Workload Optimization Manager 3.6.3 Release Notes

Release Date: March 24, 2023

This document describes issues that are addressed in Workload Optimization Manager 3.6.3 – Release Date: March 24, 2023. Starting with the 3.0 version family, builds are cumulative. See the Workload Optimization Manager documentation for earlier versions of the Release Notes.

For any questions, contact your support representative.

Configuring Kubernetes Targets for Workload Optimization Manager

To set up a Kubernetes target for Workload Optimization Manager, you deploy the Kubeturbo pod with specific configuration resources. These resources require your version of Workload Optimization Manager, mapped to a `TURBONOMIC_SERVER_VERSION`. Use the following table to map your version of Workload Optimization Manager:

Workload Optimization Manager Version	TURBONOMIC_SERVER_VERSION number
3.6.3	8.8.3
3.6.2	8.8.2
3.6.1	8.8.1
3.6.0	8.8.0
3.5.6	8.7.6
3.5.5	8.7.5
3.5.4	8.7.4
3.5.3	8.7.3
3.5.2	8.7.2

Workload Optimization Manager Version	TURBONOMIC_SERVER_VERSION number
3.5.1	8.7.1
3.5.0	8.7.0

For information about Kubeturbo, see the Kubeturbo GitHub repository at https://github.com/turbonomic/kubeturbo.

For more information about Kubernetes targets, see "Target Configuration" in the *Target Configuration Guide*.

What's New for Version 3.6.3

Version 3.6.3

- **Parking Actions for Cloud VMs**

  This release introduces 'parking' actions for VMs in the public cloud to help you reduce your cloud expenses. With these actions, you can stop VMs for a period of time and then start them when you need them. You can enforce parking actions on demand or according to a schedule.

  For details, see "Park: Stop or Start Cloud Resources" in the *User Guide*.

- **Support for Microsoft Customer Agreement Accounts**

  The Azure Billing target now supports Microsoft Customer Agreement accounts. When you add an Azure Billing target and specify the Billing Account ID for an account, Workload Optimization Manager discovers pricing for the workloads billed under that account, and then uses pricing information when recommending actions for workloads.

  For details, see "Azure Billing" in the *Target Configuration Guide*.

- **Enforcement of Security Context Constraints (SCCs) for Pod Move Actions**

  Red Hat OpenShift uses SCCs to control permissions for pods. When executing pod move actions, Workload Optimization Manager now carries over the user-level SCCs of a pod to its new node. This prevents privilege escalation issues that occur when pods run with admin-level SCCs in their new nodes.

  For details, see "Pod Move Actions" in the *User Guide*.

- **Temporary Increases in Namespace Quotas**

  When a namespace has a defined quota and a Workload Controller in the namespace requires a resize, Workload Optimization Manager now increases the quota temporarily to ensure that the execution of the resize action complies with your rolling updates strategy.

  For details, see "Namespace Actions" in the *User Guide*.

- **New Operator Lifecycle Management (OLM) Feature**

  The new OLM feature automatically upgrades the Workload Optimization Manager client operator for customers utilizing the SaaS secure connector for hybrid support to provide a better SaaS experience with seamless access to new probe functionality, and reduced maintenance of SaaS client deployments.

- **VMware vCenter 8.0 Support**

  This release introduces support for VMware vCenter version 8.0. To submit Ideas for specific vCenter 8.0 features that Workload Optimization Manager should consider, use the Cisco Ideas Portal.

Deprecated and Removed Features

Frequent updates to the product and changes in technology require that some features are deprecated or removed from support. When a feature is deprecated, Cisco continues to support the feature, but no longer plans to enhance it and might

remove it in a subsequent release of the product. See the following sections for features that are currently planned for deprecation or removal, or were already deprecated or removed.

Features are labeled deprecated or removed based on the following definitions:

- Deprecated

  A feature that is still supported but no longer developed. The feature is no longer recommended for use and might become obsolete.
- Removed

  A feature that is no longer available in the product.
- Unsupported

  A feature that is no longer supported in the product.

The deprecation or removal changes that are listed here will be made in the noted version. Consider the details and recommended actions that are provided.

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Feature	Status	Details and recommended action
Microsoft Enterprise Agreement target	Deprecated	Deprecation and removal impact customers who previously added, or plan to add, a Microsoft Enterprise Agreement target to manage Azure *non-government* subscriptions. For more information, see "Microsoft Enterprise Agreement" in the *Target Configuration Guide*.

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Feature	Status	Details and recommended action
VMware vCenter versions 6.0, 6.5, and 6.7	Unsupported	Update your VMware vCenter version to 7.0 or 8.0, which are fully supported.

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Feature	Status	Details and recommended action
Tbmigrate, the Classic-To-XL Migration Tool	Unsupported	The Classic-To-XL Migration Tool is no longer supported. This tool provides a scripted interface that you can use to migrate from Classic installations (the 2.x version families) to XL installations (the 3.x version families). If you need to migrate from a Classic installation to one of the 3.x version families, contact your support representative.

Versioning Explanation

Workload Optimization Manager versioning uses V-R-M elements (Version, Release, Modification) in the version number to express the status of a given release, as follows:

Numbered Element	Example	Description
V - Version number	**3**.X.X	▪ Changes to platform architecture or significant changes to data models
R - Release number	X.**1**.X	▪ Major feature changes
M - Modification number is zero (0)	X.X.**0**	▪ A quarterly release ▪ All preview features from previous bi-weekly releases are now GA ▪ No new preview features in this release
M - Modification number is greater than zero (1 or higher)	X.X.**3**	▪ A bi-weekly release ▪ Can include new preview features ▪ Includes fixed issues

NOTE:
For API developers, the X.X.1 release can include final implementations of deprecated API features. These final implementations can make API changes that are not backward-compatible.

Configuration Requirements

For this release of Workload Optimization Manager, you must satisfy the following configuration requirements.

Dynatrace Targets

Starting with Workload Optimization Manager version 3.4.2, the API token that you use when you configure a Dynatrace target must access specific scopes of the Dynatrace API V1 and V2.

If you are updating to Workload Optimization Manager version 3.4.2 or later, from a version that is earlier than 3.4.2, you must generate a new API token for the Dynatrace target configuration. Then, you must enter that token in the target configuration, and validate the target.

Workload Optimization Manager uses the API token to authenticate its calls to the Dynatrace API. This token must have permission to run GET methods using the Dynatrace API, both Version 1 and Version 2. Generate a new generic access token with these scopes:

Workload Optimization Manager Functions	Required Permissions
Monitoring	▪ API V1 scopes – `Access problem and event feed, metrics, and topology` ▪ API V2 scopes – `Read entities` – `Read metrics`

NOTE:
If the target still fails to validate after you update the access token, take note of your configuration settings, delete the target, and configure the target again. Be sure to use the new API token that you generated.

Workload Optimization Manager Updates and Operator Version

Workload Optimization Manager deploys as a cloud-native application on a Kubernetes cluster. This cluster can be pre-configured on a VM that you deploy, or you can deploy Workload Optimization Manager to a Kubernetes cluster in your environment. In either case, Workload Optimization Manager uses an Operator to manage the application deployment.

For different versions of Workload Optimization Manager, the version of Operator you use changes as follows:

Product Version	Operator Version
3.6.3	42.27
3.6.2	42.25
3.6.1	42.24
3.5.6 - 3.6.0	42.23
3.5.5	42.22
3.5.4	42.21
3.5.3	42.20
3.5.2	42.19
3.5.1	42.18
3.4.6 - 3.5.0	42.17
3.4.4 - 3.4.5	42.16
3.4.3	42.15
3.4.2	42.14
3.4.1	42.13
3.4.0	42.12

When you update Workload Optimization Manager, always include the matching version of Operator in the update. Online or offline updates that were completed according to the "latest installation instructions" in the *Installation Guide* automatically include the latest Operator.

If you installed Workload Optimization Manager on a Kubernetes cluster, you might need to manually update the Operator version.

After you update the Operator version, and you verify that the pod is running and ready, edit your Custom Resource declaration to update Workload Optimization Manager to the version that matches your Operator version.

For more information, contact your support representative.

Supported MariaDB Version for OVA and VHD Installations

For its default historical database on OVA and VHD installations, Workload Optimization Manager currently supports MariaDB version 10.5.18. This support includes comprehensive testing and quality control for Workload Optimization Manager usage of the historical database.

> **IMPORTANT:**
> Because of a known issue, *you must never use* MariaDB versions 10.5.14, 10.5.15, 10.6.7, 10.7.3, or 10.8.2.

If you are running Workload Optimization Manager installed as an OVA or VHD image, and are using the database that is included in that installation, then you must use version 10.5.18. For versions of Workload Optimization Manager that you installed as an OVA or VHD before version 3.5.6, you must now update to MariaDB version 10.5.18if not already done.

For more information, see "Verifying Your MariaDB Version" in the *Installation Guide*.

SQL Modes for External Databases

If you deploy Workload Optimization Manager to work with an external database instead of the included historical database, then you must specify the correct SQL modes for the database. Configure the database as `{{ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION}}`.

In particular, the SQL modes should not include `ONLY_FULL_GROUP_BY`, `NO_ZERO_IN_DATE`, or `NO_ZERO_DATE`.

Transport Layer Security Requirements

By default, Workload Optimization Manager requires Transport Layer Security (TLS) version 1.2 to establish secure communications with targets. Most targets have TLS 1.2 enabled; however, some targets do not enable TLS or they enabled an earlier version. In that case, you see handshake errors when Workload Optimization Manager tries to connect with the target service. When you go to the Target Configuration view, you see a Validation Failed status for such targets.

NetApp filers often do not enable TLS and the supported version is TLS 1.0, which causes the NetApp target to fail validation.

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

- No appropriate protocol

  Ensure that you enable the latest version of TLS that your target technology supports. If you still encounter issues, contact Cisco Technical Support.

- Certificates do not conform to algorithm constraints

  Refer to the documentation for your target technology (such as the NetApp documentation) for instructions to generate a certification key with a length of 1024 or greater on your target server. If you still encounter issues, contact Cisco Technical Support.

Improvements

- **Improvement:**

  For on-prem deployments, the Notifications panel now includes Component Health information.

  For on-prem deployments, the Notifications panel now includes Component Health information, which ensures that customers are aware when a Workload Optimization Manager component is failing and can take remediating action.

- **Improvement:**

  Workload Optimization Manager can now collect MySQL database metrics from Instana targets.

  Workload Optimization Manager can now collect MySQL database metrics from Instana targets. Metrics include cache hit rate and database memory.

Fixed Issues

- **Fixed Issue:**

  Logs from `rsyslog` are not written as part of the diagnostics bundle.

  Due to a security fix in 8.8.2, the logs from `rsyslog` are not written as part of the diagnostics bundle.

- **Fixed Issue:**

  Estimated Savings and Effective Cost values appear as "0".

  Estimated Savings and Effective Cost values appear as "0" instead of "N/A" when the price is 0 in the downloaded RI Inventory .csv file.

- **Fixed Issue:**

  When you create dynamic groups in Azure, the filter to exclude resource groups can fail to exclude the indicated entities.

  In Azure environments, you can create dynamic groups that use a filter to exclude members of a given resource group (filter is **Resource Group != {RG_NAME}**). However, if you add filters to exclude more than one resource group, the filters do not exclude any entities.

Known Issues

- **Known Issue:**

  Group types including Container Specs, Namespaces, and Workload Controllers do not support filters using regular expressions (the RegEx option) in the UI.

  Group types including Container Specs, Namespaces, and Workload Controllers do not support filters using regular expressions (the RegEx option) in the UI.

- **Known Issue:**

  For Workload Optimization Manager deployments where the database uses a custom (non-3306) port for MariaDB or MySQL, the Parking feature cannot start.

  For Workload Optimization Manager deployments where the database uses a custom (non-3306) port for MariaDB or MySQL, the Parking feature cannot start. In these cases, suspend should be disabled from the cr.yaml as follows:

```
spec:
  suspend:
    enabled: false
```

- **Known Issue:**

  Azure subscription without cost data is not stitching to the Azure Billing target.

  Empty Azure EA subscriptions that are not incurring any charges will not stitch with the Azure Billing target, and a discrepancy will occur in the offer ID of the subscription. Once the subscription incurs a charge, the stitching occurs and the subscription should correctly associate the Azure Billing target with the offer ID.

- **Known Issue:**

  Nutanix VMs are not stitching to discovered Microsoft SQL Server DB targets.

  We currently do not support Nutanix VMs stitching with Microsoft SQL database targets.

- **Known Issue:**

  When scoping to an entity type from the global scope, the values in the Capacity and Usage chart display the average storage amount.

  When scoping to an entity type from the global scope, the values in the Capacity and Usage chart show averages instead of summations. To retrieve the total of the utilization and the capacity of a group of entities, you must explicitly create a group containing the entities and scope to that group.

- **Known Issue:**

  New Relic has ended support for monitoring integration with Microsoft SQL Server 2012.

  Workload Optimization Manager no longer supports monitoring and stitching of Microsoft SQL 2012 discovered through New Relic. We recommend that you upgrade your Microsoft SQL instance to a version New Relic supports.

- **Known Issue:**

  Under some circumstances, the Storage Summary chart can show an incorrect number of volumes.

  If you compare the total count of volumes in the Storage Summary chart with the total count of volumes in Tiers, the counts can be inconsistent.

- **Known Issue:**

  For Azure, billing information for RIs can show costs as NA.

  In Azure environments, if you configure a Microsoft Enterprise Agreement target, costs for RIs can show in the user interface as `NA`. For example, a VM that shows 100% RI coverage can show the Reserved Compute Cost as `NA`. This occurs because of a known gap in the data provided by the Microsoft EA API that the target probe uses to collect data.

- **Known Issue:**

  Cloud VMs might scale to very large instance types even if there are smaller instance types available for scaling.

  When a cloud VM with a specific disk count and disk type applies a policy that enables 'instance store aware scaling', Workload Optimization Manager might recommend scaling the VM to a very large instance type, even if there are smaller, less expensive instance types that can adequately meet the VM's resource requirements.

  To avoid this issue, disable instance store aware scaling and restrict the VM to its current instance family. For example, if an AWS VM is currently running the `i3.2xlarge` instance type, specify the `i3` instance family as a scaling constraint for the VM.

- **Known Issue:**

  If you use Embedded Reports, your dashboards might be empty after updating to this version.

  To support Embedded Reports, Workload Optimization Manager loads historical data into a TimescaleDB service, and displays that data in dashboards and charts that are powered by the Grafana observability platform. Prior to version 3.4.1, Workload Optimization Manager used the Enterprise version of Grafana, and included an Enterprise license for customers who paid for the license to use Embedded Reports.

  Starting with version 3.4.1, Workload Optimization Manager no longer has an agreement to use the Enterprise version, and ships the open-source Community version instead. After you update to version 3.4.1, Grafana automatically switches to the Community version and you should be able to use Embedded Reports as usual.

  However, under rare circumstances, you might notice that your dashboards are empty and a banner with this error message displays:

  ```
  db query error: pq: password authentication failed for user "query"
  ```

  To resolve this issue, follow these steps:

  1. Delete your Embedded Reports data source.
     - In the Grafana user interface, navigate to **Configuration / Data Sources**.
     - Click to select the Workload Optimization Manager timescale data source.
     - In the screen that appears, click **Delete** to delete the Workload Optimization Manager timescale data source.
  2. Restart the extractor component.

     When you restart the extractor component, it loads the Grafana Community version and reconfigures the data source.
     - Get the full pod name for the extractor pod by executing the command:

       ```
       kubectl get pods -n {YourNamespace} | grep ^extractor
       ```

For example, execute:

```
kubectl get pods -n turbonomic | grep ^extractor
```

The full pod name should be similar to:

```
extractor-5b86976bc8-vxwz4
```

– Delete the extractor pod.

Deleting the pod triggers it to restart. Using the example name above, you would execute the command:

```
kubectl delete pod -n {YourNamespace} {YourExtractorPodName}
```

For example:

```
kubectl delete pod -n turbonomic extractor-5b86976bc8-vxwz4
```

For further assistance, contact your support representative.

- **Known Issue:**

  For New Relic MySQL, DB Cache Hit Rate values are incorrect.

  For New Relic MySQL 8, DB Cache Hit Rate values are incorrect in Workload Optimization Manager. Because the percentage of queries that are retrieved from the cache (`db.qCacheHitRatio`) is not supported in New Relic MySQL version 8.0 and higher, the DB Cache Hit Rate values are no longer displayed in Workload Optimization Manager.

  For more information, see the New Relic documentation.

- **Known Issue:**

  The user interface shows incomplete Azure billed costs and metrics because of an issue with the Azure API.

  When attempting to discover Azure billing targets configured with partitioned cost exports on the first day of any month, Workload Optimization Manager is unable to find the directory containing the export files within a customer's Azure Storage account. The export files exist, but the Azure API does not return the correct storage location of that day's cost export files. As a result, the Workload Optimization Manager user interface may not reflect any billed cost that Azure exported on the first of the month, and the metrics dependent on that billed cost. Note that the billed cost is not limited to expenses incurred on the first day of the month.

  In the logs, the following one-time message with an INFO severity appears after the first discovery attempt.

  ```
  Download storage blob failed: no blob found from prefix: ${prefix}
  ```

- **Known Issue:**

  In a Nutanix environment, a Replace Hosts plan can fail to place VMs.

  You can configure a Replace Hosts plan on a Nutanix cluster to replace the hosts with HCI templates. However, the plan will fail to create the HCI hosts, and will result in unplaced VMs.

- **Known Issue:**

  When you view the details table for the Top Accounts chart, the Actions Taken and Saved By Actions columns can fail to show current data.

  When viewing the Top Accounts chart, you can click **Show All** to see a details table. Under some circumstances, this table can fail to update with new data in the **Actions Taken** or **Saved By Actions** columns. For example, these columns can show zero even if you have taken actions that reduced costs.

To see current actions data, display the Executed Actions chart.

- **Known Issue:**

  Hardware Refresh to replace hosts with HCI templates can fail to place workloads.

  When running a Hardware Replace plan, the plan can fail to place workloads onto HCI hosts. The plan correctly places workloads if the plan scope is in a hyperconverged environment. If the scope is *not* in a hyperconverged environment, then you must scope the plan to an entire cluster, and you must configure the plan to replace all the hosts in the cluster with HCI templates.

- **Known Issue:**

  Under specific conditions, an update of the platform can cause it to lose all of its target configurations.

  When updating Workload Optimization Manager from a version earlier than 3.3.3, if the username for any user accounts includes a % character, the update will fail to include your target configurations.

  If this occurs when you update, contact your support representative for assistance.

  > **NOTE:**
  > You should always back up your installation before you run an update.

- **Known Issue:**

  For AWS environments that have RI discount sharing turned off, analysis does not manage RI coverage and utilization.

  In AWS, you can turn off RI discount sharing for specific accounts. These accounts will not share any discounts with other accounts. Workload Optimization Manager does not recognize RI coverage or utilization for these accounts. For example, the RI Coverage and RI Utilization charts will show zero values.

  If you encounter this situation, contact your support representative for a possible workaround.

- **Known Issue:**

  For Headroom plans, you can specify the desired state for overprovisioned commodities.

  Workload Optimization Manager runs nightly plans to calculate headroom in clusters; the number of VMs you can add to a cluster without exceeding limits for Memory, CPU, or storage. For example, if you want a desired state of 80% consumption, the plan will not add VMs that will exceed 80% utilization of resources in the cluster.

  Note that reservations use these headroom calculations to determine whether Workload Optimization Manager can place the workloads in a reservation request.

  By default, plans do not keep the utilization of overprovisioned resources within the desired state (80% in the above example). The plan calculates 100% utilization of overprovisioned resources. However, when placing reservations in the cluster, analysis could recommend provisioning new hosts as a way to keep the overprovisioned resources within the desired state.

  We have introduced a setting you can make to enforce the desired state on overprovisioned resources. This can result in a lower calculated headroom. But when a reservation places and powers on a new VM, it is guaranteed to fit on the current infrastructure. Analysis will not see a need to provision a new host to support the VM's overprovisioned resources.

  To turn on this feature, edit the topology-processor settings in the cr.yaml file:

  1. Open an SSH terminal session on your Workload Optimization Manager instance.

     Log in with the System Administrator that you set up when you installed Workload Optimization Manager.

2. Open the cr.yaml file for editing. For example:

   ```
   vi /opt/turbonomic/kubernetes/operator/deploy/crds/charts_v1alpha1_xl_cr.yaml
   ```

3. In the `spec/properties` section, find the entry for the `topology-processor` component.
4. Add the following properties to the component spec:

   ```
   considerDesiredStateForProvisioningInClusterHeadroomPlan: true
   considerUtilizationConstraintInClusterHeadroomPlan: true
   ```

5. Save and apply your changes to the platform.

   After you save your changes, use `kubectl` to apply the changes:

   ```
   kubectl apply -f /opt/turbonomic/kubernetes/operator/deploy/crds/
   charts_v1alpha1_xl_cr.yaml
   ```

For assistance, contact your Support representative.

- **Known Issue:**

  For Kubernetes, in some environments analysis cannot execute Scale Node actions.

  For Kubernetes OCP 4.x and AKS environments, Workload Optimization Manager can generate and execute Scale Node actions. However, if the environment includes other Kubernetes distributions that don't support execution of Scale Node actions (EKS, AKS, and OCP), then Workload Optimization Manager can disable execution of *all* Scale Node actions in the environment.

- **Known Issue:**

  For Kubernetes environments with nodes running Linux with cgroup v2 enabled, you must use Kubernetes version 1.23.2 or later.

  For Kubernetes environments with nodes running Linux with cgroup v2 enabled, an issue in earlier versions of Kubernetes prevents Workload Optimization Manager from collecting CPU utilization data for the affected nodes. To collect CPU utilization from the cgroup v2 nodes, you must run Kubernetes version 1.23.2 or later.

- **Known Issue:**

  For very large environments, under rare circumstances queries can lock the database and cause gaps in discovered data.

  For very large environments, it is possible for queries to lock the database, and cause gaps in discovered data. When this occurs you can see errors similar to the following:

  - `[RollupProcessor] : Error during rollup activity for table vm_stats_latest:`
  - `[ComponentBasedTargetDumpingSettings] : Retaining 0 discovery dumps for target`

  If this occurs in your environment, contact your support representative for a workaround.

- **Known Issue:**

  For IBM FlashSystem, a known FlashSystem issue can cause some models to show intermittent target errors.

  For some models of IBM FlashSystem platforms, Workload Optimization Manager can show intermittent `Invalid Credentials` target errors. This is caused by a known FlashSystem REST service issue with platforms that have less than 64GB of memory.

  If you experience this issue, use the following command to restart the FlashSystem REST service:

  ```
  satask restartservice -service cfrest
  ```

Please contact your IBM FlashSystem Support representative for more information.

- **Known Issue:**

  For workloads with very large disks, Storage vMotion can time out.

  Storage vMotion actions for VMs with very large disks can time out. If you experience this, contact your support representative for help changing the timeout threshold.

- **Known Issue:**

  When updating your installation, under rare circumstances the Topology Processor component can fail to restart.

  When updating Workload Optimization Manager, under rare circumstances the `topology-processor` pod can fail to restart. The log posts an error with the statement:

  ```
  AccessDeniedException: /home/turbonomic/data/kv
  ```

  If you experience this problem, please contact your support representative for a workaround.

- **Known Issue:**

  For Azure, targets in the Australia Central region can show inconsistent pricing for VM license costs.

  For Azure environments running in the Australia Central region, the pricing for license costs that is reported to Workload Optimization Manager can be incorrect. As a result, the user interface can display incorrect license costs for Linux or Windows operating system licenses.

- **Known Issue:**

  For Azure and AWS, analysis does not consider the full cost for some workloads.

  For Azure environments, analysis considers the base OS cost, but does not consider additional costs for support or other add-on features that are bundled with the OS. The affected OS types are Ubuntu PRO, SUSE 24/7, and RHEL with HA.

  For AWS environments, analysis does not consider AWS Marketplace costs.

- **Known Issue:**

  After updating the platform, Embedded Reports can fail to display.

  Under some circumstances, after you update Workload Optimization Manager to a new version, the Embedded Reports page can fail to display. The update appears to have completed successfully, but the Embedded Reports components appear to be running and ready. However, when you click on the Embedded Reports button, you get the following error:

  ```
  failed to log in as user, specified in auth proxy header.
  ```

  This can occur when the host VM takes a long time to completely start up all the platform components. If you encounter this problem, make sure all the components are running, and then execute the following command to restart the `grafana` pod:

  ```
  kubectl delete pod -l app=grafana
  ```

  For assistance, contact your support representative.

- **Known Issue:**

  For Fabric environments, when you scope the view to Datacenter the supply chain can fail to include all the related Host entities.

  For environments that include Fabric targets, under some circumstances a view that you scope to the Datacenter might not include all the related Host entities. This can happen for hosts that include the hyphen character ("-") in the Host name. For example, for Cisco UCS targets, the supply chain will not show UCS hosts that use the hyphen character in their names when you scope to the Datacenter entity.

- **Known Issue:**

  For Azure, under some circumstances a successful scaling action appears in the logs as failed.

  For Azure environments that include Availability Sets, under some circumstances a successful scaling action appears in the Workload Optimization Manager logs as failed.

- **Known Issue:**

  With Executed Actions charts, some data is missing for actions on entities that have been removed from the environment.

  When you view Executed Actions charts or export data from them, some data is missing for actions on entities that have been removed from the environment. For example, assume an action was executed on a storage volume, and that volume has later been removed from the environment. In that case, the exported data for that action will not include values that describe the removed volume.

- **Known Issue:**

  For Azure, if you connect the target through a proxy, then the target does not discover unattached storage volumes.

  For Azure environments, if you connect to the Azure target through a proxy, then Workload Optimization Manager does not discover unattached volumes.

- **Known Issue:**

  The Onboarding wizards can sometimes fail to close.

  When you first install Workload Optimization Manager, the user interface displays onboarding wizards to walk you through setting up your license, and configuring your first target. Under some circumstances, the button to end the wizard's workflow does not close the wizard. That can result in blocking you from continuing your Workload Optimization Manager session.

  If the onboarding wizard does not close when you click **End Setup**, refresh the browser. That should close the wizard and leave you on the last user interface page that you visited.

- **Known Issue:**

  For Kubernetes environments, when you enable Feedback and Diagnostics for your installation, the collected data can include Kubernetes cluster names.

  To help us improve the product, you can enable Workload Optimization Manager to collect anonymized and non-confidential data as you go about using the product. However, because of the way Kubernetes discovery works for Workload Optimization Manager, the collected data includes the names of any Kubernetes clusters that you have set up as targets. We do not make use of those cluster names in any way.

  If you do not want Workload Optimization Manager to collect these cluster names, then you can navigate to **Settings / Maintenance Options / Feedback and Diagnostics** and turn off the option to share anonymized usage data.

- **Known Issue:**

  Changes to a policy do not immediately show up in the user interface view of the affected scope.

  When you set the scope of the Workload Optimization Manager view to a group, you can then view the automation policies that impact the given group. If you edit a policy for that group (in Settings: Policies), and then scope the view to that group again, the policy changes do not appear in the display for that group.

  The display should update within ten minutes, after the next round of incremental discovery. If the condition persists, log out of your session and log in again to update the display.

- **Known Issue:**

  For Migrate to Cloud plans, under rare circumstances the plan's actions list can show duplicate entries.

  For Migrate to Cloud plans, under rare circumstances the plan's actions list can show duplicate entries.

- **Known Issue:**

  For Azure environments, discovery does not support the Brazil Southeast region.

  For Azure environments, Workload Optimization Manager does not discover the Brazil Southeast region. Azure provides this region only to give business continuity and disaster recovery to workloads in Brazil South that require data residence.

  The user interface does not display the Brazil Southeast region in any lists or charts. Also, if you do have workloads on that region, Workload Optimization Manager will not discover those workloads.

- **Known Issue:**

  For AppDynamics environments, the platform cannot discover Database Servers if the target authentication uses oAuth for credentials.

  For AppDynamics environments, Workload Optimization Manager cannot discover Database Servers if the target authentication uses `oAuth` for credentials.

- **Known Issue:**

  For Application Component automation policies, the user interface allows you to make conflicting settings.

  The Action Generation setting can show incorrect values that you can choose for the policy. As a result, you cannot save the policy.

- **Known Issue:**

  The user interface does not currently show the billed costs for some Azure resource groups.

  For Azure environments, when you inspect resource groups, Workload Optimization Manager does not currently show the billed costs for those resource groups.

- **Known Issue:**

  For cloud environments, under rare circumstances analysis can recommend resizing a VM to an instance type that is older and less capable than an equally priced instance type.

  Under most circumstances, when a cloud provider offers a new instance type that is meant to replace an older type, the provider offers it at a lower cost. In at least one instance we have seen a case with identical costs for the newer and

older instance types. If this occurs, and capacity and cost are equal, Workload Optimization Manager cannot ensure that it chooses the newer instance type.

To work around this issue, you can create an Action Automation policy that excludes the older instance type.

- **Known Issue:**

  The All Actions chart does not include pending actions for databases or database servers.

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- **Known Issue:**

  There is a memory limit for the data you can download from the All Actions chart.

  There is a memory limit for the data you can download from the All Actions chart. For example, assume you have executed many actions over time in your environment. As a result, the list of all executed actions might exceed the data limit. In that case, downloading a CSV file from the All Actions chart will fail.

- **Known Issue:**

  Under rare circumstances, the etcd.service can fail.

  Under rare circumstances the Workload Optimization Manager platform stops responding. This occurs when `etcd.service` fails. When it does occur, you should see the following error:

  ```
  Error response from daemon: endpoint with name etcd1 already exists in network host
  ```

  To recover from this situation, restart the docker service for the Workload Optimization Manager platform. execute the command: `sudo systemctl restart docker.service`

- **Known Issue:**

  You must use certain templates when using PLACE to set up reservations or deployments.

  When you use the **PLACE** page to set up a reservation or a deployment, you choose the templates to represent the workload you will deploy. The templates you choose must include an **Image** specification that gives the path to the VM package, and optional placement constraints.

  Typically, you will use templates that are discovered through your hypervisor targets. Along with discovering resource capacities for the given VM, Workload Optimization Manager should also discover the Image specification for a given discovered template. However, in this version Workload Optimization Manager does not discover the Image descriptions. In addition, discovered templates and their image specifications are read-only. For this reason, you cannot set up placement or reservations using discovered templates.

- **Known Issue:**

  For resources that do not support Reserved Capacity, charts can show them with zero reserved capacity.

  Ring charts that show the utilization of different resources show a yellow segment whenever the Reserved Capacity for the resource is zero. For some resources there is no concept of reserved capacity, yet the ring chart still shows a yellow segment.

- **Known Issue:**

  Optimized Improvements for plans do not include hosts to provision.

  For cases where actions indicate provisioning new hosts, the Optimized Improvements chart does not include the hosts to provision in the After Plan section.

- **Known Issue:**

  In vCenter environments, you might see high storage latency, or excessive storage provision.

  In vCenter environments, you might see unusually high storage latency values or excessive recommendations to provision new storage. There is a known problem with the storage latency values that vCenter Server versions 6.5.u1x and earlier return via the API. These versions can return unusually high storage latency values.

  Workload Optimization Manager considers storage latency when calculating whether to move a VM to existing storage, or whether to provision new storage. Because of this known problem, Workload Optimization Manager can incorrectly recommend provisioning storage when moves are appropriate.

  If you encounter this problem, then you should create a policy that disables storage moves for VMs that are managed by vCenter Server versions 6.5.u1x and earlier. To create this policy:
  - Create a VM group that contains all the affected VMs. Note that Workload Optimization Manager automatically creates a group named `VMs_vCenter` that you might be able to use.
  - Create a new VM automation policy. This policy will disable storage move actions.
  - Set the group that you created to be the policy scope.
  - Under **Action Automation** add the `Storage Move` action and set it to `Disabled`.

- **Known Issue:**

  The Optimal Improvements chart can show incorrect data for hosts to be suspended.

  In cases where actions recommend that you suspend hosts, the Optimal Improvements chart should indicate no utilization on the hosts to be suspended. Under some circumstances, the chart can show utilization on these hosts. The result is incorrectly low values for utilization on the other hosts in the current scope.

- **Known Issue:**

  For vSAN environments, under some circumstances a plan that is scoped to a datacenter can fail.

  For vSAN environments, when running plans that add or replace hosts to the environment, under some circumstances the plan can show the incorrect count for hosts, and the plan can fail.

  This can happen for plans that meet the following conditions:
  - The plan type is Hardware Refresh, Add Workload, or Custom
  - The plan scope is set to a datacenter, and it includes vSAN hosts
  - The plan uses an HCI template to replace the hosts

  After running, the plan shows the full count of hosts in the vSAN environment, instead of the count of hosts in the plan scope.

  To avoid this situation, do not scope the plan to the datacenter.

- **Known Issue:**

  The Headroom chart for All On-prem Hosts does not always agree with the Top Clusters chart.

  The Headroom chart for All On-prem Hosts does not always agree with the Top Clusters chart.

  Workload Optimization Manager generates the All On-prem Hosts headroom data in a nightly plan. When the plan runs, this data is correct. In the course of the day, this data can become stale.

To accurately track your cluster usage, you should use the Top Clusters chart.

- **Known Issue:**

  For vCenter Server environments, Workload Optimization Manager does not recognize DRS rules for VM restart dependencies that are based on ClusterDependencyRule.

  For vCenter Server environments, Workload Optimization Manager does not recognize DRS rules for VM restart dependencies that are based on `ClusterDependencyRule`.

  You might be able to achieve a similar effect by expressing dependencies via `ClusterVmHostRule` or cluster affinity or antiaffinity rules.