

Turbonomic Release Notes

Release: 5.8

March 10, 2017

This document describes issues that are addressed in Turbonomic 5.8 – Release Date: March 10, 2017. All builds are cumulative. Applying 5.8 onto any release of Turbonomic v5.0 or later will include all previous fixes. Please see the Turbonomic documentation for earlier versions of the Release Notes:

<https://greencircle.vmturbo.com/community/products/pages/documentation>

For any questions, please contact Turbonomic Technical Support at support@turbonomic.com, or open a ticket at:

<https://greencircle.vmturbo.com/support>

End of openSUSE Support

Turbonomic ships as a pre-configured virtual machine image. For the last several years, that VM ran the openSUSE distribution of Linux. Starting with release 5.7, Turbonomic has begun a process to migrate away from openSUSE 13.2 and to base further releases on CentOS. You should prepare to migrate from openSUSE to CentOS at the nearest time that is reasonable for you.

For more information, and for a roadmap that describes how we will make this transition, see the Green Circle article, [Retirement of openSUSE Support](#).

Migration Requirements

Turbonomic supports two ways to upgrade to a new version:

- Update – Use an online or offline update to upgrade the software running on the Turbonomic server
- Migrate – Install a new Turbonomic VM that includes updated software, and also includes updates to the openSUSE OS or other components of the VM

NOTE: openSUSE ENDED ITS SPONSORED MAINTENANCE OF openSUSE 12.3 AS OF JANUARY 29, 2015, AND ENDED OFFICIAL SUPPORT ON JANUARY 17, 2016. TO ADDRESS THE END OF SUPPORT FOR openSUSE 13.2, TURBONOMIC IS BEGINNING AN OVERALL MIGRATION TO CentOS.

Turbonomic began delivering the platform on openSUSE version 13.2, starting with Turbonomic version 5.0. However, you could have updated to 5.0, 5.1, 5.2, or 5.3 without performing a migration. If that is the case, then

you must perform a migration to 5.4 before you can update to version 5.5. After that, you can then update to version 5.8.

To see the version of openSUSE that your Turbonomic platform is currently running on:

- Open a secure shell session to your Turbonomic VM, logged in as `root`
- In the shell, enter `cat /etc/os-release`

The results will show the OS version for that machine. If the OS is earlier than 13.2, then *you must perform a migration* to Turbonomic version 5.4 running on openSUSE 13.2, *and only after you have migrated to version 5.4* you can perform an update to a later version.

For information about migrating to a new version, please see the Turbonomic Installation Guide at the following location:

<https://greencircle.vmturbo.com/community/products/pages/documentation>

Configuration Requirements

For the 5.8 release of Turbonomic, you should satisfy the following configuration requirements.

Security Requirements for Apache Configurations

Turbonomic versions 5.5.2 and earlier shipped with the default Apache configuration – this configuration is no longer considered secure. Versions 5.5.3 - 5.7 ship with an Apache configuration that is considered secure in most environments. Updating to these versions updates the Apache configuration as well. If you do not want to update, contact Turbonomic Technical Support for the correct Apache configuration.

Note that after updating the Apache configuration (either by updating Turbonomic, or by editing the Apache configuration), you must restart Apache. We suggest that you reboot the Turbonomic VM.

In addition, you should be sure to maintain a secure OS platform. Starting with Turbonomic version 5.5 on openSUSE, you must run openSUSE 13.2 or later. If you are running an earlier version of openSUSE, please contact Turbonomic Technical Support.

If you are updating Turbonomic on an existing openSUSE platform, you should be sure to update your OS components. Systems with internet connections can use the `zypper update` command. If you are migrating to a new Turbonomic OVA, that OVA includes updated OS components.

For web browsers to communicate with Apache, this configuration requires TLS versions 1.1 or later. To use versions of Microsoft Internet Explorer 9 and 10, you must enable TLS 1.1 or later (in **Internet Options > Advanced**). For more information, see the following Green Circle article:

[The DROWN Attack: Configuring Your Operations Manager's Web Security.](#)

Storage Requirements for the Turbonomic Server

Turbonomic now states 150GB or greater as a requirement for disk storage. For Turbonomic servers hosted on VMware hypervisors, you should provide 150GB *plus* swap space to match the RAM allocation.

Transport Layer Security Requirements

Starting with version 5.4, by default Turbonomic requires Transport Layer Security (TLS) version 1.2 to establish secure communications with targets. Most targets should have TLSv1.2 enabled. However, some targets might not have TLS enabled, or they might have enabled an earlier version. In that case, you will see handshake errors when Turbonomic tries to connect with the target service. When you go to the Target Configuration view, you will see a Validation Failed status for such targets.

In particular, we have found that NetApp filers often have TLS disabled by default, and that the latest version they support is TLSv1. If your NetApp target suddenly fails to validate after installing Turbonomic 5.4 or later, this is probably the cause.

If target validation fails because of TLS support, you might see validation errors with the following strings:

- `No appropriate protocol`
To correct this error, ensure that you have enabled the latest version of TLS that your target technology supports. If this does not resolve the issue, please contact Technical Support.
- `Certificates does not conform to algorithm constraints`
To correct this error, refer to the documentation for your target technology (for example, refer to NetApp documentation) for instructions to generate a certification key with a length of 1024 or greater on your target server. If this does not resolve the issue, please contact Turbonomic Technical Support.

SMI-S Provider Versions for EMC VNX and EMC VMAX Storage Solutions

To connect to EMC VNX and VMAX disk arrays, Turbonomic uses EMC SMI-S providers that have the given disk arrays added to them. You should know that VNX and VMAX support different versions of SMI-S Providers:

- **VNX**
For VNX and VNX2 arrays, use SMI-S version 4.6.2, based on Solutions Enabler 7.6.2. We have verified Turbonomic control of VNX block storage using SMI-S version 4.6.2 as a target.
- **VMAX**
For VMAX arrays, use SMI-S version 8.1, which is included in Solutions Enabler 8.1 – We have verified Turbonomic control of VMAX storage arrays using SMI-S version 8.1 as a target.

Update Recommendations

You can apply this update to any GA version of Turbonomic from version 5.0 or later, if it is running on openSUSE 13.2 – Otherwise you should perform a migration. To upgrade older versions of Turbonomic, contact Turbonomic Technical Support to confirm the update path.

Update Links

If your server is able to connect to the Internet, you can apply the update through the online process by going to Admin > Maintenance > Software updates > Update. If you require an offline update, please see the Green Circle article:

[How To Perform an Operations Manager "Offline Update" - Latest Links Included](#)

Related Green Circle Articles

- Offline and Online Update Instructions:
<https://greencircle.vmturbo.com/docs/DOC-1649>
- Release Notes and Product Documentation:
<https://greencircle.vmturbo.com/community/products/pages/documentation>

Known Issues

- Customers who use HPE OneView targets must manually reconfigure their OneView targets after upgrading to Turbonomic 5.8. Also, these users should upgrade to 5.8, and then migrate to the 5.8 version of the CentOS deliverable. For information about migrating to a new VM, see the Turbonomic Installation Guide. For information about the CentOS deliverable for Turbonomic, see <https://greencircle.vmturbo.com/docs/DOC-4276-retirement-of-opensuse-support>

To keep your HPE OneView targets after upgrading, you should follow these steps:

- Before upgrading to 5.8, be sure to record the address and credentials for each OneView target
- Update your Turbonomic instance to version 5.8
- Reconfigure your OneView targets, and run discovery
- If your Turbonomic is running on an openSUSE VM, migrate to a CentOS VM

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- In OpenStack environments, it's possible to place a VM belonging to a specific cluster (a VM flavor that is set via extra specifications) onto a host that is not a member of that cluster. Turbonomic cannot identify this configuration error, and will not recommend a move to place the VM onto an appropriate host.

You can implement placement policies to ensure that VMs always get placed on the correct hosts. This can work even if there is no host cluster to match the VM flavor. However, in that case the user interface will not show these VMs as members of a PM cluster.

- For Hyper-V and VMM targets, secure connections use port 5986 and unsecure connections use 5985. As you enable or disable a secure connection, the user interface does not automatically set the correct port number. You must be sure to specify the correct port for the type of connection you want.
- **Customer Issue: 25858**
Turbonomic experiences an error when discovering Dell Compellent targets. As a result, Hyper-V VMs that use Compellent storage disappear from the Turbonomic topology. To rediscover the Hyper-V VMs, remove the Dell Compellent Enterprise Manager from the Turbonomic list of targets, add it again, and then rediscover your environment.
- For VMs running on Hyper-V, if you set a VCPU limit (limit VCPU to less than 100%), then the VCPU utilization data that VM returns to Turbonomic is not correct. As a result, Turbonomic will not recommend that you increase the VCPU limit.
- When you reserve resources for VMs that you will deploy in the future, Turbonomic initially calculates these reserved resources as CPU Provisioned, Memory Provisioned, and Storage Provisioned. However, these resources ultimately revert back to values that do not include the reserved VMs.
- For IBM PowerVM targets, Turbonomic creates a group named AIX-vioses-auto to contain discovered VMs. Under some circumstances, the PowerVM configuration does not result in the information Turbonomic needs to create this group. To fix this issue, see the following IBM workaround: <http://www-01.ibm.com/support/docview.wss?uid=isg3T1024482>.
- The Turbonomic Notifications (at the bottom-right of the application window) can incorrectly show a Health Check status with the following message:
<Turbonomic_Database_Table> has not been updated in the last latest
This does not indicate any problem with Turbonomic health, and you can ignore this message.
- For vCenter 6.5 targets, Turbonomic does not discover groups of VMs by their tag name/value pairs.

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- There is a rare case where Turbonomic can lose the cluster relationship for VMs running on a host. Assume you move a host out of a cluster, and directly into the datacenter (not into a cluster). Next you create a new cluster and then move the host into that cluster. In this case, the VMs on that host will not belong to any PM cluster. This can also affect Provider Virtual Datacenters that belong to the new cluster. To avoid this problem, create the cluster first, and move the directly into it.

If this problem occurs, rediscover your environment to establish the correct cluster relationships.

- In VMware environments, Turbonomic discovers Docker containers, but it does not show the "Consumes" relationship for the container consuming from the hosting VM, and it does not show the containers in the "Hosts" relationship for the hosting VM.

- **Customer Issue: 94559**

If you ignore hyperthreading for a scope that is less than a datacenter and then restart tomcat for the Turbonomic application, then Turbonomic does not calculate the CPU capacity correctly for the affected scope of hosts.

If this problem occurs, execute a full rediscovery to show correct CPU capacity.

- After you update the Turbonomic product, existing Merge Placement Policies can fail to take effect. If this occurs, select the Merge Placement Policy in the user interface, disable the policy and click **Apply**, then enable the policy and click **Apply**.
- Under some circumstances when using the Deploy View, the user interface can fail to respond. After you request a placement, if the placement recommendation does not appear within one to two minutes, reload the Turbonomic web page to reset the user interface.
- For very large Hyper-V environments, it's possible that discovery seems sluggish. The Hyper-V probe includes settings that you can make to adjust settings such as the size of the thread pool, the timeout interval, etc. If you experience problems related to discovery performance, contact Technical Support for help with making these adjustments.
- Turbonomic 5.8 introduces a new target to discover applications by process signature over WMI or SNMP. For WMI applications, it's common that the credentials must include a domain in the username. However, the user interface does not include a separate field for Domain. To specify such credentials, give <domain>\<username> as the target's username.

- Turbonomic 5.8 introduces a new target to discover applications by process signature over WMI or SNMP. This duplicates the capabilities of the **Policy > Application Discovery** settings that you can make in previous versions. Note that we are deprecating **Policy > Application Discovery**, but you can still use those settings in version 5.8, with the following caveats.
 - For Hyper-V targets, you must use the new target configuration to discover applications. Turbonomic no longer discovers application signatures in Hyper-V by using the settings in Policy > Application Discovery.
 - For vCenter Server targets, you should use the settings in **Policy > Application Discovery**.
 - You must not specify both types of application discovery for the same scope. For example, if your environment includes both vCenter and Hyper-V targets, then you must scope the target configuration to your Hyper-V clusters, and scope the **Policy > Application Discovery** configuration to your vCenter clusters.
- When using the Turbonomic REST API, be aware that requests include the password for your Turbonomic user account. You should always use the secure HTTPS protocol to ensure these requests do not include the password in clear text.

Resolved Issues

This release includes resolutions for the following issues:

Action Issues

- **Customer Issue: 22777**

After reconfiguring datastores through your hypervisor management service, under some circumstances Turbonomic can recommend VM moves to incorrect datastores.

- **Customer Issue: 25669**

In environments where PMs host VMs of very different sizes, Turbonomic can recommend moves that are not the most efficient to take. For example, assume a host with one VM that consumes 40% of host resources, and a number of VMs that consume less than 10% of resources. Under resource contention, moving the large VM might be the quickest way to resolve the issue, but Turbonomic recommends moving the smaller VMs.

REST API Issues

- The REST API2 can calculate placement for new VMs. However, if you specify placement constraints via API2 (for example, if you specify a specific datacenter or cluster), the placement calculations ignore these constraints.
- When using the Rest API2 to place workload, if the placement fails then Turbonomic continues to attempt the placement after the API call returns an ERROR value. As a result, the user interface and API2 can appear to be out of sync.

User Interface Issues

- **Customer Issue: 25877**
For scoped users, the Supply Chain view shows inventory that is outside of the user's scope.
- **Customer Issue: 26120**
Charts in custom dashboards do not match the presentation of the same data when generating a report from the given dashboard.
- **Customer Issue: 94650**
When you create a Workload Placement Policy for a group, if you change the name of the affected group then Turbonomic removes the placement policy.
- In version 5.7, License Placement Policies were not available. This release makes them available for use.
- In aggregated deployments of Turbonomic, when you go to the Policy view in the aggregating instance of Turbonomic it displays links to the underlying control instances so you can edit their policies. The links to underlying Policy Views do not execute correctly.

License and Login Issues

- **Customer Issue: 94576, 94626**
For license verification, Turbonomic calculates an incorrect number of sockets.
- The login workflow must be more secure.

Plan Issues

- **Customer Issue: 26126**

For Projection plans, when the plan recommends provisioning a copy of an existing storage controller, it shows an increase of storage capacity equal to the capacity of storage that was managed by the copied storage controller.
- **Customer Issue: 94440**

When running a plan, you can enable a placement policy that has been created but disabled for real-time analysis. However, plans ignore such a policy and treat it as disabled.
- When editing a plan, the user interface does not immediately load large groups of VMs (1000+). Instead, the user interface displays a message that states how many items are in the group, and you can click that message to fully display the group. Under some circumstances, the user interface does not display this message, and you cannot click to display the members of the given group.
- The plans to calculate headroom for the Cluster Capacity dashboard execute resize down actions in the course of the plan. The result is headroom that is only valid if you execute resize actions in your environment to match the actions that were executed in the plan. To show headroom that you have without needing to resize entities in your environment, the Cluster Capacity plans should not execute resize down actions.

Processing Issues

- **Customer Issue: 18710**

Need to improve performance when calculating VM moves and resizes in hybrid cloud environments.
- **Customer Issue: 25950**

For environments that discover Network DPods, Turbonomic unnecessarily floods the log with messages.
- **Customer Issue: 94425**

Under certain circumstances, calculations of average disk array statistics can result in errors when adding the values to the database.
- **Customer Issue: 94614**

System notifications for the Health Monitor are incomplete.
- **Customer Issue: 94646**

For some environments, the Turbonomic process uses excess memory.
- **Customer Issue: 94672**

Under unusual circumstances, polling for changes in vCenter environments can stop.

- When you use multiple instances of Turbonomic to manage a single CloudStack environment, the log can flood with the message, Cannot find PhysicalMachine for Host. This is not an error state, and the message is unnecessary.
- In VMM environments you can set up `MustNotMatch` policies to determine affinity or anti-affinity between workloads and hosts. When Turbonomic discovers these policies, it interprets them as `MustMatch` policies. The result is incorrect placement recommendations.
- For VMM targets, if you change the setting for Ignore High Availability, then you must wait for the next discovery to see the change in resource availability.

Target Issues

- **Customer Issue: 14952**
When you attach to multiple vCenter Server targets that share the same datastore, it's possible that Turbonomic can identify live `.vmdk` files on that datastore as wasted storage.
- **Customer Issue: 20409**
Under some circumstances for Azure cloud environments, Turbonomic discovers Azure hosts but fails to discover Azure VMs.
- **Customer Issue: 22479**
For environments with a large number of targets, there are circumstances where discovery performance is poor, and can require that you restart the Turbonomic server.
- **Customer Issue: 25646**
For Microsoft Exchange Server targets, when you use Scope to specify a cluster or group of VMs that host these targets, Turbonomic fails to discover target information.
- **Customer Issue: 25687**
In Hyper-V environments, deploying a VM copy to another host through the Hyper-V management software can result in discovery error messages that overrun the log files.
- **Customer Issue: 25920**
For VNX targets, there are circumstances where Turbonomic incorrectly shows near-zero values for IOPS and latency on the disk array.
- **Customer Issue: 26042**
Under some circumstances, Turbonomic fails to get network utilization statistics for Nutanix targets.

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- **Customer Issue: 26182**

For Hyper-V environments, if a VM has two IP addresses Turbonomic can fail to discover an application target that is hosted on that VM.

- For XTremIO targets, Turbonomic assumes a default IOPS capacity of 15,000,000. The capacity should be 150,000.
- Under certain conditions for environments with multiple AWS targets, discovery can fail when Turbonomic discovers the same AWS entity through different AWS targets.
- For Hyper-V targets there are circumstances where Turbonomic can show negative values for host Memory Utilization.