STRIPEYFISH

Utilities for VMware Series

sfvAlarms User Guide

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Chapter

1

Introduction

A short introduction on using alarms within VMware vCenter .

T his user guide is for the StripeyFish© sfvAlarms™ utility. VMware vCenter Server does not have an inbuilt utility for easily importing and exporting alarms. The sfvAlarms utility has been created to help the datacenter administrator easily manage alarms across multiple vCenter Server installations where it is usually desirable to have the same set of alarms across the estate.

Alarms are notifications that occur in response to selected events, conditions, and states that occur with objects in the inventory. You generally use the vSphere Client to create and modify alarms, although these can also be created via PowerShell scipts or other VMware SDK. The vCenter Server system is configured with a set of predefined alarms that monitor clusters, hosts, datacenters, datastores, networks, and virtual machines.

Each predefined alarm monitors a specific object and applies to all objects of that type. For example, by default, the Host CPU Usage alarm is set automatically on each host in the inventory and triggers automatically when any host's CPU usage reaches the defined CPU value.

If the predefined vCenter Server alarms do not account for the condition, state, or event you need to monitor, you can define custom alarms. When you set an alarm on a parent object, such as a vCenter Server, a datatcenter, or a cluster, all applicable child objects inherit the alarm. You can also set an alarm on a folder to propagate the same alarm to all objects contained in that folder.

As soon as many custom alarms are created or default alarms modified, the number of alarms in use can quickly mount. There are some **37 default alarms in vCenter 4**, **55 default alarms in vCenter5** and **61 default alarms in vCenter5.1** Alarm definitions can be fairly complex and to manage and document alarms, duplicate them across multiple vCenter installations and also to keep a managed state can be time consuming for administrators. The sfvAlarms utility can help simplify the alarm management task.

What is covered in this User Guide

In this manual, the user is taken through installation, use and reset of default alarms if it all goes wrong!

- Chapter 1: Introduction.

- Chapter 2: Installation.

- Chapter 3: Basic Use and vCenter Connection.

- Chapter 4: Alarm Export.

- Chapter 5: Alarm Import.

- Chapter 6: Default Alarms Reset.

Revision History

The following table shows the revision history.

Version	Date	Revision
v1.0	23-May-2012	First release.
v1.1	12-Oct-2012	Support for vCenter 5.1 added.
v1.1.1	07-Mar-2013	Feature request to allow alarm export folder to be specified in Preferences.

Chapter

2

Installation

How to install the sfvAlarms utility.

T he sfvAlarms utility is a Microsoft Windows 32-bit utility that is installed as a regular Microsoft deployment package (.msi). The user installing it should have privileges to do so. The sfvAlarms utility requires Microsoft .Net Framework v3.5SP1 as a minimum. This should already be installed prior to installing sfvAlarms.

Operating systems tested as compatible are as follows:

- Microsoft Windows 2003 SP2 32bit

- Microsoft Windows 2008 R2 64bit

Note

Other operating systems such as Microsoft Windows 2003 64bit and Microsoft Windows 7 should also be compatible although not tested at time of release.

Supported versions of vCenter Server

The following versions of vCenter Server have been tested as working with sfvAlarms:

- vCenter 4.0 Update 3, Update 4a

- vCenter 5.0 Update 1, Update 1b

- vCenter 5.1

Note

vCenter 4.1 and other update versions other than those listed above have not been tested, although the author can see no reason why they shouldn't be compatible.

Running the installation wizard

Open the sfvAlarms.msi file. The installation wizard will start. Follow the wizard to install sfvAlarms. Once installed, sfvAlarms will be available in the Programs menu under StripeyFish.

Chapter

3

Basic Use and vCenter Connection

This chapter shows the user how to start sfvAlarms, connect to vCenter Server and basic use of the options and menus.

S tart the sfvAlarms utility from the Start menu under StripeyFish. Once started the application main window is shown
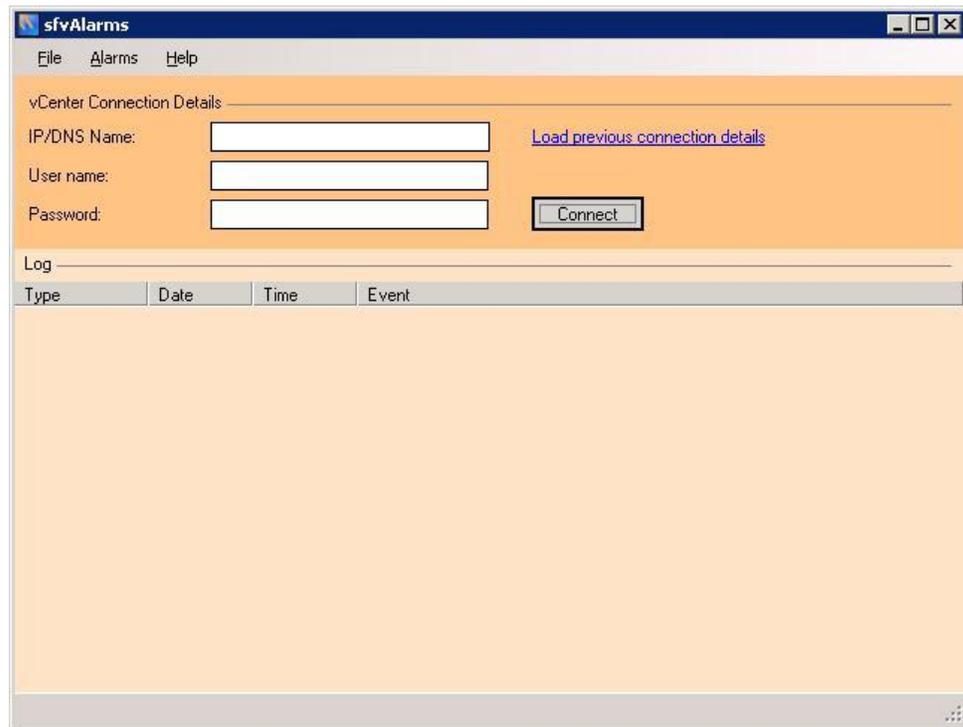
FIGURE 1 - sfvAlarms Start Screen.

Menus and Options
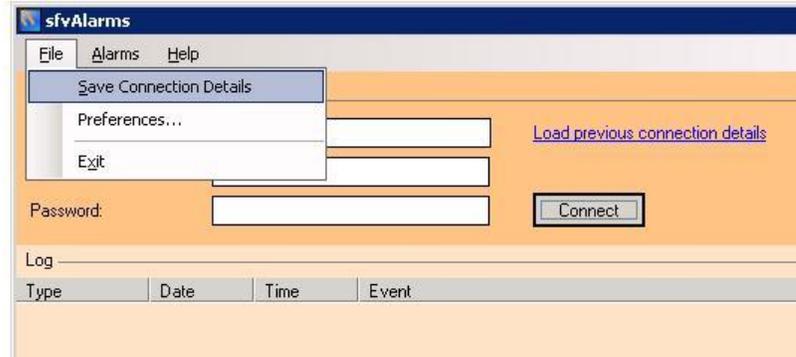
The **File menu** gives the following options:

FIGURE 2 – sfvAlarms File Menu Options

Save Connection Details

This option will save the currently entered vCenter Server connection details to the registry. They can easily be reloaded by selecting the **Load previous connection details** link.

Preferences

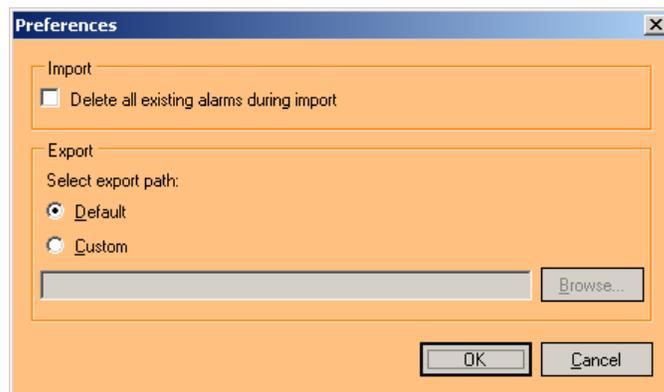The 'Preferences' menu option brings up the Preferences dialogue:

FIGURE 3 – sfvAlarms Preferences Dialogue

The '**Delete all existing alarms during import**' option can be selected if required. During an Alarm Import, all existing alarms will be removed first before the selected Alarm set is imported.

The '**Select export path**' option allows the user to select either the default location for exported alarms (which will be the installation path), or for the user to select 'Custom' and to enter a folder path directly or to use the [**Browse**] button to select a folder path.

The options selected in the Preferences dialogue are stored, so that when sfvAlarms is run again, the preferences previously selected will be remembered.

The **Alarms menu** gives the following options:

FIGURE 4 – sfvAlarms Alarms Menu Options

This options under the Alarms menu only become available once connected to vCenter.

Export

This option will export all the current alarms from the vCenter Server that is connected. For more information see the section on Alarm Export.

Import

This option will import all the alarms from the selected Alarm set into the vCenter Server that is connected. For more information see the section on Alarm Import.

Connecting to vCenter Server

The **vCenter Connection Details** area of the window enables the user to enter vCenter credentials and perform the connection.

If previous connection details have been saved and you want to connect to the same vCenter Server again, click the **Load previous connection details** link. The IP/DNS, User name and Password fields will be filled automatically.

To connect to a new vCenter Server or enter credentials for the first time, enter credentials as follows:

- IP/DNS Name: Enter either IP Address or DNS Name of your vCenter Server.

- User name: Enter user name of user that can log into vCenter Server.

Note

It is recommended that an Administrator account is used. If a limited access user is entered, then this user should have the following privileges: System.View, System.Read, Alarm.Create, Alarm.DisableActions, Alarm.Delete, Alarm.Edit, Global.ScriptAction,

- Password: Enter password for chosen user.

To connect using entered credentials, select the '**Connect**' button. The connection to the selected vCenter will be initiated and the **log** part of the window will show current status.

Note

*The connection may take **up to 4 minutes**. This is due to an un-optimised VMware library being used for sfvAlarms.*

On successful connection the log should look similar to the figure below (the latest entries are added at the top):

BASIC USE
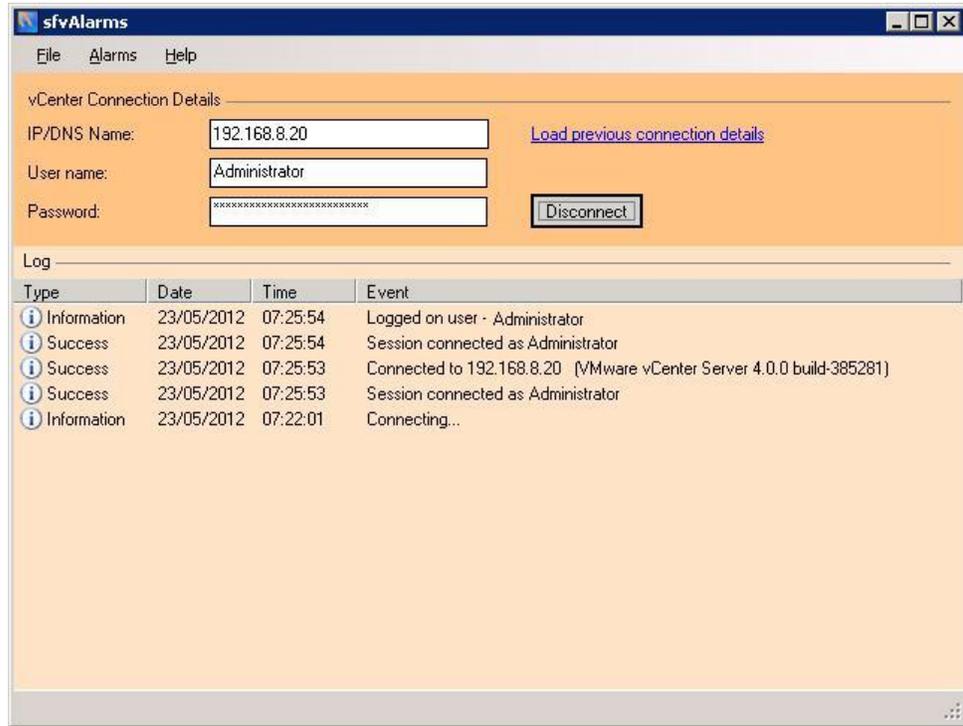
FIGURE 5 – sfvAlarms Connection to vCenter

Note

If the connection fails, or is still trying to connect after 5 minutes, check the entered credentials in a vSphere Client connection.

Once connected to vCenter, you are now ready to either import or export alarms. To disconnect, select the '**Disconnect**' button.

To **exit** sfvAlarms, either select the **File > Exit** menu option, or click the standard Windows **close** button at the top right of the window.

Chapter

4

Alarm Export

This chapter shows the user how to export all the visible Alarms from vCenter.

A fter   connecting to your chosen vCenter Server with the correct credentials to allow Alarm export, you are now ready to export all the visible alarms.

To start the Export, select the **Alarms > Export** menu item. Alarm export will start immediately and the Log entries will show progress.

Note
The first alarm to be exported may take a few seconds to start and then the remainder will be processed in quick succession.

| Log |
Type	Date	Time	Event
ⓘ Information	23/05/2012	07:33:31	Inv path for alarm definition: 'root'
ⓘ Success	23/05/2012	07:33:31	Exported alarm - VMKernel NIC not configured correctly
ⓘ Information	23/05/2012	07:33:31	Exporting alarm - VMKernel NIC not configured correctly
ⓘ Information	23/05/2012	07:33:31	Inv path for alarm definition: 'root'
ⓘ Success	23/05/2012	07:33:31	Exported alarm - Network uplink redundancy degraded
ⓘ Information	23/05/2012	07:33:31	Exporting alarm - Network uplink redundancy degraded
ⓘ Information	23/05/2012	07:33:31	Inv path for alarm definition: 'root'
ⓘ Success	23/05/2012	07:33:30	Exported alarm - Network uplink redundancy lost
ⓘ Information	23/05/2012	07:33:30	Exporting alarm - Network uplink redundancy lost
ⓘ Information	23/05/2012	07:33:30	Inv path for alarm definition: 'root'

FIGURE 6 – sfvAlarms Export Log

On completion of the export, a pop-up dialogue will be displayed. Select 'OK' and then check the Log entries to ensure no errors during export were encountered.

Alarm Sets

The export process will produce an '**Alarm Set**'. This consists of a folder called 'Alarms' located under the sfvAlarms installation directory or under the 'Custom' folder as selected in the Preferences dialogue.

> **Note**
>
> *If a* **previous export** *has been performed, then any existing '***Alarms***' folder will be* **renamed** *before the new export commences. The folder will have the date/time appended and be given an* **.archive** *extension.*
>
> *Several exports can therefore be done without losing any previously exported Alarm Sets from the same or different vCenter Servers.*
>
> *The archive folders can be renamed to something more meaningful if required and this won't affect the import process, e.g. DC1 Alarms.*

Each **Alarm Set** consists of a folder that contains XML files describing each Alarm found within vCenter Server as well as an 'Alarm Index' XML file.

Now that Alarms have been exported, you can move to the Import process to 'copy' the Alarms to another vCenter Server, or merely use a backup to ensure the same set of defined alarms can be put back when required.

Chapter

5

Alarm Import

*This chapter shows the user how to import **Alarms Sets** into vCenter Server.*

After connecting to your chosen vCenter Server with the correct credentials to allow Alarm import, you are now ready to import previously exported Alarms Sets either from this vCenter or another one in your estate..

Before starting an Import, it is important to remember a few rules for Alarms and how they relate to Inventory Objects.

Alarms and Inventory

The **Alarm Index** contains a reference to the Inventory Object where the Alarm was defined during export.

Typically most administrators have the majority of Alarms set at the 'root' of the Inventory. Alarms defined at the 'root' can be imported into another vCenter without any translation of Inventory Objects.

Alarms defined at lower levels in the Inventory, e.g. at Datacenter or Cluster will need to translated in the Alarm Index before import **if the item names are different** from the source vCenter. Some examples below will help to understand the importance of Inventory translation.

- **Example 1**: If vCenter Server A contains 10 alarms, all defined at the root, then no translation is needed. Exported Alarms from one vCenter can simply be imported into vCenter Server B.

- **Example 2**: vCenter Server A contains 10 alarms defined at the root, plus 5 alarms defined on Datacenter DC1. vCenter Server B also contains a Datacenter called DC1. As the inventories match, Exported Alarms from vCenter Server A can simply be imported into vCenter Server B.

- **Example 3**: vCenter Server A contains 10 alarms defined at the root, plus 5 alarms defined on Datacenter DC1. vCenter Server B contains a Datacenter called DC2. The inventories in this example don't match. In order to use the same set of Exported Alarms from vCenter Server A in vCenter Server B, the inventory path contained in the Alarm Index will need to be edited prior to import.

Where inventory objects where Alarms have been defined between vCenter Servers don't match in name, the Alarm Index will always need to be edited.

Editing the Alarm Index

The Alarm Index file should be edited in the following cases:

- When Inventory Objects alarms are defined upon don't match between vCenter Servers.

- When only some alarms within an Alarm Set are required.

To edit the Alarm Index, open the AlarmIndex.xml file in notepad or an XML editor. A sample section on an Alarm Index file is shown below:

```
- <Alarms>
- <Alarm>
  <Name>Host connection and power state</Name>
  <Entity>root/dc1</Entity>
     </Alarm>
- <Alarm>
  <Name>Virtual Machine Fault Tolerance vLockStep interval Status
     Changed</Name>
  <Entity>root</Entity>
     </Alarm>
- <Alarm>
  <Name>Host cpu usage</Name>
  <Entity>root</Entity>
     </Alarm>
```

Removing an Alarm

To remove an alarm, comment out or delete a complete <Alarm>… </Alarm> section. In the section shown above, you would remove the entire section contained within the box of you didn't require the 'Virtual Machine Fault Tolerance vLockStep interval Status Changed' alarm in the target vCenter Server.

Translating an Inventory Object

If, as in Example 3 the datacenter names on which some alarms are defined upon don't match, then the datacenter name can be updated for these alarms. The

inventory path is given in the <Entity>**root/DC1**</Entity> node. In this example simply update the Datacenter name to DC2. Any alarms defined in the source vCenter Server on Datacenter DC1 will now be imported and set against DC2 on the target vCenter Server.

Note

When translating, **only translate like for like objects**, *i.e. map Datacenter Alarms between Datacenters, alarms defined on Hosts between Hosts etc.*

Note

All **Alarm names** *within vCenter Server* **must be unique**, *regardless of where they are defined in the inventory. If the option to delete existing alarms on import is not selected, then the Alarm Set being imported should not contain any duplicate names to existing alarms.*

The Log will show any duplicates as an error in import. The existing alarms of the same name **will not be updated or replaced**.

Performing an Import

Before starting an import, decide whether you want to **delete all existing alarms** during the import process and set <u>Preferences</u> accordingly.

To start the Import, select the **Alarms > Import** menu item. A File Browser will open and prompt you to select an **Alarm Index file** (AlarmIndex.xml) from the chosen **Alarm Set**. Once selected, click '**Open**'.
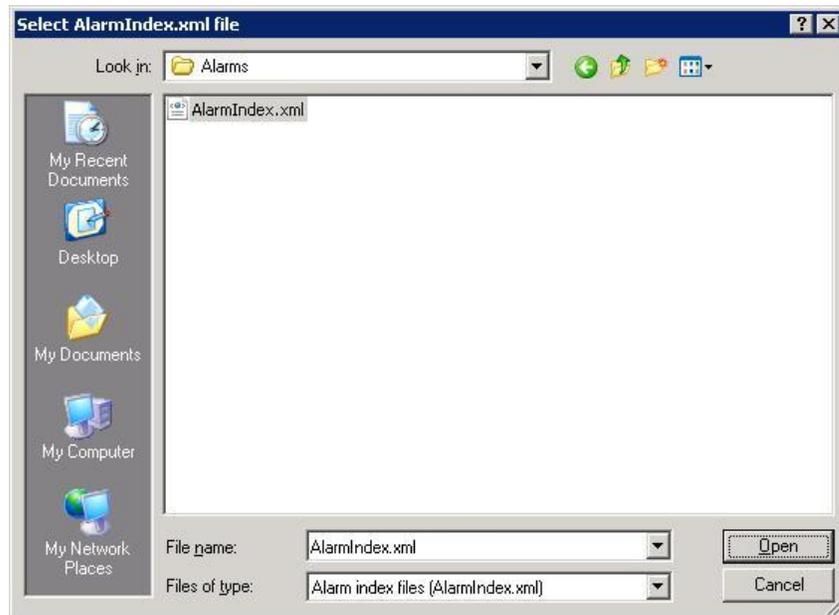

FIGURE 7 – sfvAlarms Alarm Index Browser

As soon as the Alarm Index file is selected, the import process will begin and the Log entries will show progress.

Type	Date	Time	Event
(i) Success	23/05/2012	07:40:09	Created alarm: VMKernel NIC not configured correctly
(i) Information	23/05/2012	07:40:09	Importing alarm file: 'VMKernel NIC not configured correctly.xml'
(i) Success	23/05/2012	07:40:09	Created alarm: Network uplink redundancy degraded
(i) Information	23/05/2012	07:40:09	Importing alarm file: 'Network uplink redundancy degraded.xml'
⊗ Error	23/05/2012	07:40:09	Error creating alarm - an alarm of this name already exists
(i) Information	23/05/2012	07:40:08	Importing alarm file: 'Network uplink redundancy lost.xml'
(i) Success	23/05/2012	07:40:08	Created alarm: Network connectivity lost
(i) Information	23/05/2012	07:40:08	Importing alarm file: 'Network connectivity lost.xml'
(i) Success	23/05/2012	07:40:08	Created alarm: Virtual machine Fault Tolerance state changed
(i) Information	23/05/2012	07:40:08	Importing alarm file: 'Virtual machine Fault Tolerance state changed.xml'
(i) Success	23/05/2012	07:40:08	Created alarm: Health status changed alarm

FIGURE 8 – sfvAlarms Import Log

On completion of the import, a pop-up dialogue will be displayed. Select 'OK' and then check the Log entries to ensure no errors during export were encountered.

This completes the Import process.

Note

Importing alarms from previous versions of vCenter is supported, however not all alarms are compatible. For example, alarms from vCenter 4.0 can be imported into vCenter 5.0. This has been tested with the default alarms where all but one alarm imported successfully.

Chapter

5

Default Alarms Reset

This chapter shows the user how to reset vCenter Server back to their installation defaults.

A larms can easily be reset to their installation defaults using a Knowledge Base article from VMware (KB 2009166).

Complete the following steps to reset vCenter Server alarms to their default values.

Note

Unless you have **exported** *any customized alarms first,* **they will be lost!**

To delete all the existing alarm definitions in the vCenter Server:

1. Log in to the vCenter Server using the vSphere Client.

2. Click the Hosts and Clusters view.

3. Click the Alarms tab.

4. Click Definitions.

5. Select all alarms, right-click, and click Remove.

To restore the default vCenter Server alarms, change the alarm version in vCenter Server:

1. Connect to vCenter Server using the vSphere Client.

2. Click Administration > vCenter Server Settings.

3. Click Advanced Settings.

4. Set *alarm.version* to **0**.

5. Set *alarms.upgraded* to **false**.

6. If either of these options do not exist, then add new option.

7. Restart the VMware VirtualCenter Server service