



Windows NT Support

This appendix lists the features and options that Enlighten**DSM** either does not support on the Windows NT platform, or that are implemented differently from the Unix platform. The features and options listed in this appendix are organized by menu, in the same way that the rest of this manual and the program GUI is organized:

- Configure
- Security
- User
- Disk
- Archive
- Printer
- System
- Network
- Events

In addition, there are some global differences between NT systems and Unix systems that affect the entire product, not just a single feature or module that are explained below.



Because changes have been made to NT agents, it is necessary to use the latest release of **EnlightenDSM** on Unix workstations to administer NT hosts. Some operations appear to be functional from older software, but are, in fact, not supported.

All other features not listed in this appendix work as documented in the rest of this manual. Refer to the appropriate chapter for information.

Unix and Windows NT File Pathnames

Unix and Windows NT operating systems have different and incompatible methods of specifying pathnames. EnlightenDSM supports only Unix pathnames. You can specify NT pathnames in a Unix style by typing two forward slashes (//) before the drive designations and typing forward slashes throughout the rest of the pathname instead of back slashes. For example,

Windows Pathname Unix-compatible Pathname

```
c:\phonenet\spool      //c/phonenet/spool  
                         \phonenet\spool/phonenet/spool  
d: \\d/
```

Use this Unix-compatible pathname anywhere in the GUI that requires a pathname. The pathname is automatically converted as needed by NT agents. Pathnames from agents (for example, in disk snapshots) are displayed in Unix format.

The only exception to entering Unix-compatible pathnames occurs in the user administration Home Directory text field. In this field, enter a Unix directory and a Windows directory name, separated by a vertical bar (|). You can enter Unix or Windows pathnames. The target machine will use the directory filename formatted in the same style as its operating system.

NT filenames, user names, and group names may contain spaces; however, you have to add double quotes around the name (for example, “//c/my files”). The program will automatically display filenames, user names, or group names that contain spaces with double quotation marks.

NT pathnames are case-insensitive, which can lead to unexpected results in some operations, like compare disk snapshots.

File Ownership

Unix and Windows NT operating systems use different and incompatible means of managing file ownership. NT systems uses Access Control Lists (ACL) that determine what an individual user can do with particular files. Two users with complete ACL privileges for a particular file each “own” the file, since there is no information attached to the file giving one individual ultimate ownership. Unix systems mandate that every file has a single owner, though others may have access privileges.

Some of the file scanning operations, like Snapshot, work differently on NT systems. Since there is no single owner, each file will appear to be owned by User 0 and Group 0.

Also, you cannot determine if an NT file has been renamed because they do not have inode numbers which provide information about the file (except the name) and “handles” to the Unix filesystem that disk snapshots store and use.

Directory/ File Access Times

Directory access times are not available in NT disk snapshots because to traverse a snapshot on NT, updates the directory access times in the NTFS partitions. Disk snapshots on NT were changed to store the last modification time instead of the last access time, which means that you cannot determine if a disk has been scanned, but just modified since the last snapshot. The last access times of NT files work the same as Unix files, as long as you are using NTFS partition. Archaic filesystems like FAT do not track access times, but only modification times for both files and directories.

File Permissions

Unix files have three levels of permissions that can be set independently: read, write, and execute. As mentioned previously in the section, “File Ownership,” NT uses the ACL method and does not modify the ACL. NT provides a programmatic equivalent of the Unix `chmod` command, but is not a complete mapping. EnlightenDSM can only modify the owner write permission, and not change the execute or read settings.

File System Limitations

Windows NT supports several filesystem types, including NTFS which was developed specifically for the NT operating system.

Most Microsoft filesystems that run on NT are case-insensitive. Enlighten**DSM** cannot make provisions for filesystems that cannot create Unix-like file names. (See the beginning of this appendix for information about how to convert NT filenames to Unix file names.) Enlighten**DSM** depend on long filenames for many internal operations. The DSM directory tree must be installed on an NTFS partition. The program can see and administer non-NTFS partitions, but cannot install the program on to a less capable filesystem.

Configure Menu

The Session Preferences features are not supported. All other Configure menu features are supported.

Security Menu

EnlightenDSM for NT currently does not support any Security menu features.

User Menu

EnlightenDSM for NT supports all of the User menu features with the following exceptions:

User and Group ID's

NT does not use numeric IDs to uniquely identify users and groups. This may cause unexpected results for some operations because EnlightenDSM maps between names and numbers internally. To alleviate this problem, the program stores the provided UID number along with other information when creating an NT account. The “fake” ID is reported when the account is queried. For NT accounts not created with EnlightenDSM, a UID is created on the fly, creating a large number. This number serves as a place holder for missing information.

A similar process is used for Group ID's, but these GID numbers are not usually visible.

Configure options

- The Span, Mail Alias, Mail Lists fields are not supported.
- The User ID and Expires options work in the Create New User Account menu.
- The Multi-user Add button is not functional because of Group Id issues.
- The Push NIS Maps option is not supported.

Query options

- The GID Between, Shell, Password None fields are not supported.
- The UID Between field is functional for accounts created by the GUI, and for UIDs 0 and 1 (that is, administrator and guest IDs).

Groups options

- The Group ID field is not supported.
- The NIS button is not supported.

Login Status Command

Login Status is not supported

Activity Monitor Commands

The Activity Monitor activates the following:

- Who Is Logged In
- Process Status
- CPU Summary

Who Is Logged In

Logged in users are defined differently by NT than Unix systems. NT reports remote mounts of a local filesystem as a user session and differentiates between local interactive users and remote users.

EnlightenDSM makes a determination of when to report remote users, or not. The Status Map/Host Overview counts remote users, but the logout user screen only reports interactive users. If EnlightenDSM reports users on an NT machine, but it appears to be idle, then it may be providing file services to remote users.

- The Write button is not supported.
- The Message button is not supported.

Logging Out Users

EnlightenDSM can logout interactive users from an NT machine, but it does not provide any warning. Use this option carefully as it may cause lost data. You may want to reboot the machine instead as it provides a countdown warning.

Process Status

- The Hangup, Suspend, and Continue buttons are not supported.
- The Priority button is supported.
 - High priority is -19 to -10
 - Normal priority is -9 to 0
 - Idle priority is 1 to 19

Disk Menu

Usage by Filesystem options

- The Processes button is not supported.
- Inode Number is not supported.
- GroupSummary is not supported.
- chmod command:
 - File's owner execute command is not supported.
 - File's Group is not supported.
 - Other Users is not supported.
 - Special bits is not supported.
- chgrp, chown command not supported by the Windows NT operating system.
- Edit and View commands are not supported by Windows NT.
- The Processes command is not supported.

File Search options

File Search Query

- # of Links Between field is not supported.
- Groupnames are not supported.
- File types options are not supported:
 - FIFO
 - Set UID hit
 - Socket
 - Block Special
 - Set GID bit

- Symbolic link
- Char special
- Sticky bit

Processes by Filesystem options

This feature is not currently supported, though may be in future releases.

Compare Snapshots

- Summary of renamed files not supported.
- Summary of new owners and new group owners.

Partition Differences Query

- Owner and Group names not supported.
- User ownership and group ownership not supported.

NFS options

The NFS command features are not supported. NFS is not provided for NT by Microsoft, so there is no standardized interface for administering it.

Archive Menu

Configure Devices options

The tape operation of retention and erase are not supported.

Printer Menu

You can manage print queues (kill jobs, turn the printer on and off, etc.); however, the Move command and Custom Driver options are not supported. Creating an NT printer client service and network printer server are not supported.

System Menu

TTY Configure options

None of the TTY Configuration options are supported, as NT does not support controlling TTY's. All NT processes will report the TTY as N/A. Also note that TTY Configure is only available on the host running the GUI.

Shutdown/Reboot options

Countdown, Banner mode, Reconfigure, and Single-use mode shutdown options are not supported on NT.

Cron Management options

Crontab management is not supported. NT provides a less sophisticated scheduled execution facility that is compatible with the EnlightenDSM interface. Future releases may provide an NT version of cron.

Mail Aliases

Mail aliases features are not supported. NT does not use the Internet/sendmail model of e-mail distribution, rather it uses the Mail Application Programming Interface (MAPI) which uses the Address Books model. Future versions of EnlightenDSM may support MAPI.

Network Menu

Local vs. Domain Accounts

EnlightenDSM does not recognize domains on NT. NT domains are not the same as Domain Name Service (DNS) domains. All user account administration by EnlightenDSM is performed on local accounts. To make changes to NT domain accounts, you have to change the account domain controller. The account list of a NT domain is the account list of the domain controller. Because the program does not recognize NT domains, it is not possible to query a host to determine if it is a domain controller, or to find out the controller of a given NT machine.

DNS Files

The Domain Name Servers (DNS) configuration screen provides a default pathname of /etc/named as a location for DNS files. This is correct for Unix machines, but when you configure an NT machine as a DNS server, the correct path is //c/winnt/system32/dns. Because the EnlightenDSM GUI is unaware of the type of remote machine it will be talking to, it cannot provide a different default path for NT targets.

Host Entries

Host Entries is fully supported only for DNS.

Naming Services Overrides options

None of the Naming Services Overrides options are supported.

NIS and NIS+ options

NIS and NIS+ is not a concept supported by Windows NT.

Modify Host Configuration option

Modification of the network configuration is not supported. Microsoft does not provide a programmatic method for changing this information. The Network-->Host Configuration-->Modify command appears to work by displaying the current information, but the modification is rejected by the target machine.

Events menu

Events Monitoring

Events requires that the Microsoft SNMP package (included as a standard part of the NT Workstation and Server distribution) to be installed. If this package is not loaded, all network related events will report as zero. The SNMP service daemon which is provided in the Microsoft SNMP package should **not** be enabled. **EnlightenDSM** provides its own SNMP agents, AgentENL and Agent Mon, which provide the actual SNMP service. Since the **EnlightenDSM** and Microsoft SNMP agents use the same SNMP network port, only one can run at a time. **EnlightenDSM** provides the same basic SNMP functionality as the Microsoft service, as well as enhanced DSM SNMP services.

Enlighten/DSM Events

The list of built-in events is quite different for NT and Unix. A subset of the very large performance statistics on the NT has been selected. The majority of these events are TCP/IP related; the other are mostly CPU and memory related. The `cpu_busy` event approximately corresponds to the `cpu_load` event on Unix, but is reported as a percentage of non-idle time rather than the an average process run queue length, as on Unix.

There are also events for the user, system and interrupt time, reported as percentages. Note that these CPU values are samples, not slow moving averages. They tend to fluctuate more quickly than the Unix load average.

Events E-mail Notification

Although the program does not support MAPI, Events provides a limited mailer that can send e-mail from an NT machine to Internet addresses (e.g., `user@host`). This utility is called `smtpmail` and is called by `AgentMon`. It only supports internet style addresses, and cannot send to other types of addresses. This mailer does not queue and so if the target host is unreachable or not listening for mail, the message is lost. `Smtpmail` is a stopgap measure to provide e-mail notification to Unix hosts, until the problem of interfacing with MAPI from background services can be found.

MIBII commands

These commands are not currently supported, but will be in future releases.