Turbonomic 5.8.4 Release Notes

June 12, 2017

This document describes issues that are addressed in Turbonomic 5.8.4 – Release Date: June 12, 2017. All builds are cumulative. Applying 5.8.4 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 platform 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 per-form a migration to 5.4 before you can update to version 5.5. After that, you can then update to version 5.8.4.

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* can you perform an update to a later version.

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

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

Configuration Requirements

For this 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 - 5.8.4 ship with an Apache configuration that is considered secure in most environ-ments. Updating to these versions updates the Apache configuration as well. If you do not want to update your Turbo-nomic installation, 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 configu-ration), 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. Note that you should also consider migrating to the CentOS delivery of Turbonomic as soon as possible. Turbonomic is one a roadmap to retire support of openSUSE as its platform OS. For more information, see the Green Circle article, Retirement of openSUSE Support.

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 Turbonomic Web Security

Updating the Tomcat Server

There are circumstances when you might choose to upgrade the Tomcat server on Turbonomic to a later version. In this case you must copy a local configuration file to the tomcat installation.

After you update the Tomcat server:

- Copy the file `/usr/libexec/tomcat/server.local` to `/usr/libexec/tomcat/server`
- To ensure that this server configuration file is executable, perform the command: `chmod 755 /usr/libexec/tomcat/server`

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.

Enabling Reports on Custom SELinux Platforms

When you install the provided Turbonomic OVA, the SELinu platform is configured to enable the generation and delivery of Turbonomic reports. However, if you install the Turbonomic software on a custom SELinux platform, you must perform configuration changes to enable reports.

To configure reporting, execute the following command with root privileges:

```
setsebool -P httpd_can_network_connect on
```

If you need additional assistance, contact Turbonomic Technical Support.

Enabling IOPS and Network Monitoring for OpenStack Mitaka

The Target Configuration Guide gives instructions to connect to OpenStack targets. However, if you are running Open-Stack Mitaka, you must perform additional configuration on the Mitaka platform to enable IOPS and Network data collection from Physical Machines. For those instructions, please see the Green Circle article, https://greencir-cle.vmturbo.com/docs/DOC-4685.

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.

Note that if your Turbonomic is running on openSUSE 13.2, you should consider migrating to the CentOS delivery of Turbonomic as soon as possible. Turbonomic is one a roadmap to retire support of openSUSE as its platform OS. For more information, see the Green Circle article, Retirement of openSUSE Support.

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

Improvements and Enhancement Requests

- **Customer Issue 95755**
  To improve performance, the MSSQL probe now makes a single query to the given database server for the full set of metrics the probe needs.

- **Customer Issue 95755**
  The MSSQL probe now has multithreading capability to improve discovery performance for environments with many MSSQL servers.

Known Issues

- **Customer Issue**
  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.

- In the new user interface, for virtual machines with more than one Virtual Storage resource, the Turbonomic user interface only shows a single storage resource, as the sum of all the datastores for that VM.
- For vCenter 6.5 targets, Turbonomic does not discover groups of VMs by their tag name/value pairs.
- 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, perform a full rediscovery to show correct CPU capacity.

- You can create a merge segment to support cross-vCenter move actions. You should always use Host Cluster merge segments for this case, instead of Data Center merge segments. The valid use for Data Center merge segments is to support moves between public and private clouds.
- Earlier versions of Turbonomic on the centOS platform included an Apache configuration that enabled directory browsing. Version 5.9 fixes this issue. If you migrate to a new centOS VM, the fix will take effect. However, if you update an older version to a version containing this fix, you must manually restart the httpd service to have the fix take effect.
- **Customer Issue**
  For AWS environments with multiple AWS targets, deleting one of the targets sometimes resulted in Turbonomic removing from its market some of the entities that are managed by the remaining targets. This issue has been resolved. However, when you delete the last AWS target, you must restart the Turbonomic server.

- In the new User Interface, for large environments there are conditions where some charts fail to load data. As a workaround you can modify the etc/my.cnf file. For more information, please contact Technical Support.
- For AWS environments, Turbonomic does not recommend resize down actions.
- In the New User Interface, when you expand an entry for a host in the cloud, the user interface does not show any values for host or datacenter resources. This is expected behavior because cloud services handle these entities differently than on-prem environments.
- With version 5.9, Turbonomic introduces support for the Azure Resource Manager, and no longer requires a certificate to be generated. In addition, Azure Classic VMs are no longer supported.
- In RedHat installations, generated PDFs may fail to load. The workaround is to change the ownership of the `/srv/reports/pdf_files/` directory from apache to tomcat. For assistance, contact Turbonomic Technical Support.
- **Customer Issue 94982**
  In Virtual Cloud Director environments, it's possible that your environment includes a Consumer Virtual Datacenter (VDC) that has no VMs assigned to it. In that case, utilization charts for the VDC will appear empty.

Fixed Issues

- **Customer Issue 94693**
  In rare circumstances, Turbonomic failed to update the topology and recommended moves to datastores that were no longer available to the host. This happened in large environments with significant bursts of topology changes.

- **Customer Issue 94509**
  In some circumstances for large RedHat environments, incremental discovery could fail to discover that hosts are set to maintenance mode.

- **Customer Issue 94994**
  Under certain circumstances, plans could fail to provision Nutanix storage.

- **Customer Issue 95123**
  When an environment had two hosts of comparable size, one empty and one with a single VM consumer, the VM would sometimes move between the two for negligible net benefit.

- **Customer Issue 95183**
  Under some circumstances in UCS environments, Turbonomic stopped recommending actions to move a blade from one chassis to another chassis in the same cluster.

- **Customer Issue 94591**
  For NetScaler virtual applications, Turbonomic failed to display metrics for resource capacity or utilization.

- **Customer Issue 95294**
  When using Active Directory credentials to log into an aggregator instance of Turbonomic, you could not access child instances from the policy or supply chain views.

- On Red Hat and CentOS systems, setting an HTTP proxy appeared succeed, but the proxy was not actually used for connections.
- **Customer Issue 95420**
  In the new user interface, Turbonomic displayed a warning message with the phrase, "For input string:" followed by a unique ID.

- For versions 5.7 and later, Turbonomic failed to save Balloning and Swap metrics to the database. As a result, you could not see data points for these metrics that were more than two hours old.
- Plan messaging for non-successful scenarios was very ambiguous.
- Under certain circumstances involving high utilization, OpenStack VMs would not appropriately resize to a template.
- **Customer Issue 95674**

  Turbonomic erroneously added Powered-off Nutanix VMs to its inventory.

- **Customer Issue 95688**

  In circumstances where a target has no VMs or there is an empty cluster, Turbonomic failed to discover VMs that were subsequently added. The workaround was to rediscover the environment.

- **Customer Issue 95694**

  Under rare circumstances, Turbonomic entered into a repeating cycle of rediscovery, which resulted in an error that the polling period has been exceeded.

- **Customer Issue 95704**

  Catalina log file would sometimes fail to rotate upon reaching 1GB in size.

- In IBM PowerVM environments, under some circumstances Turbonomic monitoring failed to get metrics for LPARs.
- **Customer Issue 94823**

  When Qtree-enabled NetApp volumes were present in standalone-mode, stitching would fail.

- In Hyper-V environments, the same SMB storage entity can have different names in the environment. In that case, Turbonomic would create multiple instances of that storage in the topology.
- In the New UI for plans, you can filter a list of entities and then choose "Select All" This should select all the items that display in the filtered list. However, internally this action selected all the items, excluding any filtering.
- **Customer Issue 95836**

  Under some circumstances Turbonomic threw an error when monitoring host values.

- Under circumstances when Turbonomic got no statistcs for a port or switch entity, the Turbonomic server would throw an error.
- For RHEV environments, Turbonomic did not recognize the Preparing_For_Maintenance state of a host machine. As a result, Turbonomic could recommend moving VMs from such a host machine. Turbonomic now places a Preparing_For_Maintenance host into the Turbonomic MAINTENANCE state.
- In vCenter Server environments with different versions of vCenter targets (5.x and 6.5), Turbonomic failed to discover defined tags.
- **Customer Issue 95938, 95960, 96088**

  Under some circustances, Turbonomic failed to discover all the physical machines in UCS targets.

- For deployments of Turbonomic on RedHat platforms, earlier versions required modifications to the file structure to enable connections to mariaDB.
- In the New User Interface, you can disable a specific action type in a plan. However, when it ran the plan Turbonomic would ignore the Disable setting and recommend the action anyway.
- **Customer Issue 96004**

  For UCS environments, in rare circumstances Turbonomic would fail to make recommendations for a given cluster.