WHITE PAPER

CONTENTS

COMPAQ

Compaq System Partition Administrator Utility

The System Partition Administrator Utility (SPAdmin) is an application, along with utility programs, that work together to allow online viewing and updating of the System Partition for both local and remote systems.

This document provides Administrators and System Engineers with a technical overview of the SPAdmin Utility, as well as:

- *Development history and background information.*

- *Step-by-step installation instructions.*

- *An explanation of how to use the utility.*

- *Troubleshooting tips.*

The information presented in this White Paper has been tested on and is intended for use only on English versions of any software mentioned.

NOTICE

The information in this publication is subject to change without notice.

Compaq System Partition Administrator Utility
First Edition (February 1997)
Document Number 026A/0297

INTRODUCTION

In today's business environment successful operation of the business depends on the continuing operation of production servers and workstations. As a result of server proliferation throughout an enterprise, customers are demanding high-availability solutions that reduce or eliminate down-time whenever possible. One method of achieving reduced downtime is through the use of effective system management tools.

The System Partition Administrator Utility is an administrative tool that provides system administrators with the ability to perform routine maintenance to the system partition of network servers without taking the system off line. This GUI-based application not only allows access to the system partition, but it also allows you to update the files that reside on the system partition. An administrator can also remotely update a system partition over a network running Windows NT systems. SPAdmin centralizes the maintenance tasks, thus allowing the system partition on remote servers to be updated from one location. Some advantages of using this utility are:

• Saves time and money by not having to shut down the system to perform routine maintenance.

• Reduces manpower by allowing updates to remote servers from a single location.

• Increases efficiency by saving time, money and reducing manpower.

The following tasks are performed by the System Partition Administrator Utility:

• Mounts and/or shares the system partition on the target machine.

• Analyzes files on the target system partition and on the Compaq Support Software CD or CD image to determine which files need updating.

• Copies the appropriate files from the Compaq Support Software CD or CD image to the target system partition.

The System Partition is a special area of a hard drive which is reserved for hardware specific files, configuration utilities and diagnostics. Compaq SmartStart and the Compaq Support Software CD install several files on the System Partition during the initial setup of a computer. Normal access to the System Partition is accomplished by pressing the F10 key at a special point in the power-on or reboot sequence.

SPAdmin is the next generation System Partition utility. The original utility, SPMount is a command line utility that allows access to the System Partition while Windows NT is active. This utility was released prior to the System Partition Administrator (SPAdmin) on the Compaq Resource Kit for Windows NT in October 1995. While SPMount enables you to access the system partition while the system is up and running, it does not have the robust functionality of SPAdmin which allows updating the system partition files on local or remote servers.

Target Audience

The System Partition Administrator Utility was developed for use by systems engineers, administrators and experienced Windows NT users.

Terms

Below is a list of terms used but not otherwise defined in this document.

Support Software - Collection of device drivers, configuration programs, flashable ROM images, utilities, agents, and other support software available to keep your computer performing at its best.

ROMPAQ - Support software bundled as a flashable ROM image.

DAAD - Drive Array Advanced Diagnostics a DOS-based tool designed to run on all Compaq products that contain a Compaq SMART SCSI Array Controller, Compaq Intelligent Drive Array Controller-2 (IDA-2), Compaq Intelligent Drive Array Controller (IDA), or Compaq Intelligent Array Expansion Controller.

SYSTEM PARTITION ADMINISTRATOR OVERVIEW

The System Partition Administrator (SPAdmin) is an application, along with utility programs, that work together to allow online viewing and updating of the System Partition for both local and remote systems. The utilities incorporated into SPAdmin are the System Partition Service (SysPart) and the System Partition Update Utility (UpdateSP). SysPart controls access to the system partition of a Compaq server and UpdateSP controls the updates to the system partition.
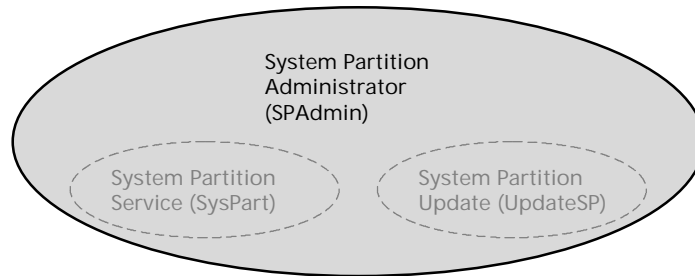
Hardware/Software Requirements

The following components are required for the SPAdmin to function properly:

1. Compaq Prosignia or Proliant server

2. Windows NT 3.51 or Windows NT 4.0 (Server or Workstation)

3. Compaq SmartStart and Support Software CD or image of the CD

Obtaining the System Partition Administrator Utility

The System Partition Administrator is located on the Compaq Resource Kit for Microsoft Windows NT, or you can download it via the Compaq World Wide Web site at:

http://www.compaq.com/solutions/frontline/winnt/utilities/index.html

The Compaq Resource Kit for Microsoft Windows NT CD-ROM is free of charge. However, you must pay the applicable shipping and handling charges.

To place an order, you can call the following numbers 24 hours a day, 7 days a week:

1-800-952-7689 (USA)

1-800-263-5868 (Canada)

1-317-364-7281 (Worldwide)

Ask for the Compaq Resource Kit for Microsoft Windows NT. Additional information on obtaining the Compaq Resource Kit, for Microsoft Windows NT CD-ROM can be found on the web at:

http://www.compaq.com/solutions/frontline/winnt/ordering.html

SYSTEM PARTITION ADMINISTRATOR INSTALLATION INSTRUCTIONS

The System Partition Administrator can be installed from various sources. This section consists of the following information:

- Instructions on obtaining SPAdmin files from the Compaq Resource Kit

- Instructions on obtaining SPAdmin files from the Compaq Internet Web Site

- Steps outlining the installation process

Installing SPAdmin from the Compaq Resource Kit for Windows NT

Choose the instructions for the appropriate operating system to get started.

Windows NT 4.0:

1. Insert the CD in the CD-ROM drive; the Resource Kit should automatically run. If the Resource Kit is already inserted in the CD-ROM drive, choose *Start/Run <cd-rom drive>\resourcekit.exe* and click *OK*.

2. Choose the following hypertext: *Browse Compaq Resource Kit* fi *Utilities* fi *Miscellaneous* fi *System Partition Administrator* from the browser window.

3. Proceed to the section entitled "Installation Process" located on page 6 of this document.

Windows NT 3.51:

1. Insert the CD in the CD-ROM drive.

2. Select *File*, then *Run* from the Windows NT Program Manager. Type *<cd-rom drive>\resourcekit.exe*, and select *OK*. Or, launch File Manager and double-click the file named *resourcekit.exe*.

3. Choose the following hypertext: *Browse Compaq Resource Kit* fi *Utilities* fi *Miscellaneous*fi *System Partition Administrator* from the browser window.

4. Proceed to the section entitled "Installation Process" located on page 6 of this document.

Installing SPAdmin from the World Wide Web

The System Partition Administrator can be downloaded from the Compaq Home Page, http://www.compaq.com. SPAdmin can be retrieved via a web browser using the following address:

http://www.compaq.com/solutions/frontline/winnt/utilities/index.html

Or, by choosing the following hypertext: *Industry Solutions* fi *Compaq/Microsoft Frontline Partnership* fi *The System Partition Administrator.*

To install the System Partition Administrator, choose the instructions for the appropriate operating system.

Windows NT 4.0

1. Select *System Partition Administrator Utility* and save the file to the hard disk or diskette. **NOTE:** You can perform a successful setup operation by executing the file from either the hard disk or diskette.

2. Choose *Start/Run <specified path from above>\cpqsystp.exe* and click *OK*.

3. Proceed to the following section titled "Installation Process."

Windows NT 3.51

1. Select *System Partition Administrator Utility* and save the file to the hard disk or diskette. **NOTE:** You can perform a successful setup operation by executing the file from either the hard disk or diskette.

2. Select *File*, then *Run* from the Windows NT Program Manager. Enter *<specified path from above> cpqsystp.exe*, and select *OK*. Or, launch File Manager and double-click the file named *cpqsystp.exe*.

3. Proceed to the following section entitled "Installation Process."

Installation Process

1. To start the install process choose the *Setup* button. Depending upon your browser security settings, you might be prompted with the following or similar dialog box:
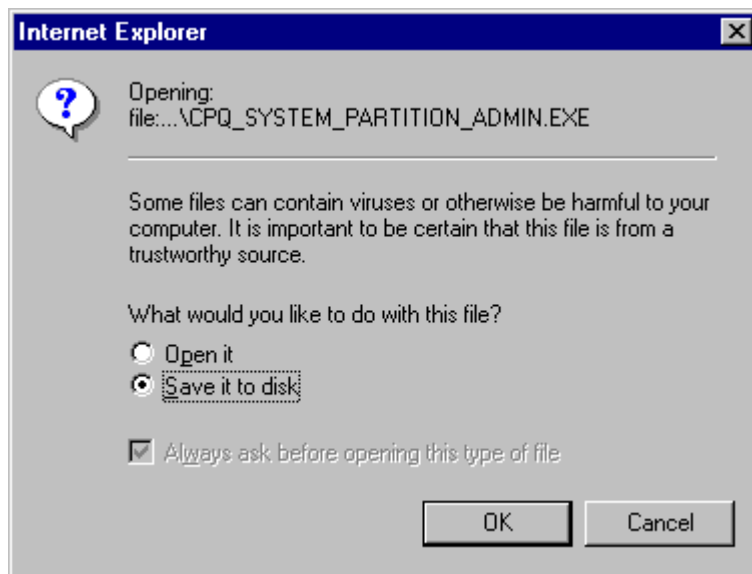
2. If the above dialog is available, choose *Open It* to start the Setup Process for SPAdmin. To save the file to disk or diskette and install SPAdmin at a later time, choose *Save it to disk*.

   If you need to save the file and the *Save it to disk* button is not available, you can copy the file from the following location on the Compaq Resource Kit:

   <cd-drive letter>:\utilities\miscellaneous\cpq_system_partition_admin.exe

   This is a self-extracting executable, choose *Start/Run* (for Windows NT 4.0) and enter the path and filename or double-click the filename to start the setup process.

   After agreeing to the License Agreement, you will receive the following dialog box:

Select Directory ✕

Setup copies the Compaq System
Partition Administrator files to the
following directory, which it will create on
your hard disk.

Location: `C:\Program Files\Com` [Browse...]

To specify a different location, press the
Backspace key to remove characters, then type
the drive and directory where you'd like Compaq
System Partition Administrator installed.

[Continue]   [Cancel Setup]
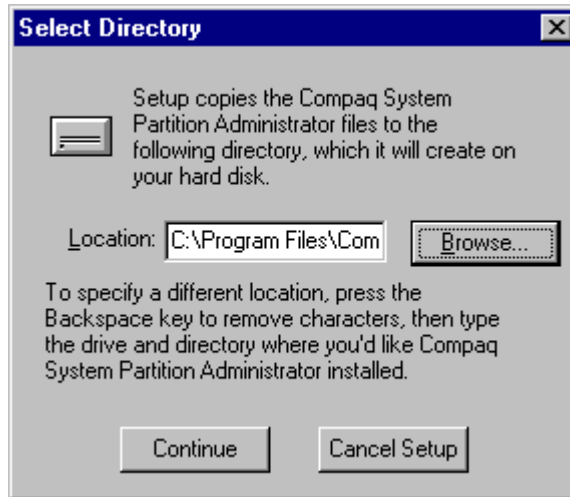
3. Choose *Continue* to install SPAdmin to the default directory or *Browse* to select a different location.

4. Select the Program Manager group in which you would like to add the System Partition Administrator icon to or create a new group and choose *Continue*.

5. Minimize or Close the program group window and choose *OK* for the following dialog box:

Compaq System Partition Administrator Setup ✕

Compaq System Partition Administrator Installation is
complete.

[OK]
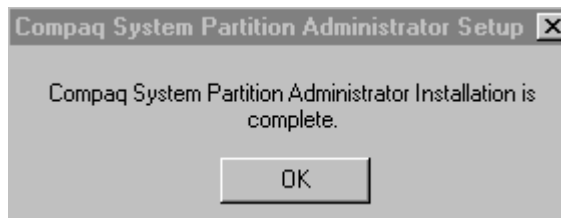
The installation process has now been completed successfully.

Installed Files

The System Partition Administrator installs the following files onto your hard drive:

TABLE 1
SYSTEM PARTITION ADMINISTRATOR FILES

FILENAME	LOCATION	DESCRIPTION
_INSTPGM.EXE	SPAdmin installation directory	Installation program file used by the self extractor
README.BAT	SPAdmin installation directory	Batch file used to view the windows help file for SPAdmin
SPADMIN.EXE	SPAdmin installation directory	System Partition Administrator utility
SPADMIN.HLP	SPAdmin installation directory	System Partition Administrator utility help file
SYSPART.EXE	%systemroot%\system32 and SPAdmin installation directory	System Partition Service
UPDATESP.EXE	SPAdmin installation directory	System Partition command line update program
UPDATESP.INI	SPAdmin installation directory	Information file used to add new system hardware

USING THE SYSTEM PARTITION ADMINISTRATOR

This section provides detailed information and instructions on using SPAdmin.

Overview

To start the System Partition Administrator, double click on the SPAdmin icon:

System
Partition
Administrator

The SPAdmin main dialog box displays, containing a tabbed control with three selections. These selections are:

- Service Maintenance

- Service Control

- System Partition Control
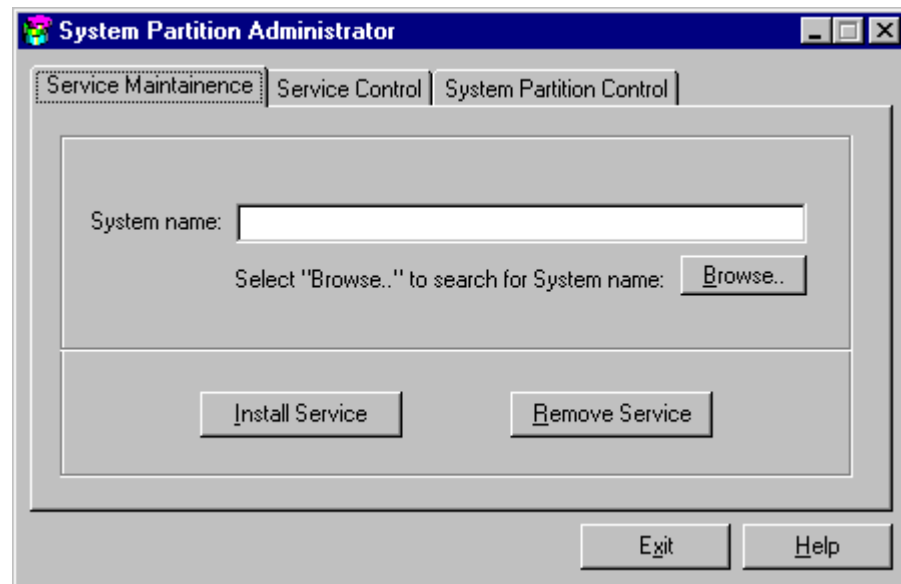
Service Maintenance

Allows the user to initiate installing or removing the System Partition Service on the specified server.

Service Control

Allows the user to mount, dismount, and mount/share the System Partition on a selected system. The System Partition Service can be stopped or started from within this tab selection, or it can be done through a MS-DOS command line.

System Partition Control

Allows the user to initiate the file update process for a System Partition on a selected system.

At any point in SPAdmin you can select the *F1* key to obtain screen-level help or you can select the *Help* button at the bottom of the main dialog.

To exit the SPAdmin utility, select the *Exit* button.

NOTE: When the *Exit* button is chosen, all partitions are unmounted and unshared.

Service Maintenance

The Service Maintenance tab is the default selection screen when SPAdmin is started:
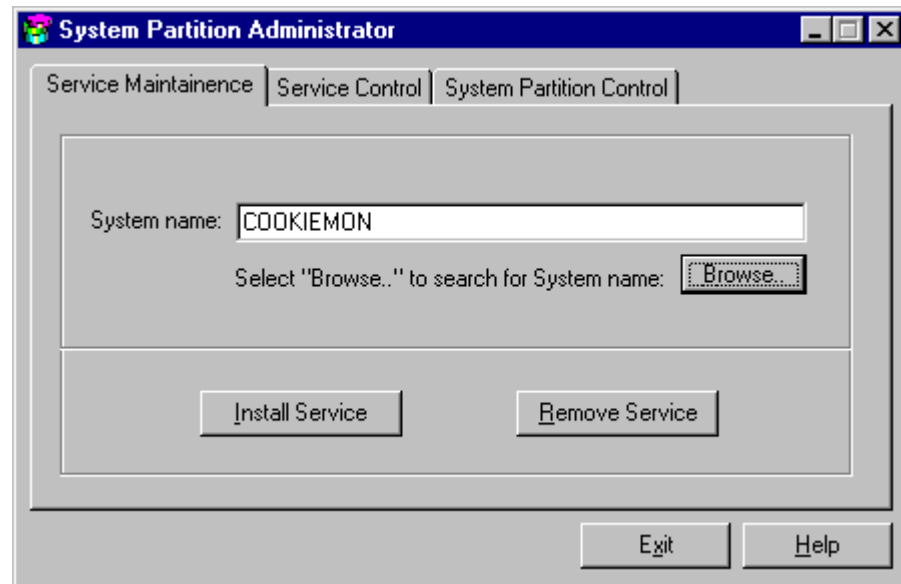
From within this dialog box, the user can either install or remove the System Partition Service from a server.

Enter the Computer name, of the system on which you want to either install or remove the service, in the *System Name* edit box. Do not use the double backslash prefix.

To browse the Network for the Computer name, select the *Browse* button. This displays the *Browse Domain* dialog box, as indicated below.

```
┌──────────────────────────────────────────┐
│ Browse Domain                              │
├──────────────────────────────────────────┤
│                                            │
│   Double click on a Domain Name for Computer Names. │
│   Double click on a Computer Name to select:        │
│                                            │
│   ┌──────────────────────────────────┐    │
│   │ SESAME                           │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   └──────────────────────────────────┘    │
│                          ┌───────────┐     │
│   Selected System:       │ Type:     │     │
│                          └───────────┘     │
│   ┌──────────────────────────────────┐    │
│   │                                  │    │
│   └──────────────────────────────────┘    │
│                                            │
│      ┌──────────┐      ┌──────────┐        │
│      │   OK     │      │  Cancel  │        │
│      └──────────┘      └──────────┘        │
└──────────────────────────────────────────┘
```
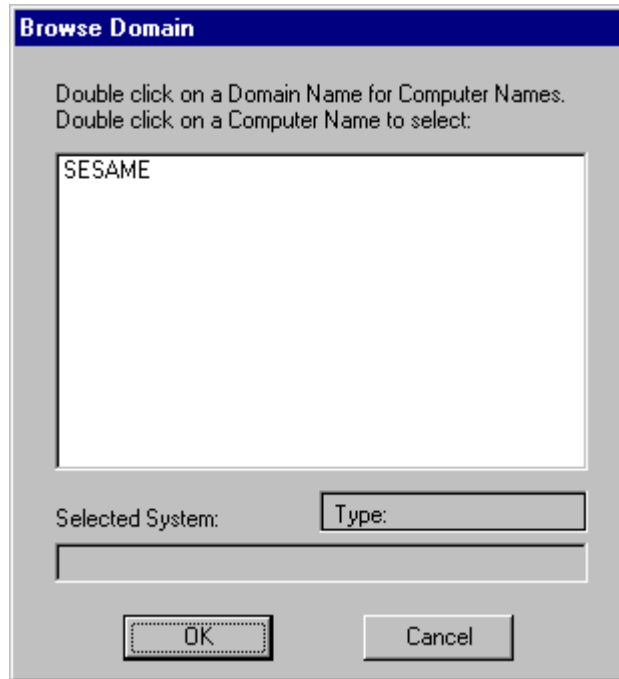
The names initially displayed in the list box of the Browse Domain dialog are the Domain names seen on the Network.

To view the system computer names within a particular Domain, double-click on the Domain name. This causes SPAdmin to search and display all available computer names for that Domain. To select a System Name, double-click on the appropriate name. That name then appears in the Selected System edit box as illustrated in the dialog box shown below.

```
┌──────────────────────────────────────────┐
│ Browse Domain                              │
├──────────────────────────────────────────┤
│                                            │
│   Double click on a Domain Name for Computer Names. │
│   Double click on a Computer Name to select:        │
│                                            │
│   ┌──────────────────────────────────┐    │
│   │ SESAME                           │    │
│   │ \\COOKIEMON                      │    │
│   │  \\TREVORMAN                     │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   │                                  │    │
│   └──────────────────────────────────┘    │
│                          ┌───────────────────┐ │
│   Selected System:       │ Type:  Computer Name│ │
│                          └───────────────────┘ │
│   ┌──────────────────────────────────┐    │
│   │ COOKIEMON                        │    │
│   └──────────────────────────────────┘    │
│                                            │
│      ┌──────────┐      ┌──────────┐        │
│      │   OK     │      │  Cancel  │        │
│      └──────────┘      └──────────┘        │
└──────────────────────────────────────────┘
```
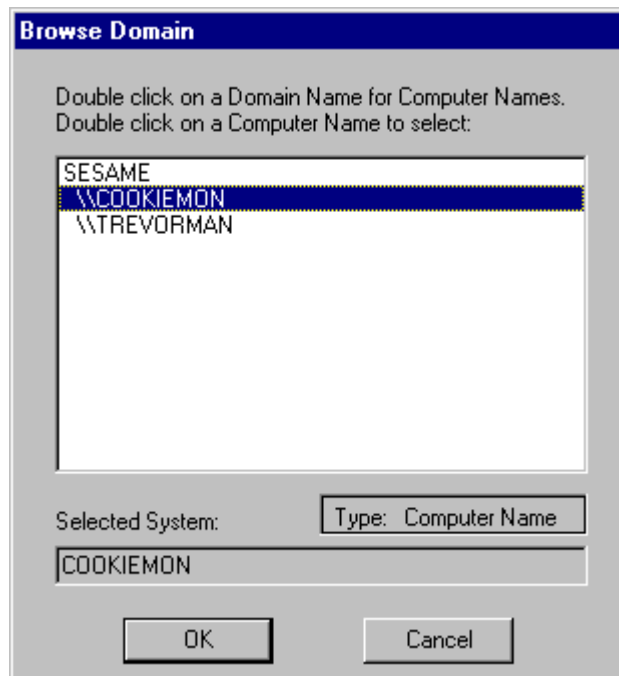
To confirm whether the entry in the list box is a Domain Name or a System Name, highlight (single click) the selection and the type of name (domain or system) displays in the status box below and to the right of the list box.

Once a selection is made, click the *OK* button. To exit the Browse Domain dialog and make no choice, select the *Cancel* button.

When the desired System name is entered in the *System Name* edit box (Service Maintenance tab), select the *Install Service* button to install and start the System Partition Service. If the operation is completed successfully you will receive the following dialog box:
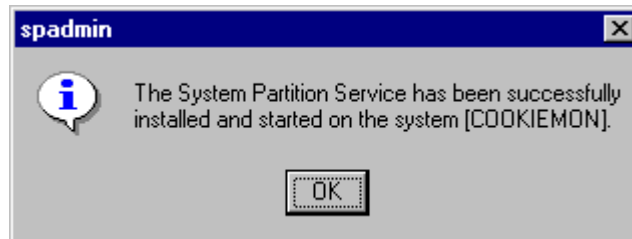
Select the *Remove Service* button to stop and remove the System Partition Service from the chosen Server. Confirmation will also be given upon successful removal of the service.

IMPORTANT: Administrator privileges are required for Service Maintenance, Service Control, and System Partition Control activities within the System Partition Administrator to complete successfully.

The Server Name is recorded in the Registry Name Database for SPAdmin after the *Install Service* button is selected and the operation has been completed successfully. For additional information on registry entries see the Windows NT Registry section towards the end of this document. This information is made available for Service Control and System Partition Control.

Service Control

When the *Service Control* tab is selected, the tabbed control changes to the following display:
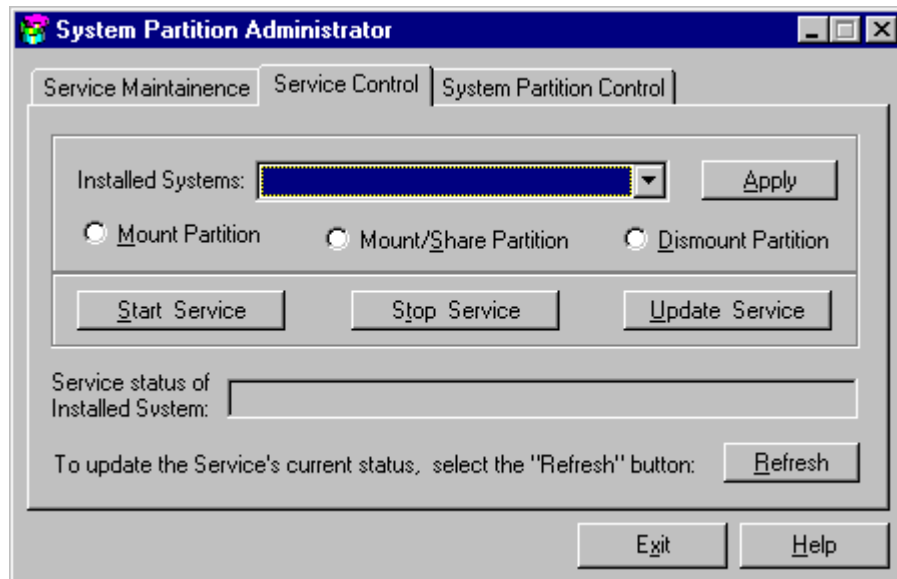
From within the above dialog box, the user can dismount, mount or mount/share the System Partition. The ability to stop, start and/or update the System Partition service is also provided.

Choose a valid computer name from the Installed Systems combo box. The *Service status of Installed System* text box displays the current Service status for the selected system.

Once selected, you choose the desired control button:

- Mount Partition

- Mount/Share Partition

- Dismount Partition

Select the Apply button so the desired control type is made active on the currently selected system. A message dialog displays to report either success or failure. Once applied, the state of the new control type remains in effect until another control type is applied.

Mount Partition

The mount partition option makes the system partition accessible on the selected machine. When selected and successfully applied, the *Service status of Installed System* text box displays the drive letter the System Partition was mounted on. You can display the System Partition contents by using File manager, Explorer, the Command line or any other means of viewing and/or accessing disk drives.

Mount/Share Partition

The mount/share partition option makes the system partition accessible and shares the partition on the network. When selected and successfully applied, the drive letter the system partition was mounted on and the share name it was assigned on the Network displays in the Service status text box. At this point, you can access the system partition from a remote machine and/or access the partition locally using the assigned drive letter.

Dismount Partition

The dismount partition option hides the system partition. When selected and successfully applied, the drive letter the System Partition was mounted on is dismounted and made unavailable. Also, if the system partition was shared, the Network share for the System Partition is deleted.

NOTE: If you choose the close icon or *Exit* button the System partition will be automatically dismounted.

Below the control type radio buttons are the following select buttons:

- Start Service

- Stop Service

- Update Service

- Refresh

Start Service

Starts the system partition service on the computer name chosen in the *Installed System* combo box.

Stop Service

Stops the system partition service. If applicable, it will also dismount and/or delete the network share. Once performed, the new status is reflected in the Service status of *Installed System* text box.

Update Service

Updates the system partition service on the computer name chosen in the Installed Systems combo box. This operation copies the System Partition Service file (SysPart.Exe) from the directory specified in the *Select Resource* dialog box to the selected system.

Refresh

Displays the most current service status for the system name being displayed under Installed Systems. The button causes SPAdmin to query the System Partition Service on each system listed in the SPAdmin Registry Database (all entries listed in the Installed Systems combo box) and obtain the most current status.

Validating the System Partition Service

To confirm that the system partition has been shared and mounted, after choosing the *Mount/Share* partition option, you can try either of the steps below.

1. Open a MS-DOS command window, at the command line try the following:

    Type *net share* and press *enter*

    Net share shows the shared resources available on the computer. You should see a share named SysPart$ (this is the default share created by the service). The dollar sign indicates that the share is hidden.

Or

2. To view the list of shared resources available on the computer from within windows try the following:

    Choose *Control Panel*, select the *Server icon* and click the *Shared Resources* button.

    You should see a share named SysPart$ (this is the default share created by the service). The dollar sign ($) is indicative to hidden shares.

System Partition Control

When the System Partition Control tab is selected, the tabbed control changes to the following display:
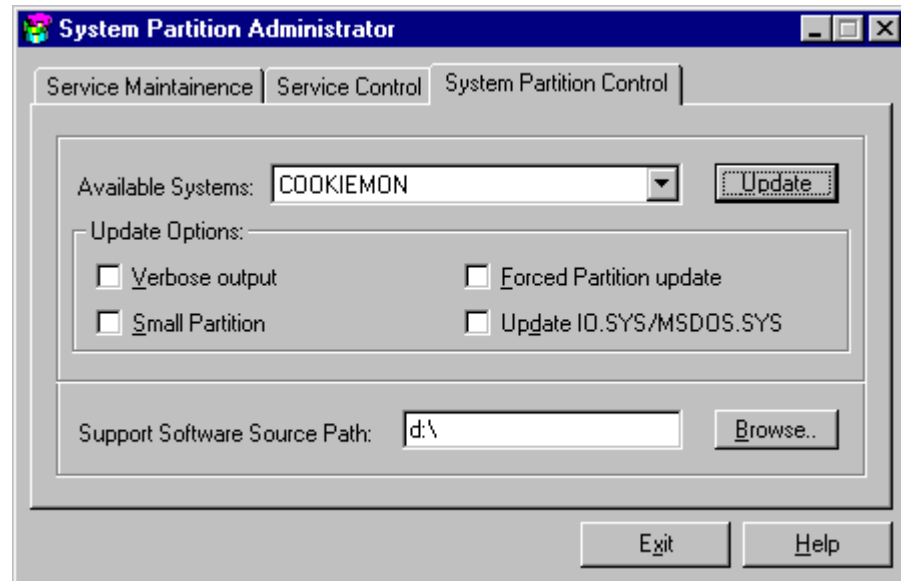
From within this dialog box, the user selects a valid system name to update the System Partition files. First you must select a valid system name from the Available Systems list box. For a system name to be listed in this list box, you must successfully install the System Partition Service through the Service Maintenance tab within SPAdmin.

Below the Available Systems list box are the following Update Options:

- Verbose output

- Forced Partition update

- Small Partition

- Update IO.SYS/MSDOS.SYS

Verbose output

When this option is selected the screen logging capabilities of the UpdateSP utility are maximized and all actions and results are displayed as they occur.

Forced Partition update

When this option is selected all files are copied from the source CD or CD image to the target System Partition without regard to the date and time stamp of the destination file.

Small Partition

When this option is selected certain files that were added with later versions of the Compaq System Partition Utility (DAAD and Options Rompaq files) are not copied due to the size limitation of this smaller System Partition.

Update IO.SYS/MSDOS.SYS

When this option is selected the System Partition boot files IO.SYS and MSDOS.SYS are updated. These files are not updated by default.

Any combination of these options can be selected prior to beginning the update process.

The Support Software Source Path must be input. This is the root path to the CD-ROM drive where the Compaq Support Software CD is inserted, or the network share where the image of the CD is located. In all cases, this path should specify the root to that CD or CD image. To browse the system for this path, select the Browse button. The following dialog will appear:
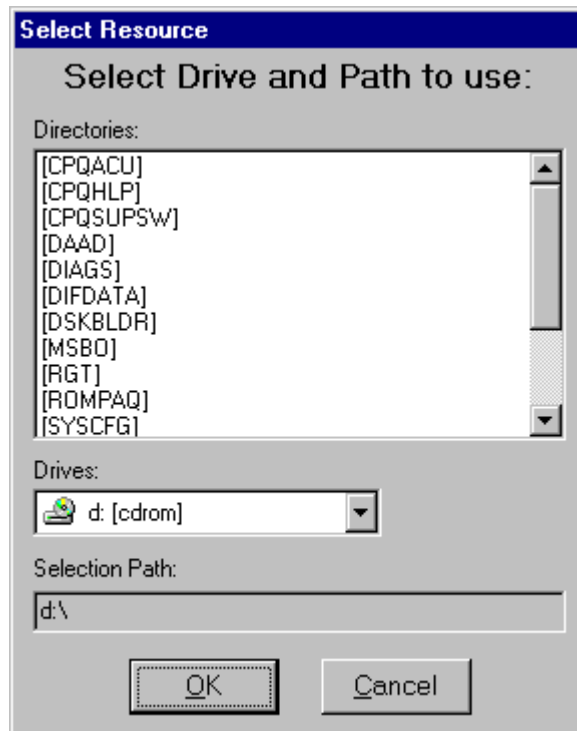
Choose the correct drive letter to the root directory of the Compaq Support Software CD or the path to the root of the CD image, then select the *OK* button. Selecting the Cancel button causes no selection to be made.

Once the system name, source path, and options are chosen, select the Update button to begin the System Partition update process. This launches the UpdateSP program, passing any options that were selected.

When launched, UpdateSP runs in a separate command prompt window. At execution end, a completion dialog box displays indicating any errors that were detected.

You are then given an option to view the full Update activity log. If Yes is selected, the System Partition Update Log dialog displays:

System Partition Update Log

Currently installed on target system \\COOKIEMON:
  Installed: System Configuration   Version: 2.32 Revision: A
  Installed: Diagnostics TEST   Version: 10.09 Revision: B
  Installed: Compaq System ROMPaq   Version: 3.01 Revision:
  Installed: Drive Array Advanced Diagnostics Version: 1.37 Revision: A
  Installed: Compaq Options ROMPaq   Version: 2.32 Revision:
  Installed: Compaq Array Configuration   Version: 1.02 Revision: A

Small (6MB) partition detected. If errors occur during file copies,
   select the "Small Partition" check box.
Analyzing and copying files to System Partition...
....
0 files copied.

No errors occurred during the system partition update process.

[OK]   [Save Log]   [Print Log]

This dialog displays the complete, verbose output from the UpdateSP utility. It also allows you to save the displayed log to a file. To save the log, select the *Save Log* button.

Select Path-File

Enter or Select a File Name to use: [   ]

Directories: Files:
[NTBE]   AUTOEXEC.BAT
[Program Files]   CONFIG.SYS
[Projects]   NTBETEMP.CMD
[TEMP]   pagefile.sys
[WINNT40]   SETNTBE.CMD

Drives:
c: [local]

Selection Path:
C:\

[Save]   [Cancel]
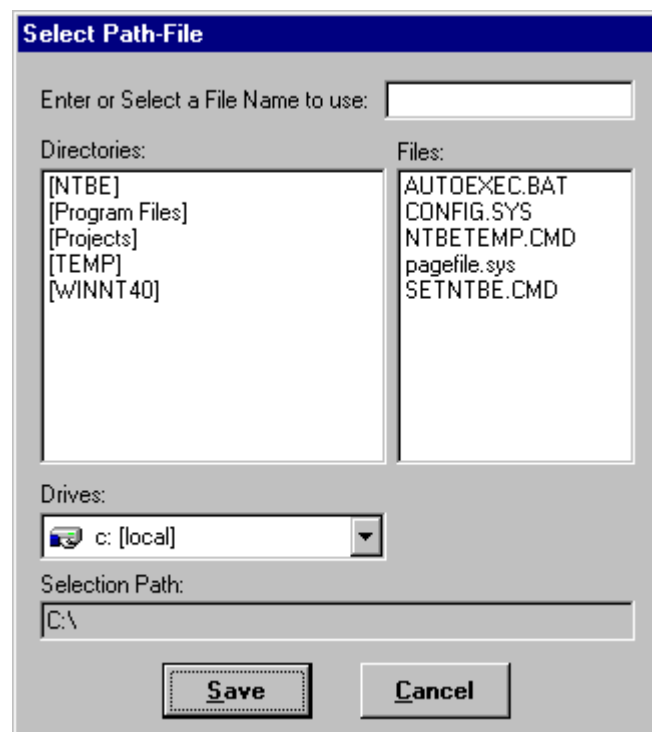
The Select File dialog allows the user to select the exact drive, path, and filename to which the log is saved.

To select the desired drive, make a selection from the Drives combo box.

To choose a specific path on that drive, double click on the directory name in the Directories list box.

To specify a file name, you may enter the file name in the edit box above the Files list box, or you can choose a file name from the Files list box.

Once all selections are made, select the *Save* button, and the log is saved to the location and name specified. If you do not wish to save the log to file, select the *Cancel* button and no selection is made.

At this point you can select the OK button on the System Partition Update Log dialog, and you are returned to the System Partition main dialog. From there you can perform further System Partition maintenance or control, and/or exit the utility.

SYSTEM PARTITION UPDATE UTILITY

The System Partition Update utility (UpdateSP) is a command line utility which is used to control updates to the System Partition through the System Partition Administrator. This utility was also designed to allow System Partition updates through batch files by communicating remotely with the System Partition Service. This gives the System Administrator greater flexibility in controlling the remote System Partition update process.

Using the System Partition Utility

The combination of the System Partition Service and the update utility allow for a "PUSH" of software updated to the system partition. A "PUSH" update allows an administrator to remotely update a system partition over a Windows NT network. Communication between the System Partition service and update utility is protocol independent, however a Windows NT protocol supporting RPC is required. The update utility will function on either Window NT 3.51 or 4.0.

UPDATESP is responsible for the following operations:

- Analyzing files on the target system partition.

- Analyzing files on the Compaq Support Software CD.

- Copying the appropriate files from the Compaq Support Software CD to the target system partition.

When used in a batch file UPDATESP performs the following operations in addition to what's listed above:

- Starts the System Partition Service (if not started).

- Mounts and Shares the System Partition on the target machine).

Updating/Adding Files

The files updated by SPAdmin are enumerated in the following groups:

- System Configuration files (by default IO.SYS and MSDOS.SYS are skipped)

- Compaq System Rompaq files

- Compaq Options Rompaq files

- Diagnostic Test files

- Drive Array Advanced Diagnostic (DAAD) files

- Compaq Array Configuration files

UpdateSP uses the [Header Information] from the corresponding group's INF file to determine if that group is eligible for an update. Once a need to update has been established, the [Files To Process] section of the INF file is used to determine which files will be updated and/or added.

Command Line Parameters

UPDATESP requires command line switches to perform its tasks. SPAdmin controls these tasks based on the options selected in the GUI interface. However, when using UPDATESP in a batch file all parameters and options must be specified. Listed below are the syntax and switches available for use with the UPDATESP utility:

```
-c <computer name>
-d <full destination path>
-f        'Forces update even if files are up-to-date
-p        'Prohibits DAAD and options Rompaq update on small system partition
-s <full source path>
-u        'Force update of IO.SYS and MSDOS.SYS (normally skipped)
-v        'verbose output
```

Syntax: *updatesp -s d:\ -d \\xyz\syspart$*
or   *updatesp -s d:\ -c \\xyz*

At least two options are required for UPDATESP to function properly, they are:

"-s <cd-rom root drive>" and either "-c <computer name>" or "-d <full destination path>"

The *-s* switch requires you to specify the root path of the CD-ROM drive which contains the Compaq Support Software CD. If the Compaq Support Software CD is in a locally attached CD-ROM drive, then the parameter should specify the root of the CD-ROM drive, such as *d:*. If the Compaq Support Software CD is located on a network share, then the drive specified should reference the drive letter mapped to the root of the CD, such as m*:*.

The *-c* switch specifies a NT computer name which is the target of the system partition file update. The target system must have the System Partition service installed. When specifying the computer name, UNC naming conventions are required (i.e. the double back slash prefix). For example, the following command *updatesp -s d:\ -c \\xyz* will perform the following tasks:

1. Start the system partition service

2. Mount and share the system partition

3. Analyze and copy files from the software support CD to the system partition.

NOTE: When used at the command line or in a batch file, the *net stop syspart* command must be added or initiated to dismount and unshare the system partition.

The *-d* switch requires a full path to the location of where the files from the Compaq Support Software CD should be copied. This switch can be useful in testing the update utility. To perform a test do the following:

1. Xcopy the contents of a real system partition to a test directory.

2. Note: You must include the /s /r /h switches when using xcopy.

3. Type *updatesp -s d:\ -d c:\<test directory name>*

4. Check the test directory to ensure the files were properly updated.
To update the files on the system partition from a command line using the *-d* switch type the following commands:

net start syspart
updatesp -s d:\ -d \\xyz\syspart$

NOTE: When used at the command line or in a batch file, the *net stop syspart* command must be added or initiated to dismount and unshare the system partition.

The *-c* switch is preferred over the *-d* switch because it automates the following processes:

- Starting the service

- Sharing the system partition

- Finding the share name

The *-v* switch turns on the verbose flag which causes the status information to be displayed as the utility executes.

When using UPDATESP in a batch file, use the syntax described previously for each target system partition to be updated. It is important to remember that all output from the UPDATESP utility is printed to the screen, therefore if you desire to save the output from program execution, you must redirect the output to a file. The syntax for this is:

updatesp -c \\mysystem1 -s d:\ >c:\update.log
The first updatesp line should use ">c:\update.log" (a single greater-than sign) to create the desired log file. Note: If this file already exist, its contents will be replaced with the new information. Each successive updatesp line should append the program output to the same filename by using the following line:

updatesp -c \\mysystem2 -s d:\ >>c:\update.log

Use of the ">>c:\update.log" (a double greater-than sign) causes the program output to be appended to the filename listed.

TROUBLESHOOTING

Use the following information if you have problems using the System Partition Administrator utility.

General Information

- If you receive error messages after performing system partition updates, view the activity log for more information.

- When you update the system partition from the *System Partition Control* tab, a confirmation dialog box appears indicating that the system partition update was completed successfully. If no errors were encountered, the confirmation dialog box will appear even though no updates were actually made. To find out whether files were copied you must view the activity log.

Message Reference

Below is a comprehensive list of messages that can be received while using the System Partition Administrator Utility. Possible resolutions or explanations for the cause of each message are also shown.

Event Viewer

EVENT ID:	10
SOURCE:	SysPart
TYPE:	Error
DATA WORDS:	0000: 00000427
DESCRIPTION:	The System Partition Service was unable to communicate with the service control dispatcher.
CAUSE:	Make sure the RPC service is started. If so, the service or the dispatcher is busy. Wait a few seconds and try again.

EVENT ID:	4097
SOURCE	Dr. Watson
TYPE:	Information
DESCRIPTION:	The application, exe\UpdateSP.DBG, generated an application error. The error occurred on <date and time> The exception generated was c0000005 at address 0100754f [<nosymbols>].
CAUSE:	This message is generated when the small partition option is chosen. Copy errors might occur suggesting the selection of this option. Currently the size of the partition is detected incorrectly. This issue will be resolved in the next release of the SPAdmin utility.

General Messages

The following messages might appear in the activity log after attempting to update the partition.

Message	Resolution/Cause
Warning: Unable to retrieve System Partition environment variable from *\\machine name*. Ensure that the Compaq System Management driver is installed.	Make sure the Compaq System management driver is installed. The driver is located on the Compaq Support Software diskette and can be installed via the setup program for the SSD.
Small (6MB) partition detected. If errors occur during file copies, select the "Small Partition" check box.	The above message will display erroneously in the activity log regardless of the size of the partition. Currently, the amount of free disk space is detected incorrectly. This issue will be resolved in the next release of the SPAdmin utility.

The following message might appear when attempting to select a server in the *Browse Domain* dialog box:

Message	Resolution/Cause
An invalid string for the selected server was detected. Do you wish to retry the selection?	Make sure a selection was made, double-click the selection.

The following message might appear when attempting to update the system partition:

Message	Resolution/Cause
An application error has occurred and an application error log is being generated. Updatesp.exe Exception: access violation (0xc0000005), Address: 0x0100754f	This message is generated when the small partition option is chosen. Copy errors might occur suggesting the selection of this option. Currently the size of the partition is detected incorrectly. This issue will be resolved in the next release of the SPAdmin utility.
System partition update was not successful for the system [computer name]. The source map definition for files on the source media failed. The following error code was returned [4]. Please correct the problem and retry the operation. Do you wish to view the full update activity log.	This message is generated when the Smartstart Software Support CD is not in CDROM drive or when an incorrect path specification is made in the *Support Software Source Path* text box. An application error will occur and you will need to restart the SPAdmin program.
The system partition update on the system [computer name] has been completed but copy errors were detected. The activity log details any errors that occurred. The following error code was returned [16].	This message will occur if files were skipped or not found because they are not relevant to your current system configuration. View the activity log for details. If a necessary file could not be copied you can manually copy it from the Smartstart Software Support CD to the correct location on the system partition. Full paths are specified in the activity log.

SUMMARY

In conclusion, the System Partition Administrator Utility allows local and remote updates of system and array configuration, ROMPAQ, diagnostic test, and DAAD files while the server remains online. As previously discussed, SPAdmin increases efficiency by saving time, money and reducing manpower.

You can download a copy of this utility from the Compaq Web Site at the following URL: www.compaq.com/solutions/frontline/winnt/utilities/index.html

You can also order a Compaq Resource Kit for Microsoft Windows NT, which contains the utility - see the details on page 4, "Obtaining the System Partition Administrator Utility."

APPENDIX - REGISTRY ENTRIES

Windows NT Registry

WARNING: Using the Registry Editor incorrectly can cause serious, system-wide problems that may require you to reinstall Windows NT to correct them. **Use this tool at your own risk.**

When you install the System Partition Administrator the following will be added to the registry:

HKEY_LOCAL_MACHINE\Software\Compaq\SPAdmin

Root:REG_SZ: *Path*

This displays the path to the root directory of the service

The following key will be added for each system that has the System Partition Service installed:

HKEY_LOCAL_MACHINE\Software\Compaq\SPAdmin*Computer Name*
Each key will contain the following value:

> State:REG_DWORD: *Constant*
> Valid values are:
>
> 0 = Unmounted
> 1 = Mounted
> 2 = Mounted and Shared
> 3 = Service Stopped

After installing the System Partition Service the following key will be added:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart - The value entries included here govern the behavior of the service.

The following values are available:

> DependOnGroup:REG_MULTI_SZ: *Group Name*
> > This value specifies zero or more group names. If one or more groups is listed, at least one service from the named group must be loaded before the SysPart service is loaded.
> >
> > Default: (empty)

DependOnService:REG_MULTI_SZ: *Service Name*
> This value identifies specific services which must be loaded before the SysPart service is loaded. If a service is listed here, that named service must be loaded before the SysPart service is loaded.

> Default: (empty)

DisplayName:REG_SZ:Compaq System Partition
> This value specifies the displayed name of the service.

ErrorControl:REG_DWORD: *Error Constant*
> This value specifies the level of error control for the SysPart service.

Error Level	Type	Description
0x3	Critical	System startup attempt failed.
0x2	Severe	If the startup is not using the LastKnownGood control set, switch to LastKnownGood. If the startup attempt is using the LastKnownGood, continue on in case of error.
0x1	Normal	If the driver fails to load or initialize, startup should proceed, but display a warning.
0x0	Ignore	If the driver fails to load or initialize, start up proceeds. No warning is displayed.

ImagePath:REG_EXPAND_SZ: *Path and filename*
> Specifies the path and filename to the services subkey.

ObjectName:REG_SZ: *Object Name*
> This value specifies the account name that the service will use to log on when the SysPart service runs.

> Default: subkeyname

Start:REG_DWORD: *Start Constant*
> This value specifies the starting value for the service.

Value	Start Type	Description
0x0	Boot	Represents a part of the driver stack for the boot (startup) volume and must therefore be loaded by the Boot loader.
0x1	System	Represents a driver to be loaded at Kernel initialization.
0x2	Auto Load	Regardless of service type.
0x3	Load on Demand	Available, but will not be started until the user starts it.
0x4	Disabled	Not to be started under any conditions.

Type:REG_DWORD: *Type Constant*
　　　This value discloses where the service fits in the NT architecture.

Service Type	Description
0x1	A kernel device driver.
0x2	A File System driver, which is also a kernel device driver.
0x4	Set of arguments for an adapter.
0x10	A Win32 program that can be started by the Service Controller and that obeys the service control protocol. This type of Win32 service runs in a process by itself.
0x20	Win32 service that can share a process with other Win32 services.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart\Enum stores enumeration information specifically for Windows NT, it provides no operational function for SPAdmin.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart\EV stores environment information obtained from NVRAM.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart\Parameters stores information regarding the status of the service. The following values are added:

ShareName:REG_SZ: Contains the share name currently assigned to system partition
State Request:REG_DWORD: Stores the state you want applied. Valid values are:
0 = Unmount Service
1 = Mount
2 = Mount and Share

UseDrive:REG_SZ: Can be used to specify a drive letter to mount the service. By default this setting is blank. If there is no entry the next available drive letter will be used.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart\Security stores information specifically for Windows NT, it provides no operational function for SPAdmin.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\SysPart\Status contains the service response mechanism.

The following values are available:
ActionTaken:REG_DWORD: *Constant*
　　　Shows a bitmap of the actions taken based on the Current State and the State Request. This field is mainly used for debugging by the developer.

#define ACTION_NOTHING	0x0	Do Nothing
#define ACTION_UNSHARE	0x1	Delete the network share
#define ACTION_UNMOUNT	0x2	Unmount the system partition
#define ACTION_FIND_DRV	0x4	Change drive letter if necessary
#define ACTION_MOUNT	0x8	Mount the system partition
#define ACTION_SHARE	0x10	Map a share on the network

Current:REG_DWORD: *Constant*

Shows the current state of the System Partition Service. Valid values are:

0 = Unmounted or Service stopped

1 = Mounted

2 = Mounted and Shared

Drive Used:REG_SZ: *Drive Letter*

Drive letter that the service used to mount the system partition

Error Code:REG_DWORD: *Constant*

Shows any error status encountered by the service. In addition, event viewer messages are generated.

SPERR_NO_ERROR	0	No error detected
SPERR_ACTION_NOT_FOUND	1	Action not found
SPERR_INVALID_DRIVE	2	Invalid drive request
SPERR_NO_DRIVES	3	No drive letters available for mounting
SPERR_ILLEGAL_ACTION_REQ	4	Illegal action requested
SPERR_NO_SYSPART_DETECTED	5	No system partition detected
SPERR_UNABLE_TO_MOUNT_SYSPART	6	Unable to mount the system partition
SPERR_UNABLE_TO_UNMOUNT_SYSPART	7	Unable to unmount the system partition
SPERR_UNABLE_TO_SHARE_SYSPART	8	Unable to share the system partition
SPERR_UNABLE_TO_UNSHARE_SYSPART	9	Unable to unshare the system partition

MachineID:REG_DWORD: *Constant*

Shows the system machine ID or type of system detected by the System Partition service. UpdateSP uses the ID to determine which system ROMPAQ file(s) are to be copied to the system partition. The Default value is 0, meaning: copy all system ROMPAQ files. This value is used to reserve space on the system partition so that all ROMPAQ files do not need to be copied to the system partition.

Update Complete:REG_DWORD: 0

This value is used internally by SPAdmin.