

Keystone® Storage-as-a-Service Service Description

1. General

This Service Description describes the Keystone Storage-as-a-Service (“STaaS”) consumption-based STaaS Service that is available to Customer pursuant to the Agreement. Upon delivery by Customer and acceptance by NetApp® of a Keystone Order for STaaS Services, the terms of the Keystone Order will incorporate by reference this Service Description, Service Description Supplement, and the applicable Keystone STaaS Terms.

1.1 Definitions.

The following additional defined terms apply to this Service Description.

- **“Additional STaaS Service(s)”** means the optional STaaS features and services that are available as part of the STaaS Services, subject to additional Fee amounts, conditions, and availability, with further details provided in Section 3.
- **“Burst Capacity”** means the amount of Consumed Capacity (in TiB) that exceeds the Committed Capacity during a billing period, per Performance Level, per Keystone Order, with further details provided in Section 2.2.
- **“Burst Capacity Limit”** means the maximum amount of Usable Capacity (in TiB), per Performance Level, per Keystone Order, for which NetApp provides Service Levels, with further details provided in Section 2.2.
- **“Burst Waiver Period”** means the number of calendar-days, from the Start Date, for which Burst Capacity usage will be metered and reported, but not charged, with further details provided in Section 2.2.
- **“Capacity Report”** means the report generated by NetApp summarizing the Consumed Capacity for the prior billing period, with further details provided in Section 2.6.
- **“CVO”** means NetApp’s Cloud Volumes ONTAP® software, as described in <https://docs.netapp.com/us-en/cloud-manager-cloud-volumes-ontap/index.html>.
- **“Commingling”** means the physical or logical incorporation of STaaS Products and non-STaaS Products in the same ONTAP cluster or in the same StorageGRID® grid.
- **“Committed Capacity”** means the amount of capacity (in TiB), per Performance Level, per Keystone Order that Customer is minimally invoiced for during each billing period, with further details provided in Section 2.2.
- **“Consumed Capacity”** means the amount of capacity (in TiB) used and metered to store Customer data, per Performance Level, per Keystone Order, with further details provided in Section 2.2.
- **“Effective Capacity”** means the amount of capacity (in TiB) equal to the Physical Capacity multiplied by a data efficiency factor ($> \text{ or } = 1$).
- **“Hybrid Cloud Service”** means On-Premises Service and, optionally, CVO ordered on a single, co-terminated Keystone Order and charged on single invoice, with ability to reallocate spend from On-Premises Service to CVO.
- **“IOPs”** means input/output operations per second.
- **“Logical Capacity”** means the capacity (in TiB) required to store Customer data on STaaS Products without any Storage Array data efficiencies applied to those data.
- **“Monitoring Tool”** means one or more of the required NetApp proprietary tools that monitors and transmits STaaS Service consumption data to enable reporting, invoicing, and STaaS Products’ capacity, health, performance, and support metrics to enable management and support of STaaS Products, with further details provided in Section 8.7.
- **“Minimum Payment”** means amount payable during the applicable billing period for Committed Capacities for each Performance Level, Additional STaaS Services (if applicable), and CVO (if applicable), identified in the Keystone Order.
- **“Non-compliant Volume(s)”** means an ONTAP volume that does not have a required AQoS policy applied.
- **“On-Premises Service”** means Keystone STaaS delivered through STaaS Products deployed at Site.
- **“Performance Level(s)”** means one of the pre-defined storage Performance Levels, based on IOPs, MBps, and/or latency, with further details provided in Section 2.3.
- **“Physical Capacity”** means the physical storage media capacity (in TiB) required to store Customer data and metadata.
- **“Provisioned Capacity”** means allocated size of one or more ONTAP® volumes or CVO volumes.
- **“Service Level(s)”** means any of the service levels described in Section 2.4.
- **“Start Date”** has the meaning ascribed to it in Section 4.4.
- **“Storage Array(s)”** means a data storage enclosure consisting of one or more storage controllers and internal and/or externally attached storage media.
- **“Target Site Readiness Date”** means date by which Customer is targeting completion of site preparation.
- **“Usable Capacity”** means the amount of Physical or Logical capacity (in TiB) available to store Customer data.

1.2 Partners.

NetApp's SaaS Services described in this Service Description may be provided by NetApp directly or resold to Customer by a Partner. Partner may also assume some of the responsibilities of NetApp under this Service Description, as noted below.

2. STaaS Features and Services

2.1 Storage types.

- **File and Block** storage type is delivered on NetApp ONTAP® AFF, ASA and/or FAS platforms.
- **Object** storage type is delivered on NetApp StorageGRID® platform.

2.2 Capacity.

- **Committed Capacity**
 - Use of the STaaS Services requires Customer to subscribe to a certain amount of Committed Capacity for each Performance Level selected in a Keystone Order. Minimum Committed Capacity thresholds and capacity increase increments for each Performance Level are set forth in Section 2.3 of this Service Description.
- **Consumed Capacity**
 - **ONTAP File and Block.** Consumed Capacity is the amount of metered Logical Capacity in use to store all instances (primary and mirrors) of Customer data plus Physical Capacity in use to store differential data of Snapshot™ copies and clones.
 - **StorageGRID Object.** Consumed Capacity is the amount of metered Physical Capacity in use to store all instances of Customer data on all nodes based on ILM policy(ies) configured.
 - **Cloud Volumes ONTAP.** Consumed Capacity is the amount of metered Provisioned Capacity of all CVO volumes.
- **Burst Capacity**
 - **Burst Capacity Limit.** The Burst Capacity Limit is equal to 120% of the then current Committed Capacity, per Performance Level, per Keystone Order. STaaS Service allows Customer's Consumed Capacity to exceed the Committed Capacity up to the Burst Capacity Limit.
 - **Burst Rate.** All Burst Capacity consumption will be invoiced at the specified Rate corresponding to the applicable Performance Level.
 - **Burst Waiver Period.** STaaS Service provides a Burst Waiver Period of sixty (60) days, from Start Date.

2.3 Performance Levels.

File and Block storage type Performance Levels are defined in terms of maximum user IOPs per Logical TiB stored per volume, target user IOPs per Logical TiB allocated per volume, and 90th percentile latency. One or more Performance Levels can be selected per Keystone Order.

- **On-Premises Service**

Storage Type	File and Block					Object
Supported protocols	NFS, SMB, CIFS, iSCSI, FC, S3* [* for FabricPool use only]					S3
Performance Level	Extreme	Premium	Performance	Standard	Value	N/A
Max IOPs/Logical TiB stored per volume @ 32K block size	12,288	4,096	2,048	512	128	N/A
Target IOPs/Logical TiB allocated per volume @ 32K block size	6,144	2,048	1,024	256	64	N/A
Max MBps/ Logical TiB stored per volume @ 32K block size	384	128	64	16	4	N/A
Target 90 th percentile Latency	<1ms	<2ms	<4ms	<4ms	<17ms	N/A
Platform	ONTAP	ONTAP	ONTAP	ONTAP	ONTAP	StorageGRID
Min Committed Capacity per Keystone Order	25 TiB			100 TiB		500 TiB
Committed Capacity increase increment	1 TiB					1 TiB
Committed and Metered Capacity type	Logical					Physical

- **Cloud Volumes ONTAP**

Storage Type	Cloud Volumes ONTAP®
Supported Protocols	NFS, CIFS, iSCSI, S3* (*AWS & Azure only)
Platform	CVO
Min Committed Capacity per Keystone Order	4 TiB
Capacity Increase Increment	1 TiB
Committed and Metered Capacity type	Logical

2.4 Service Levels.

- **Capacity Service Level.** Commercially reasonable efforts will be made to make available Usable Capacity of 120% of Committed Capacity during the subscription term.
- **Performance Service Level.** Commercially reasonable efforts will be made to provide the target IOPs/Logical TiB allocated per volume, per the Performance Levels set forth in the Keystone Order, for Allocated Capacity up to the Burst Capacity Limit.
- **Availability Service Level.** Commercially reasonable efforts will be made to provide access to Usable Capacity with average monthly uptime of all deployed AFF and FAS storage arrays, per Keystone Order, of at least 99.999% during each monthly billing period.
- **Technical Support.** Commercially reasonable efforts will be made to provide following Time to Respond (TTR) targets, after receipt of incident ticket by Keystone support, based on incident priority level assigned by Keystone support:

Priority	Time to Respond Target	Service Window
P1 Business operations severely impacted.	30 minutes	24x7x365
P2 Business operations degraded.	2 hours	24x7x365
P3 Little or no business impact.	8 hours	8x5 local business hours
P4 Informational or administrative inquiries.	24 hours	8x5 Local business hours

- **Service Parts Delivery and Replacement Service Level.** NetApp will deliver service replacement parts and send authorized engineers to Site with target time of four (4) hours from time need is determined by Keystone Support, where geographically available.
- **Sustainability Service Level.** Keystone will provide target maximum watts consumption, per TiB, per Performance Level, for STaaS Services delivered on NetApp ONTAP® Flash storage arrays.

2.5 Features.

- File and Block Performance Levels include use of the following ONTAP software features, subject to change, depending on ONTAP version deployed and services subscribed to.
 - **Protocols:** NAS Protocols (NFS, CIFS), SAN Protocols (FCP, iSCSI, NVMe), S3 (for FabricPool tiering use only).
 - **Data Management:** FlexVol® volumes, FabricPool (to supported NetApp data storage targets), FlexGroups, Snapshot™ copies, FlexClone® volumes, SnapRestore® software.
 - **Data Protection:** SnapCenter® software, SnapManager® software, SnapMirror® Asynchronous replication, SnapVault® software.
 - **Encryption:** Volume encryption, Trusted Platform Module (TPM), data-at-rest encryption.
 - **Security and Compliance:** Fpolicy, multi-tenant key management, SnapLock® Enterprise software, Autonomous Ransomware Protection.
- Object Performance Level includes use of all StorageGRID® features.

2.6 Services.

The following services will be performed by NetApp or its Partner, as applicable:

- **Design.** Design Keystone STaaS architecture and determine STaaS Products required to deliver STaaS Services.
- **STaaS Products.** Provide the required STaaS Products, including power cords, network, and interconnect cables between STaaS Products, and SFPs for STaaS Products.
- **Site Requirements.** Provide rack, space, power, cooling, networking, Monitoring Tool, and other Site preparation requirements and specifications required to deploy STaaS Products.
- **Shipping.** Provide shipping of STaaS Products to Site and provide return shipping at the end of term.
- **Installation.** Provide installation services for initial, add-on, and updates of STaaS Products.
- **Activation.** Enable monitoring, metering, invoicing, and support and make STaaS Services available for use.
- **Monitoring.** Monitor capacity, consumption, health, and performance of STaaS Products and STaaS Services using the Monitoring Tool.
- **Dark Site.** Provide alternate Monitoring Tool solution, if available, for Customers that restrict outbound transmission of Monitoring Tool data or inbound access to STaaS Products for troubleshooting or management.
- **Reporting.** Generate, for each billing period, a Capacity Report and either provide Customer with such Capacity Report through the Monitoring Tool or with each invoice.
- **Notification.** Notify Customer of incidents that may affect delivery or use of STaaS Services.
- **Technical Support.** Provide technical support, available 24x7x365, by email or telephone.
- **Parts Delivery and Replacement.** Coordinate with Customer to deliver replacement parts and to send authorized engineers to Site upon Keystone support determining need for parts replacement.

- **On-site Support and Troubleshooting.** Coordinate with Customer to send authorized engineers to Site upon NetApp Support determining need for on-site support or troubleshooting.
- **Capacity, Health, and Performance management.** Monitor deployed STaaS Products for ability to deliver STaaS Services and Service Levels and determine, communicate, and coordinate any remediation required.
- **Software Updates.** Identify, plan, and install, in coordination with Customer, Keystone required Subscription Software updates, and patches.
- **Hardware Updates.** Identify, plan, and install, in coordination with Customer, Keystone required Subscription Hardware updates.
- **Return.** At Subscription Term expiration, provide packaging (if required), deinstall STaaS Products and arrange for return to NetApp, and sanitize media and reset STaaS Products to factory settings upon return to NetApp facility.

2.7 Keystone Success Manager.

STaaS Services include remote Keystone Success Manager (“KSM”) services, available during local business hours, that serve as the Customer’s Keystone STaaS contact, providing the following services specific to Keystone STaaS:

- Conduct, as needed, STaaS Services review calls that may include:
 - General questions regarding subscription services.
 - Capacity & Performance level requirements and planning.
 - Maintenance and update planning.
 - Consumption and invoice review.
 - Incident review.
 - STaaS Services modifications and renewals.
- Escalation management.

3. **Additional STaaS Services**

The following optional features and services (each, an “**Additional STaaS Service**”) are available, for additional Fees, as part of the STaaS Services:

3.1 Advanced data protection feature.

- Provides symmetric MetroCluster™ IP synchronous mirroring feature.
- Supported on ONTAP based File and Block Performance Levels.
- Consumed Capacity for MetroCluster IP is measured as the amount of Logical Capacity in use to store primary mirrored, primary unmirrored, and all mirrored copies of Customer data.

3.2 Data tiering to non-NetApp targets feature.

- Provides FabricPool data tiering feature to supported non-NetApp data storage targets.
- Supported on ONTAP based File and Block Performance Levels.

3.3 Non-returnable non-volatile components (“NR-NVC”) feature.

- Provides option for Customer to retain defective non-volatile memory components during Subscription Term.
- Provides option for Customer to retain functional non-volatile memory components at expiration of the Subscription Term.
- Non-volatile components include storage media (hard drives and SSDs) and non-volatile memory components that contain Customer data and whose contents cannot be erased or sanitized by removing power or discharging battery or executing firmware or software commands.

3.4 US citizen support (USCS) service.

- Provides installation, parts replacement, support, and KSM services from U.S. citizens on U.S. soil, where geographically available.

4. **Keystone Order**

4.1 Order type.

Keystone STaaS provides two, non-convertible order types:

- **On-Premises Service.**
- **Hybrid Cloud Service** providing On-Premises Service and, optionally, CVO that can be added to the Keystone Order at any time up to 90-days before end of Subscription Term.

4.2 Subscription Term.

- On-Premises Service offers up to 5 years Subscription Term.
- Hybrid Cloud Service offers up to 3 years Subscription Term with co-termination of On-Premises Service and CVO.

4.3 Renewal.

- The Subscription Term will automatically renew for twelve (12) month extensions, subject to the terms in effect immediately prior to expiration until: (a) the Subscription Services are terminated by either party upon the delivery of written notice to the other at least ninety (90) days prior to the then scheduled date of expiration; or (b) the Subscription Services are renewed or extended on mutually agreeable terms.

4.4 Start Date.

Subscription Term starts and Fees begin to accrue on the Start Date that is the earlier of, either:

- The date on which NetApp notifies Customer that NetApp has activated STaaS Services and has made STaaS Services available for Customer use; or
- The date on which Customer has commenced use of the STaaS Services.

5. Fees

5.1 Capacity Reports

NetApp® will use the Capacity Reports to calculate the Fees due under each invoice for STaaS Services and such Capacity Reports will be deemed to contain the final and conclusive summary of the Consumed Capacity used by Customer during the applicable billing period, unless Customer can establish that such Capacity Report contains a material error.

5.2 Minimum Payment.

Each Keystone Order is subject to a Minimum Payment amount that is payable during the applicable billing period identified in the Keystone Order.

5.3 Non-Compliant volume charge.

Capacity usage within Non-compliant Volumes will be billed at rate of highest Performance Level purchased under Keystone Order associated with the media type on which volume resides.

5.4 Hybrid Cloud Service.

- Minimum Payment for Hybrid Cloud Service may include an amount for CVO based on metered Provisioned Capacity of all CVO volumes.
- Fees payable by Customer for Hybrid Cloud Service do not include AWS, Azure, or other cloud service provider charges, which must be paid by Customer and cloud services connectivity maintained for so long as CVO is being used.

5.5 Total Fees.

The total Fees payable for a billing period are determined for each billing period and will include Minimum Payments, additional usage-based consumption charges and/or fixed rate charges for any Burst Capacity as described in Section 2.2, and Non-Compliant Volume amount (if applicable).

6. Invoicing

Fees payable for a billing period will be included in a single invoice and will identify the components of such Fees. Customer will be invoiced in accordance with the invoice period selected in the Keystone® Order.

- **Monthly, in arrears** (applicable to On-Premises Service or Hybrid Cloud Service).
- **Annual, in advance** (applicable to On-Premises Service, only).

7. Subscription Modifications

7.1 Committed Capacity Increase.

- Customer may increase Committed Capacity to an existing Performance Level or add a new Performance Level at any time during the Subscription Term, up to 90 days prior to the scheduled expiration of the Subscription Term.
- Once effective, any increases will remain in effect for the remainder of the Subscription Term and the corresponding Minimum Payment applicable to the new Committed Capacity will be adjusted in accordance with the newly agreed upon Committed Capacity.
- Where Customer has selected annual billing, NetApp will promptly invoice Customer for any pro-rated increases in Minimum Payments owed for the remainder of the Subscription Term.

7.2 Committed Capacity Decrease.

If Customer has selected annual billing (applicable to Keystone STaaS On-Premises Service only) and a Subscription Term of at least 24 months, Customer may decrease the Committed Capacity subject to capacity decrease amount and Minimum Payment limits per Service Description Supplement.

7.3 Reallocation.

- In Hybrid Cloud Service only, Customer can reallocate On-Premises Service spend to CVO spend quarterly (up to 25% of then current ACV).
- Post reallocation, On-Premises Service monthly Minimum Payment per Keystone Order must be greater than \$16,666 (or US currency equivalent).

8. Monitoring Tool

- Keystone requires full installation and continuous enablement of Monitoring Tool at Customer Site(s) on Customer provided VMs.
- Monitoring Tool connects to and communicates only with the management plane of the STaaS Products.
- Neither NetApp nor Monitoring Tool has physical or logical access to, operates on, processes, or transmits Customer data
- During remote troubleshooting, support, or maintenance activities, Customer controls providing permission, monitoring, and logging of remote NetApp access to required STaaS Products.
- Consumed Capacity of File and Block and Object storage types is recorded not less than daily by the Monitoring Tool.
- Consumed Capacity of Cloud Volumes ONTAP is recorded every fifteen minutes by Cloud Manager.

9. Customer Responsibilities

9.1 Data protection, security, and management.

Customer is responsible for enabling, configuring, administering, and maintaining:

- Physical, network, and access security.
- Data-at-rest and data-in-flight encryption.
- All aspects of Customer data backup and recovery and business continuity/disaster recovery.
- Integration and/or automation of the STaaS Services with Customer environment or applications.
- Adherence to customer applicable industry or government compliance requirements.
- Data migration to/from STaaS Products.

9.2 Subscription expiration, cancellation, termination.

At end of subscription term, Customer must:

- Discontinue use of STaaS Services (NetApp is not responsible for Customer's access to, or availability or loss of Customer data on STaaS Products at any time after end of subscription term).
- Backup, migrate, delete, and/or sanitize media, if and as required by Customer (without rendering media unusable).
- Notify NetApp that STaaS Products and Services are no longer in use and are ready to be decommissioned and returned.
- Transport packaged items to Customer shipping area for return pickup.
- Customer may receive an extension of STaaS Services beyond the Subscription Term, for express purpose of an orderly transfer of Customer data out of STaaS Services, contingent on NetApp approval. Following terms and conditions apply:
 - Customer needs to provide written request to NetApp at least 90 days prior to expiration of the current Subscription Term.
 - Allowance is made for a period of one calendar month.
 - All effort, hardware, software, or services related to transferring Customer data out of STaaS Services are not included as part of Keystone services or fees.