Managing vSync

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To take full advantage of integrated virtual and physical monitoring, it is important to understand how to manage VMware vSphere inventories in up.time, and how vSync keeps up.time abreast of them.

When a VMware vCenter server is added as an Element to up.time, its component ESX servers and (by default) VMs are also added as Elements. It is at the vCenter-Element level that you can tweak what is monitored. Additionally, you can “promote” VM Elements to be monitored with greater depth using the up.time agent or WMI.

The dynamic nature of a VMware vCenter server’s configuration is easily managed by up.time through automated profile monitoring; whatever you have included in your inventory as parent-level items, up.time vSync will maintain an accurate mirror. See vCenter Configuration Mirrorring for more information.

Managing vCenter Inventories in up.time

After a VMware vCenter server has been added as an Element to up.time, you can manually manage all of its inventory. By default, all of a VMware vCenter’s components—ESX hosts and clusters, and their child VMs—are monitored by up.time. As a central monitoring configuration point, the VMware vCenter Element gives you the ability to determine which VMs are monitored in up.time and as a consequence, which VMware vSphere metrics are kept in the DataStore.

You can select VMs or an ESX host to be "ignored" by up.time. When VMs are ignored, their topological relationship to other VMware vCenter components is retained, but their metrics are no longer recorded to the DataStore, and they no longer count toward your license.

As the topology of your virtual infrastructure changes, you can change the contents of the ignore list. Historical data for VM Elements are retained in the DataStore, regardless if they are currently being monitored or ignored, allowing administrators to continue to perform diagnosis on a continuously changing virtual environment.

> If graphs or reports are generated that include time or date ranges where no data were collected for a VM Element, those ranges in the charts will show no data.

Although there are no resource-related reasons why you would not want up.time to monitor all ESX servers in your virtual infrastructure, other factors may dictate your monitoring policies:

- since the VMs on your ESX servers count toward your up.time license, you may have resource monitoring restrictions that require prioritization
- you are not interested in keeping performance metrics for some parts of your virtual infrastructure (e.g., some VMs are being used for testing, and are not considered mission-critical)
- similarly, as ignored VMs do not appear in live monitoring pages in up.time such as **Global Scan** or the **Resource Scan** dashboards, you may want to exclude non-essential VMs to avoid cluttering the views

On the VMware vCenter Element’s **Info** page, you can view its complete inventory, broken down by logical groupings created in the vSphere Client (e.g., by datacenter). It is here you can add or remove ESX hosts or VMs (as individual machines, or in groups at the datacenter or cluster level) from the ignore list.

For license management, ignoring or monitoring a parent object will correspondingly free up or use license spots for all of its child objects, provided there is space. For example, if the VMware vCenter Element has been configured to **Collect Virtual Machine data**, adding an ESX host will automatically include its VMs, each of which will count toward your license. Consider the following outcomes:

- if there is enough license space for the ESX host and all of its VMs, they will be monitored
- if there is no more license space, the ESX host and all of its VMs will be added (with its hierarchy intact) to the list of ignored Elements
- if there is license space for some of the Elements, the ESX host will be added and monitored, and each child VM will be added to the monitored list until license space has run out; the remaining VMs are added to the list of ignored Elements

Once VMware vCenter objects have been added, you can manage license usage by moving Elements from monitored inventories to lists of ignored Elements, or vice versa.

> If you configured the VMware vCenter server to not collect and report on VM data, and only work with ESX hosts and clusters, inventory management will obviously only be done at that inventory level.

Viewing vCenter Inventory Summaries

To see an overview of your VMware vCenter Element’s inventory, do the following:

1. In the **My Infrastructure** panel, click the gear icon beside the VMware vCenter server, then in the pop-menu, select **View**.
2. On the VMware vCenter Element profile page, ensure the **Info** tab is selected.
3. Click **Inventory Summary**.

On this page, you will see your VMware vCenter server’s total available resource counts, further broken down by datacenter.

Removing Elements from Monitored Inventories

To stop VMware vCenter server Elements from being monitored by up.time, do the following:

1. In the **My Infrastructure** panel, click the gear icon beside the VMware vCenter server, then in the pop-menu, select **View**.

2. On the VMware vCenter Element profile page, ensure the **Info** tab is selected.
3. Click **Inventory Detail**.
4. In the **vCenter Inventory Detail** page, select the checkboxes that correspond to the ESX hosts or clusters, or (if applicable) individual VMs that you want to stop monitoring.
5. Click **Add Selected Elements to Ignore**.

The inventory page will refresh, with your selections appearing in the **Ignored Elements** section.

Re-adding Ignored Elements to Monitored Inventories

To resume monitoring VMware vCenter server Elements in up.time, do the following:

1. In the **My Infrastructure** panel, click the gear icon beside the VMware vCenter server, then in the pop-menu, select **View**.
2. On the VMware vCenter Element profile page, ensure the **Info** tab is selected.
3. Click **Inventory Detail**.
4. On the **vCenter Inventory Detail** page, from the **Ignored Elements** list, select the checkboxes that correspond to the ESX hosts or clusters, or (if applicable) individual VMs that you want to start monitoring.

> To streamline the process, you can only select or remove VMs or datacenters as they were added. For example, if you added an entire datacenter to the ignore list, you cannot select individual VMs.

5. Click **Remove Selected Elements from Ignore List**.

The inventory page will refresh, with your selections appearing in the active monitoring section.

vCenter vSync Settings

From the VMware vCenter server Element's **Info** page, you can configure how up.time polls the server's topology for changes, and what up.time does when changes are encountered.

Using alert and action profiles, you can configure an extensive set of behaviors depending on what changes occur with the VMware vCenter topology. This means you can bundle VMware vSphere events with the those you normally track in your physical infrastructure.

For example, if your VMware vSphere environment is configured to dynamically allocate more compute resources to a specific department at a specific time of year (e.g., the end of the fiscal year for the accounting department), you can use up.time to detect CPU changes to the appropriate resource pool, and confirm this action in a log.

See vCenter Configuration Mirrorring for more information on the types of VMware vSphere events that up.time will watch for.

vSync Configuration Settings

The following settings are used to configure a VMware vCenter server's vSync behavior:

Alert Profiles	A list of alert profiles (listed in alphabetical order) that are triggered when new VMs or ESX hosts belonging to the VMware vCenter server are discovered when vSync scans the VMware topology.
Action Profiles	A list of action profiles (listed in alphabetical order) that are triggered when new VMs or ESX hosts belonging to the VMware vCenter server are discovered when vSync scans the VMware topology.
Default Basic Performance Data Polling Interval	The amount of time, in minutes, that up.time waits between metric data retrieval operations for newly discovered ESX servers. Select the **Apply to Existing ESX Servers** check box to have this modified polling interval applied to all ESX servers that are part of the VMware vCenter server's topology, and the up.time inventory. Any ESX server whose polling rates have been individually changed will conform to this new global setting.
Default Advanced Performance Data Polling Interval	The advanced data settings perform the same functions as those above, but are for advanced VMware vSphere metrics.

Changing vSync Settings

To modify how vSync mirrors a VMware vCenter server Element's configuration in up.time, do the following:

1. In the **My Infrastructure** panel, click the gear icon beside the VMware vCenter server, then in the pop-menu, select **View**.
2. On the VMware vCenter Element profile page, ensure the **Info** tab is selected.
3. In the **vSync** section, click **Edit Settings**.
4. Make changes to vSync settings as needed:
    - modify the alert profile or action profile lists for newly discovered VMs in the specified My Infrastructure group
    - modify the alert profile or action profile lists for newly discovered ESX servers in the specified My Infrastructure group
    - modify the ESX server polling intervals, and indicate whether this change is to be retroactively applied to all known ESX servers

> The polling intervals modified here will apply only to newly discovered ESX servers via vSync. Whether individually configured, or from a previous global setting, existing ESX server Elements in up.time will use older intervals, unless you use the Apply to Existing ESX Servers option.

5. Click **Save**.

Manually Resyncing up.time with a vCenter Topology

To force up.time to resync with a VMware vCenter server (i.e., search for new VMs and ESX servers, metric data for monitored Elements, and changes to the topology), do the following:

1. In the **My Infrastructure** panel, click the gear icon beside the VMware vCenter server, then in the pop-menu, select **View**.
2. On the VMware vCenter Element profile page, ensure the **Info** tab is selected.
3. In the **vSync** section, click **Resync Now**.

A **Resyncing** status update will persist until up.time has completed the vSync process. Once the sync operation has been completed, the polling intervals configured for this VMware vCenter server will be reset.