. If a file cannot be disinfected, the program would ask the user whether to delete the file.
- **Delete.** The infected files will be first overwritten, and then deleted from the system. The content of the files will be lost.

- **Rename.** Infected executable files will be given a different file extension to eliminate the risk of further spreading of the virus in case of unintentional execution of the infected file. The file name extensions are changed from .com to .vom, from .exe to .vxe, .doc to .voc etc.

If the Confirm operations check box below is selected, F-Secure Anti-Virus will ask for confirmation before doing anything to infected files. If the task was started interactively, F-Secure Anti-Virus will ask for confirmation every time a virus is found. In case of a scheduled task, all the confirmations will be requested in one batch. The Confirm operations check box is selected by default. If you click the check box to clear it, F-Secure Anti-Virus will proceed with disinfection, deletion and renaming files without asking for confirmation.

F-Secure Anti-Virus can also be instructed to beep or display a message every time it finds a virus. This is not given as a task parameter, but can be selected from the Scanning Preference dialog box.

## Schedule Properties

Tasks can be scheduled for execution at specific times. In order to have the scheduled tasks executed without running F-Secure Anti-Virus, F-Secure Manager should be active at all times.

Begin with selecting the Scheduling Enabled check box in the upper area of the page. This will enable the scheduling options.

To schedule a task to run automatically, use the Scheduling tab of the Properties for Task dialog box.

Under Scan frequency, there are three general options for how often the task will be executed:

- **Daily:** Execute the scan every day.
- **Weekly:** Select the check boxes corresponding to the days of the week when you wish the task to run.
- **Monthly:** Enter the day of the month on which you wish the task to be executed.

Under Time to scan, there are two alternatives for setting the time of the day when the task should be performed.

Enter the desired time by clicking the At option button and typing in the numbers for hours and minutes. If two or more tasks are scheduled to run at the same time, the task that appears first on the task list takes precedence.

Alternatively, click the Start after \_ idle minutes option button and type in the number of idle minutes after which F-Secure Anti-Virus should perform the task. This way, machine is scanned automatically when the user is away. Tasks that use this option are run once per day, according to the order in which they appear on the task list. If the machine is not idle during the day, the task will be rescheduled for the following day. The Scheduling page can also be accessed directly from the task list by selecting the task and choosing Schedule from the Tasks menu or from the right-click-shortcut menu. Double-clicking on the task's Next Run field will also display the Scheduling page.

## Executing a Task

A task can be executed either by scheduling it or by running it interactively.

To run a task interactively, select the task on the task list and press Enter, or click Execute the currently selected task on the toolbar. You can also choose Start from the Tasks menu or from the right-click-shortcut menu. If the toolbar contains a shortcut button for the task you wish to execute, just click the shortcut button without selecting the task on the task list.

If the task is the first one in the current session of F-Secure Anti-Virus, then the program first scans the computer's memory. After that, the Scanning Disk for Viruses dialog box appears. The task name is displayed in the upper part of the dialog box, along with the scan status, the name of the scanned file, and the progress indicator.

The lower part of the window displays a preliminary report, which lists the scan method; the name of the file, folder, or disk being scanned; the action to be taken on infected files; the types of the target viruses; and the types of scanned files.

A task may be aborted at any time by clicking Stop in the dialog box. The program will ask for confirmation before terminating scan.



# Viewing Task Results

[Viewing Task Execution Reports](#)

[Viewing the Scan Log](#)

[Printing Task Results](#)

## Viewing Task Execution Reports

After executing a scanning task, F-Secure Anti-Virus produces a report on the task results. If a virus is found, the Virus Alert: Check the Results! message box is displayed on the screen and you can view the results report immediately by clicking Report in the Scan Finished dialog box. This dialog box and the Virus Alert message box, if relevant, are displayed on the screen even if F-Secure Anti-Virus is executing scans in its minimized mode.

To view a results report, switch from the toolbar to the task list mode. To do this either select Enlarge to Tasklist from the Edit menu or click Enlarge on the toolbar.

Select the task on the task list and either click Show the results file of the currently selected task on the toolbar, or choose Results from the Tasks menu or the right-click-shortcut menu. The task results are presented in a separate window.

Depending on your preferences, the new report may either overwrite the report about the previous execution of the task, or can be appended to the existing list of reports.

Each task result report shows the execution time and results of a specific executed task at the latest scan or the preferred number of scans, and includes the name of the user, the name or ID of the workstation, and the version of F-Secure Anti-Virus.

Below these, the report states the scan execution time, the scan results, and the following scan parameters: the scan method; the name of the scanned file, folder, or disk; the action taken on the infected files; the types of the target viruses; and the types of scanned files.

Further in the report, more detailed results are given. There is a separate entry for each virus infection. If you double-click on a virus name, the Virus Information dialog box, which contains virus descriptions, will be displayed. Virus descriptions are also available at the F-Secure Anti-Virus World Wide Web server. Choose Virus Descriptions on the Web from the Help menu to access the server.

General information about the infected file can be obtained by double-clicking on its name in the report, which opens the File Information dialog box. In this dialog box, the file's size, attributes and creation time are shown.

If the computer is connected to a network, the report can be sent to administrator by clicking Admin in the Task Results dialog box. The report can also be printed out by clicking Print.

## **Viewing the Scan Log**

Information about the executed tasks and F-Secure Anti-Virus Gatekeeper scans that found a virus is stored in the log file by default. You can have the log include only one type of entries, or change the length of the log, by using the Reporting Preferences.

To view the log, click Show the log file on the toolbar or choose Log from the Tasks menu. The log contains one line per each executed task or scan, beginning with the task name. Each log entry for a task execution consists of the task name, execution time and the result status. Each log entry for a virus-finding F-Secure Anti-Virus Gatekeeper scan includes the time of the scan, and the name of the infected file.

Virus alerts are shown in red.

The maximum length of the log, 500 lines by default, can be set in the Reporting Preferences dialog box.

## **Printing Task Results**

If the computer is connected to a printer, you can print out the log and the task results.

To print results of an executed task directly from the task list, select the task and then choose Print Results option from the File menu. You can also print the results report can from the Task Results dialog box by clicking Print.

To print the log, choose Print Log from the File menu.

Choose Printer Setup from the File menu to open the standard printing dialog box. In the dialog box, select the printer, paper size, and other printer settings.

Choose Page Setup from the File menu to define page parameters, including print margins.

# Setting F-Secure Anti-Virus Preferences

Preferences control the way in which F-Secure Anti-Virus functions. There are several different preferences, each responsible for some portion of the program's functionality.

If F-Secure Anti-Virus is installed with network functionality, the F-Secure Anti-Virus administrator pre-defines the preferences and may decide to hide some of them from the users. In this case, some preferences may be unavailable.

To access the Preferences dialog box, choose Preferences from the Edit menu or click the Open the Preferences dialog button on the toolbar. Once the Preferences dialog box is displayed, click on the tab corresponding to the Preferences you would like to modify. The following Preferences are available in the Preferences dialog box:

<b>Preference</b>	<b>Function</b>
General	Controls the program settings and sets the language.
Scanning	Determines which files the program will accept as scan objects, and how it will inform you if a virus is found.
Protection	Controls whether F-Secure Anti-Virus Gatekeeper is enabled and what actions it takes if a virus is found.
Reporting	Controls task result reports and the log file.
Workstation	Used for setting the user name and the workstation ID.

To access a particular Preference, click its corresponding tab in the Preferences dialog box. The instructions on using various Preferences follow.

## **More:**

[General Preferences](#)

[Scanning Preferences](#)

[Protection Preferences](#)

[Reporting Preferences](#)

[Workstation Preferences](#)

## General Preferences

Use the General Preference dialog box to define the ways in which F-Secure Anti-Virus operates.

The Save Tasks Automatically check box, if selected, enables automatic saving of any new or modified task at the closing of F-Secure Anti-Virus. This check box is selected by default.

The Save Window Settings on Exit check box, if selected, causes F-Secure Anti-Virus to save the location and settings of its main window when it is closed. The next time the program is started, it starts in the same mode as in the end of its previous session. By default, this check box is selected.

The Run Scheduled Tasks Minimized check box, if selected, makes all the scheduled F-Secure Anti-Virus tasks, executed through F-Secure Manager, run with the minimized display. By default, this check box is selected.

In the General Preference, you may also choose your preferred language from the Language: list of available choices.

## Scanning Preferences

Use the Scanning Preferences to re-define executable and document files for F-Secure Anti-Virus usage, and to specify the way, in which F-Secure Anti-Virus informs you about the detected viruses.

In the Executable Files box select the extensions of the files, which F-Secure Anti-Virus will consider to be executable. The default set of the executable files extensions is the following: .com, .exe, .sys, .ov?, .app, .pgm, .bin. If you need to re-define executable files, type in the new extensions and delete those you do not need. Normally, this is not needed.

Similarly, in the Document Files box select the extensions of the files, which F-Secure Anti-Virus will consider to be document files. The default set of the document files extensions is the following: .do?, .xl? and rtf. If you need to re-define document files, type in the new extensions and delete those you do not need. Note that normally RTF files can not contain macro viruses, but we regularly see infected DOC files that have been rename to RTF.

Under When a Virus Is Found, select the type of notification in the event a virus is found. Instruct the computer to beep by selecting the Beep check box. If you wish to have a message displayed, select the Display the Following Message check box and type in the message to be displayed when a virus is found. To test the functionality of Scanning Preferences, use the EICAR Test File.

## Protection Preferences

In the Protection Preference, you can enable and configure F-Secure Anti-Virus Gatekeeper. F-Secure Anti-Virus Gatekeeper is the program for providing dynamic protection against viruses. It functions transparently in the background, looking for viruses whenever you access diskettes or files.

F-Secure Anti-Virus Gatekeeper detects the same viruses as does the fully executed scan, works for both Windows and DOS sessions under Windows, and in case of a network installation communicates directly with F-Secure Anti-Virus administrator.

Select the Enable F-Secure Anti-Virus Gatekeeper check box under Dynamic Virus Protection to activate F-Secure Anti-Virus Gatekeeper. If this check box is selected, the other options of the dialog box become available.

Under Preventive Action, select between Confirm before Denying Access to Infected File and the default Always Deny Access to Infected File.

Under Action on Infected File, select the action to be taken by F-Secure Anti-Virus Gatekeeper on the infected files. Click either of the following: None to take no action except notifying; Rename, to rename the infected file; Delete to delete the infected file; and Disinfect to disinfect the infected file.

In F-Secure Anti-Virus for Windows 3.1, the "Protection Preferences" dialog box is a little different. Below are the instructions on using the Protection Preferences in F-Secure Anti-Virus for Windows 3.1.

In order to go to the Preventive Action selection, click More in the "Protection Preferences" dialog box.

Under Preventive Action, there are four options for F-Secure Anti-Virus Gatekeeper actions when it finds the virus. Two options are available when the virus is found under Windows, and two options are available when the virus is found under DOS session.

Under When Virus is Found under Windows, choose either Confirm Before Denying Access to Infected File, or the default Always Deny Access to Infected File.

Under When Virus is Found under DOS Session, choose either Confirm before Terminating the DOS Session, or the default Always Terminate the DOS Session.

The Action on Infected File selection in F-Secure Anti-Virus for Windows 3.1 offers the available choices for the actions taken by F-Secure Anti-Virus Gatekeeper on the infected files. Click either of the following: None, to take no actions except for notifying; Rename, to rename the infected file; and Delete to delete the infected file.

The Protection Preference dialog box in F-Secure Anti-Virus for Windows 3.1 includes the following Scanning Options for F-Secure Anti-Virus Gatekeeper: Search for Document Macro Viruses and Scan Created and Renamed Files.

The Activity Display is a small window that displays the status of progress in real time. Choose from the following available options: Show Names of Scanned Files, Show Icons only, and None.



## Reporting Preferences

In the Reporting Preferences you can configure the log, and determine whether the task results reports will be stored in the program, or overwritten by the next scan.

Under New Results, select the way in which F-Secure Anti-Virus will store the task results reports. Select either Append After Previous Results, if you wish to keep the previous results reports saved, or Overwrite Previous Results, if you do not need to keep the previous results reports. In the latter case, only the latest report will be available for viewing.

Under Log File, select the appropriate check boxes for configuring the F-Secure Anti-Virus log. Click the Task Results check box to have the task results included in the log. Click the Active Protection Messages check box to have F-Secure Anti-Virus Gatekeeper messages included in the log.

To set the maximum length of the log file, click the Truncate Old Entries checkbox and type in the number. The default maximum is 500 lines.

## **Workstation Preferences**

The Workstation Preference is used to set the workstation name and the user name. In case of a network installation of F-Secure Anti-Virus, the names are needed to communicate with the F-Secure Anti-Virus administrator.

## Modifying the Toolbar

The F-Secure Anti-Virus toolbar contains ready-made shortcut buttons which provide convenient shortcuts. These buttons can be edited or moved around within the toolbar. Additionally, you can create custom shortcut buttons to suit your particular needs. Almost any function can be linked to a specially created button.

### **More:**

[Creating Buttons](#)

[Editing Buttons](#)

[Deleting Buttons](#)

[Moving Buttons Around](#)

# Creating Buttons

To create a new button, click on the toolbar with the right mouse button. A menu will be displayed. Choose Add a new button from the menu. The Create a New Toolbar Button dialog box will be displayed, where the new button can be defined.

The same dialog can be accessed by double-clicking an empty spot on the toolbar while holding down the Control key.

On the Picture list, choose the picture for the new button.

On the Action list, choose the action to be linked to the button. Available actions are the following:

<b>Action</b>	<b>Function</b>
About F-Secure Anti-Virus	Shows the F-Secure Anti-Virus splash screen.
Administration Mode	Begins/ends administration mode.
Administrator Help on Web	Connects to Administrator FAQ page on F-Secure Anti-Virus Web server.
Delete Task	Deletes the currently selected task.
Distribute Task	Distributes the selected task. Enabled only when F-Secure Anti-Virus is in administration mode.
Duplicate Task	Makes a copy of the currently selected task.
Edit Preferences	Opens the Preferences dialog box.
Edit Task Settings	Opens Properties for the currently selected task.
Enlarge/Shrink	Displays/hides task list.
Execute Task	Executes a task.
Exit	Exits F-Secure Anti-Virus.
F-Secure Anti-Virus Contact Information	Shows contact information for your F-Secure Anti-Virus vendor.
F-Secure Anti-Virus Gatekeeper Settings	Allows to edit settings of F-Secure Anti-Virus Gatekeeper.
Help Contents	Displays help items.
Help on Context	Searches for help items on context.
How to Use Help	Displays advice on how to use help.
Manage Bulletins	Opens the Manage Bulletins dialog box. Enabled only when F-Secure Anti-Virus is in administration mode.
New Task	Creates a new task.
Page Setup	Opens a normal page setup dialog.
Print Log	Prints the log without preview.
Print Results	Prints the results of a selected task without preview.
Printer Setup	Opens a normal printer setup dialog.
Read Bulletins	Displays the Read Bulletins list.
Save All	Saves the program settings.
Schedule Task	Opens the Schedule dialog box for the selected task.
Search for Help On	Searches for help on a chosen topic.
Send Message	Opens the Send Messages dialog box.
Send Update	Opens the Update dialog. Enabled only when F-Secure Anti-Virus is in administration mode.
Start Task	Executes the currently selected task.
Undistribute Task	Removes the selected task from local workstations. Enabled only when F-Secure Anti-Virus is in administration mode.
View Infected Files	Opens a dialog where infected files may be viewed.

View Log	Enabled only when F-Secure Anti-Virus is in administration mode. Opens the Log file.
View Task Results	Displays results of a task.
View Task Results	Displays results of the currently selected task.
View User Messages	Opens the Read Messages dialog box. Enabled only when F-Secure Anti-Virus is in administration mode.
View User Reports	Opens the User Reports dialog. Enabled only when F-Secure Anti-Virus is in the administration mode.
Virus Information	Displays the Virus Information dialog box.
Virus Information on Web	Connects to F-Secure Anti-Virus Web server to view virus descriptions.
Web Club	Connects to F-Secure Anti-Virus Web Club.

If you choose either of Execute Task, Schedule Task or View Task Results actions, click the task of your choice on the Task list, located below the Action list..

After you have selected the action and the picture to be linked to the button, click OK, and the new button appears on the toolbar.

There is a shortcut way to create a new task button. Grab the task from the task list by pressing Control and clicking on the task with the mouse, then drag and drop it on the toolbar, while keeping Control pressed down. The new button, named according to the selected task, will appear on the toolbar.

## **Editing Buttons**

To modify an existing button, double-click the button, while holding Control down. This will display the Edit Toolbar Button dialog box, where the button's properties can be freely edited. The same dialog can be accessed by first right-clicking the button and then selecting the Edit button from the displayed menu. Select the desired action and picture for the button.

After making the desired modifications, confirm the changes by clicking Change. Clicking Delete will delete the button. F-Secure Anti-Virus will ask for confirmation before deleting the button.

## Deleting Buttons

To delete a button, click on it with the right mouse button and choose Remove button from the displayed menu. Alternatively, double-click the button while holding Control down to go to the Edit Toolbar Button dialog box and click Delete at the bottom of the dialog box. F-Secure Anti-Virus will ask for confirmation before deleting the button.

Buttons can also be deleted by dragging them off the toolbar, while holding Control down. In this case F-Secure Anti-Virus will request confirmation as well.

## **Moving Buttons Around**

To move buttons within the toolbar, press Control and grab the button with the mouse by clicking on it and keeping the button of the mouse pressed down. The button can be dragged around the toolbar and dropped in a suitable place by simply releasing the mouse button.



## Network Features

While F-Secure Anti-Virus can be used on a stand-alone computer without any network connections, it is designed to support communication between a user and the system administrator via the network. Some examples of network features are given below.

### **More:**

[Updates](#)

[Tasks](#)

[Messaging](#)

[Cross-Platform Compatibility](#)

## **Updates**

The administrator can automatically update F-Secure Anti-Virus on the users' computers via the network. Depending on the Updating Preferences, a user need not be aware that an the update is taking place.

## Tasks

The administrator can design scanning tasks and distribute them to local workstations through the network. F-Secure Anti-Virus programs on individual workstations pick the tasks up automatically and add them to their own task lists. If the tasks have been designed to run on a schedule, the local programs will execute automatically.

## Messaging

F-Secure Anti-Virus supports communication between users and the system administrator in the form of messages and bulletins.. A user may send messages to administrator, and the administrator may send general bulletins to all the users.

In addition, F-Secure Anti-Virus can be set up to automatically send the task result report to administrator each time when it finds a virus on a network workstation. F-Secure Anti-Virus Gatekeeper can be set up to send a message to administrator each time it detects a virus.

The administrator can send bulletins to all users simultaneously. When you launch F-Secure Anti-Virus, it will notify you of any new bulletins.

You can access the list of the bulletins either directly from this dialog by clicking Yes, or later by choosing Read Bulletins from the Edit menu.

Select a bulletin from the list, and click Read to view it.

To send a message to your F-Secure Anti-Virus administrator, choose Send Message from the Edit menu. Enter the subject and the text of the message in the displayed dialog box and click Send.

## Cross-Platform Compatibility

F-Secure Anti-Virus is available for a number of platforms, including:

- Windows 3.1
- Windows 95
- Windows NT
- OS/2

All Windows versions are compatible with each other and the OS/2 version. All these different versions may also co-exist on the same network and share tasks, messages etc. This means that the system administrator may use F-Secure Anti-Virus for Windows NT, for example, and still get reports from users that run Windows 3.1, Windows 95 or OS/2. He can also send out tasks that are executed on each workstation regardless of what operating system it is running. In order to get this functionality, all versions must use the same communication directory, stored on a central server.

# Menus

F-Secure Anti-Virus in a Stand-Alone Computer installation configuration has the following five menus: File, Edit, Tasks, View, and Help. The View menu is not available for some operating systems. In addition to these menus, there is also the shortcut menu, which can be displayed by clicking the right mouse button on the task list. The shortcut menu contains commands from the Tasks and the Help menus. Some of the menu commands, described below, are only present on network workstations, and are not present in case of the Stand-Alone Computer installation of F-Secure Anti-Virus. In case of Network workstation installation, there is also one hidden menu, Administration, which is only visible in Administration mode. Administration mode on network workstations can be turned on with a password from the File menu by choosing Administration.

## File Menu Command

Save All (Control+S)

Print Results... (Control+P)

Print Log...

Page Setup...

Printer Setup...

Administration...

Exit (Control+Q)

## Edit Menu Command

Send Message...

Read Bulletins...

Enlarge to Tasklist

Shrink to Toolbar

Preferences...

## Tasks Menu Command

New Task (Insert)

Duplicate

Delete (Del)

Start (Enter)

Settings (Alt+Enter)

Schedule (Control+Enter)

Results (Control+R)

Log(Control+L)

All the above commands, except for Log and Results, are disabled when F-Secure Anti-Virus is in its toolbar mode.

## Function

Saves all unsaved tasks, Preferences, and window settings.

Prints the results of the selected task.

Prints the log.

Sets margins.

Standard printer setup.

Switches to the Administration mode, first asking for the administration password. When in Administration mode, use this command to switch to User mode.

Exits F-Secure Anti-Virus.

## Function

Opens a dialog for sending messages to administrator. If this command is dimmed, network communication is installed, but not active, as when you are not logged in.

Opens the list of bulletins.

Enlarges the interface to the full-size window when F-Secure Anti-Virus is in the toolbar mode.

Shrinks the window into a toolbar, if it is in full size mode.

Opens the Preferences dialog box for configuring the settings of F-Secure Anti-Virus.

## Function

Creates a new task named "Untitled Task."

Makes a copy of the selected task. The new task is named "Copy of" + the old task's name, cutting it at the maximum allowable name length. The new task is automatically selected.

Asks for confirmation, then deletes the selected task.

Executes the selected task.

Opens the Properties for Task dialog box, where the selected task parameters can be modified.

Opens the Schedule dialog box, where the selected task can be scheduled.

Opens the results file of the selected task, to view, copy, or print it. This command acts as a print preview for results.

Opens the log file with the list of task execution times and results, to view or print it. This command acts as a print preview for the log file.

### **View Menu Command**

Large Icons  
Small Icons  
List  
Details

### **Function**

Displays each task as a large icon.  
Displays each task as a small icon.  
Displays the tasks in the form of the list.  
Default. Displays the tasks in the form of a list with the Next Run and the Last Status fields.

Please note that the various view options are not available under Windows 3.1.

### **Help Menu Command**

Contents  
Help on Context (F1)  
Search for Help On.  
How to Use Help  
Virus Descriptions  
Web Club...  
Virus Descriptions on the Web...  
  
Contact Information...  
  
About...

### **Function**

On-line help index.  
Context-sensitive help.  
Searches for help on given topics.  
Instructions on how to use Help.  
Displays descriptions of a variety of viruses.  
Connects to F-Secure Anti-Virus Web club.  
Connects to F-Secure Anti-Virus WWW server to view virus descriptions.  
Provides contact information for your F-Secure Anti-Virus vendor.  
Information about F-Secure Anti-Virus for Windows.

F-Secure Anti-Virus Help acts in accordance with the Windows Help structure. To learn more about Windows Help, choose How to Use Help.

### **Shortcut Menu Command**

New Task  
Duplicate  
  
Delete  
Start  
Settings  
  
Schedule  
  
Virus Descriptions

### **Function**

Creates a new task named "Untitled Task."  
Makes a copy of the selected task. The new task is named "Copy of" + the old task's name, cutting it at the maximum allowable name length. The new task is automatically selected.  
Asks for confirmation, then deletes the selected task.  
Executes the selected task.  
Opens the Properties for Task dialog box, where the selected task parameters can be modified.  
Opens the Schedule dialog box, where the selected task can be scheduled.  
Displays descriptions of a variety of viruses.

The shortcut menu can be accessed by clicking the right mouse button on the F-Secure Anti-Virus task list. This commands in this menu correspond to items in some of the normal menus.

# Overview of F-Secure Anti-Virus Administration

There is more to being the F-Secure Anti-Virus administrator than just maintenance. You can determine how the program actually functions and how F-Secure Anti-Virus appears when installed on the user workstations.

F-Secure Anti-Virus provides protection and features for everyone:

- Average end users
- Sophisticated end users
- System administrators

The normal end user should not be bothered with anti-virus issues. The transparent protection of F-Secure Anti-Virus Gatekeeper ensures that the end-user does not need to know that an anti-virus program is protecting the system unless a virus tries to enter the system.

The sophisticated end user and the system administrator are more interested in computer viruses and want to know how their information is protected.

F-Secure Anti-Virus aims to provide invisible protection for end user data and program files. To this end F-Secure Anti-Virus features:

- Automatic background scanning of every executed file with the most sophisticated scanner available.
- Scanning tasks designed by the system administrator and executed automatically at pre-scheduled times or when the computer is idle.
- An easy-to-use toolbar interface for scanning hard drives and diskettes at the click of a mouse. The toolbar is completely drag-and-drop customizable. Both the administrator and the end users can customize the user interface.

F-Secure Anti-Virus provides a wealth of features to make your work easier.

**More:**

[Implementation Steps](#)



## Implementation Steps

The steps involved in setting up F-Secure Anti-Virus for your organization are:

1. Install the program on the Administration workstation. If the computer is connected to the network, the installation will also create the shared communication directory structures on the server disk.
2. Create the task base. Add, modify, schedule, and remove tasks on F-Secure Anti-Virus task list to create the task base suitable for your organization.
3. Modify the toolbar. Add, modify, and remove the buttons on the toolbar. The toolbar should correspond to the task base and to the specific needs arising from your system.
4. Modify the F-Secure Anti-Virus Preferences, so that they are suitable for the users. Hide at least the Network, Administration, Scanning and Restrictions Preferences in the Preferences dialog box.
5. Create the installation directory. If you choose to perform the complete installation on workstations, use the Distribute F-Secure Anti-Virus Installations command in the F-Secure Anti-Virus Administration menu to create the suitable installation directory.

In order to customize F-Secure Anti-Virus separately for various user groups, repeat steps 2 through 5 for each customization.

# Network Installation

Overview

Installing F-Secure Anti-Virus on the Administration Workstation

Entering the Administration Mode

## Overview

There are three basic ways in which the F-Secure Anti-Virus system can be set up on the workstations:

- Complete installation with network functionality
- Remote installation with network functionality
- Stand-alone installation without network functionality

Complete installation means that F-Secure Anti-Virus is installed locally to all workstations. Remote installation means that only one installed copy of F-Secure Anti-Virus exists on the network drive, and all the workstations run the same copy.

### **More:**

[Network Installation](#)

[Stand-Alone Installation](#)

## **Network Installation**

There are two options for installing F-Secure Anti-Virus and the Gatekeeper on network workstations. The preferable method is to install both programs on every workstation. The server will act as the communications relay. Under such configuration, all the network functions and communications capabilities are available. Only the directories needed for communication over the network are created on the server. F-Secure Anti-Virus tasks and updates are distributed automatically to every workstation connected to the network, this is called a complete installation.

In some situations, for example, when workstations have insufficient hard disk space, it may be necessary to install F-Secure Anti-Virus and the Gatekeeper to run on the server, installed remotely. This is not recommended and should only be used as a last resort. In the remote installation, the users run the copy of the program stored in the server on their own workstations. Only the files and directories necessary for communicating through the network are installed on individual workstations.

Communication to and from individual workstations works as well as in the previous option, but the programs cannot be used if the network connection breaks down.

## **Stand-Alone Installation**

If there is no network available, F-Secure Anti-Virus and the Gatekeeper are installed separately on each workstation. In this case, the communications system cannot be used, and each user is individually responsible for reporting possible infections to administrator. New versions of the programs must be distributed on diskettes.

## Installing F-Secure Anti-Virus on the Administration Workstation

To start the implementation of F-Secure Anti-Virus, you should first install F-Secure Anti-Virus on a workstation in the Network Administration configuration. When you choose the Network Administration Installation option, you implicitly designate the administration workstation.

- Run the Setup program from the installation diskette.
- Choose the Network Administration Installation option.
- Choose the target directory for the copy of F-Secure Anti-Virus on the Administration workstation. You should install F-Secure Anti-Virus to the local hard drive rather than a network drive.
- Choose a shared communication directory for all F-Secure Anti-Virus users. The communication directory should be on a shared disk, so that all F-Secure Anti-Virus users have access to it.
- Type in the F-Secure Anti-Virus administration password. Note that this is not the Windows Administration password.
- Check the Enable F-Secure Anti-Virus Gatekeeper at Windows Start-Up and Load F-Secure Manager at Windows Start-Up options. It is recommended that you keep F-Secure Manager active at all times; it runs the scheduled tasks and notifies you of messages received from the other workstations.

Click Start Installation. When the installation is complete, the program will ask your name, the name of your organization, and your workstation's ID.

This information will be used in identifying the computers in reports and virus alerts.

## Entering the Administration Mode

Any workstation where F-Secure Anti-Virus is installed can be used as the administration workstation simply by running F-Secure Anti-Virus on it in administration mode. Please note that it is recommended to avoid running F-Secure Anti-Virus in administration mode on more than one workstation at a time.

When the Administration Workstation check box is selected in Preferences, F-Secure Anti-Virus asks for the administration password at start-up.

If the user does not enter the correct password, F-Secure Anti-Virus will still start, but only in user mode.

The administration password can be changed in the Administration Preferences dialog box by clicking Change. See the section [Administration Preferences](#) for more information.

The program can be switched from user mode to administration mode on any workstation by choosing the Administration command from the File menu and entering the administration password in the dialog box.

# Customizing the User Interface

After completing the installation on the Administration workstation, you may choose to customize the user interface of F-Secure Anti-Virus to fit the needs of the end-users.

## **More:**

[Creating A Task Base](#)

[Modifying The Toolbar](#)

[Editing Preferences](#)



## Creating A Task Base

Create the F-Secure Anti-Virus task base by modifying the task list of F-Secure Anti-Virus installed on the Administration workstation. The tasks can be added, modified, scheduled, and removed as described in this User's Guide.

Consider the needs of your organization and check the User's Guide for the appropriate options. Decide which types of tasks are required and whether they should be scheduled or run interactively.

Users can edit or delete tasks, unless you protect the task base from modifications by setting appropriate restrictions in Preferences. You can also disable modifications to tasks when using the Distribute Selected Task command from the Administration menu. See the section [Distributing New Tasks](#) for more information.

## Modifying The Toolbar

The toolbar buttons should correspond to the task base you created, as well as to the specific needs of your organization. Ideally, the users only need the toolbar to manage their own copies of F-Secure Anti-Virus. While this is not always possible, the most often needed functions should be linked to the toolbar. See the section [Modifying the Toolbar](#) for more information.

## Editing Preferences

Before distributing the program to users, customize the F-Secure Anti-Virus Preferences. Instructions on how various Preferences affect the program and how they can be modified can be found in the User's Guide, section 6.3, "Setting Up Preferences."

However, there are some Preferences not mentioned in the end-user documentation: Network, Administration, Restrictions, and Updating.

### **More:**

[Network Preferences](#)

[Administration Preferences](#)

[Restrictions Preferences](#)

[Updating Preferences](#)

## **Network Preferences**

The Network Preference contains the Inform Administrator with Results and Send Infected files to Administrator check boxes. Check the boxes to have F-Secure Anti-Virus send you the task results and copies of infected files from local workstations. Samples will always be sent in an encrypted format. Whenever F-Secure Anti-Virus Gatekeeper finds a virus, it will send a corresponding message to administrator. These messages can then be read by choosing View User Messages from the Administration menu.

This dialog box specifies the name and location of the shared communication directory. Select the Notify at Startup if Invalid check box to have F-Secure Anti-Virus notify you at start-up if the specified directory has become invalid.

This preference also allows changes to the F-Secure Manager polling frequency.

The Hide F-Secure Manager option lets you hide the F-Secure Manager icon from the taskbar and the desktop.

## **Administration Preferences**

In the "Administration Preferences" dialog box, there are three general settings:

**Enable Network Usage.** If this check box is not selected, all network related functions will be disabled.

**Ask Workstation Prefs on First Startup.** If this check box is selected, F-Secure Anti-Virus asks for the workstation ID and user name the first time it is started on a workstation. F-Secure Anti-Virus will not proceed until this information is provided.

**Administration Workstation.** This option is used to determine whether or not the current workstation is the administration workstation.

You can hide some of the Preferences from the users. If a Preference is hidden, the users cannot edit it, and the choices, you have made, stay in effect. It is recommended that you hide at least Network, Administration, Restrictions, and Updating Preferences.

The Administration Preferences can also be used to change the administration password. The user or administrator must know the current password in order to change it.

## **Restrictions Preferences**

Use the Restrictions Preferences to restrict the use of F-Secure Anti-Virus in the user mode. You can prevent users from seeing the program main window by selecting the No Main Window check box. In this case, the users can still start scans from the program's desktop icon. The other possible restrictions are: Disable Creation and Modification of Tasks, and Disable Network Scans.

## **Updating Preferences**

In the Updating Preferences select one of the alternatives for executing F-Secure Anti-Virus updates on the workstations: Update Automatically or Prompt at Start-Up.

## Distributing F-Secure Anti-Virus Installations

When you have completed the installation and customization on the Administration workstation, the program is ready for distribution. To distribute F-Secure Anti-Virus to the end-user workstations, you have two options:

- Set up an installation directory for Autoinst to have F-Secure Anti-Virus installed to workstations as they log on to the network server.
- Prepare the a setup installation directory and ask the users to run F-Secure Anti-Virus Setup from their workstations.

F-Secure Anti-Virus also supports installation through the use of Microsoft Systems Management Server (SMS). In this case, Autoinst is used for building the installation scripts. See the section [Microsoft Systems Management Server](#) for more information. The latest information about SMS support is available at:

- <http://www.DataFellows.com/solutions/network-management>

### More:

[Installation with Autoinst](#)

[Installation with Setup.exe](#)



## Installation with Autoinst

Autoinst is a utility program that enables the system administrator to have any version of F-Secure Anti-Virus installed or updated automatically on workstations that log on to the network. In most network environments, the workstations call a log-in batch script (e.g. LOGIN.BAT) when they log on to the network. This script is modified to invoke Autoinst. Autoinst then performs the installation according to the instructions listed in its parameter file

The administrator must place the program files and configuration files on a network drive; Autoinst will then copy them to local workstations and make the necessary changes to the users' Windows Registry or the WIN.INI and SYSTEM.INI files. Autoinst also handles updating and uninstallation, and can be used for changing the F-Secure Anti-Virus Preferences stored in the in configuration files on workstations throughout the network.

You should use the Autoinst Wizard to create the installation script. However, not all the options are available through the Wizard. If you need to fine-tune the settings, you should write a customized Autoinst script. See "AutoInst Configuration" for more information.

To distribute installations using Autoinst, first perform the Network Administration installation on the Administration workstation. Then do the desired modifications to the F-Secure Anti-Virus Preferences, toolbar, and the task base. Then choose Distribute F-Secure Anti-Virus Installations from the Administration menu, and select By Creating Installation Directory for Autoinst. Autoinst Wizard will start.

### **More:**

[Autoinst Wizard](#)

## Autoinst Wizard

Autoinst Wizard makes it easy to write the Autoinst configuration file, create the shared Autoinst installation directory, and make all the necessary files available for distribution.

You can move freely back and forth within Autoinst Wizard by clicking Back and Next. You can exit the wizard at any time by clicking Cancel. The most important steps in the Wizard are described below.

Enter the name and location of the Autoinst directory, which should be accessible from all workstations. If the specified directory does not exist, the wizard will create it, prompting for your confirmation first.

- 1. Select the check boxes corresponding to the programs you wish to distribute. Select the Yes check box to have the networking functionality enabled, if you plan to distribute scanning tasks, bulletins, and updates, and receive mail from workstations.
- 2. Choose the type of installation Autoinst should perform. Choose Remote Installation if you wish F-Secure Anti-Virus or F-Secure Anti-Virus Gatekeeper to reside on the server. In this case, only the data files, such as reports, configuration files, and others, will be copied to the local workstations' hard disks. If you choose Local Installation, Autoinst will perform the complete installation on the local workstations, which is the recommended configuration.
- 3. Choose the name of the destination directory on the local workstations' hard disks where the files will be installed. If the specified directory does not exist on some of the workstations, Autoinst will create it.
- 4. Select the source from which Autoinst will obtain the user name and the workstation ID, both of which will serve to identify the origin of mail received from workstations. Depending on your choice, various dialog boxes will be displayed upon clicking Next.
  - The most common AUTOINST-sources for various platforms are:
    - Initialization files for Windows 3.1
    - Windows registry files for Windows 95 and Windows NT
    - Environment variables for Windows NT
    - 1. If you selected environment variables as the source from which Autoinst will obtain user name and workstation name, type in the names of the both environment variables in the provided boxes, enclosing each variable between the % or # characters. Variables entered as %username% will be static while #username# will be dynamic and will change as the current user changes.
    - 2. If you chose initialization files as the source of user and workstation names, add the entries that specify the user name to the provided list. If you list multiple entries, the first of them that yields result will be used. To add entries, click Add.
    - 3. In the dialog box, type in the File name, Section name and Entry name, and click OK. The new entry will appear on the list. To edit the entry, select it on the list and click Modify. Edit the entries in the displayed dialog box. To delete an entry, select it on the list, and click Remove. Clicking Clear All will delete all the entries.
    - 4. If you chose Windows registry as the source of user and workstation names, add the registry locator for the user name by clicking Add. You can list multiple entries; in this case the first one pointing to the valid value will be used. The F-Secure Anti-Virus Autoinstall Wizard will suggest two registry locators as default and these work in most cases. Check that the information the locators point to is correct. If the default locators do not work in your case, the easiest way to add a new locator is to modify the existing locators by clicking on modify and then changing the locator to point to the right value.

- 5. In the Add registry locator dialog box, enter the Main key, the Sub key and the Value name. The Main key can be selected from the list; the available options are: HKEY\_CLASSES\_ROOT, HKEY\_CURRENT\_USER, HKEY\_LOCAL\_MACHINE, HKEY\_USERS.
- 6. Now the Autoinst Wizard is ready to copy the files. Click Next and it will start copying the files to the installation directory.
- 7. The Autoinst Wizard will ask you whether you want to customize F-Secure Anti-Virus Preferences or the settings of F-Secure Anti-Virus Gatekeeper before distributing the programs to the users. The customization is done through the standard Preferences dialog.
- 8. The final message box tells you where the Autoinst installation directory has been created and the name of the Autoinst command file, located in the Autoinst directory. Insert this command into the workstations' login scripts, so that it is executed at log-on. The wizard has also created the Autoinst.INI file, which can be further edited with a text editor to fine-tune its parameters.

## Installation with Setup.exe

Another option to distribute F-Secure Anti-Virus installations is to create a shared Setup installation directory. This is a viable solution for small (less than 10 machines) installations or if AUTOINST can not be used for some reason. To establish a shared Setup directory:

- Copy files from the proper directory on the setup CD-ROM or the setup floppies onto the network into an empty folder that is accessible by all.
- Click Distribute F-Secure Anti-Virus Installations from the Administration menu, and choose By Modifying the Installation Directory. Select the SETUP installation directory in the dialog box and click OK. The F-Secure Anti-Virus configuration and task files will be copied to the SETUP directory.

Please note that no automatic updates will take place if you use this installation option.

---

Workstation installations can now be done by running Setup.exe on workstations from the Setup directory you created.

# Systems Management

F-Secure Anti-Virus has a wealth of network-related features:

- Easily send software updates over the network with one menu command.
- Receive reports from workstations every time a virus is found.
- Receive copies of infected files.
- Receive copies of suspicious files.
- Send new tasks to workstations and thus scan workstations over the network.
- Send F-Secure Anti-Virus update bulletins or other virus related messages to users.

F-Secure Anti-Virus is not dependent on some specific brands of network software. Its communications system works as long as all the workstations on the network can treat a part of the server's hard disk as a shared logical disk. Practically, all PC network systems support this, including Novell NetWare, Windows NT Server, Windows for Workgroups, Banyan Vines, IBM AS/400 PC Support, Microsoft LAN Manager, Artisoft LANtastic, Digital Pathworks, Sun PC-NFS and FTP Software PC/TCP.

F-Secure Anti-Virus installations and updates can also be done through Microsoft Systems Management Server (SMS). See the section Microsoft Systems Management Server for more information. The latest information about SMS support is available at:

- <http://www.DataFellows.com/solutions/network-management/sms>

F-Secure Anti-Virus also supports the industry standard Simple Network Management Protocol (SNMP). The latest information about supported network management platforms is available at:

- <http://www.DataFellows.com/solutions/network-management/snmp>

## **More:**

Network-Aware Functions

Communication Directory

# Network-Aware Functions

Update Distribution

Task Distribution

Reporting

User Messages and Administrator Bulletins

## **Update Distribution**

F-Secure Anti-Virus supports automatic updating over the network. Whenever you install a new version to the installation directory, the program can be automatically updated on all the workstations connected to the network.

## **Task Distribution**

With F-Secure Anti-Virus you can send pre-configured tasks to user workstations through the network. Use this feature to develop uniform scanning practices for the whole organization and to target specific threats, such as new viruses. When the distributed tasks are no longer needed, they can be removed from all the workstations simultaneously.



## **Reporting**

The results of tasks' execution can be set to be sent from user workstations to the Administration workstation, along with any infected files found by F-Secure Anti-Virus.

## **User Messages and Administrator Bulletins**

F-Secure Anti-Virus is designed to support communication between users and administrator. Such communication facilitates efficient administration and management of the F-Secure Anti-Virus system. Communication between individual users is not supported. Direct information exchange between users and administrator takes place in the form of messages and bulletins. Messages are notes that users send to administrator. Bulletins are general announcements that you can send to all users at once.

# Communication Directory

When F-Secure Anti-Virus is installed, the communication structures are created in a directory on a shared disk. When you send, for example, an update to users, it is copied to the shared drive. F-Secure Anti-Virus programs on user workstation then copy the new files from the communication directory to the appropriate directories on local hard disks.

Likewise, when F-Secure Anti-Virus on a user workstation sends files to the shared directory, your program will copy them to the appropriate local F-Secure Anti-Virus directories.

## **More:**

[Access Rights](#)

[Novell NetWare](#)

[Microsoft Windows NT Server](#)

[Microsoft Windows for Workgroups](#)

[Microsoft LAN Manager](#)

[UNIX](#)

[Artisoft LANtastic](#)

[Banyan VINES](#)

## Access Rights

As administrator, you need both read and write access rights to the communication directory and all its subdirectories. User access to these directories can be limited in order to prevent accidental corruption of the communications system. Suggested access rights are listed in the following table.

<b>Directory</b>	<b>Suggested Access Rights</b>
Communication Directory	Read and Write access rights
BULLETIN	Read access rights
INFECT	Write access rights
MESSAGES	Write access rights
REPORTS	Write access rights
SUSPECT	Write access rights
TASK	Read access rights
UPDATE	Read access rights
UPDATE\WIN95_UP	Read access rights
UPDATE\WINNT_UP	Read access rights
UPDATE\OS2_UP	Read access rights

Access rights policies are necessarily different in different networks. Here, "write access" means that any user can create new files and delete files created by any user.

For the communications system to function, users must have both read and write access rights to the communication directory. This directory contains the file COMM.INF, which keeps track of all the files transferred over the network.

If you do not wish to use a supervisor account when installing, create the directory beforehand at a proper location, set the access rights, log in with a non-supervisor account, and specify the same directory when installing.

## Novell NetWare

To change the communication directory's privileges under Novell NetWare, use the SYSCON and FILER utilities to grant read, write, modify, create and delete privileges. For more information on how to use SYSCON and FILER, consult the NetWare documentation.

To change the privileges from the command line under NetWare version 3.11 or earlier, you can also use these commands:

- Read access rights:

```
GRANT R F FOR SYS:FSAV\COMM\BULLETIN TO GROUP EVERYONE
```

- Write access rights:

```
GRANT W C E F FOR SYS:FSAV\COMM\MESSAGES TO GROUP EVERYONE
```

- Read and write access rights:

```
GRANT R W C E F FOR SYS:FSAV\COMM TO GROUP EVERYONE
```

To change the communication directory's privileges under Novell NetWare version 4.0 or later, use commands like:

```
RIGHTS SYS:FSAV\COMM R W C E F M /NAME=EVERYONE
```

Here, "everyone", is the name for a group object containing all user objects that are to use F-Secure Anti-Virus.

## **Microsoft Windows NT Server**

To change the communication directory's privileges under Windows NT Server 3.51, select the directory in File Manager and choose the Permissions command from the Security menu.

Under Windows NT Server 4.0, select the directory in Windows NT Explorer, press Alt+Enter, click on the Security tab and click the Permissions button.

## **Microsoft Windows for Workgroups**

If you are using the built-in file sharing of Windows for Workgroups, use the File Manager to share the communication directory with read and write access, without requiring a password.

## Microsoft LAN Manager

To change the communication directory's privileges under Microsoft LAN Manager, use:

```
NET ACCESS N:\FSAV\COMM /ADD USERS:RWCD
```



## **UNIX**

To change the communication directory's privileges under most UNIX systems, use:

```
chmod 777 /usr/local/fsav/comm/
```

Refer to the `chmod` man page for information how to set directories read-only or write-only.

## **Artisoft LANtastic**

To change the communication directory's privileges under Artisoft LANtastic, use:

`NET_MGR`

Use the Shared Resources Management feature of the menu-driven application to give read, write, create, file lookup and delete privileges to the directory for appropriate groups. In LANtastic for Windows, use the Network Manager application. For more information on how to use `NET_MGR` and Network Manager for Windows, consult the LANtastic documentation.

## **Banyan VINES**

To change the communication directory's privileges under Banyan VINES, use:

```
SETARL N:\FSAV
```

Use the menu-driven application to give read, write and delete privileges for appropriate groups. For more information on how to use SETARL, consult the VINES documentation.

## Distributing Updates

The easiest way to update F-Secure Anti-Virus is via the network. The best way to handle updating is first to update the Administration workstation, and then use it as the source for the update. F-Secure Anti-Virus updating function uses the F-Secure Anti-Virus root directory as the source directory.

If you are sending updates through F-Secure Anti-Virus, make sure that you do not have Autoinst listed in the system's login script. Autoinst is only used for first time installations and should be removed as soon as everyone in the network has executed it.

---

### **More:**

[Updating the Administration Workstation](#)

[Sending Updates To Users](#)

## **Updating the Administration Workstation**

To update a new version of F-Secure Anti-Virus to the Administration workstation, run Setup.exe from the new setup disks. Choose the Update Installation option. This installation replaces the old program files on your hard disk.

If the end-users run a shared copy of F-Secure Anti-Virus from a server, make sure that nobody is using F-Secure Anti-Virus at the time of updating. The setup cannot replace the necessary files if they are open.

## **Sending Updates To Users**

After you installed a new version of F-Secure Anti-Virus on the Administration workstation, send it to the users through the network. This can be done by choosing Send Update from the Administration menu.

The program will copy all the files and directories under the F-Secure Anti-Virus root directory to the UPDATE directory on the shared disk.

When you send an update to users, all programs installed under the F-Secure Anti-Virus root directory are copied to the shared disk. If you have programs like F-CHECK or F-Secure Anti-Virus for DOS installed in their own directories under the root directory, they will also be copied to the local workstations. As you can see, this feature can be used to update or distribute programs which are unrelated to F-Secure Anti-Virus. On workstations, F-Secure Anti-Virus, when started, checks the UPDATE directory. If a new version has become available, F-Secure Anti-Virus updates itself. If the UPDATE directory contains other programs, F-Secure Anti-Virus also copies them to the local hard disk.

## Distributing New Tasks

New tasks can be created on the administration workstation and distributed to users via the network. F-Secure Anti-Virus programs on local workstations will automatically add the distributed tasks to their task lists. Similarly, you can automatically remove a previously distributed task from all workstations connected to the network. See the section on "Creating a Taskbase", under "Customizing the User Interface".

### **More:**

[Sending Tasks to Users](#)

## Sending Tasks to Users

Send a task to users by selecting it on the task list and clicking Distribute Selected Task on the Administration menu.

In the subsequent dialog box, select Network as the distribution method. Click the check boxes below to select the desired options.

If the Force report at first scan check box is selected, the local programs send the results of this task directly to administrator.

If the Force immediate scan upon receiving task check box is selected, the task is executed immediately after being copied to local workstations.

If the Protect task from modification check box is selected, the users cannot modify the task parameters.

If the Disable aborting scan check box is selected, the users cannot terminate a scan during its execution.

After you have chosen the desired options, click OK to copy the task file to the TASKS directory on the shared disk. When F-Secure Anti-Virus programs on the local workstations notice that a new task has become available, they copy the task to the local hard disks and add it to their local task lists.

A distributed task remains in the shared TASKS directory until removed by administrator. If a workstation is not connected to the network because it is switched off or not logged on to the network, or for other reasons, the task will be retrieved as soon as the contact with the server is regained.

The task files distributed by the administrator have the extension .fpa, whereas user task files are designated .fpt. On the task lists of local workstations the distributed tasks are shown in a different color.

### **More:**

[Removing a Previously Distributed Task](#)



## **Removing a Previously Distributed Task**

Remove a task that you have previously distributed by selecting it on the task list and choosing Undistribute Selected Task from the Administration menu.

The Undistribute Selected Task command sends the Undistribute file to the TASKS directory on the shared disk. The Undistribute file has the same name as the corresponding task file but is differentiated by the extension .del. When F-Secure Anti-Virus on local workstations notices that an Undistribute file has appeared on the shared disk, the corresponding task is deleted from the local hard disks.

## Collecting Reports and Infected Files

Use the Network Preferences to set up the actions to be taken by F-Secure Anti-Virus when it discovers a virus on a user workstation. Here you can select whether or not the task reports and any infected or suspected files are to be sent to administrator.

When the Inform Administrator with Results check box is selected and incorporated into the users' versions of F-Secure Anti-Virus, a task results report is sent to administrator whenever a virus is found during a scan execution. Whenever F-Secure Anti-Virus Gatekeeper finds a virus, it sends corresponding message to administrator. The messages can be read by choosing View User Messages from the Administration menu.

When the Send Infected Files to Administrator check box is selected and incorporated into the users' versions of F-Secure Anti-Virus, infected and suspected files are automatically sent to administrator. The files are transferred to the INFECT and SUSPECT directories, respectively, and the reports go to the REPORTS directory.

You can also have the results of some specific task sent to you by selecting the option "Force Report at First Scan" in the "Distribute Selected Task" dialog box. Selecting this option makes the receiving workstations send results of the distributed task to administration workstation.

The administrator's F-Secure Manager watches for new messages and reports from users. When new messages arrive, the administrator is asked whether F-Secure Anti-Virus should be started to view the messages.

**WARNING:** If you want to test the performance of F-Secure Anti-Virus by scanning a large number of files infected with various viruses, be sure to switch this option off. Otherwise, every infected file will be copied to the INFECT directory. This operation will consume a vast amount of time and disk space.

### **More:**

[Viewing User Reports](#)

[Infected and Suspected Files](#)

## Viewing User Reports

Reports can be browsed by choosing View User Reports from the Administration menu. This opens the "Read Reports" dialog box, in which the user reports are listed.

The reports list is similar to the log file. Each report is represented by one line which contains the originating workstation ID, the name of the task, the time of execution, and the report status.

The dialog box contains the following buttons:

- Read, to access a selected report;
- Delete, to remove a report from the report list and the local hard disk;
- Delete All, to remove all reports from the report list and the local hard disk;
- Help, to access context-sensitive Help; and
- Close, to exit the dialog box.

The actual report can be inspected by either double-clicking on the corresponding entry in the Report list, or by selecting the entry from the list and clicking the Read button on the lower pane of the dialog box.

The report is displayed in a separate window.

## **Infected and Suspected Files**

F-Secure Anti-Virus recognizes two types of 'at risk' files: infected and suspected ones. Infected files are those files in which the program has detected a recognized virus infection. Suspected files are those files that F-Secure Anti-Virus determines to may have a virus infection. When a file of either kind is sent from a local workstation to the network server, it is encrypted and renamed to prevent the infecting virus from spreading as a result of unintentional execution of the file. When the file is moved to the administration workstation, it is decrypted but does not revert to its original name.

Each infected or suspected file is accompanied by the information file, which contains the original name of the file, the directory path for the workstation on which it was found, the name of the infecting virus, and the ID of the local workstation.

The infected files can be viewed by choosing View User Infected Files from the Administration menu. F-Secure Anti-Virus displays the list of infected files, giving the name of the virus, the name of the infected workstation, and the name of the infected file on the local workstation, complete with the directory path. Below the list, the program displays the current file name and location of the file on the administration workstation.

If F-Secure Anti-Virus reports an unknown virus or a new variant of a known virus, please contact Data Fellows or your local distributor.

---

## Managing Messages

F-Secure Anti-Virus supports communication between users and administrator in the form of bulletins and messages. These are files that are circulated via the network shared disk.

Bulletins are general messages that administrator sends simultaneously to all the users.

Messages are notes that the users send to the administrator. F-Secure Anti-Virus Gatekeeper, when it finds a virus on a user workstation, also sends a message to administrator. The messages identify the sender and the originating workstation.

Both messages and bulletins are transferred over the network by being copied to the appropriate F-Secure Anti-Virus directory on the server disk. When F-Secure Anti-Virus is run on the administration workstation, any new messages that appear in the shared MESSAGES directory are copied to the local MESSAGES directory and added to the Message List. Likewise, F-Secure Anti-Virus run in User mode copies bulletins from the shared BULLETIN directory to the local BULLETIN directory and appends them to the local Bulletin List.

### **More:**

[Sending Bulletins to Users](#)

[Reading Messages](#)

## **Sending Bulletins to Users**

Before you can send a bulletin, you must first create it. Since a bulletin is simply a file sent through the network, you can write, draw or compile the bulletin file with any text editor or other application you want. Users must have the same application available in order to read the bulletin.

To send a bulletin to users, choose "Manage Bulletins" from the Administration menu. This will open the "Manage Bulletins" dialog box, which contains options for editing and deleting old bulletins and creating new ones. The bulletins are distributed and undistributed from this dialog.

To create a new bulletin, click New to open the "Bulletin Attributes" dialog box where you can define the bulletin.

In this dialog box, first name the bulletin. F-Secure Anti-Virus will thereafter recognize the bulletin by that name, regardless of its original file name.

The next step is to enter the actual name and directory path of the bulletin file. If necessary, use the Browse button to locate the bulletin file.

After you have defined the bulletin in this dialog box, click OK to return to the "Manage Bulletins" dialog.

The new bulletin will be on the list, and you can send it to users by selecting it on the list and clicking Distribute.

You can also remove a bulletin from circulation by selecting it on the Bulletin list and clicking Undistribute.

This makes F-Secure Anti-Virus send the Undistribute file to the shared disk. The Undistribute file has the same name as the corresponding bulletin, but has the extension .del. When F-Secure Anti-Virus programs on local workstations find the Undistribute file in the shared BULLETIN directory, the corresponding bulletin from the local BULLETIN directory is deleted.

Bulletins can be edited by clicking Edit in the "Manage Bulletins" dialog box. Bulletins can be converted into Write format for editing.

## **Reading Messages**

Read the user messages by choosing “View User Messages” from the Administration menu. In the dialog box, choose the message from the list. By default, the first unread message will be opened and marked as read.

The dialog box identifies the sender and displays the subject of the message. The message text is displayed in the lower portion of the dialog box.

The “Read Messages” dialog box contains the following buttons:

- Next, to select the next unread message and display its contents;
- Delete, to remove the currently selected message;
- Delete All, to delete all the messages;
- Close, to exit the dialog box; and
- Help, to access the context-sensitive Help.

# Administration Menu

The Administration menu is the administrator's main tool for controlling F-Secure Anti-Virus. The menu contains commands needed to administer the system.

Since the Administration menu is only visible when the program is run in Administration mode, it is hidden from normal users. To switch to Administration mode on some other workstation, simply choose the Administration command from the File menu and enter the administration password in the dialog box.

The Administration menu contains the following commands:

<b>Command</b>	<b>Function</b>
Distribute F-Secure Anti-Virus Installations	Modifies installation directory, creates installation directory for Autoinst.
Manage Bulletins	Opens the bulletin list.
View User Messages	Opens the Read Messages dialog box.
View User Reports	Opens the Read Reports dialog box.
View User Infected Files	Displays the list of infected files sent from workstations.
Distribute Selected Task	Prompts for the task options, then makes task available in the network TASKS directory.
Undistribute Selected Task	Sends an Undistribute file to the shared disk. The corresponding task will be removed from user workstations.
Send Update	Copies everything under the F-Secure Anti-Virus root directory (except what is under the LOCAL and SHARED directories) to UPDATE directory on the shared disk.
Administrator Support on the Web	Connects to the Administrator's support page on the F-Secure Anti-Virus web server.

## Don't Panic

If F-Secure Anti-Virus reports that your computer is infected with a virus, don't panic! Sometimes a badly thought out attempt to remove a virus will do much more damage than the virus might have done. The worst thing to do is to format the hard disk since that way you may lose a lot of information and end up spending a lot of work restoring your system to its original state. Further, some viruses cannot be removed even with a hard disk format.

Many anti-virus experts recommend that the way to remove a virus from the disk is to delete the infected programs and re-install them from original write-protected setup disks, or restore them from a recent, clean backup. Such radical disinfection is not necessarily practical. If the virus is a boot sector infector, there are no files which you could re-install; if it is a macro virus, you will risk losing the contents of the documents where the macros are stored. Even with a normal program virus, disinfection using the original setup disks or backup tapes may be tedious because of the sheer number of files requiring re-installation. The first actions on discovering a virus infection should be:

- Inform the system administrator.
- Put a note on the infected computer, so that it will not be used before it has been disinfected.
- If you still feel like panicking, go get a cup of coffee. The virus will wait.
- If the virus is a macro virus (such as WM/Concept or WM/CAP), notify the people you have shared documents with.
- If the virus is a boot sector infector (such as Form or Parity\_Boot), notify the people you have shared diskettes with.



- If the virus is a program file infector (such as Tai-Pan or Jerusalem), notify the people you have shared program files with.
- Follow the instructions in this section to disinfect the computer.
- If there is a problem in recovering from the infection, ask your system administrator to contact your local F-Secure Anti-Virus Business Partner for technical assistance.

At this point, it would probably be a good idea to read the description on the operation of the virus. Such descriptions are available in F-Secure Anti-Virus for Windows' Help Menu and in Viruses/Information menu in F-Secure Anti-Virus for DOS. Latest virus descriptions are viewable at Data Fellows' web site at:

- <http://www.DataFellows.com/vir-info/>

## Disinfecting the System

On a Windows system, macro viruses are the most common. However, there are several other types of viruses, each of which requires a different method for disinfection. In this section you will find detailed instructions for all operating systems and all types of viruses.

If you run into problems during disinfection because F-Secure Anti-Virus reports “A new or modified variant” of the virus and refuses to disinfect it, please contact F-Secure Anti-Virus Support.

You might have a new virus, which we need to analyse in order to add exact detection and disinfection of it to F-Secure Anti-Virus.

Make sure you check all places where the virus might have ended: disks, network drives, backup tapes, removable drives, files sent to other people via e-mail, and all other places which you have accessed during the time the virus has been in your system.

## Viruses in Document Files

If F-Secure Anti-Virus for Windows or Gatekeeper finds a virus in a document file (DOC, XLS, etc) on the hard drive or network drive, you have a macro virus. These never stay resident in memory, so you do not need to boot from a clean diskette. Just make sure you do the disinfection after exiting Word and Excel to make sure they are not locking any document files.

To disinfect, run F-Secure Anti-Virus. Open up the Settings for "Scan Hard Drive" task and make sure that the Action is set to Disinfect. Then start the task from the task bar. When the virus is found, follow the instructions given on the screen and let F-Secure Anti-Virus remove the virus.

If F-Secure Anti-Virus for Windows is unable to remove the virus, you might want to download the latest FSMACRO.DEF update via the internet from

- <http://www.DataFellows.com/macro/>

If the infection was on a network drive, it is important to make sure all workstations are cleaned at the same time to prevent re-infection. One way to do this is to force everybody off the network and include a hard drive scan made with the DOS-based F-MACRO program into the system login script.

To disinfect macro viruses, no other software should be active. If a Word macro virus is found, for example, you must exit Word and any other programs in order to disinfect.

---

### **More:**

[Macro Virus Disinfection on a DOS-Only System](#)

## Macro Virus Disinfection on a DOS-Only System

To disinfect Macro Viruses on a DOS system, run the F-MACRO program from F-Secure Anti-Virus for DOS directory. Execute it with a command line like this:

```
F-MACRO C: /DISINF
```

or, for example,

```
F-MACRO U: X: Y: Z: /DISINF
```

Latest version of F-MACRO is always available via the internet at

- <http://www.DataFellows.com/gallery/>

## Viruses in Program Files

If a virus is found in any of the program files (COM, EXE, etc.) on the hard drive or a network drive, you have a program virus. Open up the Settings for "Scan Hard Drive" task and make sure that the Action is set to Disinfect. Then start the task from the task bar. When the virus is found, follow the instructions given on the screen and let F-Secure Anti-Virus remove the virus. If F-Secure Anti-Virus cannot disinfect the virus, it will either rename the file or delete it, first asking for confirmation. The easiest way to recover such a file is to reinstall it or restore it from the backups. Contact F-Secure Anti-Virus Support if needed. If the infection was on a network drive, it is important to make sure all workstations are cleaned at the same time to prevent re-infection. One way to do this is to force everybody off the network and include a hard drive scan made with F-Secure Anti-Virus for DOS to the system login script. Also revise the access levels users have on the directories which were infected to prevent the problem from re-occurring.

## Viruses on a Diskette Boot Sector

If F-Secure Anti-Virus or Gatekeeper finds a virus on a floppy diskette boot sector, begin the “Scan floppy” task (from the Settings menu) and make sure that the Action is set to Disinfect. When the virus is found, follow the instructions given on the screen and let F-Secure Anti-Virus remove the virus. If F-Secure Anti-Virus cannot disinfect the virus, it will either rename the file or delete it, first asking for confirmation. Alternatively, you may simply copy the clean files from the diskette to a directory on the hard drive and discard the diskette.

## Viruses on the Hard Disk Boot Sector or MBR

Viruses that have infected your hard disk boot sector or the Master Boot Record (MBR) may be tricky to disinfect because they get access to your system every time you start the computer from the hard disk. For this reason, it is recommended that you boot the computer from a floppy diskette instead and use the Rescue disk to remove the virus from the hard disk.

### **More:**

[Using the Rescue Disk](#)

[Manually Repairing the MBR](#)

[Manually Repairing the Boot Sector](#)

[Special Considerations for Windows NT](#)

## Using the Rescue Disk

The Rescue Disk and the Disinfection Disk are valuable in recovering from all kinds of computer problems. Using these diskettes, you can restore vital system information to the computer when it has been destroyed or altered, and then remove any virus infection on the hard disk. For information about how to create the Rescue Disk and the Disinfection Disk in the first place, see [Creating a Rescue Disk](#). With a complete and up-to-date Rescue Disk, you can boot the computer, use the Disinfection Disk to check the system for viruses and remove possible infections, and again use the Rescue Disk to restore system information to the computer. The following example describes the restoration of system information using the Rescue Disk after the system has been infected.

Before restoring system information, you must make sure that no viruses remain in the computer. In this example we assume that the computer has been infected, so the first task is to remove the infection using the Disinfection Disk:

- 1. Switch off the computer and insert the Rescue Disk in the diskette drive.
- 2. Switch the computer back on and wait while the operating system boots from the Rescue Disk.
- 3. Exit F-Rescue.
- 4. Remove the Rescue Disk and insert the Disinfection Disk.
- 5. On the command line, type:

```
A:FSAV.EXE /HARD /ALL /DISINF
```

and press [ENTER]. You'll then see this message:

```
F-Secure Anti-Virus will remove the virus and give you a report about  
the infection and the situation after the disinfection.
```

If F-Secure Anti-Virus is unable to disinfect a boot virus automatically, you can restore the boot sector from the Rescue Disk as follows:

- 1. Switch off the computer and insert Rescue Disk in the diskette drive.
- 2. Switch the computer back on and wait while the operating system boots from the Rescue Disk.
- 3. When you see the "A:" prompt, type "F-Rescue" and press Enter to launch the program.
- 4. When the F-Rescue program starts, it displays the following menu on the screen:

```
1) Backup system information  
2) Restore system information  
0) Exit
```

1. 5. Choose "2".

You will now be shown the Restore menu, where you have the following options:

```
1) Restore MBR and first tracks  
2) Restore extended partition info  
3) Restore DOS Boot sectors  
4) Restore CMOS Setup information  
5) Make hard disk bootable  
6) Select single element to restore  
0) Exit to DOS
```

If you are recovering from a boot virus, the important choices here are 1, 2 and 3.



### *Restoring the Main Boot Records*

With option 1, you can restore the Main Boot Records of the computer's hard disks, as well as the disks' first tracks.

Depending on your system, you may have to make the following further choices:

Physical disk #0, 540 MB

Physical disk #1, 320 MB

To which disk # do you wish to restore MBR (A for All, N for None)?

- Choose A to restore all boot sectors.

### *Recovering the Original Extended Partition Information*

Option 2 allows you to recover the original extended partition information of your computer's hard disks.

Depending on the system, you may have to make the following further choices:

Physical disk #0, 540 MB

Physical disk #1, 320 MB

To which disk # do you wish to restore extended partition info (A for All, N for None)?

- Choose A to restore all areas.

### *Restoring the Operating System Boot Record*

Option 3 allows you to restore the operating system's original boot sector. Depending on your computer, you may have to make the following further choices:

Physical disk #0, 540 MB

Physical disk #1, 320 MB

To which disk # do you wish to restore boot sectors (A for All, N for None)?

- Choose A to restore all DOS boot sectors.

### *Restoring CMOS Settings*

Option 4 restores the original CMOS start-up settings. CMOS is the system's battery-backed memory which contains information about the system configuration. This information is needed during the computer's boot-up.

You are about to restore CMOS, are you sure (Y/N)?

To restore the CMOS settings, you just need to write Y and press [ENTER].

To keep your Rescue Disk current, you must update it every time you make changes to the system. The Rescue Disk must be updated every time you make one of the following changes in your computer:

- When you update your operating system
- When you update the computer's BIOS or CMOS
- When you change the number, size or partitioning of your hard disk drives
- When you change the amount of RAM in your computer
- When additional devices are connected to the system (e.g. a CD-ROM -drive)

The Rescue Disk must be updated every time the system configuration is changed. The diskette must be stored write-protected and in a safe place.

## Manually Repairing the MBR

If F-Secure Anti-Virus is unable to disinfect a MBR boot virus and restoring the MBR from a backup created by F-Rescue or NT's RDISK fails, you can try to manually recreate the MBR area. MBR (Master Boot Record) is one sector (512 bytes) located at the very start of your hard drive. These instructions work with many (but not all) DOS, Windows, Windows 95, Windows NT, OS/2 and even PC-based Unix systems.

To attempt repair, use a startup system diskette with DOS version 5 or higher and make sure that the file FDISK.EXE is on that diskette. Write-protect the diskette.

Cold start the infected computer from this diskette. Do not rely on just pressing Control + Alt + Delete; instead press the Reset button or turn the computer off and then back on.

Check if you are able to access all partitions on the hard disk(s) normally. For example, if command dir C:\ produces a normal file list of drive C:, then you know that partition of C: is recognized. Test other partitions too. If partitions are not recognized, it might be because the virus encrypts the partition data or overwrites it. In this case, the generic disinfection method described below is not possible. Do not continue or you will lose your data. Contact F-Secure Anti-Virus Support instead.

If you can access C: and other partitions, type in the command

```
FDISK /MBR
```

This will overwrite the code part of the MBR, in effect killing the virus. If you are using Novell DOS 7.0, you need to select this option from the menu, instead of giving a command-line switch.

Now re-start the computer normally from the hard disk and re-check that everything is operating normally. Do not forget to check your diskettes for the infection as well.

## Manually Repairing the Boot Sector

If F-Secure Anti-Virus is unable to disinfect a boot sector virus and restoring the boot sector from a backup created by F-Rescue or NT's RDISK fails, you can try to manually recreate the boot sector. Boot sector consists of a single sector (512 bytes) located at the start of every partition. A single hard drive can have many boot sectors. These instructions work with many (but not all) DOS, Windows and Windows 95 systems.

Use a startup system diskette and make sure that the SYS.COM file is on that diskette. The DOS version on the diskette should be EXACTLY the same as the one on the hard disk. Write-protect the diskette. Cold start the computer from the diskette and give the command

```
SYS C:
```

In addition to copying the system files over, which is not necessary to remove the virus, this will overwrite DOS boot sector with clean code, killing the virus.

Now re-start the computer normally from the hard disk and re-check that everything is operating normally. Do not forget to check your diskettes for the infection as well.

## Special Considerations for Windows NT

If Windows NT fails to boot, it might be caused by a boot virus. Since NT cannot be booted from a diskette, you must run F-Secure Anti-Virus for DOS instead. Reboot the machine with the Rescue Disk or a clean startup DOS system diskette. The first diskette of DOS installation diskette set will do. It would be easiest to use a self-made bootable diskette. Instructions on how to make the Rescue Disk are in the section, "Creating a Rescue Disk."

Turn off the power of the infected computer, insert the clean startup disk and start the machine. If the machine does not boot from the diskette, make sure your CMOS Setup settings are configured to boot from the diskette (remember to turn this setting back on after you are done).

After the computer re-starts and the prompt appears, remove the startup disk. Insert the F-Secure Anti-Virus for DOS diskette. To run F-Secure Anti-Virus from the diskette, type

F-PROT

or type

FSAV

F-Secure Anti-Virus will start and the memory test should find no viruses. If it does, you must re-create the boot diskette on a clean machine, following the instructions in the section, Creating a Rescue Disk.

After F-Secure Anti-Virus has started, open up Scan menu, make sure that the Target menu is set to Hard Drive and Action is set to Disinfect, and choose Begin Scan. When the virus is found, follow the instructions given on the screen and let F-Secure Anti-Virus remove the virus.

If F-Secure Anti-Virus for DOS is unable to remove a boot sector virus, try using your NT Rescue Disk (created beforehand with RDISK (NT utility) or during NT installation). Cold reboot from the NT Rescue Disk and choose 'Recreate boot sectors' option.

If F-Secure Anti-Virus for DOS is unable to remove a boot sector virus but you do not have a working NT Rescue Disk, it might be possible to remove the virus manually. See the section, Manually Repairing the MBR or the section, Manually Repairing the Boot Sector. Contact F-Secure Anti-Virus Support if needed.

## Viruses Resident in Memory

If F-Secure Anti-Virus finds a virus during initial memory test, you will need to reboot the machine with the rescue disk or a clean startup DOS system diskette so that the virus does not get re-loaded to memory, and re-run F-Secure Anti-Virus. The first diskette of a DOS installation diskette set will do. It would be easiest to use a self-made bootable diskette. Instructions on how to make such a Rescue Disk are in the section, Creating a Rescue Disk.

Turn off the infected computer, insert the clean startup disk and start the machine. If the machine does not boot from the diskette, make sure your CMOS Setup settings are configured to boot from the diskette (remember to turn this setting back on after you are done).

After the computer re-starts and the prompt appears, remove the startup disk. Insert the F-Secure Anti-Virus for DOS diskette. To run F-Secure Anti-Virus from the diskette, type

F-PROT

F-Secure Anti-Virus will start and the memory test should find no viruses. If it does, you must re-create the boot diskette on a clean machine, following the instructions in the section, Creating a Rescue Disk.

After F-Secure Anti-Virus has started, open up the Scan menu, make sure that the Target menu is set to Hard Drive and Action is set to Disinfect, and choose Begin Scan. When the virus is found, follow the instructions given on the screen and let F-Secure Anti-Virus remove the virus.

If you get an error message which says that low-level access to hard drive is prevented and asks you to use the LOCK command, you are using a Windows 95 boot diskette instead of a DOS boot diskette. Re-create a DOS bootable diskette or repeat the cold boot and give the LOCK command at the prompt before executing F-Secure Anti-Virus.

If F-Secure Anti-Virus cannot disinfect a file virus, it will either rename the file or delete it, first asking for confirmation. The easiest way to recover such a file is to reinstall it or restore it from the backups.

If F-Secure Anti-Virus for DOS is unable to remove a boot sector virus but you do not have a working NT Rescue Disk, it might be possible to remove the virus manually. See the section, Manually Repairing the MBR or the section, Manually Repairing the Boot Sector. Contact F-Secure Anti-Virus Support if needed.

## How Great Is the Virus Threat?

Viruses are set apart from most other information security risks by the fact that even regular back-ups are not always a sufficient precaution. Making frequent back-ups diminishes the danger of a total disaster in case of a virus attack, but since even the back-up copies can be infected or corrupted, other measures are needed.

If security is lax, a well-designed virus can spread almost unnoticeably from one computer to another. Given enough time, a virus can infect virtually all computers and even worse, back-ups in an organization. A virus can even corrupt data bit-by-bit. If the designer of such virus was sufficiently skillful and devious, the changes can be so subtle that it is almost impossible to notice them for a long time. Even if small discrepancies in the data are found, they are often thought to be the result of operator errors or other human factors. This can be the worst sort of damage, as even the backups cannot be trusted after the virus is found.

After spreading itself during the latency period, a virus can activate and wreak havoc in the computers. The extent of such damage can range from the annoying to the truly devastating. A serious virus attack can be a catastrophic experience for a company. Many companies can be left totally crippled, if the files on their computers are wiped out.

No one wants to spread a virus to partners or clients, even if the virus does no direct harm. It is difficult to be absolutely certain that a virus is "harmless".

Even though the likelihood of a disastrous virus infection is small, the danger is real and needs to be acknowledged. The costs of developing appropriate information security guidelines and purchasing effective anti-virus software are very small compared to the possible cost of an uncontrolled virus infection.

# Common Virus Myths

Misconceptions about viruses are as common as the viruses themselves. Users who are new to virus-protection software may find some basic information very helpful. The following myths are explained and the corresponding truth delivered.

## **More:**

[Viruses Spread by Themselves](#)

[Viruses Are Able to Spread Between Any Two Computers](#)

[Viruses Can Infect Also Write-Protected Disks](#)

[Some Viruses Are Completely Harmless](#)

[Only Pirated Programs Contain Viruses](#)

[Viruses Spread through E-mail and BBSs](#)

[Anti-Virus Programs Provide Total Protection Against Viruses](#)

[Viruses Can Wreck Computers](#)

[Virus Infections Happen Only to Other People](#)

[Virus Infections Can Be Removed Only by Formatting the Hard Disk](#)

## **Viruses Spread by Themselves**

Viruses cannot run themselves. Therefore, it follows that they cannot spread spontaneously, either. A virus cannot do anything until an infected program is executed or the computer is booted from an infected diskette.



## **Viruses Are Able to Spread Between Any Two Computers**

Although it is theoretically possible to create virus which could function in various computer environments, the task would be extremely complicated. In practice, it is safe to assume that DOS viruses are unable to infect other kinds of computers, such as Macintoshes, Unix computers and VAXes.

## **Viruses Can Infect Also Write-Protected Disks**

If a diskette has been write-protected manually, by using either tape or the write-protect switch, it cannot be written to. Even viruses cannot infect manually protected diskettes. However, diskettes become vulnerable whenever the protection is switched off, and this is why write-protected diskettes must also be checked for viruses.

## **Some Viruses Are Completely Harmless**

There are viruses which do not destroy information on purpose. In fact, most viruses do nothing but spread themselves, whereas some viruses are content to flash a message of some kind every now and then. A user may then think that the virus in question is entirely harmless. However, the truth is that there is no such thing as a harmless virus. In all cases, viruses increase the load on the computer and change program code without the user's knowledge or approval. Even a simple and basically harmless infection may cause some programs to be unable to function. If nothing else, viruses consume disk space better used for something else.

## **Only Pirated Programs Contain Viruses**

In most cases, infections spread with copied programs. Virus infections can often be traced to infected public domain and shareware programs or illegal program copies. However, the sad truth is that a very large number of virus infections have their source in original program diskettes. Global statistics show dozens of cases where a commercially distributed software has carried a virus infection. Altogether hundreds of thousands of infected diskettes have been shipped to unsuspecting customers. After all, what cause is there to be wary of packaged and write-protected program diskettes, especially if they come from a large and distinguished software house?

## **Viruses Spread through E-mail and BBSs**

For the most part, the infections discovered so far have not originated in electronic bulletin board systems. People who run BBSs are usually more aware of the virus threat than the average user, and they know how to protect against viruses. In most BBSs, files are automatically scanned for viruses. In addition to this, boot sector viruses (such as Michelangelo and Form) cannot spread over data communication lines.

## **Anti-Virus Programs Provide Total Protection Against Viruses**

The important thing to remember is that the programs which search for viruses – scanners – can identify only known, already discovered viruses. The advanced heuristic methods used by F-Secure Anti-Virus make it possible to detect also unknown viruses but this method does not provide identification of the viruses. This is why we provide you with a continuous update service.

An obsolete anti-virus scanner will only give the user a false sense of security, while letting new viruses slip through. Therefore, make sure that your copy of F-Secure Anti-Virus is always up to date.

## **Viruses Can Wreck Computers**

A modern computer cannot be wrecked programmatically. Every now and then there are rumors about viruses which blow up monitors or break hard disks, but not a single one of these cases has been verified.

## **Virus Infections Happen Only to Other People**

The risk to get a computer virus infection is naturally the lower the less data is brought to the computer from outside. In practice, no one is completely safe. On the other hand, the virus threat is often blown out of all proportions.



## **Virus Infections Can Be Removed Only by Formatting the Hard Disk**

It is very rarely necessary to format the hard disk in order to get rid of a virus infection. Usually the disinfection can be accomplished by using a high-quality anti-virus program.

# Common Virus Types

The following section presents some of the most common virus types and their working mechanisms. There are four major types of viruses:

- file viruses
- boot sector viruses
- companion viruses
- macro viruses

## **More:**

[File Viruses](#)

[Boot Sector Viruses](#)

[Companion Viruses](#)

[Macro Viruses](#)

## File Viruses

The file viruses infect executable programs, usually .com and .exe files, but sometimes also overlay files. An overlay file may have any extension, but the most common ones are .ovl and .ovr. All these files contain executable code.

A file virus works by finding a suitable executable program, into which it adds its own code, typically to the end of the host file. To make sure that it will be executed with the parent program, the virus adds a jump instruction to the beginning of the program. The jump transfers control to the virus code at the end of the host code.

After being activated, a virus has free reign in the computer. Normally, the main purpose of a virus is to spread the infection. This can be done in various ways.

**Resident Viruses.** When an infected program is run, the virus may stay resident in memory and infect every program executed. Viruses that use this method to spread the infection are called Resident Viruses.

**Direct Action viruses.** Other viruses may search for a new file to infect when activated. After infecting a specified number of new files, the virus transfers control to the original program. Viruses that use this method to spread infection are called Direct Action viruses. After the control has been returned to the original program, its execution will continue as if nothing happened.

**“Time bomb”.** After infecting a computer, a virus can move into its active phase, with the intention to attain the specific goal set by the virus author. Transition to the active phase can happen on a specific date, or when a certain condition has been met. In its active phase, the virus can destroy data or perform other harmful actions, like formatting the hard disk. Sometimes, these viruses are relatively harmless, perhaps slowing the computer down every Friday or making a ball bounce around the screen. Still, even if a virus was not intended to cause damage, it can do so due to an incompetence of its author. In addition, a virus can be modified, so that a more harmful version of it appears.

The obvious damages done by a virus amount to deletion of data or programs, maybe reformatting or overwriting the hard disk. However, more subtle forms of damage are also possible. Some viruses may modify data or introduce typing errors into text. Other viruses have no intentional effect other than just replicating.

The actions of a virus will slow down the start of the infected program. The delay is often so slight, that it is almost impossible to notice. There are, however, a few viruses, that infect a large number of files at once after being executed. This may slow down the start of the infected program by tens of seconds.

When a virus adds its code to the program, the size of the program will change. Some viruses avert this by storing their code in an unused area in the host file. In this case, the actual size of the infected program does not change.

Most viruses try to recognize the infections existing in files and avoid re-infecting the already infected programs. Usually, viruses mark infected files with some sort of easily distinguishable marker, such as setting the time stamp of the file to a non-valid value.

F-Secure Anti-Virus detects, identifies and disinfects all the file viruses that are in the wild.

## Boot Sector Viruses

A boot sector virus infects the boot sector on a hard disk or diskette. Normally, the boot sector contains code for loading the operating system files. A boot sector virus replaces the original boot sector with a copy of itself and stores the original boot sector somewhere else, or simply replaces it totally. When a computer is later started from such a diskette, the virus takes control and hides in RAM. It will then load and execute the original boot sector and everything will appear to be normal. However, all the subsequent diskettes inserted in the computer will be infected with the virus.

Every formatted diskette has a boot sector. All the system and data diskettes, all diskettes containing programs or no files at all, have codes in their boot sectors. This code is run when a computer is started from this diskette. If the diskette does not contain the operating system, the program code in the boot sector will print the a message, such as:

```
Non-system disk or disk error
```

If the diskette is infected with a virus, the virus has probably already infected the hard disk.

The best way to protect your computer against boot sector viruses is to prevent starting from diskettes. This can be usually done with the BIOS SETUP of the computer, although this option may be not available on older models.

If the computer has no hard disk, and has to be started form a diskette, always use the same diskette, and keep it write-protected.

Most boot sector viruses infect master boot records (MBRs) on hard disks. This causes some problems, since MBRs cannot be cleaned with the format command. The best way to disinfect MBR is to use F-Secure Anti-Virus. Another option is to low-level format the disk, re-partition it with fdisk, format with format and restore the contents from a backup.

Boot viruses are able to infect a PC regardless of the operating system (DOS, Windows, NT, Linux, NetWare, etc.). Non-DOS systems will usually fail to boot when this happens.

Because the size of the boot record on a diskette is limited to 512 bytes, large boot sector viruses have to hide part of their code outside the boot sector itself. Many viruses create bad sectors on the disk and store their code in these sectors. It is also possible to hide code in the area reserved for the main directory. Another option is to format an extra track and use it for storing the virus code. Only reasonably sophisticated viruses use the last option.

As there are five different diskette formats available, namely 360K, 1.2 MB, 720K, 1.44 MB, and 2.88 MB, very few viruses are able to infect all diskette types. A boot sector virus will usually hide at the top of memory, thus reducing the amount of memory that DOS sees. For example, a computer with 640K might appear to have only 639K. It should be noted, that some BIOS modules also take one or two kilobytes away from the DOS memory.

F-Secure Anti-Virus searches for boot sector viruses by checking the MBR, the boot sectors, the partition table, and other available hiding spaces.

Important: Never start a computer with a hard disk from a diskette because it is practically the only way the hard disk can become infected with a boot sector virus. On many machines you can prevent this by setting the boot order in the machine's BIOS SETUP settings, so that the computer always boots from the hard disk even if there is a diskette in the floppy drive.

## Companion Viruses

Companion viruses use a feature of DOS to force their execution. When several files with the same base name but different extensions are in the same directory, the file with the .com extension is executed first. This happens only when the command line entry does not include the extension. Companion viruses use this feature by selecting an .exe file and creating a .com file with the same name in the same directory. The .com file may be hidden and thus would not show up in the directory listing. It contains the virus code.

It is also possible to design a companion virus that takes advantage of the order of directories specified in the PATH environment variable, or a virus that would use some other way to get its code to be executed before the host program.

After being activated, such a virus executes the actual program and seizes control again after the execution of the program has ended.

F-Secure Anti-Virus detects, identifies and disinfects all the companion viruses that are in the wild.

## Macro Viruses

Macro viruses are viruses written with the macro “language” of an application program, such as Microsoft Word or Microsoft Excel. These macro languages are powerful enough to be used for writing viruses. Macro viruses typically spread further when an infected document is opened or new documents are saved. This is problematic, because people exchange documents much more than executable files or diskettes. New macro viruses are also very easy to create or modify.

The first macro viruses infecting Microsoft Word were found in August 1995. By April 1997, more than 550 macro viruses were known, and Word macro viruses were the most commonly reported virus type world wide. Although other word processors like WordPerfect and Ami Pro support accessing Word documents, they cannot be infected by Word viruses. However, it is not impossible to write similar viruses for these programs.

F-Secure Anti-Virus detects, identifies and disinfects all the macro viruses that are in the wild.

## Advanced Methods Used by Viruses

The following section presents some of the methods viruses use to hide their presence or to otherwise complicate the process of fighting against them.

The following viruses using advanced methods are described:

- stealth viruses;
- self-encrypting, polymorphic, and mutation viruses;
- retroviruses;
- application specific viruses;
- multipartition viruses.

### **More:**

[Stealth Viruses](#)

[Self-Encrypting, Polymorphic, and Mutating Viruses](#)

[Retroviruses](#)

[Multipartition Viruses](#)

## Stealth Viruses

A few years ago it seemed that the final weapon against the virus infections was found. This omnipotent technique was called checksumming. The checksummers calculate an individual, unique signature for each file. By re-calculating the signature search string and comparing it to the original one stored in database, it is possible to detect every change made to a file and ensure the integrity of the system. However, it did not take long for the first file-infecting stealth viruses to appear and crush the hopes of final victory in the battle against viruses.

A stealth virus falsifies the information read from a disk so that a program reading the disk receives incorrect data. The virus does this by intercepting the interrupt vectors used to read data from the disk and supplying the reading program with false information. This way, the program reading the disk receives information which incorrectly indicates everything to be all right. This technique can be successfully used by both file viruses and boot sector viruses.

A good example is the virus called Brain, the first known stealth virus. Brain is a boot sector virus which transfers the original contents of the boot sector to a suitable location on the disk. Too large to fit completely on the boot record, it needs to store a part of its own code on the data area of the disk. If a computer is started from an infected diskette, the virus is executed first. After taking control, Brain executes the original boot sector. Everything looks normal to the user, but Brain observes all disk reads and writes. Whenever a program attempts to read the contents of the boot sector, Brain responds by delivering the original boot sector code from its hiding place on the disk. Since the program actually sees the original code, everything appears to be in order, even though any diskette is infected. Brains also redirects all write attempts to the boot sector, protecting its own code.

Similar stealth methods are also used in viruses that infect files.

A stealth virus can intercept all disk reads to present false information. For this reason, F-Secure Anti-Virus has to check RAM memory before execution. If a stealth virus is already active, it can easily falsify all disk reads. Even a stealth virus cannot hide its code in memory completely, and it is always possible to find an active virus by checking all available memory before starting a virus scan. This is exactly what F-Secure Anti-Virus does.

When you start F-Secure Anti-Virus for Windows 3.1 or Windows 95, its first task is to scan the computer's memory. F-Secure Anti-Virus checks the memory in the 0 - 1088 KB range, which is accessible to DOS viruses. Windows viruses are searched for by using specific system checks. If F-Secure Anti-Virus for Windows finds a virus in the memory, it activates a dialog box to save all the open jobs, and then exits Windows. Once the Windows session is closed, the computer should be re-started from a clean diskette and scanned with F-Secure Anti-Virus for DOS.

F-Secure Anti-Virus for Windows NT does not need to perform a memory scan at all because Windows NT protects system memory and private memory areas of each program automatically.



## Self-Encrypting, Polymorphic, and Mutating Viruses

Most virus scanners operate by searching for virus search strings. Viruses that change their code between infections make it impossible to recognize the virus by using a search string.

Mutating viruses change their code and sometimes even their functionality between generations of the same virus.

The most common mutation technique is encryption. Many mutating viruses encrypt their code with a simple encryption algorithm using data such as the time of day as the encryption key. This makes all generations of a single virus different from each other, except for the decryption routine in the beginning of the virus code.

To make it impossible or inconvenient to use the decryption routine as a search string, virus writers often try to minimize the size of the virus. This is based on the fact that very short search strings can not be used because the possibility of finding the same byte sequence in normal programs increases, causing unwanted false alarms.

Most viruses encrypt themselves only at the time of infection, but there are some that do it while they are resident in memory. Whale is one of these very complex and sophisticated viruses.

The Bulgarian virus writer Dark Avenger created a virus mutation engine in 1991, called MtE. The MtE could easily be incorporated into any virus. The result was a virus which was functionally similar to the original virus, but was attached to the host program in one of an endless variety of versions. The MtE was distributed through underground bulletin boards as an object file that could be linked to any old or new virus.

It is extremely hard to isolate a search string from an MtE-encrypted virus that could be found in the next generation of the same virus. The encryption algorithm used by MtE is so advanced that only a single common byte can be found in all MtE-encrypted files. Furthermore, the location of this byte varies. The common instruction is JNZ (Jump if Not Zero), which can be found in practically every program available. The MtE uses many different encryption algorithms and randomly adds extra bytes to the decryption routines.

MtE is not the only known mutation generator. There are dozens of different mutation engines in circulation, and there are several polymorphic viruses that have been created without the help of an external generator.

There are other methods to generate mutating viruses, besides encrypting their code. One is to build the virus from very small modules that can be swapped inside the code without any functional harm.

F-Secure Anti-Virus finds polymorphic viruses with its emulator-based scanning engine.

## Retroviruses

The actions of some viruses are intentionally directed against known anti-virus programs. A virus may search for files from an anti-virus package and delete them. An active virus can identify the execution of an anti-virus product and simply crash the computer. As a result, the user may think that the virus scanner itself causes the crashes.

Other viruses do not aim for the destruction of an anti-virus product. A more devious way to incapacitate an anti-virus program is to make certain changes to the program itself. The virus scanner would still appear to be working normally, but it would not find any viruses.

The Peach virus is a good example of a retrovirus. It is a standard file virus, but has some features that are directed against anti-virus software. When Peach infects .exe files, it checks a certain byte from the file's header information. If the byte has a certain value, the file will not be infected. Peach apparently is trying to verify whether the file is a certain known program. Virus experts have yet to find out which program Peach is trying to avoid.

After being executed twenty seven times, Peach attacks the Central Point Anti-Virus (CPAV) software if it is installed in the same computer. CPAV saves its search strings in a single file on a disk and does not check for existence of the search string file. Peach deletes this file and CPAV will appear to work normally, but in fact will not recognize any viruses because of the absence of the search string file.

Due to the existence of retroviruses, F-Secure Anti-Virus utilizes many techniques against the tampering of F-Secure Anti-Virus files.

## Multipartition Viruses

Multipartition viruses use multiple infection techniques. They can infect various types of executable files, boot sectors, master boot records (MBRs), FATs, and directories.

Multipartition viruses have a better chance of surviving a cleaning operation than viruses of other types. Even if the virus is disinfected from all program files, it will infect them again, if not removed from the boot sector.

Tequila is one example of a multipartition virus. It infects both .exe files and the master boot record. The virus features encryption mechanisms and advanced hiding abilities.

F-Secure Anti-Virus detects, identifies and disinfects all the multipartition viruses that are in the wild.

## Signs Of Infection

If you experience the following symptoms, you might be infected by a new, unknown virus:

- Increased use of memory.
- Computer operating very slowly.
- Delay every time an application is executed.
- Inexplicable changes in executable or other files.
- A change in the latest alteration date of files, without apparent reason.
- Abnormal write-protection errors.
- Windows fails to start or install.
- Windows warns that 32-bit disk access is turned off.
- Inability to save Word documents to any other directory except TEMPLATE.
- Disks fail to work normally.

Unfortunately, these early warnings of a possible virus infection are not usually obvious and can be caused by a wide variety of reasons.

If the virus has an activation routine and it has passed into the active phase, it is usually very easy to detect:

- Files disappear.
  - The hard disk is formatted.
  - The computer does not start.
  - Information changes.
  - Certain files cannot be loaded or executed.
  - The virus gives some other visible signs like writing messages to the screen or playing music.
- Choose Virus Descriptions on the Web from the Help menu to access the F-Secure Anti-Virus Web server's library for more technical information.

There are screen-shots of activation routines of different viruses available for your viewing at

- <http://www.DataFellows.com/v-pics/>

## Testing Your Anti-Virus Protection

To test whether F-Secure Anti-Virus operates correctly, you can use a special test file which is detected by F-Secure Anti-Virus as though it were a virus. This file, known as EICAR Standard Anti-Virus Test File, is also detected by several other anti-virus programs. EICAR is the European Institute of Computer Anti-virus Research.

To create the EICAR test file, use any text editor to create the file with the following single line in it:

```
X5O!P%@AP[4\PZX54(P^)7CC)7}$EICAR-STANDARD-ANTIVIRUS-TEST-FILE!$H+H*
```

Save this file to any name with a .com extension, for example EICAR.COM. Make sure that you save the file in the standard MS-DOS ASCII format. Also note that the third character is an upper-case O, not numeral 0.

Now you can use this file to see what it looks like when F-Secure Anti-Virus detects a virus. Naturally, the file is not a virus. When executed without any virus protection, EICAR.COM displays the text 'EICAR-STANDARD-ANTIVIRUS-TEST-FILE!' and exits.

## F-Secure Anti-Virus Structure

This section characterizes the structure of files and directories in F-Secure Anti-Virus, and their naming conventions. This section explains the use of various files used for F-Secure Anti-Virus installation, on administrator and user workstations and on the network server.

### **More:**

[Workstation Directories and Files](#)

[Network Server Directories and Files](#)

[File Descriptions](#)

## Workstation Directories and Files

This section describes the files and directories installed on both administrator and user workstations. The directories are: the root directory, and its two subdirectories: LOCAL and SHARED.

### **More:**

[Root Directory](#)

[LOCAL Directory](#)

[LOCAL/BULLETIN Directory](#)

[LOCAL/INFECT Directory](#)

[LOCAL/MESSAGES Directory](#)

[LOCAL/REPORTS Directory](#)

[LOCAL/REPUSER Directory](#)

[LOCAL/SUSPECT Directory](#)

[LOCAL/TASKS Directory](#)

[SHARED Directory and its Subdirectories](#)

[SHARED/INFECT Directory](#)

[SHARED/REPORTS Directory](#)

[SHARED/SUSPECT Directory](#)

## Root Directory

During F-Secure Anti-Virus installation, the root directory is created on the local hard disk. In various operating environments the default path and name of the root directory are the following:

<b>Platform</b>	<b>Directory</b>
Windows 3.1	C:\F-Secure\Anti-Vir
Windows 95	C:\Program Files\Data Fellows\F-Secure\Anti-Virus
Windows NT 3.X	C:\WinNT\Data Fellows\F-Secure\Anti-Virus
Windows NT 4.0	C:\Program Files\Data Fellows\F-Secure\Anti-Virus

The root directory can also be installed elsewhere and given any other name.

Main executable files and the Help file reside in the F-Secure Anti-Virus root directory. On Windows 95 and NT 4.0 systems some shared libraries will be installed to \Program Files\Data Fellows\Common directory. However, the configuration file, F-PROTW.CFG, is always located in the local Windows directory.



**LOCAL Directory**

The LOCAL directory contains subdirectories and files which F-Secure Anti-Virus uses in its normal operations. The seven subdirectories arranged under LOCAL are: BULLETIN, INFECT, MESSAGES, REPORTS, REPUSER, SUSPECT and TASKS.

## **LOCAL/BULLETIN Directory**

On administration workstation, the BULLETIN directory under LOCAL contains the bulletins which administrator sent to users. On a user workstation, this directory holds bulletins delivered from administrator.

## **LOCAL/INFECT Directory**

On administration workstation, the INFECT directory under LOCAL contains the infected files sent from the user workstations and their accompanying information files.

## **LOCAL/MESSAGES Directory**

On administration workstation, the MESSAGES directory under LOCAL contains the messages received from the users.

## **LOCAL/REPORTS Directory**

The REPORTS directory under LOCAL contains reports from the tasks executed on the local workstation.

## **LOCAL/REPUSER Directory**

On administration workstation, the REPUSER directory under LOCAL holds the task reports sent from user workstations.

## **LOCAL/SUSPECT Directory**

On administration workstation, the SUSPECT directory under LOCAL holds suspected files sent from user workstations and their accompanying information files.

## **LOCAL/TASKS Directory**

The TASKS directory under LOCAL contains the F-Secure Anti-Virus tasks in the form of task files.



## **SHARED Directory and its Subdirectories**

The subdirectories under SHARED are used for temporary storage of files sent to administrator when the network connection is down. The reports and files to be sent to administrator are stored in their respective directories until the network connection is re-established, at which time the files are sent on to administrator. The subdirectories under SHARED are: INFECT, SUSPECT and REPORTS.

**SHARED/INFECT Directory**

The INFECT directory under SHARED temporarily stores the infected files sent from workstations until the network connection is re-established.

## **SHARED/REPORTS Directory**

The REPORTS directory under SHARED temporarily stores the task reports from user workstation until the network connection is re-established.

**SHARED/SUSPECT Directory**

The SUSPECT directory under SHARED temporarily stores the suspected files sent from the workstation until the network connection is re-established.

# Network Server Directories and Files

Files and directories on shared disk serve to provide file exchange between users and administrator.

## **More:**

[Communication Directory](#)

[BULLETIN Directory on the Server](#)

[INFECT Directory on the Server](#)

[MESSAGES Directory on the Server](#)

[REPORTS Directory on the Server](#)

[SUSPECT Directory on the Server](#)

[TASKS Directory on the Server](#)

[UPDATE Directory on the Server](#)

## **Communication Directory**

The F-Secure Anti-Virus communication directory is created during F-Secure Anti-Virus installation. This directory can be given any name. Even when more than one platform is used, the same communication directory is used for communication between the platforms.

The communication directory contains seven communication subdirectories: BULLETIN, INFECT, MESSAGES, REPORTS, SUSPECT, TASKS, and UPDATE, and two encrypted files: Comm.inf and Fpwnet.cfg.

The file Fpwnet.cfg allows to run F-Secure Anti-Virus in administration mode at any network workstation. Comm.inf keeps track of the bulletins, messages, tasks, reports, and infected and suspected files, that are circulated through the shared disk.

Comm.inf and Fpwnet.cfg are encrypted.

---

The communication subdirectories on the server are:

## **BULLETIN Directory on the Server**

The BULLETIN directory on the network server is used for transferring the bulletins issued by administrator. From this directory, bulletins are distributed to all F-Secure Anti-Virus users connected to the network.

## **INFECT Directory on the Server**

The INFECT directory on the network server is used for transferring infected files found on the local workstations. While on the server, these files are encrypted and renamed. When transferred to administration workstation, they are decrypted, but do not revert to their original names to prevent their accidental execution.



## **MESSAGES Directory on the Server**

The MESSAGES directory on the network server is used for transferring the messages sent by users. From this directory, the messages are sent on to administration workstation.

## **REPORTS Directory on the Server**

The REPORTS directory on the network server is used for transferring task reports sent from local workstations. From this directory, messages are sent on to administration workstation.

## **SUSPECT Directory on the Server**

The SUSPECT directory on the network server is used for transferring suspected files found on the local workstations. While on the server, these files are encrypted and renamed. When transferred to administration workstation, they are decrypted but do not revert to their original names.

## **TASKS Directory on the Server**

The TASKS directory on the network server is used for transferring tasks issued by administrator. From this directory, the tasks are distributed to all users connected to the network.

## UPDATE Directory on the Server

The UPDATE directory on the network server is used to automatically distribute new versions of F-Secure Anti-Virus to the users. The directory names vary by platform as follows:

- Windows 3.1: \UPDATE
- Windows 95: \UPDATE\WIN95\_UP
- Windows NT: \UPDATE\WINNT\_UP

The latest version of the program is copied into the appropriate UPDATE directory.

The update process is facilitated by the update list stored in the file Update.ini, which is located in the appropriate UPDATE directory of the shared disk.

F-Secure Anti-Virus automatically updates the LastChange parameter in Update.ini. This parameter is checked by the local programs to determine whether a new version has become available. The local programs can then update themselves automatically. A corresponding value is also stored in local F-PROTW.CFGs.

```
[LastChange]
LastChange=[yy-mm-dd] (=year-month-day)
```

For example:

```
[LastChange]
LastChange=94-12-30
```

Since all the contents of this directory are copied to local workstations, the directory can also be used to update or distribute other programs. In such case, the program will be copied to the local F-Secure Anti-Virus root directory.

# File Descriptions

The following files are used for F-Secure Anti-Virus installation.

## **More:**

SETUP.EXE

Program Files

F-PROTW.CFG

User Profile Files

F-PROTW.INI

AUTOINST.INI

UPDATE.INI

FPW-PREF.INI

Search String Files

Task Files

The Log File

Task Result Files (Reports)

Infected And Suspected Files

Message Files

Bulletin Files

COMM.INF

TMP.~NF

**SETUP.EXE**

The installation program, SETUP.EXE, is used for installing F-Secure Anti-Virus on workstations and/or on the server.

## Program Files

F-Secure Anti-Virus consists, in fact, of two separate programs, Launcher and Main Program, each of which has its own functions. When a user starts F-Secure Anti-Virus, the Launcher is executed first. The Launcher performs certain preliminary tasks and then starts the Main Program.

When F-Secure Anti-Virus is run in user mode, the Launcher (FSAVW.EXE, FSAVNT.EXE, or FSAV95.EXE, depending on the operating environment) checks whether a new version of the program has become available. If a new version has appeared in the shared UPDATE directory, Launcher reads the Update Preferences to find out whether the program should be updated without notifying the user. If the user's confirmation is required before updating, Launcher requests it. Otherwise, it proceeds directly to copying the new program version to the local F-Secure Anti-Virus root directory. Having done this, it executes the Main Program

If F-Secure Anti-Virus is run in administration mode, Launcher skips the version check and immediately starts the Main Program.

The Main Program (FPWM.DLL, FPWM32.DLL) is the visible part of the application. When started, it executes the Memory Check at the beginning of its first scan. Then, if in user mode, it checks the shared disk for new tasks, user-defined signatures, and bulletins. It also checks the local INFECT, SUSPECT and REPORT directories for reports and infected and suspected files that should be sent to the administrator.

If it finds any such items, it copies them from or to the shared disk.

Having completed these preliminary tasks, the Main Program informs the user of new bulletins and continues its normal routine, periodically checking the shared disk for new tasks, signatures and bulletins.

When executed in administration mode, the Main Program first checks the shared disk directories MESSAGES, INFECTED, SUSPECT and REPORT for user messages, infected and suspected files. Files: Suspected;, and reports from other workstations. It then informs the administrator of its findings. Afterwards, it periodically checks the shared disk for messages, reports, and infected or suspected files.



## **F-PROTW.CFG**

F-PROTW.CFG is the F-Secure Anti-Virus system file. It contains the User Profile and other information needed for the program's successful execution. F-PROTW.CFG is located not in the F-Secure Anti-Virus root directory, but in the Windows root directory. F-PROTW.CFG is encrypted.

User settings stored inside F-PROTW.CFG can only be modified via the Edit/Preferences menu. If you need to change a setting across a large number of workstations, contact your local support and ask for the FPWUTIL utility. This restricted utility is available to network administrators if needed, but it is not made generally available for security reasons.

## **User Profile Files**

A User Profile file contains the user Preferences. At the same time, the User Profile file can also act as the F-Secure Anti-Virus system file, F-PROTW.CFG. The administrator can create and save several different User Profiles and move the User Profile files onto the shared disk to be installed directly from the network.

On a user workstation, a User Profile file acts as the system file, F-PROTW.CFG. Therefore, all User Profile files must be named F-PROTW.CFG before the programs are installed onto workstations. Otherwise F-Secure Anti-Virus will not recognize these files.

## F-PROTW.INI

This section applies only to Windows 3.1x

---

F-PROTW.INI is the definition file, used by both F-Secure Anti-Virus for Windows 3.1 and F-Secure Anti-Virus Gatekeeper operating under Windows 3.1.

One use of F-PROTW.INI is to define the memory areas which are not to be scanned for viruses. Some exotic display drivers are incompatible with a memory scan. If your system uses such a driver, the latter may cause Windows to stop responding during a memory scan. Should this occur, follow the instructions below:

- Always save your work in other Windows applications before running the memory scan tests. If Windows stops responding, there is no way to continue the Windows session and it will be necessary to re-start the computer.
- Create the F-PROTW.INI file in the Windows directory. If the F-PROTW.INI file already exists, simply edit the existing file To determine which memory areas should be skipped, enter "ShowSegmentNumber=1" into the [MemoryScan] section of F-PROTW.INI, for example:
- [MemoryScan]  
ShowSegmentNumber=1
- This will make F-Secure Anti-Virus Gatekeeper's memory scanner display the number of scanned memory segments rather than the percentage completed in the progress indicator window.
- Restart Windows to see the memory being scanned.
- When Windows stops responding, write down the segment number shown in the progress window. For example, if the window shows "Scanning Segment 1a", the segment number is "1a". After rebooting, write "AreaStatusXX=1" (in which XX stands for the segment number) into the [MemoryScan] section of F-PROTW.INI.

For example:

```
[MemoryScan]
ShowSegmentNumber=1
AreaStatus1a=1
```

- Then run the memory scan again. If Windows stops responding again (this time in another segment), simply write another "AreaStatus" line to F-PROTW.INI. It is very unlikely that Windows will stop responding more than once or twice. Finally, comment out or remove the "ShowSegmentNumber=1" entry from F-PROTW.INI or set the value to zero.

Remember, the memory scan hanging problem is caused by incompatibilities with certain video drivers. Therefore, if you change your video driver, try removing the "AreaStatusXX=1" entries and running the memory scan again to see what happens.

## **AUTOINST.INI**

AUTOINST.INI is the configuration file for Autoinst, the utility program for F-Secure Anti-Virus automatic installation or updating on workstations logged on to a network. In most cases, all workstations automatically call a batch file from a login script (e.g. LOGIN.BAT) when they log on to the network. The login batch script is modified to invoke Autoinst. Autoinst then performs the installation according to the instructions it finds in AUTOINST.INI.

The program files and configuration files are placed on a network drive by the administrator. Autoinst copies them to the local drive and makes necessary changes to the user's WIN.INI, SYSTEM.INI files and/or makes the necessary registrations. Autoinst also handles updating and uninstallation, and can be used for changing configuration (preferences) of workstations throughout the network.

See the sections [Installation with Autoinst](#) and [Autoinst Configuration](#) for more information.

## UPDATE.INI

UPDATE.INI is an ASCII file which Autoinst uses to determine whether or not to update (copy) files to the destination directory. This file is also used by F-Secure Anti-Virus for automatic updating by FSAVNT.EXE, FSAVW.EXE, or FSAV95.EXE, depending on the platform.

Autoinst opens the UPDATE.INI file located in the source directory and the other UPDATE.INI file located in the destination directory to compare the file dates. If either the source or the destination directory does not contain UPDATE.INI, or if the date strings of the two files are different, Autoinst copies the files. If the dates are identical, the files are not copied.

Note that UPDATE.INI affects only the copying of program files. It has no effect on whether the configuration files are copied, or edited on the local drive according to the settings specified in Autoinst.INI.

Example of UPDATE.INI:

```
[LastChange]
LastChange=95-03-15
```

Note that when the program files are copied, UPDATE.INI is also copied. Therefore, the two copies will be identical after the first run, and program files are not copied upon subsequent runs. Be sure to change the date in UPDATE.INI before sending an update.

In order to enable automatic updating of Gatekeeper (via the comm directory) without starting the on-demand scanner, the administrator should use UPDATE.INI to set

```
[Updating]
AgentPollUpdates=1
```

## **FPW-PREF.INI**

F-Secure Anti-Virus allows to update files, such as VIRSTOP.EXE (a TSR in the DOS version), from the network server to local workstations. Such functionality is normally needed only with Windows 3.x workstations.

When F-Secure Anti-Virus starts, it checks the file FPW-PREF.INI. Copy this file to the directory which contains FSAVW.EXE.

FPW-PREF.INI should contain lines like the following:

```
[Update]
Source=V:\MASTER\FSAV
Destination=C:\FSAV
```

The FPW-PREF.INI file causes F-Secure Anti-Virus to update files from the server directory V:\MASTER\FSAV to the local directory C:\FSAV each time it starts up.

For example, to update the file VIRSTOP.EXE on all the workstations, the administrator only needs to update VIRSTOP in the master directory on the server. Then F-Secure Anti-Virus will make sure that all the workstations run an up-to-date copy of VIRSTOP.

## **Search String Files**

The Search String Files contain the search strings F-Secure Anti-Virus uses for detecting viruses. F-Secure Anti-Virus has its own search string database, in the file SIGN.DEF. This file is specifically encrypted, so that it can be accessed only by F-Secure Anti-Virus.

## Task Files

Parameters of each F-Secure Anti-Virus task parameters are stored in an encrypted task file, located in the local TASKS directory. When F-Secure Anti-Virus is started, it reads all the task files and displays the corresponding tasks on the task list.

F-Secure Anti-Virus contains one default task, which is hard-coded into the program and cannot be deleted. When F-Secure Anti-Virus is installed, it creates the task file for the default task and displays the task as Default task on the task list. Although the default task cannot be deleted, its parameters can be modified normally.

Other pre-configured tasks may also be included in the program. Such tasks are stored in normal task files, and do not differ from ordinary, user-defined tasks.

User-defined task files have the extension FPT. The file name is generated from the first 8 letters of the task name. For example: "Scan Network File Servers" becomes "SCANNETW.FPT". In case of a duplicate name, F-Secure Anti-Virus replaces the last four letters of the task file name with a four-digit number. For example: "SCAN0001.FPT", "SCAN0002.FPT".

The tasks distributed by the administrator are named in the same way as the user tasks, except that the file extension is FPA.



## **The Log File**

The log file, F-PROTW.LOG, contains one line per executed task. A log entry consists of the task name, its execution time and result.

The log file is stored at the LOCAL directory.

## Task Result Files (Reports)

A results file (report) contains the results of one or several tasks. If the Append option is selected in the Reporting Preference, the file contains the results of several consequent scans, otherwise it contains the results of only one task.

The result file name is the same as the corresponding task file name, but its extension is FPR (F-Secure Anti-Virus Result File), for example: SCANNETW.FPR. Results files are in binary format and cannot be browsed with a text editor. On local workstations, the results files are stored in the REPORTS directory. On administration workstation, reports from user workstations are stored in the REPUSER directory. The reports can be inspected while inside the program. Warnings of viruses are shown in red. Headings are in larger font sizes.

A results file has the following elements:

- The heading, which states the task name and execution time. The user name and the workstation name are given below.
- The brief description of the task parameters.
- The summary of results. For example:

```
'Scanned 1 disk(s), 14 file(s). No viruses found.', or
```

```
'Scanned 1 disk(s), 14 file(s). Alert! Found 2 virus(es) in 30 file(s).  
Disinfected 0 file(s).'
```

- If infections have been found, the infected files are arranged under entries that state the infecting virus. For example:

```
'Found the Jerusalem virus in
```

```
C:\APPS\BIN\QEDIT.EXE
```

```
C:\DOS\FORMAT.COM', or
```

```
'Found the Vienna virus in
```

```
C:\COMMAND.COM'
```

Double-clicking on the infected file name opens a window where the file is described in more detail.

Double-clicking on the infecting virus name displays the description of the virus.

## **Infected And Suspected Files**

Infected and suspected files are the files which have a confirmed or suspected virus infection. When such files are sent from local workstations to administrator, they are renamed to prevent spreading of infection through accidental execution of the files.

The substitute name for an infected file is formed by concatenating the letters INF and the current five-digit infected file count number, which may contain leading zeros. The renamed files have the extension VIR, for example: INF00015.VIR

The substitute name of a suspected file is similarly formed by concatenating the letters SUS and the running five-digit suspected file count number, which can include leading zeros, for example: SUS00015.VIR

When infected and suspected files are sent to administrator, each of them is accompanied by the information file, which contains the name of the infecting virus, the local workstation's name, the name of the original file and its directory path. The information files have the extension INF. Their names are formed by concatenating the letters INF and the running five-digit count number, which may include leading zeros, for example: INF00015.INF

## **Message Files**

Message files are simple text files sent from users to the administrator. Besides the actual message, a message file contains, in its first three lines, the subject of the message, the ID of the sending workstation, and the sender's user name.

Message files have the extension TXT. Their names are concatenations of the letters MSG and the running five-digit message count number, which may include leading zeros, for example: MSG00130.TXT.

## **Bulletin Files**

Any file, regardless of its format, can serve as a bulletin file, as long as both its sender and recipient possess the application needed to read the file. In practice, this means the text editor or other application with which the bulletin file was created.

Each bulletin is accompanied by the separate file having the extension INF. The INF file contains the name of the bulletin, the name of the application used to create the bulletin, and the name of the bulletin file. When a bulletin is copied from the shared BULLETIN directory to a local workstation, this information is incorporated into the local F-PROTW.CFG.

The name of each INF file is the concatenation of the letters BUL and the running five-digit bulletin count number, which may include leading zeros, for example: BUL00015.INF.

## **COMM.INF**

The COMM.INF file tracks all tasks, messages, bulletins, search strings, reports, and infected files sent through the network. COMM.INF is located on the shared disk, and is accessed periodically by the local F-Secure Anti-Virus programs which check for new tasks, bulletins, messages, and reports. The COMM.INF file is encrypted.

## **TMP.~NF**

Every time F-Secure Manager or F-Secure Anti-Virus running on a workstation starts reading the shared communications directory, the semaphore file named TMP.~NF is created in the communications directory, unless it already exists. As long as the semaphore file exists, F-Secure Manager or F-Secure Anti-Virus from no other workstation can access the communications directory. After reading the needed information, F-Secure Anti-Virus deletes the TMP.~NF, so that other workstations are able to access the communications files.

# Microsoft Systems Management Server

This section describes how F-Secure Anti-Virus can be installed through the Microsoft Systems Management Server (SMS) to all kinds of Windows environments:

- Windows 3.1 and 3.11
- Windows for Workgroups
- Windows 95
- Windows NT 3.51 and NT 4.0

This section provides you, the network system administrator, with information about the steps you should take in order to easily deploy F-Secure Anti-Virus with SMS. It is assumed that you are familiar with SMS as well as the Autoinst methods of F-Secure Anti-Virus. See [Autoinst Configuration](#) for information about the usage of Autoinst on Windows environments.

For information on using SMS, see the documentation in the Microsoft Windows NT Server Resource Kit.

## **More:**

[Preliminary Steps](#)

[Distributing F-Secure Anti-Virus to Windows Workstations](#)

[Distributing F-Secure Anti-Virus to Windows NT Workstations](#)



## Preliminary Steps

Before you can install F-Secure Anti-Virus with SMS:

- Make sure that all potential client workstations have SMS clients software with Package Command Manager (PCM).
  - Use queries to identify which clients have enough disk space to install F-Secure Anti-Virus.
  - Divide the potential client workstations to separate machine groups based on the operating systems.
  - Prepare F-Secure Anti-Virus source files for distribution using Autoinst.
  - Create a Package Definition File (PDF) for each type of installation.
- The latest PDFs for use with F-Secure Anti-Virus templates are available at:

- <http://www.DataFellows.com/solutions/network-management>

### More:

[Designing the Management Network](#)

[Preparing F-Secure Anti-Virus Installation for Distribution](#)

[Source Directories of Autoinst Installation](#)

[Target Directory](#)

[Creating Program Group and Icons](#)

[Installing F-Secure Manager Service Under Windows NT](#)

## Designing the Management Network

You can use the following information to create queries for F-Secure Anti-Virus.

<b>Platform</b>	<b>Hard disk space required</b>
Windows 3.1	4.0 MB
Windows 95	4.0 MB
Windows NT	5.0 MB

Remember to include the operating system with the queries so you can easily create a machine group for each operating system. Later you will use these machine groups to target F-Secure Anti-Virus installation jobs. Please remember also that as time progresses and further developments are created, more disk space may be required on any of these systems. Web Club updates will provide this information.

Windows NT 4.0 Service Pack 2 has known problems with the most anti-virus programs running on NT 4.0. Therefore it is not recommended to install F-Secure Anti-Virus for Windows NT or F-Secure Anti-Virus for Windows NT Server into a system that has Service Pack 2 installed, unless you have also installed the HotFix Microsoft created for this version of the NT kernel.

The kernel fix for Service Pack 2 is available at Microsoft's FTP site at:

<ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/NT40/hotfixes-postsp2/krnl-fix> See also Microsoft's Knowledge Base article Q141239 which is available at:

- <http://support.microsoft.com/support/kb/articles/q141/2/39.asp>

## Preparing F-Secure Anti-Virus Installation for Distribution

In order to successfully distribute F-Secure Anti-Virus installations through the use of Microsoft Systems Management Server, the installation packages have to be prepared before the distribution. Since SMS uses Autoinst for installing and configuring F-Secure Anti-Virus for Windows on client workstation side, an Autoinst installation kit has to be created.

To create Autoinst installation kit, do the following:

- 1. Launch F-Secure Anti-Virus.
- 2. Log in as F-Secure Anti-Virus Administrator.
- 3. Choose "Distribute F-Secure Anti-Virus Installations" from the Administration menu.
- 4. Choose the "By Creating Installation Directory for Autoinst" option.
- 5. Enter the correct path for the shared directory in the Create Installation Directory At field. This is where the Autoinst installation package will be created. Note that this directory has to be visible to SMS.
- 6. Choose OK to start the creation of the Autoinst installation package. F-Secure Anti-Virus program files will be copied to new destination directory.
- 7. Optionally, adjust the user profile of F-Secure Anti-Virus for Windows by Choosing Modify and making the desired changes in the dialog that opens.

When F-Secure Anti-Virus has transferred all the program files and you have optionally modified the User Profile, the creation of the Autoinst installation package is complete.

The Autoinst installation directory should now contain the following subdirectories and files:

<b>File/Directory</b>	<b>Description</b>
Install	Contains program files needed for installation.
Preferen	Contains configuration files for installation.
Tasks	Contains default set of task files.
AutowXX.exe	Autoinst application for various versions of Windows.
Autoinst.ini	Configuration file used by Autoinst.

On 32-bit Windows platforms, Autow32.exe is run. On Windows 3.1 and Windows for Workgroups, Autow31.exe is run. The Autoinst.ini file is common for all Windows platforms.

The following sections cover only those of Autoinst settings that are significantly important for SMS distribution.

The Autoinst initialization file, Autoinst.ini, meets the requirements of the distribution environment. Note: if you are using Autoinst Tuner for modifying Autoinst.ini file, which is highly recommended, the section names in code samples will refer to corresponding tab sheets names in Autoinst Tuner.

## Source Directories of Autoinst Installation

Autoinst supports relative path names for the source and target directory paths, since SMS needs the directories to be referred with relative names. By default, the following entries should have the values:

```
[Install]
```

```
InstallFrom=INSTALL\
```

```
[Preferences]
```

```
PreferencesFrom=PREFEREN\
```

```
[FPW]
```

```
TasksFrom=TASKS\
```

## Target Directory

Autoinst needs to know the target installation directory path in client workstation. By default this entry points to C:\FSAVW directory but can be changed freely.

```
[Install]
```

```
InstallFrom=INSTALL\
```

```
InstallTo=C:\FSAVW
```

## Creating Program Group and Icons

Autoinst.ini file has entries for creating F-Secure Anti-Virus program group or folder as well as the appropriate program icons in client workstation after the installation .By default, entries are not in use. To activate them, remove the semicolon in the beginning of the desired line.

```
[FPW]
```

```
TasksFrom=TASKS\
```

```
; GroupName=F-Secure Anti-Virus
```

```
; Icon0=0,0,0,F-Secure Anti-Virus for Windows
```

```
; Icon1=2,0,scana.fpt,Scan Drive A:
```

```
; Icon2=2,1000,scanallh.fpt,Scan All Hard Drives
```

In Windows NT environment, the program group and icons will be created under common group.

## Installing F-Secure Manager Service Under Windows NT

F-Secure Manager Service needs an account to be correctly registered. F-Secure Manager Service can be installed either under the generic Local System account or a specific account. F-Secure Manager Service needs an access to shared F-Secure Anti-Virus communication directory in order to receive updates, distributed tasks etc. therefore it is recommended that it is installed under a specific account; the account has to be given full access to F-Secure Anti-Virus communication directory as well as to log in locally with service rights.

Since the password for the account can be delivered through Autoinst.ini and will not encrypted, it is strongly recommended to give only the minimum set of rights to that account, just enough to meet the requirements stated above. The account name and password will be given in following entries.

```
ServiceAccountName=FSAV-GROUP
```

```
ServiceAccountPassword=PASSWORD
```

See <http://www.DataFellows.com/solutions/network-management> for the latest information about automating this process.

---

To enable F-Secure Manager Service automatically after installation the following entry has to be set to a non-zero value.

```
[F-Secure Manager]
```

```
EnableAsService=1
```

# **Distributing F-Secure Anti-Virus to Windows Workstations**

[Creating the F-Secure Anti-Virus package](#)

[Creating the F-Secure Anti-Virus installation job](#)

[Installing F-Secure Anti-Virus to the client Workstations](#)



## **Creating the F-Secure Anti-Virus package**

Before you can send F-Secure Anti-Virus installation job to the target clients you must create the F-Secure Anti-Virus package with SMS Administrator.

In the SMS Administrator, open the Packages window. From the File menu, choose New to get the "Package Properties" dialog box.

Choose Import. Find the right PDF file for the clients. For Windows 95 the PDF file is FSAV95.PDF and for Windows 3.x the file is FSAVW.PDF. The file is located in the F-Secure Anti-Virus source directory.

Choose Workstations. In the source directory box enter the full UNC name for the source directory you made in step 2.2. You can also press ellipsis box and browse for the source directory. When browsing choose Network even if the source directory is within the same computer because this way SMS automatically converts the source directory into an UNC name.

Choose OK in all open dialog boxes. When the package has been created and appears in the Packages windows, you can use it to create a job.

## **Creating the F-Secure Anti-Virus installation job**

When the package is ready you can create a job to install F-Secure Anti-Virus to client workstations. In the SMS Administrator, open the Jobs window. From the File menu, choose New.

Check that the job type is Run Command on Workstation and choose Details.

Choose the F-Secure Anti-Virus package and appropriate Job Target. Select the right machine group if you have created it.

If this is the first installation with F-Secure Anti-Virus, the default Send Phase and Distribute Phase settings are correct. If you have already sent and distributed the package to the distribution servers and you want to send additional commands to workstations, clear the check marks in the Distribute Phase.

Select the right command for the clients. You have two choices:

F-Secure Anti-Virus Agent and Gatekeeper Install installs F-Secure Anti-Virus program files to client workstations and activates F-Secure Manager and Gatekeeper.

F-Secure Anti-Virus files Install only copies F-Secure Anti-Virus program files to the workstations but does not enable either F-Secure Manager or Gatekeeper after the installation.

## **Installing F-Secure Anti-Virus to the client Workstations**

After the sending and distributing of the F-Secure Anti-Virus package is ready, the users see the F-Secure Anti-Virus package when they next time log on the network (if SMSLS is in their logon script) or they run RUNSMS.BAT batch file.

# Distributing F-Secure Anti-Virus to Windows NT Workstations

[Installation Methods](#)

[Package Command Manager Service](#)

[Creating the F-Secure Anti-Virus Package](#)

[Creating the F-Secure Anti-Virus installation job](#)

[Install Using Package Control Manager Service](#)

[Install Using PCM Application](#)

## **Installation Methods**

Installation of F-Secure Anti-Virus for Windows NT is more complicated than with Windows or Windows 95 because of Windows NT's security features. Gatekeeper for NT is based on kernel mode device drivers, which will be installed as system drivers. To be able to install the drivers properly, local administrator or equal rights are needed.

Since many users don't have administrator rights to their workstations, you have two choices:

- You grant users Administrator privileges during the installation
- You use Package Command Manager Service

## Package Command Manager Service

Package Command Manager is normally installed as an application on SMS clients. Because it runs as an application, it only has the privileges assigned to the user account from which the application is run. Fortunately Microsoft now provides Package Command Manager (PCM) service to Windows NT clients that are member of Windows NT domain and have SMS 1.2 installed. PCM service can be downloaded from Microsoft's website at:

- <http://backoffice.microsoft.com/downtrial/moreinfo/pcm.asp>

It will be a part of SMS 1.2 Service Pack 2, which is scheduled for release in the first quarter of 1997.

PCM service requires a user account that has administrator privileges on the client computer. It then can install software with administrative privileges. Thus, it can install software that PCM application cannot (e.g. F-Secure Anti-Virus). However, you must keep in mind that PCM introduces a security risk. If users on any of the workstation could replace the PCMSVC32.EXE file with their own application, they could run any application with administrator privileges.

Also with PCM service you can install software completely in background so that users do not have to do anything. With the PCM application users must log on to activate PCM and must execute a job or if it is a mandatory job it will be executed automatically within five minutes. However, with PCM service users do not see any dialog boxes and they do not log on to a workstation to install software.

See the PCM service documentation for more details about installing the PCM service.

## **Creating the F-Secure Anti-Virus Package**

Before you can send F-Secure Anti-Virus installation job to the target client workstations you must create the F-Secure Anti-Virus package with SMS Administrator.

In the SMS Administrator, open the Packages window. From the File menu, choose New to get the "Package Properties" dialog box.

Choose Import. Find the right PDF file for the clients. For Windows NT the F-Secure Anti-Virus PDF file is FSAVNT.PDF. The file is located in the F-Secure Anti-Virus source directory.

Choose Workstations. In the source directory box enter the full UNC name for the source directory you made in step 2.2. You can also press ellipsis box and browse for the source directory. When browsing choose Network even if the source directory is within the same computer because this way SMS automatically converts the source directory into an UNC name.

Choose OK in all open dialog boxes. When the package has been created and appears in the Packages windows, you can use it to create a job.

## **Creating the F-Secure Anti-Virus installation job**

When the package is ready you can create a job to install F-Secure Anti-Virus to client workstations.

In the SMS Administrator, open the Jobs window. From the file menu, choose New.

Check that the job type is Run Command on Workstation and choose Details.

Choose the F-Secure Anti-Virus package and appropriate Job Target. Select the right machine group if you have created it.

If this is a first installation of F-Secure Anti-Virus for Windows NT, the default Send Phase and Distribute Phase settings are correct. If you have already installed the package on distribution servers and you want to send additional commands to workstations, clear all check marks in the Distribute Phase.

Select the right command for the clients. You have two choices: "F-Secure Anti-Virus Agent and Gatekeeper Install" installs F-Secure Anti-Virus files to clients and activates gatekeeper. "F-Secure Anti-Virus files Install" only copies F-Secure Anti-Virus files to the workstations. F-Secure Anti-Virus files install can be run with only user privileges.

If you want to use PCM Service and install F-Secure Anti-Virus in background, you must check Mandatory After and insert correct date and time. PCM service installs software only after the job becomes mandatory.



## **Install Using Package Control Manager Service**

If you are using the Package Control Manager (PCM) service the software is installed when the job becomes mandatory. However, the PCM service will not run jobs while the PCM application is running. If you have not replaced old PCMWIN32.EXE with a modified one, you must make sure that PCM application is not running. To make sure that the PCM application is not running, either disable or remove the PCM application or make sure that no user is logged on.

Any packages sent to Windows NT clients with the package properties Automated and System (Background) Task (like F-Secure Anti-Virus installation by default) must be performed by the PCM service rather than by the PCM application. A modified version of PCMWIN32 is available from Microsoft. It will not attempt to run jobs that are Mandatory and that have the package properties Automated and System (Background) Task. Those jobs will wait until the PCM application is not running and will be run then by the PCM service. See the PCM service documentation for more details.

PCM application is running although its window is not visible. You can close the PCM application by logging out or by stopping it using Windows NT Task Manager (NT 4.0 only).

## **Install Using PCM Application**

After the sending and distributing of the F-Secure Anti-Virus package is ready, the users see the F-Secure Anti-Virus package when they next time log on the network (if SMSLS is in their logon script) or they run RUNSMS.BAT batch file.

# Autoinst Configuration

This section describes the format of Autoinst.INI, the configuration file for the F-Secure Anti-Virus Autoinst installation tool. Note that Data Fellows is constantly adding new features to Autoinst and therefore, new settings are being added for Autoinst.INI all the time. The latest settings which are not covered in this manual can be found in Autoinst Technical Specification. The latest version of this document is available online at Data Fellows WWW server at:

- <http://www.DataFellows.com/anti-virus/support/autoinst/>

The latest information about the keywords supported by Autoinst is available at:

- <http://www.DataFellows.com/anti-virus/support/autoinst/autoinst-file-format.htm>

If you don't have access to the Internet, ask your F-Secure Anti-Virus support for that information.

## **More:**

[Using Autoinst](#)

[Configuration File Sections](#)

[Special Considerations for 32-Bit Platforms](#)

## Using Autoinst

Autoinst is a utility program that enables the system administrator to have any version of F-Secure Anti-Virus installed or updated automatically on workstations that log on to the network. In most network environments, the workstations call a log-in batch script (e.g. LOGIN.BAT) when they log on to the network. This script is modified to invoke Autoinst. Autoinst then performs the installation according to the instructions listed in its parameter file.

The administrator must place the program files and configuration files on a network drive; Autoinst will then copy them to local workstations and make the necessary changes to the users' Windows Registry or the WIN.INI and SYSTEM.INI files. Autoinst also handles updating and uninstallation, and can be used for changing the F-Secure Anti-Virus Preferences stored in the in configuration files on workstations throughout the network.

You should use the Autoinst Wizard to create the installation script. However, not all the options are available through the Wizard. If you need to fine-tune the settings, the following information will be useful. F-Secure Anti-Virus also supports installation through the use of Microsoft Systems Management Server (SMS). In this case, Autoinst is used for building the installation scripts. The latest information about SMS support is available at:

- <http://www.DataFellows.com/solutions/network-management>

### **More:**

[Security Issues](#)

[Invoking Autoinst](#)

## Security Issues

Please note the following:

- Autoinst and its initialization file should be write protected by the administrator, so that workstations have read-only access to them.
- The source directory should be write protected by the administrator.
- Autoinst is checksum-protected, which means that it can detect changes to its own code.

## Invoking Autoinst

The installation parameters for Autoinst are stored in an inifile. The name of the inifile can be specified on the command line:

```
Autoinst [switches] [inifile]
```

If no name is specified, Autoinst will use the file Autoinst.INI, which is located in the same subdirectory.

Throughout this document, the inifile for Autoinst will be referred to as Autoinst.INI.

There are five sample INI files in the Autoinst directory under the F-Secure Anti-Virus directory. The INI file for installing F-Secure Anti-Virus Gatekeeper, COLO.INI, may look like this:

```
; This INI file for Autoinst can be used to install F-Secure Anti-
Virus ;Gatekeeper

; locally to workstations. Communication between F-Secure Anti-
Virus ;Gatekeeper

; and F-Secure Anti-Virus for Windows is installed.

;

; Modify drive letters and directories to suit your system.

;

; Sections [Administration] and [F-Secure Manager] are not needed if ;F-
Secure

; Anti-Virus for Windows is already installed at users' workstations.

[Autoinst]

ShowErrorMessages=1

; set ShowProgress=3 and StopAtExit=1 for troubleshooting purposes

ShowProgress=0

StopAtExit=0

ContactAdmin=Autoinst error! Please contact your network administrator!

NoVersionInfoDisplay=0

WindowMode=0

WindowTitle=F-Secure Anti-Virus Gatekeeper Installation

WriteAtStartup=

WriteAtStartup=Performing F-Secure Anti-Virus Gatekeeper Automatic
Installation.

WriteAtStartup=

WriteAtInstall=Installing F-Secure Anti-Virus Gatekeeper files on your
hard drive,

WriteAtInstall=please wait while the files are being copied.

WriteAtInstall=
```

WriteAtExit=F-Secure Anti-Virus Gatekeeper installation is complete.

WriteAtExit=

WriteAtExit=If you experience any problems, contact your network administrator!

WriteAtExit=

[Local]

; the WindowsDirectory= entries are only used by Autoinst for DOS

WindowsDirectory=C:\WINWG

WindowsDirectory=C:\WINDOWS

WindowsDirectory=C:\WIN3

WindowsDirectory=C:\WIN31

WindowsDirectory=C:\WFW

[Install]

SoftwareID=FPW

InstallFrom=V:\FSAVW\SOURCE

InstallToWin=FSAVW

[Administration]

AdministrationEnabled=1

CommunicationDirectory=V:\FSAVW\COMM

UserName=%USER%

WorkstationName=%USER%'s PC

[Preferences]

LastChange=95-03-22

set=F-PROTW.CFG|Network|RptAdmin|1

set=F-PROTW.CFG|Network|InfAdmin|0

[Gatekeeper]

Enable=Always

AccessSettings=1

[F-Secure Manager]

Load=Always

# Configuration File Sections

[Autoinst](#)

[Local](#)

[Install](#)

[Administration](#)

[Preferences](#)

[Gatekeeper](#)

[Enabling F-Secure Anti-Virus Gatekeeper](#)

[Uninstalling F-Secure Anti-Virus Gatekeeper](#)

[Other Entries](#)

[F-Secure Manager](#)

[FPW](#)

[TSRLoad](#)



## Autoinst

The [Autoinst] section of Autoinst.INI specifies the settings for the Autoinst program itself, for example:

```
[Autoinst]

ShowErrorMessages=1

ContactAdmin=Please contact your network administrators!

ShowProgress=1
```

The ShowErrorMessages= entry specifies whether Autoinst shows error messages when it encounters problems while performing its actions. If there is an error, Autoinst displays the message, which describes the error, along with the text specified in the ContactAdmin= entry.

The ErrorNoWinDir= entry specifies whether Autoinst displays the error message if no Windows directory is found; the default value is 1.

The ShowProgress= entry determines whether Autoinst displays information about the progress of its actions. It may have values from 0 to 3. ShowProgress=3 is useful for troubleshooting, as Autoinst will then display the most detailed information about its actions.

The InstallIfWinOnly= entry specifies whether the software should be installed in any case, or only if Windows is found on the system. The default value is 0 (always install). The following options are available:

Option	Function
Win31	Install if Windows 3.1x is installed
Win95	Install if Windows 95 is installed
WinNT	Install if Windows NT is installed

These values can be used in any combinations, separated by white spaces, for example:

```
InstallIfWinOnly=Win31 Win95.
```

The StopAtExit= entry specifies whether Autoinst terminates after performing all its actions; the default value is 0. If the specified entry value is other than zero, Autoinst stops and displays the following message: "Autoinst has terminated. Press Enter to continue." A nonzero value is useful for troubleshooting, as this will give you a chance to examine Autoinst's output.

Autoinst can be forced to show special messages, specified in the inifile. Multiple entries can be written; in this case the messages are displayed in the order of their appearance in the inifile. Empty entries are shown as empty lines.

The texts specified in the WriteAtStartup= entries are shown at start-up; the texts specified in the WriteAtInstall= entries are shown before the program files are copied; and the texts specified in the WriteAtExit= entries are displayed in the end. If WriteAtExit= is specified, the default exit message is not shown.

If the NoVersionInfoDisplay= entry is set to zero, no copyright and version information for Autoinst is shown.

The WindowMode= and the WindowTitle= entries are only valid for the Windows version of Autoinst. Unlike the DOS version, Autoinst for Windows also obtains information about the local Windows directory from Windows. Other from that, the Windows version of Autoinst behaves exactly the same as the DOS version and accepts the same parameters.

The WindowMode= entry in the [Autoinst] section determines the visibility of the Autoinst for Windows window. The following options are available:

Option	Function
0	The window is shown normally (default)
1	The window is shown minimized (iconized)
2	The window is not shown

In any case, the window is shown if an error occurs, or if a stop at exit has been specified.

The title on the caption of the Autoinst window can be specified in the WindowTitle= entry of the [Autoinst] section. If it is not given, the window is titled "AUTOINST".

The Autoinst for Windows obtains information about the local Windows directory from Windows. Hence, the WindowsDirectory entries in the [Local] section are ignored.

If F-Secure Anti-Virus or the Gatekeeper is installed by the Windows version of Autoinst, F-Secure Anti-Virus, F-Secure Manager, and F-Secure Anti-Virus Gatekeeper are unloaded upon installation in order to be able to update the program files of these applications. Then, F-Secure Manager or F-Secure Anti-Virus Gatekeeper will be reloaded, if so specified.

## Local

Autoinst normally alters the workstation's local WIN.INI and SYSTEM.INI files; for that it needs to know the location of the workstation's Windows directory. While the Windows version of Autoinst obtains this information from Windows, Autoinst for DOS uses the WindowsDirectory= entry in the [Local] section of Autoinst.INI to determine the location of the Windows directory. It is possible for different PCs in the network to keep their Windows directories in different locations, so multiple paths can be given, for example:

```
[Local]

WindowsDirectory=C:\Windows

WindowsDirectory=C:\WINWG
```

Autoinst searches these paths for certain Windows files to determine which path matches the proper Windows directory.

Autoinst accepts environment variables in "WindowsDirectory=" entries in order to support network installations of Windows. The environment variable name must be enclosed in double quotation marks, e.g.:

```
WindowsDirectory=H:\HOME\ "USER" \WINDOWS
```

## Install

The [Install] section of an Autoinst.INI file specifies the source directory on a network drive, from which the files will be copied, and the destination directory on a local drive, where the files will be installed, for example:

```
[Install]

InstallFrom=V:\GATEKEEP

InstallTo=C:\WINDOWS\GATEKEEP
```

If the InstallFrom entry is not present, or is empty, no error messages are produced, but the InstallTo= or InstallToWin entry is ignored. If the InstallFrom= is not empty, but the specified directory does not exist or is invalid (does not exist and creation fails), Autoinst displays an error message.

Note that you may specify an UNC pathname (\\servername\directory\directory) in the InstallFrom= entry. The entry may also specify a relative pathname (no drive/root directory). In that case, the path is relative to the directory where Autoinst resides.

- The source directory should be write-protected by the administrator.
- If the destination directory does not exist, it will be created.

Instead of the InstallTo= entry, InstallToWin= can be used. It specifies the destination path relatively to the user's Windows directory, for example:

```
InstallToWin=GATEKEEP
```

This installs the program files to C:\WINDOWS\GATEKEEP if the workstation's Windows directory is C:\WINDOWS. If both the InstallTo= and InstallToWin= are specified, InstallTo= will be used. Both InstallTo= and InstallToWin will be ignored, if InstallFrom= is not given.

If any files are present in the destination directory, specified in the entry InstallTo= or InstallToWin=, Autoinst assumes that an update is being performed

---

Autoinst can be used for remote installations. In such installations, Autoinst does not copy the files from a network drive to a local drive, but the installed application is run directly from the network drive. In order to change the inifiles appropriately, Autoinst needs to know where the application resides. Its location is specified in the [Install] section using the InstallRemote entry, for example:

```
InstallRemote=V:\GATEKEEP
```

InstallFrom= takes precedence over InstallRemote=.

Note that you may specify an UNC pathname (\\servername\directory\directory) in the InstallRemote= entry. The entry may also specify a relative pathname (no drive/root directory). In that case, the path is relative to the directory where Autoinst resides.

The SoftwareID= entry should be changed only when installing software other than F-Secure Anti-Virus Or the Gatekeeper. For keeping track of installed software, Autoinst stores the installed software's ID and location in the [DFAPPS] section of the user's WIN.INI file, for example:

```
[DFAPPS]

FPW=C:\WINDOWS\GATEKEEP
```

Autoinst assumes that the software, which it installs, is either F-Secure Anti-Virus Or the Gatekeeper, or both. If you wish to install other software, specify its ID in the [Install] section, for example:

```
SoftwareID=MySoftware
```

No entry is written to WIN.INI, if a "null" software is specified:

```
SoftwareID=0
```

Do not use a different software ID when installing F-Secure Anti-Virus Or the Gatekeeper; either leave the Software ID entry out, or set SoftwareID=FPW.

---

---

## Administration

Both F-Secure Anti-Virus and the Gatekeeper can be set up in a networked environment, so that information about infected files is sent to administrator. In F-Secure Anti-Virus there are also other administrator-user communication features. However, all these features work only if the communication directory has been established on a shared drive. The administrator should properly install F-Secure Anti-Virus on the system to set up the communications directory and to manage the information. Once this has been done, the administrator can specify the communication parameters in the [Administration] section of Autoinst.INI, for example:

```
[Administration]

AdministrationEnabled=1

CommunicationDirectory=V:\GATEKEEP\SHARED

SpoolDirectory=C:\WINDOWS\GATEKEEP\SHARED

UserName=#USERNAME#

WorkstationName=#COMPUTERNAME#
```

All the settings in the [Administration] section will only take effect if the AdministrationEnabled= entry has a value other than zero.

The UserName= and WorkstationName= entries specify the names of the environment variables that hold the user and workstation names for the local workstations, respectively. The environment variables must be entered between the % or # characters. %USERNAME% is static while #USERNAME# is dynamic (and thus, recommended).

These names are needed in order to identify the infected computer: upon finding an infected file, F-Secure Anti-Virus Or the Gatekeeper sends a message, containing the user name and the workstation name, to the administrator. To make identification possible, Autoinst fetches the values of the specified environment variables and stores them in the F-PROTW.CFG file.

The user and workstation names can also be obtained from the initialization files, rather than from the environment variables. The UserNameFromIni= and the WorkstationNameFromIni= entries can be specified for this purpose. The syntax of these entries is "infile|section|entry," for example:

```
UserNameFromIni=C:\TOOLS\PCTCP\PCTCP.INI|pctcp general|full-name
```

The above means, that the user name can be obtained from the C:\TOOLS\PCTCP\PCTCP.INI file, namely from the "full-name=" entry in the [pctcp general] section. If the full pathname of the initialization file is not specified, it is assumed that the file is in the user's Windows directory. Multiple "UserNameFromIni=" and "WorkstationNameFromIni=" entries may be given. In that case, the first entry for which the specified value is found, will be used.

All these parameters are stored in the F-Secure Anti-Virus Or the Gatekeeper configuration file, F-PROTW.CFG. Autoinst will simply take the values from Autoinst.INI, and store them in F-PROT.CFG.

If one of the names has not been specified and administration has been enabled, F-Secure Anti-Virus Or the Gatekeeper will prompt the user for it upon activation.

---

If administration was enabled, Autoinst creates the appropriate subdirectory structure on the local workstation. F-Secure Anti-Virus and the Gatekeeper will use these directories for temporary storage of data before it is sent to the shared communication directory on a network drive. These subdirectories are created under the directory specified in the SpoolDirectory= entry. If no such entry is present, the SHARED directory under the program files directory is used. The following subdirectories are created:

Name	Function
INFECT	Stores infected files
REPORTS	Stores reports and messages
SUSPECT	Stores suspected files

The SpoolDirectory= entry should always be specified if remote installations are made. If this entry is not

present with a remote installation, Autoinst shows an error message.

If administration was enabled, Autoinst makes the following changes to the settings of the installed F-Secure Anti-Virus : 1) Enable network features, 2) Switch to the user mode, 3) Disable the stand-alone installation setting.

## Preferences

The settings for F-Secure Anti-Virus and the Gatekeeper are stored mainly in F-PROTW.CFG, and partially in other files, such as DFAPPS.INI and F-PROTW.INI.

Autoinst copies the files to the local workstation's Windows directory from the directory specified in the PreferencesFrom= entry in the [Preferences] section, for example:

```
[Preferences]
```

```
PreferencesFrom=V:\GATEKEEP\USERS
```

However, the files previously residing in the local workstation Windows directory are not overwritten. This ensures that the changes users have done to the settings are retained.

Note that you may specify an UNC pathname (\\servername\directory\directory) in the PreferencesFrom= entry. The entry may also specify a relative pathname (no drive/root directory). In that case, the path is relative to the directory where Autoinst resides.

The administrator can create different configurations for different user groups by specifying separate Autoinst.INI configuration files with pointers to various Preferences directories.

If the PreferencesFrom= entry is not specified, the files F-PROTW.CFG, DFAPPS.INI, and F-PROTW.INI are copied, if present, from the source directory specified in the InstallFrom= or the InstallRemote= entry of the [Install] section.

The administrator can force certain setting to be set to certain values each time Autoinst is run. This is done by specifying these values in the [Preferences] section of Autoinst.INI. The entry format is:

```
set=filename|section|entry|value
```

<Filename> refers to a file in the local workstation's Windows directory. Note that this feature also allows system administrators to change settings of the files WIN.INI, SYSTEM.INI, and others.

The administrator can specify that the changes to F-Secure Anti-Virus Preferences are to be made only at certain times. This is done by adding the following entry to the [Preferences] section:

```
LastChange=YY-MM-DD
```

The specified date will be written into WIN.INI as:

```
[DFAPPS]
```

```
SOFTWARE_ID|PrefsLastChange=YY-MM-DD
```

If Autoinst is run, and the respective dates in Autoinst.INI and WIN.INI match, no changes are made to the settings. Note that in that case, none of the entries in [Administration], [FPW], [Gatekeeper] and [F-Secure Manager] sections will have any effect. If the LastChange= entry is not present, the changes are made every time.

Autoinst can be used for adding groups to Program Manager. To do that, the administrator has to prepare a groupfile and store it in the source directory specified in the PreferencesFrom= entry; Autoinst copies it to the user's Windows directory. To add this group to the Program Manager program groups, the administrator should write its name in the AddGroup= entry of the [Preferences] section, for example:

```
AddGroup=FSAVW.GRP
```

Note that this feature should only be used with DOS Autoinst, as the Windows versions of Autoinst can create the program group by themselves; see the FPW section for more information.

Certain initialization files, such as F-PROTW.CFG, are encrypted to prevent users from changing the settings manually. Autoinst decrypts such files before making changes there, and re-encrypts them afterwards.



## **Gatekeeper**

The administrator can force some of the F-Secure Anti-Virus Gatekeeper's preferences to be set in the [Gatekeeper] section of the Autoinst.INI. The settings that are not specified there, retain the values stored in F-PROTW.CFG.

## Enabling F-Secure Anti-Virus Gatekeeper

The Enable= entry determines whether F-Secure Anti-Virus Gatekeeper is enabled upon Windows startup. The same settings apply to Gatekeepers for all Windows platforms.

For F-Secure Anti-Virus Gatekeeper for Windows 3.1x, Autoinst adds A-PROT.EXE to the RUN= line of WIN.INI and adds the line device=c:\path\F-PROTW.386 to the [386Enh] section of SYSTEM.INI if F-Secure Anti-Virus Gatekeeper is to be enabled. If F-Secure Anti-Virus Gatekeeper is not to be enabled, Autoinst makes sure these changes are removed from WIN.INI and SYSTEM.INI.

For F-Secure Anti-Virus Gatekeeper for Windows 95 and F-Secure Anti-Virus Gatekeeper for Windows NT, the appropriate changes are made to the system registry. Because of that, only Autoinst for 32-bit Windows (AUTOW32) can be used for installing F-Secure Anti-Virus Gatekeeper for these platforms.

The following options are available:

Option	Function
Enable=Always	Will always enable F-Secure Anti-Virus Gatekeeper
Enable=Never	Will always disable F-Secure Anti-Virus Gatekeeper
Enable=OnInstall	Will enable F-Secure Anti-Virus Gatekeeper only if an installation is performed
Enable=OnUpdate	Will enable F-Secure Anti-Virus Gatekeeper only if an installation or update is performed
Enable=NotOnInstall	Will disable F-Secure Anti-Virus Gatekeeper only if an installation is performed
Enable=NotOnUpdate	Will disable F-Secure Anti-Virus Gatekeeper only if an installation or update is performed

## Uninstalling F-Secure Anti-Virus Gatekeeper

Autoinst can also be used for uninstalling the software. If Uninstall=1 was specified, Autoinst removes all the F-Secure Anti-Virus Gatekeeper's files from the local workstations. It also removes references to F-Secure Anti-Virus Gatekeeper from WIN.INI and SYSTEM.INI files or the registry.

The Uninstall= option has precedence over other options; if it was specified, all the other options are ignored.

## Other Entries

The `AccessSettings=` entry specifies whether the user can access the F-Secure Anti-Virus Gatekeeper settings dialog in order to enable or disable the Gatekeeper or otherwise change its settings.

The `ConfirmDosSessionKill=` and the `ConfirmWinDenyAccess=` entries specify the values for the respective settings (only applies to F-Secure Anti-Virus Gatekeeper for Windows 3.1x).

The `F-PROTW.386=` entry can be used for specifying the alternative path to the device driver (only applies to F-Secure Anti-Virus Gatekeeper for Windows 3.1x). If `F-PROTW.386=` was specified, the `device=` entry in the `SYSTEM.INI` file will not determine the installation destination. Instead, it will be written exactly as specified in the `F-PROTW.386=` entry. This enables the VxD to be loaded from a different location, than the rest of F-Secure Anti-Virus Gatekeeper, for example:

```
F-PROTW.386=c:\F-PROTW.386
```

An appropriate entry is also written to `F-PROTW.INI`. F-Secure Manager will use it when it enables Gatekeeper.

## F-Secure Manager

The Load= entry in the [F-Secure Manager] section determines whether F-Secure Manager will be loaded upon Windows startup. WIN.INI or the registry will be appropriately changed.

There are six available options:

<b>Option</b>	<b>Function</b>
Load=Always	Will always load F-Secure Manager
Load=Never	Will never load F-Secure Manager
Load=OnInstall	Will load F-Secure Manager only if an installation is performed
Load=OnUpdate	Will load F-Secure Manager only if an installation or update is performed
Load=NotOnInstall	Will not load F-Secure Manager if an installation is performed
Load=NotOnUpdate	Will not load F-Secure Manager if an installation or update is performed

Autoinst for 32-bit Windows also supports installation of F-Secure Manager as a service under Windows NT. In order to install F-Secure Manager as a service, set EnableAsService=1.

## FPW

The settings for F-Secure Anti-Virus for Windows 3.1, F-Secure Anti-Virus for Windows 95, and F-Secure Anti-Virus for Windows NT are specified in the [FPW] section.

If Uninstall=1 is specified, Autoinst removes all the F-Secure Anti-Virus files from the local workstations, and removes references to these files from the workstations' WIN.INI and SYSTEM.INI files or the registry.

The LocalDirectory= entry specifies the root of F-Secure Anti-Virus local data directories. These directories, namely BULLETIN, INFECT, MESSAGES, REPORTS, REPUSER, SUSPECT, and TASKS, are used for storing task files, reports, bulletins, and other items. If no LocalDirectory= entry is present, a directory named LOCAL is created under the program files directory and serves as a root for these data directories.

The LocalDirectory= entry should be always specified when remote installations are made, because the user's data files must reside on the local workstation. If the LocalDirectory= entry is missing, and the local programs directory is unknown, the tasks are not copied during installation, because Autoinst does not know the location of the local TASKS directory. Autoinst will give an error message, if it does not find this entry during a remote installation.

The local data directories will always be created, even if only F-Secure Anti-Virus Gatekeeper is being installed. Autoinst assumes that F-Secure Anti-Virus is being installed, if the SoftwareID= is set to the default value FPW.

---

The TasksFrom= entry specifies the directory from which the task files are to be copied during installation. Parameters of each F-Secure Anti-Virus task are stored in an encrypted task file, located in the local TASKS directory. When F-Secure Anti-Virus is started, it reads all the task files and displays the corresponding tasks on the task list.

Note that you may specify an UNC pathname (\\servername\directory\directory) in the TasksFrom= entry. The entry may also specify a relative pathname (no drive/root directory). In that case, the path is relative to the directory where Autoinst resides.

Since the tasks must be in sync with the user's F-PROTW.CFG, the new tasks cannot be copied over the previously installed tasks. Therefore, they are copied only if there are no tasks in the local workstation's TASKS directory.

The Windows versions of Autoinst supports the creation of a Start menu folder (or Program Manager program group in Windows 3.1 and Windows NT 3.x) for F-Secure Anti-Virus. The parameters of this group are also given in the [FPW] section. The GroupName= entry specifies the name of the Program Manager group to be created or updated, for example:

```
GroupName=F-Secure Anti-Virus for Windows
```

The IconX= entries specify the program items to be created or updated: X denotes a number from 0 to 15. The entries have the following format:

```
IconX=ICON_TYPE, DRIVE_ID, TASK_NAME, ICON_TITLE
```

ICON\_TYPE can take the following values:

Value	Function
0	Start F-Secure Anti-Virus for Windows
1	Start F-Secure Manager
2	Execute a task with F-Secure Anti-Virus for Windows

DRIVE\_ID specifies the drive to be scanned by the task: 0 corresponds to Drive A:, 1 to Drive B:, 2 to Drive C:, etc. 1000 denotes All HDDs, and 1001 denotes All Network Drives.

TASK\_NAME specifies the name of the task file for the task to be launched when the icon is double-clicked; it is used only if the ICON\_TYPE is set to 2.

ICON\_TITLE is the text that appears below the icon in the Program Manager.

An example of the group parameters:

```
GroupName=F-Secure Anti-Virus for Windows
```

Icon0=0,0,0,F-Secure Anti-Virus for Windows

Icon1=2,0,scana.fpt,Scan Drive A:

Icon2=2,1,scanb.fpt,Scan Drive B:

Icon3=2,1000,scanallh.fpt,Scan All Hard Drives

Icon4=2,1001,scannetw.fpt,Scan Network

Icon5=1,0,0,F-Secure Manager

In many cases, there is no need to create icons to end-user workstations at all, as they rarely need to start the actual application. Even if they do, they can easily do it via the F-Secure Manager icon.

---

## TSRLoad

The [TSRLoad] section specifies the load options of TSR programs like VIRSTOP. These programs can be installed on a workstation with Autoinst just like any other software.

The ID= entry defines the program's identifier, for example:

```
[TSRLoad]
```

```
ID=VIRSTOP
```

This identifier is used in subsequent entries for specifying the load options for that program. Multiple TSRs can be installed by using multiple ID= entries and their options.

The <id>= entry, where "<id>" stands for the ID, as defined by the ID= entry, specifies the name of the TSR's program file, for example:

```
VIRSTOP=virstop.exe
```

This entry is required; an error occurs if it is not present. Neither the drive, nor the path needs to be specified, since they are determined by the location of the installation, as specified in the [Install] section. However, the full pathname can be given here, if installation of a file already present on the system is desired. In any case, an error occurs if the file is not found on the system.

The <id>|LoadFrom= entry specifies the full pathname of the load file, from which the TSR will be loaded, for example:

```
VIRSTOP|LoadFrom=C:\AUTOEXEC.BAT
```

This entry is required, an error occurs if it is not present. The specified file must already exist, otherwise an error occurs as well.

The <id>|LoadPos= entry specifies the position of the TSR's load command inside the load file. The following options are available:

Option	Function
BeginFile	The command will be written at the beginning of the load file (default).
EndFile	The command will be written at the end of the load file.
LineNumber	The command will be inserted before line number <n>. Negative line numbers denote lines from the end of the file: -1 for the last line, -2 for the last but one line.
RelativeToLineWith	The command will be inserted <increment> lines after the first line containing <substring>. Increment can be negative for inserting the command before the line containing <substring>.
BeforeLineWith	The command will be inserted immediately before the line containing <substring>.
AfterLineWith	The command will be inserted immediately after the line containing <substring>.

For example, the following entry will cause the command to be written immediately before the line containing "win.com":

```
VIRSTOP|LoadPos=RelativeToLineWith,-1,win.com
```

The <substring> parameter is case insensitive.

The <id>|LoadPrefix= entry, if present, causes a string to be inserted before the command. The prefix is inserted immediately before the command, without any spaces in between. It is useful for making drivers to be loaded from CONFIG.SYS, or for specifying the LOADHIGH option, for example:

```
VIRSTOP|LoadPrefix="LH"
```

```
VIRSTOP|LoadPrefix="device="
```

The quotation marks are required.

---

The <id>|LoadSuffix= entry, if present, causes a string to be appended to the command. The suffix will be

appended immediately after the command, without any spaces between them. It is useful for specifying load options for programs, for example:

```
VIRSTOP|LoadSuffix="/COPY"
```

The quotation marks are required.

---

The <id>|ReplaceOption= entry specifies what action should be taken if there already is a command that loads the executable, which is specified in the <id> entry. The following options are available:

<b>Option</b>	<b>Function</b>
RetainOld	The old command will always be retained; no change will be made to the load file
RetainOldIfSame	The default option. The old command will be retained only if it exactly matches the new command (same path, same name, same suffix)
ReplaceOld	The old command will always be replaced

The <id>|ReplaceAtOldPos= entry, if not zero, forces the new command to be inserted at the location of the old command, if the latter exists in the load file. In that case, the <id>|LoadPos= entry will be ignored.

Unless the <id>|ReplaceAtOldPos= entry is present and has a value other than zero, the position of the new command is determined by the <id>|LoadPos= entry.

---



## Special Considerations for 32-Bit Platforms

The settings described below only apply to the 32-bit Windows version of Autoinst (AUTOW32.EXE). In addition to the "UserName=", "UserNameFromIni=", "WorkstationName=" and "WorkstationNameFromIni=" settings, the "UserNameFromRegistry=" and "WorkstationNameFromRegistry=" entries are supported. They will be used only if none of the other entries are present. Multiple "UserNameFromRegistry=" and "WorkstationNameFromRegistry=" entries may be used: the first one that points to a value in the registry will take effect. The format for the values of both these entries (called "registry locators") is:

MAINKEY [ \ SUBKEY ] \ \ [ VALUENAME ]

where:

Option	Function
MAINKEY	main key name, must be one of: HKEY_CLASSES_ROOT", "HKEY_CURRENT_USER", "HKEY_LOCAL_MACHINE", "HKEY_USERS"
SUBKEY	subkey name, may be missing
VALUENAME	name of registry value, may be missing if the default value is to be used

For example, the following are valid locator specifiers.

All items present:

```
UserNameFromRegistry=HKEY_LOCAL_MACHINE\Network\Logon\username
```

No subkey:

```
UserNameFromRegistry=HKEY_LOCAL_MACHINE\user-name
```

No value name:

```
UserNameFromRegistry=HKEY_LOCAL_MACHINE\Network\Logon\
```

No subkey nor value name:

```
UserNameFromRegistry=HKEY_LOCAL_MACHINE\
```

## F-Secure Anti-Virus for DOS

F-Secure Anti-Virus for DOS is available in two editions which differ primarily in functionality. Your license includes either the F-PROT Edition of F-Secure Anti-Virus for DOS, with the F-PROT scanning engine, or the AVP edition of F-Secure Anti-Virus for DOS, with the AVP scanning engine. Both editions are described in this section. Your F-Secure Anti-Virus License Certificate indicates which edition you have.

### **More:**

[AVP Edition](#)

[F-PROT Edition](#)

# AVP Edition

F-Secure Anti-Virus for DOS is included in your F-Secure Anti-Virus for Windows license to let you boot the computer up from a trusted diskette if it refuses to start Windows. This section contains information about using F-Secure Anti-Virus for DOS.

The original diskette should be write-protected and kept in a safe place, because it may be needed in case of a virus outbreak. We also recommend that you create a Rescue Disk for use when you discover a problem. This will make it easier to recover from disk crashes, virus infection, or data loss caused by an error.

F-Secure Anti-Virus for DOS performs at two levels:

VIRSTOP is a memory-resident background scanning program. The main purpose of VIRSTOP is to prevent the execution of programs infected with known viruses.

Further protection against virus infection is given by the disk-based program, F-Secure Anti-Virus, which offers more comprehensive virus scanning as well as facilities to recover from virus infections.

## **More:**

[Installation](#)

[Setting parameters for F-Secure Anti-Virus for DOS](#)

[The F-Secure Anti-Virus for DOS interface](#)

[Location](#)

[Objects](#)

[Actions](#)

[Options](#)

[Statistics](#)

[Detecting and removing viruses](#)

[Messages from the Code Analyzer](#)

[Viewing a report file](#)

[Unpacking Engine](#)

[Extracting Engine](#)

[Updating](#)

[Error codes](#)

## Installation

If you have been using F-PROT for DOS, you can update it simply by copying F-Secure Anti-Virus for DOS over the \F-PROT\ENG\DOS with this command:

```
XCOPY R:\F-PROT\ENG\DOS\*.* C:\F-PROT
```

## Setting parameters for F-Secure Anti-Virus for DOS

When you start F-Secure Anti-Virus for DOS from the command line, you can use additional parameters. Below are examples of the FSAV command with parameters, followed by possible options:

```
FSAV path:\name /option(s)
```

Scan floppy disk in drive A: and disinfect viruses:

```
FSAV A: /- /Y
```

Scan all local hard drives and disinfect viruses:

```
FSAV *: /- /Y
```

Scan all local hard drives, disinfect viruses, disable aborting and return to DOS after scan:

```
FSAV *: /- /Y /Z /Q
```

Path - any DOS path, \* or \*: - all hard disks

Name - may be wildcards \* or ? Default is executable files

Options:

- /- disinfect
- /E delete infected files
- /M skip memory test
- /P skip Master Boot Record test
- /B skip DOS Boot Sector test
- /T=path swapping directory
- /W[A][=filename] save report
- /WA appends to existing file
- /O display OK messages
- /Y skip all dialogs
- /S sound off
- /X do not use XMS memory
- /? help screen
- /I initiate scan immediately
- /Q quit to DOS after test
- /\* check all files
- /N check remote disks, used with \*:
- /1 check only one floppy disk
- /R do not scan subdirectories
- /U disable unpack (Unpacking Engine)
- /A disable extract (Extracting Engine)
- /H disable heuristic analysis (Code Analyzer)
- /@[!]= listfile.txt scan by list file. List file is text file with filenames or directorynames line by line. Wildcards is not allowed. If optional [!] is present list file will be deleted after processing. If /@... key is

present F-Secure Anti-Virus for DOS starts scanning after loading. Location control is not in the action.

- /D daily scanning. If this key used, F-Secure Anti-Virus for DOS will not start if it was successfully finished scanning this day.
- /N redundant scanning
- /Z disable aborting
- /F= profile.prf F-Secure Anti-Virus for DOS starts with parameters defined in the profile file:

## **The F-Secure Anti-Virus for DOS interface**

When F-Secure Anti-Virus for DOS starts up, it loads its antivirus databases and tests memory for the presence of resident viruses. After a successful start, F-Secure Anti-Virus for DOS displays a short message in the bottom of it's screen:

```
"Antiviral databases were loaded. Known viruses: [number]"
```

where [number] indicates the current number of viruses/virus families that F-Secure Anti-Virus for DOS detects. As you update F-Secure Anti-Virus for DOS this number will increase.

You can work with the program using your "mouse" or a combination of keys. To activate a menu (or the properties tabs) move the pointer over on the desired location and click the left "mouse" button. Working with keys, press <Alt> and the colour marked letter of the menu (tabs respectively). To navigate and check/uncheck options without the mouse, use the <ALT>, <TAB>- and arrow keys to move around, to check/uncheck an option in a dialogue use the <SPACE> key.

Most of F-Secure Anti-Virus for DOS functions can be configured from the F-Secure Anti-Virus for DOS screen's tabs.

## Location

Using the “Location” tab you can select the disks (local, removable and network) and/or directories F-Secure Anti-Virus for DOS should scan for viruses.

To select a/several disk(s), click the left mouse-button on the disk-name or point the disk with the cursor and press <Space>.

The following options can be set:

- Local Hard Drives - selects all local hard/removable drives
- Network Drives - selects all available network disks
- Path - allows you to add a directories for testing. If this option is set then the text box is accessible (you can get where using <Tab>) and you can specify the names of the directories which you wish to scan. To add more than one directory, simply list it dividing with semicolon
- Subdirectories - if this option is set, F-Secure Anti-Virus for DOS will scan all subdirectories,



## Objects

The "Objects" tab allows you to select what objects or file masks (filenames and/or filename-extension) F-Secure Anti-Virus for DOS should scan for:

- Memory - to scan system memory (including High Memory Area) right after starting F-Secure Anti-Virus for DOS. Only if «Memory» option is set in the default profile (or in the profile "profile.prf", if you start F-Secure Anti-Virus for DOS from the command line with "/F=profile.prf" option) system memory will be scanned;
- Sectors - to scan system sectors;
- Files - to scan files (also files with System, Hidden and ReadOnly attributes);
- Packed files - to activate the Unpacking Engine for testing files packed by utilities PKLITE, DIET, LZEXE, Com2Com, EXEPACK, COMPACK;
- Archives - to activate the Extracting Engine for searching viruses in archive files (ARJ, ZIP, LHA, RAR).
- The "File mask" option can be configured as followed :
- Smart - F-Secure Anti-Virus for DOS tests programs, i.e. files (also in archives) having the extensions \*.BAT, \*.COM, \*.EXE, \*.OV\*, \*.SYS and other executable files
- Programs - F-Secure Anti-Virus for DOS tests programs, i.e. all files (also in archives) with extensions \*.BAT, \*.COM, \*.EXE, \*.OV\*, \*.SYS;
- All files - says it all, F-Secure Anti-Virus for DOS scans for all files (\*.\*)
- User defined - here you can manually specify, for which file-masks F-Secure Anti-Virus for DOS should be looking for.

## Actions

The "Actions" tab allows you to configure F-Secure Anti-Virus for DOS's behaviour should it detected a virus-infected object and/or suspicious code. You can only select one option at a time:

- Report Only - the F-Secure Anti-Virus for DOS will only inform you about detected viruses. Cure and removal will not be performed
- Display Disinfect dialog - if F-Secure Anti-Virus for DOS detects a virus, a dialog box will be displayed asking what to do next
- Disinfect automatically - cure infected objects automatically without asking for confirmation.

Delete automatically - delete any infected file without asking for confirmation You can select more than one option at a time from the following settings:

- Copy to (for the Infected objects) - to copy every detected infected object into a special directory. The directory's name by default is "infected". If you want to use another directory's name, click on the accordingly entry-field (or press the <Tab>) and type in the name of the directory.
- Copy to (for the Suspicious objects) - to copy every detected suspicious object into a special directory. The directory's name by default is "suspicious". You may define another directory as you see fit. Suspicious objects should be sent to your nearest F-Secure Anti-Virus for DOS distributor for further analysis.

## Options

In the "Options" tab, you can set different virus scanning modes as well as other program options:

- Warnings - activates an additional mechanism of checking. Warning messages will be displayed, if a file or sector contains a changed or damaged virus and also if a suspicious sequence of program code is found in the computer's memory
- Code analyzer - activates F-Secure Anti-Virus for DOS's Code Analyzer, which is able to discover many new, yet unknown viruses.
- Redundant scan - activates whole scanning - the whole object is completely scanned (normally only code, where virus instructions can be found, is checked). Redundant scan should be used in case you experience virus-like behaviour of your system, but no virus was actually identified. For every day use, redundant scanning is NOT recommended as it slows down the scanning considerably and may lead to false alarms when scanning "clean" files.
- Show clean object - with this option activated, F-Secure Anti-Virus for DOS lists every file it scans in the progress window - marked as "ok" if no virus was found. If this option is disabled, only infected objects are listed in the scan progress window.
- Show pack info - this option will show the packing method used for the files F-Secure Anti-Virus for DOS is scanning.
- Sound effects - beep when a virus is detected;
- Report file - this option allows you to create a report file. The filename is by default "Report.txt". If you want to use another filename click on the entry-field containing the report file's name (or press the <Tab>) and change it accordingly. Further report file options are:
  - Append - report will be added to the end of the previously used report file
  - Limit size, Kb: This setting allows you to limit the size of the report file F-Secure Anti-Virus for DOS creates. Default limit is 500 Kb.

## **Statistics**

The Statistics tab shows you the statistics for the current scan job. Statistics are dynamically updated as F-Secure Anti-Virus for DOS scans your system(s).

“Statistics” has two parts:

- Scanned - displays the number of checked sectors, files, packed and archived files, directories, scanned Kbytes, as well as the time elapsed so far for scanning. The results are dynamically updated while the scan-job is running.
- Found - displays information about the number of virus bodies found, cured objects, deleted objects, failures which happens during the curing, warnings, suspicious objects, and input/output errors.

## **Detecting and removing viruses**

Before starting a virus-scan, make sure, all settings for your scan-job are as you want them:

- Location tab: select disks/directories which you want to scan.
- Objects tab: select objects for scanning.
- Actions tab: choose action F-Secure Anti-Virus for DOS should take when a virus is discovered.
- Options tab: set virus scanning modes and other program options. To start a virus scanning, click on the button "Scan Now"

If you wish, that F-Secure Anti-Virus for DOS stops scanning and displays a dialogue-box whenever a virus is detected, select "Display Disinfect dialog" in the "Actions" tab.

As soon as F-Secure Anti-Virus for DOS detects a virus it will ask you, what it should do:

- Disinfect - cure the infected object
- Delete - delete the infected object
- Skip - simply create a report, the virus will not be cured or deleted.
- Stop - stop scan

If you select "Apply do all infected objects" then F-Secure Anti-Virus for DOS will no longer stop the scan-job but deal with infected objects as previously chosen automatically.

## Messages from the Code Analyzer

The Code Analyzer checks program code for inconsistencies which might indicate a virus and gives a warning if it finds anything suspicious. The following are messages which the Code Analyzer gives:

- suspicion [virus type],
- where [virus type]:
- Com - looks like a .COM file infector
- Exe - looks like a .EXE file infector
- ComExe - looks like a .COM and .EXE file infector
- ComTSR, ExeTSR, ComExeTSR - looks like a memory resident Com, Exe or ComExe infector
- Boot - looks like an image file of boot virus or boot virus dropper
- Trojan - looks like a trojan horse program encrypted - a suspicious file contains a decryption routine

The Code Analyzer can make mistakes – in other words interpret healthy code as suspicious, but it has been tested on a very wide sample of files and during tests did not make any major errors. If you find that the Code Analyzer on your F-Secure Anti-Virus for DOS has made a mistake, please send copies of the files which the Code Analyzer has incorrectly diagnosed to your local distributor.

Because the Code Analyzer checks many branches of the algorithm of the program, F-Secure Anti-Virus for DOS works about two times more slowly when the Code Analyzer is selected than when it is switched off. But this mechanism detected about 80% of viruses (including many ciphered ones) from our collection, and we consider that the new unknown viruses will be detected with the same probability.

## **Viewing a report file**

A Report file is a simple text file and can be viewed with any text-editor running under DOS.

## **Unpacking Engine**

Utilities for packing executable files are widely distributed. They write a packed file to a disk with a special unpacker. At execution of such a file this unpacker unpacks the executed program in operative memory and starts it.

The files infected with a virus can be packed with an uninfected packer. At scanning by the usual anti-virus programs the files infected in this way will be detected as non-infected, as the body of a virus is packed together with the program code. However, the Unpacking Engine in the F-Secure Anti-Virus for DOS unpacks files created by the various versions of the most popular packing utilities: PKLITE, DIET, Com2Com, EXEPACK, LZEXE COMPACK in a temporary file and subjects them to repeated checks. If a known virus is found inside a packed file, the virus can be deleted. Thus the initial file is replaced unpacked and cured. The mechanism of unpacking also works correctly and with files that have been packed repeatedly (up to five packing levels).

The unpacking module also works with some versions of immunizator files (a program protecting files from infection by connecting supervising blocks to them) such as CPAV, Dropper ABCDE, and F-XLOCK and ciphering programs such as CryptCOM.

The module Unpacking Engine will be constantly updated for new packers, encryptors and immunizators.



## **Extracting Engine**

The Extracting Engine is a mechanism for unpacking from archives. The difficulty of finding viruses in ZIP, ARJ, LHA, RAR, etc. files is at the moment, perhaps, one of the greatest problems which anti-virus producers face. Viruses can remain hidden in the file for months and even years, and quickly spread to archives. Archives stored on bulletin board systems (BBS) are an especial source of danger.

The Extracting Engine copes successfully with this problem. When scanning archives the Extracting Engine unpacks files from their archive on a given mask in a temporary file and transfers them to a basic module for checking. After it is checked the temporary file is destroyed.

The current version of the Extracting Engine contains codes for unpacking archives of the existing versions of the formats ARJ, ZIP, LHA, RAR and will be updated regularly for other versions of archives. F-Secure Anti-Virus for DOS detects an infected file, even if it is for example, ciphered by the utility CryptCOM, then packed by PKLITE and is archived by the program PKZIP.

The Extracting Engine does not unpack archives protected by a password.

---

## **Updating**

Unfortunately, new viruses are constantly appearing, and the Data Fellows Anti-Virus team works ceaselessly to produce anti-virus measures which are effective against them. To update your current version of F-Secure Anti-Virus for DOS all you need to do is to copy the new anti-virus databases (known as virus definitions) into the F-Secure Anti-Virus for DOS directory and to replace the current F-Secure Anti-Virus for DOS.SET file with the one received with your updated virus definitions. The new virus definitions together with a new FSAV.SET file is obtainable from the Data Fellows web site.

## **Error codes**

When you run F-Secure Anti-Virus for DOS from the command line, when it has finished running it will generate one of the following return codes:

- 0 - no viruses found;
- 1 - scanning is not completed;
- 3 - suspicious object;
- 4 - a virus found;
- 5 - all viruses found deleted;
- 7 - FSAV.EXE has been corrupted;
- 10 - internal error in F-Secure Anti-Virus for DOS.

## F-PROT Edition

F-Secure Anti-Virus for DOS is included in your F-Secure Anti-Virus for Windows license to let you boot the computer up from a trusted diskette if it refuses to start Windows. This section contains information about using F-Secure Anti-Virus for DOS.

The original diskette should be write-protected and kept in a safe place, because it may be needed in case of a virus outbreak. We also recommend that you create a Rescue Disk for use when you discover a problem. This will make it easier to recover from disk crashes, virus infection, or data loss caused by an error.

F-Secure Anti-Virus for DOS performs at two levels:

1. VIRSTOP is a memory-resident background scanning program. The main purpose of VIRSTOP is to prevent the execution of programs infected with known viruses.
2. Further protection against virus infection is given by the disk-based program, F-Secure Anti-Virus, which offers more comprehensive virus scanning as well as facilities to recover from virus infections.

### **More:**

[Installing F-Secure Anti-Virus for DOS](#)

[Using DOS F-Secure Anti-Virus in Interactive Mode](#)

[Functions of F-Secure Anti-Virus for DOS](#)

[Scanning for Viruses](#)

[Scanning Method](#)

[Where to Search](#)

[Action on Finding a Virus](#)

[Target Virus Type](#)

[Files To Be Scanned](#)

[Executing Scan](#)

[Configuring F-Secure Anti-Virus for DOS](#)

[Information on Viruses](#)

[New Virus Search Strings](#)

[Exiting from F-Secure Anti-Virus for DOS](#)

[Using F-Secure Anti-Virus for DOS in Command-Line Mode](#)

## Installing F-Secure Anti-Virus for DOS

To install F-Secure Anti-Virus for DOS, follow the steps listed below:

- 1. Start your computer preferably from a clean write-protected diskette.
- 2. Insert the write-protected F-Secure Anti-Virus for DOS diskette into the appropriate drive and switch to that drive. This is usually drive A:.
- 3. Type A:install and press Enter
- 4. If the version you are installing has more than one language, you will first be asked the installation language. After you select the language, the main installation screen appears.
- 5. This screen shows the command line switches that will be set when VIRSTOP is installed and running. If your computer is not short of memory, deselect \DISK by moving to VIRSTOP, using the arrow keys, and then pressing Enter. A menu will be displayed.
- 6. Press the spacebar to toggle the switch setting to No, and press Enter to make the change. Press esc twice to get back to the main menu and move to Start Installation. Press Enter to start installation.
- 7. Important: If you are running Windows, we recommend that you use Gatekeeper from F-Secure Anti-Virus for Windows, and do not install VIRSTOP at all.
- 8. Before the installation is complete, a message will be displayed, asking whether you would like to change the message which VIRSTOP gives whenever it finds a virus. Press y if you wish to have a customized message displayed. Write the message to the message line and press Enter.
- 9. When the installation is complete, you will be queried whether you want F-Secure Anti-Virus to scan the hard disk immediately. We recommend that you press y.
- 10. Once the hard disk has been scanned and found to be clean, the following message appears:
  - No viruses or suspicious files/boot sectors were found.
- 11. F-Secure Anti-Virus for DOS is now installed.
- 12. The virus-stopping program, VIRSTOP, can be activated at once by restarting the computer. To do this, remove diskette from the drive A: and press Control+Alt+Del simultaneously. From now on whenever you start your computer, the background virus stopper, VIRSTOP, is actively checking for viruses each time files or disks are used. If VIRSTOP finds a problem, it gives a signal and displays a message on the screen. In this case, follow the displayed instructions.
- 13. Run F-TEST program from the F-Secure Anti-Virus directory to check whether VIRSTOP is properly installed and working.
- 14. F-Secure Anti-Virus for DOS can be used directly from the supplied diskette, but the hard disk installation speeds it up and makes it easier to use. F-Secure Anti-Virus for DOS takes up about two megabytes of hard disk space. However, some of the files can be omitted to save storage space. The files essential for normal operation of F-Secure Anti-Virus for DOS with the background-checking program VIRSTOP active in memory are: F-PROT.exe, VIRSTOP.exe, Sign.def, and English.tx0 or another .tx0 language file. If you choose this minimum configuration, you will not be able to change the language used or view the virus descriptions. Otherwise, the program will function normally.
- 15. Important: While F-Secure Anti-Virus for DOS does not search for Windows-based macro viruses, you can use F-MACRO to scan for macro viruses from within DOS. The latest version of F-MACRO is available at:
  - <http://www.datafellows.com/f-prot/macro/>



## Using DOS F-Secure Anti-Virus in Interactive Mode

When F-Secure Anti-Virus for DOS is installed on the hard disk, it is located on the hard disk, drive C:, in the F-Secure Anti-Virus directory.

To start F-Secure Anti-Virus for DOS, type:

```
C:\
```

```
cd \F-PROT
```

```
F-PROT
```

F-Secure Anti-Virus will load the stored virus information and scan for the known viruses. Then, the main menu is displayed.

## **Functions of F-Secure Anti-Virus for DOS**

Using F-Secure Anti-Virus for DOS you can do the following:

- Scan for viruses.
- Configure F-Secure Anti-Virus to present information in various ways.
- Look up information on known viruses or add information on new viruses.
- Obtain information about the program.
- Quit the program.



## Scanning for Viruses

When Scan is chosen from the main menu, a sub-menu, showing the current option selections, is displayed.

The following options are available for scanning parameters:

<b>Method</b>	<b>Secure Scan</b>
Search	Heuristic Analysis Hard disk Diskette drive Network <User -specified>
Action	Report only Disinfect/Query Automatic disinfection Delete/Query Automatic deletion Rename/Query Automatic renaming
Targets	<u>Boot sector</u> viruses (Yes/No) File viruses (Yes/No) User-defined strings (Yes/No) Packed files (Yes/No)
Files	Standard executables All files <User-specified>

## Scanning Method

F-Secure Anti-Virus for DOS can scan for viruses using both methods: Secure Scan and Heuristic Analysis. Scanning is the virus detection method in which a file or a boot sector is read, checking for characteristics of known viruses. Heuristic (pattern-recognition) analysis, which gives a high level of protection against new viruses, uses a set of rules to detect suspicious code. The heuristic algorithms used by F-Secure Anti-Virus detect new, previously unknown viruses.

VIRSTOP uses the Quick Scan scanning method. As its name implies, the Quick Scan is faster, but less secure, than Secure Scan, and cannot find some complicated encrypted viruses and some viruses, written in high-level languages.

## Where to Search

The Search command is used to select the drives and directories F-Secure Anti-Virus for DOS should search for viruses. The following options are available:

### Hard Disk

Diskette Drive

Network

User Specified

### Scans all partitions on the internal hard disk.

Scans one of the diskette drives. Some removable hard disks also show in the Diskette Drive menu, due to drivers used.

Scans all the network drives. By using this option, a network server's hard disk, except for its boot sectors, can be scanned for viruses from a workstation.

Scans a drive, directory, or file, specified by the user. If a directory is selected, F-Secure Anti-Virus checks all of its subdirectories as well.

## Action on Finding a Virus

The Action command is used to choose the action to be taken on the infected file when the virus is found. The following options are available:

### Report only

Disinfect/Query

Automatic disinfection

Delete/Query

Automatic deletion

Rename/Query

Automatic renaming

### Default action; lists the name of the infected files.

F-Secure Anti-Virus prompts for confirmation before it attempts to disinfect the file. If the infection cannot be removed, the file is deleted. F-Secure Anti-Virus asks for confirmation before deleting the file.

The file is disinfecting without confirmation request.

The file is overwritten several times and then deleted. F-Secure Anti-Virus asks for confirmation before deleting the file/

The file is deleted without confirmation request.

F-Secure Anti-Virus renames the file, asking for confirmation first. The extensions are changed from .exe to .vxe, from .com to .vom.

The file is renamed without confirmation request.

## Target Virus Type

The Targets command of the main menu is used to specify the types of viruses to search for. The default is to search for boot sector viruses, file viruses, and to search within packed files. The available options are described below:

Select Boot sector viruses (Yes/No) alone if you are cleaning up after an attack by a specific boot sector virus.

Select File viruses (Yes/No) alone if you are cleaning up after an attack by a specific file virus.

Select User-defined strings (Yes/No) if you have manually updated F-Secure Anti-Virus for DOS with new search strings.

Select Packed files (Yes/No) to have F-Secure Anti-Virus search for viruses in packed files. Regardless of whether the infection occurred before or after packing, F-Secure Anti-Virus for DOS can find viruses in files packed with LZEXE, PKLITE, EXEPACK, DIET, and ICE. If the infection occurred after packing, F-Secure Anti-Virus can find it in archives packed with other tools, as well.

## **Files To Be Scanned**

The Files command is used to select which types of files F-Secure Anti-Virus should scan. Most viruses will only infect standard executable files.

The default choice, Standard executables, is to scan the usual executable file types with the extensions: .com, .exe, ov?, app, .pgm, and .sys. This option is recommended for normal scanning.

All files should be selected if you are cleaning up after a virus attack. This will ensure that the virus is not hiding in some obscure overlay file.

The <User-specified> option allows the user to add a set of file extensions, for example, XTree Gold's .xtr overlays to the list of files to be scanned.

## **Executing Scan**

When you have selected the desired options, start the scan by choosing Begin Scan at the top of the Scan menu.

The window at the bottom of the screen will display the names of the files as they are scanned. The scanning can be canceled at any time simply by pressing esc.

When the scan is finished, a summary of its results is displayed. If viruses or suspicious programs were found, press Enter to view the report. Press s to save report on the disk, or press p to print it out.

## **Configuring F-Secure Anti-Virus for DOS**

Presentation of information by F-Secure Anti-Virus for DOS can be configured using the two commands: Language and Setup.

The default language for messages is English. Use the Language command to view the listing of the languages supported by your version of F-Secure Anti-Virus. If alternatives are available, choose the one you require. You will need to re-install VIRSTOP with the new language setting.

Use the Setup command to set up the list of information about viruses, which is available under the Viruses command of the main menu. This list can be displayed in two ways: by lines or by columns. By lines is the default choice. To change it, press y after choosing the Setup command.

## **Information on Viruses**

When a virus is found, it is important to get information about it. View information about viruses by choosing Viruses from the main menu. Use the page up and page down keys to move around the list and to select the virus in question. Then press Enter to view the detailed information.

Alternatively, get straight to the detailed information by starting typing the virus name. As soon as the virus name can be uniquely identified, the detailed information is displayed.

## New Virus Search Strings

In the event of a sudden new virus epidemic, the virus search strings can be added to F-Secure Anti-Virus for DOS before its next update is available. The search strings can be entered by choosing New search strings under Viruses.

After selecting New search strings, choose Add a new search string. You will be queried about the name of the virus; whether it infects .com files, .exe files, and boot sectors; and then asked to Enter the hexadecimal search string.

Choose List user-defined search strings to view the names of the viruses whose search strings were added, the names of the objects they infect, and the search string for each virus.

Choosing Delete a search string displays the names of the user-defined viruses. Select the name of the virus you wish to delete. Confirmation is needed prior to deletion.

You can also directly edit the user.def file, since it is a plain ASCII file, for example:

```
CEB New_virus
```

```
000102030405060708
```

## **Exiting from F-Secure Anti-Virus for DOS**

To exit from F-Secure Anti-Virus, press esc repeatedly, until you return to the main menu. Once in the main menu, choose Quit.

If you changed any options settings, either save the new settings by pressing y, or exit without saving them by pressing n.

It is not recommended to save the changes on the original F-Secure Anti-Virus for DOS diskette, as it should be write-protected all the time. Use a copy instead.



## Using F-Secure Anti-Virus for DOS in Command-Line Mode

F-Secure Anti-Virus for DOS is usually run without any parameters when it enters the interactive mode. It is also possible to run F-Secure Anti-Virus in the command-line mode, which makes it easier to tailor F-Secure Anti-Virus to perform desired searches. When F-Secure Anti-Virus is run from a diskette in the command-line mode, it works almost as fast as when run from the hard disk.

F-Secure Anti-Virus for DOS can be started from the command line as follows:

```
FSAV [drive, directory, or file] [parameters]
```

F-Secure Anti-Virus will then enter the command-line mode, unless the /inter parameter was given. The available parameters are listed below.

```
/640      Only scan 640K of memory.
/all      Check all files.
/analyse  Use heuristic analysis instead of search strings.
/append  Used with /report to append to existing report.
/auto     Automatic deletion.
/beeep   Sound an alarm if a virus is found.
/command Force command-line mode.
/delete   Delete all infected files.
/disinf   Disinfect whenever possible.
/ext=    Specify default extensions for files to scan, use period as a separator.
/freeze  Freezes the machine if a virus is found in the memory.
/freeze2 Freezes the machine if a virus is found on the disk.
/guru    Report with more details when using heuristic analysis.
/hard    Scan all DOS partitions on the hard disk.
/help    Display this list.
/inter   Force interactive mode.
/list    List all files checked.
/mono    Use monochrome mode on color displays.
/multi   Scan multiple diskettes.
/net     Scan any network drives found.
/nobreak Do not abort scan if esc is pressed.
/nofloppy Do not test if there is a diskette in drive A:
/nomem   Skip initial memory scan.
/nosub   Do not scan subdirectories.
/nowrap  Do not wrap text in reports.
/[no]boot [Do not] scan boot sectors.
/[no]file [Do not] scan files.
/[no]packed [Do not] scan inside packed files.
/[no]user [Do not] scan for user-defined patterns.
/page    Pause after each page (command-line mode)
/rename  Rename infected files to .vom or .vxe.
/report= Send the output to a file.
/silent  Do not generate output to screen.
/version Return with version number as an errorlevel value.
```

Some examples of useful command lines are:

```
FSAV A: Scan a diskette using the Secure Scan method.
```

```
FSAV A: /multi /auto /disinf
```

```
Scan multiple diskettes with automatic disinfection.
```

```
FSAV c: /list /report=list.txt
```

```
Make a secure scan on drive C: and send a list of scanned files to
List.txt.
```

FSAV /hard /all

Scan all files on all the partitions of the hard disk.

FSAV /hard /nofile

Scan only the memory and boot sectors for viruses.

FSAV D: E: /all

Scan all files on drives D: and E:.

FSAV /net

Scan all network drives.

FSAV I:\PD

Scan a public domain directory on the file server.

FSAV c:\ /nosub

Scan just the root directory of drive C:.

F-Secure Anti-Virus scans in the command-line mode can be aborted by pressing esc unless /nobreak parameter was used.

When F-Secure Anti-Virus is run in the command line mode, it will return an exit code, which can be checked with the DOS errorlevel command.

<b>0</b>	<b>Normal exit; nothing found.</b>
1	Abnormal termination, unrecoverable error (usually a missing or corrupted F-Secure Anti-Virus file.)
2	Self-test failed, program has been modified.
3	A Boot/File virus infection found.
4	Virus search strings found in memory.
5	Program terminated by esc.
6	At least one virus was removed.
7	Out of memory.
8	Suspicious files found, not necessarily a virus.

F-Secure Anti-Virus for DOS can be executed every time the computer is started by adding the necessary command line to the Autoexec.[bat file](#). A batch file FP.BAT is included on the installation diskettes. If this batch file is called from Autoexec.bat, it runs F-Secure Anti-Virus on the start-up and displays the message appropriate to the exit code. This batch file can be easily modified to suit the paths and requirements of the user.

The F-Secure Anti-Virus for DOS package includes the following components:

<b>F-PROT.EXE</b>	<b>The main module of F-Secure Anti-Virus for DOS, with virus scanning and disinfecting features.</b>
VIRSTOP.EXE	The virus stopping program that offers active protection from viruses.
INSTALL.EXE	The F-Secure Anti-Virus for DOS installation program, which also configures VIRSTOP.
F-TEST.COM	A utility program for verifying that VIRSTOP is operating.
SIGN.DEF	A database, containing search strings for viruses. This file is encrypted.
SETUP.F2	Used for storing user preferences.
VERSIO_N.NNZ	Used with FPUUPDATE.BAT to return the version number,

ENGLISH.TX0	N.NNZ, of the package. Used for language support, along with such files as: ITALIANO.TX0, SWEDISH.TX0, VIR-HELP.ENG, VIR- HELP.ITA and others.
F-MACRO.EXE	DOS-based program which scans for macro viruses.
FSMACRO.DEF	Library of search strings for macro viruses, used by F- MACRO.EXE.

## Web Club

The F-Secure Anti-Virus Web Club provides help and assistance to F-Secure Anti-Virus users. To enter, choose the Web Club command from the Help menu. The first time you use this option, enter the path and name of your World Wide Web browser, and your location.

To connect to the Web Club directly from within your web browser, open this location:

- <http://www.DataFellows.com/anti-virus/webclub/>

For advanced support, the F-Secure Anti-Virus Support Center is available on the web:

- <http://www.DataFellows.com/anti-virus/support/>

## Feature Requests

If you would like to see a new feature developed (user interface, compatibility, functionality, etc.), please use the bug report / feature request form on our web server, available for each F-Secure product through the Support Center:

- <http://www.DataFellows.com/anti-virus/support/>

## **Virus Descriptions on the Web**

Data Fellows maintains a comprehensive collection of virus-related information on its web site. To view the Virus Information Database, choose the Virus Descriptions on the Web command from the Help menu.

Alternatively, to connect to the Virus Information Database directly, open this location:

- <http://www.DataFellows.com/vir-info/>

## Electronic Mail Support

If the online services at [www.DataFellows.com](http://www.DataFellows.com) do not cover your question, you are welcome to contact Data Fellows Technical Support by electronic mail. With the purchase of an F-Secure Anti-Virus license, technical support is free.

Please include the following information in your support request:

- The version number of F-Secure Anti-Virus you are using
- The version number of your operating system (DOS, Windows)
- A detailed description of the problem, including any error messages given by F-Secure Anti-Virus, or other landmark details which may help us duplicate the problem

Please contact the F-Secure Anti-Virus reseller from whom you bought your F-Secure Anti-Virus license for basic technical assistance, at:

- Anti-Virus-<yourcountry>@DataFellows.com
- Example: Anti-Virus-@DataFellows.com

If there is no authorized F-Secure Anti-Virus Business Partner in your country, you can request basic technical assistance from:

- Anti-Virus-Support@DataFellows.com

After you have installed F-Secure Anti-Virus, you can find a README file in the F-Secure Anti-Virus program group in the Windows Program Manager. The README file contains the very latest information, which you may find useful.

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## Data Fellows

Data Fellows, with offices in San Jose, California and Helsinki, Finland is one of the world's technologically leading software producers. Recognizing ground-breaking invention in the major business areas of anti-virus, data security and cryptography software products, the Gartner Group has chosen Data Fellows as one of the two most innovative companies in the field of computer security.

The Data Fellows mission is to provide complete integrated security solutions to the corporate world. Policy management of the corporate security infrastructure is accomplished through a Data Fellows framework combining a variety of products from other leading security vendors. Data Fellows envisions a global information space where corporate information is confidentially shared through encryption and diverse access control techniques, and securely stored by the detection and elimination of malicious code which would otherwise change or destroy information.

The Data Fellows customer list includes:

- More than half of the world's 10 largest banks
- Many of the world's largest industrial corporations
- Many of the best-known telecoms (US West, MCI, Finnish Telecom, etc.)
- Many of the world's largest telecom manufacturers (Nokia, L.M. Ericsson, etc.)
- NASA, US Naval Warfare Center, US Air Force
- Lawrence-Livermore National Laboratory, Los Alamos National Laboratory
- Several European governments
- Several European Defense Forces
- US Department of Defense Medical branch
- US Federal Reserve Board
- UK Home Office
- Several major airlines

Data Fellows is the only data security company in the world to have a strong foothold in all areas of IT security:

- Leader in anti-virus technology
- Developer of the Internet de-facto encryption technology SSH
- Innovator in IPSec design and development with technology support for all main platforms
- One of the first VPN vendors, the only one to combine security and cost-effectiveness through strong encryption, cryptographic authentication and data compression

Data Fellows is shipping strong encryption technology globally, working in partnership with many leading data security integrators, and offering a global network of first class technical support, training and distribution centers.

Data Fellows' products include:

- F-Secure Cryptography — the Secure Product Family. F-Secure products utilize the SSH protocol, providing a generic transport-layer encryption mechanism for network connections. The SSH protocol provides both host authentication and user authentication, together with privacy and integrity protection is currently being used at thousands of sites in at least 40 countries. Its users include top universities, research laboratories, many major corporations, and numerous smaller companies and individuals. F-Secure products include client and server products for secure logins and files transfers, Virtual Private Network products and secure commerce products that will solve the security problems

inherent in the current web server and client products.

- F-Secure Anti-Virus, based on the F-PROT Professional and AVP technologies, has won several reviews and tests conducted by leading industry publications, including PC Magazine (Editor's Choice), Software Digest, PC World, and Virus Bulletin. It is one of the best established anti-virus software products world-wide experiencing a steady annual sales growth of over 100%. F-Secure Anti-Virus versions are available for Windows 95, Windows NT, Windows 3.1, Macintosh, OS/2, DOS, and Novell NetWare.

Privately held, Data Fellows has distributors in more than 50 countries. Data Fellows' anti-virus and cryptography products have been localized in more than 30 languages, and they are exhibited on a regular basis in international trade expositions such as COMDEX and CeBIT.



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Technical support: <http://www.DataFellows.com/anti-virus/support/>

Your local contact: Anti-Virus-<country>@DataFellows.com

Data Fellows direct: Anti-Virus-Support@DataFellows.com

# License Agreement

## DATA FELLOWS LICENSE TERMS

Data Fellows License Terms cover all Data Fellows products (software). Data Fellows Software is licensed, not sold, by Data Fellows Ltd. (Data Fellows) to you for use only under the following terms. Data Fellows reserves any rights not expressly granted to you. You own the media on which the software is submitted, but Data Fellows retains ownership of all copies of the software itself and its updates. The software is protected by copyright laws and international copyright treaties, as well as other intellectual property treaties.

You will receive a prespecified number of base packages (normally one) which include the ordered software with the proper documentation. In addition to this, you will receive a prespecified number of additional manuals, and one short user's guide of which you may make copies for your use.

### This License Allows You

to:

Install and use the Data Fellows software only on the number of computers specified below.

THE SIZE OF THIS LICENSE IS \_\_\_\_\_

### This License Further Entitles You

to:

Extend the size of this license by purchasing additional licenses. The total number of computers using the licensed software is limited by the arithmetic sum of the sizes of the individual licenses you have purchased.

The software is considered to be in use on a computer when it is loaded into the temporary memory (i.e. RAM) or installed into the permanent memory (e.g. hard drive) of that computer.

Create as many copies of the Setup program as you need for installation and backup purposes.

Install freely the software on the home computers of those employees that belong to the users of this software at the office (only valid for Anti-Virus products). This installation may be done either from delivered media or from copies made of them according to the license conditions.

### Update policy:

(*Anti-virus products*): After purchase you are provided with updates and technical support for a specified period of time. After this, the software can be updated for an annual fee. The update interval is 1 to 3 months. A technical bulletin of the current virus situation will be annexed to each update. The updates will be delivered on a number of installation disks per base package to the person registered as base package users. You will receive updates and technical support from the provider where you have purchased and registered. On request, the updates and the technical support can be provided to an additional number of locations against a separate fee.

**Note:** In case of a worldwide license the update policy is the one agreed between the provider and the user.

(*Cryptographic products*): After purchase you are provided with technical support for a prespecified period of time. After this, update and support service can be provided against an annual fee.

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# Glossary of Terms

access control

AUTOEXEC.BAT

background task

BAT file

BIOS

bit

Boot

boot sector

byte

checksum

CMOS

cold boot

COM file

CONFIG.SYS

CounterSign

CPU

CRC

DOS

EXE file

HPFS

kilobyte

LAN

MBR

Megabyte

Modem

multipartite virus

mutating virus

NFS

NTFS

on-access scanner

On-demand scanner

RAM

Real-time scanner

reset

ROM

SMS

SNMP

stealth virus

time bomb

timestamp

trojan horse

virus

warm boot

worm

## **access control**

The procedure which grants or denies users or processes to use a system. Usually this involves authentication of the user, verifying of access rights, monitoring and logging.

## **AUTOEXEC.BAT**

The command file automatically executed during system startup in DOS.

## **background task**

Task executed by the system but not shown in the foreground window (running but not visible).



## **BAT file**

File containing DOS commands used for automating repetitive tasks.

## **BIOS**

Basic Input/Output System. The part of the operating system that takes care of the most hardware-specific tasks. This part is stored on ROM on most PCs.

**bit**

The smallest unit of memory size, sets of which make up bytes, arranged in a sequential pattern to express text, numbers, or other detailed information, recognizable by the computer's processing system.

## **Boot**

To restart the computer.

## **boot sector**

Boot record. An area located on the first track of diskettes and logical disks. Boot sector information enables the computer to read an operating system like, for example, MS-DOS.

## **byte**

A small unit of memory size, enough to store one alphabetical or numeric character. Each byte is composed of “bits,” binary units collected in sets (e.g. 00101101) to store the smallest pieces of information.

## **checksum**

Identifying number calculated from file characteristics, such that if the file changes even the smallest amount, this identity is changed.

## **CMOS**

Complementary Metal Oxide Semiconductor. The battery-powered memory of PC-computers. The size of this memory is typically within the 32-50 byte range. CMOS contains information about external details such as disks, date and peripherals. It is not emptied when the computer is turned off, provided the battery still has power.



## **cold boot**

To restart the computer by cycling the power.

## **COM file**

DOS executable program with a simple structure. The maximum size is 64 kilobytes.

## **CONFIG.SYS**

The configuration file automatically executed during system startup in DOS.

## **CounterSign**

The revolutionary Data Fellows framework integrating a variety of scanning engines to offer protection at a number of levels, for all possible compressions and encryptions, implementing virtually 100% virus protection at the whole-enterprise level under a single interface.

## **CPU**

Central Processing Unit, the “brain” of the computer, usually housed in a “box”, the rectangular unit which may be separate from the monitor.

## **CRC**

Cyclic Redundancy Check. One of the most popular checksum methods. CRC uses a 32-bit signature calculated from the contents of the file.

## **DOS**

Disk Operating System, the most basic system type originally used on all Personal Computers.

## **EXE file**

An “executable” file, or program file; the type of file that “runs”, as contrasted with a document or data file.



## **HPFS**

High Performance File System. The file system used by OS/2.

## **kilobyte**

Over one thousand (1 024) bytes of information.

## **LAN**

Local Area Network, a small network within a room, building or group, which may or may not be connected to the larger worldwide Internet.

## **MBR**

Master Boot Record. An area located on the zero track of physical hard disks. It contains the main boot program and the partition table. Main boot record is independent of operating systems and is always executed first after the computer has performed the Power-On-Self-Test (POST). The size of a main boot record is 512 bytes. The main boot program translates the partition table, which contains information on how the physical disk is divided (partitioned) into logical entities. After this, the main boot program executes the boot sector of the active partition.

## **Megabyte**

Over one thousand (1 024) kilobytes, or over one million (1 024 <sup>2</sup>) bytes, a moderately large unit measure of computer memory.

## **Modem**

A telephonic piece of hardware used to connect a computer or Local Area Network to a larger network such as the Internet.

## **multipartite virus**

A virus composed of several parts. Every part of a multipartite virus needs to be cleaned away, to give assurance of non-infection.

## **mutating virus**

A virus which changes (mutates) as it progresses through the host files. Physiologically cancer is a mutating virus, which alters tissues and changes itself as it proceeds with creating damage. Similarly mutating viruses in the software world can change themselves as well as the host files, making disinfection a greater challenge.



## **NFS**

Network File System used by many Unix variants.

# **NTFS**

NT File System used by Windows NT.

## **on-access scanner**

Real-time scanner, a background process that provides you with a constant guard against viruses.

## **On-demand scanner**

A virus scanner you start manually at will.

## **RAM**

Random Access Memory, the dynamic memory used by the processor at the time of processing.

## **Real-time scanner**

A scanner that operates as a background process, allowing the user to continue working at normal speed, with no perceptible slowing.

## **reset**

To warm boot the system.

## **ROM**

Read Only Memory, static memory storage holding information for the processor to use, not to edit or delete.



## **SMS**

Microsoft Systems Management Server. An administration tool used for installing and updating software components on Windows platforms.

## **SNMP**

Simple Network Management Protocol. A standard protocol which enables centralized management of hardware and software from a number of vendors in a heterogeneous network.

## **stealth virus**

A virus which hides itself from view by intercepting disk access requests. When an anti-virus program tries to read files or boot sectors to find the virus, it feeds the reading program a clean image of the object being read.

## **time bomb**

Destructive action triggered at some specific date or time.

## **timestamp**

The creation or last modification time recorded for an object.

## **trojan horse**

Program that purposefully does something the user that starts it does not expect.

## **virus**

Parasitic program capable of attaching itself to files or disks and replicating itself repeatedly.

## **warm boot**

To restart the computer without cycling the power.



**worm**

Parasitic program capable of replication by inserting copies of itself into machines in a network.

