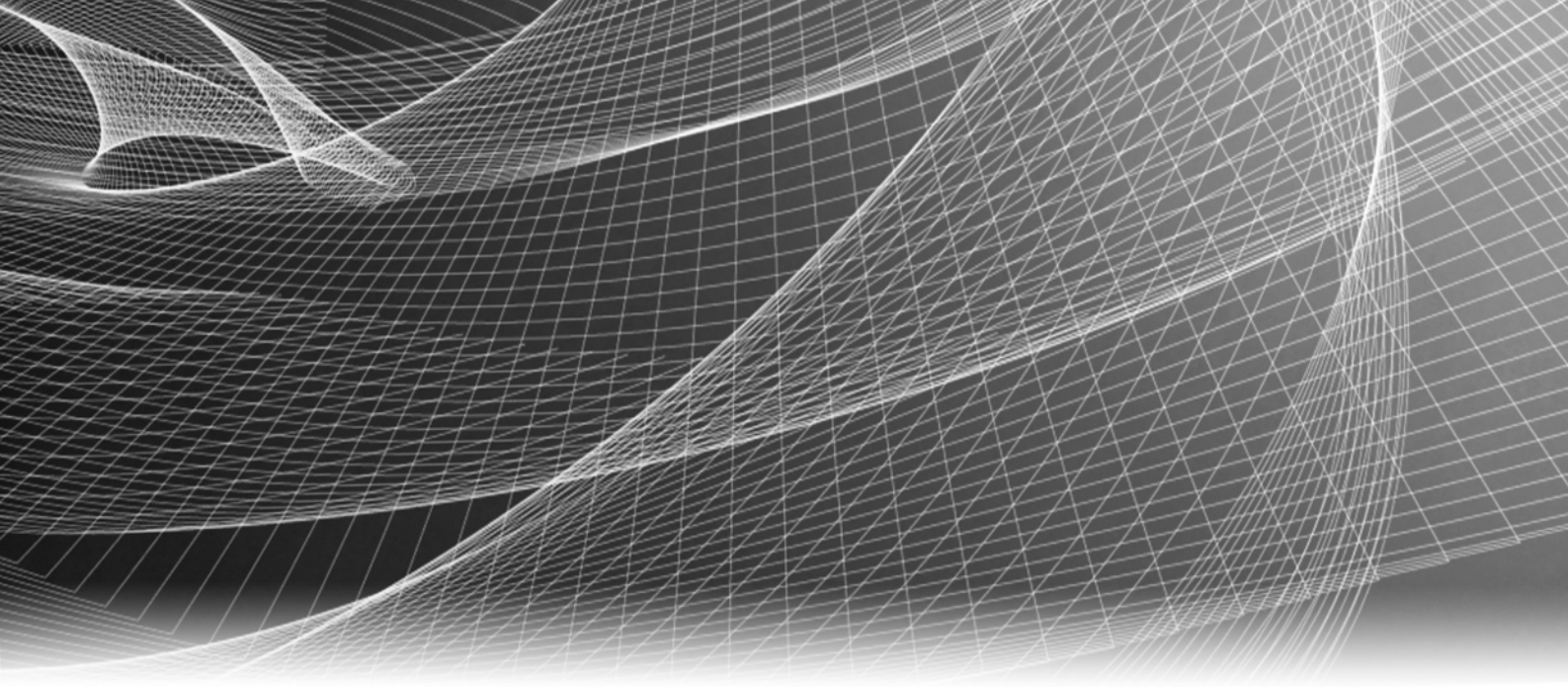

EMC® Unisphere™ for VMAX® Performance Viewer

Installation Guide

REV 01

EMC²

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For the most up-to-date regulatory document for your product line, go to the technical documentation and advisories section on the EMC online support website.

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PREFACE

As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your EMC representative if a product does not function properly or does not function as described in this document.

Note: This document was accurate at publication time. New versions of this document might be released on the EMC online support website. Check the EMC online support website to ensure that you are using the latest version of this document.

Purpose

This document describes how to install and configure the EMC Unisphere for VMAX Performance Viewer V1.6.

Audience

This document is intended for the system administrator, system programmer, or operator who will be involved in managing Symmetrix arrays.

Related documentation

The following EMC publications provide additional information:

- *EMC Unisphere for VMAX Installation Guide*
- *EMC Unisphere for VMAX Product Guide*
- *EMC Unisphere for VMAX Release Notes*

Conventions used in this document

EMC uses the following conventions for special notices:

Note: A note presents information that is important, but not hazard-related.

IMPORTANT

An important notice contains information essential to software or hardware operation.

Typographical conventions

EMC uses the following type style conventions in this document:

Normal	Used in running (nonprocedural) text for: • Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus • Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, and utilities • URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, and notifications
Bold	Used in running (nonprocedural) text for names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, and man pages Used in procedures for: • Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus • What the user specifically selects, clicks, presses, or types
Italic	Used in all text (including procedures) for: • Full titles of publications referenced in text • Emphasis, for example, a new term • Variables
`Courier`	Used for: • System output, such as an error message or script • URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
`Courier bold`	Used for specific user input, such as commands
`Courier italic`	Used in procedures for: • Variables on the command line • User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections — the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

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Note: To open a service request through EMC Online Support, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

Product information

For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to EMC Online Support (registration required) at:

https://support.EMC.com

Technical support

EMC offers a variety of support options.

Support by Product — EMC offers consolidated, product-specific information on the Web at:

https://support.EMC.com/products

The Support by Product web pages offer quick links to Documentation, White Papers, Advisories (such as frequently used Knowledgebase articles), and Downloads, as well as more dynamic content, such as presentations, discussion, relevant Customer Support Forum entries, and a link to EMC Live Chat.

EMC Live Chat — Open a Chat or instant message session with an EMC Support Engineer.

Symmetrix System Viewer — Illustrates the system hardware, incrementally scalable system configurations, and available host connectivity offered for Symmetrix systems, go to the EMC Online Support, and download this stand-alone utility.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to:

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CHAPTER 1
Performance Viewer Overview

This chapter provides a brief overview of the Performance Viewer. Topics include:

- Performance Viewer Overview 12
- Functions available in the Performance Viewer 13
- Exporting Performance files from Unisphere for VMAX 14

Performance Viewer Overview

The EMC Unisphere for VMAX 1.6 release includes a Performance Viewer which can be run on a VM player to:

- Analyze/troubleshoot diagnostic data off site
- Use historical data for long-range capacity planning
- Produce reports off site

How it works

Figure 1 shows an environment with both Unisphere for VMAX and the Performance Viewer.

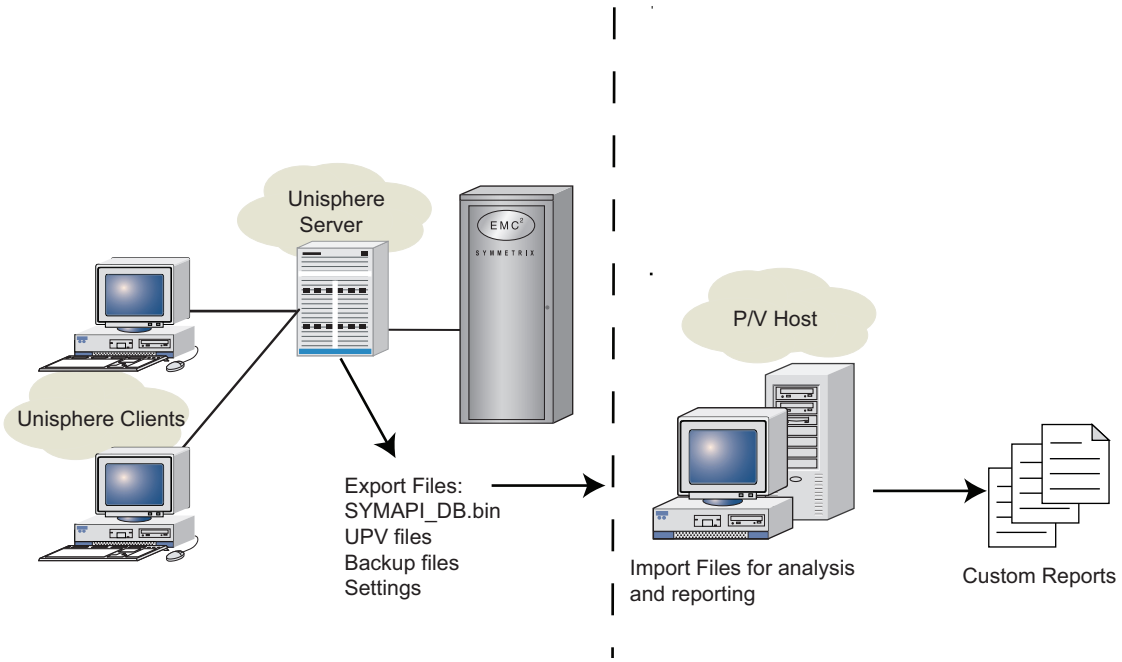

Figure 1 Process for using the Performance Viewer

The following file types can be exported from Unisphere for VMAX V1.6 and imported to the Performance Viewer V1.6:

- SYMAPI databases
- UPV files (diagnostics and real time traces)
- Backup files (historical data, diagnostics data, and Real Time traces if applicable)
- Settings (thresholds, reports, user-defined dashboards, and templates)

On the Unisphere side, all files are located in the following directories on the server side:

Backup File — `SMAS/Backup/SPA`

SYMAPI Database — `SMAS/Backup/SPA/SE`

Settings — `SMAS/Backup/SPA/Settings`

Functions available in the Performance Viewer

To start an offline session and view data on the Performance Viewer you must have a minimum of one `symapi_db.bin` file and one UPV report or a database backup file. The Performance Viewer allows additional UPV reports for the same database, or a database backup file, without dropping the previously stored data.

The Performance Viewer can accommodate multiple offline sessions, each with its own `symapi_db.bin` file. When a user switches between offline sessions, the data from the previous session remains in the database for that session. Stored data is only removed when a user chooses to delete it. The viewer prompts the user when the maximum number of Symmetrix databases is reached.

The following functions are available (for the specified database and time range data backup files) in the Unisphere Performance Viewer:

- Import Performance Viewer Settings
- Create, edit, and delete thresholds
- View Real Time traces
- Create, copy, edit, delete, and run ad hoc reports
- All Analyze features for viewing and drilling down historical and diagnostic data
- All dashboard and template functions

The Performance Viewer can only show data that exists in the current `symapi_db.bin` file configuration with the corresponding data loaded. Only managed objects existing in the SYMAPI database are presented in the Performance Viewer display.

Note: You can only load UPV data that is newer than data that is already loaded, i.e. you cannot load older data after newer data is loaded, or data with an overlapping time period.

Exporting Performance files from Unisphere for VMAX

To use the Performance Viewer, you require at least one `database.bin` file and one data file (UPV or a backup). You can also import/reuse the settings.

SYMAPI_DB.bin and Settings

To export the Symmetrix bin file and all the settings, follow these steps:

1. Select **Export PV Settings** from the Common Tasks pane of Unisphere for VMAX to open the **Export Performance Viewer Setting** dialog box.

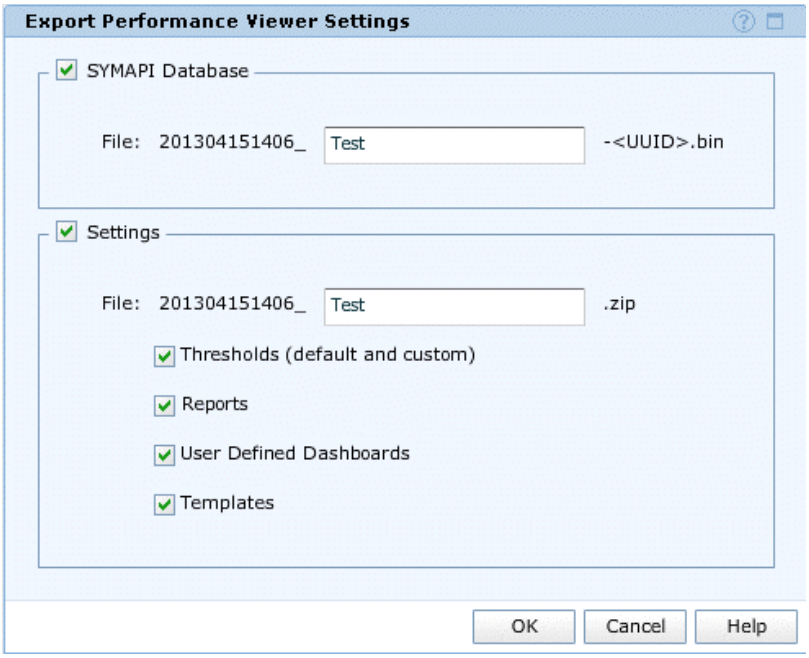

Figure 2 Export Performance Viewer Settings dialog box

2. Enter a **File** name for each data export file and click **OK**. The system automatically saves the files to the default locations.

   File locations:

   SYMAPI Database — `SMAS/Backup/SPA/SE`

   Settings — `SMAS/Backup/SPA/Settings`

Database backup file

To export a database backup file, follow these steps:

1. Open **Settings** › **Databases** in Unisphere for VMAX Performance view.
2. Select the database and click **Backup** to open the Backup Database Wizard.

   You can run a backup now, or schedule a backup.

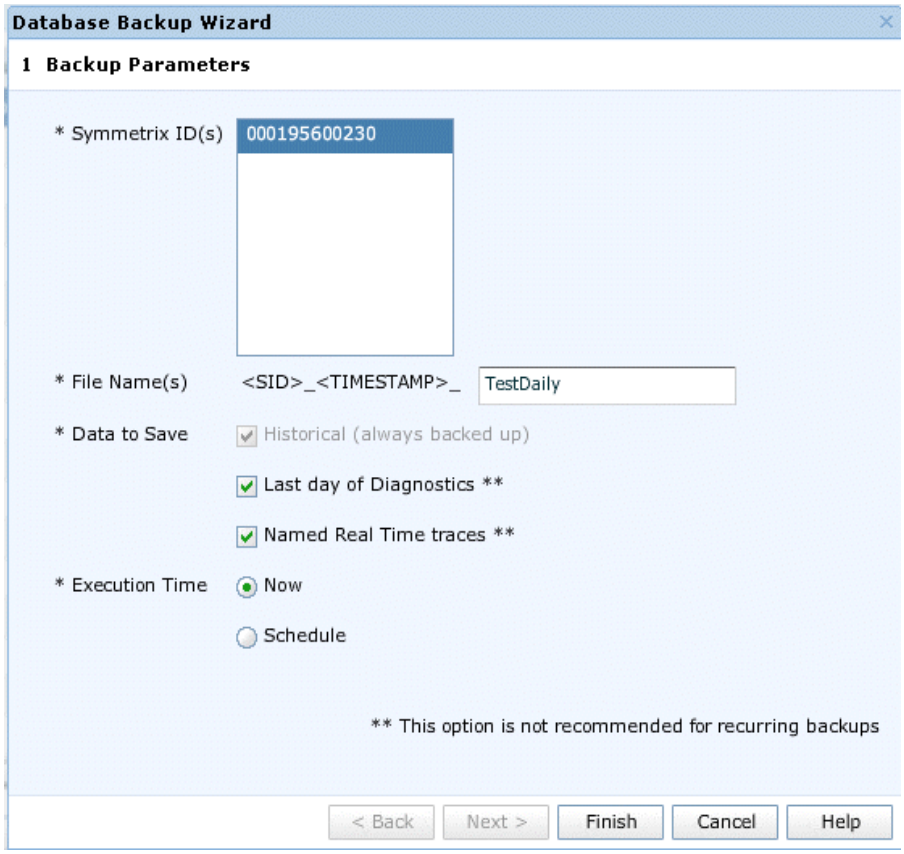

Figure 3 Database Backup Wizard

The system automatically saves the backup file to the following location:

Export directory for databases: `/SMAS/backup/SPA`

Export data

To export a data collection file:

1. Open **Settings** › **Reports**.
2. Click **Create** to open the Create Report dialog box.

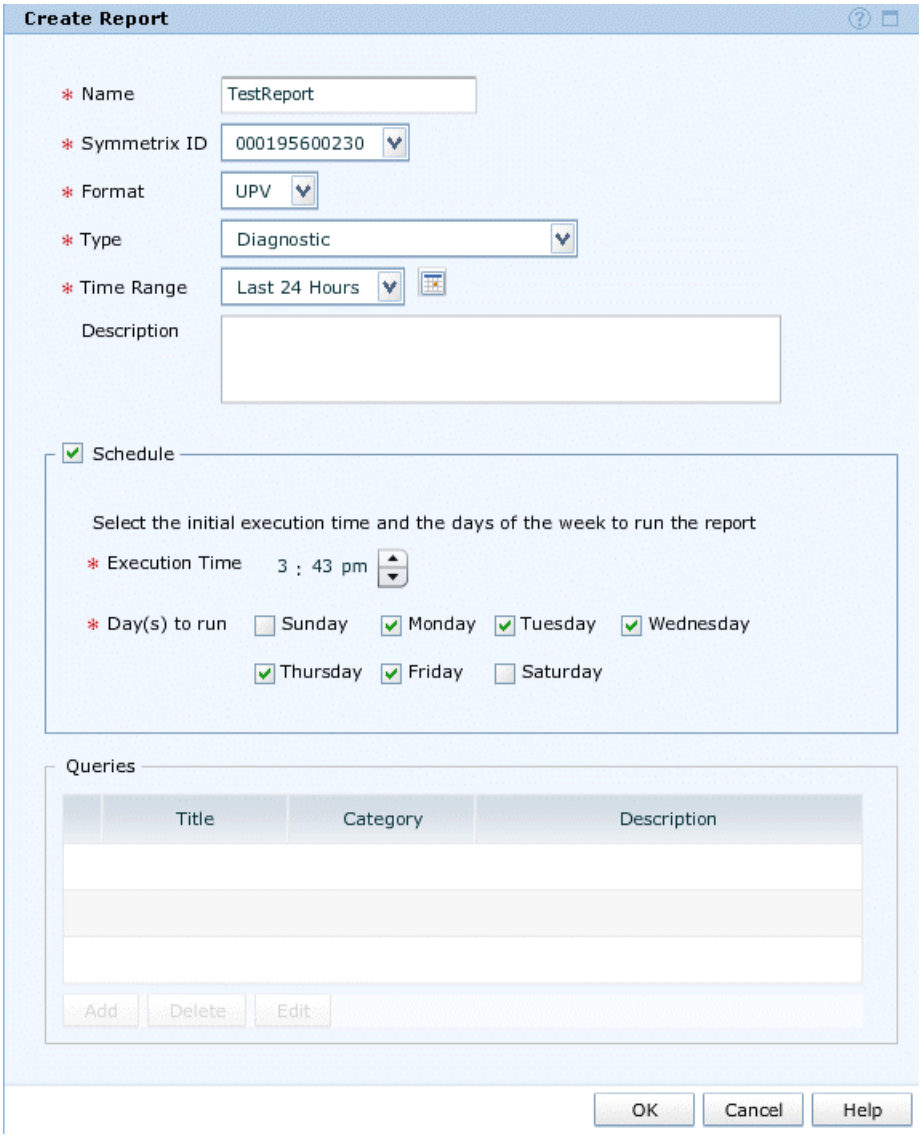

Figure 4 Create Report dialog box

3. Enter a report **Name**.
4. Select the **Symmetrix ID**.
5. Select **UPV** for the report **Format**.
6. Select the report **Type**.
7. *Optional*: Enter a **Description**.
8. *Optional*: **Schedule** the report to run at a recurring time on selected days.
9. Click **OK**.

10. From the **Reports** view, select the report and click **Run Now**.

The system automatically saves the data report to the following location:

Export directory for reports: `SMAS/backup/SPA/`

Note: You will need these directory locations to FTP these files to the VM Player location.

CHAPTER 2
Installing the Performance viewer

This chapter explains how to install the Performance Viewer. Topics include:

- Before you begin 20
- Installing the viewer 20

Before you begin

The Unisphere Performance Viewer is a virtual appliance that must be installed on an offline system; one that is not connected to the Unisphere server. In addition are the following requirements:

Windows 7	64-bit
VMware Player	Version 5.0
CPU	2 vCPU
Memory	4096 MB

Installing the viewer

Follow these steps to install the Performance Viewer on a VMWare Player.

1. On the EMC Online Support site:
   a. Click **Support By Product** in the main navigation bar.
   b. In the **Find a Product** text box, type **Unisphere for VMAX Performance Viewer** and click the green arrow.
   c. Locate the appropriate kit and download the OVA archive file (`*.ova`) containing the installation program to a temporary directory:

      `univmaxpv160_n_suse11_x86_64_vapp_OVF10.ova`
2. From the VMWare player, select **Player** › **File** › **Open**.
3. Select the `univmaxpv160_n_suse11_x86_64_vapp_OVF10.ova` file from the **Name** list and click **Open**.
4. Click **Import** on the Import Virtual Machine dialog box.
5. **Accept** the License agreement.

IMPORTANT

Switch the Network Adapter to Host Only Mode before continuing.

Configuring the VM Player

Follow these steps to configure the VM Player:

1. In the VM Player window select **Play virtual machine**.

   The system requests you change the root password.
2. Enter and confirm the **root** password.
3. Answer **No** to configuring a **Static IP** and **Time Zone**.
4. Accept the default **IP address** for each VM installation.

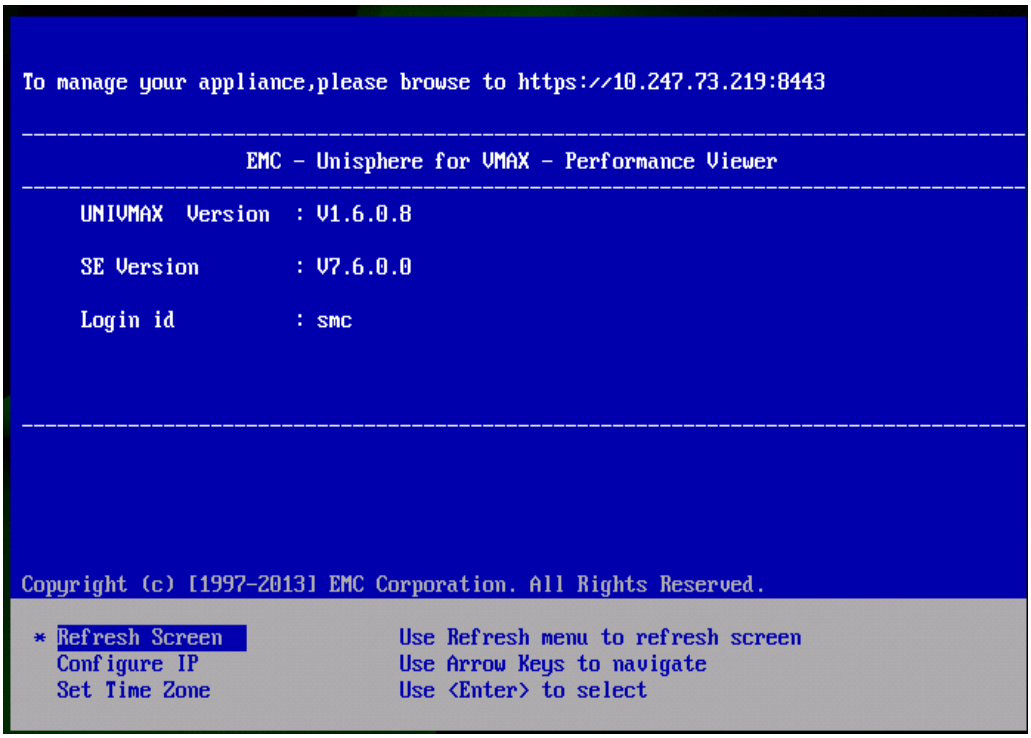

Figure 5 Configure the IP Address for each VM installation

5. Transfer the exported Unisphere for VMAX Performance files via FTP to the VM Player location. Refer to "Exporting Performance files from Unisphere for VMAX" on page 14.
6. Open the Performance Viewer using the following form:

   `https://IPAddress:8443/univmax`

7. Follow the steps in Chapter 3, "Using the Performance Viewer,"to get the viewer populated with the data exported from Unisphere for VMAX.

All of the Unisphere for VMAX ad-hoc reporting and data analysis features are available in the offline viewer.

CHAPTER 3
Using the Performance Viewer

This chapter provides a brief overview of the Unisphere for VMAX Performance Viewer. topics include.

- Loading Data in the Performance Viewer 24

Loading Data in the Performance Viewer

Note: Before importing data, the Performance Viewer opens to the Settings page.

When you open the Performance Viewer, it looks similar to Unisphere for VMAX, but it only displays the **Home** and **Performance** buttons. The Symmetrix arrays do not appear until you load the `symapi_db.bin` file.

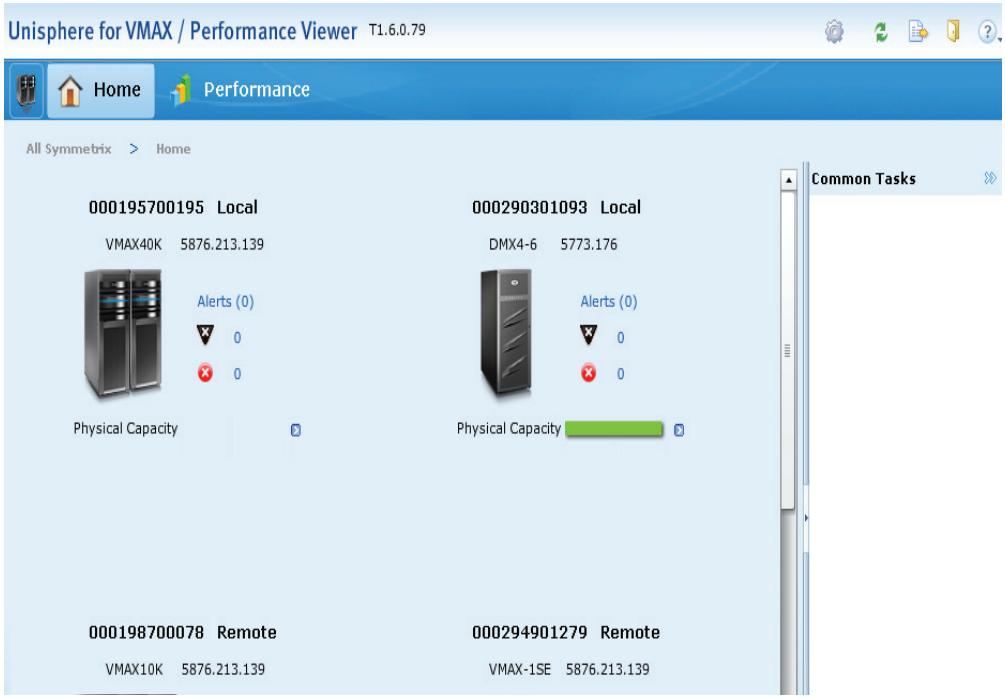

Figure 6 Performance Viewer opening view

The Performance view provides options for Monitor, Analyze, and Settings, as shown next.

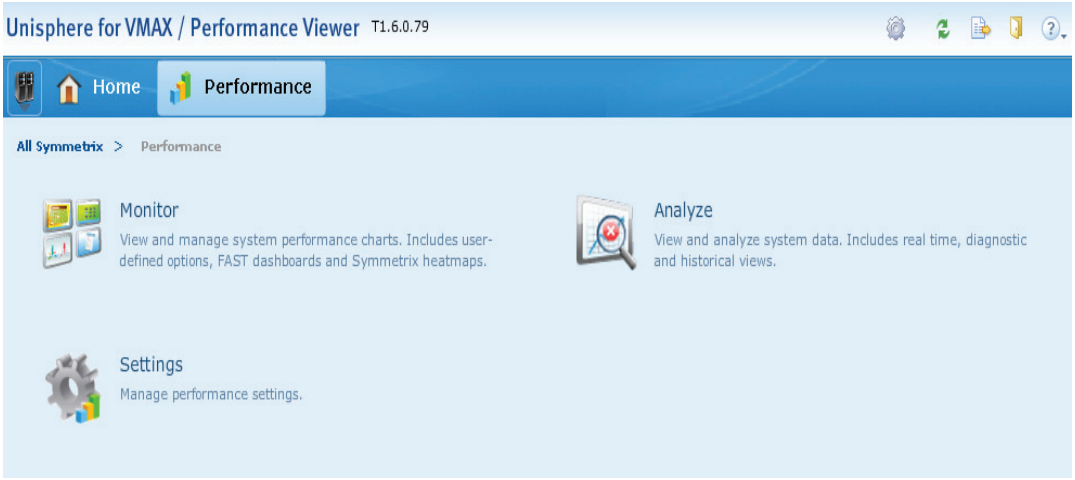

Figure 7 Performance menus

When you select Settings, the menus in Figure 8 display.

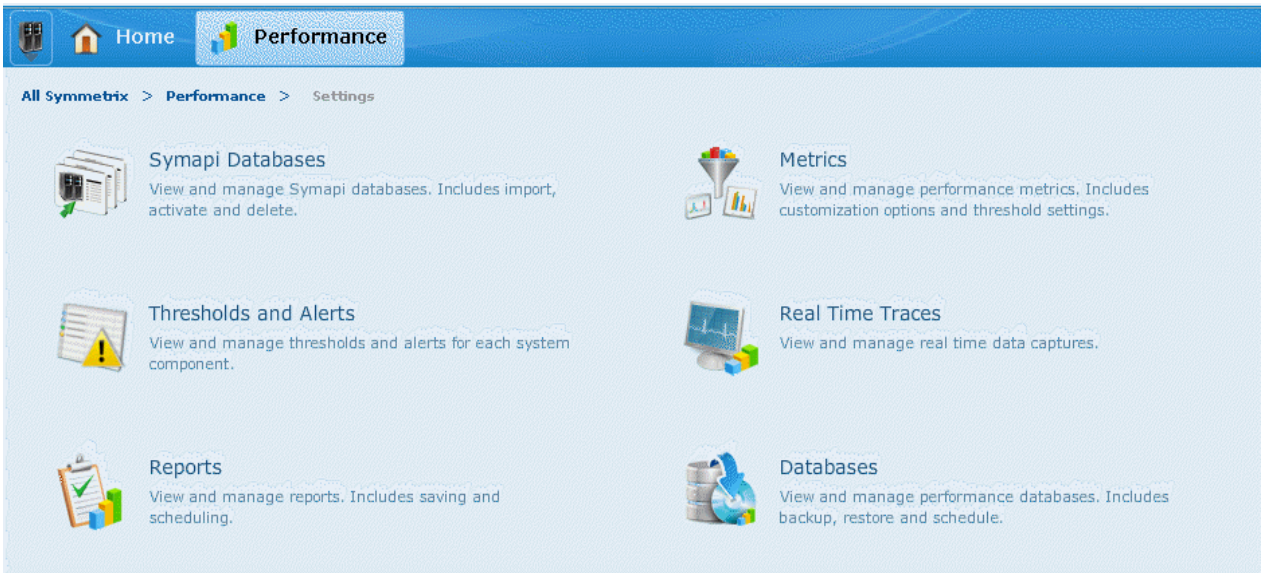

Figure 8 Performance Settings view

Importing the SYMAPI database

1. Open **Settings** › **SYMAPI Databases** to import the Symmetrix database `.bin` file (exported from Unisphere).
2. Click **Import** to open the Import SYMAPI Database dialog box.
3. To populate the **Select File** list, you must enter the File Directory location (if different than the default location) and click **Find**.

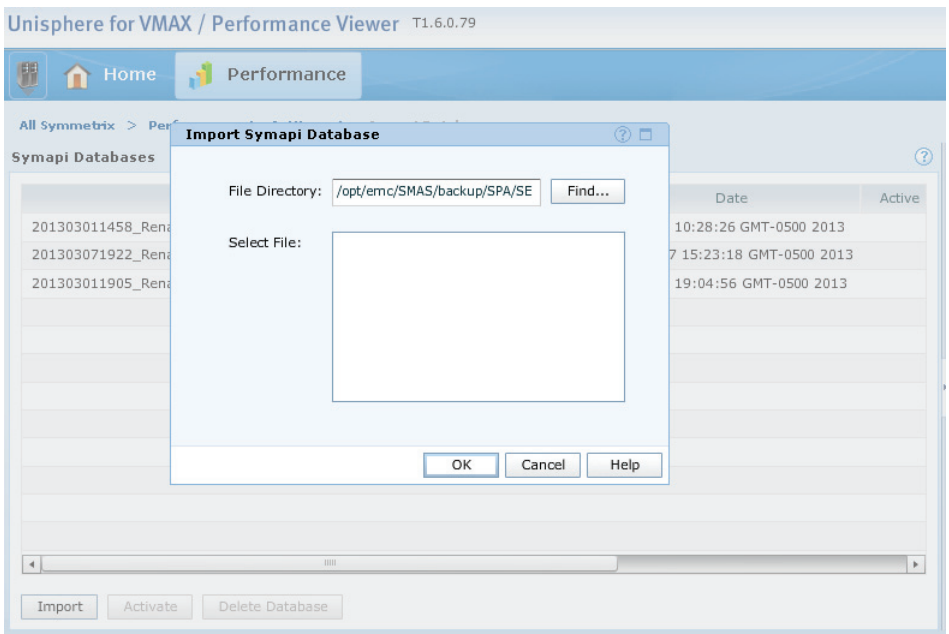

Figure 9 Importing a SYMAPI database

4. Select a file from the **Select File** list and click **OK**.
5. To begin the data analysis, select a **SYMAPI Database** and click **Activate**.

6. Open a command line session to restart the SMAS process, as follows:

```
/etc/init.d/smas stop
/etc/init.d/smas start
```

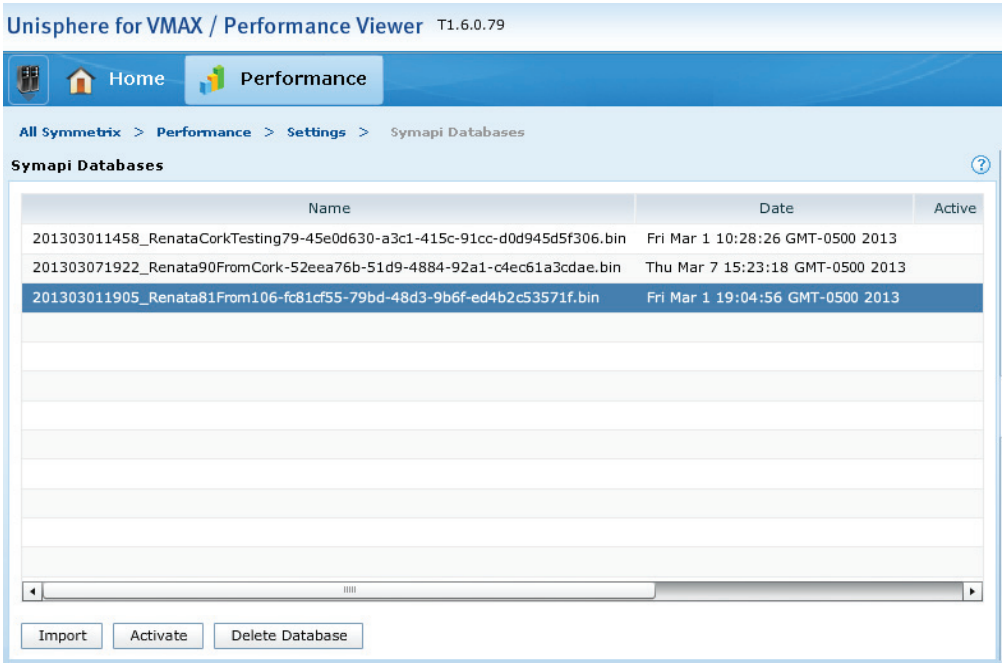

Figure 10 Activate the SYMAPI Database File

The **SYMAPI Database** view displays the **Name** and **Date** of the database file and whether it is **Active** or **Inactive**.

Loading a database backup file

1. Open **Settings** › **Databases** to load the Symmetrix backup file or a UPV file (exported from Unisphere).
2. Click **Load** to open the **Load Performance Viewer Data** dialog box.
3. To populate the **Select File** list, you must enter the **File Directory** location (if different than the default location) and click **Find**.

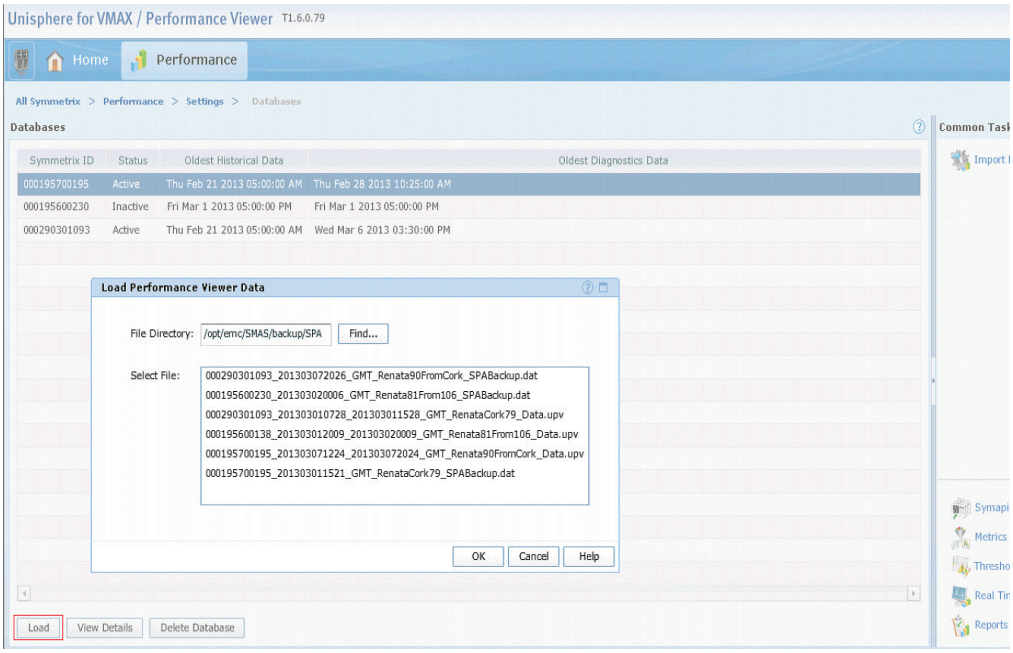

Figure 11 Loading a database backup file

4. Select a file from the **Select File** list and click **OK**.

Viewing Database Details

1. Select **View Details** to see more detailed information about the data that was loaded in a particular database.

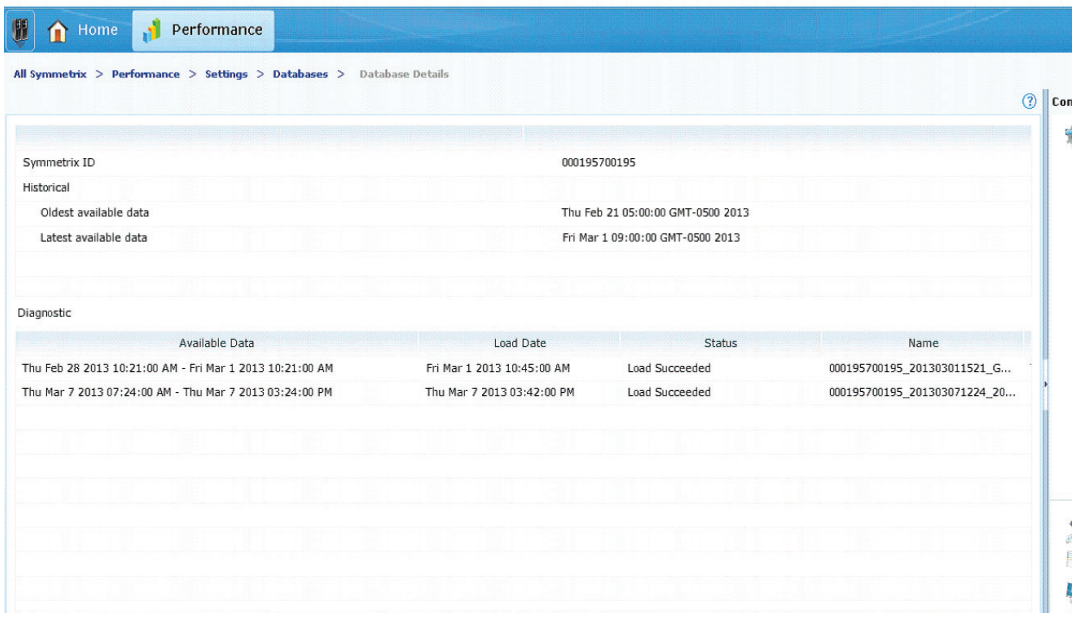

Figure 12 Database Details view

The Database Details view shows the date and status details for Historical and Diagnostic data.

After the SYMAPI database file is activated and data is loaded in the Symmetrix array's database(s), you can begin to use the **Analyze** and **Monitor** features of the Performance Viewer.

Figure 13 shows the data in the **Analyze, Diagnostics** view.

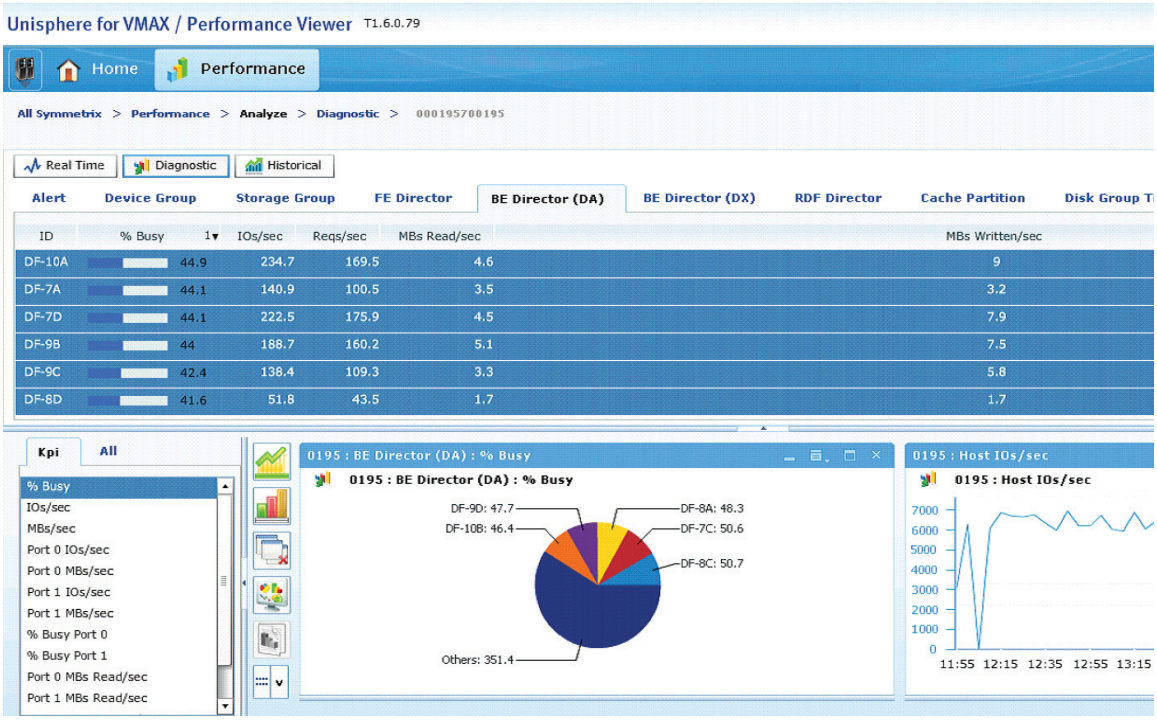

Figure 13 Analyze Diagnostics view

You can use all the ad-hoc report functions from the **Settings, Reports** view.

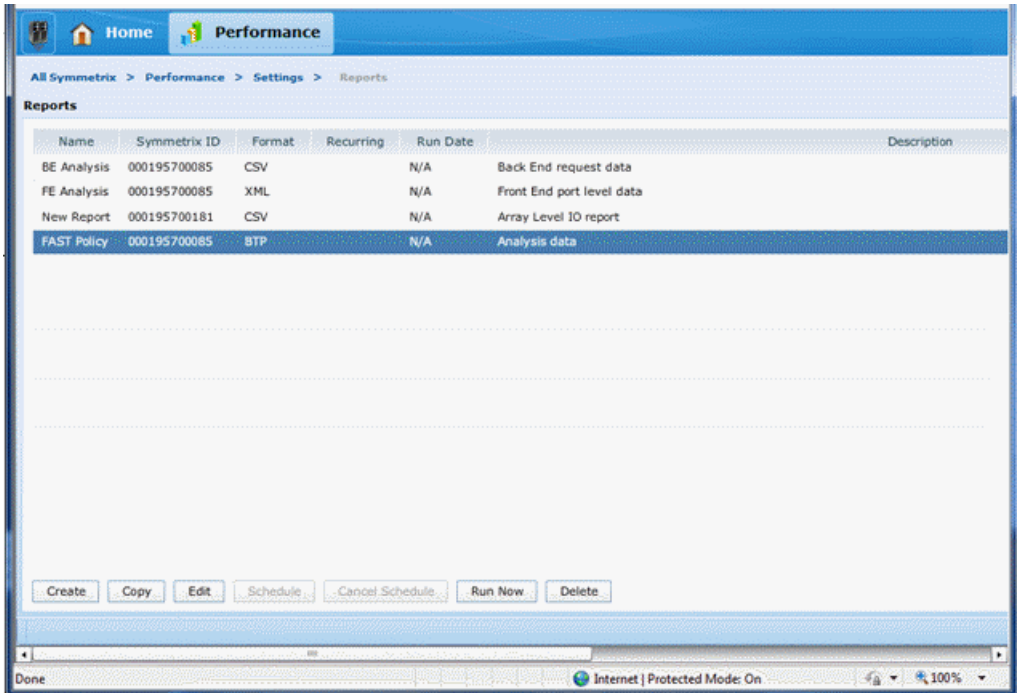

Figure 14 Reports view