Sun StorageTek™ Business Analytics Administration Guide

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INTRODUCTION TO ADMINISTRATION

This chapter explains the administrative menus of the Sun StorageTek Business Analytics Management Console. Your User ID must be defined with permissions to the administrative menus for you to have access to the **Tools** menu selections.

Note: With the acquisition of StorageTek, Sun Microsystems has re-branded and re-named Global Storage Manager (GSM) as Sun StorageTek Analytics, a member of the Enterprise Storage Manager portfolio of software solutions. The functionality of Business Analytics is identical to GSM, only the name has changed.

ADMINISTRATIVE FUNCTIONS OVERVIEW

The following table provides an overview of the administrative functions that can be accessed using the **Tools** pull-down menu.

Dashboard Administration	A dashboard is a set of panes on the Management Console Home Page. Use Dashboard Administration to view existing dashboards, set the current dashboard, as well as to add, modify, or remove dashboards.
Change Password	Change and confirm your new password.
View Administration	A view is a collection of assets, or a collection of other views. Use the Views wizard to create a new view, modify an existing view, or remove a view.
User Administration	Use the Users wizard, to add, view, modify, or delete Sun StorageTek Business Analytics users, manage their assigned views and dashboards, or reset a user's password.
Policy Alerting	Add, modify, or delete policies based on user-specified alert thresholds or conditions.
Reporting Administration	Review/delete scheduled report jobs, maintain alias names, define manual host to HBA mapping, define fields for Asset reports, and maintain allocation forecast report data.
Site/Local Manager Administration	Create, list, modify, or delete sites or Local Managers.
Data Polling Schedule	Enable/disable, view, add, modify, or delete polling schedules for all Collection Types (e.g., Array) and Collection Metrics (e.g., Performance).
SRM Agent Configuration	Configure the scan schedule, filters, and other miscellaneous configuration parameters for the SRM Agent.
Application Status	Monitor agent status or agent alerts throughout your deployment and view the license audit report.
Database Administration	Refresh the data used to create the storage panes and define how long collected data should be kept.
TSM Report Parameters	Configure TSM report parameters related to Backup Window start and end times, disk pools, reclamation process, and tape drives/paths.

Table 1 - Tools Pull Down Menu

DASHBOARD ADMINISTRATION

A dashboard is a set of panes on the Management Console home page. Dashboard Administration allows the user to view existing dashboards, set their current dashboard, as well as add, modify, or remove dashboards.

CHANGE DASHBOARD

Change Dashboard allows you to choose your customized Management Console home page.

Note: After a current dashboard is selected, it persists between Management Console login sessions until that dashboard is changed. The **Manage Dashboards** menus allow you to create, modify, and delete dashboards that can be selected as the current dashboard (or customized Home Page).

Proceed as follows:

1. Log in to the Management Console.

2. Select **Dashboard Administration** -> **Change Dashboard** from the **Tools** pull-down menu. The **Change Dashboard Selection** window appears.

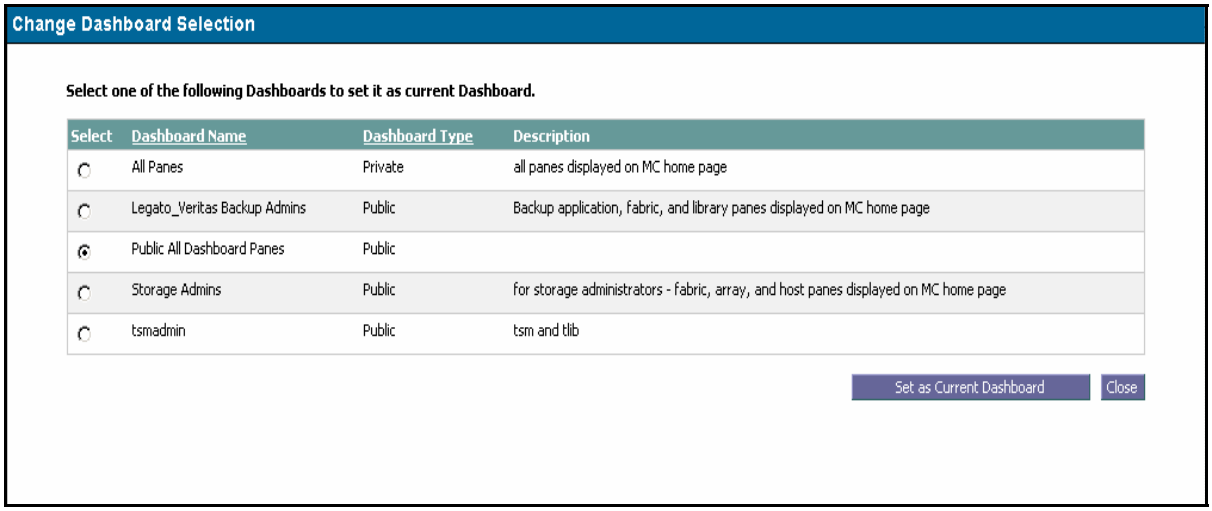


Figure 1 - Change Dashboard Selection

3. Change Dashboard Selection contains a table with radio boxes under the Select heading allowing you to select a dashboard as well as the Dashboard Name, Dashboard Type (private or public), and Description fields. The window also contains the **Set as Current Dashboard** and **Close** buttons. Clicking **Close** will close this window.

4. To set the current dashboard, proceed as follows:

    a. Use the radio box under the **Select** heading to choose the desired dashboard.

    b. Click the **Set as Current Dashboard** button. The "Default Dashboard has been changed. Click the **OK** button to close this window and refresh the Home Page" dialog appears.

    c. Click **OK** and the customized Home Page will appear.

MANAGE DASHBOARDS

Manage Dashboards allows you to create personalized dashboards (customized Home Pages) that may be selected as current by users. You select the panes (i.e., Server, Array, Backup, Library, etc.) that will appear in the dashboard that you create.

Proceed as follows:

1. Log in to the Management Console.

2. Select **Dashboard Administration-> Manage Dashboards** from the **Tools** pull-down menu. The **Manage Dashboards** window appears.

   It contains a selection radio box and the dashboard Name, Description, and dashboard Type fields. It also contains the **Remove Selected, Create New, and Close** buttons. Clicking **Close** closes the Manage Dashboards window.

   The checkbox next to the **Dashboard Name** heading is used to select all dashboards displayed in the table. You can click on either the **Dashboard Name** or **Dashboard Type** to select the table sort order.

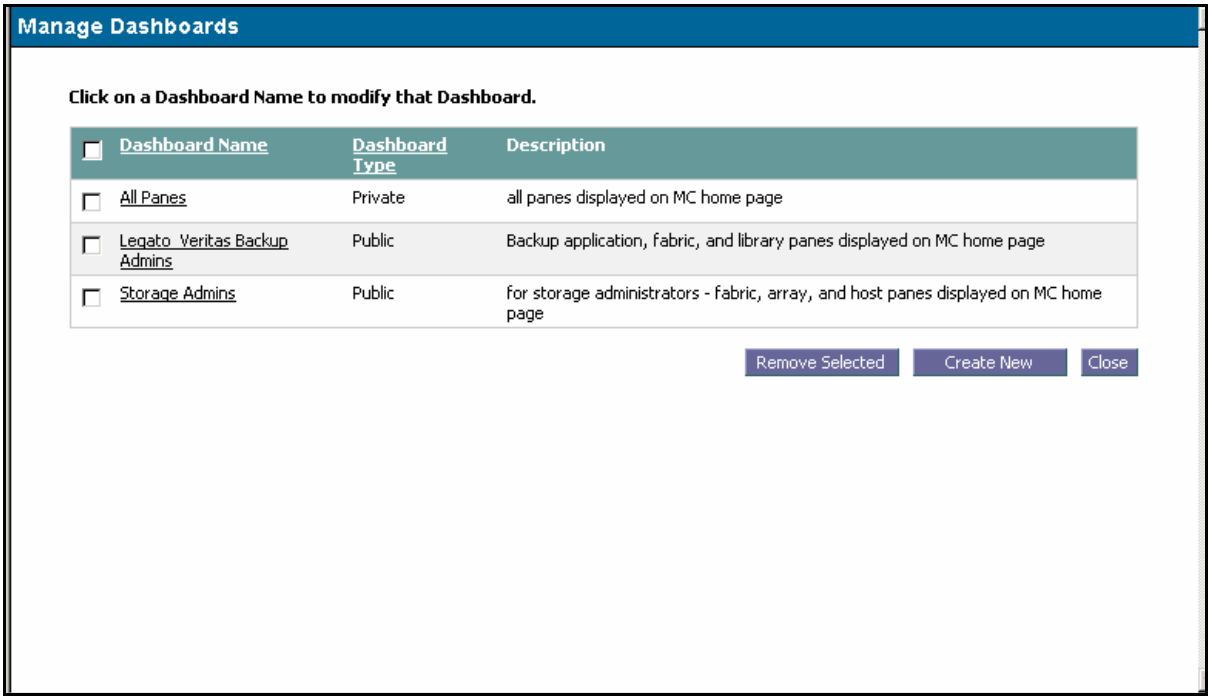


Figure 2 - Manage Dashboards

ADD NEW DASHBOARD

3. To add a new dashboard, proceed as follows:

   a. Click the **Create New** button and **the Dashboard Administration: Create New Dashboard** window appears.

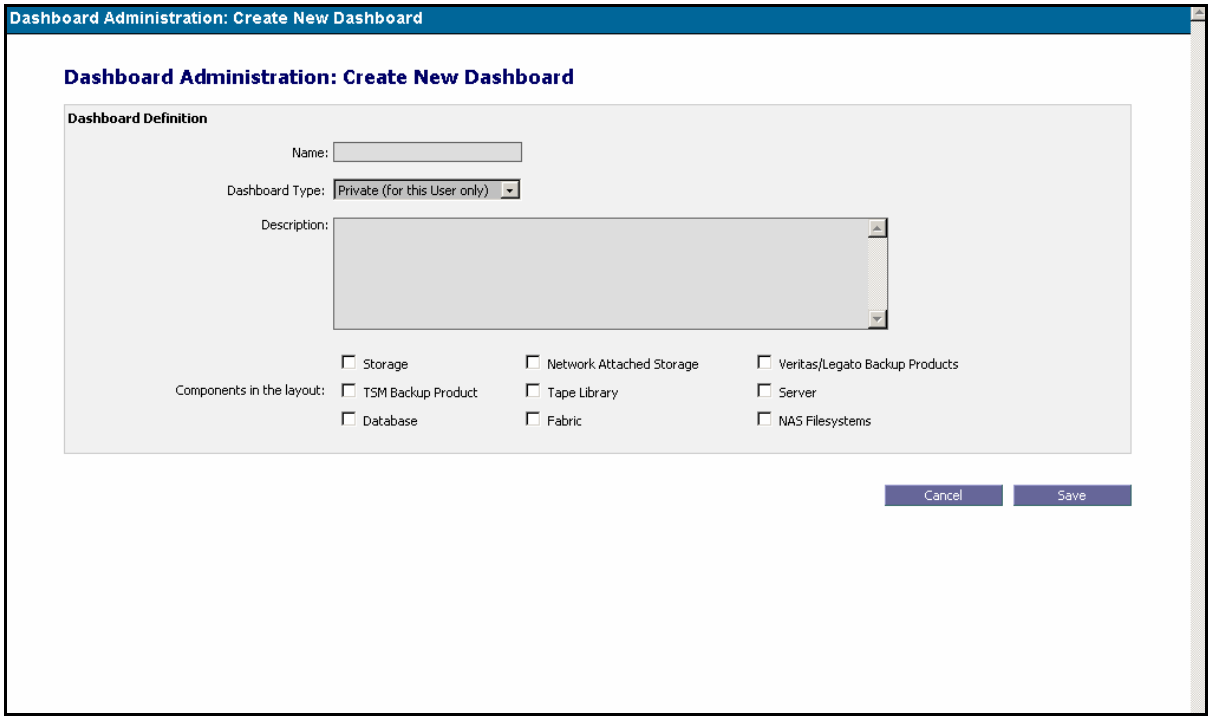


Figure 3 - Dashboard Administration: Create New Dashboard

b. Type a meaningful name in the **Name** input box.

c. Use the **Dashboard Type** pull-down list box to specify whether this dashboard will be available to just this user (private) or all Sun StorageTek Business Analytics users (public).

d. In the **Components in the layout** check boxes, use the check boxes to specify each type (Storage, Tape Library, etc.) of component to be displayed on the customized Home Page. A check mark in a checkbox enables that pane.

- **Storage** – Adds the **Storage Allocation Overview** pane.
- **Network Attached Storage** – Adds the **NAS Device Overview** Pane.
- **Veritas/Legato Backup Products** – Adds the **Backup Summary Status** pane.
- **TSM Backup Product** – Adds the **TSM Summary** pane.
- **Tape Library** – Adds the **Tape Library Overview** pane.
- **Server –** Add the **Host Filesystem Utilization** pane.
- **Database –** Adds the **Database Management** pane.
- **Fabric –** Adds the **Fabric Utilization Overview** pane.
- **NAS Filesystems –** Add the **NAS Filesystem Overview** pane.

Note: The agent data that appears in a customized Management Console Home Page will depend on the actually deployed Smart Agents, the user's assigned views, and when Sun StorageTek Business Analytics refreshes that pane.

e. Click **Save** and the **Manage Dashboards** window will refresh with the new dashboard listed in its table.

Note: The first time you add the Storage Allocation Overview to the Home Page you may need to select **Tools->Database Administration->Refresh Cap Allocation** to populate the pane. This data is automatically refreshed every morning by default.

Remove Selected Dashboards

4. Using the checkboxes, specify the dashboard(s) that you want to remove or click the checkbox beside the **Dashboard Name** heading to select all the dashboards in the table.

5. Click the **Remove Selected** button. The "Are you sure you wish to remove the selected dashboards from the system? All component assignments to these dashboards will be deleted!" dialog appears.

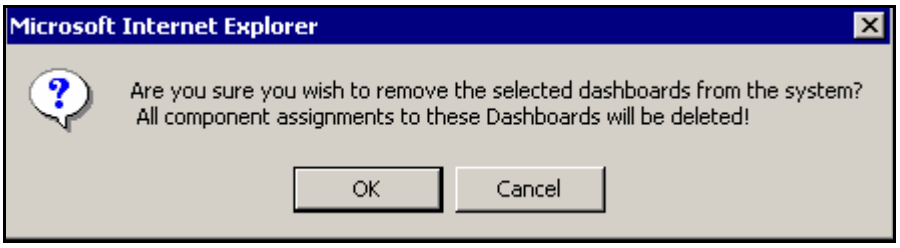


Figure 4 - Remote Dashboards Confirmation Dialog

6. Click **OK** to confirm removing the dashboards and the **Manage Dashboard** window is refreshed. The selected dashboards will no longer appear in the table. Clicking **Cancel** cancels the removal and returns you to the Manage Dashboards window.

Change Password

To reset your password, proceed as follows:

1. From the **Tools** pull-down menu, select **Change Password** and the Change Password window is displayed. It provides input boxes that allow you to change and confirm a new password. Clicking **Clear** removes all characters you have typed in the input fields. Clicking **Close** closes the **Change Password** window.
2. Enter and confirm a new password in the New Password and Confirm Password fields, respectively.
3. Click **Save**. The "Your password has been successfully changed" dialog appears.

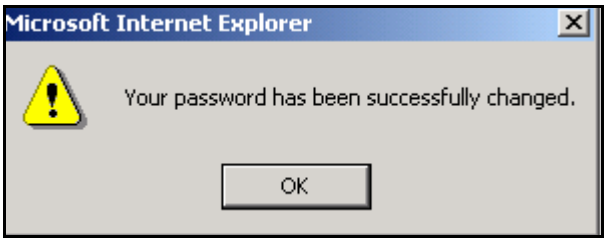


Figure 5 - Password Changed Dialog

4. Click **OK** to complete the procedure.

VIEW ADMINISTRATION

A view is a collection of assets, or a collection of other views. The View Administration menus allow the administrator to manage the assets and which users have access to them. Report security is controlled by what view is assigned to the user.

There are two view types: Asset View and Composite View. An Asset View is assigned any number of monitored assets. An asset is a physical device or application. These include servers, arrays, switches, NAS devices, databases, and tape libraries. A site is also considered an asset, and it provides visualization of all the resources within that site in the Sun StorageTek Business Analytics reports. A Composite view is comprised of one or more views.

Note: A Composite View cannot contain other Composite Views. It can only contain Asset Views.

After you have added all the sites into the Sun StorageTek Business Analytics application, you should create an *enterprise-level view* that has the following characteristics:

- Is an Asset View (not Composite View).
- Contains all the sites in your entire infrastructure.
- Is assigned to the overall administrator(s) at your company.

The Management Console's **Site/Local Manager Administration** menus allow you to add all of your sites.

Proceed as follows:

1. Log in to the Management Console.
2. From the **Tools** pull-down menu, select **View Administration** and the **Views Wizard** window appears.

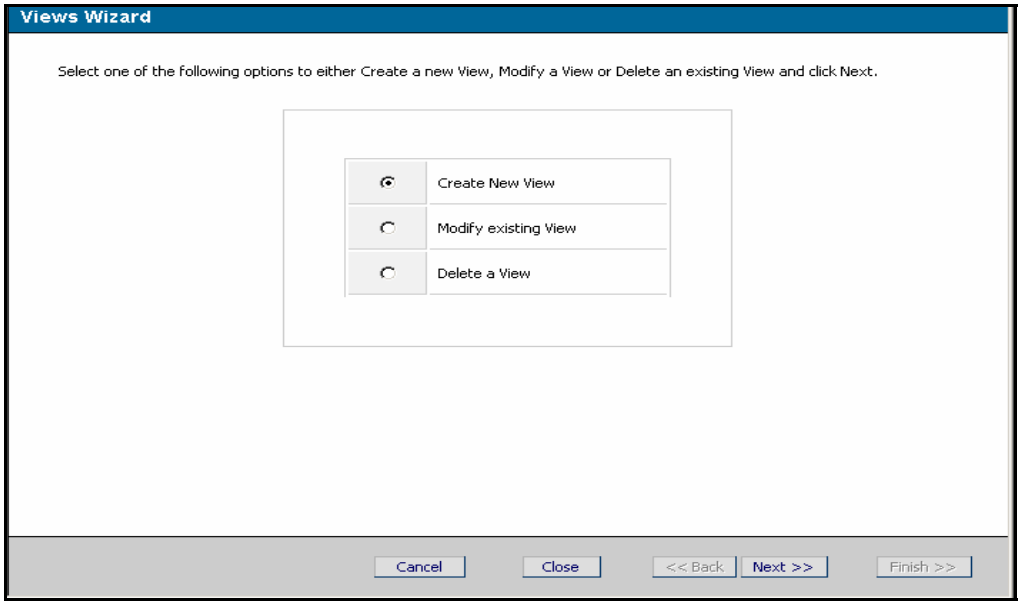


Figure 6 - Views Wizard

The Views Wizard allows you to:

- Create a view

- Modify an existing view
- Delete a view

Note: Adding a particular asset category to a view enables the menu options for that category. Adding a site adds all the assets in that site and enables the associated menu options.

Clicking **Cancel** cancels the operation and closes the Views Wizard. Clicking **Close** causes the home page to be redrawn with newly defined views accessible using the View selection pull down on the top right section of the home page.

CREATE ASSET VIEW

Sun StorageTek Business Analytics supports two view types: Assets View and Composite View. This section describes how to create an Asset View.

1. In the **Views Wizard**, use the radio box to select **Create New View** and click **Next>>**. The **Create View** window appears.
2. Type a meaningful name for the view in the **Name** input box.
3. Use the **View Type** selection box to choose Asset View. An Asset View consists of physical assets, such as servers and arrays.
4. Optionally type descriptive text for the view in the **Description** box. The description may consist of up to 255 characters.

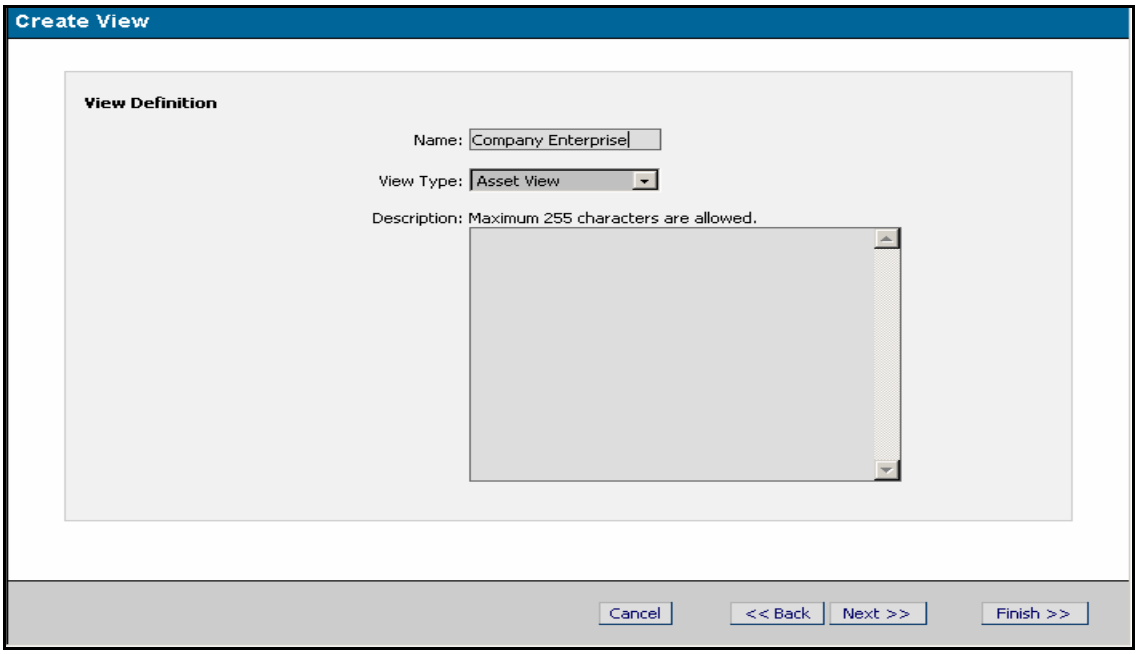


Figure 7 - Create Asset View

5. Click **Next>>** to continue. The **View Administration: Add Assets to View** window appears.
6. Click the down arrow beneath the "What type of asset do you wish to add to this view?" list box and select the type of asset (e.g. Arrays).
7. Click the **List** button. The View Administration: Add Assets to View window is updated with a list of the available assets for the selected asset type.
8. Sequentially view and then assign assets to your view:

- **Sites** – View/select sites from a table that contains the asset type (site), name, location, and description fields. Select the site(s) you want to assign to the view and then click **Add to View**. See Figure 8 – View Administration: Add Assets to View. If you add a site to a view, you are automatically adding all the assets in that site to the view. You do not need to add them individually.
- **Arrays**– View/select arrays from a table that contains the asset type (array), name, location, and description fields. Select the array(s) you want to assign to the view and then click **Add to View**. This activates the storage menus accessed through the Storage pull down menu.
- **Hosts** – View/select host servers from a table that contains the asset type (hosts), name, location, and description fields. Select the host(s) you want to assign to the view and then click **Add to View**. This activates the menus accessed through the Servers pull down menu.
- **Backup Client and Policies** - View/select backup clients from a table that contains the asset type (backup client), name, location, and description fields. The Description field identifies the backup policy name. Select the backup client(s) you want to assign to the view and then click **Add to View**. This enables the Backup Job Wizard and the TSM menus. Certain backup menu options are controlled by user privileges, as described in the subsequent User Administration section.
- **Fabric Switches** – View/select fabric switches from a table that contains the asset type (fabric switches), name, location, and description fields. Select the fabric switches you want to assign to the view and then click **Add to View**. This activates switch menu options accessed through the Fabrics pull down menu.

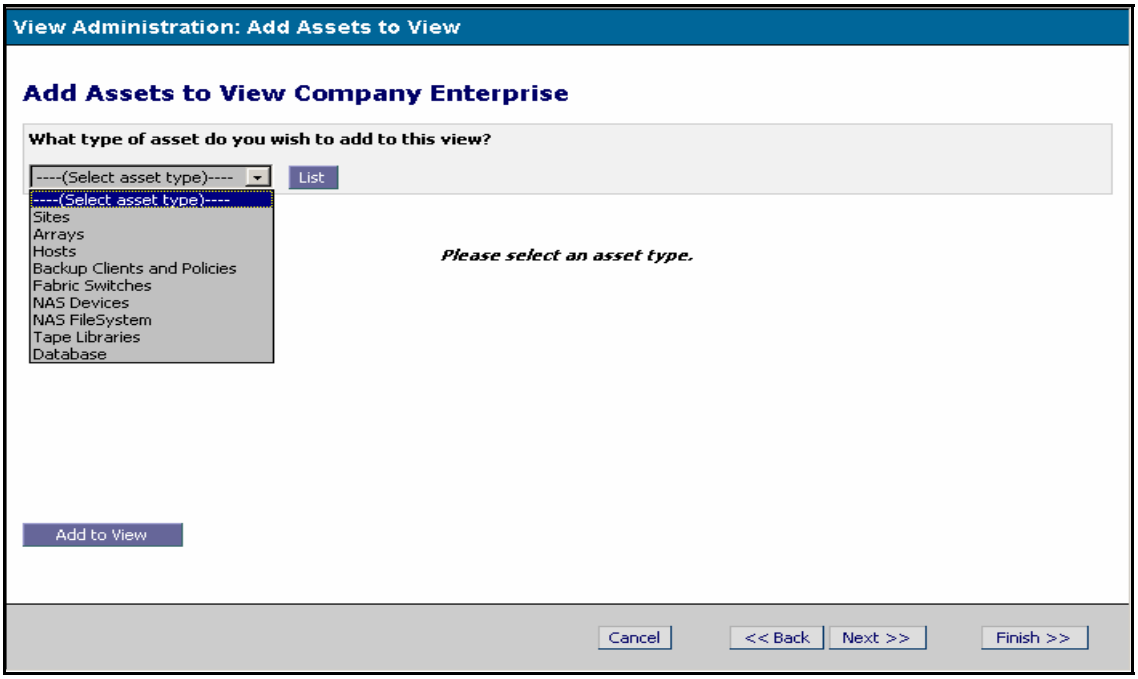


Figure 8 - Add Assets to View

- **NAS devices** - View/select NAS devices from a table that contains the asset type (NAS devices), name, location, and description fields. Select the NAS device(s) you want to assign to the view and then click **Add to View**. This activates the NAS menu options accessed through the Storage pull down menu.
- **NAS Filesystem** – View/select NAS file systems for a selected site and NAS server. Select the NAS file systems and then click **Add to View. Note**: Qtrees are not displayed in the list of filesystems. You can add only filesystems to the

view and not qtrees. A qtree is similar in concept to a partition. It creates a subset of a volume to which a quota can be applied to limit its size. As a special case, a qtree can be the entire volume. If there are files and directories in a volume that do not belong to any qtrees, the filer considers them to be in qtree 0. Qtree 0 can take on the same types of attributes as any other qtrees. Currently, be sure to add the NAS filesystems to an asset (not composite) view.

- **Tape Libraries** - View/select tape libraries from a table that contains the asset type (Tape Libraries), name, location, and description fields. Click the libraries you want to assign to the view and then click **Add to View**. This enables the tape library menus accessed through the Backup/Restore pull down menu.
- **Databases** - View/select databases from a table that contains the asset type (databases), name, location, and description fields. Click the database(s) you want to assign to the view and then click **Add to View**. This enables the database menu options.

9. After you have selected the desired assets, click **Add to View**. The "<asset type> assets added successfully" message is displayed.
10. After you have completed assigning assets, click **Next>>** to continue or **Finish** to give users access to the view at a later time. If you click **Next>>**, the **View Administration: Manage Users** window appears**.**
11. The table contains checkboxes that allow adding currently unassigned users to the view. You can click the checkbox next to the **User Name** heading to select all users in the table.

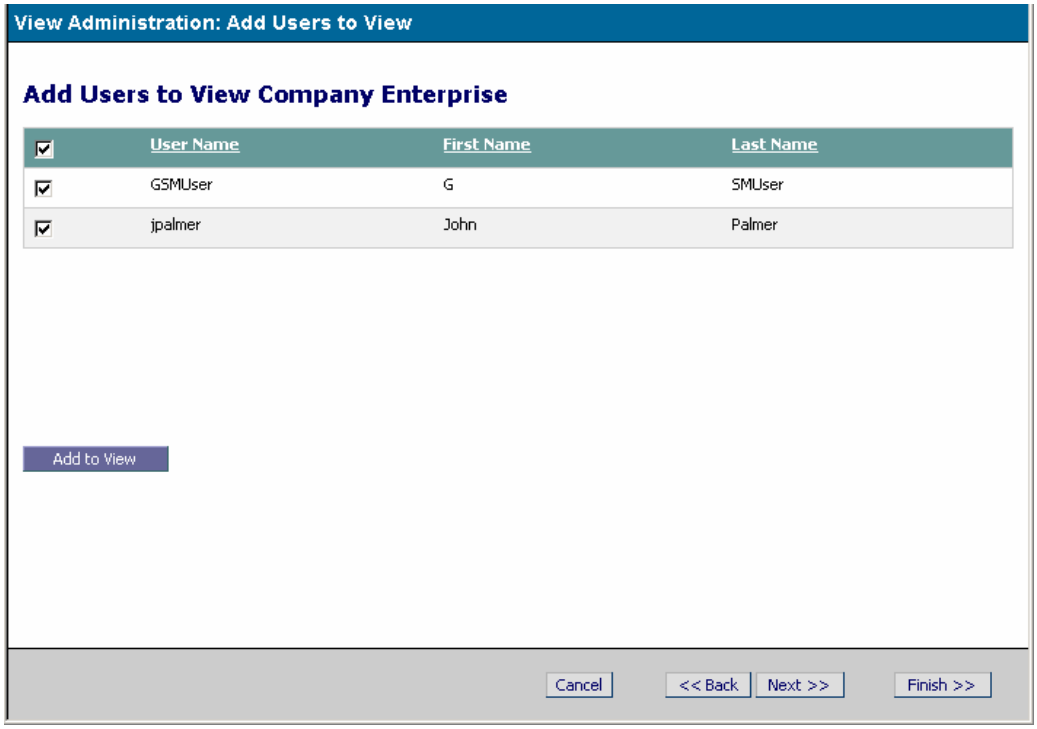


Figure 9 – View Administration: Add Users to View

12. After you select one, several, or all users, click **Add to View**. If there are unassigned users, the table is updated with these users.
13. Click **Next>>** and the Create View – Summary window is displayed similar to the one shown below.

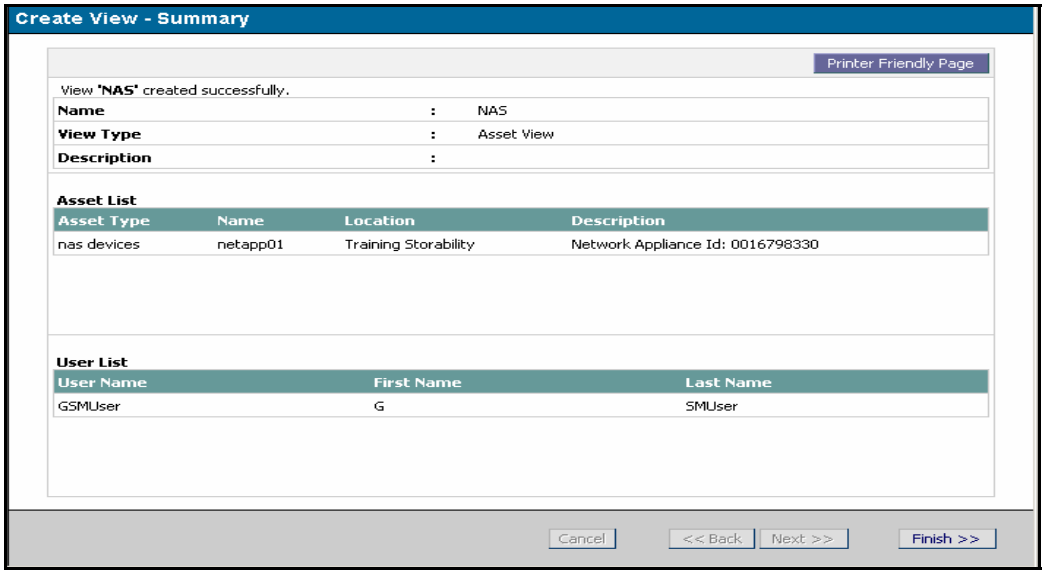


Figure 10 - Create View - Summary

The Create View – Summary window contains the following summary-level information about the view:

- View "<view name>" created successfully
- Name – View name
- View Type – Asset View
- Description – Description of view, if defined
- Asset List table – Specifies asset type, name, location, and asset's description
- User List table – Specifies the user name, first name, and last name

14. Click **Finish>>** and the Views Wizard window is displayed.

You can print this report as a record of your view configuration.

At this point, if you select **Close**, the home page will be refreshed, ensuring that the new view appears in the Views pull down menu on the home page. If you select **Cancel**, the home page is not refreshed. Any change that you have made will be visible the next time the home page is refreshed.

CREATE COMPOSITE VIEW

This section describes how to create a Composite View that consists of one or more Asset Views, which have already been defined in the Sun StorageTek Business Analytics application.

1. In the **Views Wizard**, use the radio box to select **Create New View** and click **Next>>**. The **Create View** window appears.
2. Type a meaningful name for the view in the **Name** input box.
3. Use the **View Type** selection box to choose creating a Composite View.

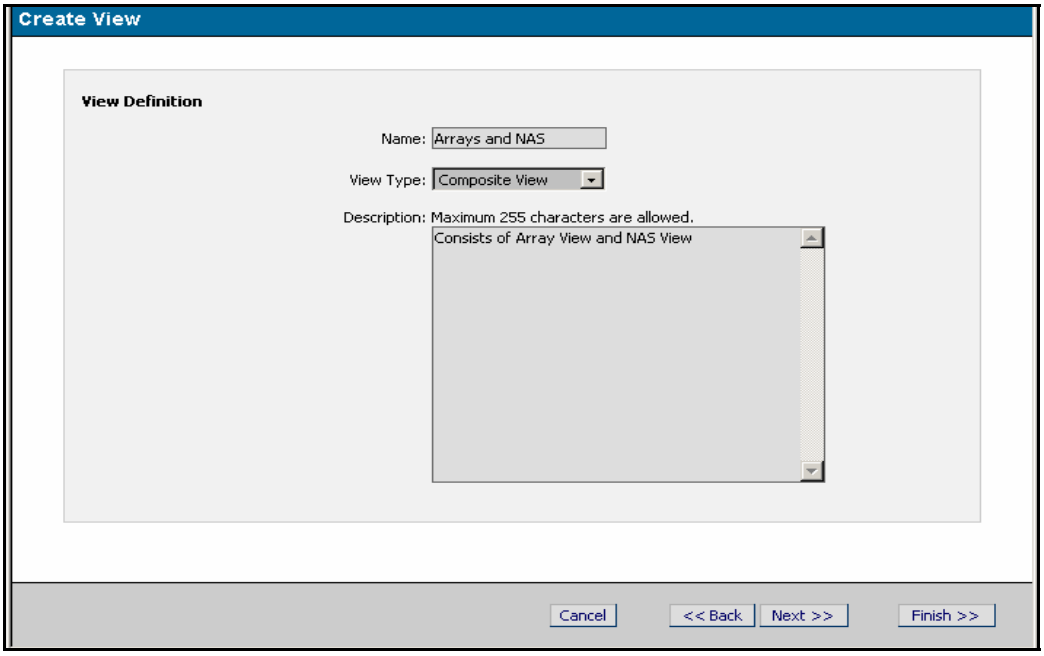


Figure 11 - Create View - Composite View

4. Click **Next>>** and the **View Administration: Add Child Views to View** window is displayed. The table lists all the current asset views in the table and contains checkboxes to allow their selection. The columns are described as follows:

   - Asset Type – Is listed as "views"
   - Name – Name of asset view
   - Location – Is listed as N/A (not applicable)
   - Description – Description of asset view, if defined

5. Using the checkboxes, select the Asset Views you wish to add to the composite view and click **Add to View**. A checkmark in a checkbox selects that view.

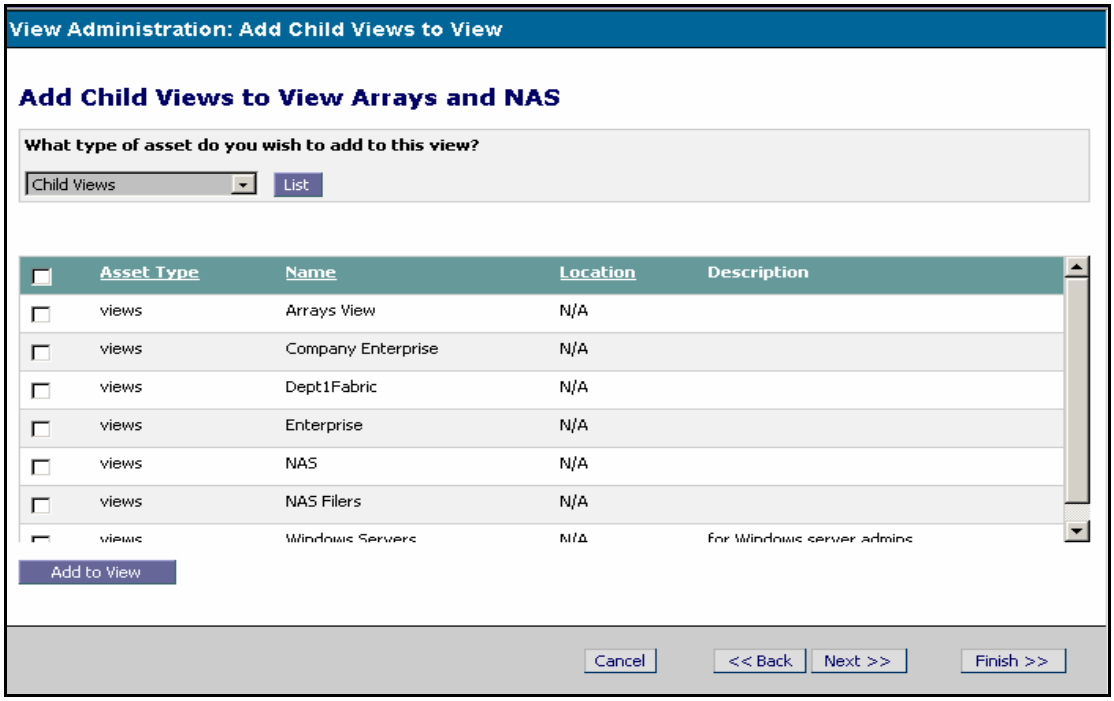


Figure 12 - Add Child Views to View <view name>

6. After you have completed assigning asset views, click **Add to View**.
7. The "Do you want to add selected assets to view?" dialogue appears.

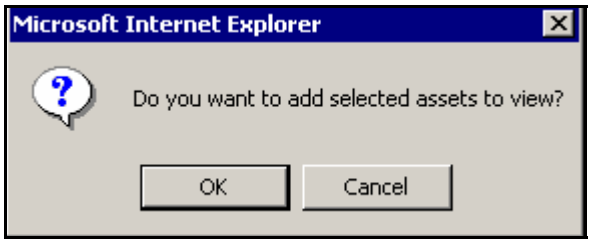


Figure 13 - Do you want to add selected assets to view?

8. Click **OK** to confirm adding the asset views to the Composite View or **Cancel** to cancel and return to the Add Child Views to View <view name> window.
9. Click **Next>>** to continue or **Finish** to give users access to the view at a later time. If you click **Next>>**, the **View Administration: Add Users to View** appears. Use this window to assign the Composite View to the desired users. The table lists the user name, first name, and last name of each user in the database.
10. Use the checkboxes to choose one, several, or all users and click **Add to View**. If some users were not selected, these users appear in the table.
11. Click **Finish>>** and the **Views Wizard** window is displayed.

MODIFY ASSET VIEW

When you modify an Asset View, you can add or remove asset(s) to/from that view as well as add or remove a user's access to the view.

1. Select **Modify Existing View** on the **View Wizards** window.
2. The **Modify View** Window appears. It contains a listing of views identified by the name, view type, and location fields. The View Type is either Asset or Composite.

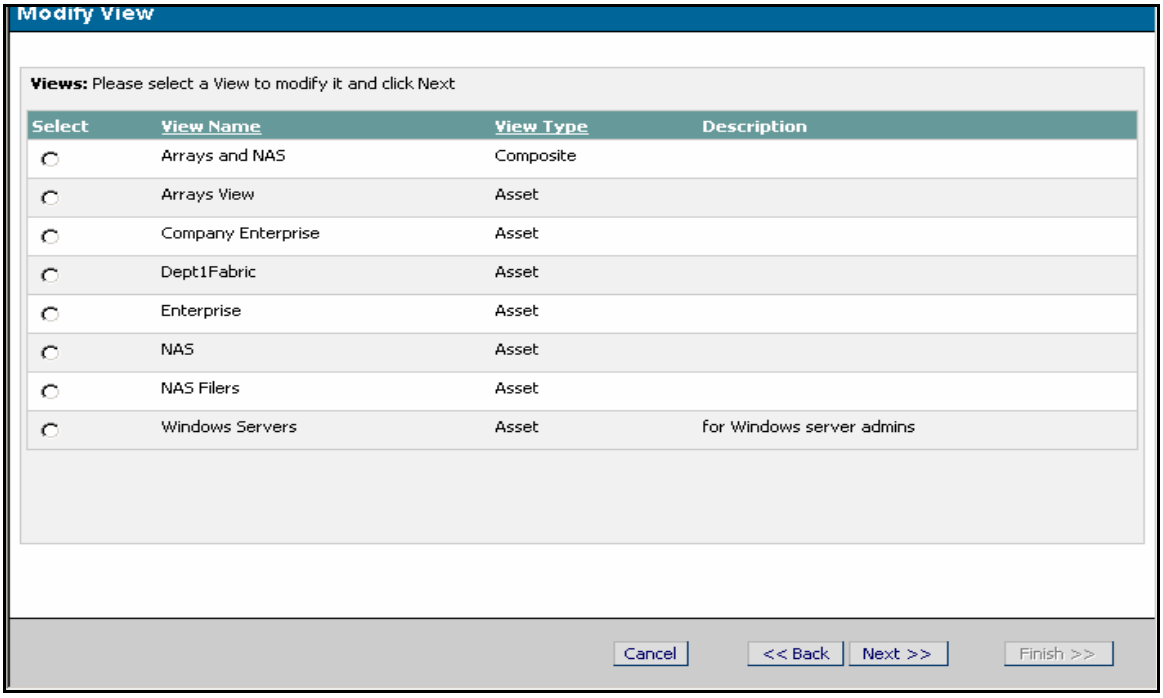


Figure 14 - Modify View

3. Using the radio box, choose the desired Asset View and click **Next>>**.
4. The **View Administration: Manage Assets** window appears. This screen shows all the assets currently assigned to your view.

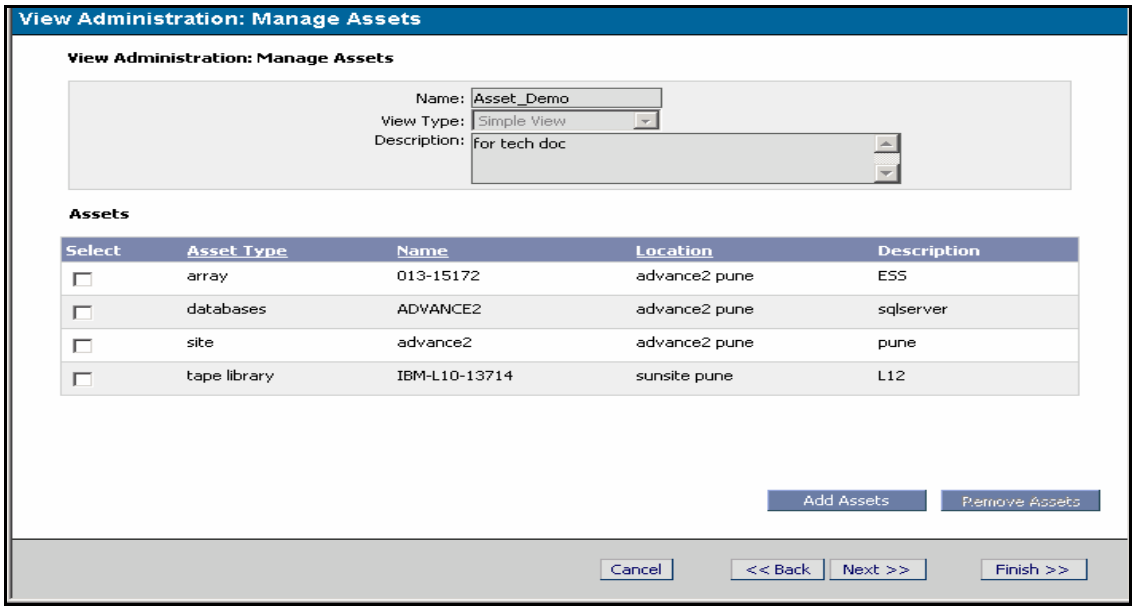


Figure 15 - View Administration: Manage Assets

Add Assets

a. Click to display the **View Administration: Add Assets to View** window.

b. Use a combination of the "What type of asset do you wish to add to this view?" list box and the **List** button to view/add assets to the view you are modifying. The system will only list assets not already assigned to the view.

c. Select the desired assets to add and click **Add to View**. Click Next>> and the View Administration: Manage Users window appears.

d. Modify the list of users with access to the View and click **Finish**.

Remove Assets

a. Use the selection box to choose the assets to be removed.

b. Click **Remove Assets**. When prompted, click **OK** to confirm removing the assets from the view.

MODIFY EXISTING VIEW – COMPOSITE VIEW

When you modify a Composite View, you can add or remove child views to/from that view as well as add/remove users.

1. Select **Modify Existing View** on the **View Wizards** window.
2. The **Modify View** Window appears. It contains a list of views identified by the name, view type, and location fields. The **View Type** is either Asset or Composite.
3. Using the radio box, choose the desired Composite View and click **Next>>**. The Manage Assets window is displayed for the selected Composite View.

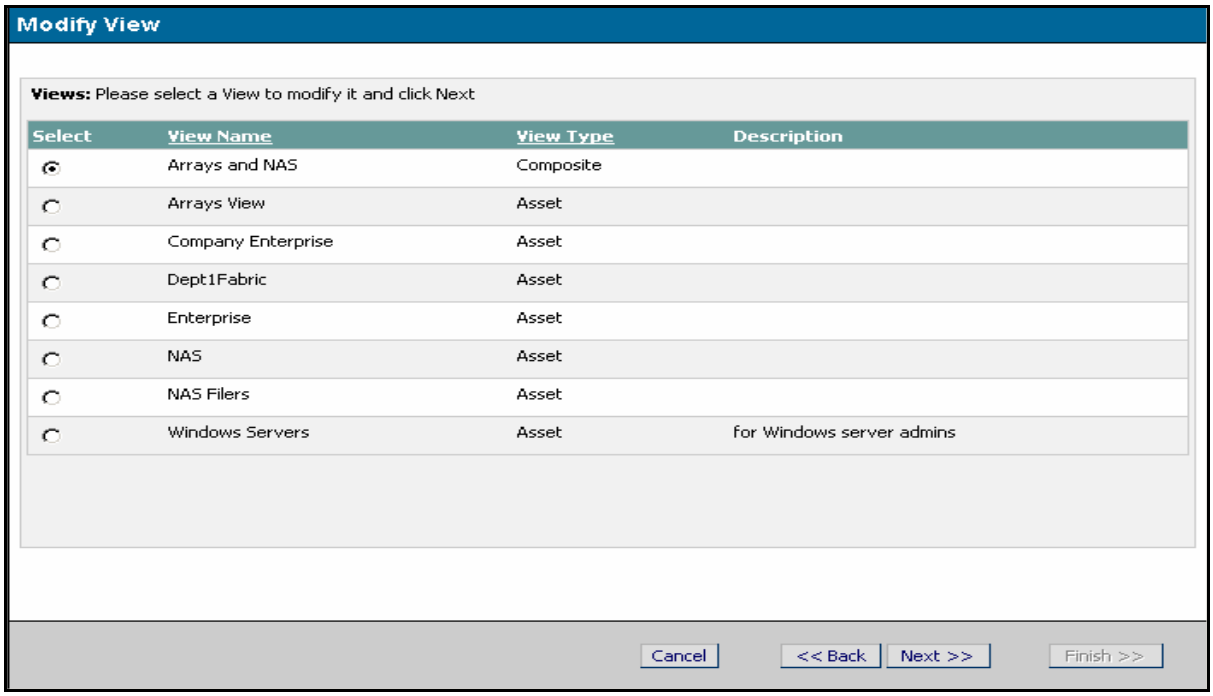


Figure 16 - Manage Assets - Composite View

Add Child Views

a. Click **Add Child Views** to display the **View Administration: Add Child Views to View** window.
b. Use the list box to select **Child Views**.
c. Click the **List Child Views** button. The **View Administration: Add Child Views to View** window is displayed. It contains a list of views not currently assigned to the view you are modifying.
d. Select the desired child views and click **Add to View**.
e. Add additional child views or click **Next>>** and the Manage Users window appears.
f. Add/remove user's access to the modified view and click **Finish**.

Remove Child Views

a. Use the selection box on the Manage Assets window to choose one or more child views to be removed.
b. Click the **Remove Child Views** button.
c. When prompted, click **OK** to confirm removing the child views.

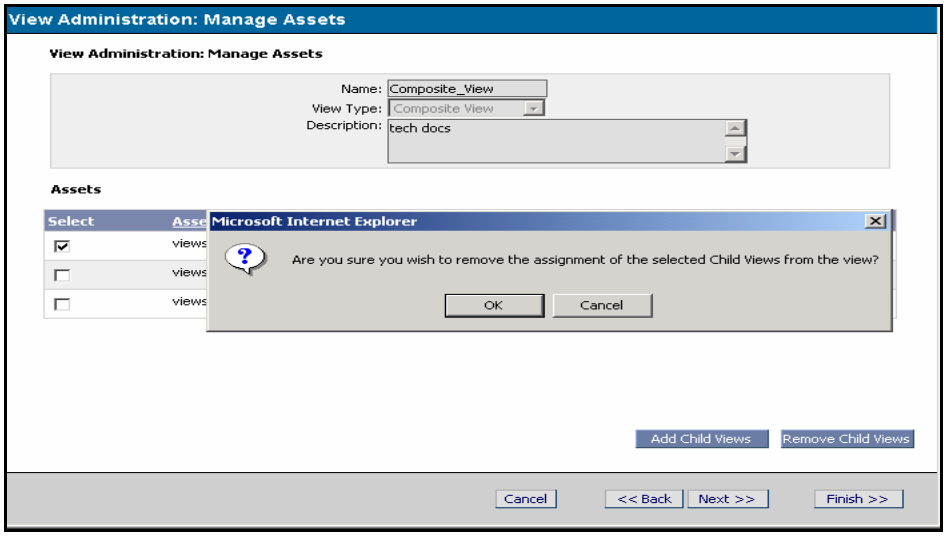


Figure 17 - Remove Child Views

d. Click **Next>>** to display the Manage Users window that allows you to add/remove users assigned to the view, or click **Finish**>> to complete modifying the Composite View.

Delete a View

The Delete a View menu option enables the administrator to delete a view and all users' access to that view.

Note: If you delete the default view of a user, that user is automatically assigned a view since each user must be assigned at least view to view any data within the Sun StorageTek Business Analytics reports.

1. Use the radio box on the **Views Wizard** to select **Delete a View**.
2. Click **Next>>** and the **Delete Views** window is displayed.

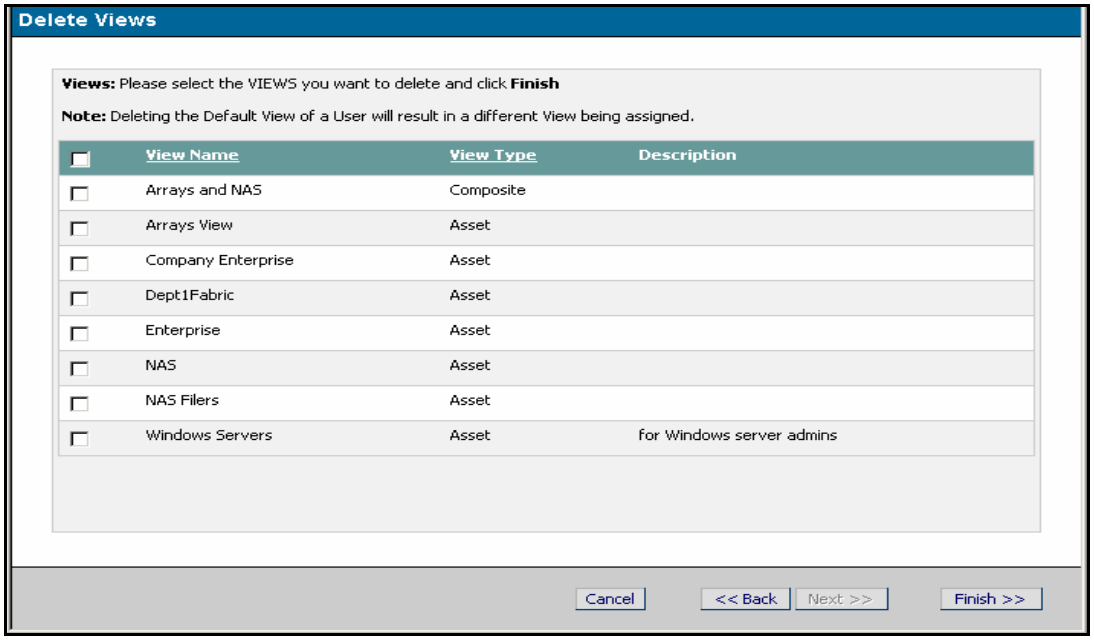


Figure 18 - Delete Views

3. Use the checkboxes to choose the view(s) to be deleted and click **Finish>>**.
4. A confirmation pop up dialog appears after you click **OK**.

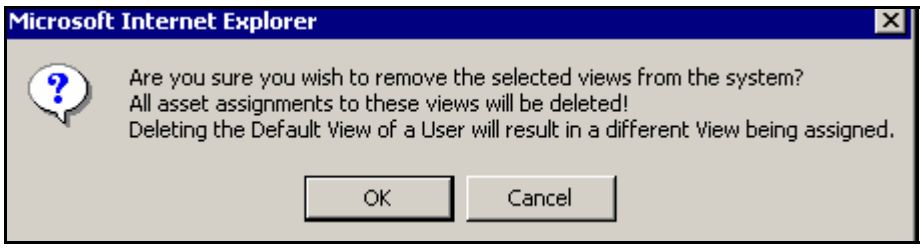


Figure 19 - Delete Views Confirmation

5. Click **OK** to confirm deleting the view(s) or click **Cancel** to cancel and return to the Delete Views window.

USER ADMINISTRATION

The **Users** Wizard allows the administrator to:

- View, add, modify, and delete users
- Assign views to users
- Reset passwords

All users can change their own password.

Proceed as follows:

1. Log in to the Management Console.

2. Select **User Administration** from the **Tools** pull-down menu. The **Users Wizard** is displayed.

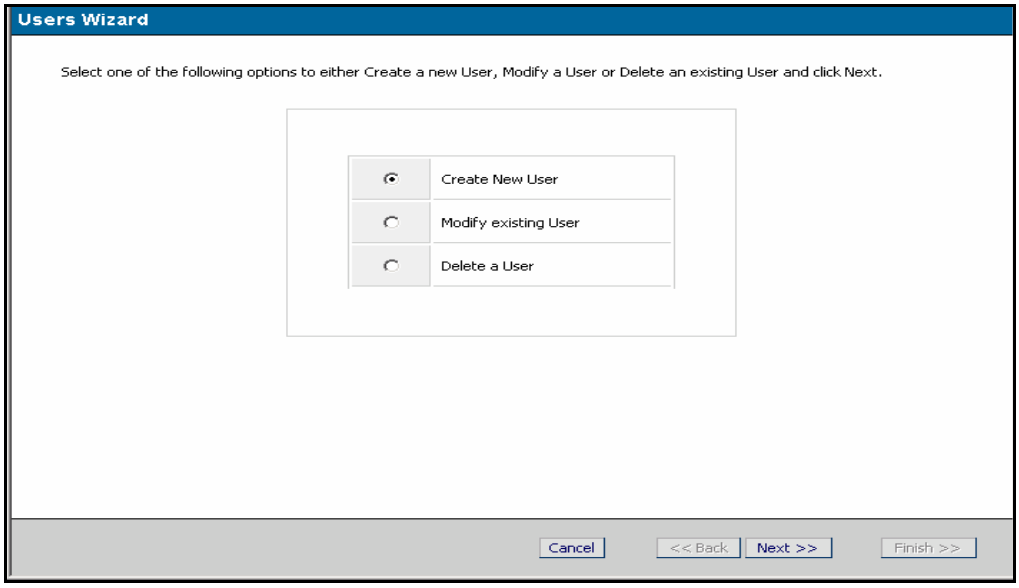


Figure 20 - Users Wizard

CREATE NEW USER

1. Use the radio box to select **Create New User** and click **Next>>**. The Add a User window is displayed. Be aware that:

   - The new user will be asked to change the password upon first login.
   - Fields in bold are required.

2. Enter the user's first name, middle initial and last name.

3. Enter the e-mail address to which the username and password will be sent.

4. Enter the user's phone number.

5. Enter the user name; this cannot contain spaces.

6. Use the **Select View** list box to choose a default view to be assigned to the user. You cannot add a user unless you assign the user a default view. If this is a Composite View, the user will also be able to see any Child Views that comprise the Composite View.

7. Use the **Default Dashboard** list box to choose a default dashboard to be assigned to the user.

8. For **Allow to Manage Accounts**, use the radio button to specify if the new user will be allowed access the User Administration and View Administration menus. If you enable this option, the user can manage any user, including the administrative users. As a result, this option should only be enabled for administrators.

9. For **Additional Administration Rights**, put a check in the check box to enable the Administration Right or leave it empty to not assign it to the user.

The following table describes the menu selections associated with the various Administrative Rights.

Administrative Right	Available Menu Selections
All Users	Dashboard Administration (menu) Change Password
Allowed to manage user accounts	Users Administration Views Administration
Architecture Administration	Site/Local Manager Administration Data Polling Schedule SRM Agent Configuration Application Status --> Agent Status Application Status --> Agent Alerts Application Status --> Sun StorageTek Analytics License Report Database Admin --> Configure Table Purge Database Admin --> Refresh Capacity Allocation
Report Administration	All menu options under Reporting Administration: • Scheduled Report Overview • Maintain Aliases • Manual Host/HBA Mapping • Define Fields for Asset Report • Maintain Storage Forecast • Policy Alerting
Backup Administration	Backup administrator menus: • Backup Exceptions • Meta Database Capacity • Real Time Events • Backup Exposure • TSM Daily Administration
Provisioning Menus	Provisioning: • Storage Provisioning Wizard • View Storage Reservations

Table 2 - Tools Menu Security Options

10. Enter and confirm the password for the new user; it must consist of 6-10 alphanumeric characters.

11. Click **Next>>** to continue. The **Manage Views for User <user_name>** window appears. It contains a table that identifies the views currently assigned to the user as well as a selection box to remove views, if desired.

    Note: You cannot delete the top-level, default view in the view hierarchy using the Manage Views for User window.

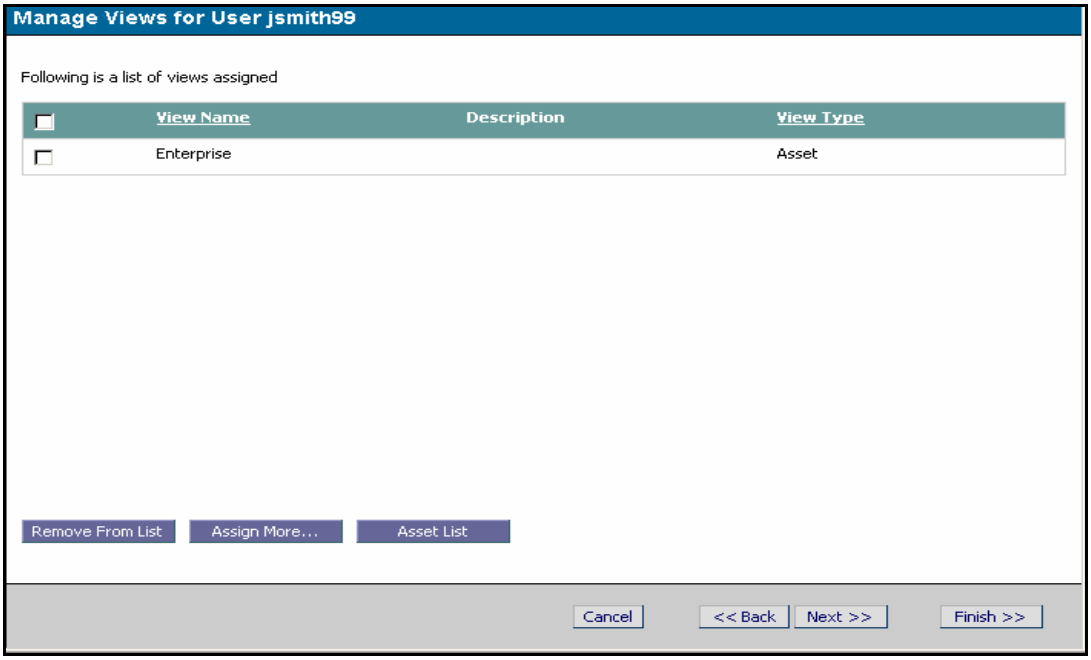


Figure 21 - Manage Views for User

12. Choose one of the following actions:
    - **Remove from List** – Select the views to be removed and click **Remove from List**. A confirmation pop up dialog appears.
    - **Asset List** – View the Assets Allocated to the User <user_name> window. The asset type, name, location, and description are displayed for each assigned asset.
    - **Assign More** – Add views to the user using the Add More Views to User button. This window contains a list of views identified by name, location, and description. The **Add** button enables you to add the views you select.
13. Click **Next>>** and the Create User - Summary window appears. The window lists the following configuration details on the created user:
    - User <user name> was created successfully – User was successfully added to the database.
    - User name
    - First name, middle initial, last name
    - Phone (if optionally defined)
    - Default view
    - Default dashboard
    - Allowed to manage users
    - All additional administrative rights assigned
14. Click **Finish** and the **Users Wizard** window is displayed.

You can print this page as a record of the user's privileges.

An email will be sent to the new user with their username and the assigned password. When the user logs into the Management Console for the first time, he/she will be prompted to change this password to a user-selected one.

MODIFY EXISTING USER

This section describes how to modify an existing user. Proceed as follows:

1. From the **Tools** pull-down menu, select **User Administration**. The Users Wizard is displayed.

2. Select **Modify Existing User** and the Modify User window appears. It contains a selection box and identifies users by user name, first name, and last name.

3. Select the user and click **Next>>** to continue. The Modify a User window appears.

4. Modify the information in the fields (e-mail address or phone number, default view, default dashboard, for example). To change the user password, click the **Change Password** button.

5. By default, the Backup Administration parameter is not checked for upgraded users. The Administrator needs to assign administrative rights for those users that need them. Without this check box being checked, administrative options on the Backup/Restore pull-down menu will be suppressed. Refer to Table 2 to view these menu options.

6. Make the desired changes to the user and click **Next>>.** The Manage Views for User <user name> window is displayed.

7. Perform one of the following actions:

   - **Remove from List** – Select the views to be removed and click **Remove from List**. A confirmation pop up dialog appears.
   - **Assign More** – Add views to the user using the Add More Views to User window. It contains a selection box and a listing of views identified by name, location, and description. The **Add** button enables you to add the views you select.
   - **Asset List** – View the Assets Allocated to the User <user_name> window. The asset type, name, location, and description are displayed for each assigned asset.

8. Click **Next>>** to continue. The Modify User – Summary window appears.

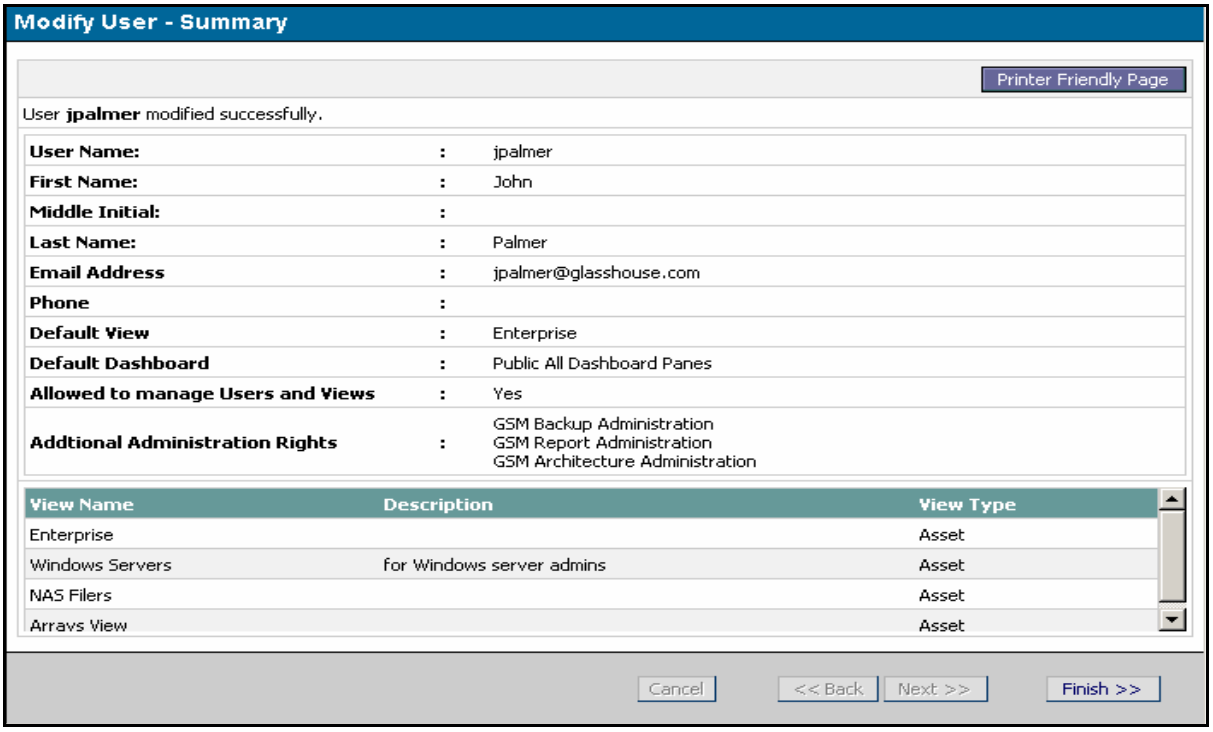


Figure 22 - Modify User - Summary

9. Examine the user's configuration information in the Modify User – Summary window to confirm your changes.

10. Optionally click **Print Friendly Page** to print the information to a local or network printer as a record of this user's privileges.

11. Click **Finish** and the Users Wizard is displayed.

DELETE A USER

Use the Delete a User menu option to remove a user's access to the Sun StorageTek Business Analytics application.

1. From the **Tools** pull-down menu, select **User Administration**. The Users Wizard appears.

2. Use the radio button to select **Delete a User**. The **Delete Users** window is displayed. It identifies users by user name, first name, and last name. It does not include the logged in user in the table.

3. Use the selection box to specify the user, users, or all users to be deleted and click **Finish>>**.

4. The confirmation pop up dialog, shown below, appears. Click **OK** to confirm the action.

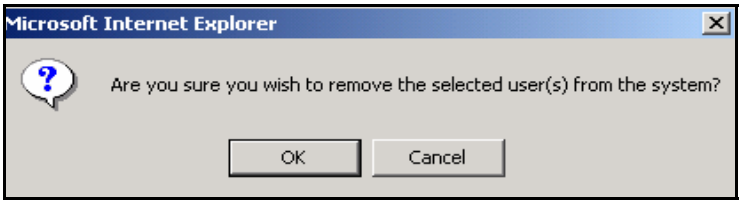


Figure 23 - Confirm Deleting User

5. The **Delete User: Status** window appears with the "User(s) deleted successfully." status message.
6. The Users Wizard is displayed.

POLICY ALERTING

Policy Alerting allows the administrator to:

- View existing policies.
- Modify an existing policy.
- Use a policy template to add a new policy.

Policy-based management utilizes the Storability Policy Agent and the Sun StorageTek Business Analytics database. The Policy Agent has a built-in SMTP client. The Policy Agent's SMTP server must be specified when the agent is installed and configured. You must be the policy owner to modify a particular policy, and a policy will only be executed if the owner has been assigned the asset through a view.

Note: An error message will display if you select **Policy Alerting** and the COM Agent (Management Console), Policy Agent, and the Scheduler Agent (Central Manager) are not running and registered.

ETL DATA LOADING PROCESS

Sun StorageTek Business Analytics Version 5.0 includes the Storage Wizard functionality. The Storage Wizard functionality is designed upon a series of newly designed data warehouse tables. These data warehouse tables have the prefix of "gsr_" in the assurent database and are populated through a database extraction, transformation, and loading process (ETL). The ETL process is responsible for looking up any newly inserted storage array data in the legacy array tables, normalizing and transforming the data into a format suitable for rapid query, and loading the data into the storage data warehouse tables.

By default, the ETL process is set up to run as a policy alerting item at 4:00 am each day in the Sun StorageTek Business Analytics application for the default user (gsmuser). To schedule the ETL process at another time, modify this policy accordingly. Its modifiable elements include:

- Alert Condition (mode is equal to incremental or full)
- Schedule information
- Email contacts
- Enabling/disabling sending empty email
- Enabling/disabling the policy

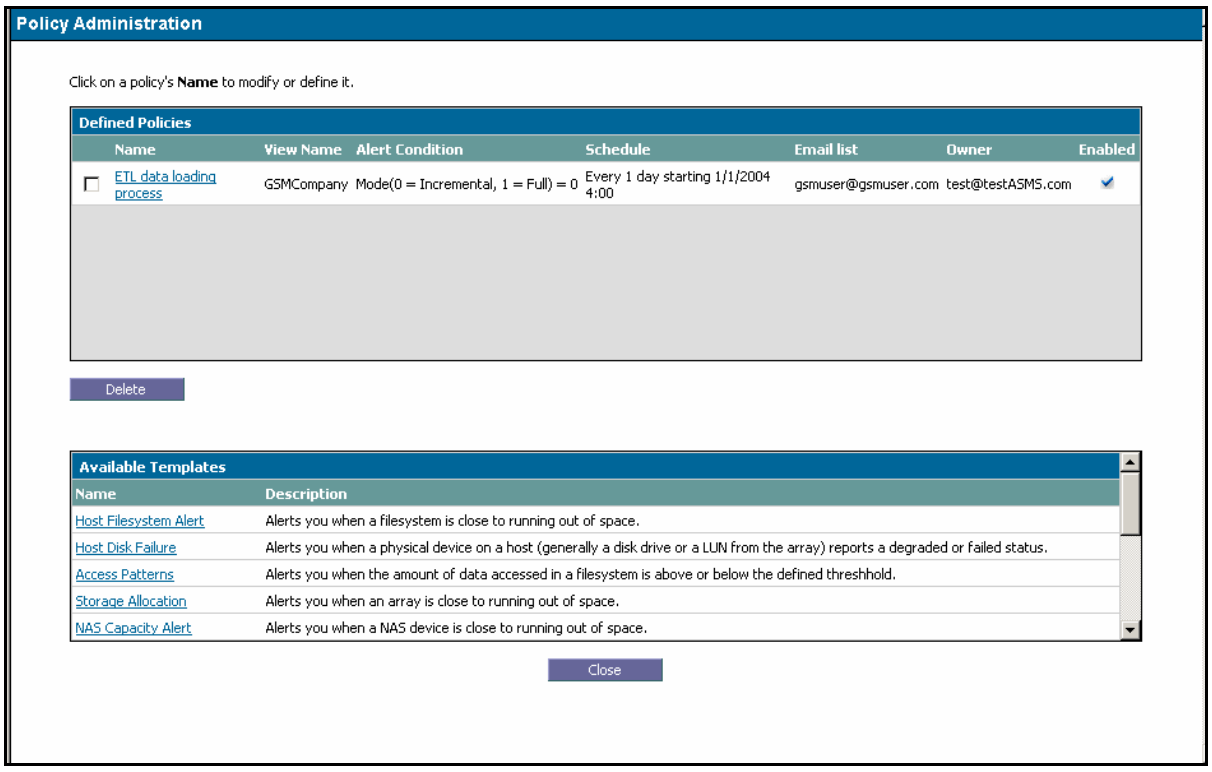


Figure 24 - Default ETL ata loading processs

By default, the ETL process is set up to run in "incremental mode". This means that the program will only process "delta" records, those records that are changed since the last ETL process; therefore, the impact on the database resources for the daily ETL process is lessened.

The ETL process will invoke a database stored procedure, gsr_main_proc_etl, in the assurent database. The execution result of the stored procedure is kept in the gsr_statistics table. The best time to schedule the ETL process is during the off hours, when the load on the database server is light, and after the records for the array tables are newly populated by the array agents.

The additional policy templates are briefly described as follows:

- **Host Filesystem Alert** - Alerts you when a filesystem is close to running out of space.
- **Host Disk Failure** - Alerts you when a physical device on a host (generally a disk drive or a LUN from the array) reports a degraded or failed status.
- **Access Patterns** - Alerts you when the amount of data accessed in a filesystem is above or below the defined threshold.
- **Storage Allocation** - Alerts you when an array is close to running out of space.
- **NAS Capacity Alert** - Alerts you when a NAS device is close to running out of space.
- **NAS Quota –** Alerts you when an activated hard or soft quota is nearly reached.
- **Fabric Port Status Change** - Alerts you when a fabric port changes state.
- **Fabric Port Failure** - Alerts you when a fabric port goes offline.
- **Database Table Rows** - Alerts you when the number of rows in a database table exceeds the threshold.
- **Database Space** - Alerts you when a database is close to running out of space.

- **Backup Failed Job Summary** - Alerts you when a backup job fails for the defined servers.
- **Backup Drive Status List** - Alerts you when a tape drive's status changes to the defined value.
- **TSM Disk Pool Alert** – Alerts you when a disk pool is getting full.
- **NAS Filesystem Quota Alert** – Alerts you when a hard and/or soft quota threshold is reached.

POLICY ADMINISTRATION

1. Log in to the Management Console.
2. Select **Policy Alerting** under the **Tools** pull-down menu. The **Policy Administration** window is displayed similar to the one shown below.

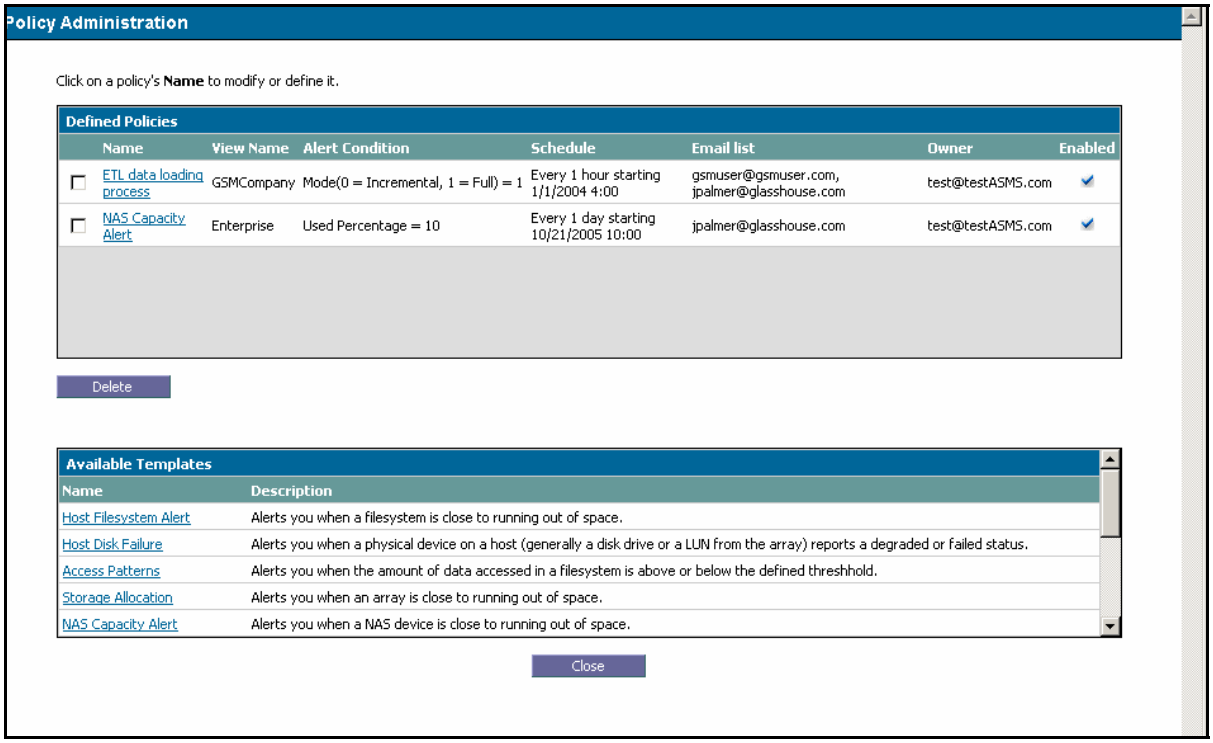


Figure 25 - Policy Alerting

The window is divided into two tables: the Defined Policies table at the top and the **Available Templates** table beneath it. The **Defined Policies** table allows the administrator to view existing policy details. You can select the **Name** check box and click **Delete** to remove an existing policy.

In the **Available Templates** table, you select the **Name** link to use the selected template to add a new policy to your Sun StorageTek Business Analytics application.

Clicking **Close** closes the Policy Alerting window.

ADD POLICY

1. From the **Policy Administration** window, click the desired link (e.g., Host Filesystem Alert) in the **Available Templates** table and the **Add/Modify Policy** window appears. This window displays the following non-modifiable parameters:

    - **Name** – The name of the template

- **Description** – Description of that policy
- **Owner** – Administrative user who is creating the policy. This is the only Sun StorageTek Business Analytics user who can modify the policy after it is saved to the database.
- **View** – The user's current view.

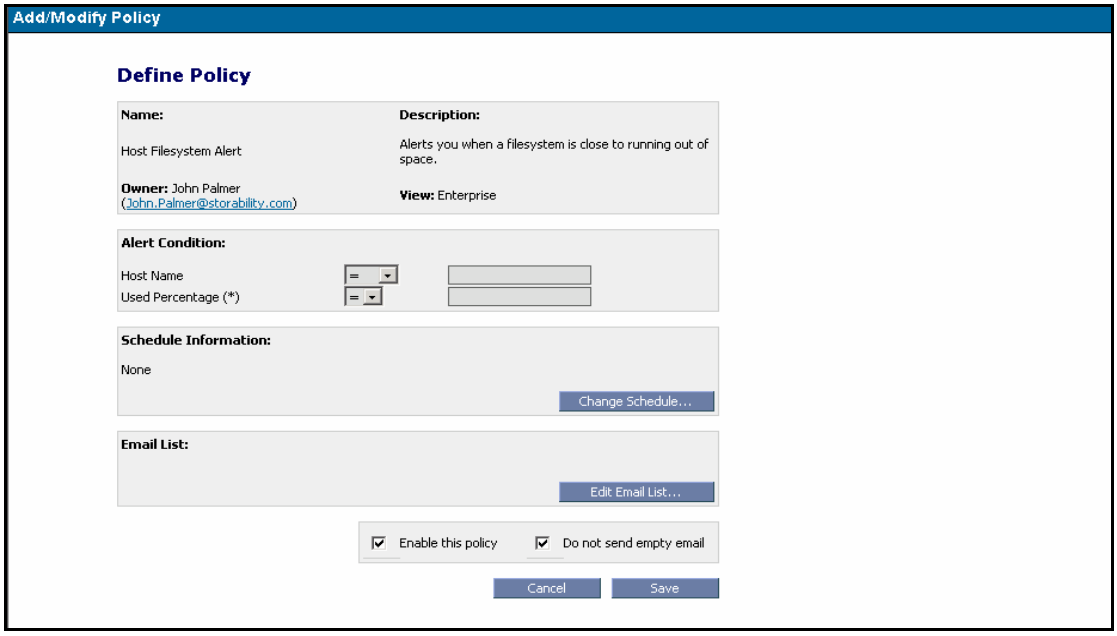


Figure 26 - Add/Modify Policy Window (Host Filesystem Alert)

2. If applicable, specify the **Alert Condition,** which depends upon the selected template; blank is a wild card for "all":
   - ETL data loading process: Mode(0 = Incremental, 1 = Full); incremental is recommended for use in a production environment.
   - Host Filesystem Alert: Host Name (=, LIKE) user-defined variable value
   - Host Disk Failure: blank
   - Filesystem Access Patterns: Access Percentage (all) (=, >, <) user-defined value
   - Storage Allocation: Used Percentage (*) (=, >, <) user-defined value
   - NAS Capacity Alert: Used Percentage (*) (=, >, <) user-defined value
   - Fabric Port Status Change: blank
   - Fabric Port Failure: blank
   - Database Table Rows: Row count (*) (=, >, <) user-defined variable value
   - Backup Failed Job Summary: Backup Client (=, LIKE) user-defined value and Backup Policy (=, LIKE) user-defined value
   - Backup Drive Status List: blank
   - TSM Disk Pool Alert – TSM Server (=) (LIKE) optional parameter, Disk Pool (=) (LIKE) optional parameter, Percent Utilized (blank=all)>, <) user-defined required value
3. Click the **Change Schedule** button and the **Scheduler** window appears.
4. Use the radio button for the "Perform this job:" parameter to specify whether the schedule is to occur once or on a recurring basis. If you specify "on a recurring basis", the window is refreshed with **Frequency** selections (every minute, hourly, daily, or weekly.

5. Use the radio button to specify the frequency where:
   - Every Minute: The window is refreshed and allows you to specify the job will be performed every xx minutes.
   - Hourly: Allows you to specify the job will be performed every xx hours.
   - Daily: Allows you to specify the job will be performed every xx minutes.
   - Weekly: Allows you to specify the job will be performed every xx weeks on the selected day of the week.
   - Monthly: Allows you to specify the job will be performed every xx months on the selected day of the week or date (1-31) of the month.
6. Specify the start date for the schedule:
   - Use the hour/minute list boxes to specify a minute of an hour.
   - Click the Calendar icon and select a month and year
7. Click **Save** to save the scheduling information and return to the Add/Modify Policy window.
8. Click the **Edit email list** button and the Email List window appears.
9. In **Address Book**, optionally type a fully qualified email address and click **Add** to add a user who is not a Sun StorageTek Business Analytics user to the email recipients.
10. In **Address**, enable the check box for each user you want to add to the email recipients and click the **Add Contact List>>** button. The selected users appear in the Contact List box to the right of the **Address** list box.
11. Click **OK** to submit the contact list and return to the **Add/Modify Policy** window.
12. Review/modify the "Enable the Policy" setting. By default, the policy is enabled (check mark) after it is saved. Remove the check mark if you want to save the policy but enable it at a latter time.
13. Review/modify the "Do not send empty email" setting. By default, the Policy Agent does not send an email every time it checks the policy condition. Remove the check mark if you want an empty email sent every time the agent checks the policy condition.
14. Click **Save** and the policy appears in the **Defined Policies** table in the **Policy Administration** window.

MODIFY POLICY

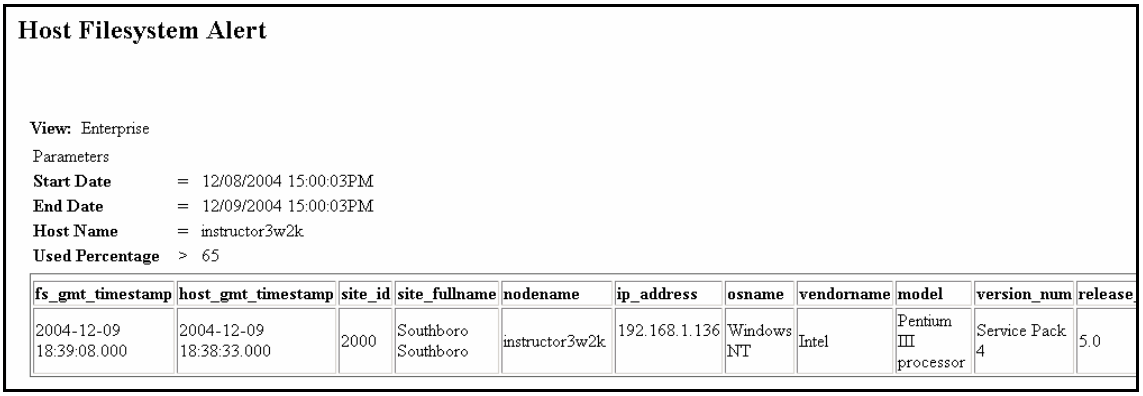
1. From the **Policy Administration** window, click the desired link policy listed in the **Defined Policies** table and the **Add/Modify Policy** window appears pre-filled with the existing alert condition, schedule, and contact list.
2. Modify the defined policy:
   - Click the **Change Schedule** button to change how frequently or when it is performed.
   - Click the **Edit Email List** button to edit an email address or to add/remove email recipients.
   - Use the respective check boxes to change the status of the policy (enable/disable) and/or the sending empty email settings.
3. Click **Save** to submit the changes.

DELETE POLICY

1. From the **Policy Administration** window, select the check box for the existing policy to be removed from the database.
2. Click **Delete.** The Policy Administration window is refreshed and the selected policy no longer appears in the **Defined Policies** table.

POLICY EMAIL ALERT

A sample Host Filesystem Alert is shown below.



Host Filesystem Alert

View: Enterprise

Parameters

Start Date = 12/08/2004 15:00:03PM
End Date = 12/09/2004 15:00:03PM
Host Name = instructor3w2k
Used Percentage > 65

fs_gmt_timestamp	host_gmt_timestamp	site_id	site_fullname	nodename	ip_address	osname	vendorname	model	version_num	release_
2004-12-09 18:39:08.000	2004-12-09 18:38:33.000	2000	Southboro Southboro	instructor3w2k	192.168.1.136	Windows NT	Intel	Pentium III processor	Service Pack 4	5.0

Figure 27 - Sample Host Filesystem Alert

The top portion of the report shows the start time and end time for the database query that was executed to check the policy condition (Used Percentage>65%). The Host Name and Used Percentage parameters are defined in this particular policy. The table provides the row from the database table related to the policy condition.

REPORTING ADMINISTRATION

The administrator uses the **Reporting Administration** menus to:

- Modify/delete user-defined scheduled reports.
- Add, modify, or delete aliases for Fabric WWNs, Switch WWNs, or Array IDs.
- Define manual host to HBA mapping for servers that don't have a Host Agent.
- Define fields that are displayed in asset reports.
- Populate database tables with data used to forecast how much storage will be allocated to servers over a user-specified time period.

SCHEDULED REPORTS

Scheduled Reports is an administrative function that allows the administrator to perform system-wide maintenance on user-defined scheduled reports. The Management Console's Storability Report Scheduler runs as a Windows services, and it manages sending the URL to generate a report to designated email recipients. It uses an IP address (not a Domain Name) to perform this functionality.

1. From the **Tools** pull-down menu, select **Reporting Administration->Scheduled Reports**. The **Scheduled Reports** window is displayed with a list of scheduled reports in a tabular format.

   The window provides a selection box and identifies the Report Name, Start Time, and Recurrence for each scheduled report in the database.

MODIFY SCHEDULED REPORT

2. Click the **Report Name** link for the desired schedule. The **Report Scheduling** window opens with pre-filled fields from the existing scheduled report.

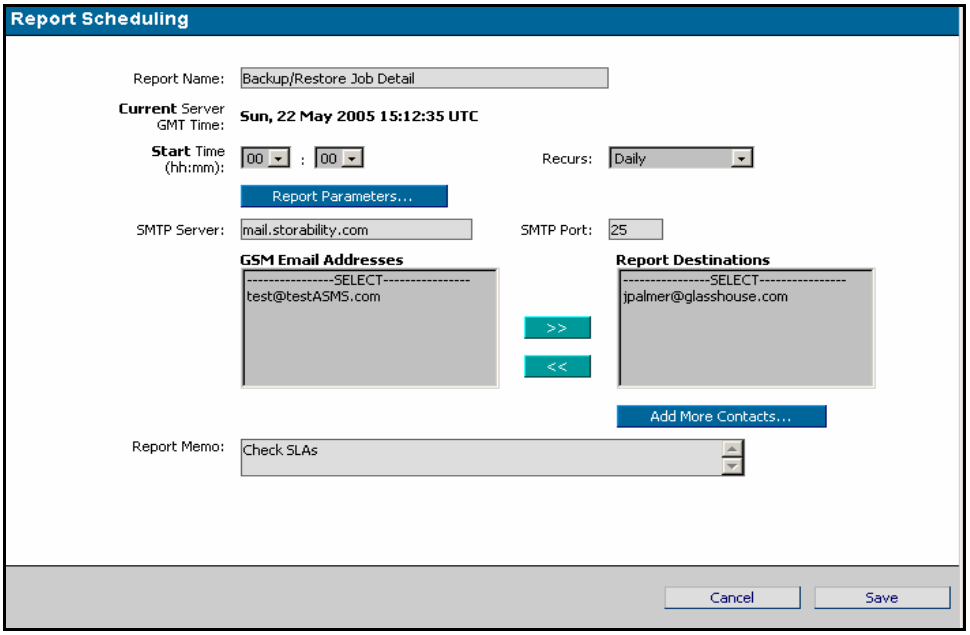


Figure 28 - Report Scheduling

3. Change any of the following attributes of the scheduled report:

   - Report Name
   - Start Time (hh:mm)
   - Recurs (e.g., daily)
   - Report Parameters
   - SMTP Server
   - SMTP Port
   - E-mail contacts (not in database)
   - Report Destinations
   - Report Memo

4. Click **Save**. A confirmation dialog appears.

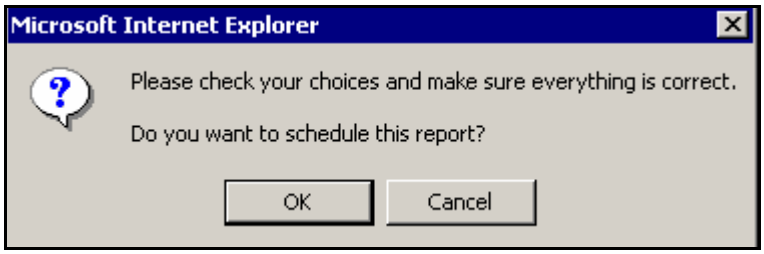


Figure 29 - Delete Scheduled Report Confirmation

5. Click **OK** to save the scheduled report information to the database or **Cancel** to cancel the operation.

6. The Report Scheduling Completed window appears.

Delete Scheduled Report

7. Select the reports you want to delete using the check box beneath the **Delete** heading on the Report Scheduling screen.
8. Click the **Delete Scheduled Reports** button.
9. When the "This will delete the selected report(s). Are you sure?" dialog is displayed, click **OK** to confirm the operation. After you confirm the operation, all the selected reports are deleted and the screen is refreshed.

Maintain Aliases

An alias allows you to create a more meaningful name for an asset. The Maintain Aliases Wizard is used to add new aliases or modify/delete existing aliases (e.g., Switch WWN Alias, Fabric WWN Alias, or Array ID Alias) as well as to generate a report on existing aliases. Aliases are displayed instead of the WWN or Array ID in various Management Console reports in which these assets appear.

Create New Alias

Proceed as follows to add a new alias.

1. Select **Reporting Administration-> Maintain Aliases** from the **Tools** pull-down menu. The Maintain Aliases Wizard appears.

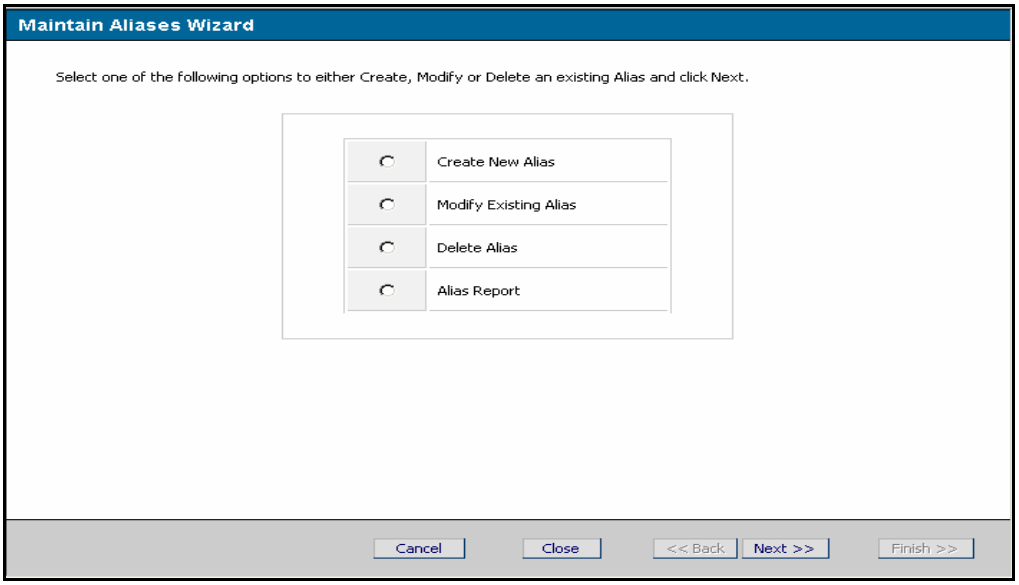


Figure 30 - Maintain Aliases Wizard

2. Use the radio box to select **Create New Alias** and click **Next>>**. The Select Site and Asset Type window appears.

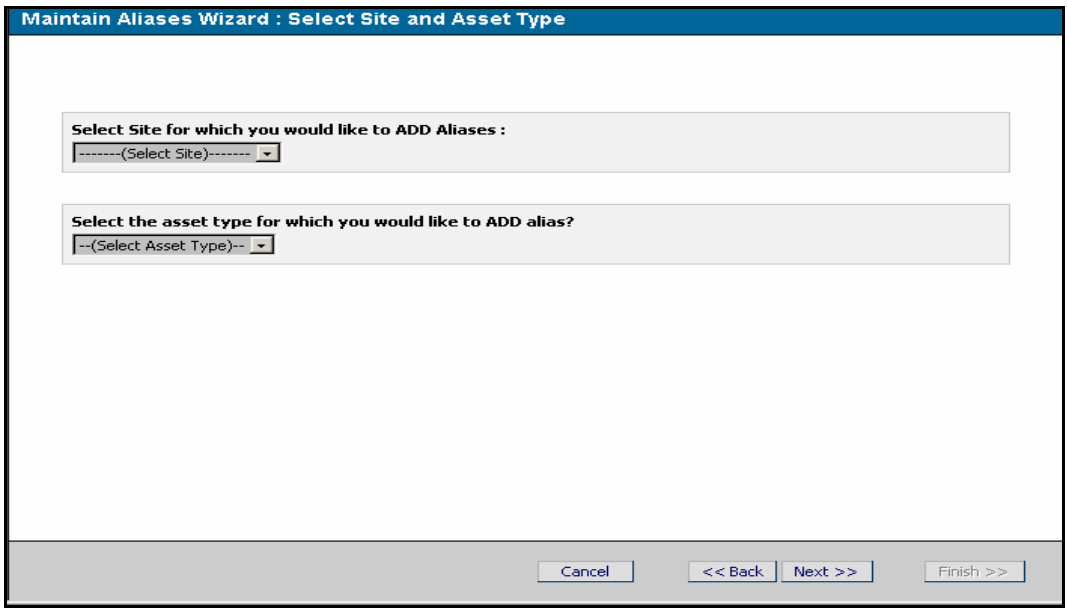


Figure 31 - Select Site and Asset Type

3. Use the selection list box underneath the "Select Site for which you would like to ADD Aliases:" heading to choose the desired site.

4. Use the selection list box beneath the Select the asset type for which you would like to ADD Aliases:" to select the asset type (Switch WWN, Fabric WWN, or Array ID).

5. Click **Next>>** and the Maintain Aliases Wizard: ADD Alias window is displayed. A sample window to add an Array ID alias appears below.

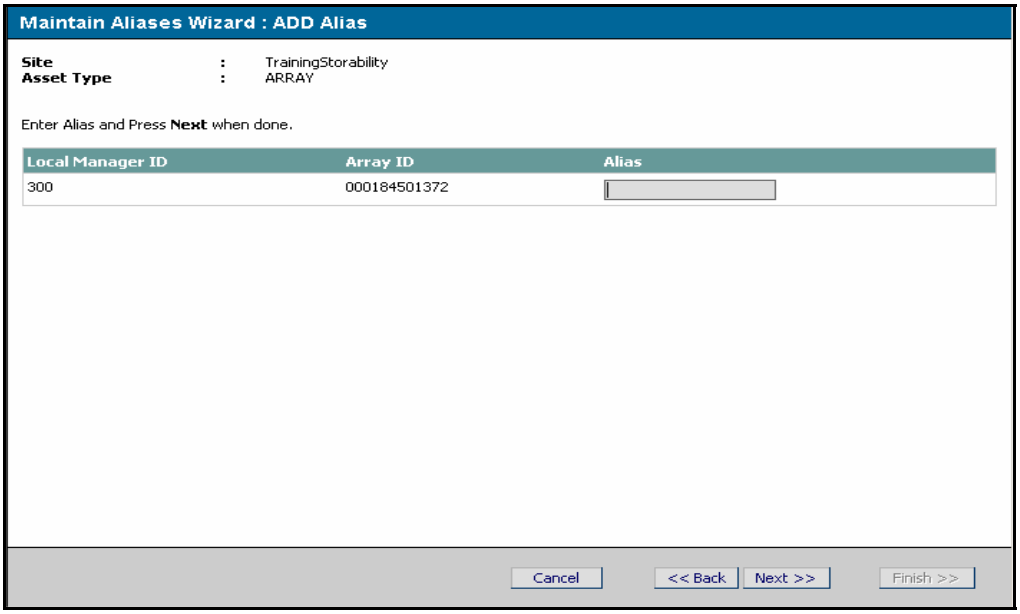


Figure 32 - Maintain Aliases Wizard: Add Alias

6. Type the alias in the input field beneath the Alias heading and click **Next>>**.

7. The Maintain Aliases Wizard: ADD Alias Confirmation window appears**.** Click **Finish>>** to complete adding the alias**, Back** to change the alias, or **Cancel** to cancel**.**

8. Clicking **Finish>>** displays the Maintain Aliases Wizard: ADD Alias Status similar to the one that appears below.

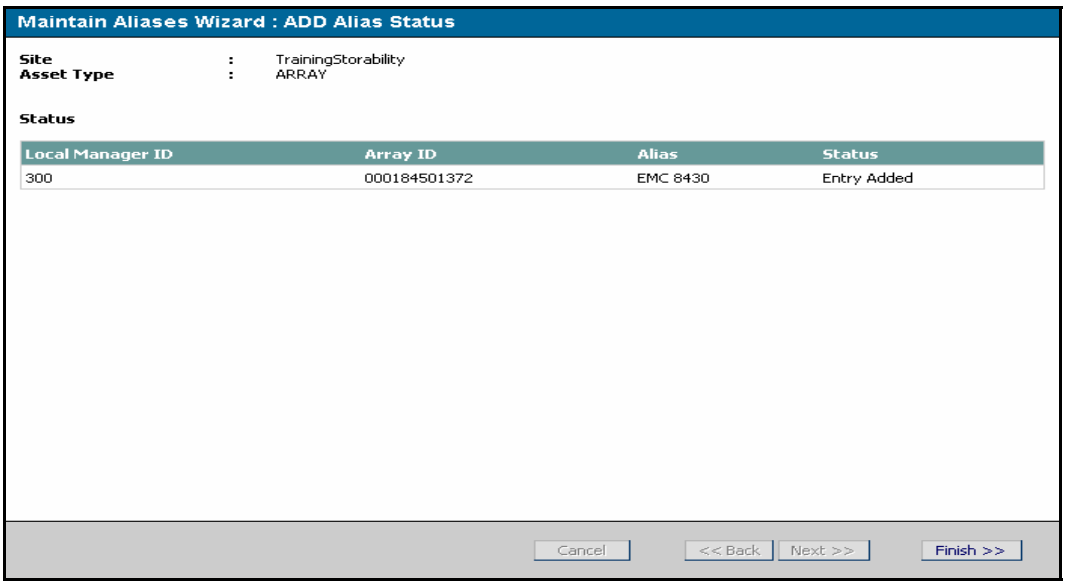


Figure 33 - Maintain Aliases Wizard - Add Alias Status

10. Click Finish>> to return to the Maintain Aliases Wizard window.

MODIFY EXISTING ALIAS

Proceed as follows to modify an existing alias.

1. Select **Reporting Administration -> Maintain Aliases** from the **Tools** pull-down menu.

2. Use the radio box to select **Modify Existing Alias** and click **Next>>**. The Maintain Aliases Wizard: Select Site and Asset Type window is displayed.

3. Use the selection list box underneath the "Select Site for which you would like to MODIFY Aliases:" heading to choose the desired site.

4. Use the selection list box beneath the Select the asset type for which you would like to MODIFY Aliases:" to select the asset type (Switch WWN, Fabric WWN, or Array ID).

5. Click **Next>>** and the Maintain Aliases Wizard: MODIFY Alias window appears.

6. Using the input boxes beneath the **Alias** heading, modify the desired aliases.

7. Click **Next>>** and the Maintain Aliases Wizard: MODIFY Alias Confirmation window is displayed.

8. Review the modify aliases and click **Finish>>**, click **Back>>** to make changes, or **Cancel** to cancel.

9. Clicking **Finish>>** displays the Maintain Aliases Wizard: MODIFY Alias Status window. It shows the Local Manager ID, Array ID/Switch/WWN/Fabric WWN, Alias, and Alias Status (e.g., Entry Added).

10. Click **Finish>>** and the Maintain Aliases Wizard window is displayed.

DELETE ALIAS

Proceed as follows to delete an existing alias.

1. Select **Reporting Administration -> Maintain Aliases** from the **Tools** pull-down menu.

2. Use the radio box to select **Delete Alias** and click **Next>>**. The Maintain Aliases Wizard: Select Site and Asset Type window is displayed.

3. Use the selection list box underneath the "Select Site for which you would like to DELETE Aliases:" heading to choose the desired site.

4. Use the selection list box beneath the Select the asset type for which you would like to DELETE Aliases:" to select the asset type (Switch WWN, Fabric WWN, or Array ID).

5. Click **Next>>** and the Maintain Aliases Wizard: DELETE Alias window appears.

6. Select, one, multiple, or all existing aliases and click Next>>. The Maintain Aliases Wizard: DELETE Alias Confirmation window is displayed.

7. Review the information and click **Finish>>**, **Back>>** to make changes, or **Cancel** to cancel.

8. Clicking **Finish>>** displays the Maintain Aliases Wizard: DELETE Alias Status window is displayed.

9. Using the input boxes beneath the Alias heading, modify the desired aliases.

10. Click **Next>>** and the Maintain Aliases Wizard: MODIFY Alias Confirmation window is displayed. It shows the Local Manager ID, Array ID/Switch/WWN/Fabric WWN, Alias, and Alias Status (e.g., Entry Deleted).

11. Review the information and click **Finish>>** to display the Maintain Aliases Wizard window is displayed.

ALIAS REPORT

Proceed as follows to generate and display the Alias Report.

1. Select **Reporting Administration -> Maintain Aliases** from the **Tools** pull-down menu.

2. Use the radio box to select **Alias Report** and click **Next>>**. The Maintain Aliases Wizard: Select Site and Asset Type window is displayed.

3. Use the selection list box underneath the "Select Site for which you would like to VIEW Aliases:" heading to choose the desired site.

4. Use the selection list box beneath the Select the asset type for which you would like to VIEW Aliases:" to select the asset type (all aliases, Switch WWN Alias, Fabric WWN Alias, or Array ID Alias).

5. Click **Next>>** and the **Alias Report** window is displayed.

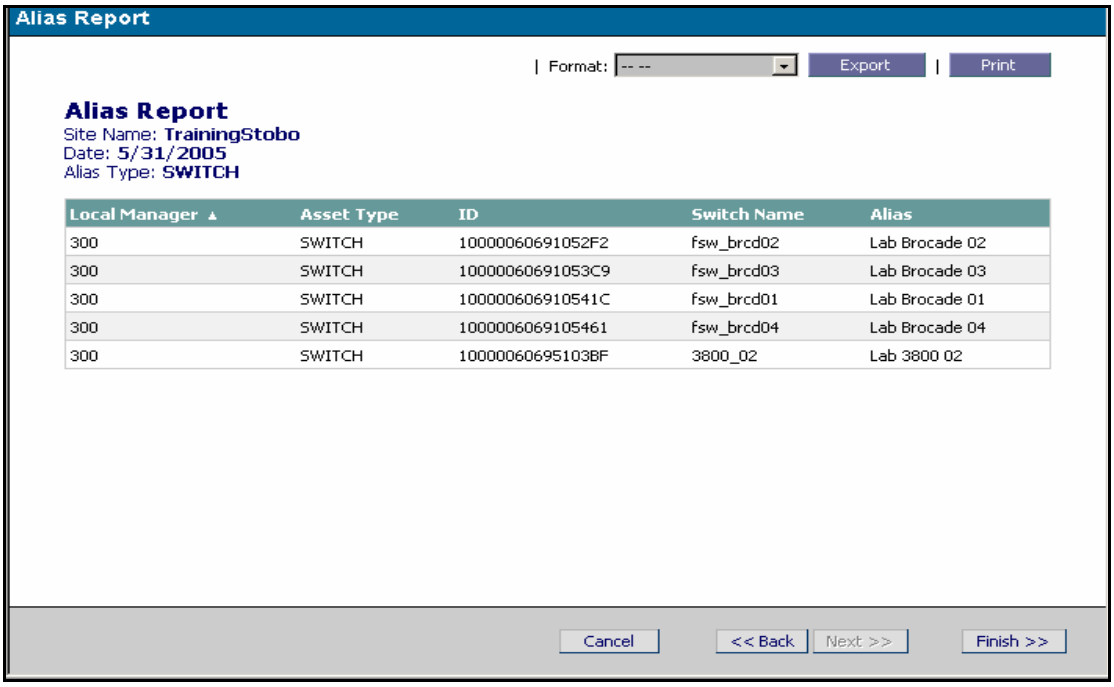


Figure 34 - Alias Report

6. After you view the report, click **Finish>>** to return to the Maintain Aliases Wizard window.

MANUAL HOST TO HBA MAPPING

Follow the steps listed below to enter information for a server that is not running a Host Agent.

1. Select **Reporting Administration -> Manual Host to HBA Mapping** from the **Tools** pull-down menu. The **Host/HBA Configuration (Step 1 of 3)** screen appears.

2. Select the site and click **OK**. The Host/HBA Configuration (Step 2 of 3) window appears.

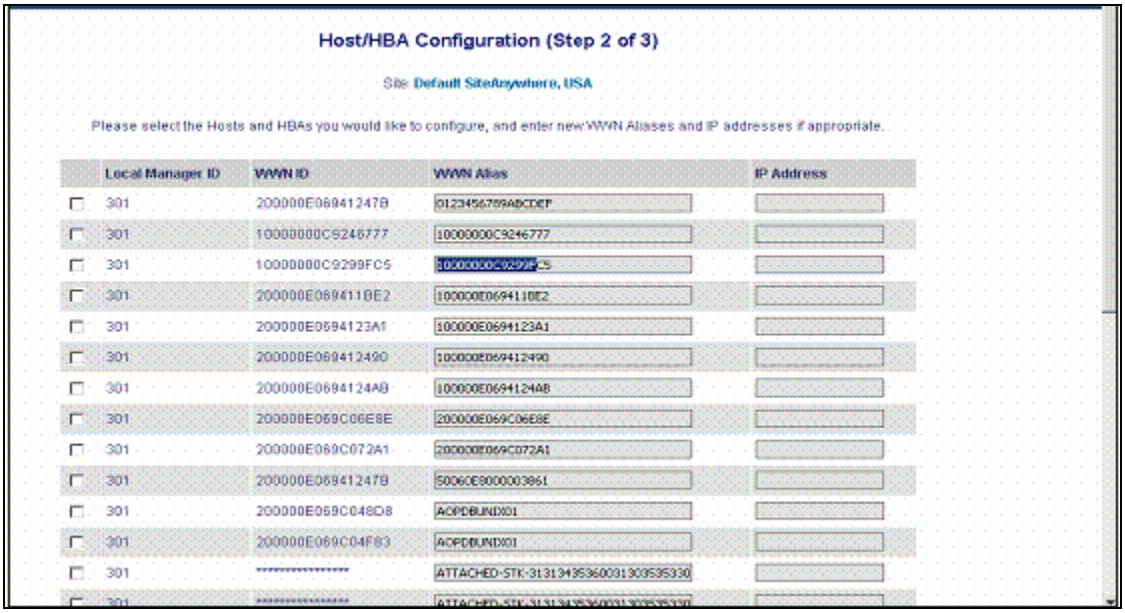


Figure 35 - Host/HBA Configuration (Step 2 of 3)

The table lists each Local Manager ID, WWN ID, WWN Alias, and IP Address for host HBAs in the database. The figure is for illustrative purposes only with many WWN Aliases already defined.

3. Define the WWN aliases and IP addresses for hosts and HBAs in the respective input fields.

4. Click **Submit>**.

5. Verify the information on changes displayed in the Host/HBA Configuration (Step 3 of 3) window.

6. Click **Add> or Back>>** to make changes.

7. Clicking Add> displays a table that shows the hosts/HBA mappings that were assigned.

8. Close the window.

Define Fields for Asset Reports

User-Defined Fields allows the administrator to add their own asset information to provide more flexibility in tracking their assets. Some uses include:

- Track lease expiration dates
- Store Asset tag numbers, locations, etc.
- Store maintenance contract information

The administrator uses the **Define Fields** and the **Data Entry** menu selections to perform this task.

Define Fields

The administrator uses Define Fields to select an asset type (e.g., array) and define a new field regarding the selected asset type.

1. Select **Database Administration**-> **User-Defined Fields** from the **Tools** pull-down menu.
2. Select **Define Fields** and the Define Asset Fields wizard is displayed.
3. In the **Step 1 of 4: Select an Asset** window, use the drop down box with the list of asset types to select the desired asset type. These include arrays, hosts, switches, tape libraries, and NAS devices.

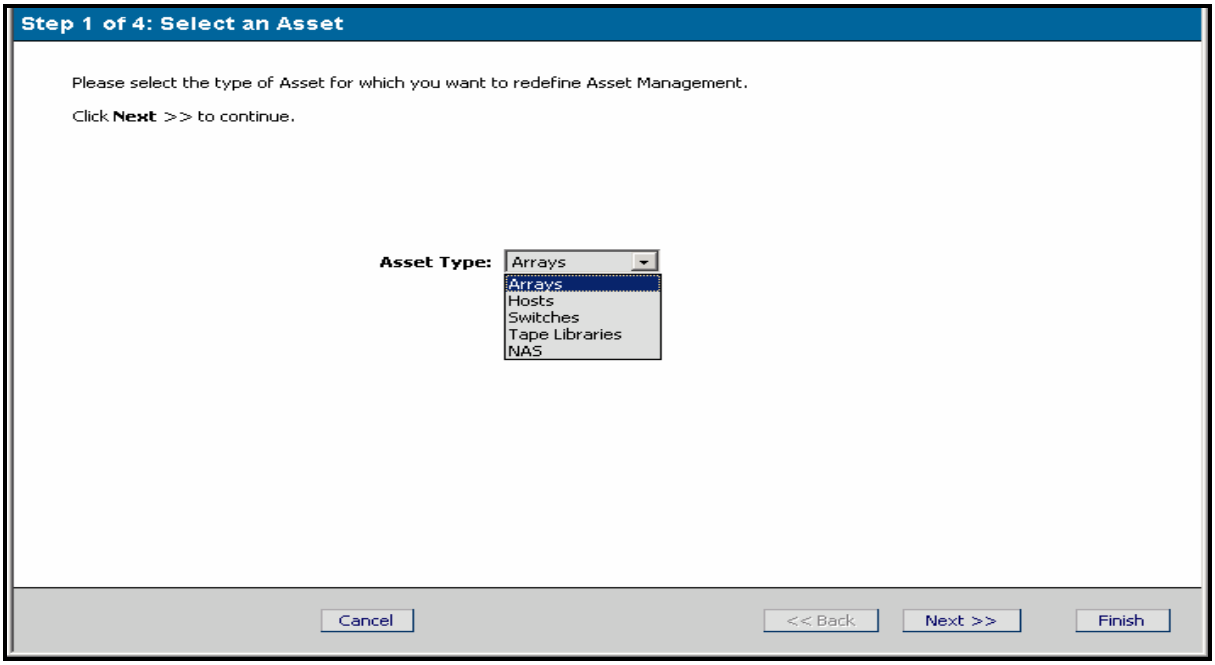


Figure 42 - Host/HBA Configuration (Step 2 of 3)

4. Click **Next>>** and the Step 2 of 4: Define Asset Fields window is displayed. As specified in the window, you may select and delete an existing field or create a new one.

Figure 43 - Step 2 of 4: Define Asset Fields

5. To add a new asset field, click **Create New Field.**
6. Type a meaningful name in the **Field Name** input box.
7. Use the **Field Type** drop down box to choose **text**, **number**, or **date** as the data type for the user-defined field you are creating.

   In the screen below, an asset tag with a field type of number has been configured for arrays.

Figure 44 - Define Asset Field Example

8. Click **Next>>** and the Step 3 of 4: Confirm Changes window is displayed. Examine the field name and field type information.

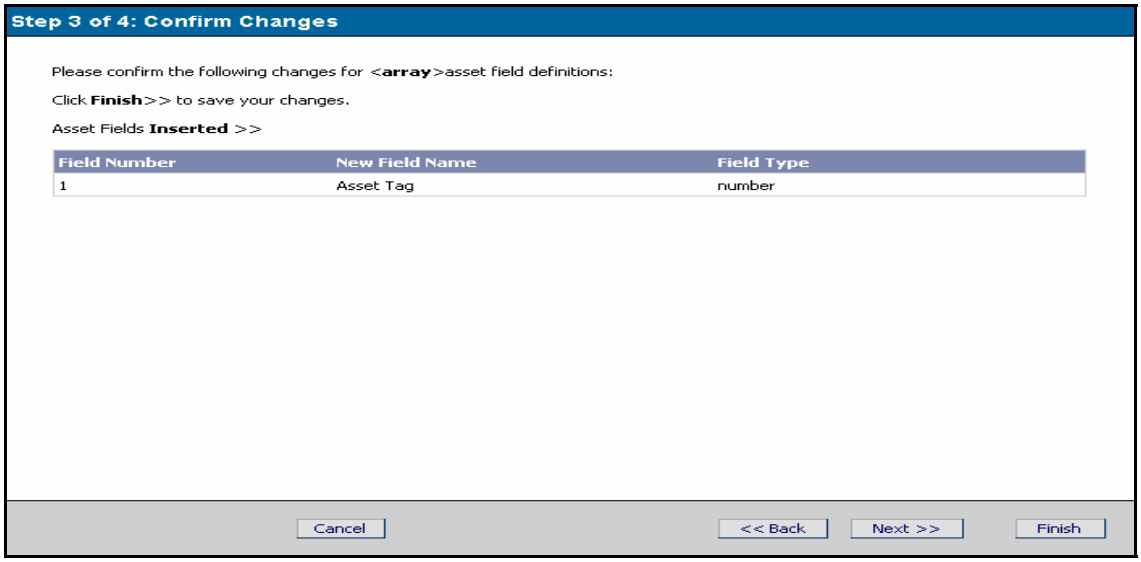


Figure 45 - Define Fields: Confirm Changes

9. Click **Finish** and a confirmation pop up box is displayed.

10. Click **OK** and the Step 4 of 4: Summary window appears, similar to the one shown below.

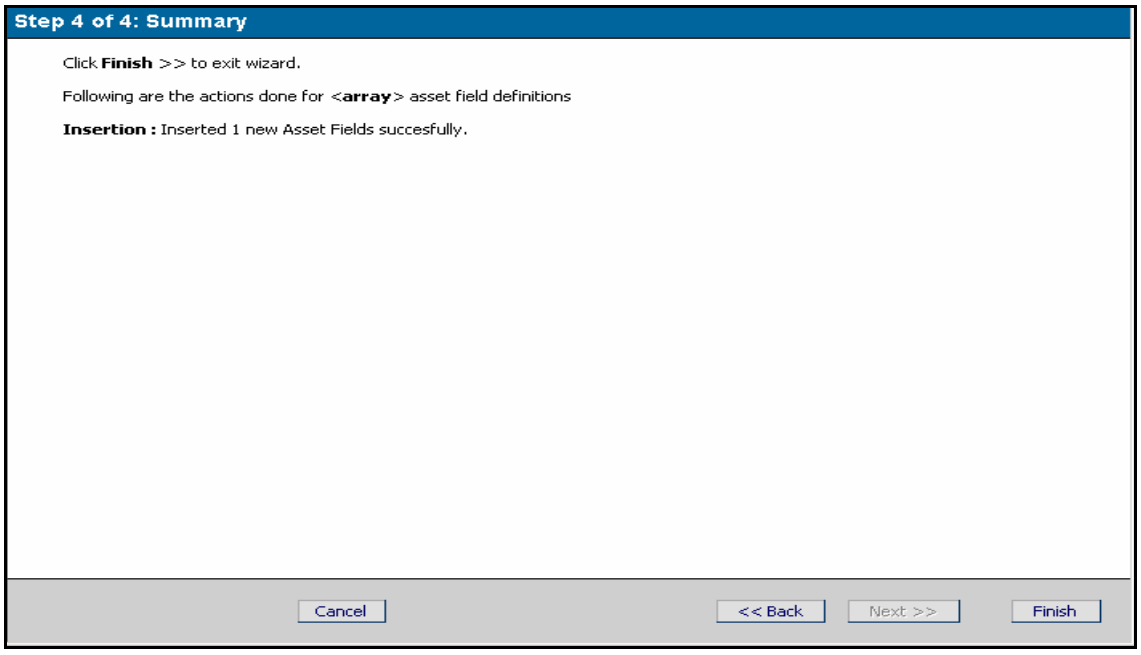


Figure 46 - Define Fields: Summary

11. Click **Finish** to exit the wizard.
12. To delete an existing asset field, proceed as follows:

a. Select **Reporting Administration-> Asset Management** from the **Tools** pull-down menu.
b. Select **Define Fields** and the Define Asset Fields wizard is displayed.
c. In the Step 1 of 4: Select an Asset window, use the drop down box with the list of asset types to select the asset type.
d. In the Step 2 of 4: Define Asset Fields window, use the select boxes to choose the asset field(s) to be deleted.

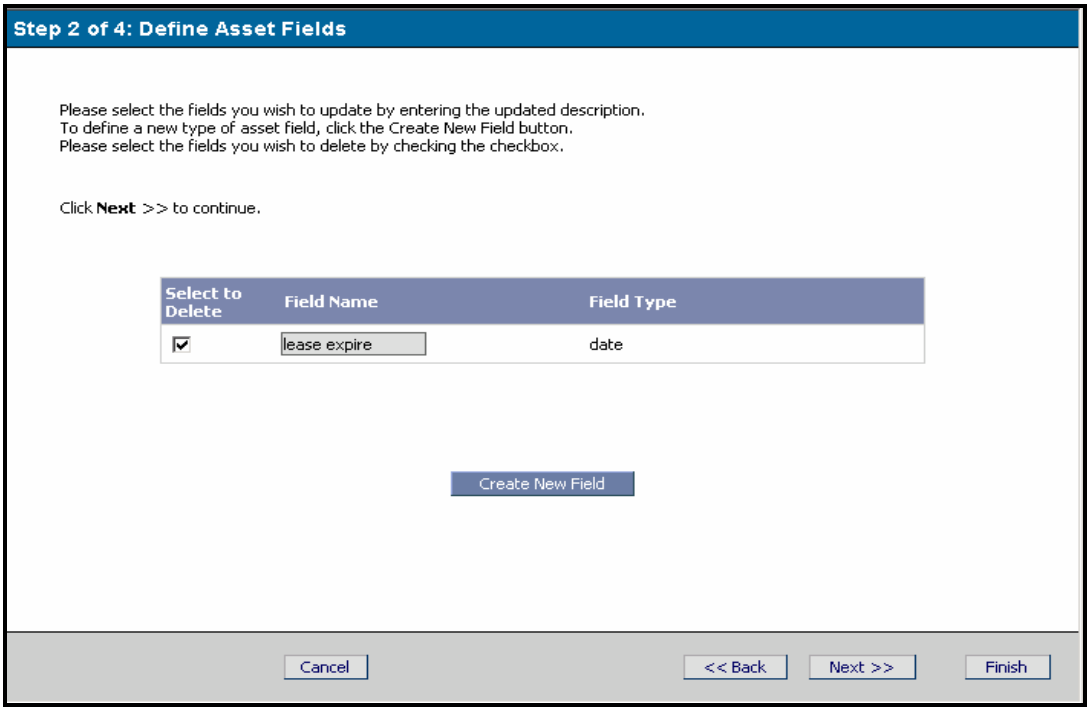


Figure 47 - Selecting Asset Field for Deletion

Note: Deleting an Asset Field will remove any data you have input into that field from the database. You can modify/delete fields by selecting the fields you wish to delete by checking the checkbox and/or updating the text in field(s).

e. In the Step 3 of 4: Confirm Changes window, examine the asset field you have chosen for deletion and click **Next>>** to continue.
f. Click **OK** in the "Do you want to save the changes" pop up dialog and the Step 4 of 4: Summary window is displayed. It describes the actions that were taken, such as "Deletion: Deleted 1 Asset Fields successfully."
g. Click **Finish** to exit the wizard.

DATA ENTRY

Data Entry enables the administrator to enter data into the user-defined fields you created for an asset.

1. Select **Reporting Administration-> User Defined Fields** from the **Tools** pull-down menu.
2. Select **Data Entry** and the **Asset View** window is displayed.

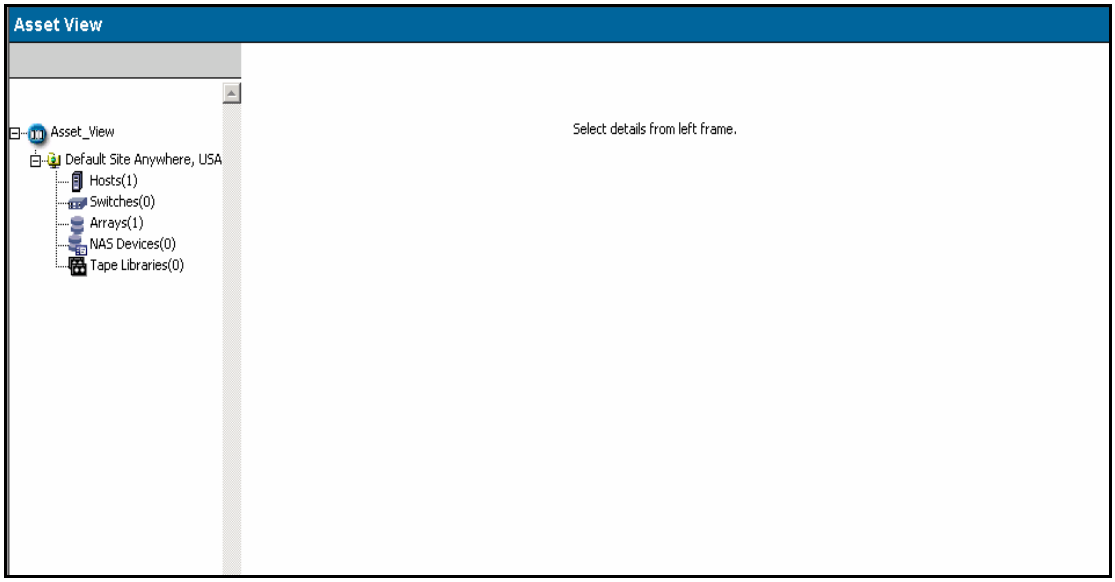


Figure 48 - Asset View

3. Click on the asset for which you want to enter data. The defined fields for the selected asset appear. The screen below shows the array assets for which the user has authorization through their view.

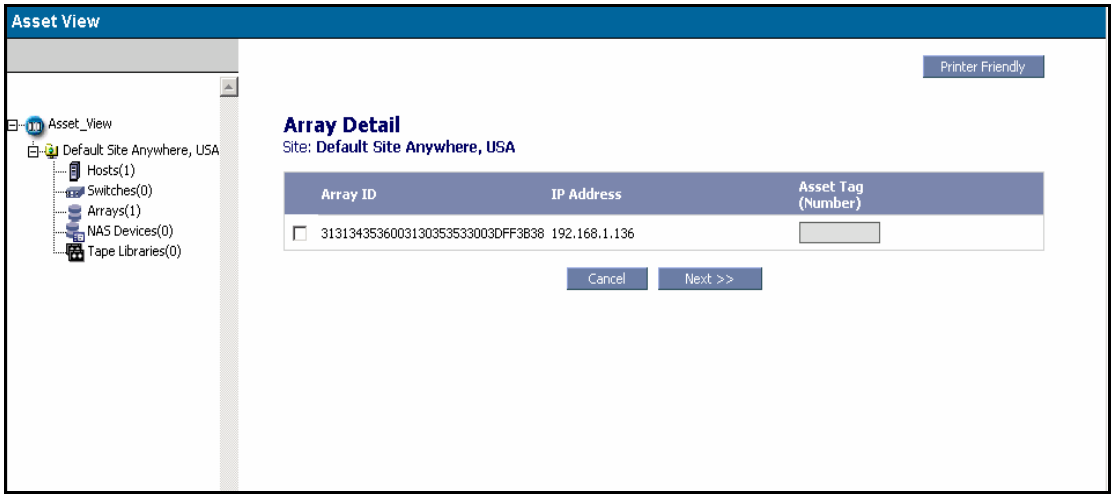


Figure 49 - Data Entry: Arrays

4. In the data entry field for the selected asset, type the desired information and click **Next>>** to continue.

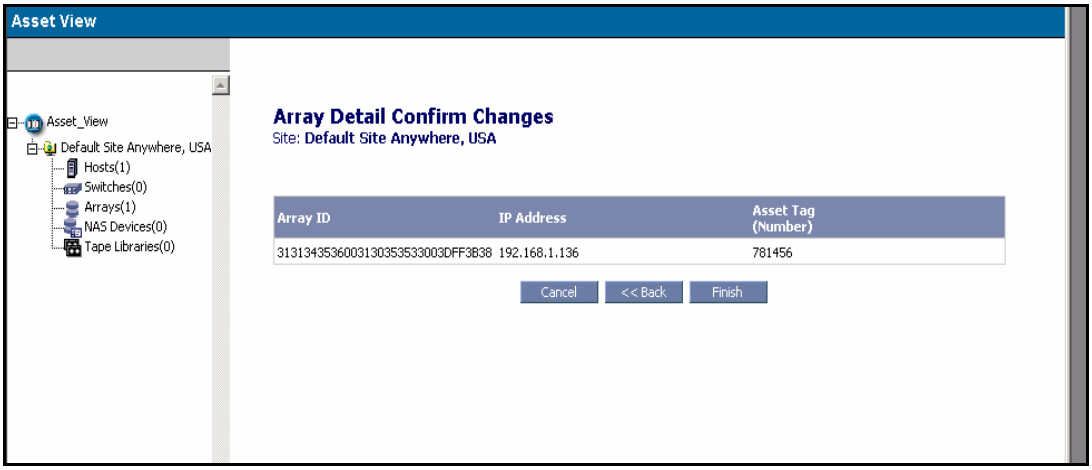


Figure 50 - Asset View: Confirm Changes

5. Examine your information and click **Back<<** if you want to change it or **Finish** to complete the data entry.
6. After you click Finish, a confirmation dialog box is displayed.
7. Click **OK** to submit your changes to the database.
8. The Detail Summary window appears indicating "The changes have been saved."
9. Click Close to finish and the Home Page is displayed.

DISPLAYING USER-DEFINED FIELDS

The Asset Management report provides access to the tabular device reports, which contain an **Asset** tab. In the Asset Management report, you can expand the tree in the navigation pane to choose the desired device. The **Detailed Array Configuration** report is shown below for a selected array.

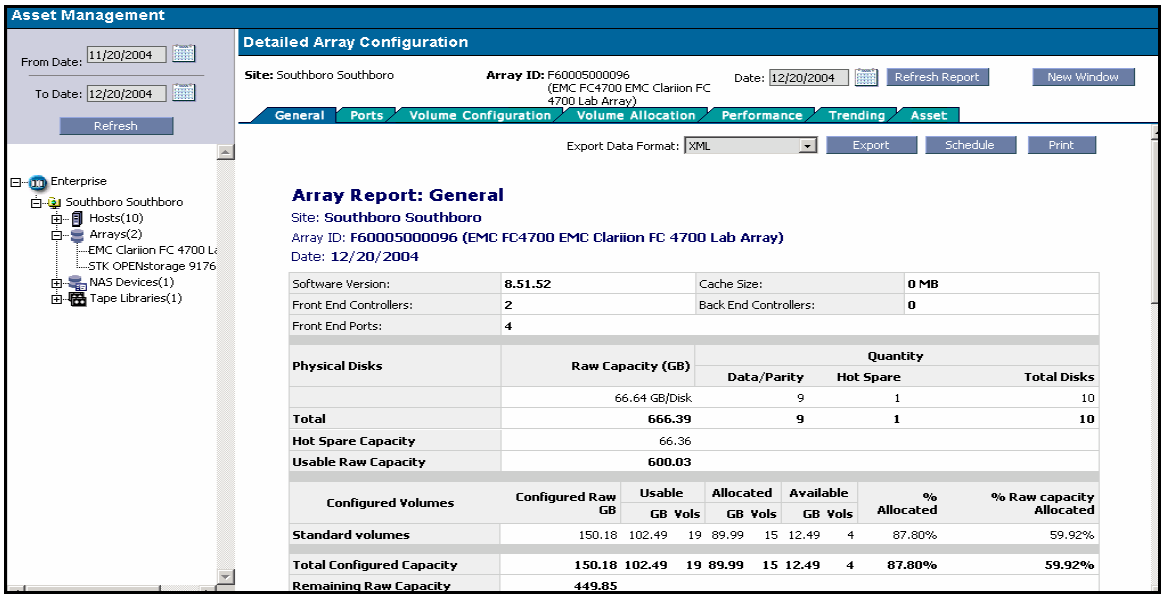


Figure 51 – Detailed Array Configuration

By clicking the **Asset** tab, you display an Asset report similar to the one that follows.

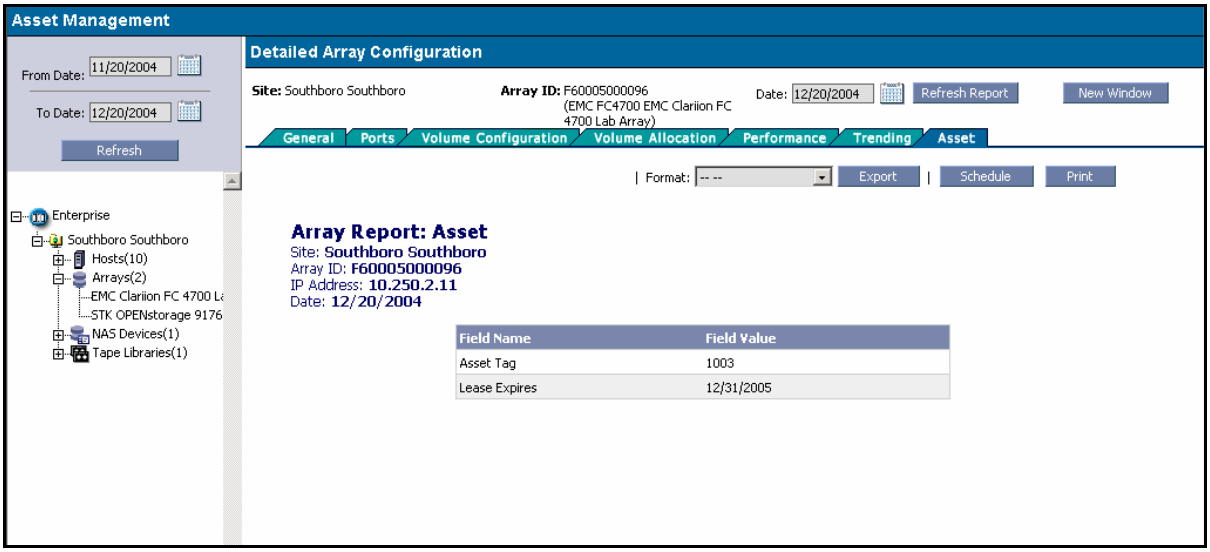


Figure 52 - Sample Array Asset Report

MAINTAIN ALLOCATION FORECAST REPORT

The Maintain Allocation Forecast report allows the administrator to set allocation specifications used in the **Trending and Forecasting** report under Storage.

1. Select **Reporting Administration->Maintain Allocation Forecasting** report.
2. To auto-populate the report for a selected calendar year, select Auto-Populate Server Forecast and the Auto-Populate Server Forecast window appears.
3. Use the pull-down menu to select the desired calendar year and click **Next** to edit server forecasts or **Finish**.

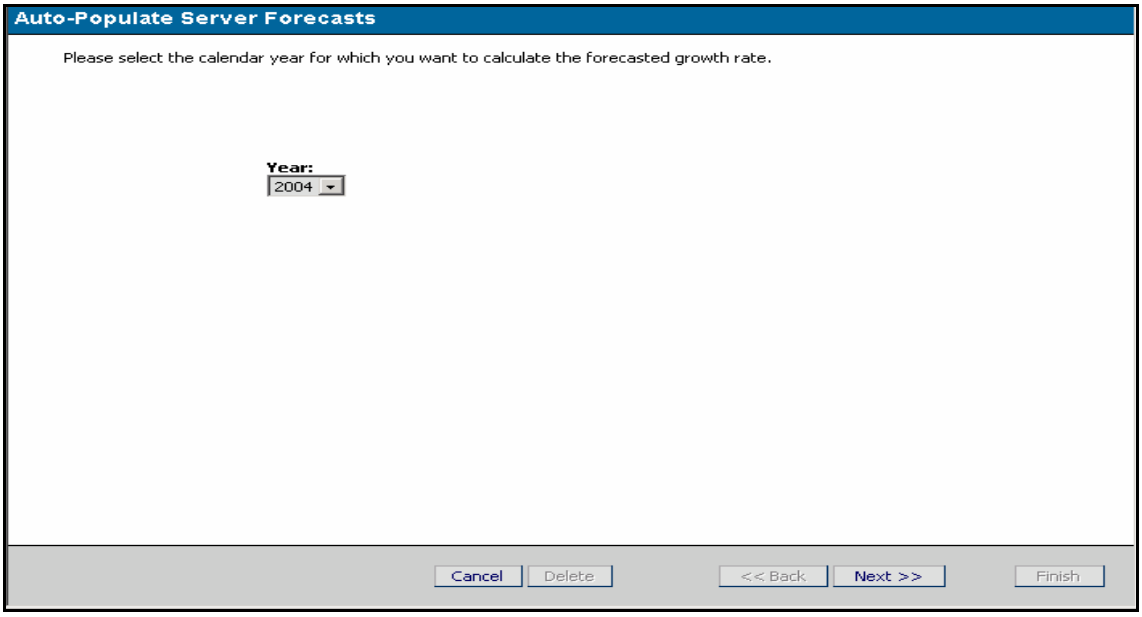


Figure 53 - Auto-Populate Server Forecasts

4. To edit server forecasts, click the Edit Server Forecasts button on the Auto-Populate Server Forecasts window. Note: You can proceed directly to this menu by selecting Reporting Administration->Maintain Server Forecasts->Edit Server Forecasts.

5. Use the navigation pane on the **Edit Server Forecasts** window to select the desired site.
6. Expand the hosts and then select the desired host server whose forecast will be edited. You can change the following parameters:
   - Growth rate
   - Growth (GB)

SITE/LOCAL MANAGER ADMINISTRATION

A site consists of one or more Local Managers. Within menu security, site represents one type of asset that may be assigned to an Asset View. In addition, site is one licensed entity in the Sun StorageTek Business Analytics software license.

The Default Site and Default Local Manager are added to the Sun StorageTek Business Analytics application at installation time. Use Site/Local Manager Administration to modify the seed data or to add, modify, or delete other sites and Local Managers for your deployment.

ADD A NEW LOCAL MANAGER

1. From the **Tools** pull-down menu, select **Site/Local Manager Administration**. The **Site and Local Manager Listing** window is displayed.
2. Click **Add New Local Manager** and the Create Local Manager window is displayed.
3. Enter a meaningful name and short name for the Local Manager.
4. Enter the IP address of the server on which the Local Manager will be installed.
5. Use the radio list box to assign a site to the Local Manager.
6. Click Save. The "Are you sure you want to create this Local Manager" dialog appears.
7. Click OK to confirm adding the Local Manager and to return to the Site and Local Manager Listing window

ADD NEW SITE

Follow the procedure outlined below to add a new site.

1. From the **Tools** pull-down menu, select **Site/Local Manager Administration**. The **Site and Local Manager Listing** window is displayed, similar to the one that is shown below.

Figure 54 - Site and Local Manager Listing

2. Select **Add New Site** and the **Create Site** window appears. **Note**: Do not use special characters (e.g., &) in a site name.

3. Enter a meaningful name in the **Site Name** input field.

4. Enter a description for the location in the **Site Location** input field.

5. Type the number of Local Managers you plan to deploy at the Site in the "Local Managers to add" field. Each Local Manager runs a unique instance of the Storability Routing Agent. This selection will generate a unique Routing ID to identify the Local Managers. You will need this Routing ID when you install the Local Managers. Refer to the *Planning and Concepts* chapter to obtain additional information on the concepts of *Site* and *Local Manager*.

6. Click **Save**.

7. When the pop up confirmation box appears, confirm adding the Site. The **Add Local Managers to New Site [site name]** window appears, similar to the one shown below.

Figure 55 - Sample Add Local Managers to New Site

9. Enter the **Local Manager Name**(s) and **Short Name**(s), which are used to refer to the Local Manager servers.

10. Enter the **IP Address** of the Local Manager.

11. Continue Steps 9 and 10 to add the number of Local Managers you previously specified. The window will provide the input boxes for these Local Managers.

12. Click **Save**. The **Site/Local Manager Administration** window contains a list of the Local Managers that you have defined beneath the **Local Manager Name** heading.

Note: You may export or print the **Site and Local Manager Listing** window to facilitate configuring the corresponding Local Manager/Routing ID when installing the Local Manager(s).

MODIFY/DELETE SITES

Follow the procedure outlined below to modify or delete an existing Site.

1. From the **Tools** pull-down menu, select **Site/Local Manager Administration**. Your screen displays the Site and Local Manager Listing window.

2. Click the **Site Name** to be modified or deleted. The **Modify/Delete Site** window appears.

3. Click **Delete** to remove the Site or change the desired information (e.g., Site Location) and then click **Save**.

4. The "Are you sure you want to update this Site?" dialog appears.

5. Click **OK** to confirm updating this site or **Cancel** to cancel the operation.

6. After you click **OK**, the Site and Local Manager Listing window is displayed.

MODIFY/DELETE LOCAL MANAGERS

Follow the procedure outlined below to modify or delete an existing Local Manager.

1. From the **Tools** pull-down menu, select **Site/Local Manager Administration**. The Site and Local Manager Listing window is displayed.

2. Click the **Local Manager Name** to be modified or deleted. The **Modify/Delete Local Manager** window appears.

3. Click **Delete** to remove the Local Manager or change the desired information (e.g., IP Address) and then click **Save**.

4. The "Are you sure you want to remove this Local Manager?" dialog appears.

5. Click **OK** to confirm updating this site or **Cancel** to cancel the operation.

6. After you click **OK**, the Site and Local Manager Listing window is displayed.

DATA POLLING SCHEDULE

Data Polling Schedule allows the administrator to:

- View existing polling (data collection) schedules.
- Execute on-demand data polling using an existing polling schedule
- Create a new polling schedule
- Delete an existing polling schedule
- Enable or disable a polling schedule

Data collection can be scheduled to occur once (on-demand) or on a repetitive basis (e.g. daily) for all sites.

The Data Polling Schedule window shows the default schedule for each collection type and collection metric. During the Sun StorageTek Business Analytics Central Manager Database setup, a set of default polling schedules are created in the portal database. By clicking on a unique Job ID, the administrator can review/modify the schedule as well as enable or disable it. Business Analytics data polling schedules use Central Manager local time.

Note: An error message will display if you select **Polling** and the COM Agent (Management Console), Data Polling Agent (Central Manager), and Scheduler Agent (Central Manager) are not running and registered.

POLLING SCHEDULES WINDOW

1. Log in to the Management Console.
2. Select **Data Polling Schedule** under the **Tools** pull-down menu. The **Polling Schedules** window is displayed similar to the one shown below.

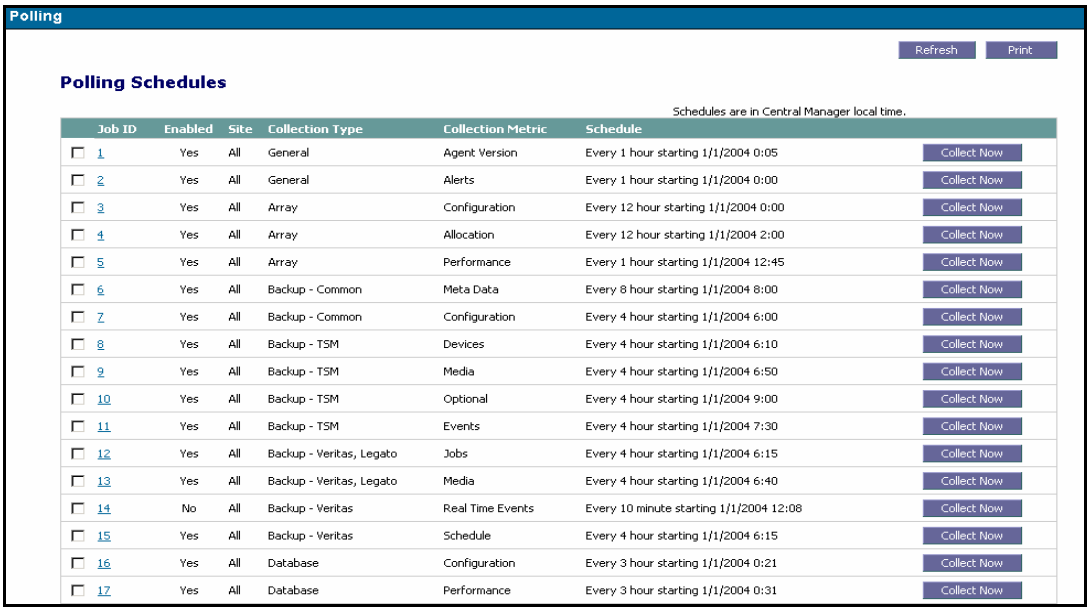


Figure 56 - Polling Schedules

The Polling Schedules window provides the following information on each polling schedule in the database:

- **Job ID** – Is a unique, system-generated identifier that persists until the schedule is removed from the database.
- **Enabled** – Shows whether (Yes/No) the polling schedule is enabled. The predefined polling schedules are all **disabled** when **you first access** the Polling menu.
- **Site** – Identifies the site(s) or specifies all sites.
- **Collection Type** – Specifies the type of agent published tables to be collected; may be General, Array, Backup, Database, Fabric, Host, NAS, SRM, or Library.
- **Collection Metric** – Depends on the collection type:
    - **General** – Agent Version, Alerts
    - **Array** – Allocation, Configuration, Performance
    - **Backup - Common** – Meta Data, Configuration
    - **Backup – TSM** – Devices, Media, Optional, Events

- **Backup** – **Veritas** – Jobs, Media
- **Backup** – **Veritas** – Real Time Events, Schedule
- **Database** – Configuration, Performance
- **Fabric** – Configuration, Performance
- **Host** – Configuration, Filesystem, Logical VM (Volume Manager)
- **NAS** – Configuration, Filesystem, Logical VM
- **SRM** – Configuration, Statistics
- **Library** – Configuration, Jobs, Media, Statistics
- **Fabric** – Configuration, Performance
- **Performance** – Statistics (used with Host Statistics Agent)
- **Data Aggregator** – Statistics (used to collect Data Aggregator Agent data collection statistics)

- **Schedule** – Description of the frequency of data polling scheduled

3. You may click the **Collect Now** button beside a particular polling schedule to request an immediate (on-demand) data collection for the specified collection type and collection metric.

   Note: Data collection may take some time to complete or impact to some extent system resources depending on the type/metric you have chosen.
4. You may click any of the following headers to change the current sort order in the window:
   - Job ID
   - Site
   - Collection Type
   - Collection Metric
5. You can select any of the following buttons at the bottom of the window:
   - Enable – Enable selected (check mark) polling schedules
   - Disable – Disable selected (check mark) polling schedules.
   - Delete – Delete selected (check mark) polling schedules.
   - Add New – Add a new polling schedule.

ADD NEW DATA POLLING SCHEDULE

1. Click the **Add New** Button and the Add New Polling Job window appears.
2. Specify the collection options:
   - Click **Connection Type** and select the type (General, Array, Backup, etc.) of agent to collect data from.
   - Click **Connection Metric** and select the agent data to be collected. Select the desired site in the **Site** list box or all Sites.
3. Click the **Change Schedule** button and the **Schedule**r window appears.
4. Use the radio boxes to specify whether this schedule will be executed once or on a re-occurring basis.
5. If you select reoccurring, the window refreshes with your choices for frequency. Use the radio boxes to select hourly, daily, weekly, or monthly.
6. Use the **Hour/Minute** pull-down list boxes to set the start time.
7. Use the **Calendar** icon to specify the start date.
8. Click **Save** and return to the **Add New Polling Job** window.
9. Optionally change the **Collection Timeout** for the selected Collection Type and Metric. The default setting is 1200 seconds. The timeout will apply to all tables being collected with the given Collection Type and Metric.

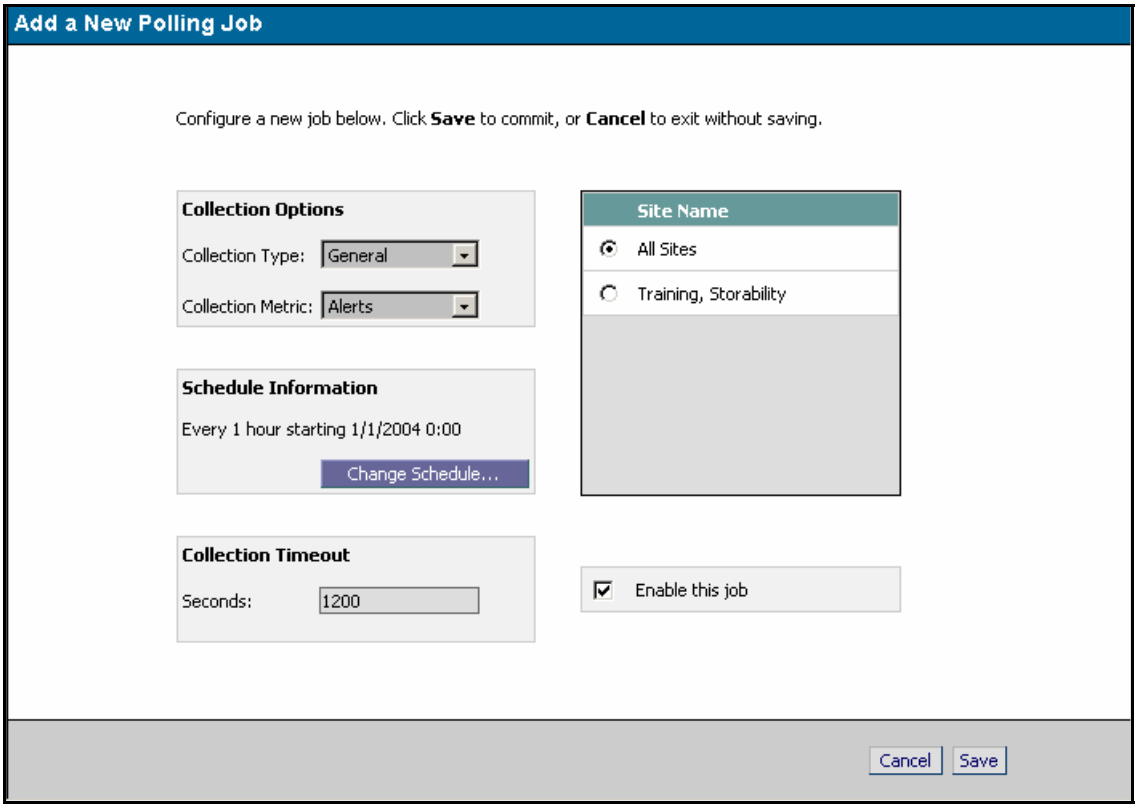


Figure 57 - Add a New Polling Job

10. Click the **Enable this job** check box to enable the schedule and then click **Save**. The Polling window is refreshed and displays your new polling schedule.

MODIFY DATA POLLING SCHEDULE

1. Click the **Job ID** link and the Add a New Polling Job window opens.
2. In the Site Name box, you currently must choose All Sites.
3. The "Enable this job" check box allows you to enable (check mark) or disable the job.
4. The "Collection Timeout" field enables you to adjust the data collection timeout for the given Collection Type and Metric. The default value is 1200 seconds.
5. Click the **Change Schedule** button and the Scheduler window appears.
6. Use the radio boxes to specify whether this schedule will be executed once or on a re-occurring basis.
7. If you select reoccurring, the window refreshes with your choices for frequency. Use the radio boxes to select hourly, daily, weekly, or monthly.
8. Use the **Hour/Minute** pull-down list boxes to set the start time.
9. Use the **Calendar** icon to specify the start date.
10. Optionally change the default **Collection Timeout** (1200 seconds).
11. Click **Save** and return to the **Add New Polling Job** window.

DELETE POLLING SCHEDULE

12. Click the check box beside each system-assigned **Job ID** to select the polling schedule(s) to be deleted.
13. Click the **Delete** button and confirm removing the selected polling schedules, when prompted. The polling schedules are removed from the database.

Enable/Disable Polling Schedule

The **Disable** button allows polling schedules to remain in the database but not be used during agent data collection. Once disabled, you use the **Enable** button to enable the polling schedule(s) and, thereby, have them used during scheduled agent data collection. You may use the **Collect Now** button to request an immediate (on-demand) data collection for the specified collection type and collection metric.

1. Select the polling schedule(s) to be enabled or disabled.
2. Click the **Enable** button to enable the polling schedule that you previously disabled, or click the **Disable** button to disable it.

SRM Agent Configuration

SRM Agent Configuration provides a graphical user interface to set up the configuration parameters for the SRM Agent configuration file for Windows or UNIX platforms. The SRM Agent configuration includes the following parameters:

- **Scan Schedules** – Schedule when the SRM agent runs.
- **Filters** – Define the types of data the SRM Agent scans and the data reported. Sun StorageTek Business Analytics includes filters for email archive files, unauthorized files, and user-specified files.
- **Remote Shares** – Provide the security information that allows the SRM Agent to scan remote shares on Windows, UNIX, or both.
- **Advanced Settings** – Additional configuration settings such as the number of threads and caching location on disk.

The administrator can configure the following new SRM Agent Configuration filters:

- **Email archive** – Provides a list of email archives. The default SRM Agent configuration contains filters for .ost, .pst, .nsf, and .nst files for the Microsoft Exchange and Lotus Notes mail applications, respectively.
- **Unauthorized files** – Report on file types that are banned (e.g., .mp3) on your corporate network for reasons like content or size.
- **User-defined file types** – Report on any file types you specify. To add a user defined file type filter, it is mandatory to manually add the filter definition in the XML file (filter_def_srmComplete.xml) that contains a list of all filter definitions.

The Management Console's Filesystem Details report provides access to the file-specific reports, where applicable.

Loading Configuration File

1. Select **SRM Agent Configuration** under the **Tools** pull-down menu. The SRM Agent: Load Configuration File window is displayed.

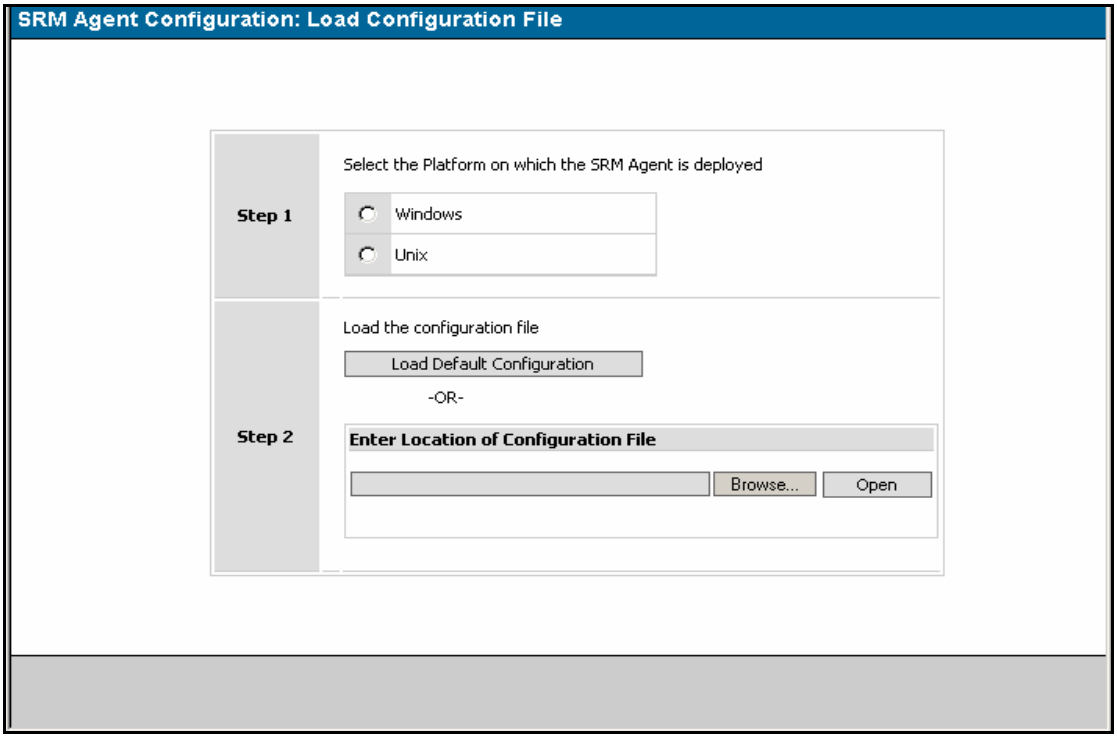


Figure 58 - SRM Agent Configuration: Load Configuration File

2. Use the radio boxes to choose the server platform, Windows or UNIX, where the SRM Agent Configuration File will be used. The config_srm.xml file requires remote share file scanning parameters to be entered slightly differently on UNIX and Windows platforms.

   The following options are not provided on the **Advanced** tab for UNIX file editing:
   - Impersonating user details - user name, password, domain name
   - Enable remote filesystem scan checkbox
   - Remote shares to scan list
   - Per Disk option from the 'scan type' combo box

3. Choose the configuration file to be loaded:
   Default Configuration File
   a. Click the **Load Default Configuration** button.
   Local SRM Configuration File
   b. Click **Browse**.
   c. Navigate and select (highlight) a local SRM Configuration File. It is located by default in the folder: <drive>:\Program Files\Storability\GSM\Agents\SRM Agent on a Windows server.
   d. Click **Open** to upload the selected file to the Management Console server.
4. After the selected XML file is loaded, the SRM Agent Configuration window appears with the **Scan Schedules** tab enabled.

SCAN SCHEDULES TAB

The Scan Schedules tab provides the following elements:

- The **Current Configuration** list, which has the following fields:

- Check box to select any (or all) displayed schedules
- Schedule name field
- Text description of the schedule

- **Delete** button that allows you to delete the selected schedule(s)
- **Add New Schedule** text box allowing you to specify the name for a new schedule
- **Add** button to display the Scheduler window used to define a scan schedule
- Scan on Start checkbox allowing you to enable/disable the scan on start option for the schedule.

- Disable All Schedule Scans checkbox allowing you to enable/disable all schedule scans

Add Scan Schedule

To add a new scan schedule, proceed as follows:

1. Click **Add** and the **Scheduler** window opens.
2. Choose the desired frequency: hourly, daily, weekly, or monthly.

   Hourly – Will launch file system scanning every xx hours starting at midnight.

   Daily – Will refresh the window by adding the **Starting At**: pull-down list boxes. These allow you to set when (hh:mm) the scanning will be initiated. Beneath the list boxes, the message, "Job will be fired every 1 day(s) at hh:mm" is refreshed to match your settings.

   Weekly – Will refresh the window by adding the **Weekly Options**. These provide radio boxes you use to choose the day(s) of the week (Sunday – Saturday) for file system scanning. Beneath the radio boxes, the message "Job will be fired every <day>, <day>,<day>, etc. at hh:mm" is refreshed to match your settings.

   Monthly - Will refresh the window by adding the **Monthly Options**. These add the "Perform this job every xx month(s) on: <day of week> or <Day> settings. Beneath the radio boxes, the message "Job will be fired every xx month(s) on Day xx at hh:mm" is refreshed to match your settings.
3. Click **Save**.

There should be at least one schedule for the SRM agent to function properly. Do not include spaces in a schedule name.

FILTERS TAB

The **Filters** tab displays the following elements:

- **Pre-Scan Filters** – List of predefined filters controlling the agent's behavior prior to file system scanning.
- **Post-Scan Filters** – List of pre-defined filters controlling the agent's behavior after file system scanning is completed. These options allow you to perform post-scan processing on the data before it is inserted in the database.
- **Applied Filters** – Combined list of filters selected for configuration by highlighting the pre/post scan filter and then clicking the >> button. If the default configuration file is loaded then all the post-scan filters are displayed in this list.
- **Filter Description** – Text box refreshes with descriptive text for a particular filter selected (highlighted) in the **Applied Filters** text box.
- **Input Parameters** – Defined parameters for a selected filter (Applied Filter text box). For example, %TEMP% may appear if the temporary_files filter is chosen.
- **Set**– Set the filter values for the selected filter. Filters values once set cannot be reset.

- **Reset** – Clear the current filters and revert to the original filter values provided the filter values have not been set.

ADVANCED SETTING TAB

The Advanced Settings tab displays a window that allows you to define additional configuration settings for the SRM Agent configuration. These options are described as follows:

- **Disk Cache Location** – Enter a path for the agent's disk caching (e.g., < drive >:\Program Files\Storability\GSM\Agents\Storability SRM Agent).
- **Enable Disk Caching** – Put a check in this check box to enable disk caching for the agent during scans. Otherwise, disk caching during scans is disabled.
- **Handle Compressed Data** – Put a check in this check box to - report compressed file size. Otherwise, the actual size of the file system will be reported.
- **Enable remote file system scan** – Put a check in this check box to enable remote file systems/shares to be scanned. Otherwise, remote file system scanning is disabled.
- **Scan Type** – Determines how multiple scans are processed. Valid values are sequential, per disk, or per file system for local disk and sequential or per file system for remote disk.
- **Maximum Number of Threads** – Specify the maximum number of threads used by the SRM Agent during scans.
- **Remote Command Configuration** – Specify the user name and password that is used to initiate the SRM Agent remotely on a system.
- **Impersonating User** – Specify the user name, password, domain information that allows the agent to scan remote Windows shares. This textbox is enabled only when enable remote file system scan checkbox is enabled. Passwords are saved in plain ASCII text.
- **Remote Shares to Scan** – Use the **Add** and **Delete** buttons to define the remote shares to be scanned. The Add and Delete buttons for Remote Shares Scan will be enabled only when the enable remote file system scan checkbox is enabled.

As previously described, the **Advanced** tab provides slightly different options when you configure a config_srm.xml file for a UNIX platform, as shown below.

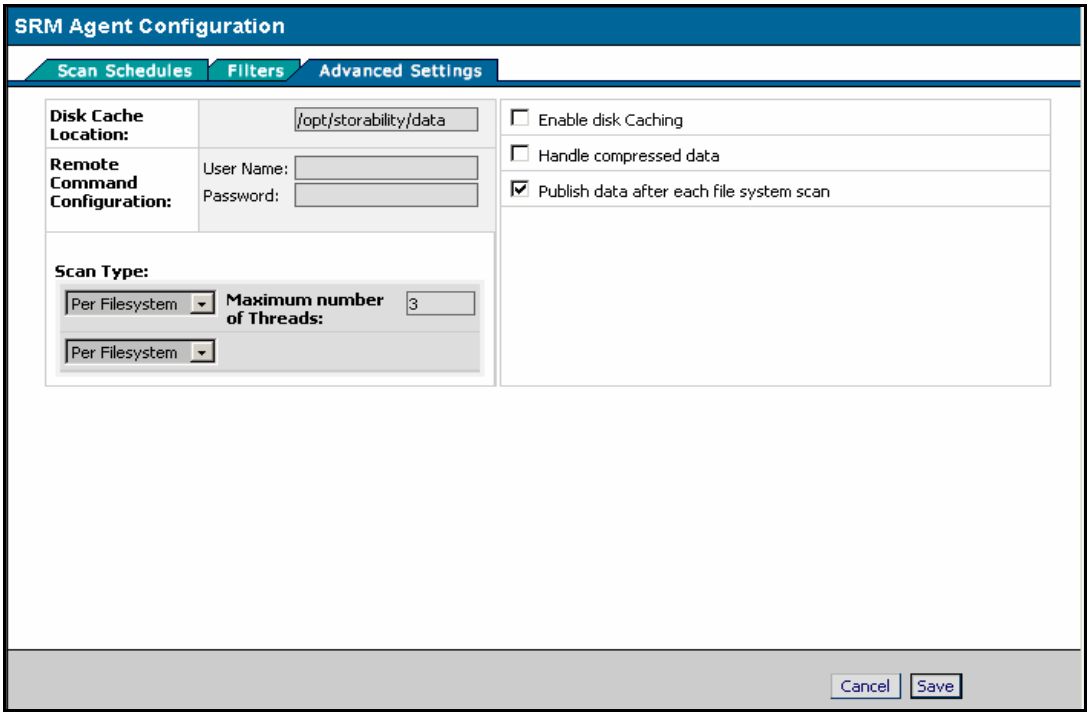


Figure 59 - SRM Agent Configuration - Advanced Tab for UNIX

SAVING CONFIGURATION

Each tab provides a **Save** button that allows you save a new SRM Agent Configuration.

1. When you click **Save**, a confirmation message box appears. Clicking the **OK** button opens the **File Download** dialog box. It shows the default file name, file type (XML), and the IP address of the Management Console server. The **Open** and **Save** buttons allow you to open or save the file, respectively. Clicking **Cancel** returns you to the SRM Agent Configuration window and clicking **More Info** displays a Microsoft Internet Explorer Help facility.
2. Click **Save** and the **Save As** dialog box appears.
3. Use **Save In** to specify the desired destination location for the file.
4. Click **Save** to save the SRM Configuration file to that directory/folder. The default file name will need to be renamed to config_srm.xml before the file is used.

SRM USER INTERFACE CONFIGURATION FILE

The predefined filters file for the SRM Agent User Interface (UI) is named `filter_def_srmComplete.xml`, and the Document Type Definitions (DTD) file (`filter_def_srm.dtd`). Both files are located in the folder:

```
<drive>:\Program Files\Storability\GSM\Storability Management
Console\Source\portalsource\storabilitypriv\srmui
```

on the Management Console.

The SRM Agent User Interface (UI) Filters module reads from the predefined or "canned" filters, and populates the filters tab. The Filters tab in the user interface contains pre-scan filters, post-scan filters and table configuration elements, as described in the previous section.

The following sections provide examples that show how pre-scan filters, post-scan filters, and table configuration elements may be added to `filter_def_srmComplete.xml file`.

File Structure

In the xml file, filter_root is the root element. It will have all the canned filters listed under it. The name of the child of the root element is 'filter'. There can be one (1) or more filter elements under filter_root.

The 'filter' has certain attributes which are necessary to populate the config_srm.xml file. These are contained in the Filters section and include:

- name
- action
- attribute
- operator
- expandEnv
- caseSensitive

The attribute "name" specifies the name of the attribute that the table is being applied to (e.g., rowsPerFileSystem of gsa_srm_largest_old_files). The caption attribute is the HTML description that will be seen in the UI (e.g., caption='Enter the size:'). The type attribute will be the HTML element that will be present in the UI, eg: if type='text', a text box will be shown.

The 'filter' also has tags under it like:

- applies_to_table - This element can occur only *once*. Its purpose is to apply
- the filter to a specific table.
- filter_description – Will provide a detailed description of the filter. The content of this element will be read and pasted in the UI. You should enter the description in a *single* line.
- filter_input_param – There can be one or more of these tags under 'filter'. This element will contain the input parameter for a particular canned filter.

Example of Pre-scan Filter

Assume you want to prevent the agent from scanning a drive on a host. You can proceed as follows:

1. Create a <filter> </filter> xml tag. In the <filter> tag, add the following attributes: name, action, action, attribute, operator, expandEnv and caseSensitive. These are similar to the attributes present in the config_srm.xml file for filters. In our example, these are defined as:

   ```
   <filter name='skip_c_drive' action='exclude' attribute='path'
   operator='eq' expandEnv='true' caseSensitive='false'>

   </filter>
   ```

2. Populate the <applies_to_table> tag. Keep in mind that the *applies_to_table* tag can occur only *once*. Its purpose is to apply the filter to a specific table. The attribute type in this tag specifies whether the filter is pre-scan or post-scan. If the type is pre-scan, the value for this tag *must be* 'filters' (without the single quotation marks). In out example, the filter may be defined as:

   ```
   <filter name='skip_c_drive' action='exclude' attribute='path'
   operator='eq' expandEnv='true' caseSensitive='false'>

      <applies_to_table type='pre-scan'>

      filters

      </applies_to_table>
   ```

```
</filter>
```

3. The <filter_description> tag is next specified. This tag is basically a short description of the filter that you are configuring. Keep in mind that the description *must be* entered in one line and can occur only once. In our example, the following *<filter_description>* tag is defined:

```
<filter name='skip_c_drive' action='exclude' attribute='path'
operator='eq' expandEnv='true' caseSensitive='false'>
<applies_to_table type='pre-scan'>
filters
</applies_to_table>
<filter_description>
This filter will skip scanning a drive in the SRM Agent. Because of
this filter, tables will not report any data for this filesystem.
      </filter_description>
</filter>
```

4. The *<filter_input_param>* tag follows. There can be one or more of these tags. This tag is useful for configuring the input parameters for a particular canned filter. The attribute "name" will be the name of the attribute that the table is being applied to (e.g., rowsPerFileSystem of gsa_srm_largest_old_files). If a filter is being configured, the name attribute should be equal to "ignore".

   The "caption" attribute is the short HTML description that will be seen in the UI (e.g., caption='Enter the size:'). The "type" attribute will be the HTML element that will be present in the UI. For example, if you specify that type='text', a text box will be shown.

   The value of the <filter_input_param> tag will be the default value of the filter that will be shown in the UI. In our example, it may be defined as follows:

   In our case, the filter will now look like:

```
<filter name='skip_drive' action='exclude' attribute='path'
operator='eq' expandEnv='true' caseSensitive='false'>
<applies_to_table type='pre-scan'> filters
</applies_to_table>
<filter_description>
This filter will skip scanning a drive in the SRM Agent. Because of
this filter, tables will not report any data for this filesystem.
</filter_description>
<filter_input_param caption='Enter the name of the drive'
name='ignore' type='text'>
C:
</filter_input_param>
</filter>
```

EXAMPLE OF POST-SCAN FILTER

Assume you want to report the Graphic Files that exist on a host server. The gsa_srm_usage_details table is used to report these files.

1. Create a <filter> </filter> xml tag. In the <filter> tag, add the following attributes: name, action, attribute, operator, expandEnv and caseSensitive. These are similar to the attributes present in the config_srm.xml file for filters. In this example, these may be defined as follows:

```
<filter name='Graphic_Files' action='include' attribute='path' `
      operator='wildcardeq' expandEnv='true' caseSensitive='false'>
</filter>
```

2. Populate the <applies_to_table> tag. The <applies_to_table> tag can occur only *once*. Its purpose is to apply the filter to a specific table. The attribute type in this tag specifies whether the filter is pre-scan or post-scan. If the type is pre-scan, then the value for this tag must be 'filters'. In this example, the filter may be defined as follows:

```
<filter name='Graphic_Files' action='include' attribute='path'
operator='wildcardeq' expandEnv='true' caseSensitive='false'>
<applies_to_table type='post-scan'>
      gsa_srm_usage_details
</applies_to_table>
</filter>
```

3. Define the <filter_description> tag. This tag is basically a short description of the filter that you are configuring. Keep in mind that the description must be entered in one line only and that this tag can occur only once. In this example, the filter may be defined as follows:

```
<filter name='Graphic_Files' action='include' attribute='path'
operator='wildcardeq' expandEnv='true' caseSensitive='false'>
     <applies_to_table type='post-scan'>
           gsa_srm_usage_details
     </applies_to_table>
     <filter_description>
This filter will report all the graphic files on the host. The
various graphic files can be: JPG, GIF, PSD, AI etc.
     </filter_description>
</filter>
```

4. Define the <filter_input_param> tag. There can be one or more of these tags. This tag is useful for configuring the input parameters for a particular canned filter. The attribute "name" will be the name of the attribute that the table is being applied to(e.g., rowsPerFileSystem of gsa_srm_largest_old_files). If a filter is being configured, then the "name" attribute should be equal to "ignore".

   The "caption" attribute is the short HTML description that will be seen in the UI (caption='Enter the size:'). The "type" attribute will be the HTML element that will be present in the UI. For example, if type='text', a text box will be shown.

   The value of the <filter_input_param> tag will be the default value of the filter that will be shown in the UI. In this example, it may be defined as follows:

```
<filter name='Graphic_Files' action='include' attribute='path'
operator='wildcardeq' expandEnv='true' caseSensitive='false'>
```

```
      <applies_to_table type='post-scan'>
            gsa_srm_usage_details
      </applies_to_table>
      <filter_description>
            This filter will report all the graphic files on the
host. The various graphic files can be: JPG, GIF, PSD, AI etc.
Please separate the types by a comma without spaces. For eg:
*.jpg,*.gif,*.psd,*.ai
      </filter_description>
      <filter_input_param caption='Enter the extensions'
name='ignore' type='text'>
            *.jpg,*.gif,*.psd,*.ai
      </filter_input_param>
</filter>
```

EXAMPLE OF CONFIGURING TABLE ELEMENTS

Assume you want to configure the gsa_srm_largest_files table. You can proceed as follows:

1. Create a <filter> </filter> xml tag. In the <filter> tag, add the following attributes: name (name of the filter), action, attribute, operator, expandEnv and caseSensitive: These are similar to the attributes present in the config_srm.xml file for filters. In this example, you might define the following tag:

```
<filter name='config_gsa_srm_largest_files' action='exclude'
attribute='path' operator='eq' expandEnv='true'
caseSensitive='false'>
</filter>
```

2. Populate the <applies_to_table> tag. The <applies_to_table> tag can occur only once. Its purpose is to apply the filter to a specific table. The attribute type in this tag specifies whether the filter is pre-scan or post-scan. If the type is pre-scan, the value for this tag *must be* filters. In this example, the tag may be defined as:

```
<filter name='config_gsa_srm_largest_files' action='exclude'
attribute='path' operator='eq' expandEnv='true'
caseSensitive='false'>
      <applies_to_table type='post-scan'>
            gsa_srm_largest_files
      </applies_to_table>
</filter>
```

3. Define the <filter_description> tag. This tag is basically a short description of the filter that you are trying to configure. Keep in mind that the description must be entered in one line only and this tag can occur only once. In this example, the filter may be defined as follows:

```
<filter name='config_gsa_srm_largest_files' action='exclude'
attribute='path' operator='eq' expandEnv='true' caseSensitive='false'>
   <applies_to_table type='post-scan'>
         gsa_srm_largest_files
```

```
   </applies_to_table>
   <filter_description>
         This filter sets attributes for the Largest Files table. The
first text box tells the agent to report only certain amount of files
per FileSystem that it has scanned. The second text box tells the agent
to consider only files which have size greater than this value. This
value has to be in bytes.
   </filter_description>
</filter>
```

4. Define The <filter_input_param> tag. There can be one or more of these tags. This tag is useful for configuring the input parameters for a particular canned filter. The attribute "name" will be the name of the attribute that the table is being applied to (e.g., rowsPerFileSystem of gsa_srm_largest_files).
   If a filter is being configured, the "name" attribute should be equal to "ignore". The "caption" attribute is the short HTML description that will be seen in the UI (e.g., caption='Enter the size:'). The "type" attribute will be the HTML element that will be present in the UI. For example, if type='text', a text box will be shown.

   The value of the <filter_input_param> tag will be the default value of the filter that will be shown in the UI. In this example, it may be defined as:

```
<filter name='config_gsa_srm_largest_files' action='exclude'
attribute='path' operator='eq' expandEnv='true'
caseSensitive='false'>
<applies_to_table type='post-scan'>
gsa_srm_largest_files
    </applies_to_table>
    <filter_description>
This filter sets attributes for the Largest Files table. The first
text box tells the agent to report only certain amount of files per
FileSystem that it has scanned. The second text box tells the agent
to consider only files which have size greater than this value.
This value has to be in bytes.
    </filter_description>
    <filter_input_param caption='Enter rows to be reported per
FileSystem' name='rowsPerFileSystem' type='text'>
          25
    </filter_input_param>
    <filter_input_param caption='Enter the File Size Threshold (in
bytes)' name='fileSizeThreshold' type='text'>
          5242880
    </filter_input_param>
</filter>
```

Sample Customized SRM User Interface Configuration File

The following filter_def_srmComplete.xml file listing consolidates the previous examples of configuring pre-scan filters, post-scan filters, and table elements.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE filter_root SYSTEM "filter_def_srm.dtd">
<filter_root>
```

```
      <filter name='skip_drive' action='exclude' attribute='path'
operator='eq' expandEnv='true' caseSensitive='false'>
            <applies_to_table type='pre-scan'>
                  filters
            </applies_to_table>
            <filter_description>
                  This filter will skip scanning a drive in the SRM Agent.
Because of this filter, tables will not report any data for this
filesystem.
            </filter_description>
            <filter_input_param caption='Enter the name of the drive'
name='ignore' type='text'>
                        C:
            </filter_input_param>
      </filter>
      <filter name='Graphic_Files' action='include' attribute='path'
operator='wildcardeq' expandEnv='true' caseSensitive='false'>
            <applies_to_table type='post-scan'>
                  gsa_srm_usage_details
            </applies_to_table>
            <filter_description>
                  This filter will report all the graphic files on the
host. The various graphic files can be: JPG, GIF, PSD, AI etc. Please
separate the types by a comma without spaces. For eg:
*.jpg,*.gif,*.psd,*.ai
            </filter_description>
            <filter_input_param caption='Enter the extensions'
name='ignore' type='text'>
                  *.jpg,*.gif,*.psd,*.ai
            </filter_input_param>
      </filter>
      <filter name='config_gsa_srm_largest_files' action='exclude'
attribute='path' operator='eq' expandEnv='true' caseSensitive='false'>
            <applies_to_table type='post-scan'>
                  gsa_srm_largest_files
            </applies_to_table>
            <filter_description>
                  This filter sets attributes for the Largest Files table.
The first text box tells the agent to report only certain amount of files
per FileSystem that it has scanned. The second text box tells the agent to
consider only files which have size greater than this value. This value
has to be in bytes.
            </filter_description>
            <filter_input_param caption='Enter rows to be reported per
FileSystem' name='rowsPerFileSystem' type='text'>
```

```
                  25
            </filter_input_param>
            <filter_input_param caption='Enter the File Size Threshold (in
bytes)' name='fileSizeThreshold' type='text'>
                  5242880
            </filter_input_param>
      </filter>
</filter_root>
```

Application Status

The Administrator can access the following reports:

- **Agent Status**– View the status of agents running in the environment
- **Agent Alerts** – View the errors/alerts generated by the agents in the environment.
- **License Report** – Verify the agents that your company is licensed to deploy as well as how many of these agents are currently in use.

Agent Status

The Agent Status report provides a listing of all agents in the environment whose tables have been collected by the Central Manager. The Central Manager collects a table, named the gsa_agent_version-2_0 (or gsa_agent_version) object, on a regular basis. The agent status is up (green) when data is successfully collected from the agent.

If the agent is not running or responding, the table is not collected and the agent status will be reported as down (red). In addition, the report shows the last time data was collected from the agent.

1. Select **Application Status** under **Tools**.

2. Select **Agent Status** and the Agent Status report appears.

Note: It is a good practice to check this report daily so that you are aware of agent outages in a timely manner. The Sun StorageTek Business Analytics application continues to show devices on the Home Page for a few days after it stops collecting data. Thereafter, it will assume that the device no longer exists and stop displaying it.

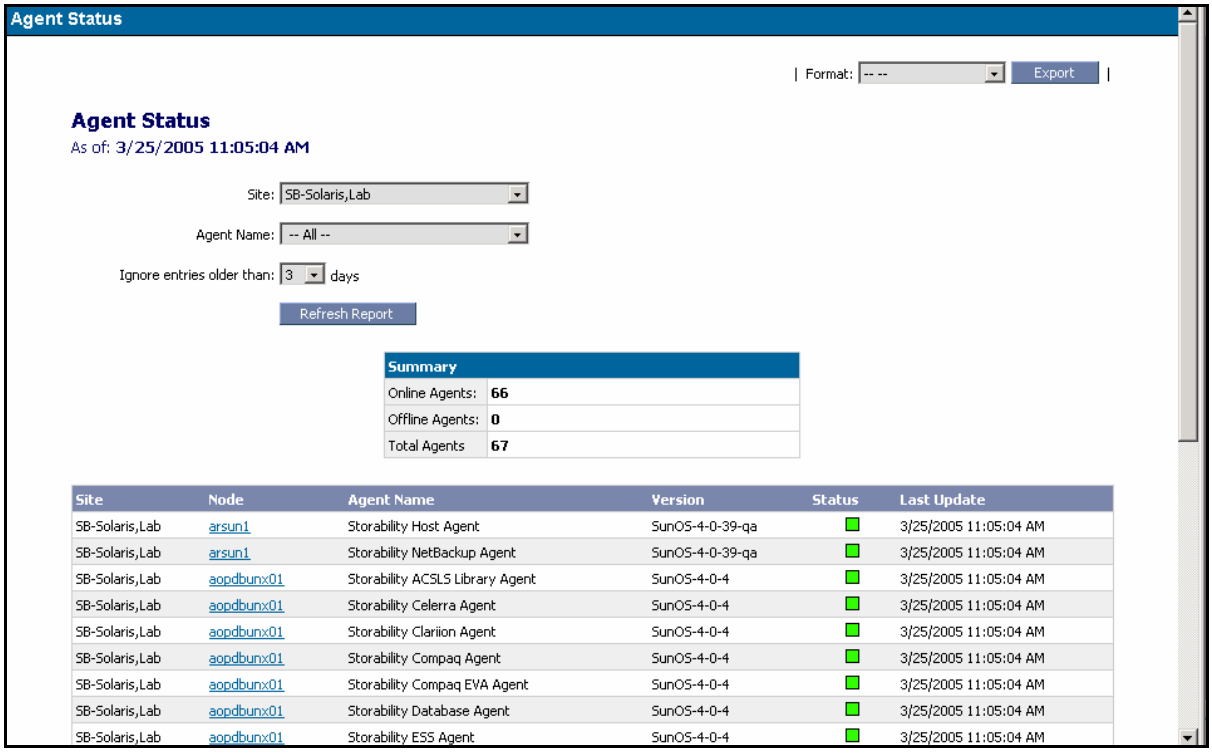


Figure 60 - Agent Status Report

The summary table at the top of the report shows the number of agents whose status is **online** or **offline** and the **total number of agents** in the environment. Beneath the summary table, the following information is displayed for each agent:

- Site Name
- Node name or IP address or server name on which the agent is running (i.e., from which data is collected)
- Agent Name
- Agent platform and version
- Status indicator (green specifies online; red specified offline status)
- Date/time last updated

If displayed, click the **Node Name** link and the **Detailed Host Configuration and Utilization** report is displayed is the server's Host Agent is running.

To refresh the report:

3. Select whether or not to ignore entries in the table that have not been updated within the specified number of days. The default value is thirty (30) days.
4. Select a particular Site (or all Sites).
5. Click **Refresh Report**.

Note: This report allows you to verify the agent is running. It does not indicate whether it is properly configured to collect all data.

AGENT ALERTS

Each Sun StorageTek Business Analytics agent publishes an Alerts object, which is used to generate the Agent Alerts report. Follow the procedure, described below, to display the logged alert messages generated by your agents.

1. Select **Application Status** under **Tools**.

2. Select **Agent Alerts** and the Agent Alerts form appears.

3. Use the drop down box to select whether or not to ignore entries in the table that has not been updated within the specified number of days. The default value is one (1) day.

4. By enabling the checkboxes next to the **Filter By** heading, choose the criteria used to control the types of errors and alerts extracted from the table. The criteria consist of Site, Agent, IP Address, severity, error ID, and description.

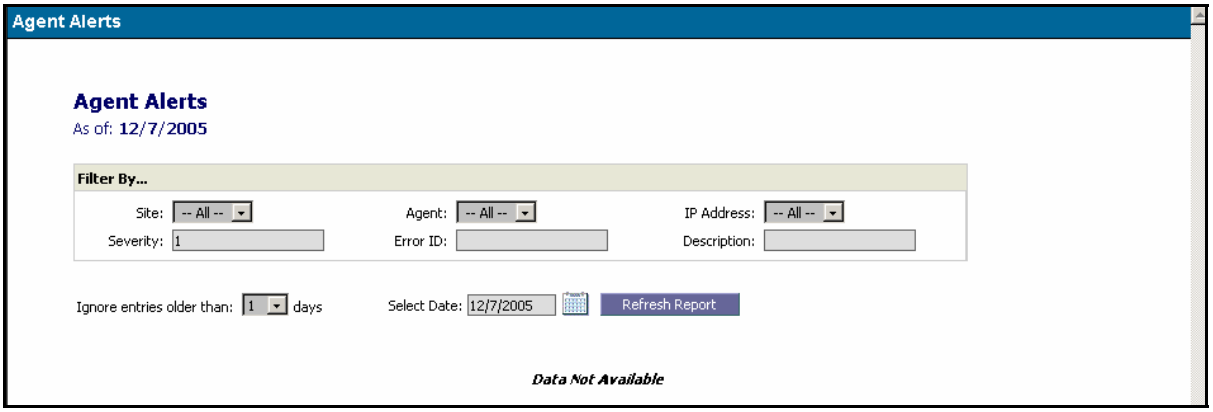


Figure 61 - Agent Alerts Filter by Criteria

5. Use the **Calendar** to specify the start date.

6. Click **Refresh Report** and the following information appears in the report:

   - Site Name
   - IP address or server name on which the agent is running (i.e., from which data is collected)
   - Agent Name
   - Severity of alert
   - Number of times alert generated
   - Date/time alert last generated
   - Error ID

- Description of alert event

If displayed, click the **Node Name** link and the Detailed Host Configuration and Utilization report is displayed.

License Report

The **License Report** allows the administrator to see how many smart agents they are licensed to deploy as well as how many agents are currently in use. The License Agent supports this report.

1. Log in to the Management Console.
2. Select Application Status.
3. Select **License Report** and the **License Report** appears.

The report provides the following information:

- License Report Header – Appearing at the top, left section of the report, it identifies the report name and the current date.

- Expiration – Consists of centered text that indicates the expiration of the license. The expiration date is displayed in mmmmmm dd, yyyy format.

  If the Expiration date is less than 15 days away, the text consists of red, centered, bold text indicating the expiration date. For example:

  ```
  Your license will expire on <date>.
  ```

  If the Expiration date has already been reached, the text consists of red, centered, bold text indicating the expiration date. For example:

  ```
  Your license key expired on <date>
  ```

The License Alerts section contains a table with one line for each license violation detected. A sample table follows.

Item	Violation
Host Agents	Number of Licensed Host Agents exceeded. License overrun of <number>.
SRM Agents	Number of Licensed SRM Agents exceeded. License overrun of <number>.

Table 3 – License Violations

The <number> variable reflects the difference between the number of licensed agents versus the number of deployed agents detected by the Central Manager. For example, if eight host agents are licensed but ten deployed agents are detected, the <number> will be 2.

The License Details section contains a table detailing how many items have been licensed, and how many items the Central Manager has detected as being deployed. The licensed items appear as follows:

- Sites
- Routing Agents
- Arrays

- Fabrics
- Filers
- Hosts
- SRM
- Database applications
- Backup applications
- Tape Libraries
- Provisioning module

A sample table in the License Details section follows.

Item	Licensed	Currently Using
Sites	4	4
StorageTek Tape Libraries (ACSLS)	6	4
EMC Clariion arrays	5	5
Database applications	3	2
EMC Symmetrix arrays	12	11
SAN Fabrics (all vendors)	6	5
Item	**Licensed**	**Currently Using**
HDS arrays (using HiCommand)	3	3
Hosts (all vendors)	250	187
Network Appliances filers	4	2
Veritas NetBackup	4	4
Storability Routing Agent	10	4
SRM (file-level) agents	25	12
StorageTek tape libraries (SNMP)	3	3
Provisioning module	1	1

Table 4 - License Details

The License Details table will not include the following infrastructure agents:

- Scheduler Agent
- Data Polling Agent
- Data Aggregator Agent
- COM Agent (Management Console)
- License Agent
- Policy Agent

In addition, The License Details table will not include the following obsolete/non-licensed agents:

- LSC Agent
- Fabric Performance Agent

- Brocade Agent
- Brocade21 Agent
- McData Agent
- Host Stats Agent
- Query Agent

Database Administration

The following sections describe the functions that you access under the Database Administration menu selection.

Configure Purge Table

Configure Purge Table allows an administrator to control how much historical data is maintained in specific, active tables in the database. It allows you to configure the frequency that data is exported from the table into a file and then purged from the original table.

Note: The system enforces a minimum time that data must be stored in each database table.

Add Tables to Purge Table Configuration

To set up the table purge configuration, proceed as described below.

1. Select **Database Administration** from the **Tools** pull-down menu.

2. Select Configure Purge Table and the Table Purge Configuration screen appears.
   Note: When you perform this operation for the first time, no tables are listed.

3. Read carefully the instructions concerning the Purge Table utility.

4. Click **Add New**.

5. Click the **Table Name** pull-down menu to examine the tables that you can add to the configuration.

6. Use the **Day Interval** pull-down to specify the number of days to keep the table's data.

7. Click **Insert** to add the table to the configuration.

8. Repeat Steps 5-7 until all the tables you want to include in the table purge configuration are listed.

9. The Scheduled Job (e.g., at1.job) added to the Windows Scheduler on the Central Manager is used to trigger the Table Purge for the specified tables. The only exception to this rule is the table **gsa_alerts** table, for which deletion of records is automatic when configuration data is entered.

   To view/modify the table purge entries, proceed as follows:

   a. Log on to the Windows server running the Sun StorageTek Business Analytics Central Manager using a user account that has administrator privileges.
   b. Locate the file, splist.sql under folder <Storability install root>\GSM\Task.
   c. Add the following lines to the end of the file:

exec gsa_sp_purge_table <table name in single quotes>

go

For example:

exec gsa_sp_purge_table 'gsa_alerts'

go

The next time the scheduled job is run, the records in the table will be deleted according to the retention period configured.

UPDATE OR DELETE PURGE TABLE CONFIGURATION

After you have set up the initial Table Purge Configuration, you can update or delete the configuration as follows:

1. Select **Database Administration** under the **Tools** pull-down menu.
2. Select **Configure Purge Table** and the **Table Purge Configuration** screen appears.
3. Choose the table that you want to update or delete from the purge configuration.
4. To update its configuration, click the **Update** button and the **Modify Purge Configuration** screen appear.
5. Set the new desired interval and click **Update**.
6. To delete a table in the purge configuration, click the radio button beside the table name and click **Delete**. The confirmation dialog box appears.
7. Click **OK** to commit the changes.

REFRESH CAPACITY ALLOCATION

The Storage Capacity Allocation Overview pane on the Home Page is refreshed daily by default, whereas other data shown is refreshed on a more frequent basis. You use this menu to manually refresh the data that appears in the chart.

Proceed as follows to refresh the capacity allocation for a specified view:

1. Select **Database Administration** under the **Tools** pull-down menu.
2. Select **Refresh Cap. Allocation** and the Refresh Capacity Allocation window appears.

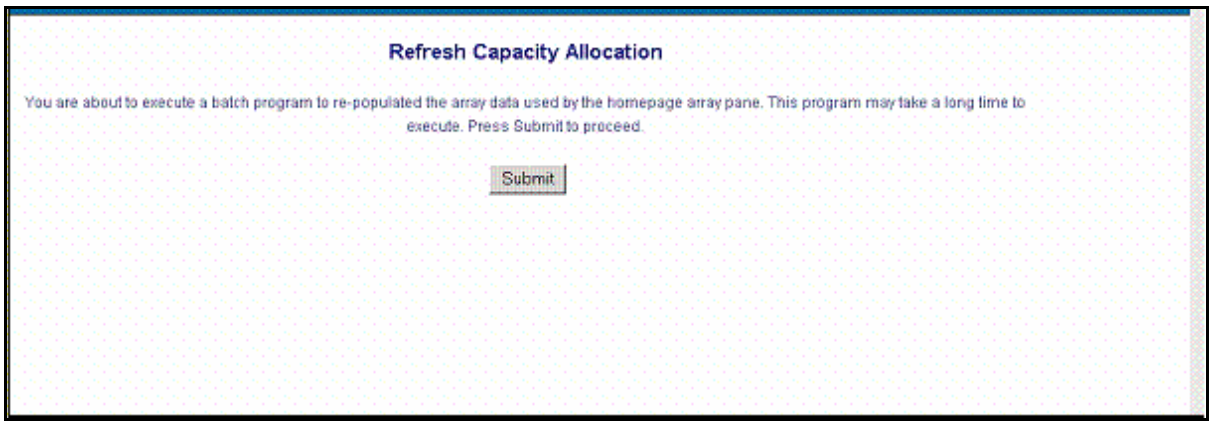


Figure 64 - Refresh Capacity Allocation

3. Click **Submit**. After the refresh query has executed, the following dialog is displayed.

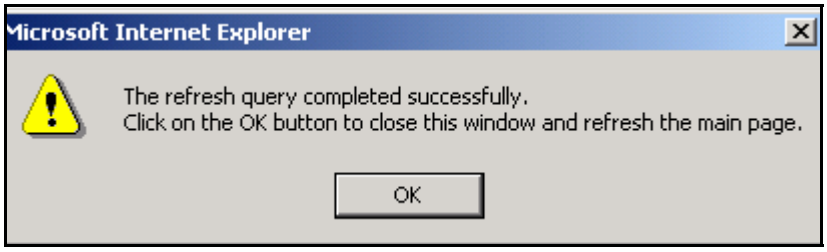


Figure 65 - Refresh Query Completed

4. Click OK to complete the procedure.

TSM Report Parameters

The TSM Reporting Module provides a TSM Daily Administration Report that gives a TSM Administrator a quick encapsulation of the state of affairs in his TSM environment over the last 24 hours. This report includes various parameters for data such as a defined backup window, disk pool utilization and reclamation threshold.

TSM Report Parameters allows you to modify the current parameters and, thereby, change the behavior of the report. You must have backup administration rights to access the TSM Report Parameters menu selection under **Tools**.

1. Select TSM Report Parameters under the **Tools** pull-down menu. The TSM Report Parameters window is displayed.

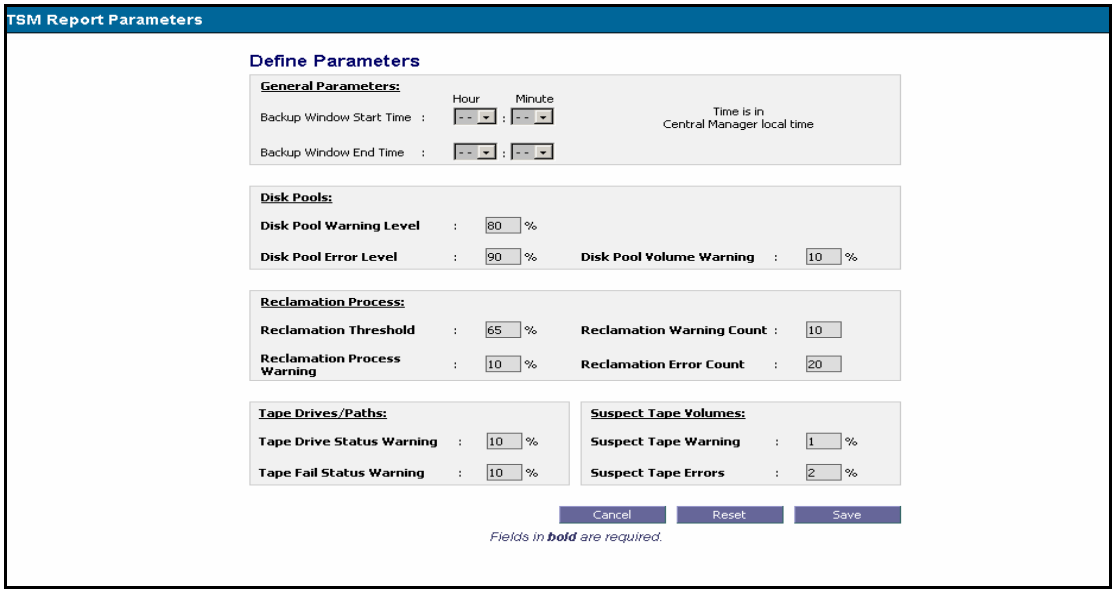


Figure 66 - TSM Report Parameters

2. Modify any of the following **General** parameters:

   - Backup Window Start Time - This parameter is used to calculate the beginning of the backup window for the previous day. For this parameter, only the time part is relevant. For example, if the current date/time is 8/24/2004 14:30 PM, using the default value (07:00 PM), the beginning of the backup window is 8/23/2004 19:00:00. If set to NULL, the beginning of the backup window is 24 hours from the current moment (e.g. 8/23/2004 14:30:00). Note that the default value is NULL meaning the default backup window is "now – 24 hours" to "now".

   - Backup Window End Time - This parameter is used to calculate the end of the backup window for the previous day. For this parameter, only the time part is relevant. For example, if the current date/time is 8/24/2004 14:30 PM, using the default value (07:00 AM), the end of the backup window is 8/24/2004 07:00:00. If set to NULL, the end of the backup window is the current moment (e.g. 8/24/2004 14:30:00). Note that the default value is NULL meaning the default backup window is "now – 24 hours" to "now".

3. Modify any of the following **Disk Pools** parameters:

   - **Disk Pool Warning Level** and **Disk Pool Error Percentage** – These parameters control the status indicator next to the Disk Pool Count > XX % Utilized link on the TSM Daily Status report. A status of "None" (with a green indicator) means that all disk pools are utilized. A status of "Warning" (yellow) indicates at least one disk pool is at least Disk Pool Warning Percentage (e.g. 80%) but less than Disk Pool Error Percentage (e.g. 90%) utilized. A status of "Error" (with a red indicator) indicates that at least one disk pool is greater than Disk Pool Error Percentage (e.g. 90%) utilized. The count of the number of Disk Pools greater than or equal to the Disk Pool Warning Percentage for the site/server is displayed next to the red/green/yellow indicator.
   - **Disk Volume Warning Percentage** - This parameter controls the status indicator next to the Read Only/Offline Disk Pool Volumes link in the TSM Daily

Status Report. A status indicator of "Warning" (yellow) indicates that at least one but less than the disk volume warning percentage (e.g., 10%) of the total volumes in any disk pool are either not "ONLINE" or not "READWRITE". A status indicator of "Error" (red) indicates that less than/equal to the disk volume warning percentage (e.g. 10 %) of the disk pool volumes in any disk pool are not "ONLINE" or not "READWRITE". A status indicator of "None" (green) means that all disk pool volumes are "ONLINE" and "READWRITE".

4. Modify any of the following **Reclamation Process** parameters that control the status indicator next to the Tape Volumes Reclaimable > XX % link on the TSM Daily Status report:

   - **Reclamation Threshold –** This threshold parameter (e.g. 65%) defines the threshold in which a certain percentage of data on a tape has expired and, thereby, makes it reclaimable.

   - **Reclamation Warning Percentage** – This parameter controls the status indicator next to the Reclamation Failures link on the TSM Daily Admin Report. A status of "None" (green) means that all reclamation processes ran successfully. A status of "Warning" (yellow) means that at least one but less than the Reclamation Warning Percentage (e.g.10%) of all reclamation processes failed. A status of "Error" means that greater than or equal to the Reclamation Warning Percentage (e.g.10%) of all reclamation processes that ran at the site failed. The count of the number of reclamation processes that failed for the site is displayed next to the red/green/yellow indicator.
   - **Reclamation Warning Count** and **Reclamation Error Count** - A status of "None" (green) indicates that no servers in the site have more than the Reclamation Warning Count e.g. 10) reclaimable tapes. A status of "Warning" (yellow) indicates at least one server in the site has more than Reclamation Warning Count (e.g. 10) reclaimable tapes but less than the Reclamation Error Count (e.g. 20) reclaimable tapes. A status of "Error" (red) indicates at least one server in the site has more than Reclamation Error Count (e.g. 20) reclaimable tapes.

5. Modify any of the following **Tape Drives/Tape Paths** parameters:

   - **Tape Drive Status Warning** and **Tape Fail Status Warning** - These parameters control the status indicator next to the **Tape Drives/Paths** link on the main TSM Daily Status report. A status of "Online" (green) indicates all servers in the site have no tape drives in an offline state. A status of "Warning" (yellow) indicates at least one server in the site has at least one tape drive or path in an offline state but less than the Tape Drive Status Warming percentage (e.g.10%) and less than the Tape Fail Status Warning percentage of that server's tape drives/paths are offline. A status of "Error" (red) indicates at least one server in the site has greater than or equal to either the Tape Drive Status Warning percentage or the Tape Fail Status Warning percentage of its tape drives in an offline state.

6. Modify any of the following **Suspect Tape Volumes** parameters:

   - **Suspect Tape Warning** and **Suspect Tape Errors -** These parameters control the status indicator next to the **Suspect Tapes** link on the main TSM Daily Status report. A status of green indicates all servers in the site have less than the Suspect Tape Warning percentage (e.g. 1%) of their tapes marked as suspect. A status of red indicates at least one server in the site has greater than or equal to the Suspect Tape Errors percentage (e.g. 2%) of their tapes

marked as suspect. As status of yellow indicates at least one server in the site has Suspect Tape Warning percentage (e.g. 1%) of their tapes marked as suspect but less than the Suspect Tape Errors percentage (e.g. 2%).