

**SUNGARD**

RECOVERY-AS-A-SERVICE

RaaS for NetApp Storage Environments



Expert hosting, management, and recovery of your NetApp storage environment

SunGard Recovery Services for NetApp is a suite of services that delivers recovery of your NetApp storage environment, including storage management, daily data backup, replication, vaulting, and fully managed recovery services.

Continued explosive data growth has put traditional data protection methods under pressure. Tape-based backup methods, in particular, are outmoded consuming IT budgets and creating administrative complexity. As a basis for recovery, tape is high-risk, resource intensive, and unreliable – and slows the recovery beyond what most organizations can tolerate. In many cases, these risks have called into question the need to continue traditional backup methods altogether.

Recognizing these limitations, many organizations have adopted more efficient disk-based protection methods such as that enabled by the NetApp suite of data management software and hardware. Snapshot capabilities built into NetApp disk have become a popular alternative to traditional backup. However, recovery options have focused on data without the end-to-end services approach required to ensure coherent complex applications recovery.

SunGard Recovery-as-a-Service (RaaS) suite offers a comprehensive, end-to-end approach to managing applications in NetApp storage environments which is designed to ensure the successful capture, replication, and retention of data while also delivering tiered applications recovery options at a secondary recovery location.

Three Tiers of Recovery-as-a-Service Options for NetApp Storage Environments

SunGard RaaS suite for NetApp storage includes three tiers of recovery built on a managed vaulting foundation. SunGard and NetApp jointly developed these services to ensure the flexibility, scalability and assured data coherency required for resiliency of a wide variety of applications.

Add any combination of recovery services to Managed Vaulting:

- Recover2Cloud for Storage Replication – for fully-managed recovery of virtual applications from managed NetApp vaults
- Managed Recovery Program (MRP) – for fully-managed recovery of applications on NetApp storage
- Access to shared recovery systems at SunGard facilities – for self-managed recovery

These highly flexible services can be tailored to meet the specific needs of your applications environment. Recovery services start with a managed vault foundation, which ensures the coherent capture, replication and retention of NetApp-stored data. Then, recovery options are added according to your application type and business availability requirements. These options can be used in combination, delivering a flexible range of tiered options which are designed to match the tiered value of applications to your business.

All RaaS options for NetApp storage are delivered from SunGard's premier recovery centers by trained and experienced NetApp recovery specialists.

SunGard Recovery Services for NetApp include

- Managed Vaulting
- Recover2Cloud for Storage Replication
- Managed Recovery Program
- Colocation Services

SunGard Recovery Services for NetApp have been developed jointly by NetApp, one of the leading providers of enterprise class storage solutions, and by SunGard Availability Services, a leader in recovery services—and a NetApp platinum-level partner.

These highly flexible services can be customized to meet the specific needs of your business. They range from traditional hosting of your secondary NetApp environment, to a full management of your testing and recovery program with the backing of service level agreements.

All Recovery Services for NetApp are delivered in SunGard's premier recovery centers by trained and experienced NetApp specialists.



Managed Vaulting for NetApp

With Managed Vaulting for NetApp storage, SunGard takes on responsibility for moving protected data from your primary NetApp storage environment to a SunGard secondary NetApp environment in one of our world-class recovery data centers. The service delivers managed protection, including backup, replication, vaulting, and storage management. This service is offered with recovery access to SunGard shared equipment available at the vaulting facility. Working with SunGard services means that capital expenditures – and maintenance overhead – at the secondary site are eliminated in favor of flexible, predictable monthly service fees.

Managed backup services

Managed online backup greatly simplifies data protection, retrieval and restoration. It eliminates the logistical challenge of transporting storage media, as well as the risk of lost or damaged tapes.

With Managed Vaulting for NetApp, the backup data in SunGard's NetApp storage environment is available 24/7 for you to retrieve and restore.

Daily backups are performed using NetApp SnapVault software, which combines block-level incremental backup

with 20:1 deduplication to reduce backup times from hours to minutes. The deduplication process also minimizes long-term capacity requirements, which keeps your costs down because pricing is based on storage used.

This approach to backup presents an opportunity to free up capacity in your source NetApp storage environment. This is because— while it's important to keep a small number of snapshots local for immediate recovery—additional copies (daily, weekly, and beyond) no longer need to take up production-side resources.

SunGard ensures that all backups jobs are running according to your policies. We handle all incidents through resolution and retain your backups for the periods defined by your company.

Managed replication services

In addition to daily backups, SunGard uses NetApp SnapMirror to replicate the data between your source NetApp storage environment and SunGard's target every few minutes. These frequent replication points are scheduled in advance according to your requirements, helping to ensure you meet the required Recovery Point Objective (RPO).

SunGard RaaS options for NetApp at a glance

Attributes	Colocation Services: NetApp	Managed Vaulting: NetApp	R2C for Storage Replication: NetApp	Managed Recovery Program: NetApp
Service Description	Dedicated colocation	Managed backup, replication and storage recovery service	Automated recovery of protected applications as VMs on low-cost cloud	Fully managed recovery from dedicated or shared storage
Storage pricing model	Capex investment	Opex usage model	Opex usage model	Opex usage model
SunGard space/power	✓	✓	✓ (server capacity)	✓
On-Demand Recovery Hardware	✓	✓	✓	✓
Network connectivity to production site	✓	✓	✓	✓
Initial seeding services		✓	✓	✓
SunGard NetApp hardware and software		✓	✓	✓
Managed daily backup and mirrored replication		✓	✓	✓
Source and target capacity monitoring		✓	✓	✓
FlexClone of recovery data		✓	✓	✓
Backup of non-NetApp servers		✓	✓	✓
Preservation and recovery of VMware vCenter			✓	✓
Dedicated SunGard SDM				✓
Change management				✓
Service level agreement		FlexClone available	4- to 12-hour RTO	Full system restore

Replication has the potential to strain a network, so there are a number of components in place to minimize bandwidth usage. The first is the SnapMirror deduplication process, which ensures only changed blocks of data are transmitted over the network. Next, you can reduce your bandwidth requirements—and cut costs—by enabling the compression functionality built into SnapMirror. This accelerates transfer rates and reduces the network bandwidth utilization by up to 70%.

Additionally, SunGard automatically takes “checkpoints” during data transfers. If the source system goes down, then our operations team can restart the transfer from the most recent checkpoint, rather than from the beginning. Finally, to eliminate the need for full transfers when recovering from a broken mirror or loss of synchronization, SnapMirror also performs intelligent resynchronization.

Monitoring and management services

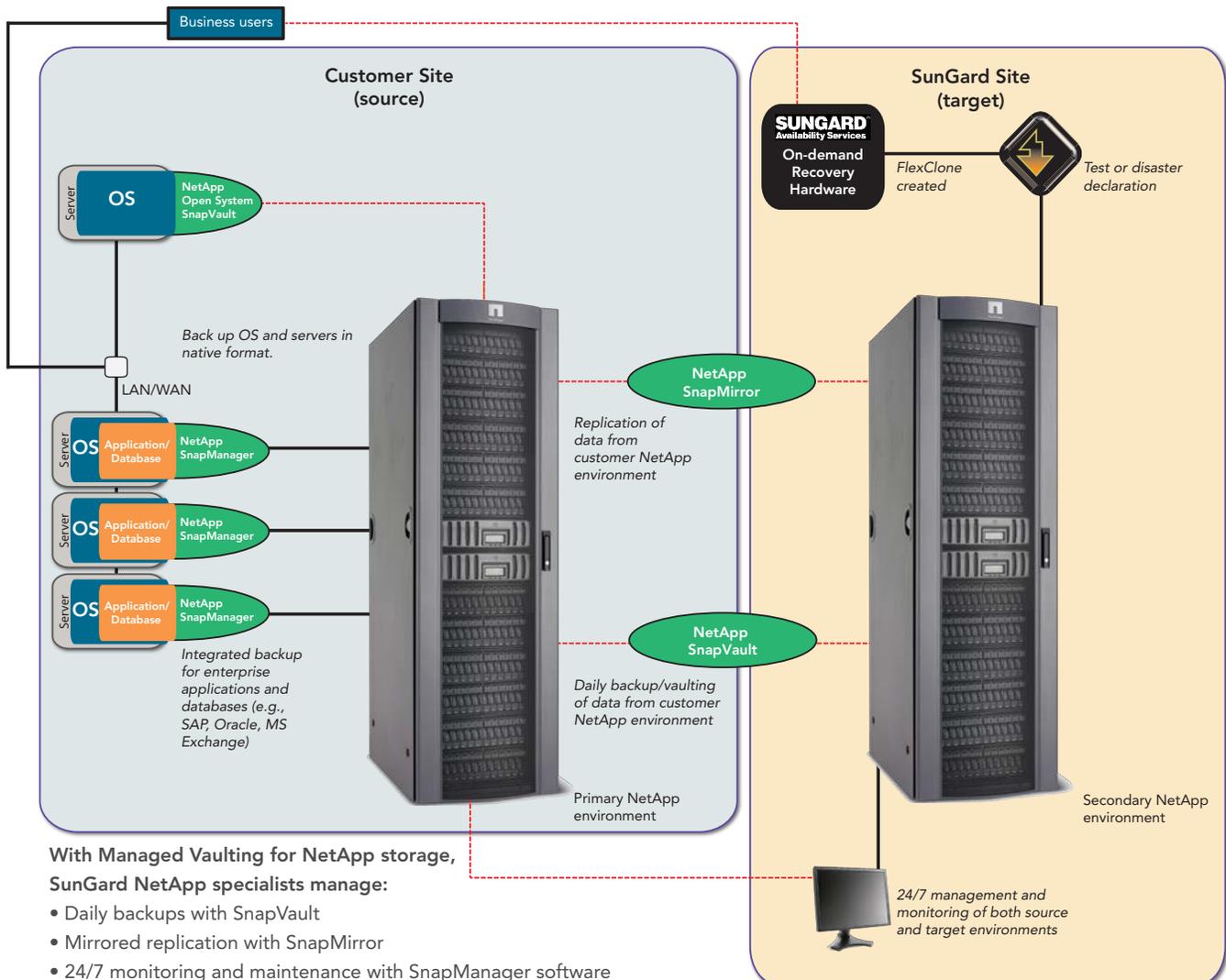
In order to ensure successful backup and replication, SunGard uses the NetApp On-Command software suite to monitor both the source NetApp storage environment at your production site, as well as the target environment hosted in our data center. This allows our service delivery team to monitor your device CPU, memory, physical hardware, environmental components, WAN interface utilization, and more, so that we can notify you of any issues in your primary NetApp storage environment. The SunGard NetApp storage environment within our data center is completely managed by our operations team.

Security services

The SunGard team works with you to identify your security requirements before implementing the NetApp storage solution.

Managed Vaulting for NetApp Storage

Fully managed backup, replication, monitoring and recovery of your NetApp storage environment



With Managed Vaulting for NetApp storage, SunGard NetApp specialists manage:

- Daily backups with SnapVault
- Mirrored replication with SnapMirror
- 24/7 monitoring and maintenance with SnapManager software
- Recovery and testing, including a FlexClone image of your protected environment

For data at rest, NetApp's approach of providing data in its native, fully usable format at both ends of the replication takes security into account. The data that is encrypted at your location remains in that encrypted format at the target location, where it is managed using the same key used at the source.

For data in flight, SunGard uses leading VPN technology to ensure that all data in flight is encrypted and protected.

While we recommend encrypting data at the source location, SunGard also offers the option to manage data encryption after replication.

Application, Database, and Operating System Protection

Using the NetApp SnapManager software suite, SunGard NetApp specialists work with you to design a solution that eliminates the need for multi-step backup tasks (for example, exporting live databases to flat files) before running a backup job.

SnapManager takes snapshots of your application and databases, which it uses to perform the backup. In this way, backups take place without disrupting application or database performance. The result is an extremely efficient way to protect your databases (SQL, Oracle), as well as many of the most critical enterprise applications, such as MS Exchange, Oracle financials, and SAP.

Because each SnapManager software product integrates with a specific application or database, the need to convert data between readable formats is eliminated. As a result,

the software helps support faster Recovery Time Objectives (RTO) and allows SunGard to quickly reestablish full system functionality more quickly in the event of a failure.

In a similar way, we can protect your servers and operating systems in their native states using NetApp's Open System SnapVault. Data is transmitted directly to the secondary NetApp storage environment at SunGard, ready for fast retrieval and restoration.

Recovery services

As a NetApp Platinum Partner, SunGard NetApp infrastructure is connected to enterprise-class, on-demand recovery hardware, and we adhere to best practices for NetApp-based recovery.

During a test, or an actual recovery, the SunGard operations team creates a NetApp FlexClone of your protected data within the secondary NetApp storage environment and presents it to the on-demand recovery hardware. Our operations team automates many of the tasks necessary to create the FlexClone, which shortens your recovery time even more.

Once the FlexClone is created, SunGard follows proven procedures based on 30 years of disaster recovery experience to help ensure every step in the recovery is problem-free. When your production environment is restored, you have remote access to both the SunGard recovery hardware, and the FlexClone itself, in order to complete the loading of OS, applications, and data back to your site.

Recover2Cloud for Storage Replication using NetApp storage

SunGard Recover2Cloud (R2C) for Storage Replication provides fully managed, SLA-backed recovery of large virtual application environments leveraging investments in NetApp storage environments. Gain faster assured recovery with less management burden at a lower cost than with alternative solutions.

For organizations with large virtual application environments—averaging 450 and more virtual machines (VMs) – Recover2Cloud (R2C) for Storage Replication solves a persistent recovery challenge by delivering predictable, easily managed, assured fast recovery of these environments.

R2C automates VM recovery and allocates server resources as secure private cloud for optimized, rapid recovery. Recovery time objectives (RTOs) are backed by contractual service level guarantees.

When added to Managed Vaulting for NetApp storage, this service works with VM images stored on the target NetApp storage device located at the SunGard recovery facility.

Server capacity is allocated from our large standby compute resources to create a virtual private cloud (VPC) environment which is dedicated to you. VMware vCenter configuration is captured and recreated accurately, as a first step in recovery – followed by fast, automated recovery of the entire virtual applications environment.

Adding R2C for Storage Replication significantly speeds recovery of large numbers of virtual machine images – such as 450 or more – along with lowering the burden of test management and disaster recovery, reducing errors and delays from human operation. The lowered cost of VPC platform recovery provides an added advantage.

Managed Recovery Program for NetApp

SunGard's Managed Recovery Program (MRP) delivers an enhanced technology recovery solution, helping to ensure you can recover your critical systems and application data from unplanned disruptions or disasters. MRP provides complete Recovery Life Cycle Management that integrates several of SunGard's Recovery Services to deliver a comprehensive managed recovery solution.

When MRP is added to the Managed Vaulting for NetApp solution, you can experience a fully managed, end-to-end service that leverages SunGard's resources, technology and tradition to ensure the highest level of protection.

The Managed Recovery Program for NetApp includes:

Recovery procedure documentation

The SunGard Managed Recovery team regularly assembles information about the primary environment that is protected at our site, including configurations, networks, operating systems, databases and applications. The Managed Recovery team uses this information to develop the restoration procedures necessary to restore your OS and application data from the most recent viable backup. SunGard also works with you to add the steps necessary to recover and start applications.

Test management

The service includes a dedicated Service Delivery Manager (SDM) who acts as an extension of your team and has expert knowledge of your recovery program, including the workflow, timeline, and communication and escalation procedures. He or she is a single point of contact who coordinates test planning, test execution, test monitoring, post-test reporting, and the post-test reviews during which both your team and SunGard analyze results and identify gaps.

Recovery Lifecycle Management

Recovery Lifecycle Management integrates with your ongoing production change and configuration management procedures. This allows SunGard to identify the changes that can impact recovery procedures and recovery infrastructure configurations. The SunGard SDM is responsible for coordinating the process with your change and infrastructure management team, and notifies you when changes to recovery procedures and recovery configurations are required. Before changes are made, you are asked to review and approve them.

Colocation Services for NetApp

With Colocation Services for NetApp, you colocate your secondary NetApp storage appliance in one of SunGard's premier recovery data centers. SunGard connects this target appliance to our on-demand recovery hardware, which stands by to maintain business continuity in the event there is an outage at your primary facility. While your team performs the regular data movement tasks (backup and replication to the target appliance), SunGard provides the space, power, cooling, and connectivity.

Colocation Services for NetApp are an ideal way to ensure the availability of your storage at a lower cost than building out and maintaining the infrastructure in-house.

About SunGard Availability Services

SunGard Availability Services provides disaster recovery services, managed IT services, information availability consulting services and business continuity management software. With approximately five million square feet of datacenter and operations space, SunGard Availability Services helps customers improve the resilience of their mission critical systems by designing, implementing and managing cost-effective solutions using people, process and technology to address enterprise IT availability needs.



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