

Advanced Server Manager (ASM) Pro is a server management tool especially designed for server supervisors and management information system (MIS) personnel. Helping them spot errors or potential system malfunctions in their network servers through a single management station. ASM Pro is based on the Simple Network Management Protocol (SNMP) for network access and connectivity.

The ASM package consists of two parts — ASM Server Agent and ASM Manager Station. ASM Server Agent is installed in the server machines that are monitored by the ASM Manager Station, while ASM Manager Station is the monitoring station that gathers information concerning the ASM Server Agent. ASM Server Agent supports the following operating systems: Novell NetWare, SCO OpenServer, SCO UnixWare, and Microsoft Windows NT.

Features

ASM Pro includes the following features:

Server Information. Allows the user to select available machines for monitoring, and to add and delete machines as the need arises.

- **System Listing.** A list of available servers appears, along with the server's operating system type, protocols, addresses, and traps.

Configuration Information. Information pertaining to the actual configuration of the servers.

- **DMI Information.** System configuration information about the processor, BIOS, and memory for the selected server.
- **System Resource Information.** Information about IRQ addresses, DMA channels, I/O ports, and memory addresses.

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- **Storage Information.** Information about the type of hard disk being used to store data.
 - **I/O Device Information.** Information about system I/O devices.
 - **NIC Information.** Network interface card information.

Performance Monitoring. Describes how to monitor server system performance, and what types of monitoring are available.

- **Processor Utilization.** CPU utilization information.
- **Memory Utilization.** System memory utilization information. Threshold settings for memory utilization may also be changed from the ASM Manager Station.
- **Disk Utilization.** SCO OpenServer, SCO UnixWare, and Windows NT only. Information about disk efficiency and performance. Redirected block information is shown if you have a NetWare server.
- **File System Utilization.** File system utilization information. Threshold settings for file systems may also be changed from the ASM Manager Station.
- **NIC Utilization.** Network interface card data transmission utilization information.
- **NIC Fault.** Network interface card fault information.
- **PCI Bus Utilization.** PCI bus utilization information. Threshold settings for the PCI bus may also be changed from the ASM Manager Station (for some models only).
- **H/W Monitoring.** Displays the hardware environment of the server in the following areas: system voltage, temperature, fan status or CPU voltage. When a hardware error occurs in these areas, a trap is sent by the ASM Server Agent to the ASM Manager Station, which records the trap in a log file for future use.

Fault Management. Fault management allows the ASM Manager Station to check for hardware errors and allowable threshold values of

monitored agents. It notifies the system administrator when a problem occurs or shuts down the server to protect the system against further damage.

- **Event Notification and Threshold Setting.** Based on the trap error type, the system administrator may specify how to handle the trap, such as notifying the system administrator and/or shutting down a certain server.

UPS (Uninterruptible Power Supply). A UPS system is built into the server. The UPS function ensures a graceful system shutdown of the monitored server in the event of an AC power supply failure. This feature works in conjunction with the ASM Server Agent software; ***it will not work without the ASM Server Agent software installed.***

For systems with a Redundant Power Supply installed (available for Windows NT and NetWare), you can monitor and control the Redundant Power Supply remotely through the ASM Manager Station.

RDM (Remote Diagnostic Manager). RDM is a standalone utility that informs the system administrator in the event of a system hardware failure. The system administrator can then run diagnostic programs from a remote console, and then reboot the system. Please refer to the *RDM User's Guide* for more information on this feature.

ASM Manager Station Utilities. Includes an array of additional tools that help you view and manage system resources.

- **System Overview.** Displays a summary of a machine. You can use this to view hardware information of certain machines.
- **Event Log.** Displays a list of event logs from the machines.

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- **ASM Browser.** Displays predefined SNMP MIB files and then gathers agent system information according to the definitions in the MIB files. This tool is especially useful when you try to manage network machines which are not standard to ASM Manager Station and no matching window display is available.
 - **Asset Manager.** Monitors machines for any hardware configuration changes and logs them into an inventory file in the ASM Manager Station. You can use this tool to manage system assets through a single centralized monitoring station.
 - **Statistic Viewer.** Displays system performance information logged at the agent. You can use this to analyze and maintain bottlenecks occurring in the system.
 - **Event Viewer.** Displays abnormal events that occur in a machine. You can use this to trace system failures and malfunctions.

Supports Add-on Modules

In addition to the these features, ASM Manager Station also supports a host of add-on modules like:

APC PowerChute Agent (supported by Novell Netware and Windows NT only)

Adaptec C/IO Sub-agent (supported by Novell Netware and Windows NT only)

Mylex GAM Agent

DPT RAID Sub-agent

ADM Station/Agent

For more information concerning the above modules, please refer to their user's guides.

Supports Snap-in Modules

You can also snap-in ASM Pro to the following:

CA UniCenter

HP OpenView

Novell ManageWise

Microsoft SMS

For more information about these systems, please refer to their user's guides.

System Requirements

The minimum system requirements are as follows:

For ASM Manager Station:

Intel 486 or higher processor

12MB of RAM (16MB recommended)

10MB free hard disk space

Microsoft Windows 95, Windows 98, or Windows NT operating system

Ethernet card

Modem (optional for RAS/OOB*)

For ASM Server Agent:

Intel 486 or higher processor

12MB of RAM (16MB recommended)

10MB free hard disk space

Novell NetWare, SCO OpenServer, SCO UnixWare, or Microsoft Windows NT operating system

Ethernet card

Modem (optional for RAS/OOB*)

* Remote Access Service or Out-of-Band connection

System Setup

Make sure that your system meets all the system requirements before proceeding. You may also want to change your screen resolution to 800 x 600 or higher for optimum viewing.

ASM Manager Station

To install ASM Manager Station:

1. Insert ASM Pro's installation CD into the CD-ROM drive, access your CD-ROM drive and then double click `Setup.exe` to start the installation.
2. Follow the installation wizard. The program will ask for some information and prompt you to insert the appropriate Setup Disks. After ASM Pro finishes updating the registration, a screen asking you to restart your system appears.
3. Click `Finish` to reboot your system.



Remember to remove all diskettes or CD's from the drives before rebooting the system.

ASM Server Agents

ASM Server Agent can be installed into four different operating systems. All the installation files for these operating systems are included on the installation CD.

Here is a list of operating systems supported by ASM Pro:

Novell NetWare

SCO OpenServer

SCO UnixWare

Microsoft Windows NT

Installing Novell NetWare Agent



Make sure the SNMP is configured properly.

ASM Server Agent requires SNMP.NLM running with Control Community set to 'public'; otherwise, ASM Manager Station cannot communicate with ASM Server Agent.

ASMAGENT.NCF, the script file which loads all related modules of ASM Server Agent, loads SNMP with the following command:

```
load snmp control=public
```

If you load SNMP.NLM before ASM Server Agent, make sure the Control Community has been set properly. For more information, please refer to related documents about the SNMP Agent for NetWare (NetWare SNMP).

Please check your AUTOEXEC.NCF to see if you have loaded SNMP. Notice that because of the autoloading feature of NLM, you can not directly find where SNMP is loaded. The most common module is TCPIP.NLM which autoloading SNMP.NLM. If you are using TCPIP, load SNMP by using the command line `load snmp control=public` before loading TCPIP.

For NetWare 4.x users, if you are using INETCFG.NLM to configure the network, be sure to configure SNMP and make sure that the SNMP.NLM is running with Control Community set to 'public'.

To install Novell NetWare agent:

1. Insert the ASM Server Agent setup disk into the NetWare server's drive.

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2. At the NetWare server console, type the following:

```
load <CD-ROM drive>\Setup
```


where <CD-ROM drive> is the drive letter of your CD-ROM.
 3. You will be asked if you want to install the ASM Server Agent on your system. Select **Yes** to install.
 4. The setup program then detects the NetWare version and the model of the server. It then copies related NLM files into the SYS: SYSTEM directory and C: of your NetWare server. In addition, some necessary command lines will be added into AUTOEXEC.NCF in SYS: SYSTEM.
 5. If the DMI service provider is installed in your NetWare system, the setup program will ask you to install DMI instrumentation code of ASM agent.
 6. Press any key to continue. The ASM Server Agent Configuration Utility is launched.
 7. The Password option is highlighted. Set up a password, then exit the utility.



The password will be required when using the ASM-Station to remotely change or set any values for the agent, such as threshold values and any trap handling method. If the password is disabled, there will be no security protection for the agent when the station tries to change or set these values.

You may skip this step if you are installing ASM Server Agent solely for the purpose of utilizing the UPS and/or RDM functions (refer to Chapter 5, ASM Pro Utilities, for more information about the `asmcfg` utility).

You must reboot the server to activate the ASM Pro drivers.



The ASM Server Agent is automatically started after the server is restarted and running.

Installing SCO OpenServer Agent



Make sure the snmp is configured properly.

ASM Server Agent requires SNMP running with community set to 'public' and the IP address of the ASM Manager Station should be in the `/etc/snmpd.trap`. Otherwise, the ASM Manager Station cannot communicate with the ASM Server Agent, and the server icon in the ASM Manager Station will remain RED.

Follow these steps to install the SCO Server Agent:

If the ASM installation diskette is already available, go to STEP 3. Otherwise, you have to do STEPS 1 and 2 to make the ASM installation diskette from the DD file on the ASM package CD-ROM.

1. Mount the CD-ROM drive. For example, you mount the CD-ROM to `/mnt`.
2. Insert an empty 1.44MB diskette into your floppy drive and execute the command:

```
# dd if={PATH}/asm33.dd of=/dev/rfd0135ds18
```

Here, {PATH} denotes the directory under which `asm33.dd` is located. For example, `/mnt/SCOUnix`.

3. Insert the ASM Server Agent Setup disk into the drive of the server. Login as root on the server that has SCO OpenServer installed.

Click on the **Software Manager** icon if you are in the desktop window, or execute **custom** if you are at the UNIX shell prompt.

1. Choose **Software D Install New**.
2. The Begin Installation screen displays. Follow the onscreen instructions. Click on **Continue** to accept the defaults.
3. When the Select Media screen displays, highlight **Floppy Disk Drive 0** and click **Continue** to accept the default media (floppy disk drive 0).
4. At the Install Preferences menu, select **Full**.



*If the SCO Agent has been installed previously, the program will ask if you wish to preserve the existing config file. If you choose **Reinstall**, the program will overwrite the previously installed SCO Agent. If you choose **Cancel**, the installation will terminate.*

8. The *asmconfig* screen displays. Press **Enter**. You will be asked to enter and re-enter the new password. Next, select the **SNMP_Config** option to enter the target IP addresses to send a trap. (You can run *asmconfig* at a later time to enter the addresses. See Chapter 5, ASM Pro Utilities, for information about running *asmconfig*.)



If the SCO Agent has been installed previously, target IP addresses will appear on this screen.

9. Select **Quit** to exit the utility. The following message displays before the kernel relink.
Adding device to system configuration files...

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10. When the installation is complete, the following message displays:

Installation Complete.

11. Exit Software Manager and reboot the system.

Configuring ASM Server Agent for SCO OpenServer

You may skip this configuration if you are installing the ASM Server Agent solely for the purpose of utilizing UPS or RDM functions.

Find a server to invoke the *asmconfig* utility to set up a password for the agent. The password will be required when using the ASM Manager Station to remotely change or set any values for the agent, such as threshold values and any trap handling method. If the password is disabled, there will be no security protection for the agent when the station tries to change or set these values.

Refer to Chapter 5 (ASM Server Agent Utilities) for instructions on how to use the *asmconfig* utility.

Installing SCO UnixWare Agent



All of the following procedures require root permission.

To install the SCO UnixWare agent:

If the ASM installation diskette is already available, go to STEP 3. Otherwise, you have to do STEPS 1 and 2 to make the ASM installation diskette from the DD file on the ASM package CD-ROM.

1. Mount the CD-ROM drive. For example, you mount the CD-ROM to `/mnt`.

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2. Insert an empty 1.44MB diskette into your floppy drive and execute the command:

```
# dd if={PATH}/asmuw.dd of=/dev/rdisk/f03ht
```

Here, {PATH} denotes the directory under which asmuw.dd is located. For example, /mnt/UnixWare.

3. Insert the ASM installation diskette into your floppy drive and at the shell prompt execute this command to begin ASM installation:

```
# pkgadd -d diskette1 asm
```

The installation process will copy the ASM Server Agent package into the /usr/asm directory, and automatically make necessary modifications to system configuration files:

```
/etc/netmgt/snmpd.comm
```

```
/etc/netmgt/snmpd.peers
```

```
/etc/inittab
```

After the installation is successfully completed, the ASM agent can be manually started by executing the command:

```
# /usr/asm/asmsmuxd
```

or it will automatically be started on the next system reboot.



Before starting ASM SMUX Agent `asmsmuxd`, you should execute the ASM Agent Configuration Utility `asmcfg` to configure at least "SNMP", "ASM_Password" and other parameters. Refer to Chapter 5 ASM Pro Utilities for detailed instructions on using the ASM Configuration Utility.

Installing Microsoft Windows NT Agent



Before installing ASM software, make sure that TCP/IP and its related SNMP service are installed on the server.

Follow these steps to install the Windows NT agent:

1. Insert installation CD-ROM into your drive after booting NT and logging in as the system administrator.
2. Click on the **Start** button and select **Run**.
3. Verify the path and click **OK**. The Welcome screen displays.
4. Click **Next**. You will be requested to stop SNMP service.
5. Click **Yes**. You will be prompted to choose a destination directory. If you only want to install ASM SNMP agent, you can choose **Typical**, if you want to choose more components, click **Custom**. There are four components in ASM agent:

- SNMP agent
- DMI Instructmentation code of ASM (asm.mif)

ASM Pro agent defines proprietary ASM.MIF which support the same items as SNMP agent.

- SMS agent

If you want to integrate the ASM into Microsoft Systems Management Server Administrator, you have to install SMS agent on NT server.

- DMI Instructmentation code of standard server.mif

ASM Pro agent support SERVER.MIF defined by DMTF.

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6. Click **Next**, for the default directory or click on Browse to find your own destination directory. Check any component you want to install then Click **OK**.
 7. The asmcfg utility launches automatically.

You may skip steps 8 through 11 if you are installing ASM Server Agent solely for the purpose of utilizing UPS and/or RDM functions.
 8. Enter a password then click **OK**. The password will be required when using the ASM Manager Station to remotely change or set any value for the NT Agent, such as threshold values and any event handling options. If the password is disabled, there will be no security protection for the agent when the station tries to change or set these values.
 9. Enter the IP address of the ASM Manager Station then click **ADD** to add trap destinations. Click **OK** to end the asmcfg utility. This IP address tells the Agent where to report (trap).
 10. Click **Yes** to save your modification; otherwise, click **No**. Next the view readme file dialog box appears.
 11. Click **Yes** to view, **No** to continue.
 12. Click **Finish** to exit setup.