

NetApp System Advanced Deployment Service



The NetApp® System Advanced Deployment Service installs a single- or dual-controller NetApp ONTAP® storage system. The Advanced Deployment Service includes one of the predefined implementation packages to prepare the system for operations, to connect the system into the Customer’s environment, and to image and deploy Customer-specific details for the NetApp system management domain. If Customers want to deploy multiple systems, a deployment package is required for each unit that defines the system—for example, each high-availability (HA) pair or each node. For environments that are performing a Technology Refresh (“Tech Refresh”), the Advanced Deployment Service includes the necessary tasks to perform a nondisruptive migration of data from old to new infrastructure. This Service Description is by and between NetApp, Inc. (“NetApp”) and the end Customer or NetApp Authorized Reseller (“Customer”) identified in the NetApp quote.

Advanced Deployment Service

With the Advanced Deployment Service, NetApp provides physical installation and implementation of NetApp technologies. NetApp gathers information about what is required in the physical and software configuration and prepares and configures the system according to a design that is developed by NetApp engineers on behalf of the Customer's IT organization. After the system has been configured, NetApp verifies that it is functional and ready to use. For Tech Refresh, NetApp adds the new nodes to the environment, performs a nondisruptive migration by using the Volume Move ("VolMove") feature of ONTAP, and transfers the existing data to the new environment in a seamless and efficient manner, with no downtime to the Customer's production environment.

Key benefits

The flexibility, efficiency, and scale that NetApp technologies provide help organizations grow and meet changing business needs. Improper installation or misconfiguration of new technology can cause the system to fail, wasting time, resources, and money. To avoid missteps and to optimize efforts, careful planning, knowledge of best practices, and thorough testing are required before deployment of the system in a production environment. Without expert help, Customers can experience downtime and miss out on many of the capabilities and benefits that NetApp technology has to offer.

The goal of the NetApp System Advanced Deployment Service is to provide a high-performance NetApp technology—whether it is a storage system, an appliance, software, or other technology—that is ready to meet the application requirements. In addition to installation, setup, implementation, and verification, NetApp optimizes the system so that Customers can reap the benefits of a consistent, high-quality deployment from the start while minimizing risk and shortening deployment time. NetApp service professionals help eliminate missteps so that the Customer's staff can stay focused on business-critical tasks.

Service delivery

To confirm that the new system is compatible with the Customer 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.

The Advanced Deployment Service is delivered in six phases:

- **Service preparation.** NetApp engineers engage with designated Customer personnel to perform a site preparation and deployment review. They apply standard methodology and best practices while planning the Customer's system deployment.
- **Deployment.** NetApp usually schedules and performs the installation during normal business hours, although we can accommodate non-business hours installation if requested through the Advanced Deployment Service. By applying NetApp best practices, engineers install one or more systems in a standalone or HA configuration. They also minimally configure the operating system as required.
- **Service validation.** To validate that the Customer's equipment is ready for use, NetApp creates a minimal test configuration and then tests it to determine that read/write access is available for up to two colocated hosts. If the Customer has purchased an HA model, NetApp also tests and verifies failover and failback capabilities. For NetApp FAS ONTAP systems, deployment also includes all necessary switches and cabling installation, as well as node configuration.
- **Implementation.** Based on environmental variables such as IP addresses, host names, and networking infrastructure designs, the NetApp technology is configured within the limits defined in the Advanced Deployment Service package selected. For Tech Refresh deployments, NetApp consultants perform the VolMove nondisruptive migration for the Customer and transfer the Customer's existing data to the new NetApp infrastructure.

- **Validation.** NetApp validates the features that are configured as part of the implementation packages selected. NetApp also validates that the data migration has occurred during a Tech Refresh deployment.
- **Service completion and Knowledge Transfer.** Finally, NetApp service professionals provide all necessary information to the Customer's team during a single Knowledge Transfer (KT)* session so that the Customer can continue to support and to maintain the new system in their environment. NetApp's goal is to provide Customers with a fully functional, working system so that Customers can deploy it into their data infrastructure, either with their own resources or by using NetApp Services resources.

* KT does not replace NetApp Learning Services training. The Customer must have all necessary staff available for the KT session, and the session must occur on or before the completion of the Advanced Deployment Service.

Service scope

Following are details about the Advanced Deployment Service scope: Service preparation

- Prepare the Customer site and conduct installation review:
 - Validate that the Customer environment is suitably prepared for integration of the NetApp system solution.
 - Perform software and hardware inventory checks.
- Review and receive final sign-off of parameters to be used during the deployment and validation process.

Deployment

- Physically install the purchased products.
- Validate, update, and verify the firmware and software versions that are included with the hardware purchase.
- Configure core components:
 - Power.
 - Controllers to storage shelves.
 - Storage and client management network connection.
- Perform system tests to confirm that the system is prepared for implementation of the custom configuration.
- Set up the purchased system or systems:
 - Load the system management software.
 - Enable controller failover, if the system is clustered.
 - Configure email and SNMP notifications, if applicable.
 - Deploy the management node, if applicable.
 - Enable NetApp AutoSupport® telemetry (if applicable).

Service validation

- Perform internal testing for successful integration into the Customer environment.
- Verify and test the system:
 - Verify the protocol and licensing, if applicable.
 - Create the management account and confirm client access on a test volume (if applicable).
 - Perform a connectivity test; connect up to two hosts.

Implementation

- Configure the Implementation Package (which varies by product) based on the Customer's selection from Group A and Group B in the tables at the end of this document. The Implementation Package is discussed and agreed upon with the Customer during the time of engagement and project kickoff. This step is excluded when Non-Disruptive Migration for Tech Refresh is selected.
- Integrate the system into the Customer's network infrastructure.

Validation

- Perform basic tests on the features and system services that are included in the advanced configuration scope selected.
- Perform basic tests on HA failover (based on the hardware purchased).
- Perform cluster-mode testing and operation (based on the hardware purchased).

Service completion, KT, and administrative details

- Conduct the KT session, which is a short briefing about the implemented functions. Give instructions and hints to the operating staff for best practices in daily work, manageability, and monitoring.
- Prepare and deliver the following:
 - Acceptance test procedure—testing all components, readying implementation for service.
 - Documentation for the NetApp system as deployed.
 - An “as-built” document with the deployment and configuration details.
 - Base setup step-by-step documentation.
 - Advanced setup step-by-step documentation.
 - Testing logs and NetApp Active IQ® Config Advisor output.
- Review “as-built” documentation with the Customer contact.
- Provide the Customer with a quick tour of the NetApp Support Site.
- Register the system.

Note: NetApp tests its products to standard software or hardware specifications. Completion of this testing is not a requirement of the product’s acceptance, which is addressed under the product purchase agreement.

Non-Disruptive Migration for Tech Refresh

In addition to the preceding deployment scope, the Advanced Deployment Service includes the following Non-Disruptive Migration for Tech Refresh scope, as requested. If the Non-Disruptive Migration for Tech Refresh is not selected, Customer may choose from the Implementation Packages in the table at the end of this document.

Note: Implementation Packages are not applicable if a Tech Refresh is performed.

The Non-Disruptive Migration for Tech Refresh scope has the following limitations per HA pair:

- Maximum new HA pairs: one.
- Maximum new cluster switches: two.
- Maximum number of intermediate ONTAP upgrades: three.

Discovery

- Hold a planning call with Customer to discuss the data migration process, change control windows, priority volumes, and cutovers (if applicable); to review the disk-zeroing process with Customer; and to go over other pertinent details.
- Use the system health commands to display information about the health of cluster resources.
- Review the node management and Service Processor IP details.
- Review the current and target ONTAP version.
- Review the Compatibility Matrix for the required software and firmware level of the existing source environment.

Design

- Generate NetApp Active IQ® reports and run Upgrade Advisor for each ONTAP upgrade that is required to the source environment, as applicable.
- Review the Upgrade Advisor output, as applicable.
- Create and review the ONTAP upgrade plan, as applicable.
- Create and update the ConfigBuilder Delivery Workbook.

Implementation

- Upgrade the existing source environment to a minimum of ONTAP 9.8, including an intermediate upgrade or upgrades as per the upgrade plan, as applicable.
- Verify that the corresponding firmware is upgraded as required.
- Perform and verify additional disk assignments.
- Join controllers to the existing ONTAP system.
- Create storage aggregates.
- Create logical interfaces (LIFs), if required.
- Create network port trunks.
- Implement and configure cluster interconnect switches and convert the existing switchless cluster to a switched cluster, if required.
- Identify volumes on the source controllers for nondisruptive migration.
- Develop a data migration plan based on the migration of source volumes to the destination or storage VM (SVM) volume mappings and zoning changes.
- Perform volume moves from the source nodes to the destination nodes.
- If required, update LUN reporting nodes to a new HA pair SLM reporting-nodes list.
- If required, migrate data LIFs between cluster nodes.

Testing

- Test access through all newly created LIFs.
- Validate with Customer that all data can be accessed in the destination nodes.

Removal of nodes and/or disk shelves

- Perform disk-zeroing of all drives that are in the source disk shelves.
- Remove the source controllers from the cluster.
- Remove the source disk shelves from the cluster.
- If applicable, remove switches (if they were temporarily installed) and configure the new environment back to a switchless cluster.

Assumptions

- The source system is using ONTAP 9.8.x or a later version.
- All the clusters are in the same data center.
- The environment has passed Config Advisor validation before the advanced configuration starts.
- Volume move activities depend on the source controller performance.

Service prerequisites and conditions

NetApp responsibilities

- Advanced configuration deliverables are available up to 3 months after the system setup and installation have been completed.
- Advanced configuration deliverables will not exceed 5 days of delivery.
- NetApp reserves the right to subcontract any or all portions of the Professional Services provided herein.
- NetApp will perform ONTAP upgrades to a maximum version of ONTAP 9.8 per NetApp's supported upgrade paths. If Customer upgrades require more than three direct upgrades, the purchase of additional Time and Materials will be required.

Customer responsibilities

- The new equipment must be available at the Customer site before services begin.
- Customer is required to maintain active support contracts during the Schedule of Performance for their NetApp products and/or equipment.
- The data center must be prepared so that rack space and the necessary power and network connectors are available and meet standard product specifications.
- The Customer must provide access to the data center and required systems.
- The Customer must provide all information necessary for the deployment on or before the date of the service.
- The Customer must make sure that network connectivity and physical infrastructure (for example, electricity, facilities, and cabling) are available and meet product specifications.
- The Customer must provide a contact who is available throughout the service to clarify questions and to provide information, access, and passwords when needed.
- The Customer contact must be immediately available to work with the NetApp consultant during the handover stage of the service.
- The Customer must provide access to the contacts and the facility as requested for up to 5 days for completion of Advanced Deployment Service.
- Customers must provide at least 2 weeks' notice to schedule service delivery.
- To complete NetApp MetroCluster™ configuration, the Customer must purchase the Advanced Deployment Service for both ends of the MetroCluster connection.
- The Customer is responsible for registering any third-party product or products that are purchased on the NetApp quote. This registration enables Customer access to downloads, documentation, and support notifications and reminders for support renewal when the third-party product support contract expires. More information about these third-party products can be found on the NetApp Support Site.
- Customer is responsible for backing up the Customer's data in preparation for the data migration.
- Customer will retain data backup throughout the engagement or as required until the migration has been completed.
- Customer will use the Customer data backup if data restoration is required.
- The Customer will validate NAS and/or SAN access after the volume move migration has been completed.

Shared responsibilities

- The entire Advanced Deployment Service must be completed within 1 year of the purchase order date. Otherwise, the order automatically terminates and is deemed complete.
- NetApp will send the Customer a confirmation email when the service is complete, providing an opportunity for the Customer to advise whether the service was not delivered satisfactorily. If the Customer does not submit a written notification of a service performance issue within 5 business days from receipt of the confirmation email, the work will be deemed accepted.

Exclusions

The following items are not included in the Advanced Deployment Service:

- Low-level detailed design.
- Repositioning of equipment beyond a commercially reasonable distance.
- Any services not listed earlier (for example, a standard migration service that requires a cutover event such as NetApp SnapMirror®, Data ONTAP® operating in 7-Mode, or non NetApp to NetApp migrations); these services should be purchased separately.

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

Purchasing

Customers typically purchase deployment services when they purchase the system. 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, NetApp 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.

Additional services

NetApp can assist in every phase of the NetApp system lifecycle. Whether Customers need help with planning their next-generation solution, need an extra set of hands for a major deployment, or want to optimize an existing infrastructure, NetApp Services personnel have the skills to help Customers start it right and keep it right. NetApp offers a complete portfolio of related services, including consulting, design, implementation, and support services.

Implementation packages

AFF and FAS scope

The Advanced Deployment Service includes one package from Selection Group A and two additional packages, either from Selection Group A or Selection Group B. Customer selects all packages before they schedule delivery.

Note: If Non-Disruptive Migration for Tech Refresh is performed, the following Implementation Packages do not apply.

Selection Group A

Customer must select at least one of the packages from Group A before they schedule delivery.

NAS Implementation Package	SAN Implementation Package	Hybrid Implementation Package
Up to 8 storage VMs (SVMs)	Up to 8 SVMs	Up to 8 SVMs
Up to 8 aggregates	Up to 8 aggregates	Up to 8 aggregates
Up to 48 volumes	Up to 48 volumes	Up to 48 volumes
Up to 48 qtrees	Up to 48 qtrees	Up to 24 qtrees
Up to 1 CIFS-NFS server	Up to 24 SAN LIFs	Up to 4 SAN LIFs per SAN SVM (maximum 16)
Up to 24 LIFs	Up to 24 LUNs mapped to 10 SAN hosts	1 CIFS-NFS server
Up to 36 CIFS share-NFS exports per volume	Up to 48 NetApp Snapshot™ policies	Up to 12 LIFs
1 failover group per node management LIF, cluster management LIF, and data LIF (1 subnet for data traffic per SVM)	1 NetApp SnapMirror relationship per SVM	Up to 15 CIFS share-NFS exports per volume
Up to 48 Snapshot policies	Full HA and network redundancy testing	1 failover group per node management LIF, cluster management LIF, and data LIF (1 subnet for data traffic per SVM)
	FC and IP SAN configuration	Up to 48 Snapshot policies
	Up to 4 switches (purchased from NetApp)	Up to 12 LUNs mapped to 5 SAN hosts
	Up to 12 VLANs per switch	Full HA and network redundancy testing
		FC and IP SAN configuration
		Up to 2 switches (purchased from NetApp)
		Up to 6 virtual LANS (VLANs) per switch

Selection Group B

Storage Backup Package	Disaster Recovery Package	Advanced Knowledge Transfer
1 SnapMirror relationship per SVM	Up to 10 NetApp SnapVault® relationships (including schedule and destination volume)	At least 2 hours dedicated to explaining the system, how it was set up, and how to get the most out of the ONTAP and OFFTAP features
Full HA and network redundancy testing	Testing of the SnapVault relationship for backup and restore functionality	
Up to 10 SnapMirror relationships set up (including schedule and destination volume)		
1 intercluster LIF per node (if applicable)		
2 cluster peer relationship baseline transfers performed and updated (if time allows)		
Testing of SnapMirror failover and giveback		

MetroCluster configuration

The Advanced Deployment Service must be ordered for both systems that will form a MetroCluster configuration, and then the following deliverables are included:

- Gathering of MetroCluster specific requirements.
- Planning meetings to verify prerequisites:
 - Network connection/layer 2
 - IP addresses
- Configuration of MetroCluster features.
- Validation testing to determine that the MetroCluster connection is functioning properly.
- Remediation to achieve a successful MetroCluster configuration.

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.