



Service Update Management Assistant (SUMA) on AIX 5L



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Introduction

The Service Update Management Assistant (SUMA) moves the system administrator away from the manual task of retrieving maintenance updates from the Web. SUMA, which is included in the base AIX 5L™ Version 5.3 operating system, provides clients with flexible, policy-based options allowing them to perform unattended downloads of all AIX 5L™ updates from the IBM @server® Support Web site (<http://www-1.ibm.com/servers/eserver/support/pseries/aixfixes.html>). It allows automation of common tasks such as downloading a specific update when it becomes available, downloading the latest security updates, or downloading an entire maintenance level. A scheduling module is utilized to allow policies to be run at various intervals in order to conform to a client's maintenance window.

SUMA policies can be run without extensive configuration. Filtering options allow comparisons against an installed software inventory, a fix repository, or a maintenance level to ensure only desired fixes will be downloaded. SUMA provides the option to send an e-mail notification containing a list of what's available for download, as well as detailed summary statistics of a download. The technology offered by SUMA assists in moving clients toward an autonomic maintenance strategy by automating the download of software maintenance updates, which allows clients to take advantage of the increased security and reliability benefits of having current fixes, and the cost benefits which result from spending less time on system administration.

2 Why SUMA?

Fix automation, the ability to get maintenance fixes onto a system automatically, is becoming a focus area for IT system administrators. As system administration becomes more complex and time consuming, it is often a roadblock that prevents systems from being up to date with current software fixes. Clients want the increased security and reliability benefits, as well as the reduced downtime and total cost of ownership that comes with keeping current fixes on a system. To meet these client demands, SUMA has automated the process of determining which fixes are available, discovering which of the available fixes a system needs, and downloading the necessary fixes onto a system, thereby reducing both the complexity and the time spent on system administration to perform these tasks.

2.1 Automates manual tasks

SUMA is a move toward autonomic computing and is focused on automating a client's maintenance strategy by establishing an electronic relationship between the client and the fix distributor. The automation provided by SUMA moves the system administrator away from the manual task of retrieving maintenance fixes from the Web.

SUMA provides flexible, policy-based options which allow clients to perform unattended downloads of fixes from the IBM @server Support Web site. It allows automation of common client tasks such as downloading a specific APAR when it becomes available (refer to the "Fix Types" section below for a definition of APAR), downloading the latest security fixes, or downloading an entire maintenance level. SUMA utilizes a scheduling module to allow policies to be run at various intervals in order to conform to a client's maintenance window, or downloads may be initiated immediately.

2.2 Easy to configure

One of the strengths of SUMA is its ability to run a policy without extensive configuration. Policy defaults are utilized such that all that is required to be specified, for example, is a fix type, such as "APAR" and the corresponding APAR number.

In addition, prior to a download, SUMA filtering options allow comparisons against an installed software inventory, a fix repository, or a maintenance level, to ensure only desired fixes will be downloaded.

2.3 Notification e-mail of download

At the completion of a download operation, there is the option of having a notification e-mail sent containing a list of the fixes that were downloaded and detailed download summary statistics, or a list of the fixes that are available, if the download was run in preview mode.

2.4 Proactive maintenance strategy

SUMA takes a big step in helping clients achieve a proactive maintenance strategy by providing the ability to automate the download of software maintenance fixes which can significantly reduce the amount of time clients spent on system administration.

3 Functional Details

SUMA offers a wide range of features and functions that provide system administrators with the power to setup the capability of automating the download of maintenance fixes onto a system.

3.1 Fix types

SUMA allows the flexibility for a policy to be set to retrieve one of eight different “fix types”:

- APAR – Specifies a request to download an APAR. An authorized program analysis report (APAR) number allows you to obtain an update/fix. Operating system commands are provided to determine if an APAR is installed on your system.
- PTF – Specifies a request to download a PTF. A program temporary fix (PTF) typically contains multiple fixes (known as APAR’s) and is associated with a single fileset (for example, bos.mp64). PTF’s are temporary because they will be incorporated into the next release of the product or maintenance level.
- Critical – Specifies a request to download the latest critical fixes.
- Security – Specifies a request to download the latest security fixes.
- I/O Server – Specifies a request to download the latest fixes for I/O Server virtualization software.
- Latest – Specifies a request to download all of the latest fixes.
- Fileset – Specifies a request to download a specific fileset.
- Maintenance Level – Specifies a request to download a specific maintenance level.

3.2 Action

A policy can be set to perform one of three different actions:

- Preview – Specifies a download preview will be performed. No filesets will be downloaded. In addition to previewing the filesets that would be downloaded, this option can also be used to generate an e-mail notification listing the fixes that are available on the IBM @server Support Web site.
- Download – Specifies that filesets will be downloaded based on the policy.
- Download and Clean – Specifies that filesets will be downloaded based on the policy, followed by a clean operation. The clean operation will remove filesets that are not needed from the download target directory, such as updates that have been superseded by

a newer fix level that has been brought down. This can help manage the size of the fix repository.

3.3 Download protocol

SUMA provides flexibility in the protocol that can be selected for the download transfer, supporting ftp, http, and https (secure). SUMA also supports proxy servers.

3.4 Filtering

SUMA performs various types of filtering on the fixes requested for download. Comparisons can be performed against an inventory of software installed on a system, a directory containing a repository of fixes, or against the maintenance level of the system to ensure that only the desired fixes will be downloaded.

3.5 Download summary reports

At the completion of a download operation, SUMA displays, logs, or e-mails a summary report showing the number of fixes that were downloaded successfully, any fixes that failed to download, and fixes that were skipped because they were already present on the system. A preview option is also available if you wish to generate a list of fixes that are available on the IBM @server Support Web site.

3.6 Scheduling

SUMA downloads can be scheduled or executed immediately. By scheduling a policy, an unattended download can be setup to conform to a client's maintenance window. SUMA also provides support for scheduling policies at flexible intervals such as: hourly, daily, weekly, monthly, etc. This allows the download to occur at an optimal time or can be used to establish the frequency to check for the availability of certain fixes.

Scheduled policies can also be designated as repeating. Repeating policies for certain fix types, such as APAR, PTF, or Maintenance Level will be repeated according to the selected interval, and then deleted when the specific fix or maintenance level is found. Other fix types, those released as a group on an ongoing basis, such as Critical, Security, I/O Server and Latest will be continually repeated at the specified interval until the policy is unscheduled. Policies can also be scheduled to be non-repeating, in which case they will be run once and then removed from the system.

3.7 Logging

Another area where SUMA provides offers a lot of flexibility is logging. SUMA supports six different verbosity levels that can be uniquely set for sending information to the screen, a log file, or as a part of an e-mail notification. The levels are listed below, ordered from the least to the most amount of information displayed.

- OFF – No information is displayed or logged.
- ERROR – Displays error messages and other highly important messages.
- WARNING – Displays warning messages in addition to ERROR messages.
- INFO – Displays informational messages in addition to WARNING messages.
- VERBOSE – Displays verbose informational messages in addition to INFO messages.
- DEBUG – Displays debug output for debugging purposes. This setting is not used for normal operations.

3.8 Multiple interfaces available

To enable your system for automated downloads of maintenance fixes, SUMA provides both command line and menu-driven System Management Interface Tool (SMIT) interfaces. Please refer to the SUMA Usage Scenarios for detailed command line examples, or the SUMA SMIT Interfaces for a review of the SUMA SMIT menus.

4 Usage Scenarios

There are many types of automation that can enhance a client's software maintenance strategy. SUMA addresses multiple client usage scenarios in order to make the process of getting software maintenance fixes more efficient. This reduces the amount of time spent on system administration.

4.1 Download specific APAR when available

Clients are often required to monitor when a specific APAR that they are interesting in installing becomes available. SUMA automates this task by periodically checking for the APAR, sending an e-mail notification with the APAR status, and downloading it when it becomes available.

For example, a client, who has a support contract, opens a problem management record (PMR) to report a problem. After a service representative verifies the problem, the client often would be given an APAR number along with an estimate on when the fix will be available. If the problem is pervasive, the client may also be given an interim fix to use until the official fix becomes available. The client can now take the APAR number and use the SMIT SUMA menus to setup a repeating policy to check for the APAR periodically (for example, once a week on Thursday at 3:00am). When the APAR is available, it will be automatically downloaded and the client can then install it when desired. The client will also receive an e-mail notification of the download, and the repeating policy will be automatically deleted.

4.2 Download the latest critical fixes periodically

Critical fixes are issued periodically and are grouped for convenience, although they may also be obtained individually as specific fixes. They include fixes that address security issues or fix problems that are pervasive in nature. They do not include interim fixes, which are often provided for pervasive problems until an official fix is available.

For example, clients who wish to monitor the fix distribution site for the latest critical fixes can setup a repeating SUMA policy to check for critical fixes once a month (or whatever timeframe is desirable). When new critical fixes become available, they can be downloaded into a client's fix repository automatically, and a corresponding e-mail notification can be sent. This type of repeating policy will remain active until the client decides to remove it since it is not looking for specific "one-time" information, such as a specific fix.

4.3 Download an entire maintenance level

A maintenance level is a recommended set of fixes that have received extensive testing together. Clients who choose to download a specific or the latest maintenance level can do this by using the SMIT SUMA menus to set a policy to have this done when convenient, for example Thursday at 3:00am during off-peak hours. Comparisons can be performed against an inventory of software installed on a system, or a directory containing a repository of fixes, so that only the fixes needed to bring a system to a particular maintenance level will be downloaded.

4.4 Download the latest fixes periodically

Some clients wish to maintain a fix repository that holds all the latest fixes. They can then use these fixes to periodically update their system to the latest level.

To establish a process that would allow a system to be up-to-date with the current fixes, a SUMA policy could be setup that would check for new fixes periodically (for example, once a week on Saturday at 3:00am). When new fixes are available, an unattended download will occur, placing the fixes in the system's designated fix repository, and the client will receive an e-mail notification with the results of the download. Filtering options allow fixes to be downloaded only for filesets that are installed on the system.

Additionally, a global SUMA configuration setting can be made to remove all superseded updates from the fix repository at the completion of the download. This provides space management of the fix repository by deleting fixes that are no longer needed.

4.5 Download the latest version of a particular fileset

Clients often want to ensure that they are running the latest version of a particular fileset, such as bos.rte.install. Through the SMIT SUMA menus a policy can be set containing the fileset name and its version number (or "latest" in this case). This allows periodic checks (for example, once a week on Wednesday at 3:00am) to be made for the latest level of a particular fileset, and for it to be automatically downloaded if it is not already present on the system. The client may then install the new fileset when convenient.

4.6 Download a specific version of a particular fileset

Sometimes clients wish to download a specific version of a particular fileset because it may contain a fix for a particular problem that they are interested in. Through the SMIT SUMA menus, clients have the ability to perform downloads immediately or schedule them for another time.

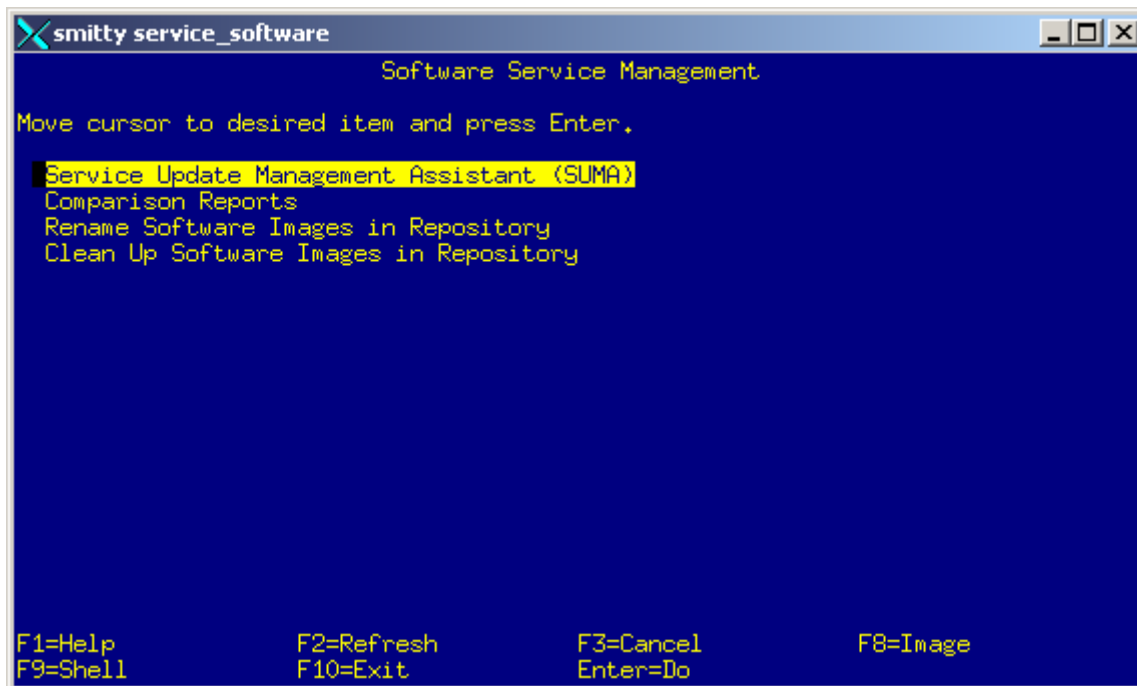
For example, a client may be interested in downloading a specific fileset and version immediately, for example bos.rte.alt_disk_install.rte 5.2.0.41. An existing policy containing this request can be run immediately or scheduled for a later time. Likewise, this request for immediate download can be handled without even creating a policy since this is a one-time operation that does not have to save the policy for a future attempt. In this case, the information would simply be entered through the SMIT SUMA menus (or on the command line) prior to performing the immediate download.

5 SMIT Interfaces

SUMA provides two interfaces for accessing its automated download functionality. A menu-driven SMIT interface can be used, as well as a command line interface. This document will highlight the flow through the SUMA SMIT menus.

5.1 The main SUMA menu

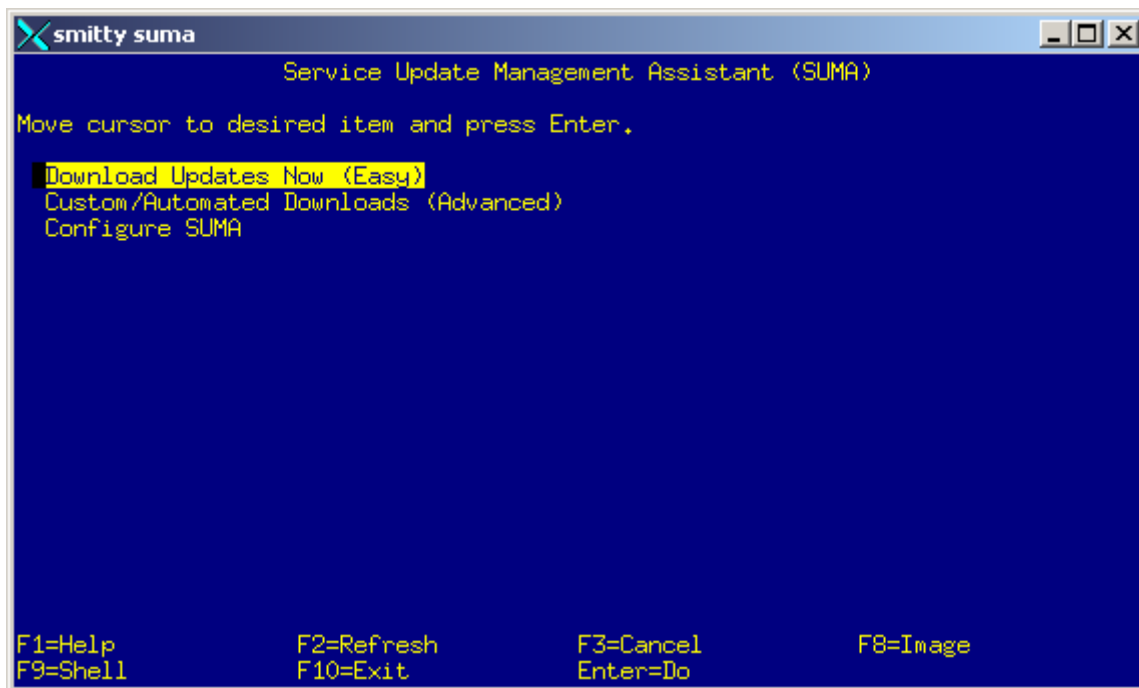
The main SUMA menu can be selected from either the “Software Service Management” menu, or the “Software Maintenance and Utilities” menu. It can also be reached directly by entering the fast path “smitty suma”.



SERVICE UPDATE MANAGEMENT ASSISTANT (SUMA)



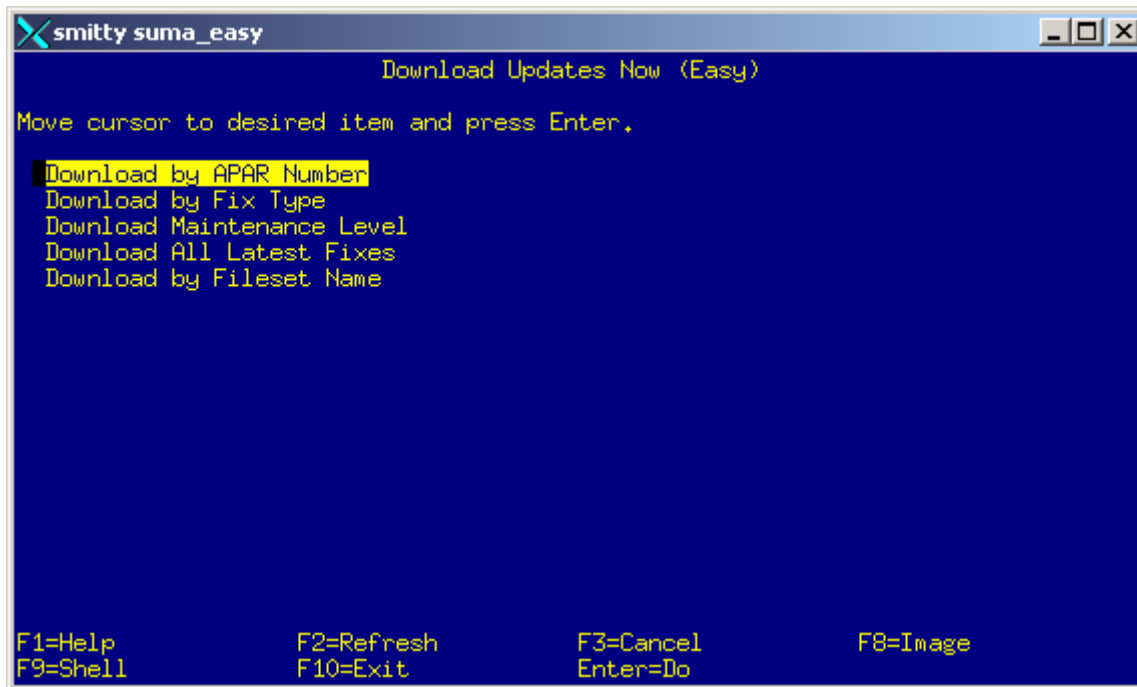
Once you reach the main SUMA menu, shown below, you are given the option of choosing to enter the “Easy” SUMA menus if you wish to utilize SUMA defaults, the “Advanced” menu if you wish to customize your SUMA operation, or menus to “Configure” SUMA.



5.2 The “Download Updates Now (Easy)” menu

The “Download Updates Now (Easy)” menu provides easy access to common SUMA tasks, such as: downloading by APAR number, downloading by fix type (such as critical or security), downloading a maintenance level, downloading all the latest fixes, or downloading a specific fileset.

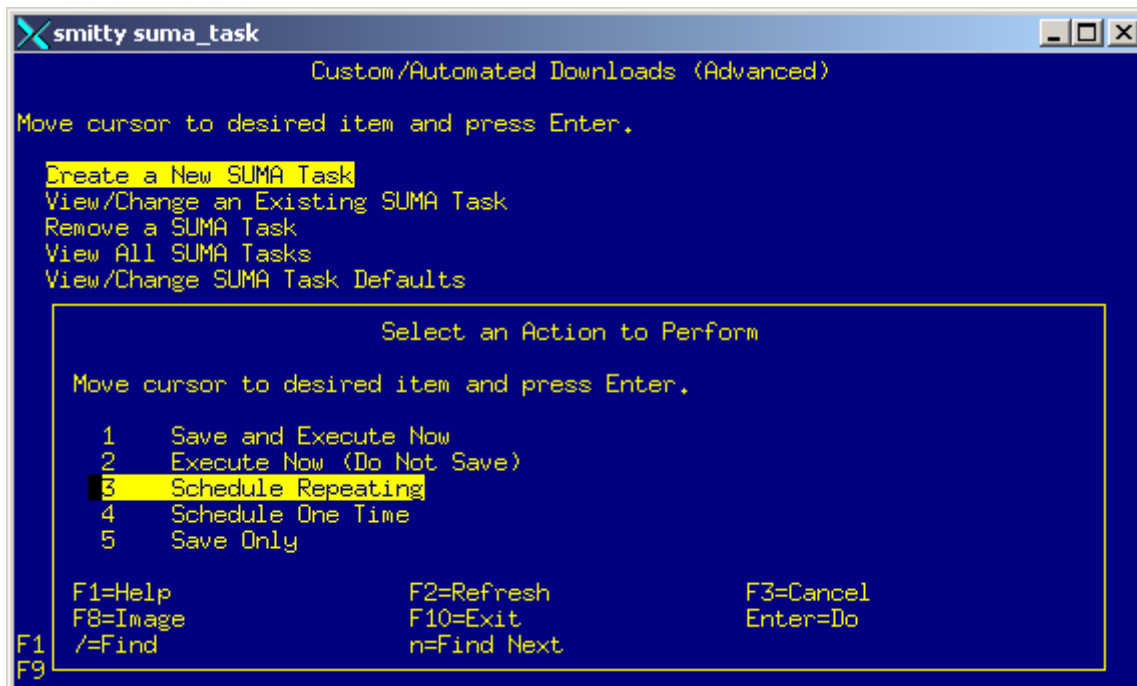
These menus require minimal input, such as an APAR number (e.g., IY12345), a maintenance level (e.g. 5200-04), or a specific fileset name and level (e.g., bos.rte.install 5.2.0.41). SUMA defaults are used to provide the remainder of information needed to run the chosen task. The “Easy” menu allows for immediate downloads only. Those wishing to schedule a download can utilize the “Advanced” menu.



5.3 The “Custom/Automated Downloads (Advanced)” menu

The “Custom/Automated Downloads (Advanced)” menu provides options that give the client flexibility on setting up their policy or task for automated downloads. When creating a new task, a task can be scheduled (e.g., Schedule Repeating) to allow for an unattended download, or run immediately (e.g., Save and Execute Now). Customization options for the filesets being downloaded allow for specification on items such as: requisite processing, filtering, and file system handling.

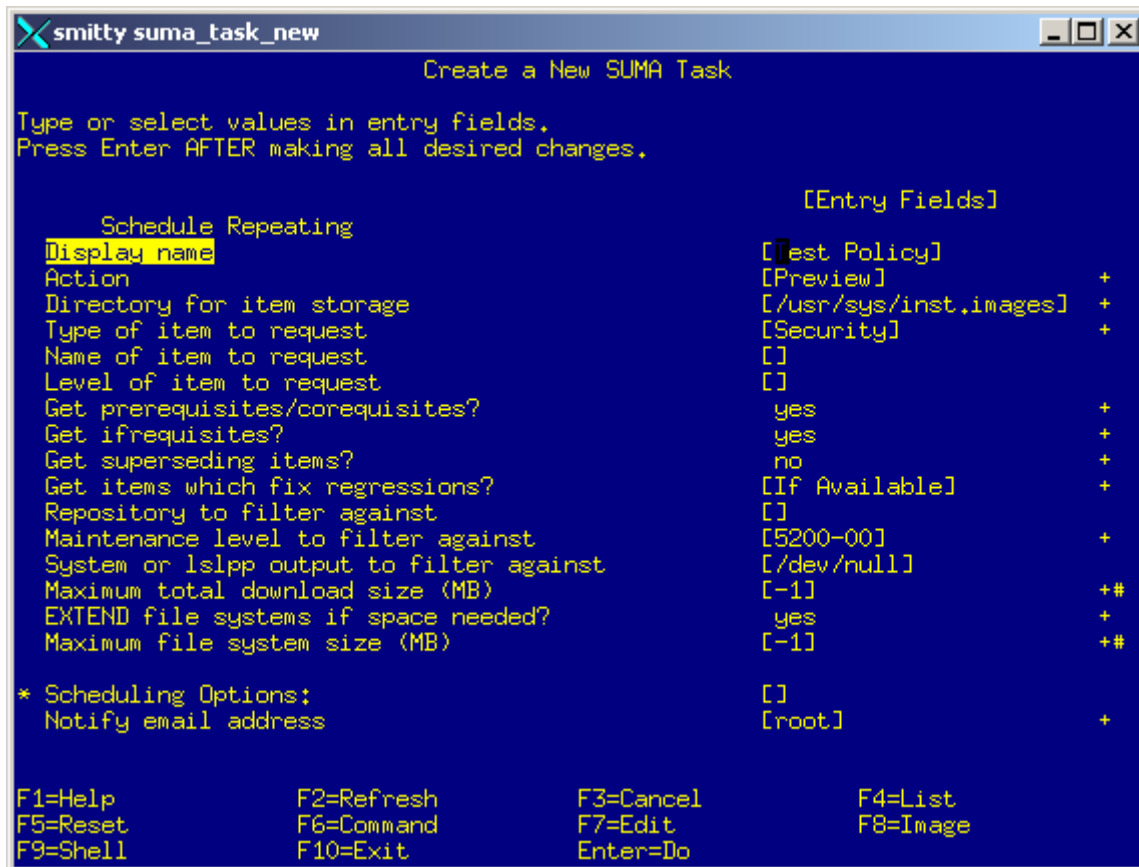
The “Advanced” menus can also be used to change SUMA task defaults (such as the download target directory), and to manage your SUMA tasks (e.g., view, change, remove).



5.4 The “Create a New SUMA Task” menu

The “Create a New SUMA Task” menu allows downloads to be customized through specification of options such as requisite processing (for example, selecting whether to download filesets that are prerequisites of the filesets being downloaded), filtering (where, as an example, you may choose not to download any filesets that are already installed on the system), and file system handling (where one example would be specifying a maximum total size of the files that can be downloaded).

In addition, the “Create a New SUMA Task” menu can be used to specify a schedule for unattended downloads.



5.5 The “Base Configuration” menu

The “Base Configuration” menu allows SUMA global configuration settings to be viewed or changed. These settings are used for each SUMA task that is run and allow specification of values for items such as: the screen, logfile, and email verbosity levels; flag options for the lppmgr command to help manage the size of a download repository; the download protocol; and the download timeout setting.

Global configuration settings differ from SUMA task defaults in that global configuration settings apply to all SUMA tasks that are run, whereas SUMA task default values can be uniquely set for each SUMA task, if desired.

```

smitty suma_task_new
Base Configuration

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

Screen output verbosity
Logfile output verbosity
Notification email verbosity
Remove superseded filesets on Clean?
Remove duplicate base levels on Clean?
Remove conflicting updates on Clean?
Fixserver protocol
Download protocol
Maximum log file size (MB)
Download timeout (seconds)

[Entry Fields]
[Info/Warnings/Errors] +
[Debug] +
[Info/Warnings/Errors] +
yes +
yes +
no +
http +
ftp +
[1] #
[30] #

F1=Help      F2=Refresh   F3=Cancel    F4=List
F5=Reset     F6=Command   F7=Edit      F8=Image
F9=Shell     F10=Exit     Enter=Do

```

SERVICE UPDATE MANAGEMENT ASSISTANT (SUMA)



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