SERVICE DESCRIPTION

NETAPP DATA MIGRATION AS A SERVICE

Service background and overview

NetApp® Data Migration as a Service delivers specialized expertise to smoothly and securely migrate your data from NetApp or third-party storage environments to any new on-premises NetApp system or to AWS, Azure, or Google Cloud services. NetApp Professional Services experts and NetApp Services Certified Partners provide the knowledge and the experience to get your systems into production quickly, while maintaining normal business operations throughout the transition. The service tailors and executes a migration plan that meets the specific requirements of your business. This Service Description is by and between NetApp, Inc. ("NetApp") and the end Customer or NetApp Authorized Reseller ("Customer") identified in the NetApp quote.

Key benefits

Move your file, block, object, or virtual machine data to any NetApp system—on premises or in the cloud—on time, on budget, and without data loss. Premigration planning and discovery establish a quick and efficient path to the end state that you want. By determining optimal implementation and configuration and by providing the right sequencing and tools, NetApp Data Migration as a Service mitigates business disruptions from outages and long cutovers during and after migration and maintains data protection and regulatory compliance. The ability to run parallel environments during the migration helps facilitate a complete and successful migration.

NetApp makes it easy and cost effective to complete your data migrations. Tell us how much data you need to move and we will give you a cost in just minutes—no more long, drawn-out scoping and quoting processes. The more data you move, the lower the cost per terabyte.

With each 1-year contract, our experts will move one workload or multiple workloads to new on-premises NetApp systems or to any hyperscaler cloud environment for a flat fee that's based on the amount of data you are migrating. It doesn't matter where your data currently resides. There is no additional cost regardless of the migration type or tool required to perform the work. Everything you need is included—no surprises.

With deep proficiency in cloud and on-premises data migrations, NetApp Professional Services specialists use proven methodologies and tools to provide the operational flexibility to easily migrate your data to a new cloud or on-premises environment. You can depend on NetApp Professional Services to deliver a fully validated and tested NetApp environment, with your data completely intact.

Service delivery

To confirm that the new system is compatible with the Customer's environment and can be easily integrated, the service starts with a review of all relevant parts of the environment. The Advanced Deployment Service interview is performed in person or virtually by telephone, Webex, Zoom, or other online meeting service with the NetApp consultant. The result of this interview is a completed deployment questionnaire, noting all the required information for the installation and configuration phase.

NetApp Data Migration as a Service is delivered in six phases:

- **Service Tasks.** Discuss your migration needs with the NetApp team. Determine the amount of data to migrate and the type of migration (NAS, SAN, object, cloud).
- **Discover.** Determine key risks and data sources in your current environment to establish a transition timeline and storage mapping to hosts.
- **Design.** Use migration requirements from the previous phase to design a complete migration plan and strategy to enable a flawless migration.
- **Implement.** Perform migration in waves, based on the migration plan. Confirm project reporting and risk management for addressing operational configurations, connectivity integration, user acceptance testing, and validation.
- **Test.** Validate the successful completion of the technical aspects of the data migration.
- **Closeout.** Deliver detailed solution documentation for transition execution and confirm that all aspects of the transition plan are complete and that the project requirements have been met.

Service Tasks

The tasks for Data Migration as a Service include:

- Agree with the Customer on the amount of data to be migrated within a period of 1 year.
- Validate that the migration scope is applicable for Data Migration as a Service and does not require any of the named exclusions.

Discover

- Gather Customer requirements, including but not limited to:
  - Source controllers.
  - SAN volumes/logical unit numbers (LUNS).
  - NAS file systems, using discovery tools if required.
  - VMware Virtual Machine guests that need to be migrated.
- For SAN migrations, the following additional tasks apply:
  - Gather host operating system, service packs, and HBA configuration.
  - Determine the size of LUNs presented to the hosts.
  - Review storage requirements—SAN volumes, applications, and hosts affected by data migration.
  - Determine the underlying LUN structure, multipath configuration, and active paths to the LUN.
  - Gather fabric configuration, like virtual SAN, NPIV, and zone information.
  - Perform a gap analysis for each host using the Interoperability Matrix Tool (IMT) and identify required hot fixes, OS updates, HBA driver, and multipath software. Create a Host GAP Analysis Report using IMT, if applicable.
- For NAS migrations, the following additional tasks apply:
  - Identify NAS volumes on source nodes.
  - Review storage requirements—NAS volumes, virtual CIFS servers, applications, hosts, shares, and exports affected by data migration.
- For multi-protocol remdiation, the following additonal tasks aplly:
  - Identify and document all multiprotocol accessed data on source NAS arrays in the user-mapping/file permission plan.
  - Identify applications/groups that are using this data.
  - Identify accounts/groups and authentication methods used for each of the protocols.
  - Identify primary protocol for each source Isilon filesystem.
- For VMware migrations, the following additional tasks apply:
  - Review/validate ESX hosts with Interoperability Matrix Tool (“IMT”).
  - Review VMware storage requirements: Capacity and datastore, performance and network, multi-tenancy, vSphere, IP and SAN requirements for LIF’s.
- For object migrations, the following additional tasks apply:
  - Identify Namespaces on source S3 Object Store arrays.
  - Identify S3 buckets on source S3 Object Store arrays.
  - Review storage requirements: Applications, namespace and S3 bucket affected by data migration.
- Determine the type of migration and notify the Customer.
- Discuss the NetApp provided migration tool and prerequisites with the Customer.
- Create an initial Storage Design Document.
- Onboard assigned NetApp resources into the Customer’s environment (including documentation completion, training, and VPN access requirements) in order to work on site or remotely.

Design

- Review the data collected during the Discovery phase.
- Determine nonproduction data of up to 1TB that will be included in a test migration.
- Create a Test Migration Plan.
- For SVM migrations, the following additional task applies:
  - Verify cluster/SVM peering, if applicable.
- For multi-protocol remediation, the following additional tasks apply:
  - Document all users and groups in the user-mapping/file permission plan.
  - Design a NetApp supported name mapping solution required to provide consistent mapping between NIS or LDAP (UNIX) and Active Directory.
  - Develop a multiprotocol user-mapping/file permission plan for each of the protocols.
- For SAN migrations, the following additional tasks apply:
  - Identify the target configuration for each host. Determine additional NetApp product requirements (SnapDrive®,SnapManager®).
  - Create migration zones from source to destination storage.
    Note: The Customer is responsible to complete cabling between source and destination storage in the existing SAN environment.
  - Configure source storage (create a host group for destination storage).
- For VMware migrations, the following additional tasks apply:
  - Create datastore/aggregate layout if needed.
  - Determine deduplication schedules and thin provisioning guidelines.
  - Configure Igroup and portset, where required.
- Perform a test migration that includes one 4-hour cutover.
- Review test migration results with the Customer and document in the Test Migration Plan.
- Verify the Customer's schedule to accommodate movement of data.
- Develop a Data Migration Plan that includes source volume/LUN/VMs to destination aggregate/SVM/volume/LUN/datastores mapping and type of migration and tooling.
- Create a Rollback Plan, which analyzes potential risks and identifies the levels of user impact and downtime that might necessitate rolling back the migration to the premigration environment.
- Update the Storage Design Document outlining the storage configuration specific to the Customer's environment.

Implement

- Review the Data Migration Plan with the Customer before commencing migration.
- For SAN migrations, the following additional tasks apply:
  - Provision destination aggregates and configure additional data logical interfaces (LIFs) for new or existing SVMs, if applicable.
  - Provision and/or configure destination SAN volumes and LUNs on the destination nodes.
- For Logical Volume Manager (LVM) based SAN migrations, the following additional tasks apply:
  - Configure igroups for the UNIX and Linux hosts, and map LUNs to each respective SAN host or hosts, if applicable.
    Note: Customer is responsible to zone one HBA from each UNIX and Linux host to the target ONTAP 9.x controllers.
  - Perform nondisruptive FC-SAN LUN data migration from source UNIX logical volumes (LVs) to NetApp destination LUNs/LVs via Logical Volume Mirroring, using native UNIX and Linux logical volume disk mirroring.
  - Stage the NetApp host utilities installation file on each UNIX host.
  - Validate that mirroring is complete and remove source disks from mirror and volume group.
- For non-LVM-based SAN migrations, the following additional tasks apply:
  - Perform setup of the migration tool and fulfill the applicable requirements, including but not limited to:
  - Insert migration appliance to the existing SAN environment, if applicable.
  - Present migration tool with source and destination LUNs.
- Migrate data from source to destination storage using the NetApp proposed migration tool.
- Remove source and destination LUNs from the migration tool.
- Reconfigure SAN hosts (server remediation).
- Remove source LUNs from UNIX and Linux hosts, if applicable.
  Note: The Customer is responsible to update SAN zoning, removing host access to source LUNs.
  Note: The Customer is responsible to reconfigure the host server or servers (server remediation). Update servers with Host Attach Kit and SnapDrive. Reboot and check MPIO/ALUA.

- For NAS migrations, the following additional tasks apply:
  - Provision destination aggregates and configure up to four additional data LIFs for new or existing SVMs, per the Storage Design Document.
  - Provision volumes on destination NetApp ONTAP 9.x clusters, per the Data Migration Plan.
  - Create CIFS shares and NFS exports on the destination NetApp ONTAP 9.x clusters, per the Data Migration Plan.
  - Perform setup of the migration tool and fulfill the applicable requirements, including but not limited to:
    - Initiate baseline and schedule incremental migrations from source to destination storage.
    - Monitor incremental data migration updates before cutover.
    - Present migration tool with source and destination LUNs.
    - Coordinate with the Customer's technical resources to schedule the cutovers in accordance with the process outlined in the Data Migration Plan.
    - Perform final sync update using the data migration tool and cut over from the source array to the ONTAP 9.x destination cluster.
- For multi-protocol remdiation migrations, the following additonal tasks apply:
- Implement configuration changes (ONTAP option settings).
- Adjust ACLs if necessary.
- Provide documented remediation procedure and supporting documentation updated in the user-mapping/file permission plan.
- For NetApp SnapMirror® based migrations, the following additional tasks apply:
  - Use SnapMirror to quiesce existing disaster recovery (DR) to source controllers.
  - Initiate SnapMirror baseline and schedule incremental migrations from source to destination storage.
  - Monitor incremental data migration updates before cutover.
  - Coordinate with the Customer's technical resources to schedule the cutovers in accordance with the process outlined in the Data Migration Plan.
  - Perform final sync update for all source NetApp volumes, and cut over from one source NetApp FAS/AFFxxx to the destination FAS/AFFxxx ONTAP 9.x cluster.
- For SVM DR migrations, the following additional tasks apply:
  - Initialize the SVM DR SnapMirror relationships.
  - Monitor SVM DR SnapMirror relationships.
  - Remotely monitor incremental SVM DR SnapMirror updates before each cutover.
  - Coordinate with the Customer's technical resources to schedule the cutovers in accordance with the process outlined in the SVM DR Migration Plan.
  - Perform final sync update with SnapMirror and cut over from the source array to the ONTAP 9 destination cluster.
- For VMware migrations, the following additional tasks apply:
  - Create roles for role based access control for vCenter Server instance.
  - Create up to one (1) additional Storage Virtual Machine ("SVM"), if required.
  - Create datastores per VMware solution overview.
  - Provision and configure VMware FC-SAN datastore volumes and LUNs on ONTAP cluster.
  - Provision and configure NFS-based datastore volumes.
  - Download the .zip file that contains binaries and signed certificates from the NetApp Support Site.
  - Log into the vSphere Web Client and click "Deploy OVF template". Enter details to customize the deployment.
  - Power on the ONTAP tools virtual machine and open the console of the virtual machine running ONTAP tools.
  - Verify that ONTAP tools is running after the deployment is complete.
  - If required, register ONTAP tools with the vCenter Server.
  - Perform non-disruptive migration of all VMware VM using Storage vMotion.
- For object migrations, the following additonal tasks apply:
  - Install and configure S3 data migration tool on up to two (2) Customer provided Windows 2008 VMs or physical servers.
  - Provision namespaces and S3 buckets destination SGWS storage - per Storage Design Document.
  - Customer responsibility: Update Applications to new StorageGRID destination applicable S3 bucket.
  - Preliminary testing and validation of S3 data migration tool with Storage Team and Applications Teams.
  - Initiate baseline and schedule incremental migration(s) from source to destination storage.
  - Monitor baseline and incremental data migration jobs.
  - Coordinate with the Customer's technical resources to schedule the cutovers in accordance with the process outlined in the Data Migration Plan.
  - Perform final sync update using 3rd party NAS data migration tool, and cutover from source array to destination ONTAP 9.x cluster.

Test

- Provide support to the Customer during end-user testing for NetApp products and NetApp provided migration tools during Schedule of Performance.
- For SVM-based migrations, the following additional tasks apply:
  - Validate that SVM has been successfully cut over and is running as production.
  - Customer validates that applications are online.
- Restart quiesced SnapMirror relationships from the new source controller, if applicable.
- Perform SAN host validation post-migration during Schedule of Performance, if applicable.
- Validate NAS client access and/or SAN host access to data post-migration during Schedule of Performance.
- Verify event logs in the destination storage after migration is complete.
- Verify the accuracy of data migration per the Data Migration Plan.
- Uninstall migration tools upon migration completion, if applicable.

Closeout

- Review project deliverables with the Customer:
  - Storage Design Document
  - Data Migration Plan
  - Test Migration Plan
  - Rollback Plan
  - Host GAP Analysis Report (“if applicable”)
  - User-mapping/file permission plan (“if applicable”)
- Obtain sign-off on Certificate of Completion for project acceptance in accordance with Section 5 of the SOW.

Project-specific assumptions and customer responsibilities

- NetApp will provide the NetApp selected migration tool, if applicable.
- NetApp will provide the Customer with temporary licenses for data migration software during the Schedule of Performance. NetApp has the right to replace the temporary license during the Schedule of Performance. These licenses remain the property of NetApp. Customer is not entitled to use these software features for any purpose outside the scope of this project. NetApp will uninstall the software before the end date of the engagement.
- The target NetApp infrastructure is fit for purpose, including (if applicable):
  - The vCenter Server environment has already been configured.
  - An ESXi host has been set up for the virtual machine.
  - Internet Control Message Protocol (ICMP) is enabled.
  - Customer has infrastructure in place to suport and configure iSCSI in their VMware environment.
- Customer is responsible for confirming data integrity pre- and post-migration.
- Customer is responsible for all necessary data backup in preparation for and throughout the performance of the professional services to enable data restoration, if required.
- Customer will complete all migration tool prerequisites prior to the installation of the migration tool, if applicable.
- Customer is responsible for connectivity and environmental requirements.
- Customer is responsible for making the decision to finalize cutover to production.
- Customer is required to maintain active support contracts during the Schedule of Performance for their third-party products, including switches, if applicable.
- Customer will obtain permission from their third-party product support providers to allow NetApp to file tickets with the support provider on the Customer’s behalf, as required.
- Customer will not adjust the agreed Project Schedule cutover dates without 2 weeks advance notice to NetApp. Changes to the agreed Project Schedule with less than the required advance notice will result in additional rework effort and will require a SOW Change Request in accordance with Section 6 of the SOW.
- For SAN migrations, the following additional assumptions apply:
  - Customer is responsible to complete cabling between source and destination storage in the existing SAN environment.
  - Customer is responsible to update SAN zoning, removing host access to source LUNs.
  - Customer is responsible to reconfigure the host server or servers (server remediation). Update servers with Host Attach Kit and SnapDrive. Reboot and check MPIO/ALUA.
- For LVM-based SAN migrations, the following additional assumption applies:
  - Customer is responsible to zone one HBA from each UNIX and Linux host to the target ONTAP 9.x controllers.

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  - Customer is responsible to zone one HBA from each UNIX and Linux host to the target ONTAP 9.x controllers.
- For object migrations, the following additonal assumptions apply:
  - Customer confirms no use of symlinks within their file structure environment. Selection of and pricing of the data migration tool was based on that acknowledgement. If symlinks are subsequently discovered in the Customer file share structure, a new data migration tool may be required which may incur additional cost to the Customer.
  - Creation of tenant and buckets will be done manually unless automation is required. Automation to create tenant and buckets is outside of this scope of work.
- Any required maintenance window associated with this PS Service may be delivered during non-business hours and/or business hours, as solely determined by NetApp.

Exclusions

The following items are not included in the scope of NetApp Data Migration as a Service:

- Knowledge transfer. Training is available through NetApp Learning Services.
- Any data restructuring or reorganization.
- Installation and configuration of hardware, ONTAP software, cluster switch software, and firmware that are part of the installation service and are not part of the migration service.
- Scheduling downtime and outages required for data migration is the Customer's responsibility.
- User acceptance testing.
- Verify that dependent applications, databases, and services have been started and are able to access migrated data.
- Deployment of Storage Replication Adapter (SRA)
- Any advanced migration requirements, including but not limited to:
  - Protocol conversions or remediation.
  - Migration of WORM or CAS data.
  - SnapMirror configuration/setup for disaster recovery and backup after migration.
  - Extended standby support after post-cutover support.
  - Migration of object storage data.
  - Migration of third-party snapshots.
  - NFSv4 POSIX security remediation.

Other deviations from the service scope can be accommodated with the purchase of additional NetApp services.

Purchasing

Customers typically purchase migration services when they purchase a new storage system, either on premises or in the cloud. Orders are assigned to the NetApp Services team or to NetApp Services Certified Partners in accordance with local NetApp processes.

Fee description and payment

Before NetApp performs any services, it requires an approved purchase order from the Customer, acceptable to NetApp. NetApp will invoice when it receives the approved purchase order. Payments are nonrefundable, with no right to refund or credit. If the Customer requires additional time, a new NetApp sales quote and purchase order will be required.

The migration services and the corresponding amount of TBs to be migrated reflected in the accompany MS Implementation Details Document are only available for the term specified in the NetApp quotation and/or [insert], and must be used in that period or they will expire with no right to credit or refund. Any unused services or TBs will not carry over for any further usage.

Implementation packages

This service is sold at a price per terabyte. The service is available in both an advanced payment package and a payment in arrears package.

The advanced payment package allows Customer to migrate data, sized in total up to the purchased amount of terabytes, over the period of a year from initial purchase date.

The payment in arrears package allows Customer to pay in quarterly or monthly increments.

- For the monthly payment in arrears package, Customer is allowed to migrate data up to 1/12 of the yearly purchased amount of terabytes per month, starting from initial purchase date.
- For the quarterly payment in arrears package, Customer is allowed to migrate data up to 1/4 of the yearly purchased amount of terabytes per quarter, starting from initial purchase date.

Incorporated terms

In the absence of an effective written agreement between the parties, expressly governing these services, this service is governed by the standard NetApp Support and Professional Services terms, posted at https://www.netapp.com/us/how-to-buy/stc.html as of the sales quotation date, which are incorporated herein by reference.