

SWEEP for Windows NT Loader Service

Loader Service

User Manual

December 1995

This manual documents the SWEEP for Windows NT Loader Service. For information on SWEEP for Windows NT please refer to the SWEEP for Windows NT user manual.

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About NTSweepLoader

This chapter describes the basic operation of the SWEEP for Windows NT Loader Service (NTSweepLoader).

What is a Windows NT service?

A Windows NT service is a program that executes independently of users and can survive users logging on and off the system.

A service can also be configured to start as soon as the system boots-up. This is in contrast to the 'Startup' group of Program Manager which only executes programs when a user logs on.

What is SWEEP for Windows NT Loader Service?

SWEEP for Windows NT is currently supplied as a console application. This means that it is normally executed from the Windows NT command prompt, produces only textual output, and will only run while a user is logged on to the computer system.

SWEEP for Windows NT Service Loader loads SWEEP for Windows NT and executes it in a service context rather than as a console application. With NTSweepLoader, SWEEP can be run on a system even if there are no users logged on to it.

Finding a virus

If SWEEP for Windows NT Service Loader loads SWEEP for Windows NT, and SWEEP subsequently discovers a virus - do not panic! See the SWEEP for Windows NT user manual, or contact Sophos' technical support, for more information on dealing with a virus.

How to use this manual

This manual assumes that the user has a reasonable knowledge of operating and configuring Windows NT and Windows NT services. It is organised into the following chapters:

- 'Installing NTSweepLoader', describes how to install and remove NTSweepLoader.
- 'Using NTSweepLoader', describes the NTSweepLoader modes, how to change the settings for these modes, how to start SWEEP as a service, and how to stop the NTSweepLoader service.
- 'Configuring NTSweepLoader', details the options available for configuring NTSweepLoader.

In addition, the 'Glossary' contains explanations of some technical terms used in this guide.

Installing NTSweepLoader

This chapter describes how to install NTSweepLoader, register it as a service, and remove it from the service registry.

System requirements

To use SWEEP for Windows NT Loader Service you need:

- Microsoft Windows NT.
- SWEEP for Windows NT.

The instructions for installing SWEEP for Windows NT can be found in the SWEEP for Windows NT user manual.

Installing NTSweepLoader

To install NTSweepLoader, the NTSWPLDR.EXE file has to be copied to the SWEEP for Windows NT directory:

1. Start Windows NT.
2. Double-click the *Command Prompt* icon in *Program Manager* to open a command prompt window.
3. Insert the SWEEP for Windows NT Loader Service disk into the floppy disk drive.
4. At the command prompt, enter

```
A:\INSTALL A:\ C:\SWEEP
```

assuming that the NTSweepLoader disk is in drive A: and that SWEEP for Windows NT has been installed in the C:\SWEEP directory.

Note: NTSweepLoader must be installed on a local disk. This is because the Service Control Manager might not be able to access the mapped directory path of a networked drive.

Registering the service

Before a service can be executed under Windows NT, it must be registered with the Service Control Manager. You will normally have to have *administrator* privileges to do this.

It is possible to register services manually (see your Windows NT documentation for more information), but NTSweepLoader can automate the process. From the command prompt window, ensure you are in the SWEEP for Window NT directory, and enter:

```
NTSWPLDR INSTALL
```

You should see a message similar to the following:

```
C:\sweep>ntswpldr install
NTSWPLDR Sweep for Windows NT Loader Service
Version 1.10
Copyright (c) 1995 Sophos Plc, Oxford
```

```
Configuring NTSweepLoader service on local machine:
```

```
Service created successfully.
Default settings:
...
```

If you do not see the 'Service created successfully' message, Windows NT should indicate why it was unable to successfully register the service.

Removing the service

Should you wish to remove the NTSweepLoader service from the service registry, enter in the command prompt window:

NTSWPLDR REMOVE

The NTSweepLoader program will remain in the SWEEP for Windows NT directory, and as long as it remains there, it can be registered as a service again at a later date.

Using NTSweepLoader

This chapter describes the different modes in which NTSweepLoader can start SWEEP for Windows NT as a service, how to see the settings of these modes, how to change these settings, how to start SWEEP as a service, and how to stop the NTSweepLoader service.

NTSweepLoader usage

SWEEP for Windows NT Loader Service commands are entered at the command prompt. Enter

```
NTSWPLDR -?
```

to display a list of valid options and qualifiers:

```
C:\sweep>ntswpldr -?  
NTSWPLDR Sweep for Windows NT Loader Service  
Version 1.10  
Copyright (c) 1995 Sophos Plc, Oxford
```

```
Usage: NTSWPLDR [\\machine] [show] [install|remove] <options> <modifiers>
```

Where:

install	installs the Sweep for Windows NT loader service
remove	removes the Sweep for Windows NT loader service
show	displays current settings

Options:

default	sets default options *
startup	set options for the startup sweep
server	set options for the InterCheck server
background	set options for the background scanner

Modifiers:

-a=Y N	activates or deactivates this mode **
-c=Y N	attempt to open console for this mode of NTSWEEP **
-f=<...>	set location of NTSWEEP.EXE

-l=0|1|2|3|4 sets the level of error logging +
-o=<...> set command-line parameters for this instance of NTSWEEP
-p=L|N|H|R|D sets Low,Normal,High,Realtime or Default priority

- * Should not be combined with 'startup', 'server' or 'background'
- ** Has no effect when used with 'default'
- + Only works when used with 'default'

NTSweepLoader modes

NTSweepLoader can load SWEEP for Windows NT in three different modes. All three modes of operation can be configured and executed independently. You can have up to three modes in operation simultaneously.

Startup mode

If the Startup mode is active, then SWEEP will run when the service starts. If the service is set to start as soon as the system is booted, then SWEEP for Windows NT will start to check the computer for viruses immediately after booting.

Server mode

The Server mode runs SWEEP for Windows NT continuously as an InterCheck server. It will then be able to service requests from DOS, Windows or Macintosh based clients to sweep individual files for viruses. See the SWEEP for Windows NT user manual for more information on InterCheck servers.

Background mode

The Background mode runs SWEEP for Windows NT continuously in the background. As soon as one sweep is completed, a new one will start.

Displaying the current NTSweepLoader settings

Enter

NTSWPLDR SHOW

to display a list of the current settings. For example:

```
C:\sweep>ntswpldr show
NTSWPLDR Sweep for Windows NT Loader Service
Version 1.10
Copyright (c) 1995 Sophos Plc, Oxford

Configuring NTSweepLoader service on local machine:

Default settings:
  Options: Not Set
  Priority: Not Set
  Location: C:\sweep\NTSweep.EXE
  Log Level: 1

No configuration for Startup mode.

Configuration for Server mode:
  Active: Yes
  Console: Not Set
  Options: Not Set
  Priority: Not Set
  Location: C:\sweep\NTSweep.EXE

No configuration for Background mode.
```

The Default settings in the example above show that the default location for SWEEP for Windows NT is C:\SWEEP\NTSWEEP.EXE, and the default log level is 1 (see the 'Configuring NTSweepLoader' chapter for more information on configuration settings). These default settings are inherited by all three modes. If any mode has specific options set then these will over-ride the defaults.

The message 'No configuration for Startup mode' indicates that no configuration settings specific to the Startup mode have been set, and that the startup mode is not active.

By default, the Server mode is active. This means that as soon as the NTSweepLoader service is started, SWEEP for Windows NT will be available as an InterCheck server. See the SWEEP for Windows NT user manual for more information on InterCheck servers.

Changing the current NTSweepLoader settings

To configure the different modes of NTSweepLoader, specify one of the following:

```
NTSWPLDR DEFAULT
NTSWPLDR STARTUP
NTSWPLDR BACKGROUND
NTSWPLDR SERVER
```

and add one or more command-line qualifiers. For example, entering

```
NTSWPLDR STARTUP -A=Y -L=0
```

will activate the Startup mode with no error logging. For further details of these command-line qualifiers, see the 'Command-line qualifiers' section of the 'Configuring NTSweepLoader' chapter.

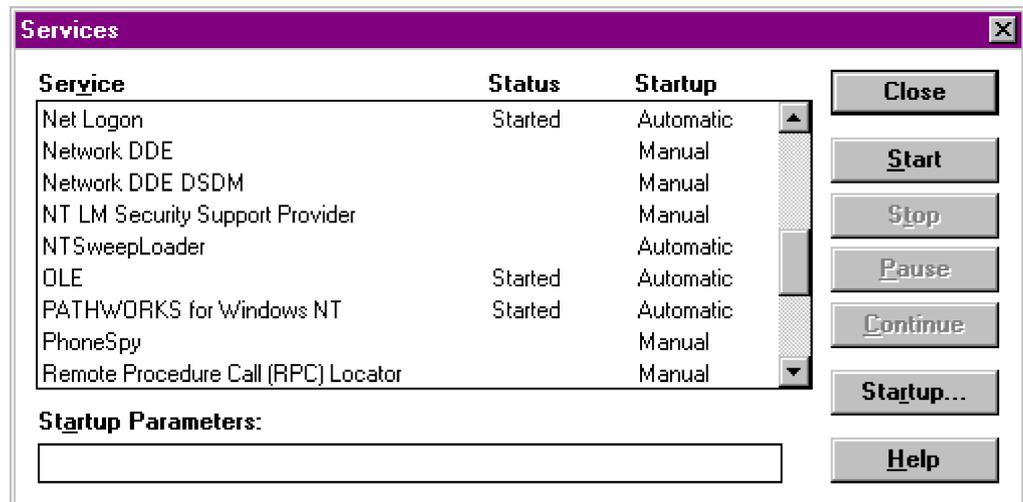
Starting NTSweepLoader service

To start the NTSweepLoader service, enter the following command:

```
NET START NTSWEEPLOADER
```

'NET START' is the Windows NT command to start a service, which is in this case the NTSweepLoader service.

Alternatively, click the *Services* icon in the Windows NT *Control Panel* to display the Services dialog:



highlight the 'NTSweepLoader' service, and click *Start*.

Note: Even if NTSweepLoader has been configured to start a sweep as soon as the service is started, no new windows will appear on the screen. This is because, by default, services do not have permission to use the desktop. See the 'Displaying output' section of the 'Configuring NTSweepLoader' chapter for information on how to change this.

Stopping NTSweepLoader service

To stop an active NTSweepLoader service from the command line, enter

```
NET STOP NTSWEEPLOADER
```

Alternatively, highlight the NTSweepLoader service on the Service dialog, then click *Stop*.

Note: If the NTSweepLoader service is stopped when a Background or Startup sweep is in progress, that sweep will continue until it is complete.

Configuring NTSweepLoader

This chapter details SWEEP for Windows NT Loader Service's command line-qualifiers, describes how to configure NTSweepLoader to check networked drives, and tells you how to display the NTSweepLoader output on the screen.

Command-line qualifiers

-? Help

NTSweepLoader will display all command line qualifiers along with a short description of their function. For example:

```
NTSWPLDR -?
```

-A=<Y|N> Activate or deactivate mode

The -A qualifier sets whether a particular mode is active or not. For example, to activate the Server mode, enter the command:

```
NTSWPLDR SERVER -A=Y
```

and to deactivate the Background mode:

```
NTSWPLDR BACKGROUND -A=N
```

This qualifier cannot be used with the Default mode.

-C=<Y|N> Create console window

The -C qualifier determines whether or not a visible console window will be created for the selected mode. By default, the actions of the SWEEP service are not visible on screen. To allow all modes to open a console window, enter:

```
NTSWPLDR DEFAULT -C=Y
```

and to disallow the Startup mode from opening a console window:

```
NTSWPLDR STARTUP -C=N
```

It is not always possible for a program running as a service to display a console window (see the 'Displaying output' section, or your Windows NT documentation, for more information).

-F=<filename> Location of SWEEP

This sets the location of the NTSWEEP.EXE program file. You will normally only set the default location:

```
NTSWPLDR DEFAULT -F=C:\SWEEP\NTSWEEP.EXE
```

-L=<0|1|2|3|4> Level of error logging

This sets the level of information NTSweepLoader will write to the Windows NT Event Log. Level 0 logs no messages at all, level 1 logs only the most critical messages, while level 4 records all the messages NTSweepLoader generates.

This qualifier only applies to the Default settings. For example, to set the error reporting level to 3, enter the following command

```
NTSWPLDR DEFAULT -L=3
```

-O="<parameters>" Options for SWEEP

This qualifier allows you to set the command-line qualifiers that each mode passes to SWEEP. By default, the Background and Startup modes operate with the -NK qualifier so that SWEEP will not wait for keys to be pressed. The Server mode always starts with the -ICS qualifier.

To make the Startup mode produce a log file:

```
NTSWPLDR STARTUP -O=" -P=C:\SWEEP\LOG.TXT"
```

To make all modes sweep all files and also sweep inside compressed files:

```
NTSWPLDR DEFAULT -O=" -ALL -SC"
```

See your SWEEP for Windows NT manual for full details of the SWEEP command-line qualifiers.

Note: If you set options for a particular mode, these will replace the defaults.

-P=<L|N|H|R|D> Priority of SWEEP mode

Use the -P qualifier to set the running priority for the different modes. The priority levels are Low, Normal, High, Real-time and Default, where the Real-time level has the highest priority and the Default level inherits the level from the Default mode.

For example, to set the Server mode to run at high priority, enter the command:

```
NTSWPLDR SERVER -P=H
```

Configuring NTSweepLoader remotely

It is possible to configure a NTSweepLoader service running on one machine remotely from another machine. Use the optional [\\machine] parameter to do this. For example,

NTSWPLDR \\MAIN STARTUP -A=Y

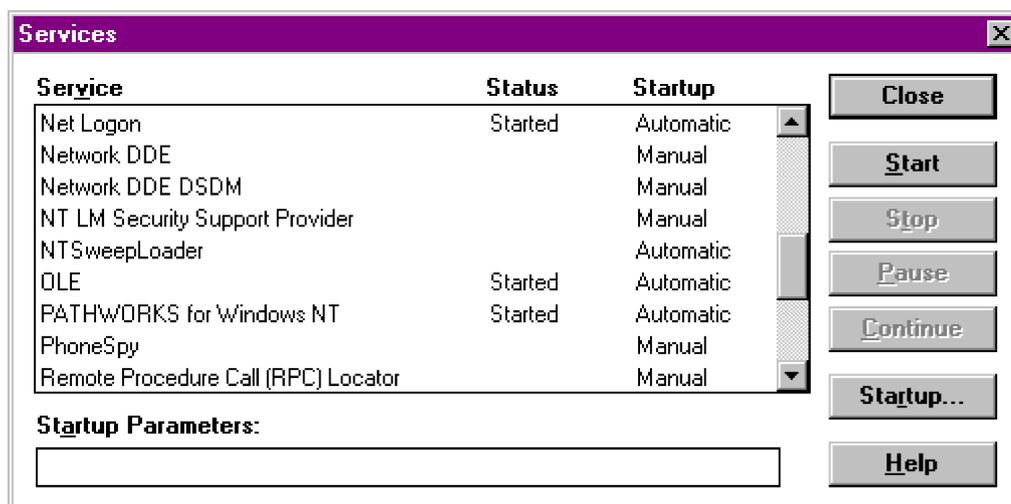
will activate the Startup mode of NTSweepLoader running on the server called 'MAIN'.

Sweeping network drives

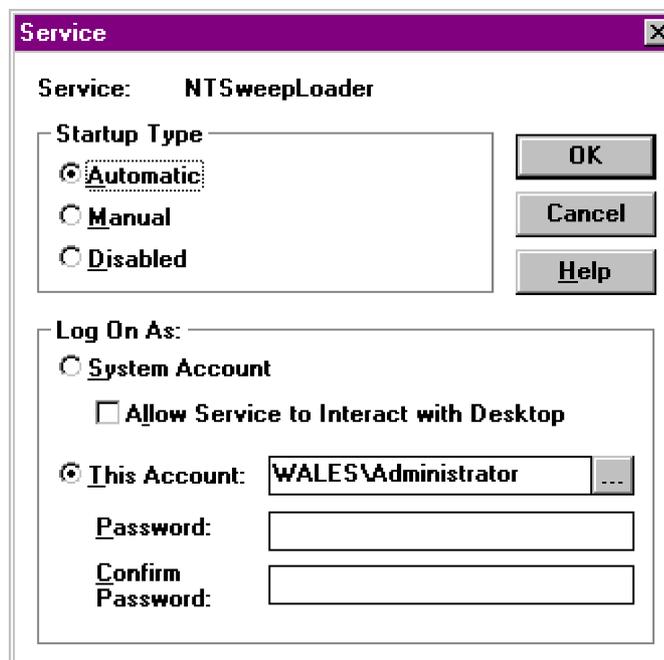
Access to all objects on a Windows NT system is controlled, and all processes must have an identity in order to execute. Without an identity it would be impossible to authorise a process' use of files, memory or any other part of the Windows NT system. Under normal use, a process inherits the identity of its parent, so any process started interactively by a logged-on user will have the same identity as that user.

Services operate independently of any logins. They must therefore be given their own process identity. By default, every new service runs with the SYSTEM identity, a built-in security account for system processes. The SYSTEM account does not have the right to access shares on remote computers. Therefore, if you wish to use NTSweepLoader to execute a sweep of a network drive, you will have to create an account with *administrator* or *backup operator* privileges for the service to log in as.

To assign the account for SWEEP for Windows NT Loader Service, click *Services* in the Windows NT Control Panel. This will display the Services dialog:



Highlight the NTSweepLoader service, then click the *Startup* button to display the Startup dialog. You will be able to enter the account name and password for the service to use next time it starts. For example:



To use the account immediately, you must stop and restart the service.

To sweep a network drive, include the full UNC name (\\Servername\Sharename) of the area you want to sweep either in the command-line options of the appropriate mode, or in a SWEEP.ARE file. For more information on SWEEP.ARE files, see the SWEEP for Windows NT user manual.

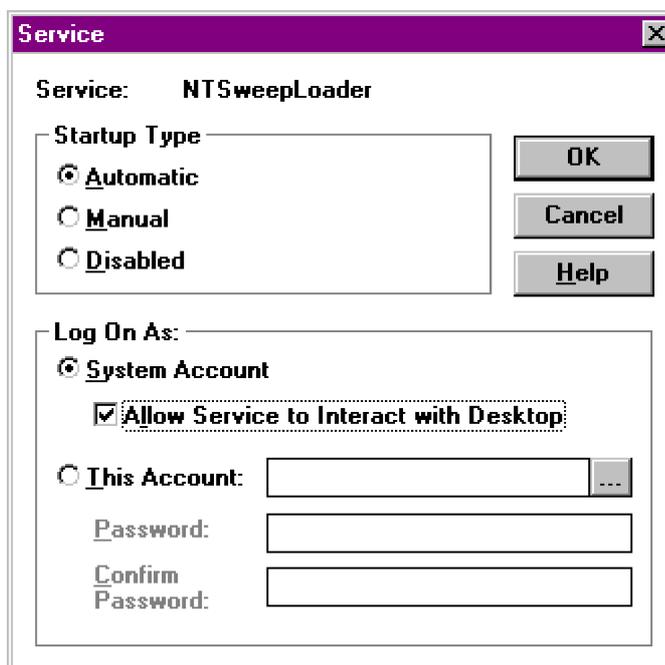
Note: If you configure NTSweepLoader to log in as anything other than SYSTEM, it will no longer be able to display its output on the screen.

Using a networked copy of NTSWEEP.EXE

If you want to configure NTSweepLoader to load a copy of NTSWEEP.EXE held on another computer, you will have to change the service login account as described in the 'Sweeping network drives' section.

Displaying output

Under normal circumstances a service is not able to display output on the screen. To allow the SWEEP for Windows NT Loader Service to display its output on the screen, you must set the 'Allow Service to Interact with Desktop' checkbox on the Startup dialog:



This is only possible if the service is logging on as SYSTEM. If you have changed the login account in the way described in the 'Sweeping network drives' section above, you will not be able to configure the service to access the screen.

To display output on the screen, you must also set the display option for the relevant mode (see the '-C=<Y|N> Create console window' section above).

Scheduling SWEEP runs

The NTSweepLoader service does not provide facilities for scheduling SWEEP runs. However, scheduling can be performed using the Windows NT AT command. See the SWEEP for Windows NT user manual, or your Windows NT documentation, for more information.

Glossary

Booting-up:	A process carried out when a computer is first switched on or reset, where the operating system software is loaded from disk.
Bootstrapping:	The same as Booting-up.
File Server:	A central data repository for a computer network, which may provide other centralised services such as shared printer control.
Floppy Disk:	Interchangeable magnetic disk used to store computer data. Usual formats are 3.5" and 5.25" disks.
Hard Disk:	A hermetically sealed magnetic disk, generally fixed within a computer, which is used to store data.
Hardware:	Any component of a computer system that has physical form. It is a term used to draw a distinction between the computer itself (hardware), and the programs which are executed on the computer (software).
InterCheck:	Proprietary Sophos technology which enables a server-based virus scanner to be used for scanning workstations connected to the network.
LAN:	Local Area Network: a data communications network covering a limited area (up to several kilometres in radius) with moderate to high data transmission speeds.
Mapped Directory Path:	A network drive known by its locally mapped name, e.g. the UNC directory path \\main\users\ might be mapped to F:\ on one particular computer on the network.
Operating System:	The computer program which performs basic housekeeping functions such as maintaining lists of files, running programs etc. PC operating systems include MS-DOS and OS/2, while minicomputer and mainframe operating systems include Unix, VMS and MVS.

PC:	Personal Computer: a desktop or portable single-user computer usually comprising a CPU, memory, screen, keyboard, and disk drive(s). PC has become synonymous with IBM compatible computer, even though this definition is not strictly correct.
Program:	A precise sequence of instructions that specifies what action a computer should perform. 'Software' is often used to describe a computer program.
Server:	See file server and security server.
Software:	See program.
UNC:	Universal Naming Convention: a standard system for naming network drives, e.g. the UNC directory \\main\users\ would refer to the users directory on the server called main.
Virus:	Sometimes explicitly referred to as a computer virus, a program which makes copies of itself in such a way as to 'infect' parts of the operating system and/or application programs. See boot-sector virus and parasitic virus.
WAN:	Wide Area Network, a set of computers that communicate with each other over long distances.
Workstation:	An ill-defined term used to describe a powerful single user, high performance, minicomputer or microcomputer, which is used by individuals for tasks involving intensive processing, perhaps CAD or simulation.

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