
Virtual Server Harvesting for Symphony User Guide

Platform Virtual Server Harvesting for Symphony
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Virtual Server Harvesting for Symphony

Platform Virtual Server Harvesting for Symphony maximizes utilization of computing resources by harvesting VMs for Symphony workload when the demand exceeds Symphony's dedicated cluster resources. The VMs, which are shared with virtual desktops and other non-Symphony applications, can be made available to Symphony during periods of low VM utilization by these applications.

Scope

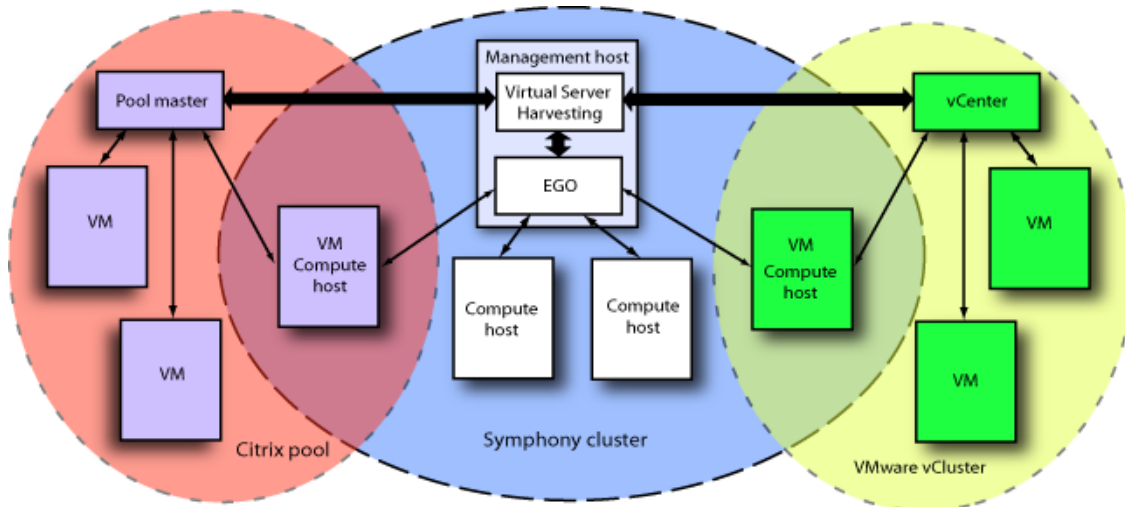
Applicability	Details
Operating system (management hosts)	<ul style="list-style-type: none"> 64-bit Windows 64-bit Linux 2.6 and glibc 2.3 or above
Symphony	Version 5.1
VMware	ESX 4.0, 3.5.x with vCenter 2.5.x, 4.0
Citrix	XenServer 5.5
Limitations	<ul style="list-style-type: none"> Virtual Server Harvesting for Symphony only controls VMs belonging to a Symphony cluster within a VMware cluster or Citrix pool. All other VMs are outside the control of Virtual Server Harvesting for Symphony. Virtual Server Harvesting for Symphony does not support overlapped resource groups.

About Virtual Server Harvesting

Virtual Server Harvesting uses configurable CPU and memory utilization thresholds to determine if VMs can be made available for Symphony workload. Once VMs become available, Virtual Server Harvesting can manage their personalities according to the application's requirements.

Functional flow

ISF Adaptive Cluster starts as an EGO service immediately after the Symphony EGO master is up and running. On startup, Virtual Server Harvesting connects to both the Symphony master and to each configured VMware vCenter or Citrix pool master. After the connections have been established, Virtual Server Harvesting identifies all the Symphony virtual machines in the virtual clusters/pools. These logical compute hosts are located through the EGO API in the Symphony cluster. Initially, these hosts are closed and therefore not available to Symphony.



Virtual Server Harvesting periodically monitors the VMware clusters and Citrix pools to gather cluster-level and physical host-level utilization metrics (CPU and memory) and compare them to preconfigured threshold values. If there is unsatisfied Symphony workload demand, three possible actions can be taken for each VMware cluster or Citrix pool during each scheduling cycle: (note that unless otherwise stated, the term "cluster" refers to both vCluster and/or Citrix pool.)

1. If both cluster metrics are between corresponding Low and High thresholds, no action is taken, i.e., no additional VMs are made available to Symphony and no VMs are removed.
2. If either cluster metric is above its High threshold value (either CPU or memory utilization), Virtual Server Harvesting goes through all the physical hosts in the vCluster or resource pool retrieving host-level values for the utilization metrics. If a value is above the High threshold for the specific host, one Symphony compute host residing in a VM at this physical host is removed from the Symphony cluster by closing it. This sequence is repeated, i.e., one VM is removed at each physical host where the utilization is above the High threshold, up to the preconfigured maximum number of VMs that can be removed during a scheduling cycle. As a result, EGO reclaims these hosts and the Symphony workload on these hosts is queued.
3. If both cluster metrics are below the corresponding Low threshold values, Virtual Server Harvesting retrieves the unsatisfied demand from the Symphony applications' consumers. Virtual Server Harvesting cycles through all the physical hosts in the vCluster or resource pool arranging the Symphony workload VMs in a host list in decreasing order of the physical host's utilization values. Virtual Server Harvesting then opens one VM, which resides on the least loaded physical host, to make it available to Symphony. This sequence continues, i.e., one VM is made available at each physical host where the CPU and memory utilization values are below the Low thresholds, up to the preconfigured maximum number of VM hosts, but not more than the initial unsatisfied demand requires.

Regardless of the comparison results, each time the Symphony application's demand for compute resources is satisfied, ISF Adaptive Cluster removes all VM hosts from Symphony that currently are not allocated to the applications' consumers. This cleanup operation prevents violation of utilization thresholds for non-Symphony virtual VMs as Symphony will not allocate and schedule any suddenly demanded workload to such hosts at any moment until the next scheduling cycle.

Personality management

Personality management involves maximizing the availability of VMs that match an application's requirements in an attempt to satisfy a consumer with the highest demand. For example, applications are often deployed in mixed clusters made up of resources running different OS platforms. When an

application has demand, its workload needs to be routed to resources with the appropriate OS. In this case, Virtual Server Harvesting will provision the VMs that meet the OS requirements of the application. This enables cluster resources to be more versatile and better equipped to handle diverse application requirements.

Scheduling policy

The Virtual Server Harvesting scheduling policy attempts to balance the unsatisfied demands of consumers. The objective of the scheduling policy is to make VMs available that satisfy the consumer with the most demand.

For example, assume there are two consumers, A and B, configured to use resource groups resGroupA and resGroupB, respectively. Consumer A has a demand for 20 slots and consumer B has a demand for 10 slots. The maximum number of VMs to make available or remove for each scheduling cycle is configured to be 4. If Virtual Server Harvesting decides it can make VMs available, it will open 4 VMs from resource group resGroupA because the demand for consumer A is more than the demand for consumer B. In each scheduling cycle, it will continue to make VMs available until either there are no VMs left to open or the demand for consumer A is lower than consumer B.

If Virtual Server Harvesting decides it will remove VMs, it will remove VMs that belong to the most highly-loaded hypervisors; during each scheduling cycle, it will continue to do so until there are no VMs left to remove.

Host-level policy

The scheduling policy can be enabled at the host level. This can be useful for cases where the VM software does not provide a load balancing mechanism such as Distributed Resource Scheduler (DRS). When the scheduling policy is enabled at the host level for a vCluster or pool, Virtual Server Harvesting monitors the loading of each individual hypervisor inside the vCluster or pool to determine which VM should be opened or closed.

Install Virtual Server Harvesting for Symphony on Windows

1. Plan and prepare for installing Virtual Server Harvesting for Symphony on Windows hosts

1. Requirements.
 - MSI version 2.0 or later is required.
 - Symphony cluster is already installed and working properly. Symphony master is a Windows host.
 - VMware Tools and/or Citrix tools packages have been installed on the VM hosts.
 - You must install Virtual Server Harvesting for Symphony in the same directory where the existing Symphony software is installed.
2. Obtain the Virtual Server Harvesting for Symphony distribution file
`SymVirtualServerHarvesting-1.2.1.msi`.

2. Install Virtual Server Harvesting for Symphony on all Windows management hosts

Use the same installation user account as Symphony to log onto all management hosts and run the installer.

Install parameters (also syntax for MSI command-line installation) Notes	
Installation Directory	Cluster installation directory.
command-line syntax:	You must input the Symphony installation directory.
INSTALLDIR= <i>path</i>	
e.g.	
<code>INSTALLDIR=C:\Symphony</code>	

3. Configure Virtual Server Harvesting for Symphony to use the cluster share directory

If the existing Symphony cluster uses a shared directory, Virtual Server Harvesting for Symphony needs to be configured to use that shared directory. To configure Virtual Server Harvesting, run "i sconfig mghost is" on the master host, for example:

EGO_TOP is `1.2.1\bin\isconfig mghost is`
where EGO_TOP represents the installation directory.
Exit the command console to reset your environment.

4. Update the cluster license

Virtual Server Harvesting for Symphony needs a license to work. To update the existing license for the Symphony cluster:

1. Acquire an "Virtual Server Harvesting for Symphony" license key from Platform.
2. Append the license key to %EGO_CONFIGDIR%\license.dat.

5. Continue the configuration using the cluster configuration wizard

The cluster configuration wizard automatically determines the correct configuration for your cluster. Log on to the Platform Management Console as cluster administrator (Admin). The wizard will start automatically (you must enable pop-up windows in your browser). Follow all the steps.

Install Virtual Server Harvesting for Symphony on Linux

1. Plan and prepare for installing Virtual Server Harvesting for Symphony on Linux hosts

1. Requirements.
 - Symphony cluster is already installed and working properly. Symphony master is a Linux host.
 - VMware Tools and/or Citrix tools packages have been installed on the VM hosts.
 - You must install Virtual Server Harvesting for Symphony in the same directory where the existing Symphony software is installed.
2. Obtain the "Virtual Server Harvesting for Symphony" Linux distribution file
`SymVirtualServerHarvesting-linux-1.2.1-buildnumber.rpm`.

2. Install Virtual Server Harvesting for Symphony on all Linux management hosts

Use the same installation user account as Symphony to log onto all management hosts.

Run the installer:

```
rpm -iv SymVirtualServerHarvesting-linux-1.2.1-buildnumber.rpm --prefix EGO_TOP
```

where EGO_TOP represents the Symphony installation directory.

3. Configure Virtual Server Harvesting for Symphony to use the cluster share directory

If the existing Symphony cluster uses a shared directory, Virtual Server Harvesting for Symphony needs to be configured to use that shared directory. To configure Virtual Server Harvesting, run "`isconfig mghost is`" on the master host, for example:

```
EGO_TOP/is/1.2.1/bin/isconfig mghost is
```

where EGO_TOP represents the installation directory.

Exit the command console to reset your environment.

4. Update the cluster license

Virtual Server Harvesting for Symphony needs a license to work. To update the existing license for the Symphony cluster:

1. Acquire an "Virtual Server Harvesting for Symphony" license key from Platform.
2. Append the license key to `%EGO_CONFDIR/license.dat`.

3. Restart EGO on the master host so that the updated license takes effect.

5. Continue the configuration using the cluster configuration wizard

The cluster configuration wizard automatically determines the correct configuration for your cluster. Log on to the Platform Management Console as cluster administrator (Admin). The wizard will start automatically (you must enable pop-up windows in your browser). Follow all the steps.

Verify and configure Virtual Server Harvesting for Symphony

Test the cluster, then configure and test Virtual Server Harvesting for Symphony.

Check the Virtual Server Harvesting installation

After installation, there will be one new EGO service "IS" registered in EGO and started. Log on to the Platform Management Console as cluster administrator (Admin) and check "System Services". The "IS" service should be listed and its state should be "STARTED". Also, one new quick link "Virtual Server Harvesting" will be listed in the dashboard and in the first tab of the PMC main console.

Configure Virtual Server Harvesting for Symphony

Add a new vCenter server

To share resources between Symphony and VMware vClusters, the IS service needs to get vCenter information and connect to it to get vCluster load information.

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab.
4. In the resource tree, select VMware Resources.
5. Click the vCenter Server tab.
6. On the Global Actions dropdown list, select Add vCenter Server.

The Add new vCenter Server page displays.

7. Input vCenter host name, user name, and password information.
8. Click Add to add the vCenter server.

The Add New vCenter page closes and the original vCenter page gets refreshed with the new vCenter server information.

9. Click the VMware vCluster tab and check the vCluster status. The vCluster information should display after the vCenter server is added.

Add a new pool master server

To share resources between Symphony and Citrix resource pools, the IS service needs to get pool master information and connect to it to get the pool load information.

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab.
4. In the resource tree, select Citrix XenServer Resources.

5. Click the Citrix Pool Master tab.
6. On the Global Actions dropdown list, select Add Citrix Pool Master.
The Add new Citrix Pool Master page displays.
7. Input host name, user name, and password information.
8. Click Add to add the pool master.
The Add New Citrix Pool Master page closes and the original pool master page gets refreshed with the new pool master information.
9. Click the Citrix Pool tab and check the status. The resource pool information should display after the pool master is added.

Configure Virtual Server Harvesting global parameters

Perform global configuration when you want the same Virtual Server Harvesting settings to apply to all vClusters and resource pools.

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the Configuration tab to configure global settings.

On the Configuration page, you can set which resource groups to monitor, configure the maximum number of VMs to open/close, and configure the scheduling interval. For thresholds, you should change the default to a proper value and, if necessary, add a new timeslot.

Configure Virtual Server Harvesting parameters for clusters or pools

Perform the following configuration when you want to customize Virtual Server Harvesting settings for individual clusters or resource pools.

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab.
4. Configure individual vClusters or resource pools:

- For vClusters, follow these steps:

1. In the resource tree, select the cluster name that you want to configure.
2. Click the Configuration tab.

On the vCluster configuration page, you can customize threshold settings for this cluster.

- For resource pools, follow these steps:

1. In the resource tree, select the pool name that you want to configure..
2. Click the Configuration tab.

On the Citrix pool configuration page, you can customize threshold settings for the resource pool.

Configure Virtual Server Harvesting parameters at host level

Perform the following configuration when you want to apply cluster-level Virtual Server Harvesting settings to physical hosts.

Note:

Setting the scheduling policy at the host level is not recommended for VMware clusters, which provide a load balancing feature. Applying a host-level scheduling policy to a cluster with integrated load balancing can cause race conditions.

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click Configuration. Under the Global Thresholds heading, click in the VMware and/or Citrix Xen checkboxes.

The CPU and memory utilization threshold settings will be applied at the host level in the VMware vClusters and/or Citrix resource pools.

Test resource sharing between Symphony and VMs

Submit Symphony workload to test sharing between Symphony and VMs in vClusters/resource pools.

1. Check VMs host status when there is no workload:
 - a) Log on to the Platform Management Console as cluster administrator (Admin).
 - b) Click on the Scavenging quick link on the dashboard.
 - c) Click the VM Resources tab.

- For vClusters, follow these steps:

1. In the resource tree, select VMware Resources.
2. Click the VMware vCluster tab.
3. Click on a cluster name to open the VMs page.

All VM hosts are "Closed" when no workload is running. Also, on the vCluster page, if no other application is running, the vCluster CPU ut and Mem ut are both below the configured thresholds.

- For resource pools, follow these steps:

1. In the resource tree, select Citrix XenServer Resources.
2. Click the Citrix Pool tab.
3. Click on a pool name to open the VMs page.

All VM hosts are "Closed" when no workload is running. Also, on the Citrix Pool page, if no other application is running, the pool's CPU ut and Mem ut are both below the configured thresholds.

2. Submit Symphony workload:

symping -u Admin -x Admin -r 10000 -m 100

3. Monitor the system to observe resource sharing:

- Monitor workload

On the Symphony Workload page, select Application Name > SessionID > Task page. Monitor the hosts that are running the tasks. Initially, only Symphony-dedicated hosts will start and run

Symphony workload. Subsequently, you can observe new VMs hosts becoming available and starting to run Symphony workload.

- Monitor resource allocation

To monitor vCluster resource allocation:

1. Select Scavenging > VM Resources.
2. In the resource tree, select VMware Resources.
3. Select the VMware vCluster tab and click on a cluster name.
4. Click the VMs tab. You can observe VMs, which are shared between Symphony and vClusters, are available for Symphony to run workload.

To monitor pool resource allocation:

1. Select Scavenging > VM Resources.
2. In the resource tree, select Citrix XenServer Resources.
3. Select the Citrix Pool tab and click on a pool name.
4. Click the VMs tab. You can observe VMs, which are shared between Symphony and the resource pool, are available for Symphony to run workload

Configuring IS_LICENSE_ACCT_PATH

The default location of the `is.<clustername>.license.acct` file, which is used for auditing purposes, is a local directory. You may want to change the file's default location to a shared location to support failover, for example. In this case, you need to define the `IS_LICENSE_ACCT_PATH` environment variable in the `IS.xml` service definition file. You can define the environment variable using the PMC; refer to the "Update a service" topic in the Symphony Cluster and Application Management Guide.

Monitoring performance metrics

The CPU and memory utilization metrics for each cluster or resource pool can be viewed via the Scavenging link in the PMC. The actual values represent the average utilization of all the physical hosts in the cluster. The preconfigured utilization thresholds are provided on the same page as the actual utilization values so that the load on the cluster can easily be observed.

View the CPU and memory utilization of a vCluster

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab. In the resource tree, select VMware Resources.
4. Click the VMware vCluster tab.

A list of VM clusters displays.

Observe that the vCluster load increases and may increase above the configured low threshold as Symphony workload runs on VMs in each cluster.

Note:

Even if all VMs are used exclusively by Symphony, there will still be a gap between total Symphony ut (CPU ut and Mem ut) and total cluster-wide ut due to additional ut by hypervisors themselves.

You can also try to run non-Symphony applications and observe the vCluster load increasing above the configured high threshold. When CPU or memory utilization is above the configured high threshold, click on the cluster name. Observe that VMs are being closed.

View the CPU and memory utilization of a Citrix pool

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab. In the resource tree, select Citrix XenServer Resources.
4. Click the Citrix Pool tab.

A list of resource pools displays.

Observe that the load in the resource pool increases and may increase above the configured low threshold as Symphony workload runs on VMs in each pool.

Note:

Even if all VMs are used exclusively by Symphony, there will still be a gap between total Symphony ut (CPU ut and Mem ut) and total pool-wide ut due to additional ut by hypervisors themselves.

You can also try to run non-Symphony applications and observe the pool load increasing above the configured high threshold. When CPU or memory utilization is above the configured high threshold, click on the cluster name. Observe that VMs are being closed.

View the workload demand of a vCluster

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab. In the resource tree, select VMware Resources.
4. Click the VMware vCluster tab.

A list of VM clusters displays.

5. Click a cluster name and then click the Workload Demand tab.

The workload demand page displays, which gives you a snapshot of the current outstanding demand, allocations, and VM status for each resource group in the cluster.

Note:

Outstanding demand values for each resource group are global in scope so the same value applies to all vClusters.

View the workload demand of a Citrix pool

1. Log on to the Platform Management Console as cluster administrator (Admin).
2. Click on the Scavenging quick link on the dashboard.
3. Click the VM Resources tab. In the resource tree, select Citrix XenServer Resources.
4. Click the Citrix Pool tab.

A list of resource pools displays.

5. Click a pool name and then click the Workload Demand tab.

The workload demand page displays, which gives you a snapshot of the current outstanding demand, allocations, and VM status for each resource group in the pool.

Upgrade to Virtual Server Harvesting for Symphony

Before upgrading to Virtual Server Harvesting for Symphony, ensure that the cluster has been upgraded to Symphony 5.1 and activated.

1. Back up the configuration files from ISF Adaptive Cluster for Symphony.
2. Uninstall ISF Adaptive Cluster for Symphony. Refer to [Uninstall Virtual Server Harvesting on Windows](#) on page 19 or [Uninstall Virtual Server Harvesting on Linux](#) on page 20.
3. Install Virtual Server Harvesting for Symphony. Refer to [Install Virtual Server Harvesting for Symphony on Windows](#) on page 8 or [Install Virtual Server Harvesting for Symphony on Linux](#) on page 10.
4. Restore the backed up configuration files.

Uninstall Virtual Server Harvesting on Windows

1. Stop the Virtual Server Harvesting service:

egosh service stop IS

2. On Windows, there is a separate msi entry point for "Virtual Server Harvesting for Symphony" in Add/Remove programs. You can click Remove or double click the original msi package to uninstall the product.

The uninstaller will remove installed binaries and local conf files. The shared location is not affected. Also, if you already ran the post-install wizard, the new EGO IS service will not be removed. You must do a manual cleanup.

3. Manually remove these files under shared conf:

- share_top\is
- eservice\esc\conf\services\IS.xml
- gui\conf\Catalina\localhost\isgui.xml
- gui\conf\pmcconf\pmc_conf_is.xml
- gui\conf\useracl\users_is.acl
- gui\conf\userconf\userconf.is.*.xml

Uninstall Virtual Server Harvesting on Linux

1. Stop the Virtual Server Harvesting service:

```
egosh service stop IS
```

2. Remove installed binaries and local files:

```
rpm -e SymVirtualServerHarvesting-linux-1.2.1_xxxxx
```

The shared location is not affected. Also, if you already ran the post-install wizard, the new EGO IS service will not be removed. You must do a manual cleanup

3. Manually remove these files under shared conf:

- share_top/is
- eservice/esc/conf/services/IS.xml
- gui/conf/Catalina/localhost/isgui.xml
- gui/conf/pmcconf/pmc_conf_is.xml
- gui/conf/useracl/users_is.acl
- gui/conf/userconf/userconf.is.*.xml

Troubleshooting

Log file location

Log files are an essential troubleshooting tool for production and test environments. By default, the IS Orchestrator log is located in EGO_TOP/iss/logs.

Component	Log file name	What it contains
IS Orchestrator	orch.log.hostname	Logs IS Orchestrator configuration. Logs retrieved results for vCenter and Symphony. Logs evaluation results for each monitoring cycle.
EGO IS service	run.log	Logs service startup messages.
PTM (PTM is the built-in framework of IS)	ptm.log	Logs PTM ERROR messages.

Log entry format

The standard format for log file entries is: "date [process id] log_level class - description" where the date is expressed in YYYY-MM-DD hh:mm:ss,sss. For example:

```
2009-11-19 13:47:32,779 INFO PTM: Timers. 1
com.platform.is.orchestrator.Adapters.PTMAdapter - Evaluation result: open
host num=0, close host num=0
```

Known issues

Workload is not dispatched to VMs

The Symphony workload VM is opened by IS Orchestrator, but Symphony application workload is not distributed to this VM by the Symphony scheduler. During the next scheduling cycle, the IS Orchestrator will close this VM because it is not allocated. Then the Symphony workload VM is opened and closed alternately, but workload is never dispatched to any VM by the Symphony scheduler. This problem is probably caused by the opened VM, which cannot satisfy the allocation request, for example:

- The resource allocation quota of a consumer is reached. Try "egosh rg -l" to check the quota of the consumer.
- The client that submits the request is disconnected. Try "egosh client view" to check the client status.

FAQ

Why are no VMs open even though there is demand and the cluster utilization is below the thresholds?

It is possible that the resource groups being monitored contain overlapping resources. Check the log file `orch.log.<hostname>` to see if VMs are in their expected resource groups; if not, a misconfiguration probably caused resources to overlap between resource groups.

Why can't I add a new vCenter or pool master server to the cluster?

Adding a vCenter or pool master server in the PMC can fail when the DNS is unable to resolve the IP address or hostname of the server. To solve this problem, add the IP address and hostname for the vCenter or pool master server to the system `hosts` file in the `/etc` directory (Unix) or `C:\WINDOWS\system32\drivers\etc` directory (Windows).

What should I do if the IS service is still running on the original master host after failover?

When the original master host fails over, a new IS service is started on the master candidate host. The original IS service continues to run on the original master host. This IS service has no impact other than it continues to write to the license audit log at each scheduling interval. It is suggested to terminate the service manually.

Why isn't the PMC displaying VMs?

Check that the VMware Tools and/or Citrix tools packages have been installed on the VM hosts. VMs will not be displayed if the applicable package is not installed.

Also, if Citrix VM hosts have OK status in the EGO host list but are not displaying in the Virtual Server Harvesting GUI, it may be a DNS-related problem. In this case, you should add the VM host names and IP addresses to the EGO master and master candidate hosts file to provide IP address-to-host name translation.

Why does my Citrix Pool Master CPU ut always show "0" or "-" on the PMC?

Prior to XenServer version 5.0, instantaneous performance metrics could be obtained using the API method `query_data_source()`. This method has been deprecated in favor of an http handler to download the statistics from the round-robin databases on the VMs and servers. Note that, by default, the legacy metrics returned by the API are zeros.

Reconfigure the XenServer host:

1. Enter the `xe host-list` command to find the UUID of the XenServer host:

```
xe host-list
```

2. Enter the command that changes the round-robin database collection interval.

```
xe host-param-set uuid=(the UUID you obtained from the xe host-list command) other-config:rrd_update_interval=1
```

3. Restart the Citrix pool master.

Why does it take a long time to see the resource pool details after adding a Citrix pool master?

This may be caused by the EGO master taking a long time to resolve the DNS names of the VMs in the pool. In this case, it is recommended to add the IP address and hostname for the VMs to the system `hosts` file in the `/etc` directory (Unix) or `C:\WINDOWS\system32\drivers\etc` directory (Windows).

Why can't I install Virtual Server Harvesting 1.2.1 packages on Windows Server 2008?

To install the Virtual Server Harvesting package on Windows Server 2008, you must open a command line window as administrator, e.g: right-click "Command Prompt" and select "Run as administrator". Execute the installer in the current window.

Why can't I execute "isconfig.exe" on Windows Server 2008?

To run `isconfig.exe` on Windows Server 2008, you must open a command line window as administrator, e.g: right-click "Command Prompt" and select "Run as administrator". Execute `isconfig.exe` in the current window.