NETAPP REMOTE OPERATE SERVICE

Service background and overview

Current NetApp® technologies can deliver significant gains in efficiency and flexibility, but poor operation might mean these gains are not fully realized. NetApp Remote Operate Service addresses these issues by providing skilled and certified NetApp residents remotely. NetApp personnel will deliver the skills, knowledge, and expertise needed to meet specific customer objectives and maximize the investment the customer has made in NetApp technology. The Remote Operate Service may be purchased directly from NetApp or through a NetApp authorized reseller. The Remote Operate Service is provided on a fixed-price basis in accordance with the terms of this Service Description, in connection with NetApp manufactured or distributed equipment owned or licensed by the customer, as well as other third-party equipment.

NetApp will provide a dedicated resource to perform the services specified in this Service Description. If this Service Description does not meet the customer's requirements, a Statement of Work (SOW) is necessary. The resource is available to work remotely during normal business hours. The resource location and the duration of the schedule of performance are defined in the NetApp sales quotation.

A dedicated remote resource delivers continuous support to operate and optimize your data infrastructure. This resource can identify inefficiencies and implement improvements, leading to streamlined operations and reduced costs. To proactively identify and address any potential issues before they become costly problems, the Remote Operate Service includes four quarterly assessments:
- Cyber Resilience
- Health and Performance
- Intelligent Data Infrastructure
- Cloud Storage Workload

Depending on your needs, you can choose the same technology package each quarter or receive all four spread throughout the year, with no more than one assessment per quarter. These assessments are designed to identify areas where operational efficiency can be improved and to keep your storage environment reliable and secure.

The Remote Operate Service performs services, including, but not limited to, the following tasks.

Activities and Tasks

As part of the NetApp Remote Operate Service (ROS), NetApp will perform the following activities and tasks.

Remote Operate Service
- Provide coordination with NetApp Global Support Center in response to Customer issues inclusive of:
  – Coordination of service personnel and resources.
  – Understanding the Customer's Data Storage Environment and representing the Customer's support needs.
  – Assist with technical support matters in cooperation with a Technical Support Engineer (as required).
  – Facilitate case resolution.
- Assist with the NetApp Support site and advise on how to best use.
- Participate in regularly scheduled reviews with the Customer.
- Participate in the Customer's weekly change management meetings.

- Review and document the Customer's NetApp storage environment.
- Provide daily monitoring and diagnostics of Customer owned NetApp storage and data management systems via applicable tools and software.
- Analyze diagnostic data to report on process and product maintenance.
- Perform case trend analysis.
- Obtain from Customer local points of contact for Return Material Authorizations ("RMAs") concerning Customer owned NetApp Equipment and process return of equipment.
- Perform site survey for installing NetApp Data Infrastructure Insights ("DII").
- Install, setup, and configure NetApp Data Infrastructure Insights, including data acquisition units, if required.
- Provide ONTAP and firmware upgrades and recommendations.
- Analyze software patches and field alerts and advise the Customer on appropriate next steps.
- Assist with disaster recovery (DR) planning, data archival planning, and data migration planning.
- Analyze the Customer needs and recommend additional products and services to meet those needs.
- Assist the Customer in modifying NetApp scripts within the Customer environment.
- Provide test planning and execution.
- Provide weekly status reports.
- Perform quarterly assessments based on Customer's needs. Customer may choose only one (1) assessment per quarter: Cyber Resilience, Health and Performance, Intelligent Data Infrastructure, or Cloud Storage Workload.

Technology Package: Cyber Resilience Risk Assessment (also known as Data Protection and Security Assessment)
- Discovery Phase
  – Perform initial discovery across all in-scope controllers.
- Design Phase
  – Conduct Customer interview to determine current Customer SLAs, RPO, RTO, backup technologies, and existing recovery procedures.
  – Conduct Customer presentation on associated risks of cyber security threats, natural disasters and ways to protect and secure your data.
- Implementation Phase
  – Run NetApp's Powershell scripts to capture Snapshot profile.
  – Run NetApp's proprietary data protection tool to capture all SnapMirror/SnapVault relationships.
  – Run commands to capture security settings.
  – Analyze current data protection service levels and identify gaps.
  – Analyze current data recovery procedures and identify gaps to reduce risk in the event of an attack on Customer's network, or in the event of a natural disaster event.
- Analyze current Snapshot, SnapVault, SnapMirror, and SnapLock policies and Identify gaps.
- Analyze current security configuration against hardening guide and identify gaps.
- Create Cyber Resilience Risk Assessment Document, including:
  – Current level of recovery risk from a cyber security breach and a natural disaster event.
  – Current Snapshot, SnapMirror, SnapVault, SnapLock policies and relationships.
  – Gaps in current data protection strategy, procedures, and Customer SLA's.
  – Recommendation of policies for Snapshot, SnapMirror, SnapVault, SnapLock, and Flexclone.
  – Gaps of current configuration against the NetApp Security Hardening Guide for NetApp ONTAP.
  – Status of Asset Management- NetApp systems approaching end of life.
  – Status of storage efficiencies which might indicate an encryption/ransomware event.
  – Status of Anti-Ransomware Protection and other NetApp anti-ransomware software enablement (9.10.1 or higher)
  – Status of event management tools.
- Review with customer cyber security controls recommended by the cyber insurance industry.

Technology Package: Health and Performance Assessment
- Discovery and Design Phase
  – Conduct Pre-Discovery Call with Customer to review site survey information, discuss any challenges and request any additional Customer information that will be required for Implementation phase.
  – Validate Pre-Requisites for Health and Performance Assessment at the customer site. Determine with Customer which controllers (serial numbers) are in-scope, and what performance data will be captured on Data Infrastructure Insights (DII) platform and AutoSupport.
  – Collect data via AutoSupport ("ASUP") by initiating Health Check Report.
  – Capture customer performance data from Data Infrastructure Insights (DII) platform and ensure Data Infrastructure Insights (DII)s Dashboard is recording data.
- Implementation Phase
  – Perform remote review and analysis of the utilization, configuration, storage efficiency, and basic performance of NetApp storage controllers identified during Discovery and Design phase.

- Perform analysis of data collected and interpret output of DII reports.
- Gather supporting documentation as required to prepare Executive Summary. Key items include those documents that provide additional insight into: Storage efficiency, performance, Hardware, software, and operating system configuration, Risks to data availability, NetApp AutoSupport configuration, Hardware support, and storage utilization trends.
- Perform Knowledge Transfer to customer in the form of an Executive Summary that includes: Storage environment performance overview, Risks – configuration and operational, Storage utilization and efficiency, and an inventory of components covered as part of the assessment. Additionally, the Executive Summary should also include Key Findings and Recommendations.

Technology Package: Cloud Storage Workload Assessment
- Discovery Phase
  - Review with Customer success criteria and business outcomes they are looking to achieve.
  - Send Customer online questionnaire to be completed prior to assessment.
  - Gather Customer data using NetApp Data Infrastructure Insights (DII).
- Implementation Phase
  - Conduct Assessment with Customer executive sponsor and key stakeholders (storage administrators, cloud architects, virtualization administrators, Line of Business owners, etc.).
  - Gather Customer requirements:
    - Capture Customer's business goals, objectives, and desired outcomes.
    - Understand the Customer's current cloud strategy, which may include reviewing and discussing use cases around cloud, automation, orchestration, and other businesses cases required by the Customer.
  - Service Level Review:
    - Review with Customer current workload analysis based on actual data collected.
    - Review Customer's service levels are currently being used in in-scope workloads and applications.
    - Review Customer's current virtualization configurations based on resources such as CPU, virtual memory, and storage requirements.
    - Review and understand Customer's data protection strategy, policies, categories of data (criticality of data), and backup/archiving requirements.
    - Determine current workload characteristics based upon factors such as workload performance, storage efficiency, data protection, compute / Virtual Machine (VM), and security.
  - Financial Analysis:
    - Gather Customer's IT overhead costs, current cloud costs, and operational costs to use as input to financial modeling.
    - Review current financial costs and fully burdened costs.
  - Workload Analysis:
    - Provide recommended workload characteristics and which NetApp cloud storage platform is best suited for each workload (i.e. Cloud Volumes ONTAP, Amazon FSxN, Azure NetApp Files, Google Cloud NetApp Volumes, etc.).
    - Review cost models of running each workload on the recommended cloud storage platform including storage, compute, and backup/archiving costs.
    - Review in-scope workloads and position the migration strategy of moving specified workloads to the appropriate cloud destination.
    - Finalize cloud strategy based on Customer business objectives and outcomes to be achieved.
    - Determine future state cloud architecture based on workloads requirements, service performance tiering based on IO density, latency, virtualized compute footprint and t-shirt sizes for service catalog, and data protection service levels.
    - Create a High Level Plan and Timeline (solution) estimates for the Customer to achieve the outcomes desired to be included in the Executive Readout.
  - Executive Readout
    - Create Executive Readout PowerPoint.
    - Present summary to executive sponsors and provide recommendations and next steps.

Technology Package: Intelligent Data Infrastructure Assessment
- Discovery Phase
  - Confirm 'in scope' assets with Customer.
  - Gather Customer data using Data Infrastructure Insights.
  - Determine current service levels and I/O density analysis.
  - Create data analysis and draft of Customer workshop presentation based on data collection.

- Design Phase
  - Conduct Assessment with Customer executive sponsor and key stakeholders (storage administrators, architects, virtualization administrators, Line of Business owners, etc.).
  - Customer Requirements:
    - Capture Customer's business goals, objectives, and desired outcomes.
    - Capture Customer's current state "as-is" and perform Strength, Weakness, Opportunity, and Threat ("SWOT") analysis.
    - Review and discuss customer's hybrid cloud, cloud, and intelligent data infrastructure strategy and plan.
  - Service Level Review:
    - Review Customer's current service levels, I/O density, Quality of Service ("QoS") based on data collection and analysis.
    - Review with Customer current workloads and applications based on data collection and reports using your data.
    - Review and discuss Customer's service levels being used in these workloads and applications.
  - Virtualization Review:
    - Review and discuss Customer's current virtualization configurations based on resources such as CPU, virtual memory, and storage requirements.
  - Data Protection Review:
    - Discover and understand Customer's data protection strategy, policies, categories of data (criticality of data).
    - Understand the Customer's current data management and protection strategy.
    - Determine data protection and archiving requirements.
  - Financial Analysis:
    - Gather Customer's IT overhead and burden costs to use as input to financial modeling.
    - Review financial modeling and fully burdened cost of IT operations.
    - Provide a cost model based on recommended data protection policies in service catalog.
    - Review cost of primary storage and data protection service levels.
    - Review cost models of running service levels on-premise, public cloud, or a hybrid cloud architecture model.
  - Recommendations:
    - Provide an optimized high level solution design based on costs and performance data.
    - Provide optimized storage service levels based on standardized cost and performance models (i.e. value, performance, and extreme).
  - Executive Readout
    - Finalize Customer strategy based on Customer business goals, objectives, and outcomes to be achieved by implementing an enterprise service provider model.
    - Finalize high level solution design that includes architecture of Customers data center environments on-premise private cloud, public clouds, and hybrid cloud services.
    - Finalize service level definitions and design based on workloads requirements, service performance tiering based on IO density, latency, virtualized compute footprint and t-shirt sizes for service catalog, and data protection service levels.
    - Finalize Financial Cost Analysis provides current and future cost of infrastructure CapEx/OpEx based on hybrid cloud strategy and design.
    - Present Executive Readout to executive sponsors, recommendations and next steps.

Closeout Phase
- Review Project Deliverables with Customer.
- Obtain Certificate of Completion Customer acceptance.

Deliverables

In connection with the ROS, NetApp will provide the following tangible materials (the "Deliverables") to Customer in a format or method mutually agreed upon between the parties:

General
- Weekly Status Report

Technology Package: Cyber Resilience Risk Assessment
- Cyber Resilience Risk Assessment Report

Technology Package: Health and Performance Assessment
- Executive Summary (Findings and Recommendations)

Technology Package: Cloud Storage Workload Assessment
- Executive Readout

Technology Package: Intelligent Data Infrastructure Assessment
- Executive Readout
- High level solution design
- Service level definitions and design
- Financial Cost Analysis

ROS Service—Closeout
- Certificate of Completion

Project-specific assumptions and customer responsibilities

The following assumptions are hereby acknowledged by the parties and apply to the performance of the ROS.

Remote Operate Service
- All services work will be performed remotely.
- Standard Hours for the performance of ROS will be Monday through Friday between 7:00 a.m. and 6:00 p.m. Local Time (Standard Hours). The Standard Hour work week is based upon a 40-hour work week comprised of eight (8) hour days.
- Services may be performed at either 25, 50, 75, or 100% of the Standard Hour work week with which the 40-hour work week constitutes 100%:
  - 25% = 10 hours per work week.
  - 50% = 20 hours per work week.
  - 75% = 30 hours per work week.
  - 100% = 40 hours per work week.
- The accompanying NetApp Quote and Customer Purchase Order will detail which option the service will be performed at based upon part number.
- NetApp will work with Customer to schedule the performance of ROS during standard hours, however NetApp must provide written authorization for the following:
  - Exceed the standard eight (8) hour workday by greater than two (2) hours.
  - Schedule work outside the standard hours.
- NetApp is not responsible for any application or host system access that encompasses coding, scripting, application analysis, system performance, troubleshooting, or applications logins outside of the services listed above.
- Customer will confirm that the Customer Infrastructure specified is remotely accessible to NetApp resources via remote VPN access. Customer will provide NetApp resources Virtual Desktop Infrastructure ("VDIs") with VPN access for purposes of performing activities and tasks defined.
- Provide an administrator for remote support utility sessions, as required.
- Maintain compatibility of interacting external systems or environments at all times.
- Customer to notify NetApp of their planned maintenance activity, to avoid missed monitoring alerts.
- The use of NetApp Data Infrastructure Insights ("DII") license by NetApp resources to perform the services listed above is included up to 1PB. Any requirement above 1 PB would necessitate an additional purchase of the additional licenses separately.
- NetApp has no obligation to provide support or maintenance in relation to any scripts created in the performance of Professional Services under this Service Description. Any and all future activity for troubleshooting, additions, or changes requested after completion of the Schedule of Performance must be requested in writing by the Customer and will be billed at NetApp's then-current time-and-materials rate.

Technology Package: Cyber Resilience Risk Assessment
- Recommendations provided are only for the Customer to evaluate and reduce their risk during a potential security issue. NetApp in no way guarantees that the service will prevent a security issue or cybersecurity attack.

Technology Package: Health and Performance Assessment
- Knowledge Transfer ("KT") does not replace NetApp University training. Customer must have all necessary staff available for the KT session, and such session must occur on or before the ROS End Date. A KT session will be delivered with each Assessment as identified in the above Project Limitations. Each KT session is no more than two (2) hours in duration. AiQ UM installed and configured.
- ActiveIQ (AiQ) Unified Managed (UM) has been installed and configured before commencement of service.
- If AutoSupport is not enabled to provide an automatic feed to NetApp, the following must be performed: NetApp requires AutoSupport messages to be triggered before Health Check report generation; For optimal reporting, it is suggested that Customer enable AutoSupport on the Saturday evening prior to each engagement and let the WEEKLY_LOG send Sunday morning to capture an entire week's worth of data; For each engagement, Customer will be responsible to pull the AutoSupport report and send it to the NetApp resource to analyze. The NetApp resource performs the analysis and presents the final recommendations within five (5) days from when the report is received.
- Any dashboards created with the data from the NetApp Active IQ will remain with the Customer.
- Procurement and implementation of Data Infrastructure Insights (DII)s and all corresponding licenses is a pre-requisite for this service.
- The NetApp Performance Assessment is currently only available for on-premises FAS and AFF storage environments, however the Assessment itself will be performed remotely.
- The maximum capacity is set at 1PB.

Technology Package: Cloud Storage Workload Assessment
- NetApp Resources may utilize temporary tools and/or licenses during the Schedule of Performance. These tools and/or licenses will remain the property of NetApp. Customer agrees that such tools and/or licenses are solely for the use to perform the services scoped herein and shall not be used for any other purposes. NetApp will de-install the tools and/or licenses prior to the End Date of the engagement. If NetApp is unable to gain access to the Customer's Site to de-install any of its tools and/or licenses for any reason, then Customer agrees that such tools and/or licenses are hereby deemed expired, and Customer cannot use the tools and/or licenses.
- NetApp and the Customer will be responsible for coordinating and managing obligations.
- Customer will provide access to application specialists, if necessary.
- Customer will be responsible for the submission of all change control processes to their change management system.
- NetApp provides assistance to Customer with the integration of NetApp supported APIs, tools, and services as integration points to Customer application(s). Customer is responsible for maintaining all non-NetApp applications, tools, and Customer-written code and scripts.
- Customer will have obtained any and all permissions for third party product licenses that are necessary for NetApp or a NetApp subcontractor to perform these services.
- Data collection will require a minimum of 14 to upwards of 30 days of data collection time.

Technology Package: Intelligent Data Infrastructure Assessment
- NetApp Resources may utilize temporary tools and/or licenses during the Schedule of Performance. These tools and/or licenses will remain the property of NetApp. Customer agrees that such tools and/or licenses are solely for the use to perform the services scoped herein and shall not be used for any other purposes. NetApp will de-install the tools and/or licenses prior to the End Date of the engagement. If NetApp is unable to gain access to the Customer's Site to de-install any of its tools and/or licenses for any reason, then Customer agrees that such tools and/or licenses are hereby deemed expired, and Customer cannot use the tools and/or licenses.
- NetApp and the Customer provide a contact who will be responsible for coordinating and managing obligations.
- Customer will provide access to application specialists, if necessary.
- Customer will be responsible for the submission of all change control processes to their change management system.
- NetApp provides assistance to Customer with the integration of NetApp supported APIs, tools, and services as integration points to Customer application(s). Customer is responsible for maintaining all non-NetApp applications, tools, and Customer-written code and scripts.
- Customer will have obtained any and all permissions for third party product licenses that are necessary for NetApp or a NetApp subcontractor to perform these services.
- Data collection will require a minimum of 14 to upwards of 30 days of data collection time.

Project exclusions/out-of-scope activities

Project exclusions are listed below.

Remote Operate Service
- Purchase of hardware, licensing of software and any associated support services (any hardware and software requested or needed by Customer, in relation to the ROS shall be purchased by Customer separately).
- Relocation of Customer equipment.
- Installation of Customer equipment.
- Development of Customer-requested automation routines.
- Development of designs to address new Customer requirements.
- Storage infrastructure architecture and design.
- Project work, such as integrations (for example, Exchange, MSSQL, or Oracle), migrations, complex disaster recovery, or configuration backup.
- Any non NetApp software licensing (i.e., third-party migration licensing) is not included in this scope. Any licensing required would require additional purchase from the Customer.
- No Services will be provided to the Customer during these activities/events:
  - Customer Holidays
  - Sick leave
  - Paid time off
  - Public Holidays
  - Professional meetings and conferences
  - Professional training

Technology Package: Health and Performance Assessment
- Analysis of the configuration or utilization of other NetApp software or hardware products not specifically identified in this document.
- Analysis of and recommendation for non-NetApp hardware or operating systems.
- Analysis of and recommendations for NetApp systems not running through ONTAP 9.x or greater.
- Analysis and recommendations for systems not sending regular ASUP and Performance ASUP data to NetApp.
- Analysis of the configuration or utilization of other NetApp software or hardware products not specifically identified in this document.
- Physical inspection of NetApp systems.

Technology Package: Cloud Storage Workload Assessment
- Installation and configuration of additional software not required for this service offering.
- Any application or data migration efforts are excluded from the scope of this engagement.
- Architecture and design services for third party, internal applications, or virtualization infrastructure is not included.
- Any upgrade assistance with operating systems, driver Installs or other components outside the NetApp domain.
- Installation and troubleshooting of IP networking equipment.
- ESX host installation and configuration.
- Execution of performance and/or stress tests.
- Configuration of advanced host access control.
- Configuration of the storage network and/or SAN zoning.
- Installation and application server builds.
- Network bandwidth evaluation, performance and tuning, and requirements definition.
- Testing of existing backup and restore procedures or development of a business continuity strategy.
- Tuning of network parameters of host bus adapter ("HBA").

Technology Package: Intelligent Data Infrastructure Assessment
- Installation and configuration of additional software not required for this service offering.
- Any application or data migration efforts are excluded from the scope of this engagement.
- Any upgrade assistance with operating systems, driver Installs or other components outside the NetApp domain.
- Overall program management.
- Installation and troubleshooting of IP networking equipment.
- ESX host installation and configuration.
- Execution of performance and/or stress tests.
- Configuration of advanced host access control.
- Configuration of the storage network and/or SAN zoning.
- Installation and application server builds.
- Network bandwidth evaluation, performance and tuning, and requirements definition.
- Testing of existing backup and restore procedures or development of a business continuity strategy.
- Tuning of network parameters of host bus adapter ("HBA").

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.

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.

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