Release Notes

Keystone

NetApp
February 11, 2024

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Release Notes

What's new in this release of NetApp Keystone services

The release notes inform you of the new features and enhancements introduced in NetApp Keystone subscription services, along with the known limitations and fixes.

The following features have been introduced in different releases of NetApp Service Engine to support enhanced functionalities offered through Keystone subscription services:

Features introduced in NetApp Service Engine 2.2

The new features in this release include a revamped dashboard for new widgets on billing, capacity utilization, service requests, and alerts. This release also includes new screens for billing and alerts management, and renaming of the Subscribed Services menu to Cloud Services.

Enhanced dashboard view

The NetApp Service Engine dashboard has been redesigned to include the following new components:

- **Capacity Utilization** For viewing the utilized capacity for your subscribed services.
- **Monthly Charges (Billing)** For viewing the aggregated monthly charges for all your subscriptions.
- **Alerts** For viewing the summary of the most recent alerts in your environment.
- **Service Requests** For viewing the list of the most recent service requests generated in your environment.

New Billing screen

A new **Billing** screen has been added for easy accessibility and calculation of your historical billing data. The screen provides a holistic view of the monthly charges associated with all your subscribed services.

Navigate to this screen from the **Monthly Charges** widget on the dashboard or from **ADMINISTRATION > Billing** to view a monthly, subscription-level break up of the charges for all your subscribed services. The billing data is based on your committed and burst capacity usage, and is available for your usage in the previous months.

New Alerts screen

A new **Alerts** screen is introduced in this release that lists all system-generated and user-generated alerts. The screen also enables you to create custom alert messages for critical events concerning your environment and convey them to other users. They can view and dismiss the alerts, as required.

Enhanced user interface

The following enhancements have been made on the NetApp Service Engine user interface:

- The **Dashboard** menu on the left navigation pane presents an intuitive navigation point to access the dashboard.
- The **Subscribed Services** menu on the left navigation pane has been renamed to **Cloud Services**.

Features introduced in NetApp Service Engine 2.1

The new features in this release include supporting multi-tenancy in a Keystone environment, and tiering capability that facilitates moving of inactive data to a lower cost local or cloud tier.

Introducing Keystone subscription services for service providers

NetApp Service Engine now supports the management of a multi-tenant environment by a service provider. You can perform the functions of provisioning, reporting, billing, and managing customers having their own subscriptions. For supporting this feature, the following enhancements have been made:

- **Dashboard:** The Dashboard displays information on the storage subscriptions, such as service tiers, capacity usage for each service level, and add-on data protection services, for a specific subscription number. As a service provider, you can view the details of your NetApp Keystone subscription and tenant subscriptions. As a tenant administrator, you can view the details of all the tenant subscriptions for your tenancy.
- **Reporting:** You can create capacity and performance reports with respect to your NetApp Keystone subscription usage and also for your tenant usage. As a partner administrator, you can view the capacity report for your subscription usage from **Reports** > **Keystone Usage**. As a partner admin, you can view the capacity usage reports for a specific tenant from **Reports** > **Tenant Usage**/**Capacity Usage**. As a tenant administrator, you can view the tenancy reports from **Reports** > **Tenant Usage**.
- **Subscription:** As a partner admin, you can view and update your subscription and tenant subscriptions from **SUBSCRIPTIONS** > **Keystone Subscriptions** and **SUBSCRIPTIONS** > **Tenant Subscriptions** respectively. As a tenant administrator, you can only view your tenant subscriptions.
- **Users:** Based on your role, you can assign privileges to a new or existing user within a tenancy as per the requirement. The role can be NetApp administrator, NetApp administrator with read only privileges, partner administrator, or tenant administrator. As a partner administrator, you can assign only partner administrator or tenant administrator roles to new users. A tenant administrator user can assign only the tenant administrator role to other users.
- **Networks menu:** As a partner administrator, you can view the networks defined for your tenancy. You can also create subnets for your subtenant and zone from **NETWORKS** > **Subnets**. This is required while provisioning storage by the end customers or subtenants.

Tiering

NetApp Keystone Keystone service now includes a tiering capability that leverages the NetApp FabricPool technology. It identifies less frequently used data and tiers it to a cold storage that is owned, deployed, and managed on-premises by NetApp. You can opt for tiering by subscribing to the extreme-tiering or premium-tiering service levels.

The following APIs have been modified to include new attribute values for the new tiering service levels:

- File services APIs
- Block store APIs

For more information, see the following links:

- Tiering
- service levels

Features introduced in NetApp Service Engine 2.0.1

The new features in this release include the following:

Support extended to Cloud Volumes Services for Google Cloud Platform

NetApp Service Engine now has the ability to support Cloud Volumes Services for Google Cloud Platform (GCP) in addition to its existing support for Azure NetApp Files. You can now manage subscribed services, and provision and modify Google Cloud Volumes from NetApp Service Engine.

Subscriptions to Cloud Volumes Services are managed outside of NetApp Service Engine. The relevant credentials are provided to NetApp Service Engine to allow connection to the cloud services.

Ability to manage objects provisioned outside of NetApp Service Engine

The volumes (disks and file shares) that already exist in the customer environment and belong to the storage VMs configured in NetApp Service Engine, can now be viewed and managed as a part of your NetApp Keystone subscription. The volumes provisioned outside of the NetApp Service Engine are now listed on the **Shares** and **Disks** pages with appropriate status codes. A background process runs at a periodic interval and imports the foreign workloads within your NetApp Service Engine instance.

The imported disks and file shares may not be in the same standard as the existing disks and file shares on NetApp Service Engine. After import, these disks and file shares are categorized with `Non-Standard` status. You can raise a service request from **Support > Service Request > New Service Request** for them to be standardized and managed through the NetApp Service Engine portal.

SnapCenter integration with NetApp Service Engine

As a part of SnapCenter integration with NetApp Service Engine, you can now clone your disks and file shares from the Snapshots created in your SnapCenter environment, outside of your NetApp Service Engine instance. While cloning a file share or disk from an existing Snapshot on the NetApp Service Engine portal, these Snapshots are listed for your selection. An acquisition process runs in the background at a periodic interval to import the Snapshots within your NetApp Service Engine instance.

New screen for maintaining backups

The new **Backup** screen enables you to view and manage the backups of the disks and file shares created in your environment. You can edit the backup policies, break the backup relationship with the source volume, and also delete the backup volume with all its recovery points. This feature allows the backups to be retained (as orphan backups) even when the source volumes are deleted, for later restoration. For restoring a file share or disk from a specific recovery point, you can raise a service request from **Support > Service Request > New Service Request**.

Provision for restricting user access on CIFS shares

You can now specify the Access Control List (ACL) for restricting user access on a CIFS (SMB) or multi-protocol share. You can specify Windows users or groups based on the Active Directory (AD) settings to add to the ACL.

Features introduced in NetApp Service Engine 2.0

The new features in this release include the following:

MetroCluster support

NetApp Service Engine supports sites configured with MetroCluster configurations. MetroCluster is a data protection feature of ONTAP that provides recovery point objectives (RPO) 0 or recovery time objectives (RTO) 0 using synchronous mirror for continuously available storage.
MetroCluster support translates to a synchronous disaster recovery feature within NetApp Service Engine. Each side of an MetroCluster instance is registered as a separate zone, each with its own subscription that includes a Data Protection Advanced rate plan.
Shares or disks created in a MetroCluster-enabled zone synchronously replicate to the second zone. The consumption of the replicated zone follows the Data Protection Advanced rate plan applicable to the zone where storage is provisioned.

Cloud Volumes Services support

NetApp Service Engine now has the ability to support Cloud Volumes Services. It can now support Azure NetApp Files.

> Subscriptions to Cloud Volumes Services are managed outside of NetApp Service Engine. The relevant credentials are provided to NetApp Service Engine to allow connection to the cloud services.

NetApp Service Engine supports:

- Provisioning or modifying the Cloud Volumes Services volumes (including the ability to take snapshots)
- Backing up data to a Cloud Volumes Services zone
- Viewing Cloud Volumes Services volumes in NSE inventory
- Viewing Cloud Volumes Services usage.

Host groups

NetApp Service Engine supports the use of host groups. A host group is a group of FC protocol host worldwide port names (WWPNs) or iSCSI host node names (IQNs). You can define host groups and map them to disks to control which initiators have access to the disks.
Host groups replace the need to specify individual initiators for every disk and allow for the following:

- An additional disk to be presented to the same set of initiators
- Updating the set of initiators across multiple disks

Burst usage and notifications

Some NetApp Service Engine-supported storage subscriptions allow customers to use a burst capacity over their committed capacity, which is charged separately over and above the subscribed committed capacity. It is important for users to understand when they are about to use or have used burst capacity to control their usage and costs.

Notification when a proposed change results in using burst capacity

A notification to display a change in the proposed provisioning that will cause a subscription to go into burst.

The user can choose to continue, knowing that will put the subscription into burst or choose not to continue with the action.

Notification when subscription is in burst

A notification banner is displayed when a subscription is in burst.

Capacity report shows burst usage

Capacity report showing the number of days the subscription has been in burst and the quantity of burst capacity used.

Performance Report

A new Performance Report in the NetApp Service Engine web interface displays information about the performance of individual disks or shares on the following performance measures:

- IOPS/TiB (Input/Output operations per second per tebibyte): The rate at which input and output operations per second (IOPS) occur on the storage device.
- Throughput in MBps: The data transfer rate to and from the storage media in megabytes per second.
- Latency (ms): The average time for reads and writes from the disk or share in milliseconds.

Subscription management

Subscription management has been enhanced. You can now:

- Request a data protection add-on, or request additional capacity for a data protection add-on for a subscription or service
- View data protection usage capacity

Billing enhancement

Billing now supports the ability to measure and bill for snapshot usage for ONTAP (file and block) storage.

Hidden CIFS shares

NetApp Service Engine supports creating hidden CIFS shares.

Fixed issues in NetApp Service Engine

The following issues that were found in a previous release of NetApp Service Engine have been fixed for you to successfully use your NetApp Keystone services.

Issue Description	After the fix	Fixed in version
Volume move was automatically triggered when non-FabricPool aggregate existed on the cluster. Any modifications to volumes or disks triggered a volume move to another aggregate.	No volume move is triggered for volume operations.	NetApp Service Engine 2.2

Issue Description	After the fix	Fixed in version
Host groups deletion removed host groups from the NetApp Service Engine user interface (UI), but not from the cluster.	Resolved.	NetApp Service Engine 2.2
Host groups could be unmapped from the disks on the NetApp Service Engine UI, but not from the cluster.	Resolved.	NetApp Service Engine 2.2
Export policies could not be deleted from the NetApp Service Engine UI.	The changed policies can be saved from the UI.	NetApp Service Engine 2.2

Known issues in NetApp Service Engine

The following known issues have been reported in NetApp Service Engine. You might encounter these issues when you provision or use your storage as a part of your Keystone subscriptions.

Known Issue	Description	Workaround
Limitations in synchronous data protection	There is an issue where the VLANs, IPspaces, and Broadcast domains are not defined on the secondary partner of an MetroCluster cluster. This issue can affect recovery of data from the replica zone.	Place a service request for GSSC to perform a manual network configuration on the partner cluster. The network configuration can be done in advance if the network components (VLAN, IPspace, and Broadcast domains) are known.
Limitations in disabling and deleting volumes that are disaster recovery enabled	If there are two or more volumes in a storage VM that are disaster recovery enabled, disaster recovery cannot be disabled for a file share or disk.	Raise a service request for GSSC to resolve the issue.
Limitations in deleting file servers and block stores that are disaster recovery enabled	Deleting a disaster recovery enabled block store or file share might fail because peering is not removed due to timeout.	Failed deletion is available in “Contact Support” and Support will be notified via OpsRamp Ticket.
Limitation when creating multiple snapshots	When multiple snapshots are triggered for creation, the web page initially displays only the last snapshot issued.	Auto job picks up the other snapshots within 15 minutes.
Disaster recovery enabled file servers on the secondary controllers are not deleted.	All primary volumes and the replication relationships are removed. However, the disaster recovery object is not deleted. This object does not consume any capacity or networking.	There is no workaround for this issue.
Limitation in disabling backup on volumes	Raise a service request for GSSC to resolve the issue.	There is no workaround for this issue.

Known Issue	Description	Workaround
Limitation in deleting network subnets	Customers are unable to delete network subnets.	Raise a service request for GSSC to resolve the issue.
Limitation in deleting VLAN using API	Deleting a VLAN that has a subnet associated with it leaves an empty subnet stub in the UI.	Raise a service request for GSSC to resolve the issue.
Limitation in importing storage VMs with non-standard subnet	Storage VMs (storage virtual machines, also known as SVMs), created outside of NetApp Service Engine cannot be operational due to a non-standard subnet. The storage VMs are imported with the status `Contacted Support`.	Raise a service request for GSSC to resolve the issue.
Capacity and billing reports might be inaccurate in NetApp-managed environments	In a NetApp-managed environment, the capacity and billing reports generated from the UI might be affected due to missing LUN size metrics and service levels on backup volumes.	Raise a service request for GSSC to resolve the issue.
A 15-minute lag in reporting the committed capacity on graphs after subscription creation.	When a tenant subscription is created, and the report graphs are checked immediately (within 15 minutes of the subscription creation), the committed capacity is not reported correctly.	Check the report graphs at least 15 minutes after the subscription is created.
Change in service levels does not move volumes	If two different aggregates in the same cluster are used for two service levels, changing the service level on a volume to another does not move the volume to the other aggregate. Only the adaptive QoS policy is applied.	Raise a service request for GSSC to resolve the issue.
Creation of FCP SVM requires iSCSI activation	For creating a storage virtual machine (SVM) and enabling FCP support on it, an iSCSI interface activation is required.	Raise a service request for GSSC to resolve the issue.
Limitation with multiple host groups with same initiator	If multiple host groups are created with the same initiator name, and disks are mapped to all the host groups, the disks get mapped to only one host group on the cluster.	Raise a service request for GSSC to resolve the issue.

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