



# **Change Log**

## **NetApp Solutions**

NetApp  
August 04, 2023

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# NetApp Solutions Change Log

Recent changes to the NetApp Solutions collateral. The most recent changes are listed first.

## All Changes

Date	Solution Area	Description of change
07/14/2023	Data Analytics	Update TR-4947 : Apache Kafka workload with NetApp NFS storage ( AWS FSxN included )
06/09/2023	Database	Added new TR-4973: Quick Recovery and Clone of Oracle VLDB with Incremental Merge on AWS FSx ONTAP
06/08/2023	Hybrid Cloud	Added GCVE with CVS - Application Consistent Disaster Recovery with NetApp SnapCenter and Veeam Replication
06/08/2023	Hybrid Cloud	Added GCVE with CVS - VM Migration to NetApp Cloud Volume Service NFS Datastore on Google Cloud VMware Engine using Veeam Replication feature
05/23/2023	Virtualization	Added TR-4400: VMware vSphere Virtual Volumes (vVols) with NetApp ONTAP
05/19/2023	Database	Added new TR-4974: Oracle 19c in Standalone Restart on AWS FSx/EC2 with NFS/ASM
05/16/2023	Hybrid Multicloud with Red Hat OpenShift	Added new title in the side bar and new content
05/16/2023	Hybrid Multicloud with Red Hat OpenShift	Added new content
05/10/2023	Hybrid Cloud	Added TR-4955: Disaster Recovery with Azure NetApp Files (ANF) and Azure VMware Solution (AVS)
05/05/2023	Database	New TR-4951: Backup and Recovery for Microsoft SQL Server on AWS FSx for ONTAP
05/04/2023	Virtualization	Added "What's New with VMware vSphere 8" content
04/27/2023	Hybrid Cloud	Added Veeam Backup & Restore in VMware Cloud with AWS FSx for ONTAP
03/31/2023	Database	Added Oracle Database Deployment and Protection in AWS FSx/EC2 with iSCSI/ASM
03/31/2023	Database	Added Oracle Database Backup, Restore and Clone with SnapCenter Services
03/29/2023	Automation	Updated blog "FSx for ONTAP Monitoring and Auto-Resizing using AWS Lambda Function" with options for private/public deployment along with manual/automated deployment options.
03/22/2023	Automation	Added blog: FSx for ONTAP Monitoring and Auto-Resizing using AWS Lambda Function
02/15/2023	Database	Added PostgreSQL High Availability Deployment and Disaster Recovery in AWS FSx/EC2
02/07/2023	Hybrid Cloud	Added blog: Announcing general availability of NetApp Cloud Volumes Service datastore support for Google Cloud VMware Engine

Date	Solution Area	Description of change
02/07/2023	Hybrid Cloud	Added TR-4955: Disaster Recovery with FSx for ONTAP and VMC (AWS VMware Cloud)
01/24/2023	Database	Added TR-4954: Oracle Database Deployment and Protection on Azure NetApp Files
01/12/2023	Database	Added blog: Protect your SQL Server workloads using NetApp SnapCenter with Amazon FSx for NetApp ONTAP
12/15/2022	Database	Added TR-4923: SQL Server on AWS EC2 using Amazon FSx for NetApp ONTAP
12/06/2022	Database	Added 7 videos for Oracle database modernization in hybrid cloud with Amazon FSx storage
10/25/2022	Hybrid Cloud	Added link to VMware documentation for FSx ONTAP as an NFS datastore
10/25/2022	Hybrid Cloud	Added reference to blog for Configuring Hybrid Cloud with FSx ONTAP and VMC on AWS SDDC using VMware HCX
09/30/2022	Hybrid Cloud	Added solution for Migrating Workloads to FSxN datastore using VMware HCX
09/29/2022	Hybrid Cloud	Added solution for Migrating Workloads to ANF datastore using VMware HCX
09/14/2022	Hybrid Cloud	Added links to TCO calculators and simulators for FSxN / VMC and ANF / AVS
09/14/2022	Hybrid Cloud	Added supplemental NFS datastore option for AWS / VMC
08/25/2022	Database	Added blog - Modernize your Oracle database operation in hybrid cloud with Amazon FSx storage
07/11/2023	Data Analytics	Update TR - 4947 : Apache Kafka with FSxN
08/25/2022	AI	New solution: NVIDIA AI Enterprise with NetApp and VMware
08/23/2022	Hybrid Cloud	Updated the latest region availability for all supplemental NFS datastore options
08/05/2022	Virtualization	Added "Reboot Required" information for recommended ESXi and ONTAP settings
07/28/2022	Hybrid Cloud	Added DR solution with SnapCenter and Veeam for AWS/VMC (guest connected storage)
07/21/2022	Hybrid Cloud	Added DR solution with CVO and JetStream for AVS (guest connected storage)
06/29/2022	Database	Added WP-7357: Oracle Database Deployment on EC2/FSx Best Practices
06/16/2022	AI	Added NVIDIA DGX SuperPOD with NetApp design guide

Date	Solution Area	Description of change
06/10/2022	Hybrid Cloud	Added AVS with ANF native datastore overview and DR with JetStream
06/07/2022	Hybrid Cloud	Updated AVS region support to match public preview announcement / support
06/07/2022	Data Analytics	Added link to NetApp EF600 with Splunk Enterprise solution
06/02/2022	Hybrid Cloud	Added list of region availability for NFS datastores for NetApp Hybrid Multicloud with VMware
05/20/2022	AI	New BeeGFS Design and Deployment guides for SuperPOD
04/01/2022	Hybrid Cloud	Organized content of Hybrid Multicloud with VMware solutions: landing pages for each hyperscaler and inclusion of available solution (use case) content
03/29/2022	Containers	Added a new TR: DevOps with NetApp Astra
03/08/2022	Containers	Added a new video demo: Accelerate Software Development with Astra Control and NetApp FlexClone Technology
03/01/2022	Containers	Added new sections to NVA-1160: Installation of Astra Control Center via OperatorHub and Ansible
02/02/2022	General	Created landing pages to better organize content for AI and Modern Data Analytics
01/22/2022	AI	Added TR: Data movement with E-Series and BeeGFS for AI and analytics workflows
12/21/2021	General	Created landing pages to better organize content for Virtualization and Hybrid Multicloud with VMware
12/21/2021	Containers	Added a new video demo: Leverage NetApp Astra Control to Perform Post-mortem Analysis and Restore Your Application to NVA-1160
12/06/2021	Hybrid Cloud	Creation of Hybrid Multicloud with VMware content for virtualization environment and guest connected storage options
11/15/2021	Containers	Added a new video demo: Data Protection in CI/CD pipeline with Astra Control to NVA-1160
11/15/2021	Modern Data Analytics	New content: Best Practices for Confluent Kafka
11/02/2021	Automation	AWS Authentication Requirements for CVO and Connector Using NetApp Cloud Manager
10/29/2021	Modern Data Analytics	New content: TR-4657 - NetApp hybrid cloud data solutions: Spark and Hadoop
10/29/2021	Database	Automated Data Protection for Oracle Databases

Date	Solution Area	Description of change
10/26/2021	Database	Added blog section for enterprise applications and database to NetApp solutions tile. Added two blogs to Database blogs.
10/18/2021	Database	TR-4908 - Hybrid Cloud Database Solutions with SnapCenter
10/14/2021	Virtualization	Added parts 1-4 of NetApp with VMware VCF blog series
10/04/2021	Containers	Added a new video demo: Workload Migration using Astra Control Center to NVA-1160
09/23/2021	Data Migration	New content: NetApp Best Practices for NetApp XCP
09/21/2021	Virtualization	New content on ONTAP for VMware vSphere Administrators, VMware vSphere automation
09/09/2021	Containers	Added F5 BIG-IP load balancer integration with OpenShift to NVA-1160
08/05/2021	Containers	Added a new technology integration to NVA-1160 - NetApp Astra Control Center on Red Hat OpenShift
07/21/2021	Database	Automated Deployment of Oracle19c for ONTAP on NFS
07/02/2021	Database	TR-4897 - SQL Server on Azure NetApp Files: Real Deployment View
06/16/2021	Containers	Added a new video demo, Installing OpenShift Virtualization: Red Hat OpenShift with NetApp
06/16/2021	Containers	Added a new video demo, Deploying a Virtual Machine with OpenShift Virtualization: Red Hat OpenShift with NetApp
06/14/2021	Database	Added solution: Microsoft SQL Server on Azure NetApp Files
06/11/2021	Containers	Added a new video demo: Workload Migration using Astra Trident and SnapMirror to NVA-1160
06/09/2021	Containers	Added a new use-case to NVA-1160 - Advanced Cluster Management for Kubernetes on Red Hat OpenShift with NetApp
05/28/2021	Containers	Added a new use-case to NVA-1160 - OpenShift Virtualization with NetApp ONTAP
05/27/2021	Containers	Added a new use-case to NVA-1160- Multitenancy on OpenShift with NetApp ONTAP
05/26/2021	Containers	Added NVA-1160 - Red Hat OpenShift with NetApp
05/25/2021	Containers	Added blog: Installing NetApp Trident on Red Hat OpenShift – How to solve the Docker ‘toomanyrequests’ issue!
05/19/2021	General	Added link to FlexPod solutions

Date	Solution Area	Description of change
05/19/2021	AI	Converted AI Control Plane solution from PDF to HTML
05/17/2021	General	Added Solution Feedback tile to main page
05/11/2021	Database	Added automated deployment of Oracle 19c for ONTAP on NFS
05/10/2021	Virtualization	New video: How to use vVols with NetApp and VMware Tanzu Basic, part 3
05/06/2021	Oracle Database	Added link to Oracle 19c RAC Databases on FlexPod DataCenter with Cisco UCS and NetApp AFF A800 over FC
05/05/2021	Oracle Database	Added FlexPod Oracle NVA (1155) and Automation video
05/03/2021	Desktop Virtualization	Added link to FlexPod Desktop Virtualization solutions
04/30/2021	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 2
04/26/2021	Containers	Added blog: Using VMware Tanzu with ONTAP to accelerate your Kubernetes journey
04/06/2021	General	Added "About this Repository"
03/31/2021	AI	Added TR-4886 - AI Inferencing at the Edge: NetApp ONTAP with Lenovo ThinkSystem Solution Design
03/29/2021	Modern Data Analytics	Added NVA-1157 - Apache Spark Workload with NetApp Storage Solution
03/23/2021	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 1
03/09/2021	General	Added E-Series content; categorized AI content
03/04/2021	Automation	New content: getting started with NetApp solution automation
02/18/2021	Virtualization	Added TR-4597 - VMware vSphere for ONTAP
02/16/2021	AI	Added automated deployment steps for AI Edge Inferencing
02/03/2021	SAP	Added landing page for all SAP and SAP HANA content
02/01/2021	Desktop Virtualization	VDI with NetApp VDS, Added content for GPU nodes
01/06/2021	AI	New solution: NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches (Design and Deployment)



Date	Solution Area	Description of change
12/22/2020	General	Initial release of NetApp Solutions repository
<b>AI / Data Analytics</b>		
Date	Solution Area	Description of change
07/14/2023	Data Analytics	Update TR-4947 : Apache Kafka workload with NetApp NFS storage ( AWS FSxN included )
07/11/2023	Data Analytics	Update TR - 4947 : Apache Kafka with FSxN
08/25/2022	AI	New solution: NVIDIA AI Enterprise with NetApp and VMware
06/16/2022	AI	Added NVIDIA DGX SuperPOD with NetApp design guide
06/07/2022	Data Analytics	Added link to NetApp EF600 with Splunk Enterprise solution
05/20/2022	AI	New BeeGFS Design and Deployment guides for SuperPOD
02/02/2022	General	Created landing pages to better organize content for AI and Modern Data Analytics
01/22/2022	AI	Added TR: Data movement with E-Series and BeeGFS for AI and analytics workflows
11/15/2021	Modern Data Analytics	New content: Best Practices for Confluent Kafka
10/29/2021	Modern Data Analytics	New content: TR-4657 - NetApp hybrid cloud data solutions: Spark and Hadoop
05/19/2021	AI	Converted AI Control Plane solution from PDF to HTML
03/31/2021	AI	Added TR-4886 - AI Inferencing at the Edge: NetApp ONTAP with Lenovo ThinkSystem Solution Design
03/29/2021	Modern Data Analytics	Added NVA-1157 - Apache Spark Workload with NetApp Storage Solution
02/16/2021	AI	Added automated deployment steps for AI Edge Inferencing
01/06/2021	AI	New solution: NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches (Design and Deployment)
<b>Hybrid Multicloud</b>		
Date	Solution Area	Description of change
06/08/2023	Hybrid Cloud	Added GCVE with CVS - Application Consistent Disaster Recovery with NetApp SnapCenter and Veeam Replication

Date	Solution Area	Description of change
06/08/2023	Hybrid Cloud	Added GCVE with CVS - VM Migration to NetApp Cloud Volume Service NFS Datastore on Google Cloud VMware Engine using Veeam Replication feature
05/10/2023	Hybrid Cloud	Added TR-4955: Disaster Recovery with Azure NetApp Files (ANF) and Azure VMware Solution (AVS)
04/27/2023	Hybrid Cloud	Added Veeam Backup & Restore in VMware Cloud with AWS FSx for ONTAP
02/07/2023	Hybrid Cloud	Added blog: Announcing general availability of NetApp Cloud Volumes Service datastore support for Google Cloud VMware Engine
02/07/2023	Hybrid Cloud	Added TR-4955: Disaster Recovery with FSx for ONTAP and VMC (AWS VMware Cloud)
10/25/2022	Hybrid Cloud	Added link to VMware documentation for FSx ONTAP as an NFS datastore
10/25/2022	Hybrid Cloud	Added reference to blog for Configuring Hybrid Cloud with FSx ONTAP and VMC on AWS SDDC using VMware HCX
09/30/2022	Hybrid Cloud	Added solution for Migrating Workloads to FSxN datastore using VMware HCX
09/29/2022	Hybrid Cloud	Added solution for Migrating Workloads to ANF datastore using VMware HCX
09/14/2022	Hybrid Cloud	Added links to TCO calculators and simulators for FSxN / VMC and ANF / AVS
09/14/2022	Hybrid Cloud	Added supplemental NFS datastore option for AWS / VMC
08/23/2022	Hybrid Cloud	Updated the latest region availability for all supplemental NFS datastore options
07/28/2022	Hybrid Cloud	Added DR solution with SnapCenter and Veeam for AWS/VMC (guest connected storage)
07/21/2022	Hybrid Cloud	Added DR solution with CVO and JetStream for AVS (guest connected storage)
06/10/2022	Hybrid Cloud	Added AVS with ANF native datastore overview and DR with JetStream
06/07/2022	Hybrid Cloud	Updated AVS region support to match public preview announcement / support
06/02/2022	Hybrid Cloud	Added list of region availability for NFS datastores for NetApp Hybrid Multicloud with VMware
04/01/2022	Hybrid Cloud	Organized content of Hybrid Multicloud with VMware solutions: landing pages for each hyperscaler and inclusion of available solution (use case) content
12/21/2021	General	Created landing pages to better organize content for Virtualization and Hybrid Multicloud with VMware

Date	Solution Area	Description of change
12/06/2021	Hybrid Cloud	Creation of Hybrid Multicloud with VMware content for virtualization environment and guest connected storage options

#### Hybrid Multicloud with Red Hat OpenShift

Date	Solution Area	Description of change
05/16/2023	Hybrid Multicloud with Red Hat OpenShift	Added new title in the side bar and new content
05/16/2023	Hybrid Multicloud with Red Hat OpenShift	Added new content

#### Virtualization

Date	Solution Area	Description of change
05/23/2023	Virtualization	Added TR-4400: VMware vSphere Virtual Volumes (vVols) with NetApp ONTAP
05/04/2023	Virtualization	Added "What's New with VMware vSphere 8" content
08/05/2022	Virtualization	Added "Reboot Required" information for recommended ESXi and ONTAP settings
04/01/2022	Hybrid Cloud	Organized content of Hybrid Multicloud with VMware solutions: landing pages for each hyperscaler and inclusion of available solution (use case) content
12/21/2021	General	Created landing pages to better organize content for Virtualization and Hybrid Multicloud with VMware
10/14/2021	Virtualization	Added parts 1-4 of NetApp with VMware VCF blog series
09/21/2021	Virtualization	New content on ONTAP for VMware vSphere Administrators, VMware vSphere automation
05/10/2021	Virtualization	New video: How to use vVols with NetApp and VMware Tanzu Basic, part 3
05/03/2021	Desktop Virtualization	Added link to FlexPod Desktop Virtualization solutions
04/30/2021	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 2
04/26/2021	Containers	Added blog: Using VMware Tanzu with ONTAP to accelerate your Kubernetes journey
03/23/2021	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 1
02/18/2021	Virtualization	Added TR-4597 - VMware vSphere for ONTAP

Date	Solution Area	Description of change
02/01/2021	Desktop Virtualization	VDI with NetApp VDS, Added content for GPU nodes
<b>Containers</b>		
Date	Solution Area	Description of change
03/29/2022	Containers	Added a new TR: DevOps with NetApp Astra
03/08/2022	Containers	Added a new video demo: Accelerate Software Development with Astra Control and NetApp FlexClone Technology
03/01/2022	Containers	Added new sections to NVA-1160: Installation of Astra Control Center via OperatorHub and Ansible
12/21/2021	Containers	Added a new video demo: Leverage NetApp Astra Control to Perform Post-mortem Analysis and Restore Your Application to NVA-1160
11/15/2021	Containers	Added a new video demo: Data Protection in CI/CD pipeline with Astra Control to NVA-1160
10/04/2021	Containers	Added a new video demo: Workload Migration using Astra Control Center to NVA-1160
09/09/2021	Containers	Added F5 BIG-IP load balancer integration with OpenShift to NVA-1160
08/05/2021	Containers	Added a new technology integration to NVA-1160 - NetApp Astra Control Center on Red Hat OpenShift
06/16/2021	Containers	Added a new video demo, Installing OpenShift Virtualization: Red Hat OpenShift with NetApp
06/16/2021	Containers	Added a new video demo, Deploying a Virtual Machine with OpenShift Virtualization: Red Hat OpenShift with NetApp
06/11/2021	Containers	Added a new video demo: Workload Migration using Astra Trident and SnapMirror to NVA-1160
06/09/2021	Containers	Added a new use-case to NVA-1160 - Advanced Cluster Management for Kubernetes on Red Hat OpenShift with NetApp
05/28/2021	Containers	Added a new use-case to NVA-1160 - OpenShift Virtualization with NetApp ONTAP
05/27/2021	Containers	Added a new use-case to NVA-1160- Multitenancy on OpenShift with NetApp ONTAP
05/26/2021	Containers	Added NVA-1160 - Red Hat OpenShift with NetApp
05/25/2021	Containers	Added blog: Installing NetApp Trident on Red Hat OpenShift – How to solve the Docker ‘toomanyrequests’ issue!
05/10/2021	Virtualization	New video: How to use vVols with NetApp and VMware Tanzu Basic, part 3

Date	Solution Area	Description of change
04/30/20 21	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 2
04/26/20 21	Containers	Added blog: Using VMware Tanzu with ONTAP to accelerate your Kubernetes journey
03/23/20 21	Virtualization	Video: How to use vVols with NetApp and VMware Tanzu Basic, part 1

#### Enterprise Apps and DB

Date	Solution Area	Description of change
06/09/20 23	Database	Added new TR-4973: Quick Recovery and Clone of Oracle VLDB with Incremental Merge on AWS FSx ONTAP
05/19/20 23	Database	Added new TR-4974: Oracle 19c in Standalone Restart on AWS FSx/EC2 with NFS/ASM
05/05/20 23	Database	New TR-4951: Backup and Recovery for Microsoft SQL Server on AWS FSx for ONTAP
03/31/20 23	Database	Added Oracle Database Deployment and Protection in AWS FSx/EC2 with iSCSI/ASM
03/31/20 23	Database	Added Oracle Database Backup, Restore and Clone with SnapCenter Services
02/15/20 23	Database	Added PostgreSQL High Availability Deployment and Disaster Recovery in AWS FSx/EC2
01/24/20 23	Database	Added TR-4954: Oracle Database Deployment and Protection on Azure NetApp Files
01/12/20 23	Database	Added blog: Protect your SQL Server workloads using NetApp SnapCenter with Amazon FSx for NetApp ONTAP
12/15/20 22	Database	Added TR-4923: SQL Server on AWS EC2 using Amazon FSx for NetApp ONTAP
12/06/20 22	Database	Added 7 videos for Oracle database modernization in hybrid cloud with Amazon FSx storage
08/25/20 22	Database	Added blog - Modernize your Oracle database operation in hybrid cloud with Amazon FSx storage
06/29/20 22	Database	Added WP-7357: Oracle Database Deployment on EC2/FSx Best Practices
10/29/20 21	Database	Automated Data Protection for Oracle Databases
10/26/20 21	Database	Added blog section for enterprise applications and database to NetApp solutions tile. Added two blogs to Database blogs.
10/18/20 21	Database	TR-4908 - Hybrid Cloud Database Solutions with SnapCenter
07/21/20 21	Database	Automated Deployment of Oracle19c for ONTAP on NFS

Date	Solution Area	Description of change
07/02/2021	Database	TR-4897 - SQL Server on Azure NetApp Files: Real Deployment View
06/14/2021	Database	Added solution: Microsoft SQL Server on Azure NetApp Files
05/11/2021	Database	Added automated deployment of Oracle 19c for ONTAP on NFS
05/06/2021	Oracle Database	Added link to Oracle 19c RAC Databases on FlexPod DataCenter with Cisco UCS and NetApp AFF A800 over FC
05/05/2021	Oracle Database	Added FlexPod Oracle NVA (1155) and Automation video
02/03/2021	SAP	Added landing page for all SAP and SAP HANA content



For more information on SAP and SAP HANA updates, refer to the "Update History" content present for each of the solutions in the [SAP Solutions Repository](#).

#### Data Protection and Data Migration

Date	Solution Area	Description of change
10/29/2021	Database	Automated Data Protection for Oracle Databases
09/23/2021	Data Migration	New content: NetApp Best Practices for NetApp XCP

#### Solution Automation

Date	Solution Area	Description of change
03/29/2023	Automation	Updated blog "FSx for ONTAP Monitoring and Auto-Resizing using AWS Lambda Function" with options for private/public deployment along with manual/automated deployment options.
03/22/2023	Automation	Added blog: FSx for ONTAP Monitoring and Auto-Resizing using AWS Lambda Function
11/02/2021	Automation	AWS Authentication Requirements for CVO and Connector Using NetApp Cloud Manager
10/29/2021	Database	Automated Data Protection for Oracle Databases
07/21/2021	Database	Automated Deployment of Oracle19c for ONTAP on NFS
05/11/2021	Database	Added automated deployment of Oracle 19c for ONTAP on NFS
03/04/2021	Automation	New content: getting started with NetApp solution automation

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