Electronic Service Agent
for
pSeries Hardware Management Console
User's Guide

SC38-7107

Note

Before using this information and the product it supports, read the Notices and Trademarks information in Appendix C.

First Edition (?? Month ??   ??? Year ??)

This edition applies to Electronic Service Agent for pSeries - Hardware Management console - H1.0.0.0 and to all subsequent releases and modifications until otherwise indicted in new editions.

Contents

Appendix A. Basic Configuration property

About this user's guide

This guide provides overview information, setup or prerequisite information, initial configuration instructions, advanced configuration instructions, and use information.

Who should read this guide?

This guide is intended for use by IBM Customer Engineers (CEs) and pSeries administrators who are familiar with or have a working knowledge of Linux and RISC architecture as it pertains to basic operation of IBM RISC pSeries. Throughout this guide, Service Agent for pSeries is also referred to as Service Agent.

Terminology

You need to be familiar with the following terms that are used in this manual:

IBM Service Agent Server (SAS)
> The Service Agent Server (SAS) is located at the IBM company. It is the machine to which your computer(s) sends information that is stored, analyzed, and acted upon by IBM.

Hardware Management console
> The Hardware Management console contains the central database and the processes for controlling the Service Agent system processes and communications to IBM.

Resource filters
> Resource filters allow you to specify certain devices so that they are not reported to IBM. This is particularly needed if the device is a non-IBM device not covered under warranty or a maintenance agreement (MA).

Thresholds
> Thresholds are filters that can be applied to specific detected errors which can supersede the internal Service Agent error detection thresholds.

Register machines
> Currently, Service Agent allows you to only add or register other Hardware Management console machines.

Vital Product Data (VPD)
> Vital product data (VPD) is the information Service Agent gathers, stores, and then sends to the IBM Service Agent Server. The VPD is used, by IBM, to provide you with properly configured upgrades and additions to your configuration.

HeartBeat

HeartBeat monitoring ensures that Service Agent on each monitored machine is active. When the HeartBeat for a monitored machine fails, the condition is reported to the IBM Service Agent Server.

Chapter 1. Understanding Service Agent

This chapter presents general information about Electronic Service Agent for the pSeries Hardware Management Console.

What is Service Agent?

Service Agent is an application program that operates on a pSeries Harware Management Console (HMC) computer and accepts hardware errors from the Service Focal Point (SFP). It reports serviceable events , assuming they meet certain criteria for criticality, to IBM for service with no customer intervention.

Since licenses are checked by the IBM Service Agent Server (SAS) whenever a call is made to IBM, only machines on IBM Warranty or MA can use Service Agent to report errors.

Service Agent is *not* intended to be a replacement for the pSeries Maintenance Package. All service calls should start with use of the standard Maintenance Package. Service Agent is to be used as an additional service tool for the system.

What does Service Agent do?

Here are some of the key things you can accomplish using Electronic Service Agent for pSeries :

- ? Problem-definable threshold levels for error reporting
- ? Automatic problem reporting; service calls placed to IBM without intervention
- ? Automatic customer notification
- ? Network environment support with minimum telephone lines for modems.

What models are supported?

This level of Service Agent supports **pSeries 680 Model 6xx**

How does Service Agent handle OEM devices?

Service Agent can be configured to exclude OEM equipment or devices not covered by IBM Warranty or MA. When properly configured, OEM or devices not covered by an MA are not reported to IBM.

How does Service Agent work?

The Hardware Management Console machines have Service Agent installed on them. After machines are defined, they are registered with the IBM Service Agent Server (SAS). During the registration process an electronic key is created that becomes part of your resident Service Agent program. This key is used each time Service Agent places a call for service. The IBM Service Agent Server checks the current customer service status from the IBM entitlement database; if this reveals that you are not on Warranty or MA, then the service call is refused and posted back using the local E-mail notification.

If the current call shows that the MA Expiry (Maintenance Agreement Expiration) date is greater than the local key indicates, then the key is extended to the new expiration date and you are sent a message indicating extension of service coverage. Service Agent provides early warning notification of upcoming Warranty or Maintenance Agreement expiration by sending renewal reminders at 90, 60, and 30 days prior to expiration. This feature is activated after you register with IBM.

Service Agent is not designed to arbitrarily pick up just any general information without it having been programed to do so. There is some data that Service Agent does bring to IBM to help with problem resolution. In some cases, this information may very likely be used by IBM for other purposes. This information consists of the problem or error information itself and Vital Product Data (VPD) or Inventory data.

In the event you are concerned about whether this information is sensitive you can review the actual data that is being sent to IBM using the Service Agent User Interface.   If, after reviewing the data and determining you don't want Service Agent to send data, you can take several different steps to prevent data from going to IBM. For example:

1. Within Service Agent, you can turn off the VPD gathering feature; thus VPD is not sent to IBM.

2. After registering, you could turn off the modem itself and configure the Service Agent Notification process to notify a help desk using E-mail or have the help desk monitor Service Agent (in real time) using the Service Agent Alerts function. Then, when Service Agent detects an error, you can call into IBM manually (instead of Service Agent calling).

Today the data, besides error information, being sent to IBM is Vital Product Data (VPD) which is generated by inventory scout (invscout) on the HMC. Also, Service Agent picks up Extended Error Data (EED) and sends it to IBM.

Working with the Gateway machine (server) and the central database

On the HMC, the Service Agent software is preinstalled as a Gateway server. All configuration and setup data for monitored systems is maintained on the Gateway server and it's central database. After configuring at least one HMC, other HMC s can be made to use this gateway to call to IBM.

The figure below illustrates a typical Service Agent monitored network.
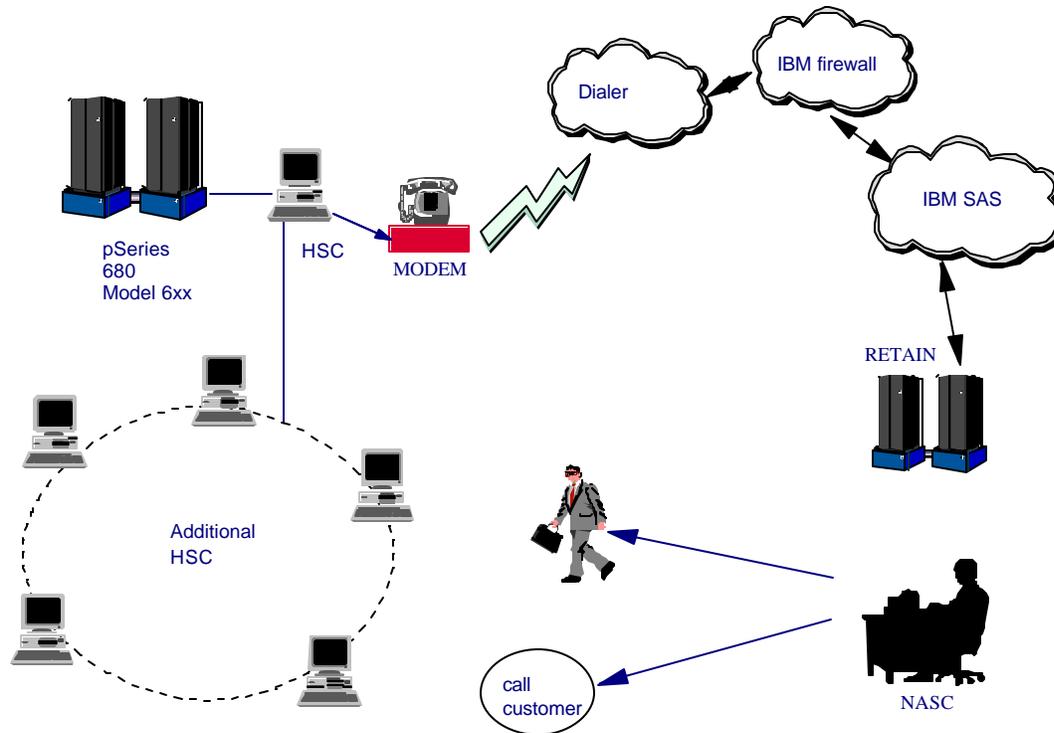
Understanding modems and TCP/IP addressing

Service Agent uses TCP/IP addressing to communicate with its monitored systems. Using IP addressing, Service Agent, receives information from its' managed systems and then forwards (from the Gateway server) that information to the IBM Service Agent Server through a call to the Dialer. This call requires a local modem on the machine you intend to use as your gateway server (where the Service Agent program and central database reside).

Understanding the monitoring system

There are three major components or processes that make up the Service Agent monitoring system:

? The Electronic Server System (ESS) process running only on the Gateway server

? The On Demand Server (ODS) process

? The User Interface

Electronic Server System (ESS) process

The ESS process runs only on the Gateway Server and handles all requests for data input and retrieval from the centralized database.

On Demand Server process

The On Demand Server (ODS) runs on all hosts defined and handles all Service Agent monitoring and communication activities for that host. The ODS retrieves and sends data to the ESS process as necessary, or makes a call to the IBM Service Agent Server (SAS).

Within the ODS, Service Agent automatically monitors and reports back to IBM three major events.

? General Health Check

? Changes in the Vital Product Data.

? Supported Error events determined by Service Agent to be valid.

These events are reported to IBM directly using a modem that is attached to the Gateway server. The actual process running and dial out times are fully configurable within the *Service Agent* program. If no errors are reported to IBM during the health check interval, Service Agent reports to IBM that it's because the machine is healthy, and not because there is a system or communication problem.

When a supported error event is detected, Service Agent starts actions to prepare and send a request for service. It logs the event and reports the problem to the IBM problem management system for remote analysis and action. If communications to the IBM Service Agent Server (SAS) have been successful, a Problem Management Record (PMR) number is returned and logged in the database with an Open status. You must define and register the HMC machines that will monitor the SFP with Service Agent to enable error detection. If you don't define and register the HMC machines, Service Agent will not capture error information.

Graphical user interface

The Graphical User Interfaces (GUI), allows the user to setup and define hosts or machines that Service Agent monitors.

  It is used for advanced functions and customization of the system as well as configuration for complex systems and multilevel networks. A logon password is utilized which is defaulted to "password".   It is recommended this password be changed after the initial install and stored in a safe place for security purposes. See *Learning about the Service Agent configuration interface*   for more information.

Additionally Service Agent can send E-mail messages or pager notifications to contacts relating all or limited machine problem information. The E-mail and pager notification functions must be configured before they become active. See *Advanced Configuration tasks*, for information on how to configure E-mail notifications.

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Chapter 2. Prerequsites

This chapter presents, in a step-by-step style, prerequisite activities that need to be verified or completed prior to installing Service Agent if it has not been pre-installed at the factory.

__ 1. Ensure your pSeries Hardware Management console is at Red Hat Linux 7.1 or above.

__ 2. Ensure the person installing Service Agent has root authority on the local server machine. This person must have access to a root-authorized window.

__ 3. Ensure there is adequate disk space available. Service Agent uses disk space in the /usr, /var, /tmp, and /home file systems. The disk space requirement vary for the gateway server and monitored machines. The programs and libraries are stored in /usr and the amount of space used remains static. The Service Agent database is stored in /var and the space used varies with the number of client nodes and the number of events generated by them.

　On the gateway server:
　　&usr should have a minimum of 12 Mb free
　　&var should have a minimum of 10 Mb free
　　&tmp should have a minimum of 10 Mb free
　　&home should have a minimum of 5 Kb free

__ 4. Java for Linux version 1.3 is required on the HMC . Ensure your Gateway server has an available serial port for the local modem if used.

　A TTY device must be available and configured on the gateway system. A modem is required. The modem is used to call the IBM Service Agent Server (SAS). For security, only outbound calls are required by Service Agent so the auto answer capability of the modem should be disabled. An asynchronous modem with a minimum communications speed of 9600 baud and error correction (in the United States) is required. Please refer to local procedures in your country or region to see what the modem requirements are for Service Agent.

　IBM ships the following modem types for use with Service Agent on some products: Remember, these modems are considered to be assigned to the product serial number. If the machine moves the modem must go with it.

　&7852 Model 400
　&7857-017 or 7858-336

If you use any of these modems, see *Modem setup*.

__ 7. Obtain the HMC information. Service Agent needs to know the hostname, machine type, serial number, and processor-id of the HMC. This information is used during configuration and registration of Service Agent.   The serial number, model, and machine type must be obtained from the labels on the exterior of the machines. You can use the following table to record this information:

Hostname	Machine Type	Model	Serial Number	Processor-id

__ 8. Check out Linux procedures.   On your Hardware Management console, ensure Point-to-Point Protocol (PPP) is installed. PPP is only required if a modem is going to be use for error reporting to IBM.

__ 9. The modem and phone should be connected and operational. Check the physical connections to determine this.

__ 10. Preparing for E-mail alerts. Your Hardware Management console (the machine on which Service Agent is installed) must have E-mail service. E-mail service is required if you want to use E-mail Alerts. E-mail Alerts can be configured using the Service Agent configuration interface. See *Advanced Configuration tasks* to learn how to configure E-mail alerts.

   Note: Service Agent does not provide E-mail support. As stated above, a mail application must be present on your Hardware Management console.

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Chapter 3. Configuring Service Agent the First Time

Understanding the Service Agent launch-panel tasks and status

The following panel shows the Service Agent launch-panel tasks and status information:

The HMC's Service Agent allows you to perform the following tasks or check Service Agent status from the Service Agent Launch panel:

Service Agent tasks

Service Agent UI - Registration/Customization
   Selecting this task launches the Service Agent graphical user interface

Stop Service Agent UI

Stops any active Service Agent user interface.   Primarily used by an administrator if the Service Agent user interface can not be stoped using the File dropdown and selecting Exit.

Change Service Agent Mode - (Server/Client)

Changes the state of the HMC from one of server or gateway to that of a client which reports its' status and errors to another HMC.

Normally all HMCs are configured as a server or gateway and each machine reports its status and errors to IBM.   Changing the mode allows you to collect status and errors from specified HMCs (machines defined as clients) and have only one HMC do the reporting to IBM. This decreases the number of your machines reporting (calling in) to IBM.

See *Change Service Agent's mode from server to client* for information on how to switch modes from Server to Client.

Start Service Agent Process

This task starts the required processes running on the HMC. These processes are: Electronic Server System (ESS) and On Demand Server (ODS).

Stop Service Agent Process

This task stops all processes associated with Service Agent. Additionally, stopping the Service Agent processes prevents any call home (calls to IBM).

Service Agent mode

Indicates wheather this HMC is a server / gateway machine or a client reporting its status and errors to a different HMC.

Service Agent status

The status of the Service Agent Electronic Server System (ESS) and On Demand Server (ODS) processes. The state is either *Running* or *Not Running*. The following information will also be displayed.

Primary server

The name of the server or gateway machine. This could be the machine you are on or it will be the name of the machine to which status and errors are reported.

Seocndary server

The name of server or gateway machine that acts as the primary server if the primary server is unavailable.

Teritary server

The name of the server or gateway machine that acts as the primary server if the primary and secondary servers are unavailable.

Client name

This is the name of a machine that is being monitored by the primary server or gateway machine. This name should match the NodeName of machine(s) that have been added as clients using the Service Agent program.

First Time Access User Interface

The first time you launch Service Agent from the Hardware Management Console (HMC) you will be prompted to type (configure) specific items or parameters pertinent to Service Agent. These entries are required to be filled in.

Complete the following steps:

Launch Service Agent from the HMC.

Click Start Service Agent processes.

Click Service Agent UI - registration / customization

Read and accept the License Agreement.

Type the word **password** for the initial password prompt. The word password is the shipped default password supplied by IBM. It is case sensitive.

Type the correct information to complete the prompts as shown in the following panel:
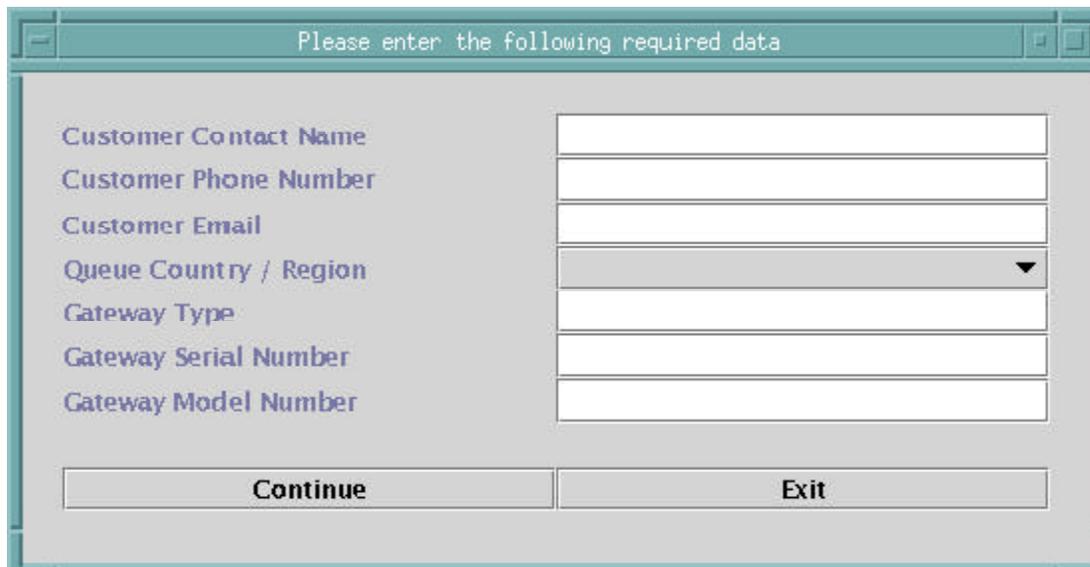
Customer Contact Name

This person should be someone that IBM can reach when an error is reported to IBM from Service Agent.

Customer Phone Number

This should be the phone number associated with the person whose name is placed in the Customer Contact Name field.

Customer Email

This should be the e-mail address of the person whose name is placed in the Customer Contact Name field.

Queue Country / Region

This field should contain the country or region location of the HMC machine. Click the dropdown to expand the country or region choices. Type the first letter of the desired country or region and you will be moved to the first occurrence of a country or region whose first letter matches your choice.

Note: It is important that the physical location of the HMC system be accurate. A incorrect location may result in mis-queing of PMRs and/or their rejection.,

Gateway Type

This is the machine type of the HMC that you designate to be the machine to send Service Agent information to IBM.

Gateway Serial Number

This is the serial number of the HMC that you designate to be the machine to send Service Agent information to IBM.

Gateway Model Number

This is the model number of the HMC that you designate to be the machine to send Service Agent information to IBM.

Click Continue. The Service Agent interface appears.

Click Network. Complete any additional optional fields as desired.
Expand the contents of the Network category by clicking the key next to the Network folder.

Note: Some of the fields are pre-filled with information taken from the Service Agent initial configuration panel (shown above).

Click OK.

Expand the contents of the Gateway category by clicking the key next to your Gateway machine.

Click Dialer.

Click the 'Location' bean. Select the Location phone number nearest to the modems regional phone location.
Several of the fields are then completed by Service Agent based on the location phone number you selected.

Click the 'Modem' bean. Select the modem that you will use for Service Agent communications. After your selection, several of the remaining fields are filled in by Service Agent.

Click OK to save the Dialer configuration.

Expand the contents of the Administration category by clicking the key to its left.

Click Register. The details pane shows the Machines template.

Select your Gateway machine by clicking it.

Click Register. The "Would you like to connect to IBM's Service Agent Server now" pop-up appears.

Click Yes. Service Agent will attempt to connect to the IBM Service Agent (SAS) server using the modem you have selected. (You should got to the CallLog for realtime status of the dialing process and connection.)

Click CallLog. Check the details pane to view the status of the attempted call. You can determine the success or failure of the connection attempt by looking in the *Description* column.

You have now completed the initial configuration of Service Agent.

Chapter 4. Learning about the Service Agent interface

Accessing the Service Agent Configuration interface

From the Service Agent launch screen, click Task **Service Agent UI - registration / customization** as shown in the screen below:

After clicking the Service Agent UI - registration / customization task, you are prompted for the Serivce Agent password as shown in the screen below:

The User Interface   requires a password to gain access to the Service Agent program. The initial default password is **password**.

The administrator should change this password to one that is unknown to anyone but himself or authorized personnel to protect the Service Agent configuration setup from unauthorized modifications.

 Typing a wrong password causes an error message to be displayed indicating the password entered does not match the one expected.   If the error message comes up, click **OK** and retype your entry to try again.

Working with the Service Agent user interface

After successful password validation the Service Agent user interface is displayed as shown in the following screen:
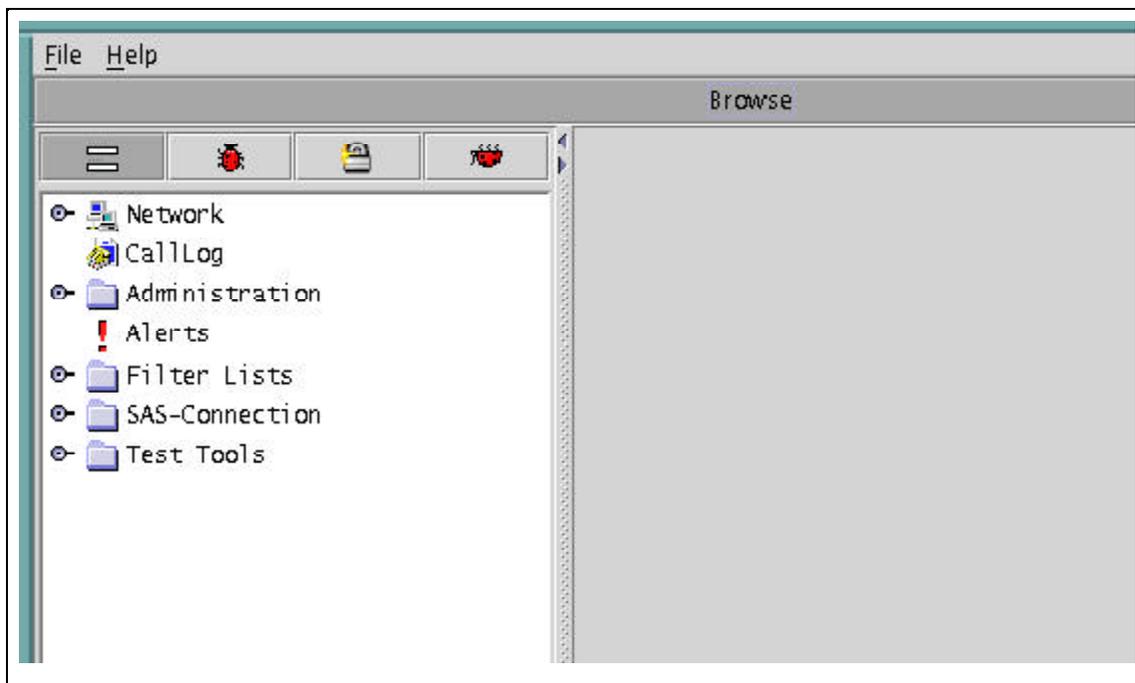
Service Agent's's user interface is used to configure and manage how you want Service Agent to work and report data to IBM.

The remainder of this chapter discusses the make up of the Service Agent user interface.
After reading the rest of this chapter you will understand how to work with the user interface.

Understanding the Configuration screen

The user interface is divided vertically into two panes – a navigation pane on the left and a detail viewing pane on the right. This is shown in the above screen.

The buttons at the top of the navigation pane are called *category selectors*. Each category determines the type of information that is displayed in the detail window to the right. The very top buttons (located in the Menu bar) are the *File* and *Help* dropdown buttons. From the *Menu* bar, selecting the *File* dropdown enables an *Exit* option. Also in the Menu bar is the *Help* dropdown. Clicking the *Help* dropdown displays the *ShowHelp* and the *About* options.

At the very bottom of the navigation pane are two buttons labeled Add and Delete. These buttons are enabled, in Properties category view only, when they apply to the item selected. For example, you cannot add or delete monitored machines when the Error view category is selected. If you want to delete a machine, you have to switch to the Properties category first.

To edit the detail information to the right, click in a field and make the necessary changes. Mandatory fields are indicated by an exclamation mark; Fields which cannot be changed are flagged with a padlock. Click the **OK** button at the bottom of the detail pane to save your changes, or click **Cancel** to abandon your changes.

If you forget to click **OK** before switching to a different screen, your changes are not saved. This is equivalent to clicking **Cancel**. After clicking **OK** , if you have missed any mandatory fields or if you have entered data which is incorrect for the field, a window pops up listing the problematic fields.

Mandatory fields which have not been completed are marked with an exclamation (**!**) ; invalid data is marked with an **X**. Additionally, the field name in the property sheet turns red. Also, if you are selecting an item from a list, you can type the first letter of the desired item to move quickly through the list.

Category Selectors

There are four category selectors available which determine the type of information displayed in the detail window when a properties button is selected. They are:

? View / Edit Properties
? View Error Events
? View Licensing Info
? View Internal Errors

In many cases the right hand detail screen may be blank. This is because the selected category may not have any information available.

View/Edit Properties button

The View / Edit Properties button is identified by the icon that looks like a equal (=) mark. While the category is selected, all *Properties* buttons of the navigation pane on the left side are active and available.

This view also provides Node information pertaining to any machine selected.

View Error Events button

The View Error Events button is identified by the icon that looks like a red bug. Selecting this category, along with Network properties, displays a table of all of the errors Service Agent has detected within it's defined network. Error Event or PMRs associated with individual machines can be displayed by selecting the View Error Events button and an individual machine.

The following list describes the content of the Service Agent Errors Events summary. The summary is made up of two screens. The right hand top consists of a series of collumns with the lower right hand section provding focus on the selected error which display some additonal fields.

Host
     The name of the machine for which information is being displayed.

Timestamp
     The year, month, day, and time the Error Event occurred.

Icons

   Icon quick indicators to error status.

Status

Status indicates the current state of a selected error. Possible states are:

   Pending

      Indicates an entry that is set to be sent to IBM. It is the initial status state which triggers the
      Service Agent CallController to connect to the IBM SAS. If the status is some other state,
      setting it to Pending again causes the entry to be resent.

   Held

      Indicates that the Error Event determined to be reportable was held rather than reported to
      IBM.

   Open

      Indicates that the Error Event was sent to IBM and a Problem Management Report (PMR)
      was generated.

   Duplicate

      Indicates an attempt was made to open a PMR that was already opened. If the same Type,
      Serial number, Description, and error number is opened before a previous PMR with the same
      error is closed a Duplicate status is returned.

   Failed

      Indicates that the Error Event failed in the attempt to open a Problem Management Report
      (PMR.

   Closed

      Indicates that the Error Event previously opened with IBM has been closed.

PMR# / PMR Number

   PMR stands for Problem Management Report. The number in this field is the PMR number
   returned from IBM when a Error Event or problem is opened.

Error# / Error Number

   Contains error number that occurred. This could be the 8 digit unique ID from the error log entry
   that was captured, or the Service Reference Number (SRN) generated by the diagnostic analysis of
   error.

Status Details (Displayed in Lower Right hand section of screen)

Chapter 4. Learning about the Service Agent Configuration Interface 29

Contains results of transmission attempts to IBM for specific error event or PMR entry.

When Status Checked(Displayed in Lower Right hand section of screen)
Last time the opened status of a specific error event was checked for closure.

Description
Short description of the error that was generated.

Resource
The logical resource name of the component that failed.

Type
Describes the severity of the error that has occurred. Following are the definitions for the error types:

PERF
Condition where the performance of the device or component has degraded to below an acceptable level (performance).

PERM
Condition from which there is no recovery (permanent).

PEND
Condition signifying that the loss of availability of a device or component is imminent (impending).

TEMP
Condition that was recovered from after a number of unsuccessful attempts (temporary).

UNKN
Condition where it is not possible to determine the severity of the error (unknown).

INFO
Condition for informational error log entry.

Class
Describes whether the error occurred in hardware or software, is an operator message, or is undetermined. Following are the definitions for the class descriptors:

H
Indicates the error is a hardware failure.

O

Indicates the error is an operator message.

S

Indicates the error is a software failure.

U

Indicates the error is undetermined.

OS

Error in Managed OS Image

CEC SP

Error on CEC CSP

Switch

BPA

HSC

Dups

Counter of duplicated error events that occurred since the original entry was generated and opened.

Last

Last time the Error Event occurred.

Error Details (Displayed in Lower Right hand section of screen)

Contains specific details for the error that occurred.

Status Details (Displayed in Lower Right hand section of screen)

Contains results of transmission attempts to IBM for a specific error event or PMR entry.

When Status Checked (Displayed in Lower Right hand section of screen)

Last time the opened status of a specific error event was checked for closure.

Model (Displayed in Lower Right hand section of screen)

Failing device Model number.

Serial (Displayed in Lower Right hand section of screen)

Failing device Serial number.

Type (Displayed in Lower Right hand section of screen)

Failing device Type number.

Note: The table may be reorganized by dragging column titles to where you wish them to be displayed. Sorting is automatic from the first column, dragging the column to the left-most table position sorts the table on the selected title.

Detail Error Event Pane

The lower right panel displays details of selected event in a scrollable pane.

   View Service Agent Internal Errors button

The View Service Agent Internal Errors button is identified by the icon that looks like a red bug that is on it's back (feet up).   Selecting this category, along with the Network properties, displays a table of all of the internal errors and exceptions Service Agent has detected. Both internal program exceptions and external access failures for host creation or program running are displayed.

The following list describes the content of the Service Agent Internal Errors category:

Host
The name of the machine for which information is being displayed.

Timestamp
The year, month, day, and time the error occurred.

Error# / Error Number
The number the system affiliates with the type of error generated.

Error Details
Contains specific details of error that occurred.

Status Details
Contains results of transmission attempts to IBM for a specific error event or PMR entry.

When Status Checked
Last time the opened status of a specific error event was checked for closure.

Details
Display any appropriate error information about the internal error if available.

ID

Internal identification number. Typically " -1".

Description

Description of the error that was generated.

Resource

The logical resource name of the program component that failed. Typically this will be "exec".

Class / Error Class

Typically this field indicates "none".

Detail Error Event Pane

The lower right panel displays details of selected events in a scrollable pane.

 View Licensing Information button

The View Licensing Information button is identified by the icon that looks like a padlock. Selecting this category, along with the Network properties, displays a table of license status information for all machines defined. Specific tables associated with individual machines can be displayed by selecting this button and an individual machine.

The following list describes the content of the licensing information category:

HeartBeat

The HeartBeat status indicates whether a monitored machine has reported into the Gateway within the defined time limit. A good HeartBeat is indicated by a Green Flag stating the machine has check in.

A missing HeartBeat is indicated by a Red X.   The Red X indicates the client is not communicating with the Gateway within the specified time limit. Some causes for missing the HeartBeat may be due to different version levels between the Gateway and the monitored machine, the Client code (ODS) not running or needing to be restarted, possible slow network delays causing the client to miss it's HeartBeat window, or the node is down. Another condition that can cause the loss of HeartBeat is the wrong time zone is set on either the Gateway server or a client node.

To adjust the HeartBeat window, go into the Hardware Service template on the individual machine and change the HeartBeat and/or the HeartBeat Delay accordingly. To be notified when a machine misses a HeartBeat, you can set the heartbeat flag in the E-mail Notification template.

LockStatus

The LockStatus status indicates whether a system has been locked out and all errors detected are ignored or whether it is unlocked and the machine is being monitored.

A Green Flag indicates the system is unlocked and is being monitored. A Red X indicates the machine is locked out and is being ignored.

In some instances you may want to run diagnostic tests on a machine manually. If the machine is not locked out, Service Agent reports any detected errors. To lockout a machine go the *Administration* folder and access the *Lockout Machines* function. Select the machine you wish to lock out and click the **lock** button. This in turn changes the LockStatus to a Red X.

After completing the task on the locked out system, you <u>MUST</u> unlock the machine by accessing the *Lockout Machines* function again, select the locked machine, and click the **unlock** button.

Status

The Status field indicates the Hardware Service Template status of the machine. Refer to the section on the Hardware Service Template for detail explanation of the Status.

Expiry

This is the date the enable license expires on.

Node

The name of the machine for which information is being displayed.

Vendor

The name of the company that manufactured the selected machine or device.

Module

This field indicates the name of the Module or Template that is licensed. An example of this is the Hardware Service template.

Comment

This is a general comment field containing additional information pertaining to the licensed template.

Standard Template Pane

The lower right panel displays details of selected item in a scrollable pane.

Add and Delete Buttons

The Add and Delete buttons (located at the bottom of the navigation pane) are enabled and disabled depending upon which property button is selected. In addition, different options are displayed under these buttons depending upon the actual functions available to the selected property.

Property Selections

Properties are located in the Navigation Pane below Category Selectors and above the Add and Delete buttons**.**   Click any Property selection to see corresponding information in the detail pane on the right or additional function selections. If a property selection has a key pointing to the right, it means there may be another level of detail below it. Click the key to expand the view. A key pointing down indicates that all lower levels are displayed. To hide that level, click the key again. You can use this hierarchy to view information at different levels; for example, you can view data for the entire network or department, or just for an individual machine.

Table Sorting Order

When information is presented in a table, as in an error list, you can change the sort order by dragging a column title left or right as needed. The table is sorted based on the contents of the first column using the columns to the right to break ties. Click a row to display details of the entry.

Network property

The property selection labeled Network is considered the main infrastructure property of the Service Agent system. This property displays the hierarchy tree used to view and configure information for individual machines and groups. When the Network property in the Navigation pane is highlighted, the Add button at the bottom is enabled.

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Chapter 5. Advanced Configuration tasks (How To..)

This chapter contains many How To....s of various tasks that you can perform from within HMC's Web-Based System Manger and the Configuration interface.

How to stop Service Agent

You must have the HMC's Web-based System Manager active.

__ 1. Close the **Service Agent user interface** (if it is open).
__ 2. Click the **Service Agent icon** to activate Service Agent.
__ 3. Click **Stop Service Agent processes**.
   Clicking Stop Service Agent processes stops all the Service Agent processes running on the HMC.

How to start Service Agent

You must have the HMC's Web-based System Manager active.

__ 1. Click the **Service Agent icon** to activate Service Agent.
__ 2. Click task **Start Service Agent processes**.
   Clicking task Start Service Agent processes starts all the Service Agent processes running on the HMC.
__ 3. Click task **Service Agent UI - registration / customization**.
   This launches the Service Agent user interface.

How to change Service Agent's mode from server to client

Changing the mode of Service Agent on a HMC means that the data gathered and recorded is passed to a server machine that has been configured to be a gateway machine. The gateway machine, in turn, passes the data from the client (or clients) to the IBM Service Agent Server.

To change the Service Agent mode you must have the Service Agent - Hardware Management Console screen displayed.

__ 1. Click **Change Service Agent mode - (server/client)**.
   The Change Service Agent mode screen appears.
__ 2. Click **Client** radio button.
__ 3. Click **OK**.

The Status should change from that of Server to Client.

How to add or create additional configuration entries

How to create a department of monitored machines

__ 1. Click **Network**.
__ 2. Click **Add**.
__ 3. Click **Child**.
__ 4. Click **Department**.
__ 5. Type the **name** you want to use to describe this department or group. (This example uses DEPT1 as the department name.)
__ 6. Click **OK**.
__ 7. Click **DEPT1** (or the name you used to create your department).
__ 8. Click **Add**.
__ 9. Click **Child**.
__ 10. Click **Machine**.
__ 11. Fill out the *Node Info* template and click **OK**. This new monitored machine (designated by the name you give it) appears indented under the DEPT1 department name.

How to add a machine

__ 1. Select **Network** property.
__ 2. Click **Add**.
__ 3. Click **Child sub-menu**.
__ 4. Click the **Machine** entry of the *Child sub-menu*.
__ 5. Complete all the required fields for the selected machine.
__ 6. Click **OK** to save the data.

How to specify the physical location of a machine

Specifying the physical location of a machine helps service representatives provide prompt, quick service to monitored machines.

__ 1. Click the **Network** property folder.

__ 2. Click **Add**.
__ 3. Click **Form**.
__ 4. Click **Location**.
__ 5. Type the correct data into the *Location* template.
__ 6. Click **OK**.
__ 7. Scroll the Browse pane to verify that the *Location* template was completed.

How to define resource filters

Resource filters allow you to specify certain devices so that they are not reported to IBM. This is particularly needed if the device is a non-IBM device not covered under warranty or a maintenance agreement (MA). Resources identification is based upon the logical name of a resource. To identify a specific resource to ignore look in the resource field of an error event that has been generated. Then use this name to use for the resource filtering function. There must be and exact match between the resource that is supplied to Service Agent and that which you wish to filter on. You can define resource filters for your network or for specific monitored machines. This example uses a specific monitored machine.

__ 1. Click on a specific monitored machine.
__ 2. Click **Add**.
__ 3. Click **Form**.
__ 4. Click **Resource Filter**
__ 5. Type the *name of the resource* to filter or a *range of resources*. For example, hdisk0, hdisk1,cd0,sysplanar0.
__ 6. Click **OK**.
__ 7. Verify your *Resource Filter(s)* by locating the Resource Filter template in the Browse pane.

How to specify thresholds

Thresholds provide you with a way to prevent certain errors (for a network view or a monitored machine view) from being reported (by Service Agent) to the IBM Service Agent Server.

Go to **Threshold** in Appendix A to see how to find out how to determine errors (their id or number) that you can then use in defining thresholds.

__ 1. Select either the *Network folder* or a *monitored machine*.
__ 2. Click **Add**.
__ 3. Click **Form**.
__ 4. Click **Threshold**.
__ 5. Type the correct data into the *Threshold template.*
__ 6. Click **OK**.

__ 7. You can verify your Threshold entry. Scroll the Browse pane to the *Filter Lists folder*.

__ 8. Click **Thresholds**

__ 9. Scroll until you locate the error that you just added .

How to lockout Service Agent on a machine

The Lockout Machines template allows turning off or locking out Service Agent on an individual machine.

CAUTION: The locked out system will not report any errors until the lock is removed. Be sure to unlock the system after all maintenance work is performed.

__ 1. Under the Administration folder, click **Lockout Machines**.

__ 2. From the Browse pane, select the monitored machine or machines on which you want to lockout Service Agent.

__ 3. Click **lock**.

__ 4. To verify the lockout, click the **Network** folder, then click the **Pad Lock** icon to display status. The machine's Satus should show a red X, indicating it is locked.

How to add an E-mail alert

__ 1. Select a monitored machine for which you want to create a Email alert folder. Selecting the Gateway server activates the e-mail alert for lower machines, but unique alerts may be added to any machine contained within the configuration.

__ 2. Click **Add**.

__ 3. Click **Child sub-menu**.

__ 4. Click **Email alert**.

__ 5. Change the default e-mail address to whom you want to send the e-mail to.
You can send an e-mail an alert to multiple e-mail addresses by separating the e-mail addresses with a comma. For example, joe@host.companyname.com, carol@abcit.com, jill@companyname.com .

__ 6. If the selected host has a different Mail Server, type the name of that server as the value for Email Server. The default name may be used if that mail server is the server performing e-mail serving.

__ 7. Change the *Email Wait Time in Minutes* field to something less than 15 if you want to check the function or receive notification sooner than 15 minutes. You can not use a value of 0.

__ 8. Set to True the types of alerts of which you want to be notified. For more information and a description of the alert types, refer to *Advanced Configuration tasks.*

___ 9. Click **OK**.
   Notes:
   ___ 1. Different E-mail alerts can be customized for particular users. For example, you may
   want employee A to be notified of CAUTIONS and employee B to be notified of
   INTERNAL ERRORS.

   ___ 2. You can view your E-mail configuration entry. In the Navigation pane, click the
   monitored machine for which you just created the E-mail alert. Then right click that
   monitored machine; select Refresh. When you expand the entires in the Navigation pane,
   notice the E-mail alert entry.

How to remove or delete configuration entries

How to remove a machine entry

___ 1. Select **Network** property.
___ 2. Select the **machine** to remove.
___ 3. Click **Delete**.
___ 4. Click **Yes** to complete the removal.
   Note: This will not uninstall the package. After removing the machine entry, go to the
   corresponding client HMC and make it a Gateway server. It will then dial IBM independently if it is
   set up correctly.

How to test certain configuration entries

How to send a test PMR to the IBM Service Agent Server

___ 1. In the Test Tools folder, click **TestPMR**.
___ 2. Select a *machine* and click **Generate** to create and send a test PMR to the IBM Service
   Agent Server.
___ 3. Reply Yes to the prompt of whether to connect to IBM now or later.
___ 4. Click the **Calllog** property to monitor the TestPMR progress for success or failure.
___ 5. Look for the Red bug icon beneath the monitored machine property. It should be prefaced by
   the error string 000-000.

How to send a test E-mail

Note: You have to have an E-mail alert defined prior to sending a test e-mail. See *How to add an E-mail alert* in the above example.

__ 1. Select a monitored machine for which you want to create a Test Emails folder. You must expand the view of the monitored machine by clicking the key next to the machine name.
__ 2. Click **Email alert icon**.
__ 3. Scroll to *Test Emails Enabled* field.
__ 4. Click the **Test Emails Enabled** check box to toggle the value to True.
__ 5. Click **OK**.
__ 6. Repeat steps 1 through 5 to send test e-mails to other e-mail addresses.
__ 7. Expand the **Test Tools** property.
__ 8. Click the **TestEmail** icon.
__ 9. Click **Send**.
    Note: E-mail is sent after the time-delay (set when created the e-mail alert) expires.
__ 10. Scroll (while in the Email folder) to *Test Emails Enabled* and click the **Test Emails Enabled** check box to toggle the value to False.
__ 11. Check with the person(s) who are designated to receive the e-mail alerts to see if they did receive the alert(s).
    Note: The e-mail test alert instructs the recipient to contact the system administrator.

How to perform other Service Agent functions

How to determine your Service Agent version

__ 1. From the Service Agent interface, click **Help**.
__ 2. Click **About**.
    About displays the Service Agent splash screen.. The Service Agent version level is displayed in the lower-left cornor of the splash screen.
    Note: Help/About displays the level of code installed on the HMC. Selecting the Environment item located under a expanded node or machine shows the Service Agent code level for that machine.

How to send Vital Product Data (VPD) to IBM

__ 1. From the SAS-Connection folder, click **Send VPD**

__ 2. Select a *monitored machine* for which you wish to send VPD.

__ 3. Click **send VPD** or **send VPD Immediately to IBM**..

  Send VPD sends VPD to IBM at the next regularly scheduled time. Send VPD Immediately
  commences to send VPD as soon as the option is clicked.

How to clean-up (remove some data from) monitored logs

You may want to clean-up monitored logs because they are gettng too large or you only want to keep
certain data.

__ 1. Expand the **Administration key**.

__ 2. Select **Purge Data**.

__ 3. Toggle to True the data you want to purge:

  ✍CallLog data

  All entries posted to the CallLog. For example, when a call is made to IBM, a record is
  created in the CallLog; this would be removed. This function removes ALL data in the CallLog.

  ✍Pugre Error Warning

  Any warning messages (non-error messages (yellow triangles)) are purged.

  ✍Pugre Internal Errors

  Any errors with the upside-down Red Bug icon posted beside them are purged.

  ✍Closed PMRs

  Pugres any PMR marked as closed.

  ✍All PMRs

  Purges all PMRs

  ✍Out-going Queue

  The Out-going queue contains all Events scheduled to be shipped to IBM. Events being Errors
  from the HMCs, VPDS from different systems and EED. All this data goes in a batch mode.
  At any time, the user can purge this queue to avoid calling to IBM.

  ✍E-mail Locks for Revision Updates

  After sending one E-mail Notification about a new revision, a lock is created and no more
  E-mail's are sent to the same E-mail ID about the same version. This is to avoid multiple mails
  being send to the same person, even if they don't upgrade Service Agent immediately. When
  the lock is purgee, revision notifications will again be sent one time for new revisions. Additional
  revision notifications of newer versions will be sent only if they have not been previously sent.

__ 4. Click **Purge** to purge all data marked as True.

  Note: If there is a large quanitity of data to purge, this activity could take some time to
  complete. You will not see any screen updates while this activity takes place.

How to clear pending request to the IBM Service Agent Server (SAS)

Normal workings of Service Agent can create requests to the IBM Service Agent Server (SAS). They can be queued for immediate or later processing. To clear any current or pending request follow the steps below:

__ 1. Click the **Administration** property folder.
__ 2. Click **Purge**.
__ 3. Toggle **Out-going Queue** to True.
__ 4. Click **Purge**.
     Note: You will not see any screen updates while this activity takes place.

Chapter 6. Starting, modifying modes, or stopping Service Agent on a HMC

The following diagram of the Service Agent - Hardware Management Console screen shows the different tasks you can run when working with Service Agent.
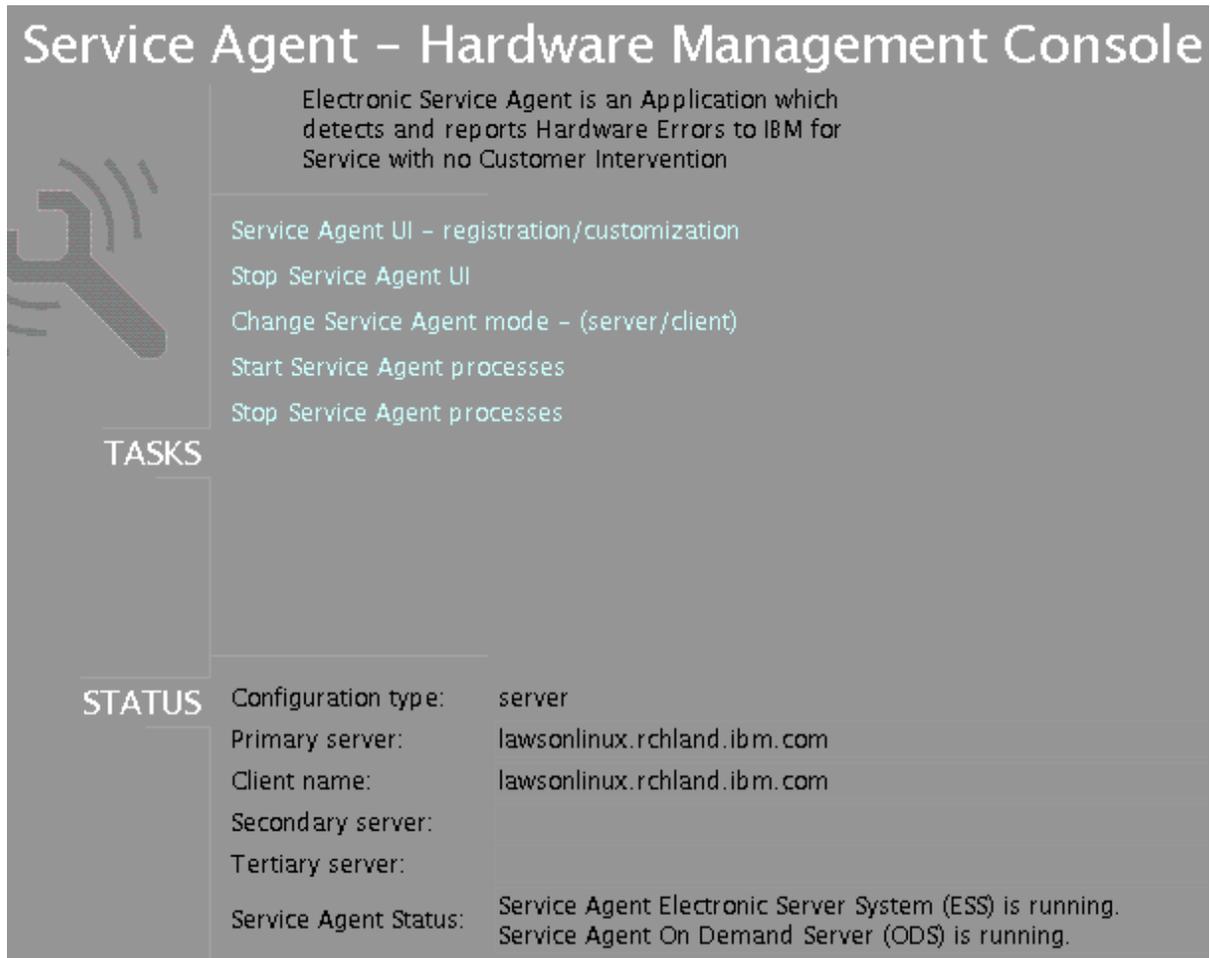
Service Agent – Hardware Management Console

Electronic Service Agent is an Application which detects and reports Hardware Errors to IBM for Service with no Customer Intervention

Service Agent UI – registration/customization

Stop Service Agent UI

Change Service Agent mode – (server/client)

Start Service Agent processes

Stop Service Agent processes

TASKS

STATUS

Configuration type:	server
Primary server:	lawsonlinux.rchland.ibm.com
Client name:	lawsonlinux.rchland.ibm.com
Secondary server:	
Tertiary server:	
Service Agent Status:	Service Agent Electronic Server System (ESS) is running. Service Agent On Demand Server (ODS) is running.

These tasks are:

- ✍ Service Agent UI - registration / customization
- ✍ Stop Service UI
- ✍ Change Service Agent mode - (server / client)
- ✍ Start Service Agent processes
- ✍ Stop Service Agent processes

Starting Service Agent processes

Before you can launch the Service Agent user interface on a HMC the Service Agent processes (from the HMC) must be running. You must have the Web-based System Manager screen displayed. To start the Service Agent processes:

___ 1. Click the task **Start Service Agent processes**.

   The following screen shows Service Agent processes are being started.
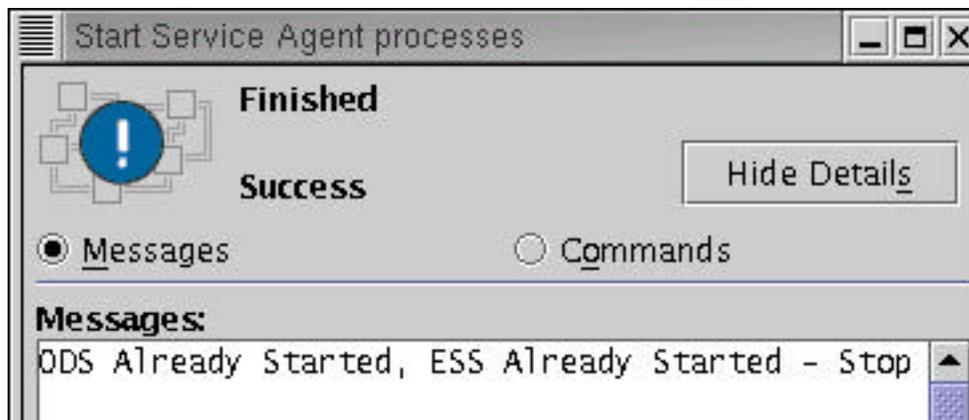
___ 2. Click, from the Web-based System Manager screen, the **Service Agent UI - registration / customization** task.

   The Service Agent user interface is displayed.

Stopping Service Agent processes

Before you can stop the Serivce Agent processes on a HMC you should exit the Service Agent user interface (from the HMC). You must have the Web-based System Manager screen displayed. To stop the Service Agent processes:

___ 1. Click the **Stop Service Agent processes** task.

The following screen shows Service Agent processes are being stopped.
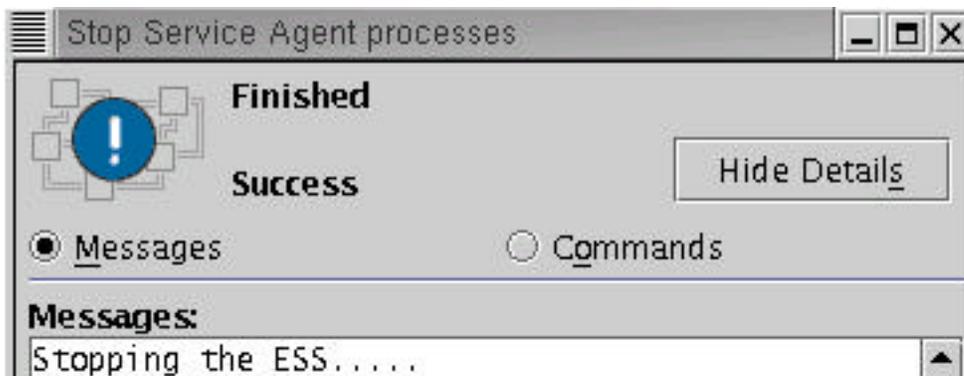
Change Service Agent's mode from server to client

You can change the mode of Service Agent from that of a Gateway server to client. Prior to changing the mode of the HMC from SA server to client you should first add the HMC host entry into the Gateway's database. See the section on **"How to add a machine"** in Chapter 5.

After adding this entry into the Gateway you can then change the newly added HMC's mode, from Server to Client. Changing the mode to client allows you to have errors and other data reported to another HMC that is designated as the Gateway HMC. That Gateway HMC, in turn, will send data to the IBM Service Agent Gateway Server. To change the mode of Service Agent to client complete the follow steps:

___ 1. Click the **Change Service Agent mode - (server / client)** task as shown in the following screen:

Change Service Agent mode – (server/client)
Start Service Agent processes
Stop Service Agent processes

TASKS

STATUS   Configuration type: client
          Primary server: sas6k7.austin.ibm.com
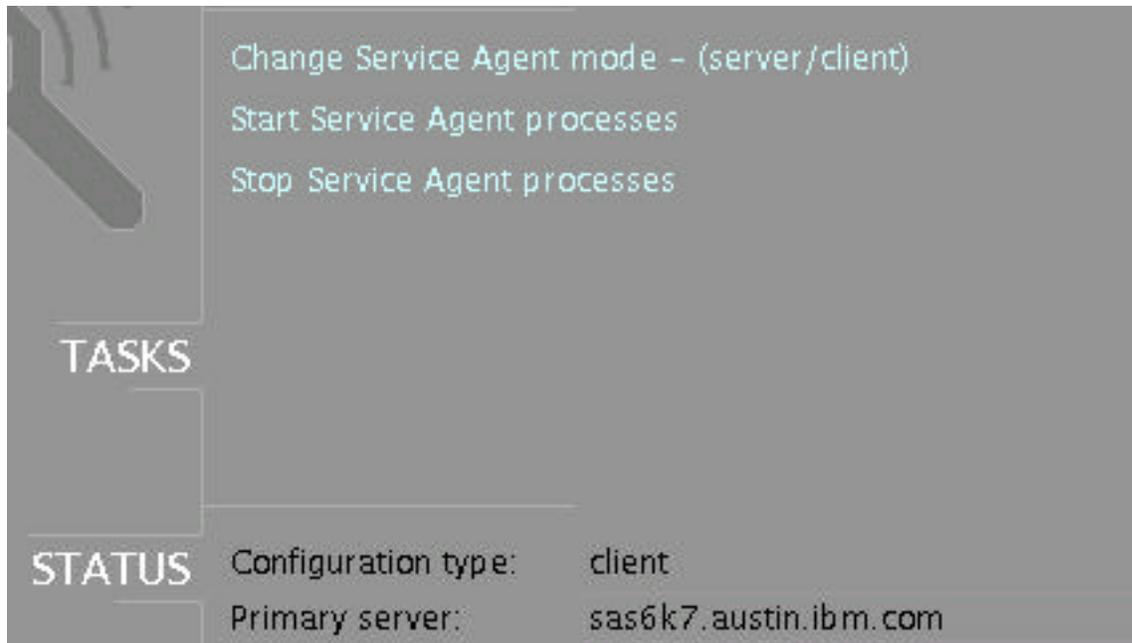
__ 2. Click the **Change Service Agent mode** radio button as shown in the following screen:
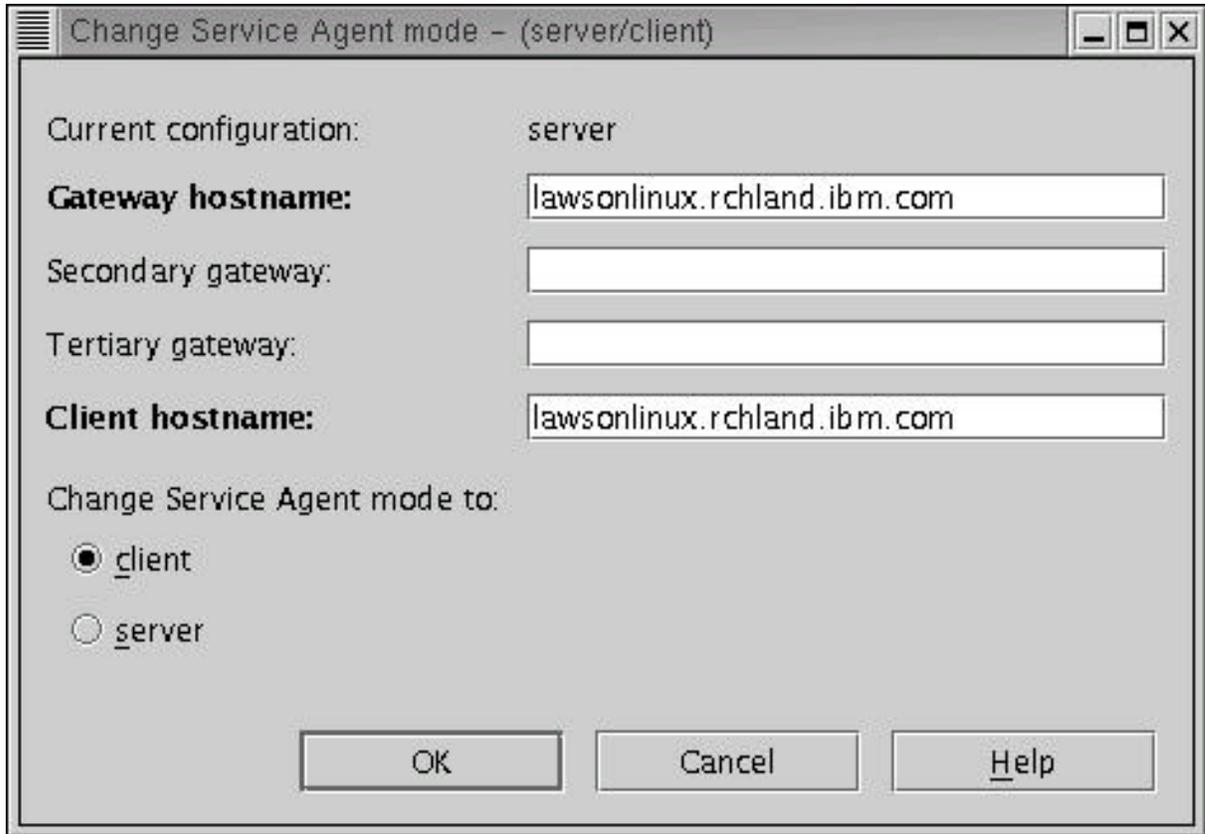
___ 3. Click OK to complete the Server to Client mode change.

The HMC is now operating in a Client mode and will report data to the specified HMC designated
as the Gateway Server HMC.
Click OK to complete the Server to Client mode change

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Chapter 7. Understanding Service Agent Security

This chapter discusses how security for Service Agent works with the following areas:

- ? Data collection
- ? PPP and modem security
- ? Global Dialer and Network
- ? IBM Service Agent Server (SAS)

Data collection

Understanding modems and TTY and PPP and Service Agent

The tty port and modem security are both configured to *not* auto-answer the modem or allow login access from the tty port. Service Agent only allows outbound calls to be created from the customer's location. At no time will the IBM Service Agent Server (SAS) attempt to call the customer's account electronically.

Service Agent, from the client through the IBM SAS, uses an IBM Certified Secure Network structure (using the Gateway ppp) to run the Service Agent Dialer application as a secure encrypted tunnel network to the IBM internal complex. The Certified Secure Network structure protects both IBM and our Service Agent Client networks from malicious attacks attempted by other users of the shared public infrastructure.

Global dialer networking to IBM SAS

The purpose of this is to provide an overview of the security methods in place for the AT&T Global Network Services Internet Remote Access Services Managed Tunneling feature with TCP/IP protocol using IPSec Virtual Private Networking with an AT&T managed Site Interface Gateway (SIG). This service has features specific to the transport medium, whether broadband or narrowband. The differing features are specifically noted where necessary:

- ? IPSec Virtual Private Network (verification/encryption of data at source and destination)
- ? Remote Client Personal Firewall feature (verification of attempted access to client machine)
- ? Authentication (verification of user identity)
- ? Authorization (verification of permissions for data to enter the IBM network)

A Virtual Private Network (VPN) is defined as a secure method of sending private data across a shared public infrastructure. In this case, private data travels from the remote client machine across a portion of a shared network (either PSTN or Broadband) to the IBM network. The IPSec protocol, as defined by the Internet Engineering Task Force (IETF) RFC2041, provides the architecture for the VPN as well as the standards for encryption and authentication. In short, the IPSec protocol adds additional headers to the IP packet, providing a means of additional verification of the packet as well as the encryption of the data payload.

For verification, the Authentication Header (AH) is used to help ensure IP data packet integrity. The AH provides a mechanism to validate that the data packet came from the expected source and it was not modified in transit. Encryption is achieved through the use of Encapsulating Security Payload (ESP) header and an implementation specific encryption protocol. AT&T currently uses 56-bit DES for the IPSec VPN transport, with stronger encryption and PKI/IKE support planned.

The IPSec VPN is implemented through a Network Device Interface Specification (NDIS) Intermediate Device Driver on the remote client machine and the Site Interface Gateway (SIG) on the edge of the IBM network. The AT&T IPSec VPN driver initiates the IPSec tunnel from the client machine to the SIG upon logon and the tunnel remains intact throughout the session. All data to and from the remote user to/from the IBM network traverses the IPSec VPN.

The Site Interface Gateway (SIG) provides the network interface from a remote client machine to the IBM Intranet. A user initiates a logon request through the dialer. At the time of initiation, the user specifies an account, user ID, and password. The dialer carries out the user request by communicating with the AT&T IPSec Virtual Private Networking (VPN) driver.   The request is sent encrypted, through the IPSec tunnel to the SIG, which establishes a session with the Remote Access Service (RAS) Interface Gateway (RIG). The RIG provides an interface to the AT&T Service Manager, which carries out user verification. The RIG then establishes to the IBM SA Server. This gateway structure prevents any additional IBM internal attempts to establish communications to the calling client hosts.

Appendix A.   Configuration details

This appendix describes the details of the Configuration folders, templates, template parameters and their fields.

This information is presented in the order you view the Navigation pane (left-most) in the user interface.

- ✍ Network
- ✍ Gateway server (where the Service Agent program is installed)
- ✍ Monitored machines (other HMCs being monitored by the Service Agent program located on the Gateway server)
- ✍ Administration
- ✍ Filtering
- ✍ Connecting
- ✍ Test tools

Network folder

The Network folder allows you to update the contact information for callback from the IBM Service Center for problems that are received. The *Name*, *Phone Number*, and *E-mail* address of a customer contact are required. In addition, the *Queue Country* where the Gateway server is located is also required. After the data has been typed, click **OK** to save the data.

Note: The country value selected is utilized to properly identify the systems and open Problem Management Reports (PMRs) based upon internal country codes.   The country selected must match that identified with the IBM customer number. If the Country code is incorrect, the PMR will either be rejected or possibily sent to an improper queue. Causing delays in problem resolution and support.

Network Template Parameters	Description
IBM Contact parameter fields	
Name	Name of a person IBM may contact for PMR discussions. (Required)
Phone Number	Phone number of contact. (Required)
E-mail	Internet E-mail address of contact. (Required)
Address parameter fields	
!Queue Country	Physical Country Location of the systems that PMRs will be open against. This will generally be the same country the contact person resides in. However, if different the country where the Service Agent network is located should be used. (Required)

Organization	Name of company. (Optional)
Organizational Unit	Name of group or division (Optional)
Street	Street location where Service Agent Network is installed. (Optional)
Locality	City, Town, or Village where Service Agent Network is installed. (Optional)
State Or Province	State/Province where Service Agent Network is installed. (Optional)
Postal Code	Zip or postal code where Service Agent Network is installed. (Optional)
IBM Customer Number fields	
Customer Number	IBM customer number. (Optional). This number is the IBM customer number that is assigned to all IBM customers on Warranty and Maintenance agreements.
Telephone Number fields	
Number	A number you want to place in the Network template that IBM can contact.
Contact Context	
Comment	Any comments that may help in communication between your company and IBM concerning support for Service Agent-monitored systems.
Standard Template Settings fields	Default Template settings used across all monitored systems. Due to processing and system differences in a network, all times indicated are approximate run times.
Err Lease in days Hours, Minutes, Seconds	This timer determines how long to keep and maintain host-detected error entries generated by Service Agent.
Vpd interval in Days, Hours, Minutes, Seconds	This timer determines how often to check for Changes in the Vital Product Data on a host. This data is then transmitted to IBM for diagnostic and error analysis.
Diag Interval - Days, Hours, Minutes, Seconds	This timer determines how often to check for errors or problems detected by the Concurrent Diagnostics.

Using the Add button from the Network folder

When the Network folder is selected you can add additional information about your Network to the Service Agent program using the *Add* button. This additional information can be viewed, through the Network folder's details list. Following are a description of the *Update*, *OK*, and *Cancel* buttons available when in the Network folder view.

Button	Description
OK	The OK button is active once data has been typed or changed in a field. Click the

	OK button to save all data.
Cancel	Click Cancel to cancel the current operation.

Node Info template parameters and descriptions

You arrive at the Node Info template by:

? Selecting the Network Properties view
? Clicking Add
? Clicking Child
? Clicking Machine

Adding a Node to be Monitored

The Node Info template allows you to define specific information about new machines that you want to add to your network of monitored machines. The following table defines and describes the parameters:

Node Info Parameters	Description
Name	Enter the fully qualified hostname of the system to be added. This is the hostname the Gateway will see it as. Such as when you ping a a hostname..
IP address	If entered must be in proper IP number format ###.###.###.###
Processor ID	Required "Uname -m" number (ProcessorID) of the host.
Type	Required input- 4 digit brass tag number located on the exterior of unit.
Serial No.	Required input - Last seven digits of the brass tag serial number located on exterior of unit.
Model	Required input. Model number of unit.
Manufacturer	Optional Manufacturer number of unit.
Type of Installation	Determines the type of protocol used to distribute the client portion of the Service Agent program to selected monitored machines. **NOTE**: This field is not enabled for the HMC since it is a closed system. Service Agent code is not transmitted or installed when a machine is defined for a HMC. The following are the available protocols:

	FTP
	FTP prompts for the a root authority ID and password. It will use the supplied password for transferring files using FTP and running installation processes using the rexec command.
	RSH
	The RSH protocol must be configured to allow access for the svcagent userID on the gateway system to access the client system. One way to do this is to add to the .rhost file in the root directory the entry "<gateway> svcagent" where "<gateway>" is the hostname of the gateway or forwarding system to which the client will be connecting.
	DSH
	The DSH protocol allows the gateway to create a node using the DSH system.
Primary Server	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates primary host sub-host reports to. This field is locked when the Gateway Machine is being displayed.
Secondary Server	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates secondary host sub-hosts report to in case of <u>primary</u> failure. (**This functions currently not active**)
Tertiary Server	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates tertiary host sub-hosts report to in case of primary failure. (**This functions currently not active)**

Form descriptions - from the Network folder

You arrive at the Form selections by:

- ✍ Selecting the Network Properties view
- ✍ Click the Add button.
- ✍ Clicking Form

? Selecting a form you want to work with

Forms allow you to add additional information to a Network, Department or a Machine's node information. The following graphic shows the Forms available using the Add button:
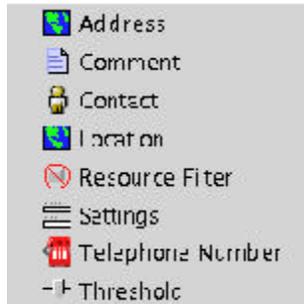
The following selections may take affect across the whole network hierarchy, department or on a individual machine bases depending upon the Property selection made. Forms added to a Machine take priority over a Department grouping and Forms added to a Department take priority over the Network.

Form descriptions:

Address
    Select the *Address* form to add additional address information to the Network, Department, or Machine.

    Note: The *Queue Country*, which is part of the address form, should be the physical Country location of the systems that PMRs are opened against. This is generally the same country the contact Name person resides in. However, if different, the country where the Service Agent network is located should be used. Queue Country is a required parameter.

Comment
    Select the *Comment* form to add additional comment information to the Network, Department, or Machine.

Contact
    Select the *Comment* form to add additional comment information to the Network, Department, or Machine.

Location
    Select the *Location* form to add additional location information to the Network, Department, or Machine as to the physical location of the system. Specific entries available are Building, Floor, and Room location.

Note: Services performed by IBM personnel on systems and products not on IBM warranty or maintenance agreement may be subject to time and material charges.

Settings

Select the *Settings* form to add additional Standard Template Settings entries to the Network, Department, or Machine.   The settings you can work with are: Err lease times, VPD time intervals, and Diag (Diagnostics) time intervals**.**

Telephone Number

Select the *Telephone Number* form to add additional phone number information to the Network, Department, or Machine.

Threshold

Select the *Threshold* form to add additional error thresholds to the Network, Department, or Machine. Error events detected by Service Agent use internal threshold levels, defined by IBM, that must be exceeded before an action is taken (Ignore, Create Pending, or Create Held). In some cases, false error events may be detected due to system configuration or unusual process activities which give false returns. If this happens, thresholds can be added for the specific error Thresholds Property Selection.

Available Threshold Entries:

Error No / Error Label	The Error No or Error Label can be a SRN number generated by the Diagnostics, a system error log error identifier, or a system error log error label. The Error ID or SRN number will be displayed in the "Error Number" field of the "Error Event" if available. **Note:** A threshold Error ID or SRN must be an exact match. If the Error ID detected by Service Agent contains upper or lower case characters the same characters must be entered for the thresholds. All characters displayed in the Error ID of a PMR entry must be typed as the Threshold error. This would include any hex notation such as *0x* if present.
Action	Action to be taken when this error occurs:
	0 - Create Pending	Create error event to be transmitted to IBM.

	1 - Create Held	Create an error event with Held status so it does not get sent to IBM. You would then have to manually change the status to Pending to send it or delete it if you were not interested in it.
	2 - Ignore	Ignore this error; do not report it.
	3 - Dup	Duplicate. An Error will be created with the Status as Duplicate. This Event will never be sent to IBM. E-mail alerts can be configured for monitoring this type of events.
Failing Device Model	This is currently not implemented. Place holder for future development.	
Count	The number of occurrences of the error before the action is taken. The frequency of the count; for example, you might only want to act on the error after it happens 3 times in 1 day, or 2 times in 45 minutes..	

Gateway folder

You reach the Gateway folder by selecting the machine designated as the Gateway Server (the HMC that launched Service Agent as your Server machine) from the expanded Network folder. The Node info template appears in the details pane.

Node info template

Parameters and Fields	Description
Node Info Parameter	
Name	Locked for Hostname of Gateway system. This field entry may be modified when associated with other hosts that are added or defined. But is locked when it is the local Gateway System
IP address	If the IP address is used, it must be in proper IP number format ###.###.###.###
Processor ID	Locked, Uname -m number of local host.
Type	Required input- 4 digit brass tag number located on exterior of unit.
Serial NO.	Required input - Last seven digits of the brass tag serial number located on exterior of unit.
Model	Model number of unit (required).
Manufacturer	Optional Manufacturer number of unit.
Primary Server (Locked)	Used for internal functions within Service Agent

	for Gateway and sub-host communication. Indicates primary host sub-hosts report to. This field is locked on the Gateway host and should not be modified.
Secondary Server (Locked- Not Implemented in Revision 1)	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates secondary host sub-hosts report to in case of primary failure. This field is not used on the Gateway host and should not be modified)
Tertiary Server (Locked- Not Implemented in Revision 1)	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates tertiary host sub-hosts report to in case of primary failure. This field is not used on the Gateway host and should not be modified.

Errorlog template

When Service Agent detects a valid Error Event it puts the event in a template withing a PMR folder beneath the host (as viewed using the Service Agent interface) it was detected on. The information defined in this template is used to open a IBM PMR and to maintain it's returning status and PMR number. When viewing an expanded machine Error Event, templates are indicated by an icon in the shape of a bug along with the SRN or error number of the event and it description. Selecting a individual error template displays its contents in the detail pane to the right. These entries are removed when the "Err Lease" value specified in the detail pane of the "Network" selection is reached.

TYPE MODEL SERIAL

Parameters and Fields	**Description**
PMR Parameter	
Timestamp	Time stamp when Error Event was first created
PMR Number	Problem Management Report (PMR) number returned from IBM.
Status	This field depicts the current status of the Error Event and the results of the PMR request. This field can be set to any of the entries in the status table. 0 Pending This status indicates an entry that is set to be sent to IBM. It is the initial status state which triggers the Service Agent CallController to connect to the IBM SAS. If the status is some other state, setting it to Pending again causes the entry to be resent.

	1 Open This status indicates a PMR was opened in the IBM support center for this machine. **2 Closed** This status indicates a PMR was closed in the IBM support center for this machine. **3 Held** This status indicates the Error Event entry was held. No connection to IBM was made for this status state. Held status entries are general information entries not generally considered hard errors or valid errors. **4 Duplicate** This status indicates an attempt was made to open a PMR that was already opened. If the same Type, Serial number, Description, and error number is opened before a previous PMR with the same error is closed a Duplicate status is returned. **5 Failed** This status indicates an attempt to open a PMR with IBM failed for some reason. See the Status Details field for specific details on the error.
TYPE	For HMC SA System Type number error was detected on. PMR is opened against this TYPE.
SERIAL	FOR HMC SA System Serial number error was detected on. PMR is opened against this SERIAL.
MODEL	FOR HMC SA System Model number error was detected on. PMR is opened against this MODEL.
Error Number	Supplied to Service Agent by the SFP system.
Description	This is the short verbal description of the error indicated from the system error log or the diagnostic data files.
Resource	This is the name of the resource the error occurred on.
Duplicate Count	This count indicates how many times the error has occurred since it was originally opened. Every time a duplicate error occurs, a check is made to see if the original creation date of the OPENed PMR is greater than 24 hours. If so, then the local status of the PMR is set to *PENDING* and an attempt is made to contact IBM again. If the PMR was closed at IBM, a new PMR number will be generated replacing the original one. If the PMR is still open, then the local status will be reset to *OPEN* and

	the original PMR number will be maintained For tracking purposes the original PMR number is appended to the details text of the PMR when the PMR is replaced.
Last Occurrence	This is the time stamp of the last occurrence of the Error Event.
Error Details	This field contains the detail description of the Error Event that occurred.
Status Details	This field contains the detail description of the status results. If the status is set to FAIL due to some communication problem with the SAS this field would contain the associated error message.
whenStatusChecked	Last time the status of a opened PMR was made.
errClass	Clasification of the PMR.

Dialer template

The dialer template allows you to define the modem parameters and field values for communication to the IBM Service Agent server. In this template, required fields are marked by the "!" character as in other screens within Service Agent. However there is no verification of required fields for the modem parameters since a modem is not required for local setup of the rest of the Service Agent program. Although it is highly recommended to configure the modem from within the Basic interface at the time of installation it is not a requirement. The dialer comes into play when you are ready to register your systems and open problem reports (PMRs) and send them to IBM automatically.

Parameter and Fields	**Description**
Dialer Parameter	
Location	This entry allows for the selection of a SAS IBM number to dial. By opening this table and selecting the country and town closest to your location, additional fields are automatically filled in if available. Some countries may have a nationwide or a fee-based 1-800 number available to use. If a local location number from the Location table is not available, look under Nationwide or Fee for a possible toll access number to use instead of a number from the Location table. **Tip***: type the first letter of the country or city to move quickly through the list.
Primary Phone Number	The phone number the modem uses to call out is populated according to

	the location selected. Change this phone number only if needed. (Prefilled by Primary Location Selection.) **Note**: Depending upon the local phone exchange, this number may need to be modified to utilize your outgoing number and area code requirements.			
Secondary Location	This entry allows for the selection of a Backup IBM number to dial. By opening this table and selecting the country and town closes to your location additional fields are automatically filled in if available. **Tip**: Type the first letter of the country or city to move quickly through the list.			
Secondary Phone Number	The phone number the modem used to call out in the event the primary phone number fails. (Prefilled by Secondary Location Selection.) **Note**: Depending upon the local phone exchange, this number may need to be modified to utilize your outgoing number and area code requirements.			
Account	The Service Agent network login account assigned by IBM. May vary depending upon Location. (Prefilled by Primary Location Selection.)			
User ID	The Service Agent network login user ID. May vary depending upon Location. (Prefilled by Primary Location Selection.)			
Password	The Service Agent network login password. May vary depending upon Location. (Prefilled by Primary Location Selection.)			
IP Addr SAS	The IP address for the Service Agent Server. May vary depending upon Location. (Prefilled by Primary Location Selection.)			
TTY Port	The port number the modem is physically connected to (0,1,2,3)			
Baud Rate	The maximum value the TTY modem will be set at for connection:			
	0	1,200	5	19,200
	1	2,400	6	28,800
	2	4,800	7	38,400
	3	9,600	8	56,000
	4	14,400		
Modem	The modem's reset and initialization string values are populated according to the modem selected. Change these values only if needed. **Tip**: type the first letter of the name of the modem to move quickly through the list.			
Reset String	The modem's initialization string values are populated according to the modem selected. Change these values only if needed.			
Init String	The modem's reset string values are populated according to the modem selected. Change these values only if needed.			
Dial Type	Select the dial type of this modem (for example, tone or pulse).			
Verify Baud Rate	The flag to verify baud rate selected works with modem. If the baud rate fails, the program attempts to select the next best baud rate that works.			

| | Default is True. If the flag is set to False, no checking is done prior to running. |

CallController template

The CallContoller template contains the entries and timers use to coordinate the call notification and external communication attempts among the monitored machines when an event or error is detected.

CallController Parameter	Description
Pending Timer	When an event or problem is detected its status is set to Pending. The value specified for the Pending Timer determines how many minutes to wait for additional events to be generated before taking action and attempting to make an external connection to the IBM SAS. For example if an error is detected at 1 PM, Service Agent will wait until 1:15 PM before calling out to IBM and placing a Problem Management Report.
Opened Timer	When a error event is set to an OPEN status the value specified in this field determines how many days to wait before checking the status of the PMR on the SAS server side. When the PMR is closed at IBM the local status is updated the next time Service Agent connnects to the SAS. Expiration of this times does NOT initiate a call.
Health Check Timer	The value specified in this field determines how often, (in days), Service Agent should call into the IBM SAS for a health check. It indicates that everything is OK and the reason SA hasn't called in before is because there were no errors to report. SA will automatically connect to the SAS, if it hasn't done so for some other reason, when the time specified expires. Whenever a connection is made to the SAS the countdown for this timer is reset in order to keep outgoing connections down to a minimum.
Max Attempts	This value determines how many attempts to make a connection to the IBM SAS before giving up and setting the **PENDING** status of the events to **FAIL** and clearing the call queue.
Current Attempt	This value indicates the current connection attempt the CallController is on. When this count equals the Max Attempts

	count. The Entries in the Call Queue are set to FAIL and the queue is cleared.
Retry Timer	This value determines how many seconds to wait before making the next connection attempt. If the Max Attempts is set to 3 and the Retry Timer is set to 60, then the CallController sleeps between each attempt for sixty seconds until the Max Attempts value is reached. {For example, Attempt-1, Sleep(60), Attempt-2, Sleep(60), Attempt-3, (Clear Queue & Set Status)}
Primary URL	This entry determines the IP address and Port number of the IBM SAS server. This value is defined by the IBM SA program and should not be modified as a general rule.
Secondary URL	This entry determines the IP address and Port number of the IBM SAS secondary server. This value is defined by the IBM SA program and should not be modified as a general rule.
Connection Idle Timeout in Minutes	This value determines how many minutes to wait before breaking the connection to the SAS if it becomes idle.

Available buttons for CallController template:

Button	Description
OK	This button located at the bottom of the detail pane is active once data has been entered or changed in a field. Click this button to save all data.
Cancel	Click Cancel to cancel the current operation.
Delete	This button, located at the bottom of the detail pane, becomes active when an entry in the detail pane is selected. Click the Delete button to delete a selected entry.

Environment template

The Environment template displays the various environment and revisions levels of the supporting system and execution files on the machine. The revision levels information is gathered every time the ODS process is started on the machine. The Environment information is transmitted with each connection to the IBM Service Agent Server for error analysis and update notification. These entries are locked and cannot be modified.

Hardware service template

Available Buttons for Hardware Service Template:

Button	Description
OK	This button located at the bottom of the detail pane is active once data has been entered or changed in a field. Click this button to save all data entered.
Cancel	Click this button to cancel the current operation.
Delete	This button is located at the bottom of the detail pane and becomes active when an entry that can be deleted in the detail pane is selected. Once an entry is selected, click Delete to remove it.

Monitored machines folder

When a monitored machine is added to the network, the following templates are associated with that monitored machine

Node info template

Parameters and Fields	Description
Node Info Parameter	
Name	Locked for Hostname of Gateway system. This field entry may be updated when an additional host is added.
IP address	If entered must be in proper IP number format ###.###.###.###
Processor ID	Locked, Uname -m number of local host.
Type	Required input- 4 digit brass tag number located on exterior of unit.
Serial NO.	Required input - Last seven digits of the brass tag serial number located on exterior of unit.
Model	Model number of unit (required).
Manufacturer	Optional Manufacturer number of unit.
Primary Server (Locked)	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates

	primary host sub-hosts report to. This field is locked on the Gateway host and should not be modified.
Secondary Server (Locked- Not Implemented in Revision 1)	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates secondary host sub-hosts report to in case of primary failure. This field is not used on the Gateway host and should not be modified.
Tertiary Server (Locked- Not Implemented in Revision 1)	Used for internal functions within Service Agent for Gateway and sub-host communication. Indicates tertiary host sub-hosts report to in case of primary failure. This field is not used on the Gateway host and should not be modified.

Errorlog template

When Service Agent detects a valid Error Event it puts the event in a template beneath the host (as viewed using the Service Agent interface) it was detected on. The information defined in this template is used to open a IBM PMR and to maintain it's returning status and PMR number. When viewing an expanded machine Error Event, templates are indicated by an icon in the shape of a bug along with the SRN or error number of the event and it description. Selecting a individual error template displays its contents in the detail pane to the right. These entries are removed when the Err Lease value specified in the detail pane of the Network selection is reached.

Parameters and Fields	Description
PMR Parameter	
Timestamp	Time stamp when Error Event was first created
PMR Number	Problem Management Report (PMR) number returned from IBM.

Status	This field depicts the current status of the Error Event and the results of the PMR request. This field can be set to any of the entries in the status table.
	0 Pending
	    This status indicates an entry that is set to be sent to IBM. It is the initial status state which triggers the Service Agent CallController to connect to the IBM SAS. If the status is some other state, setting it to Pending again causes the entry to be resent.
	
	1 Open
	    This status indicates a PMR was opened in the IBM support center for this machine.

	2 Closed
	    This status indicates a PMR was closed in the IBM support center for this machine.
	
	3 Held
	    This status indicates the Error Event entry was held. No connection to IBM was made for this status state. Held status entries are general information entries not generally considered hard errors or valid errors.
	
	4 Duplicate
	    This status indicates an attempt was made to open a PMR that was already opened. If the same Type, Serial number, Description, and error number is opened before a previous PMR with the same error is closed a Duplicate status is returned.
	
	5 Failed
	    This status indicates an attempt to open a PMR with IBM failed for some reason. See the Status Details field for specific details on the error.

Error Number	The Error Number is the actual error number found in the error log or the SRN (###-###) number generated by the concurrent diagnostics on the machine.
Description	This is the short verbal description of the error indicated from the system error log or the diagnostic data files.
Resource	This is the name of the resource the error occurred on.
Duplicate Count	This count indicates how many times the error has occurred since it was originally opened. Every time a duplicate error occurs, a check is made to see if the original creation date of the OPENed PMR is greater than 24 hours. If so, then the local status of the PMR is set to *PENDING* and an attempt is made to contact IBM again. If the PMR was closed at IBM, a new PMR number will be generated replacing the original one. If the PMR is still open, then the local status will be reset to *OPEN* and the original PMR number will be maintained For tracking purposes the original PMR number is appended to the details text of the PMR when the PMR is replaced.
Last Occurrence	This is the time stamp of the last occurrence of the Error Event.
Error Details	This field contains the detail description of the Error Event that occurred.
Status Details	This field contains the detail description of the status results. If the status is set to FAIL due to some communication problem with the Service Agent Server this field would contain the associated error message.

whenStatusChecked	This contains timestamp of last time Status was checked for this error.
errClass	This contains the Class designated for this error
Model	The model number of the HMC.
Serial	The serial number of the HMC.
Type	The machine type of the HMC.

Alternate IP Address template

The Alternate IP address template contains the IP address linked to the actual hostname of the machine. This entry is usually filled automatically by the program when it discovers an alias. It comes into play when a host defined to Service Agent on one network is actually an alias and the real hostname of the machine is linked to a different IP address. The IP address of the real hostname is then put in this Alternate IP address field. When the Gateway server firsts establishes the connection to the sub host it opens a connection to the hostname as it is defined to Service Agent. The sub host then sends back his real hostname and IP address whenever he wishes to communicate with the Gateway server. If the real hostname and IP address match what the gateway system expects, then communication is established. If it doesn't, then the Gateway server searches the database for the alternate IP address that matches the one supplied. When the alternate is found, communication is established.

Available Buttons for Alternate IP Address:

OK	This button located at the bottom of the detail pane is active once data has been entered or changed in a field. Press this button to save all data entered.
Cancel	Press this button to cancel the current operation.

Environment template

The Environment template displays the various environment and revisions levels of the supporting system and execution files on the machine. The revision levels information is gathered every time the ODS process is started on the machine. The Environment information is transmitted with each connection to the IBM Service Agent Server for error analysis and update notification. These entries are locked and cannot be modified.

Linux Hardware service template

Redhat Template	Description
Status	This entry displays the Licensed status of the hardware template. This

	entry could be one of five different status states.
	
	0 Proposed -
	    This state is the initial default state of a newly define machine indicates the system is only proposed and not licensed. No action will be taken until the status is set to Pending.
	
	1 Pending -
	    This state indicates the system is staged to be licensed. Upon the next connection to the IBM SAS a license request will be made for this host.
	
	2 Expired -
	    This state indicates the maximum licensed date has passed and the license is expired. Reregister the system to get a new licensed status. Licensed functions are disabled. When a system is expired Service Agent automatically connects and requests a new license.
	3 Corrupt -
	    This state indicates the license status is corrupt or damaged. For example if the return from License request was a bad transmission the status will be set to corrupt. Reregister the system to get a clean license status. Licensed functions are disabled with this status.
	
	4 Licensed -
	    This state indicates the machine is licensed. All functions requiring a license are activated.
	
	5 Denied -
	    This state indicates the system was denied for some reason and a license to activated this template is refused. All functions requiring a license are disabled. Refer to the template comment field or the specific calllog entry for details. You must remove and redefine the machine to remove the Denied status state.
	
	If the template is not licensed, those functions requiring licenses are not rerun. Functions requiring a licensed status are the hardware monitoring functions.

Expiry	This is the date the enable license expires on.
License	This the unique license number associated with the machine. This license number will not work with any other defined host.
Comment	General status response comments from IBM Service Agent server.
Heart Beat	Enables or disables Heart Beat process on client machine. A True value indicates Heard Beat is enabled.
Heart Beat - Days,	Timer to determine how often the gateway should expect a heartbeat

Hours, Minutes, Seconds	from the host. If the host misses, a heartbeat a notification is sent. Actual time is an approximate value of HeartBeat + Delay.
Heart Beat Delay in Minutes	Value added to the Heartbeat to compensate for Network delays and differences in systems. Minimum value is 2 minutes.
Vpd Enabled	Enables or disables Vital Product Data (VPD) gathering on client machine. True value indicates Enabled.
Vpd Interval- Days, Hours, Minutes, Seconds	This timer determines how often to check for Changes in the Vital Product Data on a host. This data is then transmitted to IBM Service Agent server for diagnostic and error analysis.
Use Default VPD Interval	Flag to determine if the Vpd Interval values defined for this machine should be used or the default values defined in the *Network* details should be used. A true value indicates to use default interval set in *Network* details.
Vpd Output	View of VPD data gathered.
Create Interal Err for Unformatted Events	If True internal error log will be updated if the error events supplied to Service Agent from the SFP have format errors. The default is no logging. (False)
Error Enabled	Flag to determine if system Error Log entries should be monitored for supported errors by the Service Agent. The Hardware Template must be licensed for this to be active.
Error Enable	Flag to determine if the concurrent diagnostic information should be monitored by the Service Agent. The Hardware Template must be licensed for this to be active.
ErrorEnabled Interval - Days, Hours, Minutes, Seconds	This timer determines how often to check for errors or problems detected by the Concurrent Diagnostics.
Enable the Automatic transmission of EDD	Extended Error Data (EED) is additional error infomation sometimes supplied by the SFP when an error occurs. Enabling this flag allows for the automatic transmission of this data to the IBM SAS.
Error Internal	Flag to determine if internal Service Agent errors should be logged.

Available Buttons for Hardware Service Template:

Button	Description
OK	This button is located at the bottom of the detail pane and is active once data has been entered or changed in a field. Click this button to save all data entered.
Cancel	Click this button to cancel the current operation.
Delete	This button is located at the bottom of the detail pane and becomes active when

	an entry in the detail pane that can be deleted is selected. Once an entry that can be deleted is selected, click Delete to remove it.

Additional machine templates

Additional templates can be added to every machine (both gateway server and monitored) to provide various functions and options customizing Service Agent to the individual company needs. To access these templates select your Gateway server or a monitored machine and click **Add** and then click **Child.**

Call Controller template

The Call Controller template, by default is installed on the gateway server for optimum performance of the Service Agent system. As a general rule this should not be changed.

CAUTION: There should only be one Call Controller assigned within the Service Agent System.   Do not operate with more than one template at a time. Results are undefined and could result in damaging the Service Agent databases.

Dialer template

The Dialer template, by default, is installed on the gateway server for optimum performance of the Service Agent program. As a general rule this should not be changed. See the Dialer section in **"Templates for Gateway"** for specific entry details.

E-mail Alert

By adding a E-mail Alert template, Service Agent can send an e-mail message to contacts relating all or limited machine problem information. You can define as many e-mail contacts as you require, but an e-mail server must be active and accessible.

E-mail Address Template	Description
E-mail Address	The E-mail address of the contact you wish to alert.
E-mail Subject	The default subject line for messages.
E-mail Server	The hostname name of the mail server to be used.
E-mail Wait Time In Minutes	This field determines how long to wait in order to gather any additional notifications that may be generated. When the time specified is reached, all

	notifications gathered are combined into one e-mail notification and sent to the e-mail address.
	Set the following flags True/False accordingly.
Cautions Enabled	An *Error Event* occurred that is considered a caution or informational entry. A PMR is not generated for it.
Failed Enabled	A Service Agent *Error Event* transmission failed to open a PMR on the IBM SAS.
Held Enabled	A Service Agent *Error Event* entry was created and set to a Held status.
Pending Enabled	A Service Agent *Error Event* entry was created and set to a "ending status.
Opened Enabled	A Service Agent *Error Event* transmission OPENED a PMR on the IBM SAS.
Closed Enabled	A Service Agent *Error Event* transmission CLOSED a PMR on the IBM SAS.
Internal Errors Enabled	An internal operating problem has occurred (e.g. inability to read a required file, or run a command, or anything that goes wrong with the operation of Service Agent).
Licensing Enabled	There is a change in the machine's licensing information. Either a machine has been licensed or it has expired.
PTF Updates Enabled	The machine has received notification that PTF Updates are available for download.
SA Updates Enabled	The machine has received notification that Service Agent Updates are available for download.
Heart Beat Enabled	The machine failed a heart beat.
Test Emails Enabled	This contact should receive any test e-mail's sent.

Available buttons for the E-mail template:

Button	Description
OK	The OK button located at the bottom of the detail pane is active once data has been typed or changed in a field. Click **OK** to save all data typed.
Cancel	Click **Cancel** to cancel the current operation.

The Null Dialer template is reserved for future development and is currently not supported.

CallLog folder

The CallLog template displays the results of connections and transmissions to the IBM SAS. By viewing this log during the dialing or initial phase of a connection, real time updates are logged as the connection is made. Once connection is made and requests have been transmitted, a summary count of the request types and whether they were transmitted successfully are logged.

The summary counts overlay the description entries made during the connection phase.

Note: The summary counts only relate to whether the transmission was successful or not. It does NOT indicate whether the specific request was accepted or failed due to some internal process checking or rejection. To determine the results of a specific request, if available, you must look at the specific entry for the request in question. A successful result on the transmission does not necessary indicate a positive reply for a specific request.

CallLog Display Columns:

Column	Description
Description	This column displays real time connection updates as the connection is made. Once the connection has ended final Success/Fail results are logged here.
Start Time Stamp	Time Stamp of when the transmission started.
End Time Stamp	Time Stamp of when the transmission ended
Type	This column is not used.
Snd	This column is not used.
Rcy	This column is not used.
Try	This column displays how many times retries it took to make the connection.
Status	This column is not used.

Administration folder

Register template

The Register template provides the capability of registering one or more defined machines.

Within this template a simple machine list is displayed, in the detail pane to the right, for selection and registration.

When the Register selection in the Navigation pane is highlighted the Add and Delete buttons at the bottom are dsabled.

Available buttons for the Register template:

Button	Description
Open	Click **Open** to display node information of the selected machine. See section on Node Info for details.
Register	Click **Register** to register the selected machine(s) with IBM.

Data Compression Cycles
By default every 24 hours Service Agent will clean and compress it's databases removing old data and deleted entries. This keeps the database at the smallest possible size. Without this feature enabled the SA databases would continue to grow without limits, which could cause disk space failures.

Available entries for the Data Compression cycles template

Parameters	Description
Next Compression Date	Specifies the data on which you want Data Compression to occur.
Enter Time (12 Hr or 24 Hr)	Specifies the time (in either regular clock hours or the 24 hour clock) that you want compression to take place
Compression Enabled	Toggle between True and False according to your needs.

Available buttons for the Data Compression Cycles template:

Button	Button
Set the Timer for Data Compression	Sets the timer to the values that you have input in the Data Compression Cycles template.
Compress Data Now	Compresses data immediately and overrides the Timer values in the Data Compression Cycles template.

Import / Export template

The Import / Export template allows for the automatic addition of machines from a ASCII input file, the capability of saving existing machine entries to a ASCII output file, and exporting the defined database to a binary file and importing a previously exported database

Import ASCII Input File Format:
Each monitored machine to be added must be on a single line. Each line must contain the required machine data in the following order with comma separators and no spaces.

Note: Processor ID is obtained by executing uname -m command on the physical host**.**

"Hostname",**"Type"**, **"Serial"**, **"ProcessorID"**, **"Model"**

For example, the input file would contain:
ABC,7042,43515,003555434C00,**120**
sas6q.ausitn.ibm.com,7013,99998,000999984C00
....
XYZ,7017,34789,4438902

Available Buttons:

Button	Description
ASCII Input Machine List	Click **ASCII Input Machine List** to input a ASCII machine list. Type the location and name of the file at the selection window.
ASCII Output Machine List	Click **ASCII Output Machine List** to output a ASCII machine list of all defined Service Agent machines. Type the destination and name of the file at the selection window.
Export Service Agent Database	Click **Export Service Agent Database** to output the defined machine database to a binary file.
Import Service Agent Database	Click **Import Service Agent Database** to input a previously exported machine database.

Lockout Machines template

The Lockout Machines template allows turning off or locking out Service Agent on a individual machine.

This is useful when there is to be some type of system maintenance that could possibly cause Service Agent to pick up false errors. For example, if diagnostics are run on a system with known problems, and Service Agent is not locked out or turned off, then when the diagnostics find an error Service Agent records and reports it.

To avoid confusion lockout the system that you wish to ignore prior to performing any activities that could cause false errors.

CAUTION: The locked out system will not report any errors until the lock is removed. Be sure to unlock the system after all maintenance work is performed.

Available Buttons:

Button	Description
Open	Click **Open** to see Node information details on the selected machine.
lock	Click **lock** to lock the machine and disable Service Agent reporting.
unlock	Click **unlock** to unlock the machine and enable Service Agent reporting.

Purge data template

The Purge data template allows you to purge all the data collected and placed in the CallLog folder. The CallLog folder is located beneath the Network folder in the Navigation Pane.

Available Button for the page template:

Button	Description
Purge	Click **Purge** to optionally purge all the following data:

     ➣ CallLog Data - Clears the CallLog

     ➣ Purge Error Warnings - Clears accumulated Error Warnings

     ➣ Purge Internal Errors - Clears accumulated Internal Errors

     ➣ Closed PMRs - Clears PMRs with a Closed status

     ➣ All PMR - Clears all PMRs from the database

     ➣ Out-going Queue - Removes pending entries in the outgoing queue and sets the status to Fail

     ➣ E-mail locks for Revision Updtes - After sending one Email Notification about a new revision, a lock is created and no more E-mails are sent to the same E-maill ID about the same version. This is to avoid multiple E-mails being sent to the same

person, even if they do not upgrade Service Agent immediately. When we purge this lock, E-mails will be sent again if there is a newer version available.

SA Access template

The SA Access template is where you can change the password that allows access to the Service Agent program. Remember, if you change the password you must notify all of your Service Agent users. It is recommended to change your password, as soon as the package is installed. Whenever Service Agent is upgraded, the password will be reset to *password*.

SA Update template

The SA Update template allows you to get updates for the Service Agent program from IBM.

Available entries for SA Update template:

Parameters	Description
Get SA Update from IBM	Downloads the latest ServiceAgent Package from IBM the next time Service Agent connects to IBM.
Get SA Update Immediately from IBM	This option immediately downloads the Service Agent Package. It starts dialing and the file will be saved to the directory "/usr/svcagent/lib". For HMC the package name will be SvcAgentHSC.i386.rpm" For AIX the package will be "svcagent.installp" For installing these packages, refer to the corresponding installation chapters for either AIX or pSeries.

VPD and EED files template

The VPD and EED files template allows you to view and manage recieved VPD and EED files.

Available entries for the VPD and EED files template:

Parameters	Description

Machines	Provides a list of all machines for which you can select to view the VPD or EED files.

Available Button for the VPD or EED template:

Button	Description
Open	Allows user to view node information associated with the selected machine
Manage the External files	Allows user to remove VPD and EED files, the have been collected, from the selected system to free up otherwise unused space.

Alerts folder template

The Alerts template allows for screen display notification of alerts.

Alerts are generated by Service Agent when important events occur, such as status changes to PMRs or Service Agent internal errors. In addition to the E-mail and pager alert notification other alert methods can be displayed on the screen. As long as the selection is open, configured alerts are displayed and maintained in the detail pane window. When the selection is closed and reopened the screen is cleared for new alerts. By default all alerts are enabled for display in the Alert selection. Specific alerts can be ignored by setting the associated toggle buttons to true.

Available entries for Alert template:

Alert	Description
Limit	Number of Alerts that are kept at one time. When the limit is reached, no more entries are displayed until the window is cleared or the limit is increased.
Alerts	This is the display capture window for Alerts
Open	To view details of an alert entry, select it from the Alert window and click **Open**.
Reset	To clear the list entries from the alert window press this button.
Cautions	To ignore "Cautions" alerts, set this toggle button to true.
Closed	To ignore "Closed" alerts, set this toggle button to true.
Failed	To ignore "Failed" alerts, set this toggle button to true.
Held	To ignore "Held" alert, set this toggle button to true.
Internal Errors	To ignore "Internal Error" alerts, set this toggle button to true.
Opened	To ignore "Opened" alerts, set this toggle button to true.
Pending	To ignore "Pending" alerts, set this toggle button to true.

Filter lists folder

Resource Filters template

The Resource Filters template works in conjunction with the Add / Forms / Resource Filter template.

When this template is selected a display of all resources that have been configured to be ignored are displayed.

If this template is blank, then no resource filters have been added to the Service Agent Network tree.

For details on adding Resource Filters, see *How to define Resource Filters* in Chapter 6.

Once resource filters have been defined, clicking on this template changes the detail pane into two sections. The upper section has a list of all of the resource filters indicating the Source or machine the resource filter has been added to and the name of the resource that is being ignored.

The lower section displays the Node Information associated with the source or machine that the filter was added to. This display changes depending upon which source or machine is selected.

Thresholds template

The Thresholds template works in conjunction with the Add Form Threshold template.

When this template is selected, all thresholds that have been configured are displayed. If this selection is made and the display is blank, no additional thresholds have been added to the Service Agent Network tree.

For details on adding Thresholds , see *How to specify Thresholds* in Chapter 6.

Once a threshold has been defined, clicking the Threshold template makes the detail pane appear in two sections.

The upper section has a list of all of the thresholds with the specific configuration information set for each threshold.

The bottom section displays the information details of the machine the threshold was added to or the information details of the Network if the threshold was added to the network. In addition there is a

Overrides entry in this section which displays the name of the source or machine this threshold overrides.

 For example, if threshold error 124-708 is added to the Network and the same threshold error number 124-708 is added to a specific machine with different configuration data, then the threshold added to the machine would take precedence or an override threshold configured for the Network when it occurs on that machine. If the error occurs on any other machine, then the threshold for the Network applies.

Service Agent Server (SAS) folder

Connect template

The Connect template provides the capability to connect to the IBM Service Agent Server (SAS) immediately or force a current connection to be canceled. It can be used in situations where there are pending requests that should go out immediately or where there is a need to verify the external connection process is working properly.

When connection is made to the SAS, any pending requests destined to be sent to IBM are handled. If there are no pending requests, then a simple handshake between Service Agent and the SAS is performed and the connection is ended.

Available Buttons for Connect template:

Buttons	Description
Connect	Click **Connect** to initiate an immediate connection to SAS.
Disconnect	Click **Disconnect** to disconnect the current connection to SAS.

ManualMicrocode template

The ManualMicrocode template provides options that allows you to work with information pertaining to microcode. The microcode information can pertain to your gateway server, your monitored machines, or to micorcode levels last received from IBM. The ManualMicrocode template provides the following functions:

- ✍ Open
- ✍ Get current installed inventory
- ✍ Retrieve MicroCode list from IBM (based upon monitored machine(s) selected)
- ✍ Retrieve master MicroCode list from IBM

✏ Display last MicroCode list retrieved

✏ Distribute MicroCode

You must have Inventory Scout (invscout) installed. For invscout installation and running, refer to the invscout documentation available on the AIX installation packages.

Note: For the HMC only the "Readme" files associated with the microcode files are avaiable fo r downloading.

Available Buttons for ManualMicroCode template:

Buttons	Description
Open	Click **Open** to display information about the monitored machine. The information provided shows Name, IP address, processor id and so on.
Get current installed inventory	The Get current installed inventory button gets the resulting list of microcode levels of the selected monitored machines(s). Service Agent can utilize this information when retrieving a MicroCode list from IBM.

Retrieve MicroCode list from IBM	This function requires a machine or monitored node(s) be selected prior to selection and a current Microcode list for the selected machine(s) be available. When the current MicroCode list is available (by executing "Get Current Installed Inventory") this function will connect into IBM and send in the inventory list. It will then retrieve the list of the latest available MicroCode for the systems selected. A selection Window will be display where the user can then select which Microcode Packages he wishes to download from IBM.
	
	The downloaded Microcode will then optionally be pushed out to the selected machine. From there the user should follow the installation procedures specified in the individual Microcode readme files.
	
	When the retrieved Microcode List is displayed the screen consists of a series of columns depicting:
	
	    Select - Toggle this field to select the Microcode for download.
	
	    Node - Indicates which selected machine or node hostname the Microcode applies to.
	
	    Device/Sysem - Displays the Type/System number the code is form
	
	    Package - Indicates the package name

Readme   - Indicates the name of the Readme file.

Latest Aval - Indicates the name of the Microcode File

Release Date - Date the Microcode was released

Need UpDate - Indicates, based upon the current revision level file

received, the selected machine should update

Impact - Indicates impact of Microcode

Severity - Indicates severity of Micorcode

At the bottom of the screen there are selection buttons that act on your
choices:

MicroCode and Readme button:

This button is a drop down button that defaults to MicroCode and
Readme. This option downloads both the MicroCode and associated
Readme files of the selected packages when the Download button is
pressed. Other options are download Readme or MicroCode only.

Destination-Gateway button:

This button is a drop down button that defaults to the
Destination-Gateway which specifies the MicroCode will be down
loaded to the Gateway System. The files will be put into the
/var/svcagent/ibmucode directory on the Gateway. Other options are
"Destination-Client" which attempts to put the microcode files on the
client machine in the /var/svcagent/ibmucode directory as well.

Download button:

Starts the downloading process for the monitored machines selected.

Cancel button:

Exits the Window and takes the user back to the previous screen.

Retrieve master MicroCode list from IBM	This function connects to IBM and retrieves a master list of available MicroCode for all AIX machine product types. A selection Window is displayed where the user can select which Microcode Packages to download from IBM.

The downloaded Microcode is then, optionally, distributed to the selected monitored machine. Follow the installation procedures specified in the individual Microcode readme files

When the retrieved Master Microcode List is displayed, the screen displays a series of expandable folders grouped according to the Microcode type available. Expanding these folder shows the package names available for download. Expanding the package names shows the list of files available for download. At the top of the Window is a License Button. Clicking on this displays the License Agreement for downloading the Code. You should Read and Understand the License Agreement before downloading MicroCode.

By highlighting a package name and pressing the Download button at the bottom of the window, all files associated with the package are downloaded to the Gateway system and put into the /var/svcagent/ibmucode directory.

Highlighting an individual file or files and pressing the Download button at the bottom of the window, downloads the selected file to the /var/svcagent/ibmucode directory on the Gateway. |
| Display last MicroCode list retrieved | This function displays the last MicroCode list retrieved from IBM. This way the user will not have to dial out overtime he wishes to view the list. In order get an updated list one of the retrieve functions must be utilized. MicroCode download capabilities are also available with this option. |
| Distribute/View/Remove MicroCode | This function allows you to optionally distribute, view, or remove previously downloaded microcode to or from the selected monitored machine(s). Follow the installation procedures specified in the individual Microcode readme files. |

Manual PMR

The Manual PMR template allows you to generate and send PMRs to the IBM Service Agent Server whenever the situation requires unscheduled sending of created PMRs to IBM.

Available Buttons for Manual PMR template:

Buttons	Description
Open	Select a machine manually open a PMR against. Then, click **Open.** The identification of the machine you want to create a PMR is displayed.
Generate	Click **Generate** to complete a PMR and follow the prompts to send the PMR to IBM. You can check the success of the transmission by checking the CallLog folder.

Send VPD template

The Send VPD template gathers the latest Vital Product Data (VPD) from the selected machine and sends it to the IBM SAS.

In those instances where the most current copy of VPD is needed by IBM support for problem analysis, this selection bypasses the VPD timer configuration. You have the option to wait for the next time Service Agent calls SAS, or you can make a connection and immediately send the VPD.

For information on configuring the VPD template, see *How to send VPD data* in Chapter 6.

Save VPD data to file

Saving VPD data to a local file is possible using the *Send VPD* option under the *SAS-Connection* folder.

Select the machine for which the VPD data needs to be saved and click
Save VPD Data to File.   A file save dialog box pops up. The VPD data can be saved in two formats.

1. Text Format - Choose the *Files of Type* as text files (*.txt) and
    choose the file name and click on **Save**.

2. ZIP Format - Choose the *Files of Type* as zip files (*.zip) and choose the file name and click on
    Save. The file will be in zip format with a .zip extension. Use *unzip -j* to unzip the file.

If the destination for the file is a diskette, the program may fail if the diskette is full and does not prompt for the next diskette to be inserted. Hence the save process stops in the middle.

The best way to copy the file to a diskette is to save the file to the local hard drive first. Then go to the command line and tar the file and then copy it to a diskette using a separate command.

Test Tools folder

TestEmail

The Test E-mail template allows you to verify the proper operation of the E-mail Alert templates that have been added. This selection sends a test E-mail notification to all E-mail Alert templates that have the Test E-mail option turned on or set to TRUE. If a E-mail address should not get *Test Notifications* this option should be switched to FALSE.

See section on "Adding E-mail Alert" templates for details. If a E-mail address fails to receive a test notification, check to make sure the E-mail alert and the test E-mail check box are set to TRUE. If they are, then examine your local E-mail system configuration and set up to ensure it is working property. Service Agent sends E-mail notifications using the simple AIX *sendmail* command as a typical client. All other aspects of the local mail system are under control and responsibility of the user or local administrator

TestPMR

The TestPMR template sends a test problem management report to the IBM SAS. Upon receiving this report contact is made back to the customer indicating proper reception of the test PMR. This is used to verify the machine can properly open a PMR into the IBM system. If contact with IBM support is not made within a reasonable time after the PMR has been successfully opened, contact IBM support or your normal channel of access to verify it's arrival. Be ready to supply the PMR#, machine type, and serial number of the machine it was opened against.

Appendix B. Modem setup

Configuring the 7852-400 Modem

The 7852 Model 400 is one of the modems of choice for Service Agent. From the factory, there are DIP switches on the side of the modem that need to be set to make asynchronous mode the default mode. Switch 12 needs to be set to the off (down) position for asynchronous mode. Switch 5 needs to be set to the off (down) position to disable auto-answer to meet the security requirement that modem will not answer. See the diagram below for proper settings of switches if necessary.

To setup and initilize the 7852-400 for operation:

__ 1. Set switchs 5 and 12 to the down (off) position.

__ 2. Connect the RS232 cable to the modem and to a serial port.

__ 3. Connect the telephone cable (sent with the modem) to the modem connector labeled LINE (middle connector), and to the telephone wall jack.

__ 4. Connect the modem power cable to the modem and the transformer to the building power.

__ 5. Power-on the modem (switch in rear).

```
Up       + +        + +      +           +  +  +  +
Down          - - -        - -        - -
Switch   1 2  3 4 5   6 7  8 9 10  11 12  13 14 15 16
```

7852-400 Service Agent DIP Switch Settings

Configuring the 7857-017 or 7858-336 Modem

The 7857 is another one of the modems of choice for Service Agent. The 7858-336 is the replacement modem for the 7857. These procedures are here to aid in the proper configuration of the 7857-017 or 7858-336, or to set a known configuration state.

To setup and initilize the 7857-017 or 7858-336 for operation:

___ 1. Connect the RS232 cable to the modem and to a serial port.

___ 2. Connect the telephone cable (sent with the modem) to the modem connector labeled
    PSTN, and to the telephone wall jack.

___ 3. Connect the modem power cable to building power.

___ 4. Power-on the modem.

___ 5. Wait for the main display panel.

Use the following procedure to place the modem in a known configuration.

After the modem is powered on and local tests have completed, there should be two lines
of configuration information displayed on the modem LCD screen.

At this time:

___ 1. Press the down arrow key 12 times until the CONFIGURATIONS message is displayed.
      ✍   CONFIGURATIONS D12
            Press ✍

___ 2. Press the right arrow key until the Select Factory message is displayed.
      ✍   CONFIGURATIONS D12
            Select Factory_

___ 3. Press the Enter key to select the Factory configuration option.
  Press the up arrow key until 0 is displayed.
      ✍   CONFIGURATIONS D12
            Select Factory 0

___ 4. Press the Enter key to load the predefined factory configuration 0.
    IBM 7857 AT CMD aa ✍
    td_ rd_ dsr_ ec ✍ ll_

___ 5. Press the down arrow key 7 times until the S-REGISTER message is displayed.
      ✍   S-REGISTER   D7
            Press ✍

___ 6. Press the right arrow key until the message Ring to answ. on is displayed.
     ✍✍   S-REGISTER   D7
            Ring to answ. On=2_

    __ 7. Press the Enter key to select Ring to answ. on.

    ✍   S-REGISTER   D7
             Ring to answ. On=_

    __ 8. Press the up arrow key until 0 is displayed.

        ✍✍   S-REGISTER   D7
                Ring to answ. On=0

    __ 9. Press the Enter key to set Auto Answer to 0.

    ✍   S-REGISTER   D7
             Press ✍

    __ 10. Press the down arrow key 5 times until the CONFIGURATIONS message is displayed.

        ✍   CONFIGURATIONS D12
                Press ✍

    __ 11. Press the right arrow key 3 times until the Store User Conf. message is displayed.

        ✍   CONFIGURATIONS D12
                Store User Conf._

    __ 12. Press the Enter key to select the Store User Configuration option.
Press the up arrow key until 0 is displayed

        ✍   CONFIGURATIONS D12
                Store User Conf. 0

    __ 13. Press the Enter key to select location 0.

    __ 14. Press the Enter key to save current configuration into User 0 .
                CONFIGURATIONS D12
                Press ✍

    __ 15. Press the Enter key to return to main display panel.
                IBM 7857 AT CMD aa_
                td_ rd_ dsr_ ec ✍ ll_   ✍ = Shows LCD as on.

The above setup places the 7857 or 7858 modem into the proper configuration for use with the
Dialer that is used for the HMC.

Notes:
1. The modem initialization strings provided are on an AS IS basis. Although they

have been tested in a typical HMC/Linux environment they may have to be modified depending on the actual setup and configuration of your environment.

2. If modem configuration assistance is required, the customer should contact the modem vendor for assistance. Assistance with IBM modem configuration issues can be obtained for a fee by registering for IBM Support Family Services. For additional information or registration information for IBM Support Family Services, call 1-800-CALL-AIX (1-800-225-5249) and select option 2, then option 1. Information regarding modem standards, general modem setup, and specific configuration tips for IBM Asynchronous Adapters can be found in the MODEMS PACKAGE on AIXSERV

Troubleshooting

UI does not appear

If the UI does not connect to the Gateway the reason may be the properties files does not have a fully qualified name in it. You may need to edit the properties file located in the *svcagentui* directory and put in the fully qualified hostname of the gateway.

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Appendix D. Notices and trademaraks

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