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Uncomplicate Data Storage, Forever

Pure Storage Advanced Services

Service Brief Repository

August 2025

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Service Brief

ActiveCluster Implementation Services

ActiveCluster Advisory Workshops & Deployment

Highlights

- Expert ActiveCluster Advisors, Deployments and Validation services.

Flexibility

- Work with Pure Storage Services team to implement according to your schedule

Pure Storage Purity ActiveCluster is a fully symmetric, active/active bidirectional replication solution that delivers synchronous replication for zero RPO and automatic, transparent failover for zero RTO. It supports multi-site configurations, allowing clustered arrays and hosts to create flexible active/active data center setups. ActiveCluster operates over both Fibre Channel and Internet Protocol. To maximize the benefits of this robust business continuity feature, Pure Storage Customer Success offers complete advisory and implementation services.

The End User Experience

Pure Storage follows a strict methodology for deploying and configuring Purity ActiveCluster. Our approach accelerates our End User's effective time to value by ensuring that your environment is configured and optimized to leverage ActiveCluster synchronous replication technology.
The ActiveCluster implementation suite of services includes the following offerings:

ActiveCluster Advisory Workshop

Pure Storage ActiveCluster Advisory Workshop includes a discovery and readiness assessment. The ActiveCluster consultant will consolidate findings in a report that will be customer-specific and cover items to be considered when deploying ActiveCluster within the environment. This report will be shared with the End User during a follow-on session. End Users can expect the following:

- Gain an understanding of the End User's goals and expectations.
- Evaluate the End User's HA requirements and how ActiveCluster fits.
- Execute a comprehensive review of the end-to-end topology and identify all interdependent components.
- Provide clarity on how ActiveCluster behaves in specific failure scenarios.
- Gain a thorough understanding of the end user’s end-to-end environment (including storage, host, and LAN, SAN, WAN, etc
- Gain insight into the scope, size, and complexity of the deployment effort.
- Provide recommendations via remote session on how best to move forward to accomplish End User goals.

ActiveCluster Advisory Workshop Delivery Methodology

Stage	Owner	Task	Method
Discovery Workshop	Pure Storage End User	The Pure Consultant will work with the End User to review the following infrastructure & associated Configuration: • FlashArray environment (Capacity review,host, volume, snapshot object review, Current replication setup (if any), SAN connectivity between locations, Pure1® proxy configurations) • Host environment(Fiber Channel MPIO settings / ISCSI connections, connections to both storage arrays, Host and virtual OS –VMWare, HyperV, Windows, Application environment) • Network configuration (Network connectivity health check, IP routing configuration on ports required for replication & management, Network bandwidth and latency analysis, forecast expected peak write throughput on replication links, forecast the impact of additional throughput on the current network) • ActiveCluster configuration, Uniform/non-uniform configuration options, Mediator topology) • Site considerations (Commercial/enterprise site leveraging Pure1, Dark site with no communication to/from the environment)	Teleconference, Email
Advisory and Recommendations	Pure Storage End User	• Provide and review recommendations on how best to move forward to accomplish End User goals as identified during the session.	Teleconference, Email
Discovery	Pure Storage, End User	• Conduct an Advisory workshop as per the services description under 'ActiveCluster Workshop'.	Teleconference, Email
Design	Pure Storage End User	• Review and confirm the results of the ActiveCluster Advisory Workshop output with key stakeholders. • Develop an ActiveCluster execution plan including hosts, hostgroups, and volumes to set up for ActiveCluster replication. Limited to hosts, hostgroups, or volumes.	Teleconference, Email
Deployment	Pure Storage End User	During the deployment phase, the Pure Storage will execute the plan identified in the design phase, leveraging the following high-level approach: • Confirm arrays are at the appropriate Purity//FA operating system version to support ActiveCluster. If they are not, perform the upgrade. • Run an ActiveCluster pre-deployment health check to ensure link bandwidth meets recommended MBs/sec and latency requirements. • Activate ActiveCluster on the Array and establish synchronous replication connections between the arrays to be used in the ActiveCluster solution. • Identify host and volumes.	Teleconference

		• Advise End User on host configuration changes needed for up to 10 hosts • Advise End User on recommended network configuration changes.	
Validation	Pure Storage End User	Pure Storage will carry out appropriate Configuration checks, including: • Verify arrays are fully supported. • Validate host group and protection group setup. • Check object counts among arrays to ensure they are within recommended limits. • Check management ports to ensure they are configured, enabled, and active. (ActiveCluster requires redundant HA network connectivity to ensure HA access to the mediator.) • Review MTU consistency to ensure compliance with recommended settings. • Review array utilization and capacity levels to ensure they fall within the recommended targets. • Check active array source and target connectivity. • Check and validate cloud mediator access and Connectivity. Pure Storage will carry out complete failure scenario testing. To complete this effort, the Pure Storage consultant will require the End User to schedule a set of End User directed failover tests which demonstrate the HA aspects of the ActiveCluster environment and may include: • **Array failover:** Local HA controller, Remote HA controller, Single and entire site array failure, Mediator failure, Replication link loss (uniform and non-uniform. • **Network & network services failures:** Replication link loss (uniform and non-uniform), Failure of pre-identified switches, Firewall failure, DNS failure • **Storage network failure:** Stretched SAN fabric outage (FC/ISCSI), SAN Interconnect (between sites), SAN single site outage • **Host failures** (single and multiple host failure)	Teleconference

ActiveCluster Workshop and Deployment Deliverables

Work Product	Active Cluster Workshop	Active Cluster Deployment
Detailed report with site configuration recommendations based upon the desired HA goals and failure scenarios identified in the workshop.	Included	Included
A validated and operational ActiveCluster environment		Included
A report to the End User that outlines the site validation testing approach and outcomes of each failover scenario, and a final version of the configuration recommendations for future site reference.		Included

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

ActiveDR Workshop

Accelerate your ActiveDR deployment with Pure Storage Services.

Highlights

- Conduct readiness assessment before the environment goes live.
- Review goals, expectations and environment.
- Confirm that environment design aligns with ActiveDR requirements and best practices.
- Deliver site-configuration recommendations.

ActiveDR offers continuous, near-synchronous replication between two FlashArrays located in different data centers, achieving a near-zero RPO (Recovery Point Objective) with minimal data loss during failover. Unlike traditional asynchronous replication, ActiveDR eliminates latency impact on front-end applications, as the target array does not need to acknowledge every write. The Pure Storage Professional Services team applies a proven methodology to develop a tailored statement of work for the design, implementation, and validation of the ActiveDR solution.

The End User Experience

Pure Storage Services helps customers maximize the value of their IT investments. Throughout the customer journey, we offer a range of services and solutions to help businesses achieve their desired outcomes. The ActiveDR Implementation service is designed for customers who wish to activate the business continuity and replication capabilities of FlashArray.

ActiveDR Work Products

- Discovery & Readiness assessment to define a clear scope of work and timeline, ensuring alignment with your business's High Availability needs.
- Comprehensive report based on the current environment, with site-specific configuration recommendations related to your high-availability goals and the failure scenarios discussed in the workshop.
- Afterward, the Pure Storage team completes the analysis and design for your approval, followed by customer-directed failover testing and knowledge transfer to fully complete the service.

As part of the workshop, the ActiveDR consultant will:

- Understand your goals and expectations.
- Assess your high-availability requirements and determine how ActiveDR aligns with them.
- Conduct a detailed review of the entire topology and identify all interdependent components.
- Clarify how ActiveDR performs in specific failure scenarios.
- Develop a comprehensive understanding of your complete environment, including storage, hosts, LAN, SAN, and WAN elements.
- Evaluate the scope, scale, and complexity of the deployment effort.

While ActiveDR is straightforward to deploy on Pure Storage FlashArray™ platforms, it involves several interdependencies within your environment. Before deploying or expanding an ActiveDR solution, it's essential to thoroughly assess these dependencies to understand how they may impact the overall environment during various disaster recovery (DR) scenarios.

We recommend conducting the Pure Storage ActiveDR Advisory Workshop at a stage where you can act on any infrastructure recommendations outlined in the report before putting the environment into production. The workshop includes a remote or on-site discovery and readiness assessment, during which the ActiveDR consultant will evaluate your environment. Findings will be compiled into a tailored report, highlighting key considerations for deploying ActiveDR effectively. This report will be reviewed with you in a follow-up session.

Before deploying ActiveDR, the Pure Storage consultant will collaborate with you to assess the following infrastructure and related configurations:

Environment	Task
FlashArray Environment	• Review of hosts, volumes, and snapshots to ensure alignment with ActiveDR guidelines. • Capacity evaluation of existing FlashArrays intended for the ActiveDR deployment. • Review of the current replication setup (if applicable). • SAN connectivity between sites. • Configuration of the Pure1 proxy.
Host Environment	• Fiber Channel MPIO settings and iSCSI connections. • Connectivity to both storage arrays. • Suitability of applications for ActiveDR.
Network Configuration	• Compatibility of the ActiveDR (management and replication) network infrastructure. • Verification that the network meets requirements for the number of IP addresses, firewall rules (if applicable), and physical port availability. • Ensure the network can support the required RPO for ActiveDR. • Forecast peak write throughput on replication links, if applicable data is available for analysis. • Evaluate the impact of additional throughput on the current network, if applicable data is available for analysis
ActiveDR Configuration	• Overview of design considerations. • Expectations for testing, failover, and failback processes. • Array performance and capacity expectations. • Best practices for integrating with third-party DR management tools.

Scoping Parameters

- This service must be utilized within 12 months of Pure Storage accepting the order. After this period, no refunds or prepaid service fees will be issued.

End User Responsibilities

- Ensure the relevant teams with the appropriate skills in Storage, Networking, and Servers are available to participate.
- Provide a suitable facility for the workshop (e.g., projector, whiteboard, if delivered onsite).
- Provide an internet connection for any demo sessions.

Out of Scope

- Any FlashArray configuration tasks unrelated to the ActiveDR setup.
- Physical installation of FlashArray cabling.
- Network configuration specific to the customer's environment.
- SAN configuration in the customer environment.
- Server remediation work.
- Configuration of third-party replication and DR management tools.
- Disaster recovery testing.
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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SERVICE BRIEF

Backup Target Modernization

Modernize your backup environment, significantly reduce costs and considerably reduce your carbon footprint.

Highlights

- Accelerate the decommissioning of costly legacy Backup appliances

Flexibility

- Work with Pure Storage Services to implement according to your schedule

Outcome

- Migration Plan and Guidance to accelerate the decommissioning of expensive Backup appliances

By moving your backup environment to Pure Storage technology, customers benefit from lower Total Cost of Ownership (TCO), a significantly reduced carbon footprint (power consumption, rack space), considerable improvements in data restore performance (Rapid Restore), multi-purpose use case, native Ransomware protection (SafeMode), and all-flash technology.

To accelerate any TCO savings, it is important to avoid the expense of running two backup environments in parallel while still catering for any long-term backup retention commitments you may have. Legacy hardware must be decommissioned and removed as quickly as possible. Pure Storage assists by identifying any existing backup data that needs to be proactively moved to Pure Storage systems and providing a plan and roadmap to success to enable you to successfully retire legacy kit as soon as possible.

The End User Experience

Pure Services can help you realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Backup Target Modernization Work Products

- **Knowledge Transfer Deck:** Overview of new Solution, proposed changes and any impact
- **Proposed Backup Migration Plan / Road to Success Document:** Includes an as-Built-Design, identification of backup data requiring cloning to Pure Storage, identification of demo backup job to clone in POC phase, documented roadmap and plan to evacuate the remainder of the legacy backup appliance
- **Configuration of New Backup Target:** Includes the configuration of New backup target using Veeam Commvault or NetBackup software as appropriate and configuration of a sample replication backup job
- **Proof of Concept / Demo copy job to Pure Storage:** Demonstration of a successful backup clone job to Pure Storage
- **Successful Data Restore test:** Successful data restore test of cloned data to confirm restore successful

Backup Target Modernization Delivery Methodology

Stage	Owner	Activity
Discovery	Pure Storage	Workshop to collect information regarding the in-scope backup environment: • Size of Backup environment • Backup schedules configured • Retention Policies
Analysis	Pure Storage End User	Analyze and review Backup data to identify and document: • Any Backup data requiring migration to Pure Storage • Backup data not requiring migration (typically <30 day retention policies) A knowledge transfer demonstrating proposed changes to environment and any impacts Proposed migration plan / basic runbook will also be published

Enablement	Pure Storage
	End User
		• Configure Pure Storage arrays into the Backup environment
		• Configure sample Backup job
		• Configure Backup job Duplication (for sample job)
		• Perform a Proof of Concept backup data copy to Pure Storage:
		  ○ A single Veeam backup job (up to a maximum of 2TB in size), **or**
		  ○ Up to 2TB of NetBackup images, **or**
		  ○ Up to 2TB of Commvault backups
		• Perform a backup restore test of the copied data, or a subset of data as per End User requirements

Scoping Parameters

- The Service is only supported for End Users using either NetBackup v10, Veeam v11 or v12,Commvault v11, as well as DDOS 6x or 7x.
- Performance guarantees cannot be made, throughput is reliant on several contributing factors of the existing infrastructure. (Industry statistics only will be used)
- Pure Storage is not responsible for provisioning of any additional server requirements. (OS Provisioning / Networking requirements)
- Pure Storage will not make any changes to current backup policies - the backup jobs should be reconfigured to point to the Pure Storage array, prior to the duplication of any jobs.
- Expiration of the backup images on the EMC Data Domain will not be carried out by Pure Storage, but will be performed by the End User.
- Pure Storage will demonstrate a single Veeam, Commvault or Netbackup backup copy job of up to 2TB in size. If the End User environment does not contain a backup job less than 2TB in size Pure Storage will create one for purposes of the demonstration.
- Any in-scope Pure Storage FlashArray systems will be pre-installed and running a minimum of Purity 6.3.x or any current green LLR/ER in the 6.3 or 6.5 OS version.
- Any in-scope Pure Storage FlashBlade systems will be pre-installed and running a minimum of Purity 4.3.x or any current green LLR/ER
- Any in-scope Data Domains, or backup software should be upgraded to the latest stable code version prior to the engagement.
- End users must have a valid vendor support agreement in place for the backup source hardware.
- End Users using Veeam must have either Enterprise Plus or Universal Veeam licenses.
- End Users using NetBackup must have NetBackup Data Protection optimization option license.

- End Users using CommVault must have either Foundation Protection, Autonomous Protection or Cyber Resilience licenses
- End User must have a valid support contract with the software vendor with appropriate Service Level Agreements.
- The target Pure Storage array(s) must have been sized appropriately, with the SE and Sales teams.
- A single iteration of this service is applicable to either a single source Data Domain (or two Data Domains in a replicated relationship) to a maximum of two Pure Storage target arrays.
- Any Pure Storage proof of concept / demonstration clone jobs will be limited to a single Veeam backup job (up to a maximum of 2TB in size), or up to 2TB of NetBackup or Commvault images.
- The proof of concept data restore test must be pointed to either a Sandpit or a non-critical area, and will not be run on a live environment.
- Pure Storage is not responsible for any performance or configuration planning for any backup infrastructure.
- Any services must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid services fees will be provided

End User Responsibilities

- Arrange access to skilled resources and subject matter experts.
- Assist Pure Storage with the discovery phase.
- Provide timely document review and feedback.
- Address any additional backup service requirements highlighted.
- Completion of migration plan, expiration of any images and subsequent decommissioning of Data Domain.
- Deploy and configure any additionally required physical or virtual servers.
- Configure CIFs or NFS access on the Data Domain to the Mtree / Filesystem.

Out of Scope

- Data Domain arrays running Virtual Tape Libraries are not supported.
- Data Domain arrays running in Governance mode are not supported.
- Data Domain arrays running Cloud Tier are not supported.
- Any Netbackup, Commvault, Veeam patching, as well as OS patching is out of scope.
- Any environments **not** running on either Netbackup v10, Veeam v11 or v12, or Commvault v11, as well as DDOS 6x or 7x are out of scope.
- Any changes to existing Backup policies are out of scope.
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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SERVICE BRIEF

Cloud Block Store in AWS

Effortlessly deploy and optimize for enterprise-grade simplicity & reduced cloud storage costs.

Highlights

- Effortless Integration: Quick setup of Pure Storage Cloud Block Store.
- Superior Performance: Achieve optimal speed and simplicity.
- Cost Efficiency: Optimize for reduced cloud storage expenses.

Outcome

- Streamlined Setup: Rapid and easy deployment.
- Enhanced Efficiency: Improved performance and management.
- Cost Reduction: Notable savings on cloud storage costs.

Our service provides expert deployment and optimization of Pure Storage Cloud Block Store, designed to seamlessly integrate with your hybrid cloud environment. We focus on delivering enterprise-grade simplicity and performance, while accelerating the reduction of your cloud storage costs. A true hybrid operation can be achieved with consistent data services, resiliency, APIs, bi-directional mobility, seamless management and orchestration.

The End User Experience

End users will experience a transformative shift in how they interact with cloud storage through the integration of Pure Storage Cloud Block Store. Here's what they can expect:

- **Seamless Operations**: The effortless deployment ensures that end users encounter minimal disruptions during the transition, allowing them to continue their work without significant interruptions or learning curves.
- **Enhanced Performance**: Users will benefit from high-speed, reliable access to their data, with improved performance that supports faster application responses and smoother operational workflows.
- **Simplified Management**: The intuitive management interface and streamlined cloud storage solutions make it easier for users to handle their data, reducing complexity and making day-to-day operations more straightforward.
- **Cost-Effective Solutions**: Users will see a reduction in cloud storage costs, thanks to optimized storage footprint and efficient management, translating to lower operational expenses and better resource allocation.
- **Scalable Flexibility**: As storage needs grow, the solution scales effortlessly, providing users with the flexibility to expand their storage capacity without compromising on performance or incurring excessive costs.

Cloud Block Store (CBS) Deployment in Amazon Delivery Methodology and Work Product

Stage	Owner	Activity	Method
Discovery and data gathering	Pure Storage, End User, Partner (if applicable)	• Assistance with Completing Pure Storage Cloud Block Store Pre-Installation Questionnaire • Dependencies required for deploying CBS into AWS • How the customer is going to access CBS from their environment once the deployment is completed & data sizing requirements. • Identify the customers specific use cases for CBS in terms of IO/Bandwidth requirements • Identify the number of clients that will access volumes on CBS & number of volumes to be created and types of data being used in volumes. • Determine AWS Cloud environment readiness	Teleconference Email
Design	Pure Storage, End User, Partner (if applicable)	• Review the information collected from the initial consultation. Produce a high level design that reflects the customers requirement with appropriate recommendations that fit their use case and deployment type manua vs Turn key (Marketplace or automated via Bicep/Terraform) Clearly define the scope of the deployment to a point where a CBS array (Singular) is deployed into the customers environment. • Scheduling CBS Implementation and deployment	Teleconference Email
Implementation and Deployment	Pure Storage, End User, Partner (if applicable)	• Deployment of CBS from AWS Marketplace • For automated deployment options: ○ Clone CBS GitHub deployment code into customer environment. • Prepare configuration for CBS. Deploy CBS using Terraform. • Validate deployment, IP access to CBS console for the customer. • Create the configuration for one host and one volume & assign it to a host. Run an IO test to illustrate IO and bandwidth.	Teleconference
Post implementation	Pure Storage, End User, Partner (if applicable)	• Deliver Post-installation report by checking deployment and validate access	Teleconference Email

Scoping Parameters

- Installation of a single Cloud Block Store instance only
- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid Services fees will be provided

End User Responsibilities

- **Computing Requirements**: An existing VPC or the ability to create a new VPC to host CBS, should it be required. Pure Storage can assist with this.
- **IAM Permissions**: As part of the deployment process, Pure Storage will need to create IAM policies. The End User agrees that Pure Storage can do this:
- Administrator Access
- AWS Service Catalog Admin Full Access
- **DC to VPC Connectivity**: For asynchronous and synchronous (ActiveCluster™) data replication, networking connectivity should be either configured or feasible. **Note**: For Active Cluster the site to site latency must be less than 11ms.
- As part of industry best practices, please perform a full working backup prior to the start of the services. Pure Storage is not responsible for lost data.
- Must provide a resource dedicated to this project and the extent of the knowledge transfer is dependent upon the availability of this resource. Please note that the time designated for knowledge transfer is throughout the project.
- Must provide Pure Storage in writing with any restrictions or requirements regarding the Pure Storage technician's use of personal equipment in advance of the beginning of the project.
- Must make the necessary administrative usernames and passwords available to the Pure Storage technician.
- Must provide Pure Storage with detailed and accurate information regarding the current network environment. This information may include the technical configuration of the domain environment.

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SERVICE BRIEF

Cloud Block Store in Microsoft Azure

Effortlessly deploy and optimize for enterprise-grade simplicity & reduced cloud storage costs.

Highlights

- Effortless Integration: Quick setup of Pure Storage Cloud Block Store.
- Superior Performance: Achieve optimal speed and simplicity.
- Cost Efficiency: Optimize for reduced cloud storage expenses.

Outcome

- Streamlined Setup: Rapid and easy deployment.
- Enhanced Efficiency: Improved performance and management.
- Cost Reduction: Notable savings on cloud storage costs.

Our service provides expert deployment and optimization of Pure Storage Cloud Block Store, designed to seamlessly integrate with your hybrid cloud environment. We focus on delivering enterprise-grade simplicity and performance, while accelerating the reduction of your cloud storage costs. A true hybrid operation can be achieved with consistent data services, resiliency, APIs, bi-directional mobility, seamless management and orchestration.

The End User Experience

End users will experience a transformative shift in how they interact with cloud storage through the integration of Pure Storage Cloud Block Store. Here's what they can expect:

- **Seamless Operations**: The effortless deployment ensures that end users encounter minimal disruptions during the transition, allowing them to continue their work without significant interruptions or learning curves.
- **Enhanced Performance**: Users will benefit from high-speed, reliable access to their data, with improved performance that supports faster application responses and smoother operational workflows.
- **Simplified Management**: The intuitive management interface and streamlined cloud storage solutions make it easier for users to handle their data, reducing complexity and making day-to-day operations more straightforward.
- **Cost-Effective Solutions**: Users will see a reduction in cloud storage costs, thanks to optimized storage footprint and efficient management, translating to lower operational expenses and better resource allocation.
- **Scalable Flexibility**: As storage needs grow, the solution scales effortlessly, providing users with the flexibility to expand their storage capacity without compromising on performance or incurring excessive costs.

Cloud Block Store (CBS) Deployment in Microsoft Azure Delivery Methodology and Work Product

Stage	Owner	Activity	Method
Discovery and data gathering	Pure Storage, End User, Partner (if applicable)	Assistance completing Cloud Block Store Pre-Installation Questionnaire. Dependencies required for deploying CBS into Microsoft Azure How the customer is going to access CBS from their environment once the deployment is completed & data sizing requirements. Microsoft Azure Cloud environment readiness. Identify the number of clients that will access volumes on CBS & number of volumes to be created and types of data being used in volumes. Determine AWS Cloud environment readiness pre-installation.	Teleconference Email
Design	Pure Storage, End User, Partner (if applicable)	Review the information collected from the initial consultation. Produce a high level design that reflects the customers requirement with appropriate recommendations that fit their use case and deployment type. Manual (Marketplace) or automated via Bicep/Terraform. Clearly define the scope of the deployment to a point where a CBS array (Singular) is deployed into the customers environment.	Teleconference Email
Implementation and Deployment	Pure Storage, End User, Partner (if applicable)	Deploying CBS via Azure Marketplace For automated deployment options. Clone CBS GitHub deployment code into customer environment. Prepare configuration for CBS. Deploy CBS using Terraform or Microsoft Bicep (IaC). Validate deployment, IP access to CBS console for the customer. Create the configuration for one host and one volume & assign it to a host. Run an IO test to illustrate IO and bandwidth.	Teleconference
Post Implementation	Pure Storage, End User, Partner (if applicable)	Deliver Post-installation report by checking deployment and validate access.	Teleconference Email

Scoping Parameters

- Installation of a single Cloud Block Store instance only.
- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- **Computing Requirements**: An existing VPC or the ability to create a new VPC to host CBS, should it be required. Pure Storage can assist with this.
- **Microsoft Azure Permissions**: As part of the deployment process, Pure Storage will need to create Microsoft Service Principles & policies. The End User agrees that Pure Storage can do this:
- Administrator Access
- Azure Service Catalog Admin Full Access
- **DC to VPC Connectivity**: For asynchronous and synchronous (ActiveCluster™) data replication, networking connectivity should be either configured or feasible. **Note**: For Active Cluster the site to site latency must be less than 11ms.
- As part of industry best practices, please perform a full working backup prior to the start of the services. Pure Storage is not responsible for lost data.
- Customer must provide a resource dedicated to this project and the extent of the knowledge transfer is dependent upon the availability of this resource. Please note that the time designated for knowledge transfer is throughout the project.
- Customer must provide Pure Storage in writing with any restrictions or requirements regarding the Pure Storage technician's use of personal equipment in advance of the beginning of the project.
- Customer must make the necessary administrative usernames and passwords available to the Pure Storage technician.
- Customer must provide Pure Storage with detailed and accurate information regarding the current network environment. This information may include the technical configuration of the domain environment.

Out of Scope

- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Pure Cloud Block Store Design and Operational Readiness Onboarding

Reduce Time-to-value and maximize return on investment with pure storage services

Highlights

- Expert-led design workshop.
- Vendor-approved detailed solution design using experienced architects
- End-to-end user acceptance testing
- Reduce time-to-value
- Maximize return on investment

Flexibility

- Work with Professional Services to implement according to your schedule

Outcomes

- Tailored detailed solution design and operations guide
- Full design documentation set
- End user knowledge transfer

At Pure Storage®, our technology is radically simple, but we recognize that end-user environments can be highly complex. Whether you're deploying a greenfield environment or integrating Pure Storage technology into an existing production data center, engineering and operational readiness are critical. Yet resource-intensive tasks can significantly impact your time-to-value. Developing a robust, resilient, and detailed solution design without extensive technology experience is a common challenge for many organizations. Pure Storage provides you with detailed design, engineering, testing, and operational readiness to ensure your storage solution is optimized for success.

The End User Experience

The end user experience with our Design and Operational Readiness service is seamless and empowering. Users are guided through every stage of the storage solution deployment, from initial design to final implementation, with clear and comprehensive documentation provided at each step. The hands-on workshop delivers in-depth knowledge and practical skills, ensuring users feel confident in managing and optimizing their storage environment. With the support of experienced architects and a focus on tailored solutions, users can expect a smooth transition, reduced time-to-value, and a solution that fully meets their operational needs, all while enhancing their overall confidence and capability in using Pure Storage technology.

Cloud Block Store Design and Operational Readiness Work Product

- Low-level design workshop and kick-off
- Documentation of functional and non-functional requirements
- Design document
- Test Plan to prove design and requirements are achieved
- Operations Guide
- Advanced knowledge transfer session

Cloud Block Store Design and Operational Readiness Delivery Methodology

	Work Product
Cloud Block Store Workshop	• CBS array configuration best practices and standards • Storage volume provisioning testing for a single host of each deployed operating system • Demo and knowledge transfer

Out of Scope

- Ethernet/IP/SAN network diagrams or design
- Guest application or server-level design and disaster recovery plans
- Platform/compute layer design
- CBS array installs or deployment
- Scripting and workflow integration
- Data migrations
- Benchmark testing of a FlashArray™ system's performance
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

End User Responsibilities

- Share information about infrastructure, business and operational process, when requested, such as, but not limited to:
    - Data center topology and high-level design
    - Application silos and domains
    - Provide SAN topology diagrams where available
    - Capacity utilization reports and growth statistics
    - Provide performance and capacity utilization reports and tools
    - Configuration management database (CMDB) reports, software and firmware levels and service life
    - All data back-up activities
- Arrange for workshops with key stakeholders and technical subject matter experts (e.g.,storage, database, system administrators, and application)
- Access to skilled resources to assist with any design or environmental questions that arise
- Allow switch collection tools to run such as Brocade SAN Health
- Timely document review and feedback

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SERVICE BRIEF

Commvault and Pure Storage Integration Enablement

Unmatched data protection, rapid recovery, and cyber resilience with seamless backup solutions

Highlights

- Learn how to utilize the latest technologies to reduce backup and restore times.
- Gain insights into the seamless integration.
- Invest in a comprehensive knowledge transfer to support and optimize your current deployments.

Outcomes

- Explore best practices and discuss how these can benefit your specific environment.
- Simplify your solution and accelerate your ROI with expert-led guidance.

Our knowledge transfer workshop offers an in-depth overview of integrating Pure Storage® arrays with Commvault Backup and Recovery, combining ease of management with all-flash performance for superior backup and restore capabilities. Cyber resilience is critical, and this service equips your team with the knowledge to implement best practices, maximizing efficiency and accelerating your return on investment. Data availability and quick recovery are essential to business continuity. By leveraging the combination of Pure Storage FlashArray™ and Commvault Intellisnap technology, backup and restore times are dramatically reduced.

The End User Experience

End users will experience a transformative improvement in their interaction with backup and restore processes. With the integration of Pure Storage FlashArray and Commvault Intellisnap, the traditional frustrations associated with lengthy downtime and data recovery will be a thing of the past. Here's what end users can expect:

Seamless backup operations: The snapshot technology ensures that backups are completed quickly and efficiently, often in a matter of minutes. This means end users won't experience disruptions or slowdowns in their daily activities due to ongoing backup processes.

Rapid data recovery: In the event of data loss, corruption, or other disruptions, end users can expect near-instantaneous data restoration. This quick recovery capability ensures that they can get back to work with minimal interruption, maintaining productivity and reducing the stress associated with data recovery.

Enhanced reliability: The use of Commvault Intellisnap technology guarantees consistent and reliable backups. End users can have confidence that their data is securely backed up and can be restored accurately, reducing concerns about data integrity and availability.

User-friendly management: The integration simplifies backup and restore management, making it more intuitive for IT administrators. This, in turn, translates to faster issue resolution and less downtime for end users, as IT teams can quickly address and resolve any data-related problems.

Simplified operations: The streamlined process means that end users benefit from a simplified, hassle-free experience. The complexity of traditional backup and restore procedures is replaced with a more straightforward and efficient system, allowing end users to focus on their core tasks without worrying about data protection issues.

Commvault Integration Enablement Work Product

- One-day workshop covering Commvault features and best practices.
- Workshop slide deck with best practices.
- One-day hands-on best practice configuration session.

Commvault and Pure Storage Integration Enablement Delivery Methodology

Stage	Owner	Task	Delivery
Planning	Pure Storage and End User	Pure Storage will share a pre-engagement questionnaire to understand the customer environment. Workshop materials will be updated and enhanced based on the provided information.	Teleconference and Email
Workshop	Pure Storage and End User	Pure Storage will deliver a one-day workshop covering: **Commvault and Pure Storage integration**: IntelliSnap, immutable snapshots, ActiveCluster™, asynchronous replication. **Commvault components**: Architecture overview, media agent best practices, storage accelerator, backup transport modes. **Deduplication and compression** **Immutable snapshots:** Protection with SafeMode with FlashArray and FlashBlade. **Backup duplication:** Auxiliary copies.	Onsite, Teleconference
Hands-on session	Pure Storage and End User	Pure Storage will deliver a one-day hands-on technical session covering: **Best practice assessment:** Ensure your Commvault environment is configured using the recommended best practice settings. **Configuration assistance:** Provide expert assistance with the configuration of Commvault features, including. • Backup jobs • Backup duplication • SafeMode • Commvault IntelliSnap	Onsite, Teleconference
Closure	Pure Storage and End User	Pure Storage will follow up on any open questions. Pure Storage to provide Commvault Advisory Workshop slide deck to end user	Teleconference, Email

Scoping Parameters

- The service can be delivered either onsite or remotely.
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Complete the pre-engagement questionnaire document.
- Ensure engagement and attendance of relevant teams and subject matter experts in the workshop.

Out of Scope

- Design and documentation of specific architectures.
- Implementation and configuration of customer specific environments.
- Integration of third-party software.
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SERVICE BRIEF

Pure Storage Cyber Protection Assessment

A focused analysis of your SafeMode™ protected features.

Highlights

- Assessment for the FlashArray™ and FlashBlade® built-in data protection features

Flexibility

- Work with the Pure Storage Services team according to your schedule

Outcomes

- Detailed report of your SafeMode and snapshot protection
- Recommendations based on your data protection goals
- Identify gaps in your Pure Storage protection features for the identified tiers
- Review recovery point objectives for your environment

This assessment is a detailed review of your Pure Storage built-in data protection features use cases and analysis for common scenarios like disasters, data corruption, accidental deletions, and ransomware. These features include snapshots protected by SafeMode which include local snapshots, asynchronous snapshots, and Purity CloudSnap.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions. End Users can expect the following:

- Understand Pure Storage SafeMode options and the protection it provides for the Pure Storage snapshot technologies.
- Provide clarity on how the Pure Storage data protection features can be leveraged for specific attack and recovery scenarios.
- Review past incidents and recovery experiences.
- Overview of the Pure1® anomaly detection and SafeMode snapshot assessment features.
- Review recovery point objects for systems and applications into the mission critical, important, and non-essential tiers on your Pure Storage appliances.
- Assist in the identification of snapshots and protection groups.
- Array assessments with implementation recommendations with a snapshot gap analysis, capacity review and replication network configuration for the appliance data protection features.
- Pure Storage will provide a Statement of Work for addressing Pure Storage implementation and configuration effort to enable the recommendations.

Cyber Protection Assessment Work Products

- The outcome of the assessment will include a detailed report of your SafeMode and snapshot protection configuration along with recommendations based on the customer's desired goals.
- The recommendations will be based on the data protection goals and scenarios identified during the assessment.
- The Pure Storage consultant will consolidate findings in a report which details SafeMode configuration, volume footprint, protection groups, snapshot coverage, replication schedules, retention policies, snapshot capacity consumed
- The assessment also identifies gaps in your Pure Storage protection features for the identified tiers.

Cyber Protection Assessment Service Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage, End User	Pure Storage will share the Pre-Engagement Questionnaire to understand more about the Customer environment. • Pure Storage will update and enhance Workshop Deck and Contents based on information provided.	Teleconference, Email
Workshop	Pure Storage, End User	Pure Storage will deliver a workshop and assessment, covering the following topics, as applicable: • SafeMode protected snapshot protection technology overview for FlashArray and FlashBlade covering local, asynchronous snapshots and CloudSnap • SafeMode management requirements and options • Best practices for SafeMode and snapshot implementation • Provide Evergreen//One™ Cyber Recovery and Resilience SLA service overview	Teleconference, Email
Assessment	Pure Storage, End User	The assessment will review the customers infrastructure and associated configuration for FlashArray and FlashBlade systems: • Environment readiness assessment for local, asynchronous, CloudSnap protected snapshots • Snapshot gap analysis, frequency and retention recommendations • Capacity review and analysis • Host, volume, snapshot, protection group object review • Current replication configuration • Current SafeMode configuration • Site consideration for Pure1 or dark sites	Teleconference, Email
Closure	Pure Storage, End User	Pure Storage will provide the following deliverables to the end user and follow up with any outstanding questions. • SafeMode Assessment Workshop Slide Deck • Data Resilience Protection Assessment Report • Statement of Work for Implementing Recommendations	Teleconference, Email

Scoping Parameters

- Service limited to a maximum of 10 Pure Storage appliances and one CloudSnap device.
- A limit of four recovery scenarios will be reviewed.
- The Service will be delivered remotely.

End User Responsibilities

- Complete the Pre-Engagement Questionnaire document.
- Ensure engagement and attendance of relevant teams and Subject Matter Experts in the Workshop.

Out of Scope

- FlashArray File, ActiveCluster™, Active DR™ configuration and deployment is not included in this service. SafeMode and snapshot assessment can be included for ActiveCluster and Active DR.
- Any FlashArray configuration work not related to SafeMode protected snapshots or snapshot configuration.
- Physical installations of any FlashArray cabling.
- Network configuration required in the customer environments.
- Host / SAN configuration required in the customer environment.
- Disaster recovery resting.
- Any maintenance on the FlashArray systems.
- Any LUN consolidation and migrations.
- Any data backup or the performance of any data backups.
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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SERVICE BRIEF

Cyber Resilience Essentials Solution Package

Fortify your data protection capabilities and business continuity

Highlights

- Expert advice for enabling critical data protection capabilities
- Work with Pure's Services team to implement either solution component according to your schedule

Outcomes

- Shoulder-to-shoulder consulting on configuring replication features
- Confirmation of SafeMode configuration
- Vendor specific guidance for integrating Pure with your backup solution

In today's digital landscape, ensuring data protection and maintaining business continuity are critical challenges for organizations. As cyber threats continue to evolve, safeguarding your data and minimizing downtime during disruptions become top priorities. The Cyber Resilience Essentials solution package from Pure Storage® is designed to address these challenges by integrating key services that enhance your organization's data protection and resilience.

Solution Components

ActiveCluster™ Implementation Service: Set up and validate a comprehensive active-active replication environment to ensure zero recovery time objectives (RTO) and recovery point objectives (RPO).

ActiveDR™ Advisory Workshop: Gain expert guidance on implementing continuous or near-synchronous replication for enhanced disaster recovery across data centers.

SafeMode™ Quick Start Service: Confirm configuration and deployment of SafeMode to protect critical data with immutable snapshots, providing an additional layer of security against ransomware and other threats.

Integration Enablement Workshop for either Veeam, Commvault, or Netbackup: Enhance your data protection capabilities with a specialized workshop tailored to integrating Pure with your backup solution.

The End User Experience

The Cyber Resilience Essentials solution package is designed to empower your organization with the tools and expertise needed to safeguard data and ensure business continuity. By implementing these essential services, you can mitigate the risks associated with data loss and downtime, secure your most critical assets, and maintain operational resilience. Whether you are setting up a new replication environment, enhancing your disaster recovery strategy, or integrating with your preferred backup solution, this package provides the foundation you need to achieve your resilience goals.

Overview

Solution Package Deliverables

Pure Storage Service will provide the following deliverables as part of Cyber Resilience Essentials:

Solution Component	Deliverables
ActiveCluster Advisory Workshop	Discovery and readiness assessment Evaluation of customer HA requirements and how ActiveCluster can be configured to support Execute a comprehensive end-to-end review of the topology and identify all interdependent components Provide consulting on how ActiveCluster behaves in specific failure scenarios Provide knowledge transfer and documented recommendations for setup, configuration, and ongoing management and optimization of the ActiveCluster environment
ActiveDR Advisory Workshop	Perform infrastructure discovery including review of the FlashArray™ environment and host environment including network configuration Evaluate customer High Availability requirements and how ActiveDR can be configured to support Execute a comprehensive end-to-end review of the topology and identify all interdependent components Provide consulting on how ActiveDR behaves in specific failure scenarios Provide knowledge transfer and documented recommendations for setup, configuration and ongoing management and optimization of ActiveDR
SafeMode Quick Start Service	Service overview: Rapid deployment of SafeMode for enhanced data protection through immutable snapshots and asynchronous replication

Solution Component	Deliverables
	Configuration and testing: Configure asynchronous replication and snapshot offload. Deploy example snapshot and replication policies via protection groups Demonstrate protection behavior before and after SafeMode enablement Provide knowledge transfer and documented recommendations for setup, configuration and ongoing management and optimization of SafeMode
Integration Enablement Workshop for either Veeam, Commvault or Netbackup	Discovery and pre-engagement questionnaire Provide workshop with guidance on Integration configuration and vendor specific Setup Provide knowledge transfer and documented best practices

Scoping Parameters and End User Responsibilities

Please refer to the individual Service Brief for each service component for additional details.

Out of Scope

Anything not listed and detailed in the Scoping Parameters section of this document or in the individual service brief for each service component is out of scope for Pure Storage.

About Pure Services

Whether you are planning your next-generation storage system, need specialized know-how for a major storage deployment, or want to optimize the investment in your digital transformation, Pure Services and our certified partners have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business. Contact your local Pure sales representative or visit www.purestorage.com.

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SERVICE BRIEF

FlashArray Capacity Add

Addition of capacity to an existing Pure Storage® FlashArray™.

Highlights

- Comprehensive upgrade and configuration

Flexibility

- Implement according to your schedule

Outcomes

- Fully upgrade flash storage solution

Pure Storage FlashArray is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. The Pure Storage FlashArray allows for non-disruptive on-demand capacity expansion through the addition of new data packs or by adding expansion shelves to extend the capacity of the FlashArray. The Pure Services team can help you scale your IT Operations by adding capacity to existing arrays.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage End User Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashArray Capacity Add Service is designed for organizations that want to scale their Pure Storage environments. Our teams use a strict methodology to safely upgrade and validate an existing FlashArray.

FlashArray Capacity Add Work Products

- Installation of additional capacity for a FlashArray system.

FlashArray Capacity Add Delivery Methodology

Stage	Owner	Task	Method
Discovery planning	Pure Storage, End User	During the planning phase, the Pure Services team will work with the Pure Storage account team and the End User to confirm: • End User contact Information • Installation address and data center requirements • Access and change control requirements • Date & time for an introductory pre-call (if required) to review the procedure and discuss expectations and requirements for the engagement • Date & time for the installation of the capacity expansion • Review site survey requirements (power, rack unit availability) • Review the completed installation checklist. • Address any product discrepancies that may be identified (additional cables/cards, etc..)	Conference
Implementation	Pure Storage	The Pure Storage on-site implementation engineer will confirm the location of the shelf with the End User. Upon confirmation by the End User, the Pure Storage on-site implementation engineer will build/configure the rack and install the additional capacity for the FlashArray system.	On Site
Post-implementation	Pure Storage	The Pure Storage on-site implementation engineer will perform the Pure Storage standard health check to validate the FlashArray additional capacity has been installed and confirm with the End User using the Pure Storage graphical user interface (GUI).	On SIte

Scoping Parameters

- This is an on-site activity only, it cannot be performed remotely.
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid services fees will be provided.
- The service is applicable to in-family FlashArray capacity upgrades only.

End User Responsibilities

- End User will need to provide the Pure Services team with the following information and work products before engaging any Pure Storage technical resource:
    1. Complete Pure Storage site readiness and pre-Installation site checklist
    2. Provision sufficient rack space and power (PDU) for capacity upgrade
    3. Ensure appropriate cabling is available

Out of Scope

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 9505

SERVICE BRIEF

FlashArray Capacity Consolidation

Increase the storage density of your FlashArray™ non-disruptively

Highlights

- Increase the storage density of your FlashArray
- Non-disruptive

Flexibility

- Work with the Pure Services team to implement according to your schedule.

Outcomes

- Upgraded flash storage solution

Capacity consolidations allow customers to increase storage density of their arrays through a swap of modules from lower to higher capacity media, often from one media type to another. In many cases this can also decrease the physical footprint of a given unit.

These procedures are non-disruptive and non-impactful to array workloads. Pure Storage Services provides these transformation services, from the moment the deal closes through to completion of the last step in the process.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business outcomes. The FlashArray Capacity Consolidation Services are designed for End Users that wish to increase the capacity and performance of their existing Pure Storage arrays.

FlashArray Capacity Consolidation Services Work Product

- **Pre-Implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm configuration details, and schedule the work.
- **Hardware Removal**: A Pure Storage implementation engineer will remove Direct Flash® Modules, unrack storage shelves and remove power cables ready to be boxed up for return if necessary.

FlashArray Capacity Consolidation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User	Pure Storage engagement request (PER) shared with End User for completion	Conference, email
Planning and documentation	Pure Storage End User	Pure Storage quality assurance group (QAG) reviews the PER to determine the pre-requisites and most appropriate action plan. Action plan is reviewed and agreed with the End User. Once PER approved, resources are engaged and schedules agreed.	Conference, email
Installation	Pure Storage End User	Pure Storage carries out an action plan as agreed in the planning and documentation phase.	On site
Post Installation	Pure Storage End User	When applicable, Pure Storage and the End User collaborate with Pure Storage shipping/ freight partners to arrange collection of any equipment due for return.	On site

Scoping Parameters

Prerequisites vary between engagements, but one or more from the following list may be applicable:

- Purity code upgrade to a later/support version.
- Swing kit shipment (will be arranged by Pure Storage account team if applicable)
- Evacuations prior to site visit
- Provision of rack space and power requirements
- Reduction of utilization/space on the in-scope array
- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Provision of rack space and power requirement.
- Complete the Pure Storage engagement request (PER) process.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray Decommission

Securely decommission a Pure Storage® FlashArray™

Highlights

- End-to-end comprehensive decommissioning of a FlashArray
- Verification of data erasure

Flexibility

- Implement according to your schedule

Outcomes

- Secure decommissioning of FlashArray

Pure Storage FlashArray is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. From time to time you may need to securely decommission a FlashArray device. You can engage the Pure Services team to plan and execute this service and work hand-in-hand with you to ensure success from start to finish.

Decommissioning an array is the process of securely wiping the flash modules within the array so that data cannot be recovered. Naturally, users want to validate that the data was deleted successfully and is no longer retrievable. We demonstrate erasure compliance using the Kroll ontrack erasure verification —which reports results of using the NIST-specified test methodology to erase data from FlashArray storage devices—to verify data can no longer be retrieved.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we help you evaluate, activate, and innovate your IT solutions.

Pure Services follows a strict methodology for decommissioning a FlashArray system, from the initial scoping call to constructing a plan and understanding all constraints and dependencies on-site to perform a safe and correct deconstruction.

FlashArray Decommission Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller(if applicable)	• Gather pre-decommission information • Schedule site survey, if required	Conference Email
Planning and document completion	Pure Storage End User Pure authorized reseller(if applicable)	• Review completed document and site survey information • Allocate Pure resource for install and formally schedule • Request data center access/ open tickets	Conference Email
Decommission	Pure Storage End User Pure authorized reseller(if applicable)	• Execute onsite decommission • Pre-commissioning check • Securely erase the flash drives • Power dow, disconnect and unmount	End User site Data center
Post-decommission	Pure Storage End User Pure authorized reseller(if applicable)	• Execute post-decommissioning health checks with Pure support • Generate a certificate of erasure and share as required	End User site Data center

Scoping Parameters

- Decommission activity is an on-site event
- Decommission activity is for an individual array
- This Service must be consumed within 180-days from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Provide the Pure Services Coordinator with the required decommissioning information.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray Design and Operational Readiness - Onboarding

Reduce time-to-value and maximize return on investment with Pure Storage services

FlashArray FA

Highlights

- Expert-led design workshop
- Vendor-approved detailed solution design using experienced architects
- End-to-end user acceptance testing
- Reduce time-to-value
- Maximize return on investment

Flexibility

- Work with Professional Services to implement, according to your schedule

Outcomes

- Tailored, detailed solution design
- Full design documentation set
- Vendor-led end-to-end testing
- Runbook
- End User knowledge transfer

At Pure Storage®, our technology is radically simple, but we recognize that end user environments can be highly complex. Whether you're deploying a greenfield environment or integrating Pure Storage technology into an existing production data center, engineering and operational readiness are critical. Yet resource-intensive tasks can significantly impact your time-to-value. Developing a robust, resilient, and detailed solution design without extensive technology experience is a common challenge for many organizations. Pure Storage provides you with detailed design, engineering, testing, and operational readiness to ensure your storage solution is optimized for success.

The End User Experience

The end user experience with our Design and Operational Readiness onboarding service is seamless and empowering. Users are guided through every stage of the storage solution deployment, from initial design to final implementation, with clear and comprehensive documentation provided at each step. The hands-on workshop delivers in-depth knowledge and practical skills, ensuring that users feel confident in managing and optimizing their storage environment. With the support of experienced architects and a focus on tailored solutions, users can expect a smooth transition, reduced time-to-value, and a solution that fully meets their operational needs, all while enhancing their overall confidence and capability in using Pure Storage technology.

FlashArray Design and Operational Readiness Work Product

- Low-Level design workshop and Kick-Off
- Documentation of functional and non-functional requirements
- Design document
- Test Plan to prove design and requirements are achieved
- Test execution
- Advanced knowledge transfer session

FlashArray Design and Operational Readiness Delivery Methodology

	Work Product
FlashArray Design and Operational Readiness Workshop	• FlashArray™ architecture and physical design • Data center requirements – power, rack space, and cooling • Physical and logical networking requirements – port allocation, speeds, IP addresses, and firewall requirements • User access via command line interface and graphical user interface • Basic security and user management: Integration with directory services • Dial home &and Pure1® design and configuration • Alerting and monitoring • Array configuration best practices and standards • Snapshot management principles, policy definition and standards, includes SafeMode™ Snapshots, Snap to NFS, and Snap to Cloud Snapshot • Guidance on integration with hypervisors • Volume provisioning best practices and standards • Advanced security: Integration with password management systems, certificates, and key management systems • Deployment and demonstration of application plugins (single host per type) • Performance considerations and optimization including quality of service (QoS) • REST API integration demo and knowledge transfer • Storage volume provisioning testing for a single host of each deployed operating system

End User Responsibilities

- Share information about infrastructure and business and operational process, when requested, such as, but not limited to:
    - Data center topology and high-level design
    - Application silos and domains
    - Provide SAN topology diagrams where available
    - Capacity utilization reports and growth statistics
    - Provide performance and capacity utilization reports and tools
    - Configuration management database (CMDB) reports, software and firmware levels,and service life
    - All data back-up activities
- Arrange for workshops with key stakeholders and technical subject matter experts (e.g., storage, database, system administrators, and application)
- Access to skilled resources to assist with any design or environmental questions that arise
- Allow switch collection tools to run such as Brocade SAN Health
- Timely document review and feedback

Out of Scope

- Ethernet/IP/SAN network diagrams or design
- Guest application or server level design and disaster recovery plans
- Platform/compute layer design
- Array installs or deployment
- Scripting and workflow integration.
- Data migration
- Benchmark testing of a FlashArray system's performance
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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

FlashArray FA

SERVICE BRIEF

FlashArray Design and Operational Readiness - Platform Optimization

Optimize your storage investment with comprehensive design and hands-on expertise

Highlights

- Expert-led design workshop
- Vendor-approved detailed solution design using experienced architects
- End-to-end user acceptance testing
- Reduce time-to-value
- Maximize return on investment

Flexibility

- Work with professional services to implement according to your schedule
- Adaptable, advanced integration modules

Outcomes

- Tailored detailed solution design
- Full design documentation set
- Vendor-lead end-to-end testing
- runbook
- End user knowledge transfer

At Pure Storage®, our technology is radically simple, but we recognize that end-user environments can be highly complex. Whether you're deploying a greenfield environment or integrating Pure Storage technology into an existing production data center, engineering and operational readiness are critical yet resource-intensive tasks that can significantly impact your time-to-value. Developing a robust, resilient, and detailed solution design without extensive technology experience is a common challenge for many organizations. Pure Storage provides you with detailed design, engineering, testing, and operational readiness to ensure your storage solution is optimized for success.

The End User Experience

The end user experience with our design and operational platform optimization readiness service is seamless and empowering. Users are guided through every stage of the storage solution deployment, from initial design to final implementation, with clear and comprehensive documentation provided at each step. The hands-on workshop delivers in-depth knowledge and practical skills, ensuring that users feel confident in managing and optimizing their storage environment. With the support of experienced architects and a focus on tailored solutions, users can expect a smooth transition, reduced time-to-value, and a solution that fully meets their operational needs, all while enhancing their overall confidence and capability in using Pure Storage technology.

FlashArray Design and Operational Readiness Work Product

- Low-level design workshop and kick-Off
- Documentation of functional and non-functional requirements
- Design document
- Test plan to prove design and requirements are achieved
- Test execution
- Advanced knowledge transfer session
- Delivery of five advanced integration modules

FlashArray Design and Operational Readiness Delivery Methodology

	Work Product
Workshop	• Pure Storage FlashArray™ architecture and physical design • Data center requirements – power, rack space, and cooling • Physical and logical networking requirements – port allocation, speeds, IP addresses, and firewall requirements • User access via command line interface and graphical user interface • Basic security and user management: Integration with directory services • Dial home and Pure1® design and configuration • Alerting and monitoring • Array configuration best practices and standards • Snapshot management principles, policy definition, and standards, including SafeMode™ Snapshots, snap to network file system, and snap to cloud snapshot • Guidance on integration with hypervisors • Volume provisioning best practices and standards • Advanced security: Integration with password management systems, certificates, key management systems • Deployment and demonstration of application plugins (single host per type) • Performance considerations and optimization including quality of service (QoS) • REST API integration demo and knowledge transfer • Storage volume provisioning testing for a single host of each deployed operating system
Advanced Integration Modules	Delivery of 5 chosen advanced integration modules. Integration modules include: **Pure1** Take a deep dive into Pure1 and all of its features, including: • Monitor and manage array performance • Capacity Planning • Self-Service Upgrades **Pure Storage vSphere Plugin** Control your FlashArray systems directly from your vSphere environment: • Deploy the Pure Storage vSphere plugin • Connect to your existing VMware infrastructure • Receive an overview and demonstration of the plugin features. **VM Analytics** Gain end-to-end visibility for VMware environments: • Deploy the Pure Storage collector • Connect the connector to your existing VMware infrastructure • Receive an overview and demonstration of the plugins features within Pure1. **Pure Storage Veeam Plugin** Utilize the Pure Storage Veeam plugin to perform more efficient Veeam backups: • Deploy the Pure Storage Veeam plugin and connect to your existing arrays • Receive an overview of the plugin features

- Learn how to leverage array snapshots to achieve more efficient backups and restores.

Commvault IntelliSnap

Utilize Commvault Intellisnap to perform more efficient Commvault backups:

- Deploy and configure Commvault IntelliSnap
- Receive an overview of IntelliSnap features
- Learn how to leverage array snapshots to achieve more efficient backups and restores

ActiveCluster

Purity ActiveCluster™ provides synchronous replication for RPO zero and transparent failover for RTO zero:

- Configure ActiveCluster between two FlashArray systems
- Create a stretched pod with shared storage
- Connect the shared storage to hosts
- Learn how to provision and monitor shared storage

ActiveDR

ActiveDR™ enables a near-zero RPO, meaning minimal data loss during a disaster recovery failover:

- Configure ActiveDR between two FlashArray arrays.
- Learn how to manage and monitor ActiveDR

Purity CloudSnap

Purity CloudSnap™ provides simple self backup to the cloud by offloading your snapshots to a compatible target:

- Install and configure cloudsnap on your FlashArray
- Setup snapshot offload to a compatible target
- Learn how to administer CloudSnap

FA File

FA File services offers native file services directly on the FlashArray:

- Configure your array and directory services ready for FA File
- Create new file shares and policies
- Learn how to connect clients to the new file services

SafeMode

Take a deep dive into SafeMode and all of its features, including:

- Snapshots using SafeMode protection
- Enabling SafeMode on your array (per PGroup / Array-wide)
- SafeMode Snapshot replication
- SafeMode Capacity Planning

Observability Quickstart

Master your storage environment with proactive real-time metrics analysis:

- Pure's vendor-agnostic approach to observability applying industry standard and open source technologies
- Learn observability fundamentals (optional)
- Technical aspects, components and configuration of metric collection
- Guided metrics export and out of box fleet overview dashboards (supported platforms only)

Fusion Enablement

Leverage automated and remote management for FlashArray:

- Create and configure Fleets within Purity using Fusion
- Understanding and defining Presets and Workloads
- If 'File Services' are being used, managing file services, within Fusion for NFS & SMB for FlashArray
- Accessing File on clients.

End User Responsibilities

- Share information about infrastructure and business and operational process, when requested, such as, but not limited to:
    - Data center topology and high-level design
    - Application silos and domains
    - Provide SAN topology diagrams where available
    - Capacity utilization reports and growth statistics
    - Provide performance and capacity utilization reports and tools
    - Configuration management database (CMDB) reports, software and firmware levels and service life
    - All data back-up activities
- Arrange for workshops with key stakeholders and technical subject matter experts (e.g., storage, database, system administrators, and application)
- Access to skilled resources to assist with any design or environmental questions that arise
- Allow switch collection tools to run, such as Brocade SAN Health
- Timely document review and feedback

Out of Scope

- Ethernet/IP/SAN network diagrams or design
- Guest application or server-level design and disaster recovery plans
- Platform/compute layer design
- Array installs or deployment
- Scripting and workflow Integration
- Data migration
- Benchmark testing of a FlashArray system's performance
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage
- Note: Advanced Integration Modules configuration is an initial configuration exercise and not a replacement for a full end to end deployment

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray File Service Enablement

Expert advice and assistance in quickly and efficiently deploying your FlashArray™ file services.

Highlights

- Onboard your FlashArray File array and accelerate time to value
- FlashArray File Services design
- Testing and requirement fulfillment

Flexibility

- Work with Pure Services to implement according to your schedule.

Outcomes

- Vendor- and customer-approved FlashArray File Services solution design
- Design and operations guide
- Testing and knowledge transfer led by Pure Storage

Pure Storage has integrated file protocols into the existing Purity stack, providing native file storage and access for FlashArray, integrating SMB and NFS protocols with multiprotocol access and a native file system into the Purity//FA operating environment. This provides the benefits of the same global deduplication and compression for files as blocks across a single shared storage pool. Features like snapshots, performance management and quotas are fully integrated and provide organizations with the benefit of the same set of data services they already use for block storage. FlashArray file native replication can be deployed using (ActiveDR™) to provide a near-zero recovery point objective (RPO) with continuous asynchronous replication.

The End User Experience

With our FlashArray File enablement service, our subject matter experts will leverage their technology experience to de-risk and accelerate your adoption of FA File Services and enable your team for success by adopting a teach-to-fish approach.

Pure Services offers enablement on a single FlashArray (if a single array environment) or on a pair of FlashArray systems, including ActiveDR setup for File Replication within a replicated environment. The service includes a FlashArray File Services Technical Workshop, enablement of a test FalshArray File Services environment, a design and operations guide and a customer configuration output document (as-built design).

FlashArray File Enablement Service Work Products

FlashArray File Service Enablement	Single Array	Two Arrays
Virtual File Network Interfaces Configured	1	2
File Systems Configured (NFS/SMB)	2	2
Managed Directories Configured (NFS/SMB)	2	2
Snapshot Policies Configured	1	1
Quota Management Policies Configured	1	1
Export Policies Configured (NFS/SMB)	2	4
ActiveDR PODs (including Replica-link) Configured	N/A	1
Replication Network Interfaces Configured	N/A	8

FlashArray File Service Enablement Delivery Methodology

Stage	Owner	Activity	Method
Technical Workshop	Pure Storage End User	• Introduction to FlashArray File Services. • Confirm all prerequisites for FlashArray File Service enablement have been met. • Agree to functional and non-functional requirements. • Agree to the delivery schedule.	Email, Zoom, Teams
Design and Documentation	Pure Storage	Tailored design and operational documentation will include the following content : • Architecture • Requirements • Virtual interface networking configuration and best practices • NFS and SMB file system provisioning • Directory services integration for AD and LDAP services • Snapshot protection • Quota management • ActiveDR replication (If required)	Email, Zoom, Teams
Enablement	Pure Storage	• Configuration of an initial File Services environment, limited to the setup of a single NFS and SMB file system. • Installation and configuration of ActiveDR replication (If required).	Zoom, Teams
Test and Acceptance	Pure Storage	End-to-end test plan tracked against requirements and the design blueprint.	Email, Zoom, Teams
Knowledge Transfer	Pure Storage End User	Knowledge transfer session for FlashArray File Services, best practices, and recommendations.	Email, Zoom, Teams

Scoping Parameters

- The in-scope FlashArray systems(s) must be running a minimum version of **Purity 6.5.x "LLR/ER**" for FlashArray File.
- Formal approval must be obtained in advance from Pure Storage for the enablement of the FlashArray File Service tunables. (Changed in 6.6.x - FlashArray File Services should be default enabled)
- The environment must have four available physical ethernet ports "two per controller," split across two network switches in an active/passive relationship to provide high availability.
- The service is limited to the creation of a maximum of two File systems" one SMB and one NFS."
- The service is limited to the creation of two additional managed directories per File system "excluding root managed directory.".
- The service is limited to the creation of a single virtual file network interface "array."
- The service is limited to the creation of a single test snapshot protection policy.
- The service is limited to the creation of a single filesystem quota policy.

- The Service will be delivered remotely.
- The Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- The service is limited to the creation of a maximum of two file systems “one SMB and one NFS”.
- The service is limited to the creation of two additional managed directories per file system “excluding root managed”.
- Provide access to a jump server to enable Pure Storage to test NFS and SMB access.
- Share information about infrastructure and business and operational process, when requested, such as but not limited to:
    - Data center topology and high-level design
    - Capacity utilization reports and growth statistics
    - Configuration management database “CMDB” reports, software/firmware levels and service life
- All data back-up activities.
- Arrange for workshops with key stakeholders and technical subject matter experts “storage, database, system administrators, application.”
- Timely document review and feedback.
- Any physical cabling of network or replication interfaces.

Out of Scope

- Server or application design, architecture, and management
- IP/Ethernet network architecture, hardware, software, or management guideline
- Any other related environments such as the backup infrastructure
- Guest application or server level design and disaster recovery plans
- Platform/compute layer design
- Physical installation or deployment of FlashArray
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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray Installation

Work with Pure services for a simple install.

Highlights

- Comprehensive installation and configuration.
- Proactive 24 x 7 CloudAssist support.
- Pure1® continuous monitoring and assistance.

Flexibility

- Implement according to your schedule.

Outcomes

- Fully integrated flash storage solution.
- Knowledge transfer for rapid adoption and operation.
- Pure1 support activated and monitoring.

Pure Storage® FlashArray™ is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. The Pure Storage Advanced Services team can plan and execute a rapid deployment of your new FlashArray system.

The End User Experience

Pure's Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashArray installation service is designed for organizations that want to quickly activate the full potential of FlashArray. Our teams use a strict methodology to deploy and configure the Pure Storage FlashArray. Our approach can accelerate time to value and ensure that your environment is fully prepared.

FlashArray installation Service Work Products

- **Pre-implementation planning**: Our service team will conduct a discovery session to review your environment, confirm configuration details, and schedule the install.
- **Hardware installation**: Pure Storage will unpack, rack, cable, and power up your new array.
- **Purity initialization**: Once installed, our team initializes the purity operating system and configures FlashArray according to your requirements.
- **Connectivity verification**: Pure Storage will connect to your SAN infrastructure and validate connectivity.
- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer**: Pure Storage will walk you through the GUI, providing an operational overview of the FlashArray and answer any questions you may have regarding the installation.

FlashArray Installation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage, End User, Pure Storage Authorized reseller(if applicable)	Send installation checklist Gather pre-install information Schedule site survey, if applicable	Conference Email Physical on site survey
Planning and document completion	Pure Storage, End User, Pure Storage Authorized reseller(if applicable)	Review completed pre-install document Review site survey information Schedule physical install.	Conference Email
Installation	Pure Storage, End User, Pure Storage Authorized reseller(if applicable)	Rack and power up hardware Validate code level on the FlashArray Configure both controllers via Purity installation script	End User site data center
Post-Installation	Pure Storage, End User, Pure Storage Authorized reseller(if applicable)	Execute post-install health checks Provide knowledge transfer with a 10-20 minute walk through of the FlashArray GUI, to demonstrate basic tasks including: 1. Create host and host groups 2. Create volumes 3. Connect host to volumes 4. Open a remote assist session 5. View host connections and show balancing (if hosts are present)	Remote or Onsite

Scoping Parameters

- The installation is an on-site activity.
- End User shall provision sufficient rack space and power for installation
- End User shall provide management, replication, iSCSI and/ or FC connections to the array
- End User shall configure the SAN(iSCSI/FC) and management network before the install begins
- End User shall ensure appropriate cabling is available
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion
- This service must be consumed within twelve months from the order being accepted by Pure Storage at which point it shall expire. Upon expiration, no refunds of prepaid service fees will be provided.

End User Responsibilities

End User shall provide the Pure Storage service coordinator with the following information and work product before engaging any Pure Storage technical resource:

- A complete Pure Storage site readiness and pre-installation site checklist
- Sufficient rack space and power for the installation
- A fully configured SAN and management network and connectivity cables from the SAN and management network to the rack location of where the array has been installed

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SERVICE BRIEF

FlashArray Installation for Microsoft Azure Operators (Nexus)

Pure Storage® FlashArray™ installation to support a Microsoft Nexus environment.

Highlights

- FlashArray installations to support Nexus environment

Flexibility

- Work with Pure Services to implement according to your schedule

Outcomes

- FlashArray deployed in alignment to specific Nexus environmental requirements

Microsoft Azure Operator Nexus is a carrier-grade and hybrid platform, built to empower telecom operators to modernize and transform their networks.

Pure Storage is able to plan and execute the rapid installation of an End User's FlashArray system to ensure it supports a Nexus environment. The installation follows the proven Flash installation service delivery methodology, while taking into account any specific Nexus environmental requirements.

The End User Experience

Pure Storage Advanced Services can help you realize the value of your IT investments. As an integral part of the Pure customer experience (CX) team, we engage with organizations to evaluate, activate and innovate their IT solutions.

The FlashArray Installation Service for Microsoft Azure for Operators "Nexus" is designed for organizations that wish to quickly activate the full potential of FlashArray, for use within a Nexus environment.

Installation for Microsoft Azure Operators (Nexus) Work Product

- **Pre-Implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm configuration details, and schedule the work.
- **Installation:** FlashArray installation and configuration to support a Nexus environment

FlashArray Installation for Microsoft Azure Operators (Nexus) Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User	• Send installation checklist • Gather pre-installation information • Complete 100gb cable map • Schedule a site survey if required	Conference Email
Planning and documentation	Pure Storage End User	• Review completed pre-install document • Review site survey information • Formally schedule physical install	Conference Email
Installation	Pure Storage	• Rack and power up the hardware • Remove any other add-in cards that were shipped with the array, specifically slots 1 and 2 • Install the 4 x 100gb HBA in slot 0 and 2 as per the cable map • Download Purity to v6.1.4 • Configure array in alignment to the document Microsoft Nexus best practices: https://learn.microsoft.com/en-us/azure/operator-nexus/howto-platform-prerequisites	On site
Post-installation	Pure Storage End User	• Execute post-install checks • Provide knowledge transfer with 10-20 minute walk through of FlashArray GUI to demonstrate basic tasks including: 1. Create host and host groups 2. Create volumes 3. Connect the host to the volumes 4. Open remote assist session 5. View host connections and show balancing “if hosts are present”	Conference Email

Scoping Parameters

- The service is applicable for FlashArray systems only (not applicable for FlashBlades)
- The service will be delivered onsite
- Sufficient rack space and power must be made available for the installation
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid Services fees will be provided

End User Responsibilities

- Complete any pre-installation checklist and provide environmental data requested in a timely manner
- Ensure sufficient rack space, power and cooling is available for the installation
- Provide management, replication, iSCSI and/or FC connections to the array.
- Configure any SAN (iSCSI/FC) and management networks before the install begins.
- Ensure appropriate cabling is available

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEFFF

FlashArray Non-disruptive Upgrade

Experience the ease of a non-disruptive upgrade from Pure Services.

Highlights

- End to end comprehensive installation and configuration.
- Upgrade without disruption.

Flexibility

- Implement according to your schedule.

Outcomes

- Fully integrated flash storage solution.
- Knowledge transfer for rapid adoption and operation.
- Post-install health checks with Pure support.

Pure Storage® FlashArray™ is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. With expanding IT workload requirements, the need for additional storage is a common occurrence. The Pure Storage Advanced Services team will plan and execute a non-disruptive upgrade (NDU) of your existing system into the latest FlashArray offering.

The End User Experience

Pure Storage Advanced Services exists to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an engagement, we provide services and solutions to enable you to achieve your business outcomes. The FlashArray NDU engagement is designed for organizations that want a seamless storage upgrade of FlashArray. The NDU services include:

- **Pre-implementation planning:** Our Services team will conduct a discovery session to review your environment, confirm configuration details, obtain support approval, and schedule software and hardware upgrade(s).
- **Pure OS upgrade:** A Pure Storage support engineer will contact you 24 to 48 hours before the hardware upgrade to perform a thorough health check and stage new OS upgrades to your current FlashArray.
- **Hardware installation:** We will unpack, configure, and follow a detailed process to non-disruptively upgrade to the new FlashArray.
- **SAN and network connectivity:** We will test all connections on your FlashArray unit, including management, replication, and Fibre Channel (FC)/iSCSI connections.
- **Knowledge transfer**: After the upgrade, we will work with your team to review the upgraded array in the management GUI, highlighting the new array model.
- **Controller return**: Upon completion, we will issue a return merchandise authorization (RMA), pack up the old controllers and schedule the return.

FlashArray Non-disruptive Upgrade Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure Storage authorized reseller (if applicable)	• Send NDU checklist • Gather upgrade information	Zoom Email Physical site survey
Planning and Document Completion	Pure End User Pure authorized reseller (if applicable)	• Review completed document and site survey information • Get support approval and schedule OS upgrades • Allocate and schedule a Pure resource for the NDU • Request data center access/ open required tickets	Zoom Email
Installation	Pure Storage End User Pure Storage authorized reseller (if applicable)	• Execute onsite upgrade (as per SOW), site survey and NDU questionnaire	Site, data center
Post-installation	Pure Storage End User Pure Storage authorized reseller (if applicable)	• Execute post-install health checks with Pure support • Pack old controllers for return	Site, data center

Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid service fees will be provided.
- The installation is an on-site activity.

End User Responsibilities

- Review and address any recommendations from the NDU checklist.
- Identify a lead resource for the Pure Team to engage during the entire installation process.
- Customers should check with their service / host / SAN switch vendors to verify they are running on recommended hardware, software and firmware revisions prior to the upgrade activity.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray Relocation Support

Securely relocate your Pure Storage® FlashArray™

Highlights

- Support relocation of FlashArray

Flexibility

- Work with Pure services team to implement according to your schedule

Outcomes

- Securely support relocating FlashArray

Pure Storage FlashArray is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. From time-to-time End Users may want to securely relocate their FlashArray, for various reasons. The Pure Services team can plan and execute this service and work hand-in-hand with End Users to ensure success from start to finish.

The End User Experience

Pure Services exists to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Performed by engineers who know Pure Storage products inside out, the FlashArray Relocation Service de-risks the process and works hand-in-hand with End Users to ensure success.

Pure Professional Services follows a strict methodology for relocating a Pure Storage FlashArray system. From the initial scoping call to constructing a plan and understanding all the constraints and dependencies on-site at the various locations to perform a safe and correct relocation.

FlashArray Relocation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	• Gather pre-relocation information • Review Site Survey Requirements (power, rack unit availability • Perform a health check of the array • Address any product discrepancies that may be identified (FC vs. iSCSI, additional cables/cards) • Confirm the scheduled maintenance window • Order packing materials as necessary	Conference Email End User site Data center site
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	• Review completed document and site survey information • Request data center access/ open required tickets	Conference Email
Relocation preparation and installation	Pure Storage End User Pure authorized reseller (if applicable)	• Pure Storage professional services will carry out the following activities: • Origin site: 1. Conduct a health check for the array 2. Fully label components and cables 3. Power down array, disconnect cabling and remove from rack 4. Safely package the array and relevant parts • Target site: 1. Rack, cable and power up the array 2. Reconfigure as required and validate connectivity 3. Perform final health check	End User site Data center site
Post-relocation	Pure Storage, End User Pure authorized reseller (if applicable)	• Execute post-relocation health checks with Pure support leads	End User site Data center site

End User Responsibilities

- Respond in a timely manner and in any event within the times and dates necessary to enable Pure Storage to perform its obligations.
- Arrange for the shipment of the array between sites, including all shipping, insurance, customs and export responsibilities. End User is responsible for all fees associated with the shipment between sites.
- Provide End User information/data to Pure Storage. The End User is responsible for the accuracy and completeness of all information it provides.
- Prove access to appropriate End User personnel (with the relevant skill and knowledge) and facilities of End User and shall notify Pure Storage personnel in writing of any special health and safety hazards of which End User is or has become aware which may exist or arise at End User site which may affect Pure Storage personnel and or the performance of Services and Deliverable listed herein.
- Where work is required to take place in sensitive areas or locations subject to access controls, End User shall
    - (i) make Pure Storage aware of any access restrictions and
    - (ii) define and implement arrangements that the End User deems acceptable to ensure the security and access protocol checks on personnel engaged on works in such areas aware of any access restrictions and
    - (ii) define and implement arrangements that the End User deems acceptable to ensure the security and access protocol checks on personnel engaged on works in such areas.
- End User shall be responsible for maintaining disaster recovery processes and all necessary back-ups so that the End User can reinstate any data in the event of a disaster including a disaster involving disruption or outage of communications, power or other utilities. Pure Storage does not provide disaster recovery services and takes no responsibility for any loss or interruption of data.
- Where End User requires Pure Storage personnel to comply with its reasonable site policies whilst at the End User site, End User shall provide written notification of such policies to Pure personnel prior to such Pure personnel attending such End User sites.
- Have rack and power (PDU) locations designated for system components at the target site.
- Provide management, replication, iSCSI and/or FC connections to the designated location of the FlashArray for connection to the array at target site.
- Configure SAN (iSCSI /FC) and management network fully at target site.
- Provide any needed connectivity cables from the SAN, management network to the rack location at target site.

Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure, at which point it shall expire. Upon expiration, no refunds of prepaid Services fees will be provided.

Out of Scope

- Shipment and/or physical relocation of the array between sites.
- Any scripting changes. Script changes for provisioning storage or any scripting or any software code changes are out of scope.
- Any data erasure and decommissioning of legacy arrays. Any erasure of data on the source arrays is out of scope.
- The shutting down of any hosts connected to the array at the beginning of the maintenance window or migrating any data to alternative storage.
- Backing up any data on the array. Pure is not responsible for any data loss resulting from relocation.
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SERVICE BRIEF

FlashArray Remote Evaluation

Remote array health check.

Highlights

- Remote evaluation (health check) of your FlashArray system

Flexibility

- Work with Pure Services to implement according to your schedule

Outcomes

- Health-check report with recommendations

The remote Pure Storage® FlashArray™ valuation service is designed to verify the status and availability of an End User's FlashArray system(s). The service offering can enable the verification and recertification of an environment to reinstate maintenance activities, as It ensures that the environment meets the necessary performance and remote access criteria for continued support. This service can also be used to validate the health of the array(s) prior to a planned non-disruptive upgrade activity.

The End User Experience

Pure Storage Advanced Services helps you realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

FlashArray Remote Evaluation Service Work Products

Pure Storage Advanced Services offers a remote Evaluation (Health Check) Service for Pure Storage FlashArray and provides a dedicated subject matter Expert remotely to validate your equipment.

FlashArray Remote Evaluation Delivery Methodology

Stage	Owner	Task	Method
Planning	Pure Storage	• Obtain any array information (version, serial number) • Check whether there are any existing service cases open for the array(s)	Teleconference Email
Remote evaluation	Pure Storage End User	Perform Pure standard health check on in-scope array(s) , including: • Checking for error messages and fault lights • Checking drive wear level • Checking shelf configuration, type and version • Checking drive type(s), data pack information and firmware versions • Confirming array serial numbers • Confirming firmware versions/ Purity upgrade requirements • Checking array data capacity and configuration	Teleconference Email
Post-health check	Pure Storage	Perform Pure standard post-health check activities, including: • Reviewing open tickets requiring break/ fix work • Providing Pure standard health check report • Providing recommendation(s) or applicable best practices	Teleconference Email

Scoping Parameters

- Remote access must be made available to the FlashArray(s).
- The service is applicable to a single site only; "any in-scope arrays must be located at the same site."
- The service is valid for up to a maximum of four array(s).
- The health check is limited to the Pure Storage arrays in scope and does not cover other technology within the environment.
- The service must be consumed within 12 months from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid services will be provided.

End User Responsibilities

- Ensure remote access is available to the in-scope array.

Out of Scope

- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.
- Any changes or remediation work (e.g. Purity upgrades) are out of scope.
- Health check or validation of any none in-scope Pure arrays.
- Any performance monitoring or recommendations.
- This service is not available for any new FlashArray installations.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray Remote Installation

Work with Pure Services to remotely install your FlashArray™ system.

Highlights

- Remote installation and configuration
- Proactive 24×7 CloudAssist support
- Pure1® continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- Fully integrated flash storage solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

In a fast-paced digital world where application demand can shoot up in an instant, new apps need to deploy in weeks instead of months, and cyberattacks make the daily news, FlashArray storage delivers the performance, scale, and security your business needs to stay ahead.

Pure Storage FlashArray is designed to support the most demanding tier 0/1 applications and consolidation efforts. Pure Services provides a remote methodology for supporting End Users deploying and configuring the FlashArray//X™, FlashArray//C™ or FlashArray//XL™ series. Our approach ensures an effective time to value, and that your environment is prepared for the workloads you plan to migrate to the FlashArray.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashArray Remote Installation Service is designed for organizations that want to quickly activate the full potential of FlashArray. Our teams use a strict methodology to deploy and configure the Pure Storage FlashArray series remotely. Our approach can accelerate time to value and ensure that your environment is fully prepared.

FlashArray Remote Installation Service Work Products

- **Pre-implementation planning**: Our service team will conduct a discovery session to review your environment, confirm configuration details, and schedule the install.
- **Purity initialization**: Once the FlashArray is racked and stacked, our team remotely initializes the purity operating system and configures FlashArray according to your requirements.
- **Connectivity verification**: Pure will connect to your SAN infrastructure and validate connectivity.
- **Knowledge transfer**: Pure will walk you through the GUI, providing an operational overview of the FlashArray and answer any questions you may have regarding the installation.

Purity Software Enablement and Installation

Once installed in the rack by customer resources, the Pure Storage remote installation resource will confirm the installation of the chassis with the End User and then follow the steps in the latest FlashArray installation manual to power on and configure the FlashArray.

To configure the array the Pure Resource will:

- Assist the End User in validating the physical installation of the FlashArray hardware

Next, they will configure the FlashArray by:

- Using video conferencing facilities, assist the End User in completing the Array Configuration Script via an IP based KVM, direct connectivity via serial or USB or VGA cable ports connected to an End User provided computer
- Assist the End User in determining the IP address of the system
- Using video conferencing facilities, assist the End User in uploading the JSON based configuration to the array via API using either cURL or postman tools (DHCP & API Methodology) using an End User provided computer

Once the FlashArray has been configured, Pure Storage will perform a complete health check and run configuration and hardware tests for all services to validate the array has been installed correctly and is in a healthy state:

- Connect to End User's SAN infrastructure and validate connectivity: Once the array is up and running, connectivity to the block storage network (FC or iSCSI) will be validated. For FC Configurations (if applicable): - Validate FC connectivity from all the array ports to the SAN switch

For iSCSI Configurations (if applicable):

- From the Pure GUI or CLI, assign IP address information including MTU size (provided by the End User) to the iSCSI interfaces and ensure that all ports have been enabled.
- Confirm that the ethernet switch shows LINK on all iSCSI Ports.
- Confirm that the Pure Storage array shows IQNs on all iSCSI ports.

Knowledge transfer: Pure resources will provide an interactive remote session thoroughly covering the GUI interface, providing an operational overview of the FlashArray and answering any questions regarding the installation.

FlashArray Remote Installation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure End User Pure authorized reseller (if applicable)	• Send installation checklist • Gather pre-install information • Setting up a Pre-Call Introduction to discuss expectations and requirements for remote engagement • Identify End User contact, data center address, etc • Provide guidance on the physical installation • Identify installation methodology (DHCP & API, or IP based KVM/direct connectivity via serial or USB+VGA cable ports provided by the End User) • Review site survey requirements (power, rack unit availability) • Address any product discrepancies that may be identified (FC vs. iSCSI, additional cables/cards) • Where applicable, create the JSON configuration statement used during the DHCP and API based installation method.	Teleconference Email
Planning and documentation	Pure End User Pure authorized reseller (if applicable)	• Review completed pre-install document	Teleconference Email
Implementation	Pure End User Pure authorized reseller (if applicable)	• Validate appropriate level of code is on the FlashArray • Remotely configure primary and secondary controllers via a Purity installation script	Teleconference
Post-installation	Pure End User Pure authorized reseller (if applicable)	• Execute post-installation health checks • Provide a knowledge transfer walk through of FlashArray GUI to demonstrate basic tasks including: 1. Create host and host groups 2. Create volumes 3. Connect the host to the volumes 4. Open a remote session 5. View host connections and show balancing (if hosts are present)	Teleconference Email

Scoping Parameters

- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion
- This Service must be consumed within 180-days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided

End User Responsibilities

- Conduct a site survey to ensure there is sufficient rack space and power available for the installation
- To ensure a successful installation we require the End User to identify a lead resource for the Pure team to engage during the entire installation process (normally 1 - 2 days)
- The End User is responsible for configuring and providing connectivity to FC and/or iSCSI SAN networks along with FC zoning configuration
- You will need to provide the Pure Services coordinator with a completed Pure Storage site readiness and pre-Installation site checklist before engaging any Pure Storage technical resource
- Contact Information: End User agrees to provide the Pure Services coordinator with the following information and deliverables:
    - End User team contact information, site location, contact name, contacts phone and email details
- Completion of a video conference to confirm Site Readiness and Pre-Installation Site Checklist
- Perform the physical installation of equipment (please note that a minimum of two installation resources will be required to physically install the equipment due to the size and weight of the array)
- Completion of a video conference to complete the installation site requirements
- Have rack and power (PDU) locations designated for installation of system components, per the FlashArray site planning guide
- Provide management, replication, iSCSI and/or FC connections to the designated location of the FlashArray for connection to the array
- Have SAN (iSCSI /FC) and management network fully configured prior to start of the install

Out of Scope

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray//XL Remote Installation

Work with Pure Services to remotely install your FlashArray//XL™ array.

Highlights

- Remote installation and configuration
- Proactive 24×7 CloudAssist support
- Pure1® continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- Fully integrated flash storage solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

In a fast-paced digital world where application demand can shoot up in an instant, new apps need to deploy in weeks instead of months, and cyberattacks make the daily news, FlashArray//XL storage delivers the performance, scale, and security your business needs to stay ahead. Built to work with the cloud-like operating model of Pure Fusion™, FlashArray//XL from Pure Storage powers “platinum” storage tiers effortlessly.

Pure Storage FlashArray//XL is designed to support the most demanding tier 0/1 applications and consolidation efforts. Pure Services provide a remote methodology for supporting end users deploying and configuring the FlashArray//X™, FlashArray//C™, or FlashArray//XL series. Our approach ensures an effective time to value, and that your environment is prepared for the workloads you plan to migrate to the FlashArray™.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashArray//XL Remote Installation Service is designed for organizations that want to quickly activate the full potential of FlashArray//XL. Our teams use a strict methodology to deploy and configure the Pure FlashArray series remotely. Our approach can accelerate time to value and ensure that your environment is fully prepared.

FlashArray//XL Remote Installation Service Work Products

Pre-implementation planning: The Pure Storage Installation team will work with Pure Storage account team and the end user to confirm pre-install technical and logistical information, including:

- Setting up a pre-call Introduction to discuss expectations and requirements for remote engagement
- Identifying end user contact, data center address, etc
- Providing guidance on the physical installation

- Identifying installation methodology (DHCP & API, or IP based KVM/direct connectivity via serial or USB+VGA cable ports provided by the end user)
- Reviewing site survey requirements (power, rack unit availability)
- Addresings any product discrepancies that may be identified (FC vs. iSCSI, additional cables/cards)
- -Where applicable, create the JSON configuration statement used during the DHCP and API based installation method.

Purity Software Enablement and Installation

Once installed in the rack, the Pure Storage remote installation resource will confirm the installation of the chassis with the end user and then follow the steps in the latest FlashArray installation manual to power on and configure the FlashArray.

To configure the array the Pure Resource will:

- Assist the end user in validating the physical installation of the FlashArray hardware

Next, they will configure the FlashArray by:

- Using video conferencing facilities, assisting the End User in completing the Array Configuration Script via an IP based KVM, direct connectivity via serial or USB or VGA cable ports connected to a end user provided computer.

Or

- Assisting the End User in determining the IP address of the system
- Using video conferencing facilities, assisting the end user in uploading the JSON based configuration to the array via API using either cURL or postman tools (DHCP & API Methodology) using an end user provided computer.

Once the FlashArray has been configured, Pure will perform a complete health check and run configuration and hardware tests for all services to validate the array has been installed correctly and is in a healthy state:

- **Connect to end user's SAN infrastructure and validate connectivit**y: Once the array is up and running, connectivity to the block storage network (FC or iSCSI) will be validated.
- **For FC Configurations (if applicable)**: Validate FC connectivity from all the array ports to the SAN switch.

For iSCSI Configurations (if applicable):

- From the Pure GUI or CLI, assign IP address information including MTU size (provided by the end user) to the iSCSI interfaces and ensure that all ports have been enabled.
- Confirm that the ethernet switch shows LINK on all iSCSI Ports.
- Confirm that the Pure Storage array shows IQNs on all iSCSI ports.

Knowledge transfer: We will walk you through the GUI, providing an operational overview of the FlashArray and answers any questions you may have regarding the installation.

Delivery Methodology

Pure Storage Service will follow the below engagement framework during delivery of the Pure Product Advisory Service

Stage	Owner	Task	Method
Pre-planning	Pure End User Pure authorized reseller (if applicable)	• Send installation checklist • Gather pre-install information	Teleconference Email
Planning and documentation	Pure End User Pure authorized reseller (if applicable)	• Review completed pre-install document • Schedule physical rack and stack/ installation	Teleconference Email
Implementation	Pure End User Pure authorized reseller (if applicable)	• Validate appropriate level of code is on the FlashArray//XL • Remotely configure primary and secondary controllers via a Purity installation script	Teleconference
Post-installation	Pure End User Pure authorized reseller (if applicable)	• Execute post-installation health checks • Provide knowledge transfer with a 10-20 minute walk through of FlashArray GUI to demonstrate basic tasks including: 1. Create host and host groups 2. Create volumes 3. Connect the host to the volumes 4. Open a remote session 5. View host connections and show balancing (if hosts are present)	Teleconference Email

Scoping Parameters

- This Service must be consumed within 180-days from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided

End User Responsibilities

- Conduct a site survey to ensure there is sufficient rack space and power available for the installation
- To ensure a successful installation we require the end user to identify a lead resource for the Pure team to engage during the entire installation process (normally 1 - 2 days)
- The end user is responsible for configuring and providing connectivity to FC and/or iSCSI SAN networks along with FC zoning configuration
- You will need to provide the Pure Services coordinator with a completed Pure Storage site readiness and pre-Installation site checklist before engaging any Pure Storage technical resource
- Contact Information: end user agrees to provide the Pure Services coordinator with the following information and deliverables:
- - End user team contact information, site location, contact name, contacts phone and email details
- Completion of a video conference to confirm Site Readiness and Pre-Installation Site Checklist
- Perform the physical installation of equipment (please note that a minimum of two installation resources will be required to physically install the equipment due to the size and weight of the array)
- Completion of a video conference to complete the installation site requirements
- Have rack and power (PDU) locations designated for installation of system components, per the FlashArray site planning guide
- Provide management, replication, iSCSI and/or FC connections to the designated location of the FlashArray for connection to the array
- Have SAN (iSCSI /FC) and management network fully configured prior to start of the install

Out of Scope

- Anything not listed and detailed in the Work Product section of this document is out of scope for Pure storage.

About Pure Services

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray//XR4 Upgrade

Upgrade your FlashArray//XR2 non-disruptively to a FlashArray//XR4 NVMe DFMs

Performance

- Leverage the fastest, most efficient storage for your data-intensive workloads

Performance

- Work with the Pure Storage service team to implement according to your schedule

Outcomes

- Upgrade to NVMe based FlashArray

Data storage technology continues to evolve at a fast pace. NVMe “nonvolatile memory express”-based storage is widely recognized as the best option for End Users running storage-intensive workloads. NVMe performs significantly faster, is more flexible and more efficient than older technologies such as SAS “serial-attached SCSI solid-state drive.”

With models of the Pure Storage® FlashArray//XR2 starting to become end of life in August 2025, Pure Storage is offering an XR2 to XR4 upgrade path to Evergreen//Foundation customers, either with existing FlashArray//XR2 arrays, or who are using SAS media to provide a clear upgrade path to a fully NVMe-based array.

The End User Experience

Pure Storage services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate and innovate their IT solutions. Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business outcomes.

For the XR4 Upgrade service, Pure Storage Services will assess your current environment to determine the most appropriate upgrade method. Once you have reviewed and approved the recommended action plan, Pure Storage will execute against the plan, according to a mutually agreed timeline.

FlashArray//XR4 Upgrade Work Products

• **Assess:** Pure Storage will assess the environment and provide a transition plan detailing the approach.

• **Execution:** Pure Storage will execute on the agreed upon upgrade approach.

• **Post-execution:** Pure Storage will remove unnecessary hardware.

FlashArray//XR4 Upgrade Delivery Methodology

Stage	Owner	Task	Method
Discovery	Pure Storage End User	Assess current FlashArray//M / SAS environment and determine the best upgrade plan, based on the following criteria: 1. Array model 2. Code level 3. Number of shelves 4. Number of unused drives	Conference Email
Execution	Pure Storage	Pure Storage will execute the agreed plan from the discovery stage. The action plan may include activities like code upgrades, controller upgrades, data evacuations (swing shelf may be required), capacity consolidation, data pack add.	Conference Email
Post execution	Pure Storage End User	Pure Storage will remove any swing shelves and old hardware from site	Onsite

Scoping Parameters

- The upgrade plan is dependent on the specific criteria documented in the discovery stage of the delivery methodology section of this document. The number of site visits required to complete the work will vary depending on the upgrade scenario.
- Purity code upgrades may be required to ensure compatibility with new NVMe-based hardware. Depending on the current version of Purity, this could involve several incremental upgrades.
- Swing kit shipment will be arranged by the Pure Storage account team “If applicable.”
- Data pack evacuation activities will be carried out remotely and prior to a site visit where possible.

- Additional site visits may be required for any FlashArray installed on dark sites.
- This Service must be consumed within 180-days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Provision of rack space and power requirement for any swing shelves.
- Where possible and if requested, any best efforts to reduce utilization / space on the in-scope array.
- Provide Pure Storage with access to the appropriate systems and environments.
- Provide access to key stakeholders, teams, decision makers, and staff as appropriate.
- Provide timely feedback and review to any proposed Pure Storage action plan or recommendation.
- Assign key decision makers and if required, provide timely feedback to any decisions required.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray//M to FlashArray//X Upgrade

Transition your SAS-based FlashArray//M™ into an all-NVMe FlashArray//X™

Flexibility

- Work with Pure Services team to implement according to your schedule

Outcomes

- Upgrade to NVMe- based FlashArray™

Data storage technology continues to evolve at pace, and nowadays it is often recognized that NVMe (nonvolatile memory express)-based storage is very often the best option for End Users (particularly when running storage-intensive workflows). NVMe performs significantly faster, and is more flexible and more efficient than older technologies such as SAS (serial-attached SCSI solid-state drive).

Both SAS-based FlashArray//M arrays and any SAS-based media components within a Pure Storage FlashArray will become end of life (EoL) in February 2024.

The Pure Storage M2X program is therefore being offered to evergreen//foundation customers, either with existing FlashArray//M arrays, or who are using SAS media and provides them with a clear upgrade path to a fully NVMe-based array.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions. Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business outcomes.

During the M2X Program, Pure Services will assess your current environment to determine the most appropriate upgrade method. Once you have reviewed and approved the recommended action plan, Pure Storage will execute against the plan, according to a mutually agreed timeline.

FlashArray//M to FlashArray//X Work Products

- Develop and provide the proposed M2X transition plan to the end customer.
- Upgrade of FlashArray//M array to a FlashArray//X with NVMe.

FlashArray//M to FlashArray//X Upgrade Delivery Methodology

Stage	Owner	Task	Method
Discovery	Pure Storage End User	Access current FlashArray//M/SAS environment and determine the best upgrade plan based on the following criteria: • Array model • Code level • Number of shelves • Number of unused drives (in chassis and shelves)	Conference Email
Execution	Pure Storage	Pure Storage will execute against the plan agreed in the discovery stage. The action plan will may include some of the following activities: • Code upgrades • Controller upgrades • Data evacuations(a swing shelf maybe required) • Capacity consolidation • Data pack add	Conference Email
Post execution	Pure Storage End User	Pure Storage will remove swing shelves and old hardware from the site.	Onsite

Scoping Parameters

- The upgrade plan is dependent on the specific criteria documented in the discovery stage of the delivery. methodology section of this document. The number of site visits required to complete the work will vary depending on the upgrade scenario.
- Purity Code Upgrades may be required to ensure compatibility with new NVMe-based hardware. Depending on the current version of Purity, this could involve several incremental upgrades.
- Swing kit shipment will be arranged by the Pure Storage account team. (If applicable).
- Data pack evacuation activities will be carried out remotely and prior to a site visit where possible.
- Additional site visits may be required for any FlashArray installed at dark sites.
- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Provision of rack space and power requirement for any swing shelves.
- Where possible and if requested, any best efforts to reduce utilization / space on the in-scope array.
- Provide Pure Storage with access to the appropriate systems and environments.
- Provide access to key stakeholders, teams, decision makers and staff as appropriate.
- Provide timely feedback and review to any proposed Pure Storage action plan or recommendation.
- Assign key decision makers and if required, provide timely feedback to any decisions required.

Out of Scope

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray//X to FlashArray//XL Upgrade

Quickly and efficiently upgrade your FlashArray//X™ to a FlashArray//XL™.

Highlights

- End-to-End comprehensive installation and configuration
- Non-disruptive upgrade

Flexibility

- Work with Pure Storage Advanced Services to implement according to your schedule

Outcomes

- Fully integrated flash storage solution
- Post-install health checks with Pure Storage support

Run everything from massive databases to cloud-native applications at the next level. Think faster transactions and more responsive customer experiences, with services always available and data always protected. Designed to be as easy to use as it is powerful, FlashArray//XL gives your business the freedom to innovate without storage as a constraint.

Pure Storage® Advanced Services team will plan and execute a non-disruptive upgrade (NDU) of your existing FlashArray//X system into the latest FlashArray//XL offering.

The End User Experience

Pure Storage Advanced Services can help you realize the value of your IT investments, where as an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an engagement, we provide services and solutions to enable you to achieve agreed business outcomes. The FlashArray™ NDU engagement is designed for organizations that want a seamless storage upgrade to FlashArray//XL. The NDU services include:

- **Pre-implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm configuration details, obtain support approval, and schedule software and hardware upgrade(s).
- **Purity Upgrade**: A Pure Storage support engineer will contact you 24 to 48 hours before the hardware upgrade to perform a thorough health check and stage new Purity upgrades to your current FlashArray//X.
- **Hardware installation**: We will unpack, configure, and follow a detailed process to non-disruptively upgrade to the new FlashArray//XL
- **SAN and network connectivity**: We will test all connections on your FlashArray unit, including management,replication, and Fibre Channel (FC)/iSCSI connections.
- **Knowledge transfer**: After the upgrade, we will work with your team to review the upgraded array in the management GUI, highlighting the new array model.
- **Controller return**: Upon completion, we will issue a return merchandise authorization (RMA), pack up the old controllers, and schedule the return.

FlashArray//X to FlashArray//XL Upgrade Delivery Methodology

Stage	Owner	Task	Method
Planning	Pure Storage End User	• Gather pre-install upgrade information / NDU checklist • Get Pure Storage support approval and schedule Purity upgrades • Allocate and schedule a Pure Storage resource for the NDU • Request data center access/open required tickets	
Upgrade	Pure Storage	• Confirm Purity versions upgrades as required • Unpack the FlashArray//XL Upgrade Kit • Install three 100G Mellanox Ethernet Card to FlashArray//X and FlashArray//XL • Install the FlashArray//XL • Run NDU tool • Boot SPM Mode on FlashArray//XL and set upgrade tunables on FlashArray//X • Connect upgrade cables between FlashArray//X and FlashArray//XL • Move DirectFlash® modules from FlashArray//X to FlashArray//XL • Run upgrade commands • Move DirectFlash shelf cables from FlashArray//X to FlashArray//XL • Set the required tunables on FlashArray//XL • Unset the NDU tunable on FlashArray//XL	
Post upgrade	Pure Storage End User	• Perform post-upgrade procedures • Remove FlashArray//X from rack, package and ship back to Pure Storage	

Scoping Assumptions

- The Service is an onsite activity
- Both the FlashArray//X and FlashArray//XL must be at a minimum of Purity 6.3.5. All 4x controllers must be running the exact same Purity version.
- The service is applicable to the upgrade of a single FlashArray//X.
- Only NVMe based systems are supported. SAS drives are not supported. Any SAS disks must be evacuated prior to the NDU.
- A maximum of two direct flash shelves (DFS) are supported.
- FlashArray X70R1, XR2 and XR3 supported.
- Any services must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid services fees will be provided. Any services must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Identify a lead resource for the Pure Storage team to engage during the entire installation process
- Ensure sufficient rack space is available (5U of rack space is required)
- Ensure sufficient power to power the FA//XL (4x C20 power connectors are required)

Out of Scope

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashArray//XL Installation

Work with Pure Services to successfully install top-tier storage for your most demanding apps.

Highlights

- Comprehensive installation and configuration
- Proactive 24 x 7 CloudAssist support
- Pure1® continuous monitoring and assistance

Flexibility

- Implement according to your schedule.

Outcomes

- Fully integrate flash storage solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

InIn today's fast-paced digital world, where app demands can surge instantly, and cyberattacks are constant threats, FlashArray//XL™ from Pure Storage provides the performance, scale, and security your business needs. Designed to support demanding Tier 0/1 applications, it delivers effortless "platinum" storage tiers and works seamlessly with the cloud-like operating model of Pure Fusion™. With a new 5U chassis for enhanced cooling and more powerful CPUs, customers can expect a 65% performance boost over FlashArray//X90.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashArray//XL Installation Service is designed for organizations that want to quickly activate the full potential of FlashArray//XL. Our teams use a strict methodology to deploy and configure the Pure Storage FlashArray series. Our approach can accelerate time to value and ensure that your environment is fully prepared.

FlashArray//XL Installation Service Work Products

- **Pre-Implementation planning:** Our service team will conduct a discovery session to review your environment, confirm configuration details and schedule the install.
- **Hardware installation:** We will unpack, rack, cable and power up your new array.
- **Purity initialization:** Once installed our team initializes the purity operating system and configures FlashArray according to your requirements.
- **Connectivity verification:** We will connect to your SAN infrastructure and validate connectivity.
- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer:** We will walk you through the GUI, providing an operational overview of the FlashArray and answer any questions you may have regarding the installation.

FlashArray//XL Installation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage, End User, Pure Authorized reseller(if applicable)	• Send installation checklist • Gather pre-install information • Schedule site survey, if applicable	Conference Email Physical on site survey
Planning and document completion	Pure Storage, End User, Pure Authorized reseller(if applicable)	• Review completed pre-install document • Review site survey information • Schedule physical install.	Conference Email
Installation	Pure Storage, End User, Pure Authorized reseller(if applicable)	• Rack and power up hardware • Validate code level on the FlashArray • Configure both controllers via Purity installation script	End User site/data center
Post-Installation	Pure Storage, End User, Pure Authorized reseller(if applicable)	• Execute post-install health checks • Provide knowledge transfer with a 10-20 minute walk through of the FlashArray GUI, to demonstrate basic tasks including: 1. Create host and host groups 2. Create volumes 3. Connect host to volumes 4. Open a remote assist session 5. View host connections and show balancing (if hosts are present)	Remote or Onsite

Scoping Parameters

- This service is an onsite activity
- The array requires at least two people to lift/ install.
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion

- This service must be consumed within twelve months from the order being accepted by Pure Storage at which point it shall expire. Upon expiration, no refunds of prepaid service fees will be provided.

End User Responsibilities

End User shall provide the Pure Storage service coordinator with the following information and work product before engaging any Pure Storage technical resource:

- Provide sufficient rack space (5U) and power for the installation, note this array uses 4 x C19 power connectors
- Provide any management, replication,iSCSI and/ or FC connections to the array
- Configure the SAN and management network before the install begins

Out of Scope

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SERVICE BRIEF

FlashArray//XL Intra Series Upgrade

Quickly and efficiently upgrade your FlashArray//XL130 to a FlashArray//XL170

Highlights

- Comprehensive intra-series upgrade from FlashArray// XL130 to //XL170
- Non-disruptive

Flexibility

- Work with Pure Storage services to implement according to your own schedule.

Outcomes

- Fully tested and operational FlashArray//XL170

Run everything from massive databases to cloud-native applications at the next level. Think faster transactions and more responsive customer experiences, with services available and data protected. Designed to be as easy to use as it is powerful, Pure Storage® FlashArray//XL™ gives your business the freedom to innovate without storage as a constraint.

Pure Advanced Services can help you benefit from even more performance capacity by helping to upgrade your existing FlashArray//XL130 to a FlashArray//XL170.

The End User Experience

Through the phases of an engagement, the Pure Storage Advanced Services team provides services and solutions to enable you to achieve agreed business outcomes. The FlashArray//XL intra-series upgrade engagement is designed for organizations that want a seamless storage upgrade from FlashArray//XL130 to FlashArray//XL170.

FlashArray//XL Intra Series Upgrade Work Product

- Execute upgrade for FlashArray//XL170
- Ensure upgrade success and return expired gear to Pure Storage

FlashArray//XL Intra Series Upgrade Delivery Methodology

Stage	Owner	Activity	Method
Planning	Pure Storage End user	• Allocate and schedule a Pure resource for the NDU • Request data center access/ open required tickets	Email or Teleconference
Upgrade	Pure Storage	• Remove CTO • Transfer PCIe cards to new controller • Install new CTO and initialize • Transfer new CTI and initialize	Onsite
Post Upgrade	Pure Storage End user	• Perform post-upgrade procedures • Pack the replaced controllers, flash modules, other used parts and ship back to Pure Storage	Onsite

Scoping Parameters

- This service is an on-site activity.
- The service is applicable to the upgrade of a single FlashArray//XL130.
- Any services must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Identify a lead resource for the Pure Storage team to engage during the upgrade process.

Out of Scope

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SERVICE BRIEF

FlashBlade Decommission

Securely decommission a FlashBlade

Highlights

- End-to-end comprehensive decommissioning of a FlashBlade
- Verification of data erasure

Flexibility

- Implement according to your schedule

Outcomes

- FlashBlade decommissioned securely and on time

Decommissioning a FlashBlade securely wipes the flash modules within the blade so that data, including the array configuration, cannot be recovered. To demonstrate erasure compliance, Pure Storage utilizes Kroll OnTrack Erasure Verification, which reports the results of using the NIST-specified test methodology. Pure Storage will verify that the data can no longer be retrieved and that there is no remnant data.

The End User Experience

Pure Storage Advanced Services enable you to realize the value of your IT investments. The Pure Storage Services team follows a strict methodology to decommission a Pure Storage FlashBlade. The process extends through an initial scoping call. Pure Storage will construct a tailored plan based on our understanding of the constraints and dependencies onsite to perform a safe and correct deconstruction.

FlashBlade Decommission Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	• Gather pre-commission information schedule site survey, if required	Conference Email
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	• Review completed document and site survey information • Allocate a Pure Storage resource for install. • Formal schedule • Request data center access and open required tickets	Conference Email
Decommission	Pure Storage End User Pure authorized reseller (if applicable)	• Execute onsite decommission • Pre-decommissioning check securely • Erase the Flash modules • Power down, disconnect, and unmount	End User site Data center
Post-decommission	Pure Storage End User Pure authorized reseller (if applicable)	• Execute post-decommission health checks with Pure Storage support • Generate a certificate of erasure and share	End User site Data center

Scoping Parameters

- The decommission activity is an onsite activity.
- The scope includes one individual FlashBlade.
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- End User shall provide Pure Storage with the decommissioning information required.

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SERVICE BRIEF

FlashBlade Design and Operational Readiness - Onboarding

Accelerate time-to-value and maximize return on investment with Pure Storage advanced services

Highlights

- Expert-led design workshop
- Vendor-approved detailed solution design using experienced architects
- End-to-end user acceptance testing and requirement fulfillment
- Maximize return on investment

Flexibility

- Work with professional services to implement according to your schedule

Outcomes

- Tailored detailed solution design
- Full design documentation set
- Vendor led end-to-end testing
- End user knowledge transfer

At Pure Storage®, our technology is radically simple, but we recognize that end-user environments can be highly complex. Whether you're deploying a greenfield environment or integrating Pure Storage technology into an existing production data center, engineering and operational readiness are critical. Yet resource-intensive tasks can significantly impact your time-to-value. Developing a robust, resilient, and detailed solution design without extensive technology experience is a common challenge for many organizations. Pure Storage provides you with detailed design, engineering, testing, and operational readiness to ensure your storage solution is optimized for success.

The End User Experience

The end user experience is seamless and empowering with our design and operational onboarding readiness service. Users are guided through every stage of the storage solution deployment, from initial design to final implementation, with clear and comprehensive documentation provided at each step. The hands-on workshop delivers in-depth knowledge and practical skills, ensuring users feel confident in managing and optimizing their storage environment. With the support of experienced architects and a focus on tailored solutions, users can expect a smooth transition, reduced time-to-value, and a solution that fully meets their operational needs, all while enhancing their overall confidence and capability in using Pure Storage technology.

FlashBlade Design and Operational Readiness Work Product

- Low-level design workshop and kick-Off
- Documentation of functional and non-functional requirements
- Design document
- Test plan to prove design and requirements are achieved
- Test execution
- Advanced knowledge transfer session

FlashBlade Design and Operational Readiness Delivery Methodology

	Work Product
FlashBlade Design and Operational Readiness Workshop	• Pure FlashBlade® architecture and physical design • Data center requirements – Power, rack space and cooling • Physical and logical networking requirements – Port allocation, speeds, IP addresses, and firewall requirements • User access via command line interface and graphical user interface • Basic security and user management: Integration with directory services • Dial home and Pure1® design and configuration • Alerting and monitoring • Array configuration best practices and standards • Snapshot management principles, policy definition & standards including SafeMode™ Snapshots • Best practices and standards for file system provisioning • Best practices and standards for S3 object provisioning • Advanced security: Integration with password management systems, certificates, and key management systems • Performance considerations and optimization including quality of service (QoS) • File system provisioning and testing • S3 object provisioning and testing

End User Responsibilities

- Share information about infrastructure and business and operational process, when requested, such as, but not limited to:
    - Data center topology and high-level design
    - Application silos and domains
    - Provide network topology diagrams where available
    - Capacity utilization reports and growth statistics
    - Provide performance and capacity utilization reports and tools
    - Configuration management database (CMDB) reports, software and firmware levels and service life
    - All data back-up activities
- Arrange for workshops with key stakeholders and technical subject matter experts (e.g., storage, database, system administrators, and application)
- Access to skilled resources to assist with any design or environmental questions that arise
- Allow switch collection tools to run such as Kiwi tools or SolarWinds
- Timely document review and feedback

Out of Scope

- Ethernet/IP network diagrams or design
- Guest application or server level design and disaster recovery plans
- Platform/compute layer design
- Array installs or deployment
- Scripting and workflow Integration.
- Data migration
- Benchmark testing of a FlashBlade system's performance
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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade Design and Operational Readiness - Platform Optimization

Optimize your storage investment with comprehensive design and hands-on expertise

Highlights

- Expert-led design workshop
- Vendor-approved detailed solution design using experienced architects
- End-to-end user acceptance testing and requirement fulfillment
- Maximize return on investment

Flexibility

- Work with Professional Services to implement according to your schedule
- Adaptable advanced integration modules

Outcomes

- Tailored detailed solution design
- Full design documentation set
- Vendor led end-to-end testing
- End user knowledge transfer

At Pure Storage®, our technology is radically simple, but we recognize that end user environments can be highly complex. Whether you're deploying a greenfield environment or integrating Pure Storage technology into an existing production data center, engineering and operational readiness are critical. Yet resource-intensive tasks can significantly impact your time-to-value; developing a robust, resilient, and detailed solution design without extensive technology experience is a common challenge for many organizations. Pure Storage provides you with detailed design, engineering, testing, and operational readiness to ensure your storage solution is optimized for success.

The End User Experience

Users are guided through every stage of the storage solution deployment, from initial design to final implementation, with clear and comprehensive documentation provided at each step. The hands-on workshop delivers in-depth knowledge and practical skills, ensuring that users feel confident in managing and optimizing their storage environment. With the support of experienced architects and a focus on tailored solutions, users can expect a smooth transition, reduced time-to-value, and a solution that fully meets their operational needs, all while enhancing their overall confidence and capability in using Pure Storage technology.

FlashBlade Design and Operational Readiness Work Product

- Low-level design workshop and kick-Off
- Documentation of functional and non-functional requirements
- Design document
- Test plan to prove design and requirements are achieved
- Test execution
- Advanced knowledge transfer session
- Delivery of five advanced integration modules

FlashBlade Design and Operational Readiness Delivery Methodology

Work Product	
Workshop	• Pure Storage FlashBlade architecture & physical design • Data center requirements – Power, rack space & cooling • Physical and logical networking requirements – Port allocation, speeds, IP addresses & firewall requirements • User access via Command Line Interface & Graphical User Interface • Basic security & user management: Integration with directory services • Dial home & Pure1 design and configuration • Alerting and Monitoring • Array configuration best practices and standards • Snapshot management principles, policy definition & standards including SafeMode • Best practices and standards for file system provisioning and S3 object provisioning • Advanced security: Integration with password management systems, certificates, key management systems • Performance considerations and optimization including Quality of Service (QOS) • File system and S3 object provisioning and testing
Advanced Integration Modules	Delivery of up to 5 chosen advanced integration modules. Integration modules include: **Pure1** Take a deep dive into Pure1 and all of its features including: • Monitor & manage array performance • Capacity Planning **Pure Storage File Replication** Enable asynchronous snapshot-based replication of file system data between FlashBlades: • Configure replication between two FlashBlades • Learn how to manage and monitor file replication **Pure Storage Object Replication** Enable asynchronous replication of object data between FlashBlades or to the Amazon AWS cloud: • Configure replication between two FlashBlades • Configure replication between a FlashBlade and AWS S3 target • Learn how to manage and monitor object replication **Pure Storage SafeMode** Take a deep dive into SafeMode and all of its features, including: • File & Object SafeMode • Pure1 SafeMode management • Ransomware **Rubrik CDM / Rubrik NAS Cloud Direct Object Archive & Backup Integration** Utilize Rubrik with FlashBlade Object Store as a S3 Target with Object Lock: • Receive an overview of Rubrik CDM and NAS Cloud Direct features • Deploy and configure Rubrik CDM or a NAS Cloud direct Immutable Archival Location with FlashBlade Object Store. • Setup Rubrik CDM test Archive SLA policy or Rubrik NAS Cloud Direct Backup Policy.

Observability Quickstart

Master your storage environment with proactive real-time metrics analysis:

- Pure's vendor-agnostic approach to observability applying industry standard and open source technologies
- Learn observability fundamentals (optional)
- Technical aspects, components and configuration of metric collection
- Guided metrics export and out of box fleet overview dashboards (supported platforms only)

Fusion Enablement

Leverage automated and remote management for FlashBlade:

- Create and configure Fleets within Purity using Fusion
- Managing File within Fusion for NFS and SMB for FlashBlade
- Managing File within Fusion for S3/Object for FlashBlade
- Accessing File & object on clients

End User Responsibilities

- Share information about infrastructure, business and operational process, when requested, such as but not limited to:
  - Data center topology and high-level design
  - Application silos and domains
  - Provide network topology diagrams where available
  - Capacity utilization reports and growth statistics
  - Provide performance and capacity utilization reports and tools
  - Configuration management database (CMDB) reports, software/firmware levels and service life
  - All data back-up activities
- Arrange for workshops with key stakeholders and technical subject matter experts (e.g., storage, database, system administrators, and application)
- Access to skilled resources to assist with any design or environmental questions that arise
- Allow switch collection tools to run such as Kiwi Tools or SolarWinds
- Timely document review and feedback

Out of Scope

- Ethernet/IP network diagrams or design
- Guest application or server level design and disaster recovery plans
- Platform/compute layer design
- Array installs or deployment
- Scripting and workflow Integration
- Data migration
- Benchmark testing of a FlashBlade system's performance
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage
- Note: Advanced Integration Modules configuration is an initial configuration exercise and not a replacement for a full end to end deployment.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade Installation Multi Chassis

Engage with Pure services to simply FlashBlade installation.

Highlights

- Comprehensive installation and configuration of multi chassis FlashBlade
- Proactive 24×7 support
- Pure1 continuous monitoring and assistance.

Highlights

- Implement according to your schedule

Outcomes

- Fully integrated flash storage solution (single chassis)
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring.

Pure Storage services use a strict methodology for deploying and configuring the Pure FlashBlade array. Our approach accelerates your time to value and ensures your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business goals. The FlashBlade multi-chassis Installation service is designed for organizations that want to quickly activate the full potential of FlashBlade.

FlashBlade Multi-Chassis Installation Service Work Product

- **Pre-Implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm configuration details, and schedule the install.
- **Hardware installation**: Pure will unpack, rack, cable, and power up your new FlashBlade
- **FlashBlade OS initialization**: Once your new unit is powered up, our team will configure FlashBlade's Purity//FB operating system to your network specifications
- **Connectivity verification**: Pure will help you connect to your FlashBlade, validate network connections, and assist with configuring client access and mounting NFS and SMB volumes.
- **Knowledge transfer**: After installation, Pure will work with your team to review the user interface, Remote Assist and phone home support.

Through the phases of an End User engagement, Pure will provide services and solutions to enable you to achieve your business goals. The FlashBlade multi-chassis Installation service is designed for organizations that want to quickly activate the full potential of FlashBlade. Once you approve the technical plan, the Pure team will prepare the new storage infrastructure, optimize storage utilization, and provide proactive support advice. Acceptance testing and knowledge transfer complete the services.

FlashBlade Multi-chassis Installation Delivery Phases

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	Send installation checklist/ network site planning guide and gather pre-install information Schedule site survey, if required	Teleconference Email
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	Allocate a Pure resource for installation Formally schedule installation Request data center access/ open required tickets	Teleconference Email
Installation	Pure Storage End User Pure authorized reseller (if applicable)	Unpack FlashBlade chassis, XFM switches and components, ensure all components are present and functional Mount FlashBlade chassis rails into the cabinet Slide FlashBlade chassis onto the rails and secure to racks Upgrade XFM switches, FlashBlade chassis and Purity//FB OS Connect cables between XFM switches Plug in appropriate network and management connections to the FlashBlade and XFM switches Configure fabric modules and networking interfaces Configure call home setup, remote assist and alerting services	End User site Data center
Post installation	Pure, Storage End User Pure authorized reseller (if applicable)	Pure engineer will work with Pure support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check Provide a detailed overview of the Pure FlashBlade GUI and validate	End User site Data center

Scoping Parameters

- The installation is an on-site activity
- This service must be consumed within 180-days from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.
- End User shall provision sufficient rack space and power (for installation) of a multi-chassis FlashBlade and XFM switches.

End User Responsibilities

End User shall give the Pure Storage Services Coordinator the following information and Work Product before engaging any Pure technical resource:

- Review and address requirements within the Network Site Planning Document
- A completed pre-installation Workbook document and provide all pre-install information
- A completed Pure Storage Site Readiness and Pre-Installation Site Checklist
- Locations of rack and power for installation of system components
- Fully configured data and management networks
- Data network and management ethernet connections to the designated install location for connection to the FlashBlade

Out of Scope

- Anything not listed and detailed in the work product section of this document or an applicable SOW is out of scope for Pure.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade Relocation Support

Minimize risk and securely relocate your FlashBlade.

Highlights

- Support relocation of FlashBlade

Flexibility

- Work with Pure Storage Advanced Services team to implement according to your schedule

Outcomes

- Securely support relocation of your FlashBlade

Pure Storage FlashBlade is the industry's most advanced storage for unstructured data, consolidating complex data silos to optimize infrastructure and accelerate tomorrow's discoveries and insights. From time-to-time, you may want to securely relocate your FlashBlade to another location. The Pure Storage Service team plans and executes this service, working with you hand-in-hand to ensure success from start to finish.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage End User experience (CX) team, we engage with you directly to evaluate, activate, and innovate your IT solutions.

Pure Storage Advanced Services follow a strict methodology to relocate a Pure Storage FlashBlade. The process extends through an initial scoping call, constructing a plan based on our understanding of the constraints and dependencies on-site at the various locations, and performing a safe and correct relocation.

FlashBlade Relocation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller(if applicable)	• Gather pre-relocation information • Review site survey requirements (power, rack unit availability) • Perform a health check of the array • Confirm the scheduled maintenance window • Order packing materials as necessary	Video conference Email End User site Data center site
Planning and document completion	Pure Storage End User Pure authorized reseller(if applicable)	• Review completed document and site survey • Request data center access/open required tickets	Video conference Email Site survey
Relocation preparation and installation	Pure Storage End User Pure authorized reseller(if applicable)	**Origin site:** • Conduct a health check the array • Fully label components and cables • Power down array, disconnect cabling and remove from rack • Safely Package the array and relevant parts **Target site:** • Rack, cable and power up array • Reconfigure as required and validate connectivity • Perform final health check	End User site Data center site
Post-relocation	Pure Storage End User Pure authorized reseller(if applicable)	• Execute post relocation health checks with Pure Storage support leads	End User site Data center site

Scoping Parameters

- This Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Respond in a timely manner and in any event within the times and dates necessary to enable Pure Storage to perform its obligations.
- Arrange for the shipment of the array between sites, including all shipping, insurance, customs and export responsibilities. End User is responsible for all fees associated with the shipment between sites.
- Provide End User information/data to Pure Storage. End User is responsible for the accuracy and completeness of all information it provides.
- Provide access to appropriate End User personnel (with the relevant skill and knowledge) and facilities of End User and shall notify Pure Storage personnel in writing of any reasonable health and safety hazards of which End User is or has become aware which may exist or arise at End User site which may affect Pure Storage personnel and or the performance of services and work product listed herein.
- Where work is required to take place in sensitive areas or locations subject to access controls, End Users shall (i) make Pure Storage aware of any access restrictions and (ii) will define and implement arrangements to ensure the security and access protocol checks on personnel engaged on works in such areas.
- End User shall be responsible for maintaining disaster recovery processes and all necessary back-ups so that the End User can reinstate any data in the event of a disaster including a disaster involving disruption or outage of communications, power or other utilities. Pure Storage will not provide disaster recovery services for relocation support services and takes no responsibility for any loss or interruption of data.
- Where an End User requires Pure Storage personnel to comply with its reasonable site policies whilst at the End User site, the End User shall provide written notification of such policies to Pure Storage personnel prior to such Pure Storage personnel attending such End User sites.
- End User shall have rack and power (PDU) locations designated for system components at the target site.
- End User shall provide any needed connectivity cables to the rack location at target site.

Out of Scope

- Shipment and physical relocation of the array between sites.
- Any scripting changes; script changes for provisioning storage or any scripting or any software code changes are out of scope.
- Any Data erasure and decommissioning of legacy arrays.
- The shutting down of any hosts connected to the array at the beginning of the maintenance window or migrating any data to alternative storage.
- Backing up any data on the array. Pure Storage is not responsible for any data loss resulting from relocation.
- Anything not expressly set forth in the Work Product section of this document or in an applicable statement of work is out of scope for Pure Storage.

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SERVICE BRIEF

FlashBlade Remote Installation

Comprehensive remote installation and configuration of your FlashBlade

Highlights

- Comprehensive installation and configuration
- Proactive 24×7 CloudAssist support
- Pure1 continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- FlashBlade installation

Pure Storage Services provide a remote methodology for deploying and configuring the Pure Storage FlashBlade platform. Our approach ensures an effective time to value and that your environment is prepared for the workloads you plan to migrate to the FlashBlade.

To ensure a successful installation we require the End User to identify a lead resource for the Pure Team to engage during the entire installation process.

The End User Experience

The FlashBlade remote installation service includes:

Installation Preparation

The Pure installation team will work with Pure account team and the End User to confirm pre-install technical and logistical information, including:

- Pure will provide the customer the FlashBlade-implementation workbook (IWB) which must be completed by the End User prior to the End User pre-planning workshop.
- Setting up a pre-call introduction to discuss expectations and requirements for the remote engagement and review the FlashBlade installation and thoroughly review completed FlashBlade IWB.
- Identify End User contact, data center address, access tickets opened
- Provide guidance on the physical installation process
- Identify installation methodology (DHCP & API or IP based KVM/ direct connectivity via serial or USB+VGA cable ports provided by the End User).
- Review site survey requirements “power, rack unit availability”
- Address product discrepancies that may be identified.
- Where applicable, create the JSON configuration statement used during the DHCP and API installation method.

FlashBlade Configuration

Once installed in the rack, the Pure Storage on-site installation resource will confirm the installation of the chassis with the End User and then follow the steps in accordance with the then current FlashBlade installation manual to power on and configure the FlashBlade.

To configure the FlashBlade, the Pure Resource will:

- Assist the customer in validating the physical installation of the FlashBlade hardware

Next, the Pure Resource will configure the FlashBlade either by:

- Using video conferencing facilities, assist the End User in completing the configuration script via an IP based KVM, Direct connectivity via serial or USB + VGA cable ports connected to an End User provided computer

Or will configure the FlashBlade by:

- Assisting the End User in determining the IP address of the system, then using video conferencing facilities, assist the End User in uploading the JSON based configuration to the array via API using either cURL or Postman tools (DHCP & API Methodology) using an End User provided computer.

- If necessary, perform an upgrade following the then current upgrade procedures.

Note: Initial configuration is guided by the 'FlashBlade – Implementation Workbook (IWB)' completed during the preparation phase.

FlashBlade Health Check

Our engineers will work with Pure Storage Support and the End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check on the array. The Health check will ensure that the following are configured and working as expected:

- FlashBlade fabric modules
- Management network
- Data network
    - Default gateway and DNS server
    - TCP ports required for Pure services
    - NTP server
- Call home
    - Pure1 integration
    - Phone home diagnostic send test
- FlashBlade GUI

Knowledge Transfer and Acceptance Testing

Our engineers will work with Pure Storage Support and the End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check on the array. The health check will ensure that the following are configured and working as expected.

After the FlashBlade has been installed, the Pure Implementation Engineer will answer any questions the End User might have regarding the installation. Additionally, the Pure implementation Engineer will walk the End User through the Pure FlashBlade GUI guiding them to perform basic tasks, including, but not limited to:

- Provide a detailed overview of the Pure storage FlashBlade GUI and validate:
    1. The End User can access the GUI
    2. The End User can create a data VLAN and a data VIP
    3. The End User can mount the FlashBlade data VIP from a client
    4. The End User can perform basic NFS operations from a client- such as creating a file, writing data and reading it back

Note: At a minimum, the Pure implementation engineer will work with the End User to create 1 VLAN, 1 VIP and confirm access through one client.

Engagement Process

The engagement process will follow a distinct structure divided into 4 stages as outlined below:

Stage	Task	Delivery method
Pre-planning	• Send installation checklist • Gather pre-install information	Zoom, Email
Planning/ documentation completion	• Review completed document • Allocate a Pure resource for the install and formally schedule	Zoom, Email
Installation	• Perform remote installation and configuration steps	Zoom
Post-installation	• Execute post-install health checks with Pure support • Pure engineer leads End User through GUI review	Zoom, Email

End User Responsibilities

Contact information: End User agrees to provide the Pure services coordinator with the following information and deliverables:

- End User team contact information
- End User site details:
    1. Site contact name
    2. Site contact phone
    3. Site contact email
- Completion of a video conference to confirm site readiness and pre-installation site checklist
- Perform the physical installation of equipment
- Completion of a video conference to complete the installation

Site Requirements

Note: Requirements are outlined in the FlashBlade-PER to be completed by the End User

- Provide rack and power (PDU) locations designated for installation of system components
- Provide data network management ethernet connections (optical/ twinAx) to the designated install location for connection to the FlashBlade
- Provide fully configured End User site data and management networks prior to the start of installation

Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.

Out of Scope

- Anything not listed in this document, or an applicable Statement of Work is out of scope for Pure

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SERVICE BRIEF

FlashBlade//S Multi-Chassis Add

Seamlessly scale your existing FlashBlade//S multi chassis array by adding a chassis.

Highlights

- End to end comprehensive installation and configuration of a multi chassis FlashBlade//S™
- Pure1® continuous monitoring and assistance

Flexibility

- Work with the Pure Services team to implement according to your schedule.

Outcomes

- Fully integrated flash storage solution
- Knowledge transfer for rapid adoption and operation

Pure Storage® FlashBlade® is the industry's most advanced storage for unstructured data, consolidating complex data silos to optimize infrastructure and accelerate tomorrow's discoveries and insights.

FlashBlade//S™ allows capacity and performance to be scaled independently and can be continuously improved over time. This unique modular storage architecture offers flexible consumption choices while minimizing waste by using less power and space.

The Pure Services implementation and integration team can plan and execute a rapid deployment of your new multi-chassis FlashBlade//S. Pure Services follows a strict methodology for deploying and configuring the Pure Storage FlashBlade multi-chassis array. Our approach ensures an effective time to value and that your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

FlashBlade//S Multi-Chassis Add Delivery Phases

The Pure Services team will follow the engagement framework below during delivery of the FlashBlade//S Multi-chassis add service.

Stage	Owner	Task	Method
Pre planning	• Pure • End User	• Share installation checklist • Network site planning guide • Collect pre-installation data • Schedule site survey (if required) • Schedule installation • Arrange data center access/ open required tickets	• Teleconference • Email
Installation	• Pure	• Unpack FlashBlade® chassis and components, ensure all present and functional • Mount FlashBlade chassis into cabinet rails • Slide chassis into cabinet and secure • Upgrade XFM switches, FlashBlade chassis and Purity//FB operating system as required • Connect cables between chassis and XFM switches • Plug in appropriate network and management connections to FlashBlade and XFM switches	• On site
Post installation	• Pure • End User	• Validate upgrade has been a success • Ensure FlashBlade is working as designed by performing a comprehensive health check • Provide overview of FlashBlade GUI	• On site

Work Product

- Installation of an additional chassis into a Multi-chassis FlashBlade//S array

Scoping Parameters

- The scope of this service is to add a FlashBlade//S chassis to an existing FlashBlade//S Multi-chassis array that is already installed and implemented.
- Sufficient rack space, power and cooling for the proper installation of the FlashBlade//S chassis must be available.
- This service must be consumed within 180 days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Review and address requirements within the network site planning document
- A completed Pure Storage site readiness and pre-installation site checklist
- Locations of rack and power for installation of system components

Out of Scope

- Anything not listed in the Work Product section of this document is deemed out of scope for this engagement
- The service does not cover the installation of XFMs, as the assumption is that they are already installed.

About Pure Services

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SERVICE BRIEF

FlashBlade to FlashBlade//S Platform Upgrade

Seamlessly upgrade your existing FlashBlade to FlashBlade//S

Highlights

- Upgrade from FlashBlade to FlashBlade//S

Flexibility

- Work with Pure Storage Services to implement according to your schedule

Outcomes

- Ready for next-generation storage needs

FlashBlade//S is the next-generation FlashBlade, designed for exabyte scale to support the needs of modern data and applications for the next decade and beyond. It builds on the simplicity, reliability, and scalability of the first-generation FlashBlade.

FlashBlade//S leverages the industry-leading, all-flash hardware and software innovation from Pure Storage and it's built using all-QLC architecture and DirectFlash modules (DFMs). The best-in-class solution is designed to support data-heavy, unstructured workloads efficiently, providing unequaled density, capacity, and performance.

By deploying a strict and proven delivery methodology, Pure Storage Services can upgrade an End User's FlashBlade array to a FlashBlade//S.

FlashBlade to FlashBlade//S Platform Upgrade Delivery Methodology

Stage	Owner	Task	Method
Pre-implementation	Pure Storage End User	• Complete upgrade validation checklist. • Gather pre-install information. • Ensure the physical environment is ready for the FB//S installation. • Ensure all parts have been delivered.Upgrade existing FlashBlade array to Purity//FB 4.4.x (validate current minor release).	Conference Email
Implementation	Pure Storage End User	• Physical installation of target FlashBlade//S array. • Upgrade target FlashBlade//S array to the same Purity//FB version as the existing. FB 4.4.x (validate current minor release). • If needed, configure SMB protocol to eliminate disruptions during the platform upgrade. Not needed for NFS or S3 protocols. • Install the XFMs. In order to communicate, the existing FlashBlade and target FlashBlade//S must be connected to the same XFMs. • Perform the FlashBlade first-gen single to multi-chassis conversion and connect to the XFM ports. • This step has been automated by the FBS2M conversion tool that the Pure Storage Advanced Services team will run. • Connect target FlashBlade//S to XFM ports and configure. • Run platform upgrade script.	Onsite
Post-implementation	Pure Storage End User	• Run post upgrade checks to verify all FlashBlade//S components are up and running, and that the upgrade was completed cleanly. • The existing first-generation FlashBlade can now be safely disconnected and powered down. • Physically uninstall, disconnect, and unmount first generation FlashBlade. • Return original first-generation FlashBlade to the Pure Storage manufacturing team.	Onsite

Scoping Parameters

- The FlashBlade must be less than 80% full prior to the upgrade.
- The FlashBlade system performance must be <1GB/s reads and <1GB/s writes.
- The FlashBlade system must not be using cascade fan in/out replication.
- The existing FlashBlade must have 17TB or 52TB blades and the target FlashBlade//S chassis must have at least one DFM per blade.
- The existing FlashBlade should contain no tunables.
- The existing FlashBlade must be running Purity//FB 4.4.x (validate current minor release).
- Any services must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Complete any pre-installation checklist and provide environmental data requested in a timely manner.
- Ensure sufficient rack space and power for adding the FlashBlade//S and XFM switches into the infrastructure.
- Both the first-generationFlashBlade and FlashBlade//S system will have to run during the upgrade, so the infrastructure should be able to handle this.
- Ensure appropriate cabling is available.

Out of Scope

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade//E Installation

Engage Pure Storage Services to simplify FlashBlade//E installation.

Highlights

- Installation and configuration of FlashBlade//E
- Pure1 continuous monitoring and assistance

Flexibility

- Work with the Pure Storage Advanced Services team to implement according to your schedule.

Outcomes

- Integrated flash storage solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

Pure Storage FlashBlade//E is an all-flash, capacity-optimized platform designed for unstructured data workloads previously stored on disk systems. It offers simple management, massive scalability, high density, and sustainability, all at a cost comparable to disk-based solutions, with significantly lower long-term ownership costs.

Pure Storage Advanced Services use a strict methodology for deploying and configuring the FlashBlade. Our approach generally accelerates your time to value and ensures your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business outcomes. The FlashBlade//E Installation Service is designed for organizations that want to quickly activate the full potential of FlashBlade//E.

FlashBlade//E installation Service Work Products

- **Pre-Implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm configuration details, and schedule the install.
- **Hardware installation**: A Pure Storage implementation engineer will unpack, rack, cable, and power up your new FlashBlade//E.
- **FlashBlade OS initialization:** Once your new unit is powered up, our team will configure FlashBlade's Purity//FB operating system to your network specifications.
- **Connectivity verification:** The team will help you connect to your FlashBlade/EE, validate network connections, and assist with configuring client access and mounting NFS, SMB or S3 volumes.

- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer:** After installation, the implementation engineer will work with your team to review the GUI, cloud assist and phone home support.

FlashBlade//E installation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User	• Send installation checklist/ network site planning guide and gather pre-install information • Schedule site survey, if required	Conference Email
Planning and documentation	Pure Storage End User	• Allocate a Pure Storage resource for installation and formally schedule installation • Request data center access/ open required tickets	Conference Email
Installation	Pure Storage End User	• Unpack the FlashBlade//E chassis and components, ensure all components are present and functional • Mount the FlashBlade//E chassis rails into the cabinet • Slide FlashBlade//E chassis onto rails and secure in the rack • Upgrade FlashBlade//E chassis and Purity//FB OS • Plug in network and management cables to FlashBlade • Configure fabric modules • Configure call home setup, remote assist and alerting services	Onsite
Post-installation	Pure Storage End User	• Pure Storage engineers will work with Pure Storage support and the End User to ensure that the FlashBlade//E is working as designed by performing a comprehensive health check. • Provide a detailed overview of the Pure Storage FlashBlade//E GUI and validate	Onsite

* Please note that the FlashBlade//E chassis rack and stack activity is a two person job. In the event there is no onsite Resource or appropriate lifting equipment available to assist, Pure Storage will dispatch a second Engineer to site. The remaining installation activities can be completed by a single Pure Storage engineer.

Scoping Parameters

- Installation is an on-site activity
- Sufficient rack space and power provisioned for the installation
- Fully configured End User site data and management networks prior to installation
- If Pure Fusion is to be enabled:

    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Review and address requirements within the Network Site Planning Document
- Complete the Pure Storage engagement request and provide all pre-install information
- Completion of a Pure Storage site readiness and pre-installation site checklist
- Provide rack and power distribution unit locations designated for installation of system components
- Provide fully configured End User side data and management networks prior to the start of installation
- Provide data network and management ethernet connections to the designated install location for the connection to the FlashBlade//E

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade//S Capacity Add

Addition of capacity to an existing Pure Storage FlashBlade//S200 or FlashBlade//S500 system.

Highlights

- Comprehensive upgrade and configuration

Flexibility

- Work with Pure Storage Services to implement according to your schedule

Outcomes

- Fully upgrade flash storage solution

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Pure Storage FlashBlade is the industry's most advanced storage for unstructured data, consolidating complex data silos to optimize infrastructure and accelerate tomorrow's discoveries and insights. The Pure Storage Advanced Services implementation and integration team can plan and execute a rapid deployment of your new FlashBlade.

The FlashBlade//S200 and FlashBlade//S500 systems allow for nondisruptive on-demand capacity expansion through the addition of new data packs or additional blades. The Pure Storage Services team can help you scale your IT Operations by adding capacity to existing arrays.

The End User Experience

Pure Storage Services helps you realize the value of your IT investments. As an integral part of the Pure Storage customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

The FlashBlade//S capacity add service is designed for organizations that want to scale their Pure Storage environments. Our teams use a strict methodology to safely upgrade and validate an existing FlashBlade//S.

FlashBlade//S Capacity Add Delivery Methodology

Stage	Owner	Task	Method
Planning	Pure Storage End User	The Pure Services team will work with the End User to validate: • End User contact information • Installation address and data center requirements • Access and change control requirements • Introductory call to review the procedure and discuss expectations and requirements • Schedule the capacity add activity	Conference Email
Implementation	Pure Storage	• On site hardware installation • Build and configure the additional FB//S additional capacity • Configuration of additional capacity into FlashBlade//S array	Conference Email
Post Implementation	Pure Storage End User	• The Pure Storage on-site implementation engineer will perform the standard health check to validate that the FlashBlade//S additional capacity has been installed successfully and provide a demonstration via the End User via the Pure Storage Graphical User Interface (GUI)	End User site Data center

Scoping Parameters

- Any additional Capacity must have been procured and be available on-site prior to the work
- This Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.
- On site activity only

End User Responsibilities

- Provision of sufficient rack space and power distribution (PDUs) for capacity upgrade
- Stakeholder engagement and timely response to any request for information
- Arrange data center access or change control activities

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SERVICE BRIEF

FlashBlade//S EXA Multi-Chassis Installation

Efficiently deploy your FlashBlade//S EXA multi-chassis environment.

Highlights

- Installation and configuration of FlashBlade//S EXA
- Proactive 24×7 support
- Pure1® continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- Integrated flash storage solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

Traditional storage architectures aren't built for the evolving requirement of large-scale modern AI and HPC. FlashBlade//EXA™ is the industry's most powerful data storage platform built to power AI factories delivering extreme throughput, low-latency metadata performance, and the ability to scale seamlessly. Its disaggregated metadata architecture eliminates constraints, enabling enterprises to train, tune and infer larger models, process multimodal datasets, and efficiently manage high-performance environments.

Pure Storage Advanced Services can plan and execute a rapid deployment of your new FlashBlade//S EXA Multi-Chassis system. Pure Storage Services follow a strict methodology for deploying and configuring a FlashBlade EXA Multi-Chassis Environment. Our approach ensures an effective time to value and that your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions. The FlashBlade//S EXA Multi-Chassis Installation Service is designed for organizations that want to quickly activate the full potential of FlashBlade//S EXA.

FlashBlade//S EXA installation Service Work Product

- **Pre-implementation planning:** Our Services team will conduct a discovery session to review your environment, confirm the configuration details, and schedule the installation.
- **Hardware installation:** We will unpack, rack, cable, and power up your new FlashBlade//S EXA
- **FlashBlade OS initialization:** Once your new unit is powered up, our team will perform basic configuration of the FlashBlade//S, a Purity//FB operating system, to your network specifications.
- **Data Node OS initialization**: Following Data Node hardware installation, Pure Storage will configure data nodes in alignment with your network specifications
- **Connectivity verification:** We will help you connect to your FlashBlade//S EXA, validate network connections, and assist with configuring client access and mounting 1 or 2 test NFS or SMB volumes to show connectivity and use of the GUI.

- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer:** After installation, we will work with your team to review the user interface, remote assist, and phone home support.

Once you approve the technical plan, the Pure Storage team will prepare the new storage infrastructure, optimize storage utilization, and provide proactive support advice as per the agreed upon technical plan.

FlashBlade//S EXA Multi-Chassis Installation Delivery Phases

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	• Send installation checklist/network site planning • Guide and gather pre-install information	Conference Email
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	• Allocate Pure Storage resources for installation • Formally schedule installation • Request data center access, open required tickets	Conference Email
Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Unpack the FlashBlade chassis, XFM switches, components and ensure all components are present and functional • Mount the FlashBlade chassis and XFM switch rails into the cabinet • Slide the FlashBlade chassis; XFM switches onto the rails and secure to the racks • Upgrade XFM switches, FlashBlade chassis, Purity//FB OS • Connect cables between chassis and XFM switches • Plug in appropriate network and management connections to the FlashBlade and XFM switches • Configure fabric modules and networking interfaces • Assist and alerting services	End User site Data center

Post Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Pure Storage engineers will work with Pure Support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check (fabric modules to XFM switches connectivity data network, management network) • Pure Storage engineers will work with Pure Support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check • Provide a detailed overview of the FlashBlade GUI.	End User site Data center

* Please note the FlashBlade//S chassis weighs 47kg (104 lbs.) without blades installed. Each blade weighs up to 3kg (7 lbs.). A chassis fully loaded with 10 blades weighs 93kg (205 lbs.). Therefore, It is necessary to dispatch two engineers to physically install the equipment.

Scoping Parameters

The installation is an onsite activity:

- This service must be consumed within 180 days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.
- End User shall provision sufficient rack space and power for installation of a multi-chassis FlashBlade EXA and XFM switches.
- End User shall fully configure your data and management networks prior to the start of install.
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion

End User Responsibilities

End User shall give the Pure Services Coordinator the following information and work product before engaging any Pure Storage technical resource:

- Review and address requirements within the Network Site Planning Document.
- A completed pre-installation Workbook document, and provide all pre-install information.
- A completed Pure Storage Site Readiness and Pre-Installation Site Checklist.
- Provide rack and power distribution unit locations designated for installation of system components.
- Fully configured data and management networks.
- Provide data network and management Ethernet connections to the designated install location for connection to the FlashBlade and XFM switches.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade//S Multi-Chassis Installation

Quickly and efficiently deploy your FlashBlade//S multi-chassis environment.

Highlights

- Installation and configuration of a multi-chassis FlashBlade//S
- Proactive 24×7 support
- Pure1® continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- Integrate flash storage solution (single chassis)
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

FlashBlade//S allows capacity and performance to be scaled independently and can be continuously improved over time. This unique modular storage architecture offers flexible consumption choices while minimizing waste by using less power and space.

Pure Storage Advanced Services can plan and execute a rapid deployment of your new FlashBlade//S Multi-Chassis system. Pure Storage Services follow a strict methodology for deploying and configuring the FlashBlade Multi-Chassis Array. Our approach ensures an effective time to value and that your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure customer experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions. The FlashBlade//S Multi-Chassis Installation Service is designed for organizations that want to quickly activate the full potential of FlashBlade//S.

FlashBlade//S installation Service Work Product

- **Pre-implementation planning:** Our Services team will conduct a discovery session to review your environment, confirm the configuration details, and schedule the installation.
- **Hardware installation:** We will unpack, rack, cable, and power up your new FlashBlade//S
- **FlashBlade OS initialization:** Once your new unit is powered up, our team will perform basic configuration of the FlashBlade//S, a Purity//FB operating system, to your network specifications.
- **Connectivity verification:** We will help you connect to your FlashBlade//S, validate network connections, and assist with configuring client access and mounting 1 or 2 test NFS or SMB volumes to show connectivity and use of the GUI.
- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer:** After installation, we will work with your team to review the user interface, remote assist, and phone home support.

Once you approve the technical plan, the Pure Storage team will prepare the new storage infrastructure, optimize storage utilization, and provide proactive support advice as per the agreed upon technical plan.

FlashBlade//S Multi-Chassis Installation Delivery Phases

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	• Send installation checklist/network site planning • Guide and gather pre-install information	Conference Email
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	• Allocate Pure Storage resources for installation • Formally schedule installation • Request data center access, open required tickets	Conference Email
Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Unpack the FlashBlade chassis, XFM switches, components and ensure all components are present and functional • Mount the FlashBlade chassis and XFM switch rails into the cabinet • Slide the FlashBlade chassis; XFM switches onto the rails and secure to the racks • Upgrade XFM switches, FlashBlade chassis, Purity//FB OS • Connect cables between chassis and XFM switches • Plug in appropriate network and management connections to the FlashBlade and XFM switches • Configure fabric modules and networking interfaces • Assist and alerting services	End User site Data center
Post Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Pure Storage engineers will work with Pure Support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check (fabric modules to XFM switches connectivity data network, management network)	End User site Data center

- Pure Storage engineers will work Pure Support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check
- Provide a detailed overview of the FlashBlade GUI and validate.

* Please note the FlashBlade//S chassis weighs 47kg (104 lbs.) without blades installed. Each blade weighs up to 3kg (7 lbs.). A chassis fully loaded with 10 blades weighs 93kg (205 lbs.). Therefore, It is necessary to dispatch two engineers to physically install the equipment.

Scoping Parameters

The installation is an onsite activity:

- This service must be consumed within 180 days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.
- End User shall provision sufficient rack space and power for installation of a multi-chassis FlashBlade and XFM switches.
- End User shall fully configure your data and management networks prior to the start of install.
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion

End User Responsibilities

End User shall give the Pure Services Coordinator the following information and work product before engaging any Pure Storage technical resource:

- Review and address requirements within the Network Site Planning Document.
- A completed pre-installation Workbook document, and provide all pre-install information.
- A completed Pure Storage Site Readiness and Pre-Installation Site Checklist.
- Provide rack and power distribution unit locations designated for installation of system components.
- Fully configured data and management networks.
- Provide data network and management Ethernet connections to the designated install location for connection to the FlashBlade and XFM switches.

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SERVICE BRIEF

FlashBlade//S R1 to R2 Blade Upgrade

Seamlessly upgrade your existing FlashBlade//S R1 to R2

Highlights

- In-place upgrade of FlashBlade//S blades to R2 models
- Maintains service availability during the process
- Full compatibility with Purity//FB 4.6 and later
- Guided and executed by Pure Storage Advanced Services

Flexibility

- Work with Pure Storage Services to implement according to your schedule

Outcomes

- Ready for next-generation storage needs

Upgrade your existing FlashBlade//S R1 blades (S100/S200/S500) to the next-generation FlashBlade//S R2 blades (S200R2/S500R2) efficiently, using Pure's validated delivery methodology.

FlashBlade//S leverages the industry-leading, all-flash hardware and software innovation from Pure Storage and it's built using all-QLC architecture and DirectFlash modules (DFMs). The best-in-class solution is designed to support data-heavy, unstructured workloads efficiently, providing unequaled density, capacity, and performance.

By deploying a strict and proven delivery methodology, Pure Storage Services minimizes system impact when upgrading an End User's FlashBlade//S R1 blades to R2.

FlashBlade//S R1 to R2 Blade Upgrade Delivery Methodology

Stage	Owner	Task	Method
Pre-implementation	Pure Storage End User	• Validate environment readiness (temperature, airflow, rack space, power) • Confirm Purity//FB 4.6+ • Conduct full system health check	Conference Email
Implementation	Pure Storage End User	• Perform pre-checks • Set maintenance mode and evacuation timeout • Remove DFM modules from old blade and install into R2 blade • Physically replace one blade at a time in the order agreed upon with customer • Upgrade blade software (if needed) • Add blade/s to system • Refresh availability domain and validate cluster status	Onsite
Post-implementation	Pure Storage End User	• Run post upgrade checks to verify all FlashBlade//S components are up and running, and that the upgrade was completed cleanly. • Return original first-generation Blades to the Pure Storage manufacturing team.	Onsite

Scoping Parameters

- FlashBlade//S must be running Purity//FB 4.6.x or newer
- DFMs must be re-seated in their original bay positions
- Only one blade is replaced at a time to preserve cluster health

End User Responsibilities

- Active participation in implementation planning to review system and environment requirements, adherence to implementation and change management policies as may be required by Pure or customer to support the deployment.
- Provide up-to-date system health status
- Ensure environmental and infrastructure readiness
- Attend pre-site visit Planning Call with Implementation Engineer
- Assist with coordination and access for blade swaps
- Retain removed blades for return shipment, if applicable

Out of Scope

- Any firmware, OS, or Purity upgrades not explicitly defined
- Cabling
- Custom configuration

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

FlashBlade//S Single Chassis Installation

Engage with Pure Storage services to simplify FlashBlade//S installation.

Highlights

- Installation and configuration of a single chassis FlashBlade//S
- Proactive 24×7 support
- Pure1 continuous monitoring and assistance

Flexibility

- Implement according to your schedule

Outcomes

- Integrate flash storage solution (single chassis)
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring

Pure Storage services implementation and integration team can plan and execute a rapid deployment of your new FlashBlade. Pure Storage services use a strict methodology for deploying and configuring the Pure Storage FlashBlade array. Our approach generally accelerates your time to value and ensures your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage services exist to assist you in the realization of the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Through the phases of an End User engagement, we provide services and solutions to enable you to achieve your business goals. The FlashBlade installation service is designed for organizations that want to quickly activate the full potential of FlashBlade. Services include:

FlashBlade//S installation Service Work Product

- **Pre-Implementation planning**: Our Services team will conduct a discovery session to review your environment, confirm the configuration details and schedule the installation.
- **Hardware installation**: We will unpack, rack, cable, and power up your new FlashArray//S
- **FlashBlade OS initialization**: Once your new unit is powered up, our team will perform basic configuration of the FlashBlade//S a Purity//FB operating system to your network specifications.
- **Connectivity verification**: We will help you connect to your FlashBlade//S, validate network connections, and and assist with configuring client access and mounting 1 or 2 test NFS or SMB volumes to show connectivity and use of the GUI.
- **Pure Fusion Fleet Creation:** If you are running more than one Pure array in your environment, and have not already enabled Fusion, Pure Storage will create a Fusion Fleet and add the array. Pure Storage will also demonstrate a Fusion Fleet volume creation activity.
- **Knowledge transfer**: After installation, we will work with your team to review the user interface, remote assist and phone home support.

Once you approve the technical plan, the Pure team will prepare the new storage infrastructure, optimize storage utilization, and provide proactive support advice as per the agreed technical plan.

FlashBlade//S Installation Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Pure authorized reseller (if applicable)	• Send installation checklist/network site planning • Guide and gather pre-install information	Conference Email
Planning and document completion	Pure Storage End User Pure authorized reseller (if applicable)	• Allocate Pure resources for installation • Formally schedule installation • Request data center access/ open required tickets	Conference Email
Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Unpack FlashBlade//S chassis and components; ensure a components are present and functional • Mount FlashBlade chassis rails into cabinet • Slide FlashBlade chassis onto the rails and secure to the rack • Upgrade FlashBlade chassis and Purity//FB OS • Plug in appropriate network and management connection to the FlashBlade • Configure fabric I/O modules (FIOMs) • Configure call home setup, remote assist and alerting service	End User site Data center
Post Installation	Pure Storage End User Pure authorized reseller (if applicable)	• Pure engineer will work with Pure support and End User to ensure that the FlashBlade is working as designed by performing a comprehensive health check • Provide engineer will work Pure support and user end to ensure that the FlashBlade is working as designed by performing a comprehensive health check • Provide a detailed overview of the Pure FlashBlade GUI and validate.	End User site Data center

* Please note the FlashBlade//S can weigh up to 275lb. It is therefore necessary to dispatch two Engineers to physically install the equipment.

Scoping Parameters

The installation is an onsite activity:

- This service must be consumed within 180-days from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.
- End User provision sufficient rack space and power (for installation).
- End User shall fully configure your data and management networks prior to the start of install.
- This service covers the installation of a single-chassis FlashBlade only.
- If Pure Fusion is to be enabled:
    - The End User shall provide the applicable LDAP related information within the Pure Engagement Request (PER form)
    - The End User will authorise the installation of the minimum Purity code required for Fusion

End User Responsibilities

End User shall give the Pure Services Coordinator the following information and Work Product before engaging any Pure technical resource:

- Review and address requirements within the Network Site Planning Document
- A completed pre-installation Workbook document and provide all pre-install information
- A completed Pure Storage Site Readiness and Pre-Installation Site Checklist
- Locations of rack and power for installation of system components
- Fully configured data and management networks
- Data network and management Ethernet connections to the designated install location for connection to the FlashBlade

Out of Scope

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SERVICE BRIEF

FlashBlade//S Single to Multi-chassis Conversion

Upgrade your existing FlashBlade//S from a single to multi-chassis environment.

Highlights

- Upgrading single FlashBlade//S to multi chassis
- Pure1 continuous monitoring and assistance

Flexibility

- Work with Pure Storage Advanced services team to implement according to your schedule.

Outcomes

- FlashBlade//S converted from a single to multi chassis environment

Pure Storage FlashBlade is the industry's most advanced storage for unstructured data, consolidating complex data silos to optimize infrastructure and accelerate tomorrow's discoveries and insights. FlashBlade//S allows capacity and performance to be scaled independently and can be continuously improved over time. This unique modular storage architecture offers flexible consumption choices while minimizing waste by using less power and space.

Pure Storage Advanced Services team can plan and execute a rapid deployment of your new multi-chassis conversion service. Pure Storage Advanced Services follow a strict methodology for deploying and configuring the Pure Storage FlashBlade multi-chassis array. Our approach ensures an effective time to value and that your environment is prepared for the workloads you plan to migrate to the FlashBlade.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

FlashBlade//S Single to Multi-Chassis Conversion Work Products

- **Pre-Implementation planning:** Our services team will conduct a discovery session to review your environment, confirm configuration details, and schedule the installation.
- **Hardware installation:** A Pure Storage implementation engineer will unpack, rack, cable, and power up your new FlashBlade and XFM switches
- **Network connectivity**: The team will help you connect to your FlashBlade, validate network connections, and assist with configuring client access and mounting NFS or SMB volumes.
- **Knowledge transfer:** After installation, the implementation engineer will work with your team to review the GUI, Cloud assist and phone home support

FlashBlade//S Single to Multi-Chassis Conversion Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage	• Our service team will conduct a discovery session to review your environment, confirm configuration details and schedule the installation.	Conference Email
Installation	Pure Storage	• Unpack FlashBlade® chassis, XFM switches, components, ensure all components are present and functional • Mount FlashBlade chassis rails into the cabinet • Slide FlashBlade chassis onto the rails and secure to the racks • Upgrade XFM switches, FlashBlade chassis and Purity//FB OS • Connect cables between chassis and XFM switches • Plug in appropriate network and management connections to the FlashBlade • Configure networking interfaces, XFM1 and XFM2 • Perform conversion • Phone home support	Onsite
Closure	Pure Storage End User	• We will help you connect to your FlashBlade, validate network connections, assist with configuring client access, and mounting a test NFS and/ or SMB volume. • After installation, we will work with your team to review the user interface, remote assist, and phone home support.	Conference Email

Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.
- Sufficient rack space and power provisioned for multi chassis conversion and XFM switches.
- Fully configured End User side data and management networks prior to the start of the conversion.
- The installation is an on-site activity.

End User Responsibilities

- Review and address requirements within the Network Site Planning Document.
- Provide rack and power distribution unit locations designated for installation of system components.
- Provide fully configured End User side data and management networks prior to the start of the installation.
- Provide data network and management Ethernet connections to the designated install location for connection to the FlashBlade chassis and XFM switches.

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SERVICE BRIEF

FlashStack Installation

Enhance your Pure Storage installation experience.

Highlights

- End to end installation
- Start configuring your solution sooner.
- Pure1® continuous monitoring and assistance for storage.

Flexibility

- Implement according to your schedule

Outcomes

- Fully integrated converged infrastructure solution
- Knowledge transfer for rapid adoption and operation
- Pure1 support activated and monitoring for storage

Pure Storage® offers a modern converged infrastructure solution that's smarter, simpler, smaller, and more efficient than ever before. Developed jointly with Cisco, the FlashStack® converged infrastructure delivers maximum performance and reliability for business-critical applications, DevOps, and modern analytics, right out of the box.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with you to evaluate, activate, and innovate IT solutions. Through the Service phases, we provide services and solutions to enable you to achieve your business outcomes. Pure Storage designed the FlashStack Installation Service for organizations that want assistance to get to the configuration of their solution quickly and enable them to activate the full potential of their systems.

FlashStack Installation Work Products

- **Pre-implementation planning:** Our team will conduct discovery to review your environment, confirm configuration details, and schedule the install.
- **Hardware installation:** A Pure Storage implementation engineer will unpack, rack, cable, and power up your new converged infrastructure.
- **Hardware check:** All hardware will be checked to confirm no dead on arrival components.
- **Setup:** Initial setup will be completed and management access tested to ensure the system is ready for configuration.
- **Knowledge transfer:** After installation, the implementation engineer will work with your team to review the installation, including Cisco UCS components, management network configurations, Pure Storage FlashArray configurations and next steps for configuration.

FlashStack Installation Service Delivery Methodology

Stage	Owner	Task	Method
Pre-planning	Pure Storage End User Authorized reseller (if applicable)	• Send installation checklist and complete pre-installation documentation • Schedule site survey, if required • Cable/Power Validation or Site Readiness in the pre-planning phase as well as software license validation to reduce installation delays. Also include CVD Design being selected	Teleconference Email
Planning and document completion	Pure Storage End User Authorized reseller (if applicable)	• Review completed document and pre-installation information • Allocate Pure Storage resource for installation • Formally schedule installation • Request data center access / open required tickets • Execute onsite install in alignment to the FlashStack installation workbook details • Rack and wire all components within the FlashStack Converged Infrastructure (CI)I architecture into rack(s)	Teleconference Email
Installation	Pure Storage End User Authorized reseller (if applicable)	• Complete standard installation and configuration of FlashArray(s) up to a maximum of 2. • Rack all Cisco UCS components up to a maximum of 2 chassis according to the installation workbook and complete power cabling. • Rack Cisco MDS & Nexus switch components up to a max of 2 each according to the installation workbook and complete power cabling. • Cable all Cisco components according to selected reference architecture. • Run through the initial setup of UCS to configure and test Management network connectivity.	End User site Data center
Post-installation	Pure Storage End User Authorized reseller (if applicable)	• Execute post-install health checks with Pure Storage support • Lead End User through GUI overview	End User site Data center

Scoping Parameters

- Sufficient rack space and power provisioned for installation
- The installation is an on-site activity
- Installation must follow selected Pure Storage and Cisco reference architecture validated design.
- This Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

Provide the Pure Storage Services Coordinator with all of the following information and Work Product prior to engaging any Pure technical resource:

- Completion of a Pure Storage Site Readiness and Pre-Installation Site Checklist and installation workbook.
- Select the required Pure Storage and Cisco validated reference architecture for the installation.
- All required software licensing, Access to Network resources (IP Address, etc)
- End User to provide rack space and power (PDU) for installation.

Out of Scope

- Any cabling requirements outside of the selected reference architecture design.
- Any Configuration of Cisco UCS, MDS &, Nexus beyond initial management IP address configuration.
- Upgrade of software on Cisco UCS, MDS & Nexus hardware.
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SERVICE BRIEF

Hybrid Cloud and Data Center Modernization Essentials Solution Package

Deploy block storage to the cloud and understand how to transform your IT storage infrastructure

Highlights

- Expert deployment of Pure Cloud Block Store with shoulder-to-shoulder knowledge transfer and best practices
- Establish an automation framework and develop roadmap for continual improvement and efficiency
- Work with Pure's Services team to implement either solution component according to your schedule

Outcomes

- Cloud Block Store Deployment
- Consulting on automation options
- Ad-hoc consulting

As organizations evolve, the need to modernize data centers and seamlessly integrate with cloud environments becomes paramount. The Hybrid Cloud and Data Center Modernization Essentials solution package from Pure Storage® is designed to help you navigate this transformation with ease. This package combines critical services that enable automation, optimize cloud deployments, and streamline operations, ensuring that your IT infrastructure is ready to meet the demands of today and tomorrow.

Solution Components

Storage Automation Advisory Workshop: Remote delivered workshop providing expert guidance on implementing automation frameworks to streamline storage operations, reduce manual intervention, and enhance scalability across your environment.

Pure Cloud Block Store™ deployment in AWS or Azure: Effortlessly deploy Pure Cloud Block Store in Amazon Web Services (AWS) or Azure ensuring optimal performance, simplicity, and cost efficiency in your cloud storage.

Ad-hoc consulting: Six days of mutually agreed upon ad-hoc consulting effort is included in this services package. Use the time to plan and kickstart implementation efforts such as observability integration, or start an automation project.

The End User Experience

The Hybrid Cloud and Data Center Modernization Essentials solution package empowers your organization to take full advantage of automation and cloud block storage capabilities. Whether you're looking to automate storage management, deploy cloud storage solutions, or optimize your data center for hybrid operations, this package provides the starting point you need to achieve your goals. By modernizing your infrastructure, you can reduce complexity, enhance performance, and drive greater operational efficiency.

Overview

Solution Package Deliverables

Pure Storage Service will provide the following deliverables as part of Hybrid Cloud and Data Center Modernization Essentials:

Solution Component	Deliverables
Storage Automation Advisory Workshop	Workshop overview: A comprehensive workshop designed to guide your strategy for implementing storage automation frameworks Automation framework guidance: Tailored advice on leveraging existing tools, plugins, and assets to automate storage operations Demonstration and recommendations: Live demonstration of storage automation modules and delivery of presentation content including proposed next steps and actionable recommendations
Pure Cloud Block Storage Deployment	Discovery and data gathering stage: Gather deployment requirements and fill-out of pre-installation questionnaire Design stage: As appropriate to AWS or Azure, review and validation of deployment requirements and checklists and ensure target environment readiness • For the AWS Marketplace, deploying CBS on AWS will require using Terraform. Implementation and deployment state: • For AWS, clone Pure Cloud Block Store deployment Github code into target environment. Prepare configuration for Pure Cloud Block Store and deploy it using Terraform. • For Azure, configure the Azure cloud environment. Configure email alerts or SNMP. Configure and validate Active Directory connectivity, if applicable, and, creation of a single Azure Resource Management (ARM) template image for Linux utilizing configuration specific to Pure Cloud Block Store. Post Implementation Stage: Deliver post-installation report and validate access. Provide knowledge transfer.

Solution Component	Deliverables
Ad-hoc Consulting	Six (6) days of Advanced Services consulting and/or project management time.

Scoping Parameters and End User Responsibilities

Please refer to the individual Service Brief for each service component for additional details.

Out of Scope

Anything not listed and detailed in the Scoping Parameters section of this document or in the individual service brief for each service component is out of scope for Pure Storage.

About Pure Services

Whether you are planning your next-generation storage system, need specialized know-how for a major storage deployment, or want to optimize the investment in your digital transformation, Pure Services and our certified partners have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business. Contact your local Pure sales representative or visit www.purestorage.com.

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SERVICE BRIEF

NetBackup and Pure Storage Integration Enablement

Optimize your NetBackup environment on Pure Storage.

79%

of organizations have at least one attempted ransomware attack (successful or not) within the last 12 months.

Highlights

- NetBackup and Pure Storage combined for robust data protection.
- Optimize backups for faster, more efficient operations.

Outcomes

- Implement optimal configurations for simplicity and efficiency.
- Strengthen defenses against cyber threats.
- Achieve quick data recovery to minimize downtime.

Our one-day workshop provides a comprehensive guide to integrating Pure Storage FlashArray and FlashBlade with Veritas NetBackup, combining all-flash performance with easy management for robust data protection and recovery. In today's cyber threat landscape, we'll equip your team with best practices to optimize backup operations and enhance performance.

As data demands grow, traditional backup methods can be inefficient. By leveraging FlashArray and Veritas NetBackup, you can streamline backup and recovery, ensuring fast, reliable protection and recovery. This integration boosts efficiency, scalability, and cyber resilience. Join us to learn how to optimize performance, simplify operations, and achieve a strong ROI.

The End User Experience

End users can anticipate a significant enhancement in their backup and recovery experience with the integration of Pure Storage arrays and Veritas NetBackup. The service includes a one day workshop covering NetBackup features and best practices and a workshop slide deck with best practices. Here's what End Users can expect:

- **Effortless Backup Operations:** The integration ensures backups are quick and efficient, minimizing any impact on daily activities and allowing end users to continue their work without disruptions.
- **Rapid Data Recovery:** In the event of data loss or corruption, end users will benefit from fast and reliable data recovery, ensuring minimal downtime and maintaining productivity.
- **Robust Data Protection:** The combination of Pure Storage and Veritas NetBackup provides a highly reliable data protection solution, reducing concerns about data integrity and availability.
- **User-Friendly Management:** The streamlined integration simplifies backup and restore management, making it more intuitive for IT administrators and resulting in quicker issue resolution and less downtime for end users.
- **Enhanced Cyber Resilience:** End users can expect robust protection against cyber threats, ensuring data security and peace of mind in a landscape of increasing cyber risks.
- **Simplified Operations**: The integration reduces the complexity of traditional backup and restore procedures, providing a straightforward and efficient system that allows end users to focus on their core tasks without worrying about data protection issues.

NetBackup & Pure Storage Integration Enablement Delivery Methodology

Stage	Owner	Task	Method
Pre-Planning	Pure Storage End User	• Pure Storage will share the Pre-Engagement Questionnaire to understand more about the Customer environment. • Pure Storage will update and enhance Workshop Deck and Contents based on information provided	Teleconference Email
Workshop	Pure Storage End User	• Pure Storage will deliver a one-day workshop covering: • **NetBackup Components:** Architecture overview, MSDP architecture, MSDP-C architecture, Media Server load balancing, Storage Lifecycle Policies, transport modes. • **NetBackup MSDP Storage Presentation:** Configuration with FlashArray and FlashBlade. • **NetBackup MSDP Storage Server Configuration**: Repository best practices, backup job configuration. • **NetBackup MSDP (Media Server Deduplication Pool) – Best Practices:** Protection using FlashArray and FlashBlade. • **NetBackup MSDP-C (Media Server Deduplication Pool Cloud) – Best Practices:** Protection using FlashBlade and S3. • **Backup Duplication:** ActiveCluster, Auto Image Replication, SLPs, NBU Catalog duplication.	Onsite Teleconference Email
Closure	Pure Storage End User	• Pure Storage will follow up on any open questions. • Pure Storage to leave NetBackup Advisory Workshop Slide Deck with End User.	Teleconference Email

Scoping Parameters

- The service can be delivered either onsite or remotely.
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Complete the Pre-Engagement questionnaire document.
- Ensure engagement and attendance of relevant teams and subject matter experts in the workshop.

Out of Scope

- Design and documentation of specific architectures
- Implementation and configuration of customer specific environments.
- Integration of 3rd Party software

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Onboarding Essentials Solution Package

Accelerate productivity and operational efficiency

Highlights

- Optimize your deployment with expert solution design, end-to-end testing and an operations guide
- Work with Pure Storage Services team to implement either solution component according to your schedule

Outcomes

- Operational Best Practices
- SafeMode Advice

Integrating new storage solutions into existing environments can be complex and challenging. Ensuring your system is optimized for success from the start and fully leveraging the capabilities of the Pure Storage® platform can be daunting tasks. The Onboarding Essentials solution package from Pure Storage addresses these challenges with services that deliver operational best practices and configuration that allows you to quickly realize the full potential of your Pure Storage investments.

The End User Experience

Beginning your journey with Pure Storage involves critical steps to ensure your environment is optimized and secure from the outset. Our Onboarding Essentials solution package is designed to provide a robust starting point, helping you navigate initial complexities and establish a solid foundation.

By integrating key operational and security services, we minimize disruptions and maximize value, enabling your IT team to focus on strategic initiatives and fully benefit from the Pure Storage platform.

Onboarding Essentials Solution Package Work Products

- **Design and Operational Readiness Service for FlashArray or FlashBlade:** Expert solution consulting to incorporate operational best practices and ensure your environment is optimally running.
- **SafeMode™ Advisory Workshop:** Expert advice on how SafeMode enhances your cyber resilience capabilities.

Onboarding Essentials Solution Package Deliverables

Solution Component	Deliverables
Design and Operational Readiness for FlashArray or FlashBlade	• Design workshop and kickoff: Detailed solution design from experienced architects, covering security, availability, advanced features, integration with external systems, management, and support. • Documentation of functional and non-functional requirements • End-to-end test planning and execution: Comprehensive testing tracked against requirements and design blueprint. • Operations guide: Detailed documentation for ongoing management and operations. • Knowledge transfer: Advanced knowledge transfer sessions to ensure your team is fully equipped to manage and optimize your Pure Storage environment.
SafeMode Advisory Workshop	• Workshop overview: A four-hour workshop providing best practices and tailored advice for implementing data protection features on FlashArray systems. • SafeMode and snapshot technology overview: Explanation of SafeMode and snapshot technology and benefits. • Implementation best practices: Guidance on best practices for ongoing usage of SafeMode and snapshot retention recommendations. • Assessment and review of feature adoption: Review and recommendation of best practices in adopting SafeMode and incorporating capabilities in a broader data protection approach.

Scoping Parameters and End User Responsibilities

- Please refer to the individual Service Brief for each service component for additional details.

Out of Scope

- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Portworx Backup and Design Deployment

Clearly defined, outcome driven design and deployment.

Highlights

- Your environment, your dates – All work pivots off your production to live dates
- Designed from the ground up to meet your requirements
- Outcome driven workshops to identify the best possible design
- Work with global team of delivery professionals to implement according to a strict methodology

Outcomes

- Single instance of PX-Backup deployed in your environment
- Detailed report showing the deployment configuration
- Ensure your team are ready for production workloads

Leverage Portworx Professional Services to reduce time-to-value from your PX backup investment. Deploy a container-native backup solution that is built for Kubernetes, simplifying compliance and data protection in your environment, to your requirement and to your deadlines.

PX backup provides self-service management to your application owners to backup and restore their applications anywhere. Built from the ground up, your teams can leverage PX Backup for more than protection. With multi-cloud capabilities, restores can be performed between any cloud, hybrid, or on-prem environment.

The End User Experience

Our outcome-based approach is built on a collaborative effort between our customers and our consultants. Experience tells us that in these environments, to move with consideration is to move with speed.Our architects will work with your teams during the design phase to ensure the PX Backup solution meets your requirements.

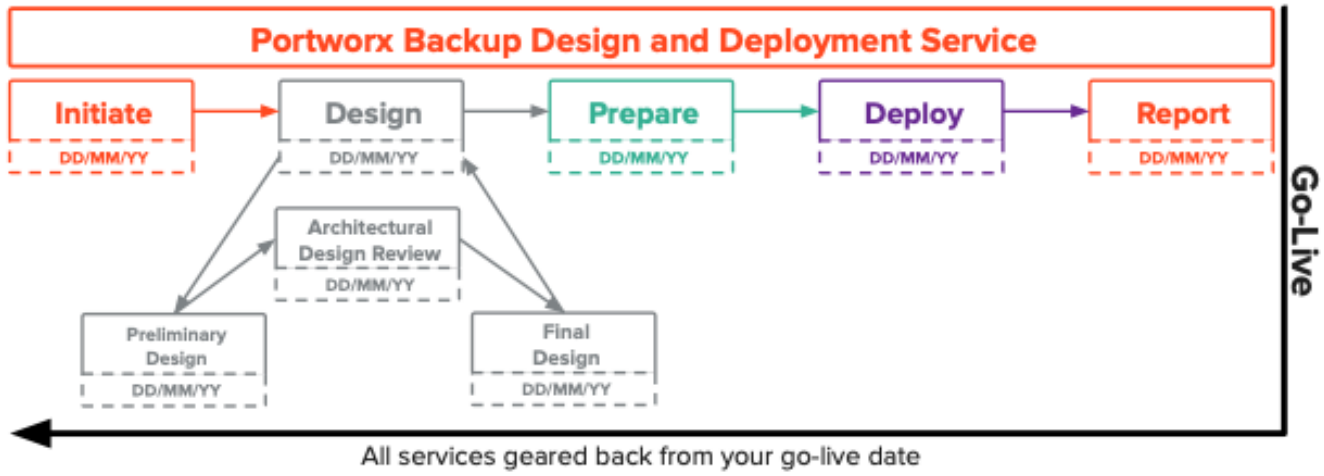
Portworx Backup and Design Deployment Work Products

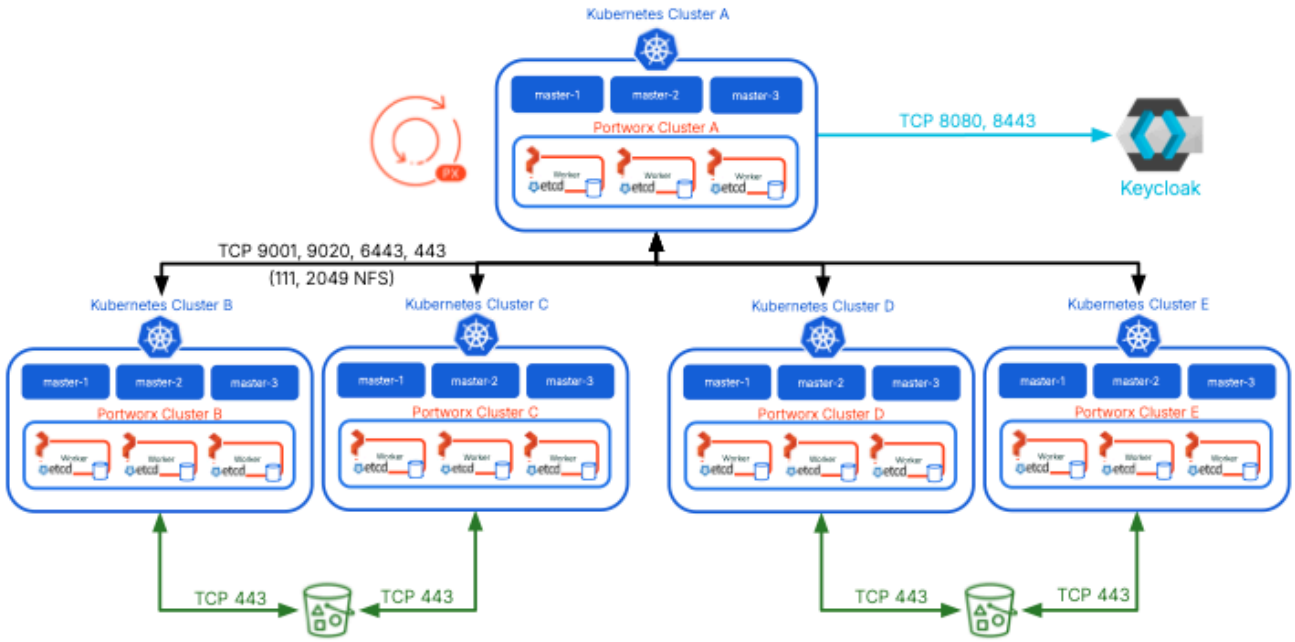
This service, delivered over five distinct phases, is designed to take our customers with us through the design and implementation of their Portworx solution. The complete service includes a single installation of PX Backup and an as built report.

Portworx Backup and Design Deployment Service Introduction

The stages of delivery permeate the entire process. We will work with your teams during the Initiate, Design, Prepare, Deploy, and Report phases. Ensuring, at each stage, we are working with you and your teams to ensure the best possible outcome.

Should multiple Professional Services offerings be purchased, covering Portworx Enterprise, PX Backup, and PX DR then a holistic approach to design and delivery will be undertaken, ensuring a coherent strategy to deployment.





Portworx Backup and Design Deployment Delivery Methodology

Stage	Description
Initiate	• Initial call to discuss the capabilities and structure of the service, its requirements and the division of responsibilities • Any environmental prerequisites determined (hardware delivery, for example) • Preliminary dates for future phases agreed and entered into project plan
Preliminary design	• Discuss in depth the requirements from PX Backup in your environment, using your target end state as a reference point • Discuss feature adoption in PX Backup, ensuring maximum value for your investment • Information to be processed with the results presented in the Final Design phase • Review of project plan taking into account any amendments to the schedule
Final design	• Design is presented to the customer in a final review session • Final Design is agreed and signed off, indicating all elements and requirements have been addressed, within scope of this service • Any amendments to the design after this phase will require additional effort, may be billed separately, and will introduce delays to the project • Project plan updated
Prepare	• Portworx Professional Services will process the outcome from the two-phase design stage, and deploy the PX backup helm chart incorporating any customization for your environment to ensure successful implementation • Dates for deployment agreed with the customer and entered into project plan • Installation Readiness checklist completed and returned by the customer, indicating the environment meets all the prerequisites for installation
Deploy	• PX backup to be deployed using the Helm chart, incorporating the parameters necessary to meet the design requirements agreed • Assist in configuration of a supported external OIDC provider, if applicable to the solution • Configure supported NFS/S3 targets as a backup location • Import downstream clusters in to PX backup configuration, where environment allows • Perform a backup and restore of an example workload provided by Pure storage • Demonstrate the construction of a backup job utilizing a schedule • Demonstrate the use of labels to automatically protect new workloads • Assist with the integration of PX Backup into a supported monitoring solution • Provide a PX Backup dashboard for Grafana, if applicable
Report	• PDF report detailing design decisions, a visual representation of the implementation, a log of any modifications made which would aid future deployments, and as-deployed YAML • Project closure

Scoping Parameters

- Installation of a single PX-backup cluster
- Installation and configuration of PX Central, the License Server, and the Monitoring Server (if required)
- This service does not include installation on the Nomad platform. Please contact servicessalesdesk@purestorage.com for installation quotes on this platform.
- All services are delivered remotely
- All services are delivered in English
- Pure assumes the customer has purchased and has available the correct licenses to apply PX-backup.
- This Service must be consumed within 12 months from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- To provide an environment which meets all the minimum requirements for PX Backup
- To ensure the necessary network is in place to make the PX Backup GUI available
- Any environmental remediation outside of the scope of PX Backup including, but not limited to, Kubernetes, networking, security, operating system, hypervisor, storage (including SAN configuration)
- The full, timely completion of the Installation Readiness Checklist. Failure to complete this form or providing inaccurate information will lead to implementation delays which may be chargeable.
- Provision of a team to cover all skills required for deployment, who have the required level of access to make the appropriate changes
- The attendance of all interested parties in the design workshops
- Provide appropriate advanced notice of a change to the agreed schedule

Out of Scope

- Kubernetes design and implementation.
- Portworx design and implementation.
- PX DR design and implementation.
- PX Backup integration with any automation tooling.
- Travel and expenses. Travel and expenses are to be invoiced off of actuals after the conclusion of this service.
- Performance testing.
- Anything unrelated to PX-backup.
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Portworx DR Design and Deployment

Clearly defined, outcome-driven Portworx DR solutions

Highlights

- Your environment, your dates – All work pivots off your production go-live dates
- Designed from the ground up to meet your requirements
- Outcome driven workshops to identify the best possible design
- Work with global team of delivery professionals to implement according to a strict methodology

Outcomes

- Single deployment of Portworx SYNC DR or Portworx SYNC DR configured, deployed and tested
- Detailed report showing the deployment configuration
- Ensure your team are ready for production workloads

Leverage Portworx to reduce time-to-value from your Portworx DR investment. Deploy either a Synchronous or Asynchronous replication solution in your environment, to your requirements, and to your deadlines.

Portworx is the leading cloud native storage solution for container-based workloads. Our Professional Services organization is ready to help you and your teams design, deploy, and run the Portworx DR solution that best fits your requirements.

The End User Experience

Our outcome-based approach is built on a collaborative effort between our customers and our consultants.

Experience tells us that in these environments, to move with consideration is to move with velocity. Our architects will work with your teams during the design phase, to ensure the Portworx DR solution meets your requirements.

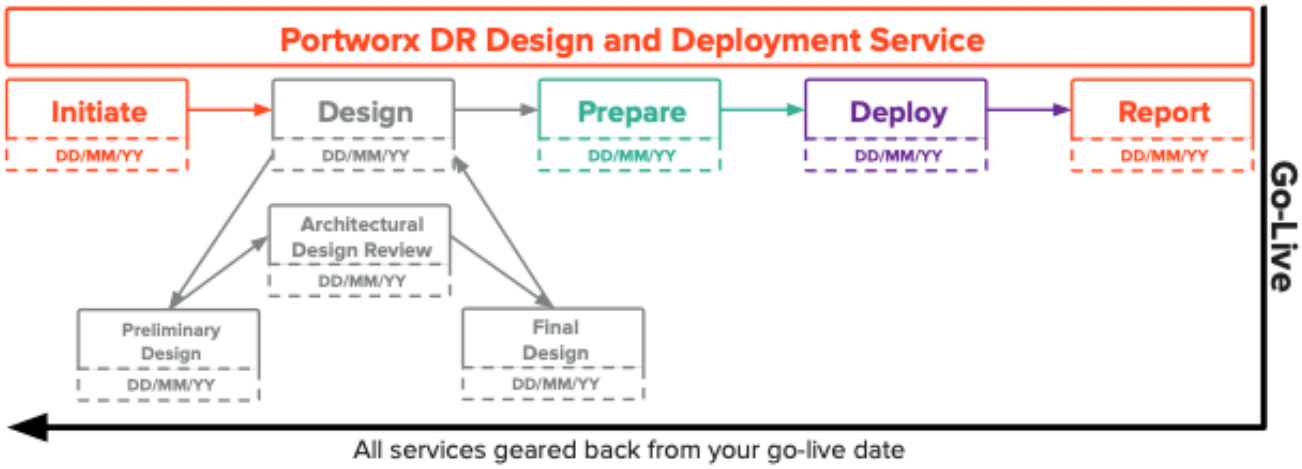
This service, delivered over five distinct phases, is designed to take our customers with us through the design and implementation of their Portworx solution. topic.

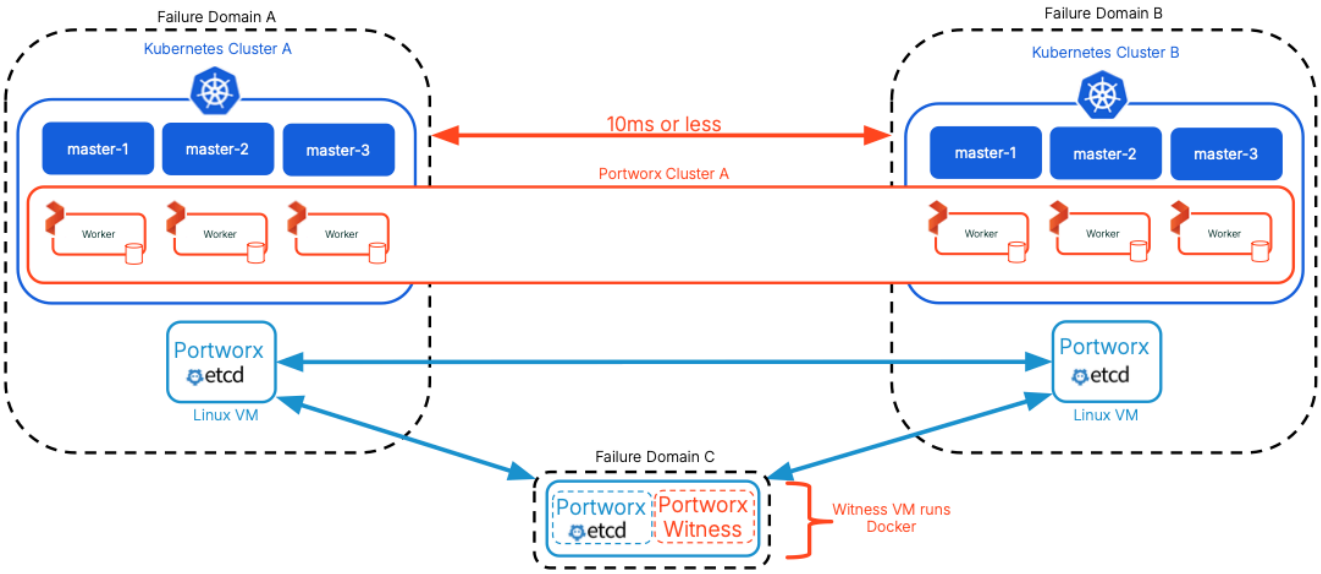
Portworx DR Design and Deployment Work Product

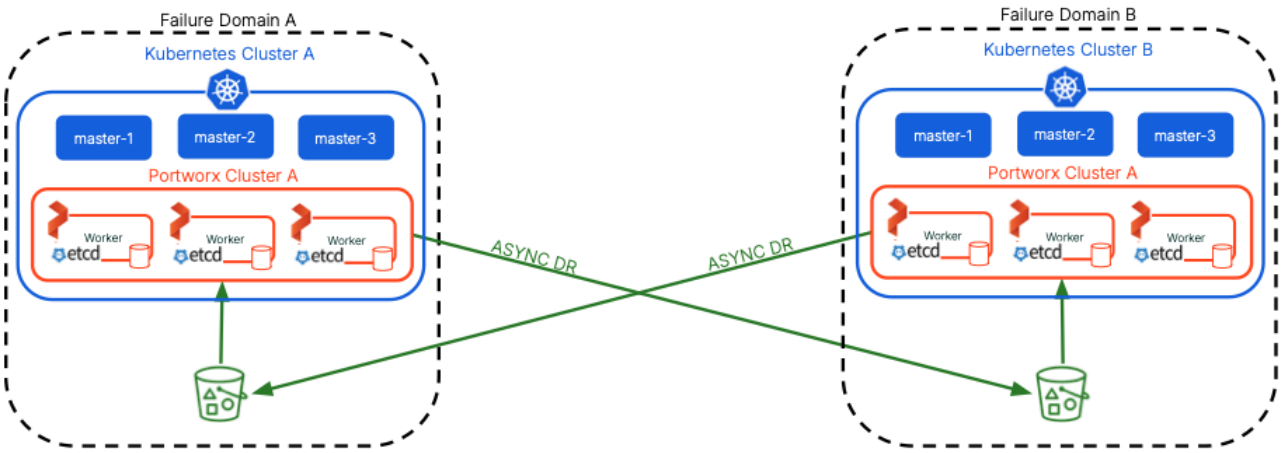
- A single installation of ASYNC or SYNC Portworx solution
- As built report.

Portworx DR Design and Deployment Delivery Methodology

The stages of delivery permeate the entire process. We will work with your teams during the Initiate, Design, Prepare, Deploy, and Report phases. Ensuring, at each stage, we are working with you and your teams to ensure the best possible outcome.







Stage	Description
Initiate	• Initial call to discuss the capabilities and structure of the service, its requirements and the division of responsibilities • Any environmental prerequisites determined (hardware delivery, for example) • Preliminary dates for future phases agreed and entered into project plan
Preliminary design	• Discuss in depth the requirements from PX Backup in your environment, using your target end state as a reference point • Discuss feature adoption in PX Backup, ensuring maximum value for your investment • Information to be processed with the results presented in the Final Design phase • Review of project plan taking into account any amendments to the schedule
Final design	• Design is presented to the customer in a final review session • Final Design is agreed and signed off, indicating all elements and requirements have been addressed, within scope of this service • Any amendments to the design after this phase will require additional effort, may be billed separately, and will introduce delays to the project • Project plan updated
Prepare	• Portworx Professional Services will process the outcome from the two-phase design Stage, and produce the deployment YAML needed for a successful implementation of Portworx SYNC DR or Portworx ASYNC DR • Dates for deployment agreed with the customer and entered into project plan • Installation Readiness checklist completed and returned by the customer, indicating the environment meets all the prerequisites for installation

Deploy	• Either Portworx SYNC DR or Portworx ASYNC DR to be deployed and tested using a workload provided by Pure Storage • Create application-specific StorageClasses for your RWO or RWX workloads • Test failover and failback of workload provided by Pure Storage • Ensure volume placement strategy is working as design, if required • Perform example snapshot and restore of Portworx volume, repeat process to a new volume • Integrate Portworx metrics with a supported external monitoring solution • Provide official Grafana dashboards for Portworx, if required • Configure access to a supported S3 location for Cloudsnaps, if required • Deploy and test AutoPilot rules, if required • Additional testing and knowledge sharing to ensure your team and ready for Day one of production • Data collected for inclusion in Report
Report	• PDF report detailing design decisions, a visual representation of the implementation, a log of any modifications made which would aid future deployments, and as-deployed YAML • Project closure

Scoping Parameters

- Installation of either:
    1. A single SYNC MetroDR cluster spanning two Kubernetes clusters or
    2. A single ASYNC MetroDR cluster spanning two Kubernetes clusters
- ASYNC DR requires two Kubernetes clusters and two installations of Portworx. If the second Portworx cluster is not present, this service will aid in the deployment of the second cluster in ASYNC DR. It will not cover other Portworx installations
- No maximum number of nodes per cluster
- All services delivered remotely
- All services are delivered in English
- This service does not include the provision of an external etcd cluster, as required by Portworx SYNC DR
- This Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.
- Customer must purchase the correct licensing.

End User Responsibilities

- To provide an environment which meets all the minimum requirements for Portworx and SYNC DR or ASYNC DR
- The provision, configuration, and security of an external etcd cluster for SYNC DR (this is a hard requirement for SYNC DR)
- For SYNC DR, End User is responsible for supplying a network which can provide 10ms or less latency between all three sites)
- Any environmental remediation outside of the scope of Portworx including, but not limited to, Kubernetes, networking, security, operating system, hypervisor, storage (including SAN configuration), any work relating to the resolution of certificate errors
- The full, timely completion of the Installation Readiness Checklist. Failure to complete this form or providing inaccurate information will lead to implementation delays which may be chargeable.
- Provision of a team to cover all skills required for deployment, who have the required level of access to make the appropriate changes

- The attendance of all interested parties in the design workshops
- Provide appropriate advanced notice of a change to the agreed schedule

Out of Scope

- Kubernetes design and implementation.
- PX backup design and implementation.
- PX Backup integration with any automation tooling.
- Travel and expenses. Travel and expenses are to be invoiced off of actuals after the conclusion of this service.
- Helm-based installations
- Anything unrelated to PX-backup.
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SERVICE BRIEF

Portworx Enterprise Design and Deployment

Clearly defined, outcome driven design and deployment

Highlights

- Your environment, your dates – All work pivots off your production go live dates
- Designed from the ground up to meet your requirements
- Outcome driven workshops to identify the best possible design
- Work with global team of delivery professionals to implement according to a strict methodology

Outcomes

- Portworx Enterprise deployed to the agreed design on up to three clusters
- Detailed report showing the deployment configuration
- Ensure your team are ready for production workloads

Leverage Portworx Professional Services to reduce time-to-value from your Portworx Enterprise investment. Deploy the GigaOm-recognised leader in Cloud Native storage in your environment, to your requirements, and to your deadlines. Portworx is the leading cloud native storage solution for container-based workloads. Our Professional Services organization is ready to help you and your teams design, deploy, and run the Portworx Enterprise solution that best fits your requirements.

The End User Experience

Our outcome-based approach is built on a collaborative effort between our customers and our consultants.

Experience tells us that in these environments, to move with consideration is to move with speed. Our architects will work with your teams during the design phase to ensure the Portworx solution meets your requirements.

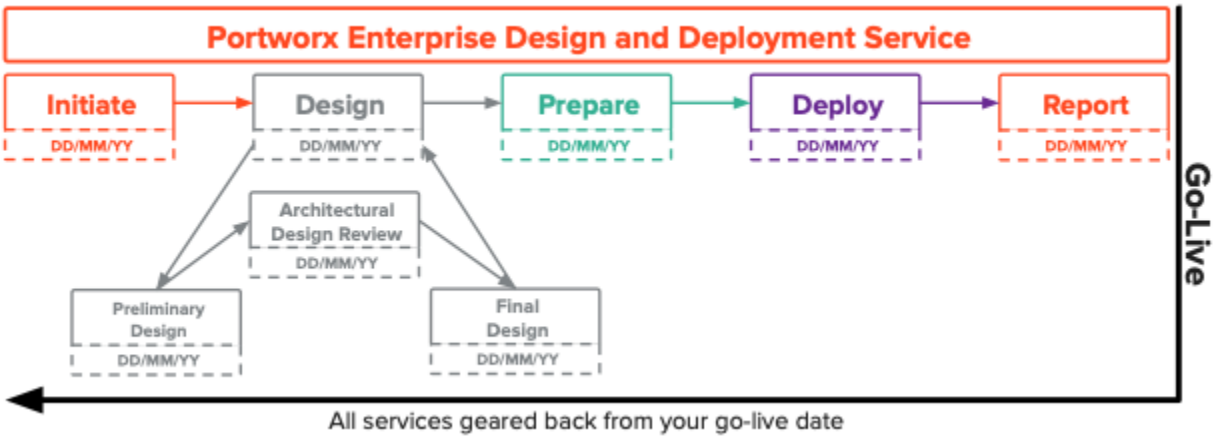
This service, delivered over five distinct phases, is designed to take our customers with us through the design and implementation of their Portworx solution.

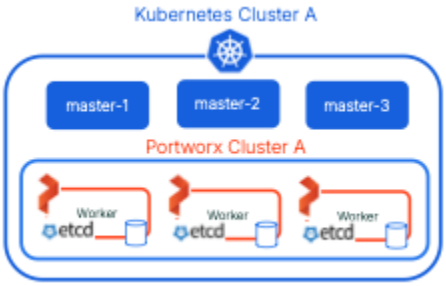
Portworx Enterprise Design and Deployment Work Products

- Up to three installations of Portworx Enterprise or Portworx CSI for FlashArray/FlashBlade
- As built report

Portworx Enterprise Design and Deployment Delivery Methodology

The stages of delivery permeate the entire process. We will work with your teams during the Initiate, Design, Prepare, Deploy, and Report phases. Ensuring, at each stage, we are working with you and your teams to ensure the best possible outcome. Should multiple Professional Services offerings be purchased, covering Portworx Enterprise, PX Backup, and PX DR then a holistic approach to design and delivery will be undertaken, ensuring a coherent strategy to deployment.





Stage	Description
Initiate	• Initial call to discuss the capabilities and structure of the service, its requirements and the division of responsibilities • Any environmental prerequisites determined (hardware delivery, for example) • Preliminary dates for future phases agreed and entered into project plan
Preliminary design	• Discuss in depth the requirements from PX Enterprise in your environment, using your target end state as a reference point

	• Discuss feature adoption in PX Enterprise, ensuring maximum value for your investment • Investigate if PX Central, with its License Server and Monitoring capabilities, is to be deployed • Information to be processed with the results presented in the Final Design phase • Review of project plan taking into account any amendments to the schedule
Final design	• Design is presented to the customer in a final review session • Final Design is agreed and signed off, indicating all elements and requirements have been addressed, within scope of this service • Any amendments to the design after this phase will require additional effort, may be billed separately, and will introduce delays to the project • Project plan updated
Prepare	• Portworx Professional Services will process the outcome from the two-phase design stage, Stage, and produce the deployment YAML needed for a successful implementation of Portworx • If required, the PX Central helm chart will be prepared • Dates for deployment agreed with the customer and entered into project plan • Installation Readiness checklist completed and returned by the customer, indicating the environment meets all the prerequisites for installation
Deploy	• Portworx to be deployed and tested using a workload provided by Pure Storage • PX Security enabled and PX Security compatible StorageClasses defined • Configure access to a supported S3 location for Cloudsnaps, if required • The example workload will leverage RWO and RWX deployments to demonstrate: 1. Scaling of frontend RWX workload 2. Volume Snapshots 3. Group volume Snapshots 4. Volume Snapshots 5. Rescheduling of workload on node failure • Deploy an example Postgres workload to demonstrate volume snapshot backup and restore to a new volume • Creation of application-specific StorageClasses for your RWO or RWX workloads • Creation and testing of VolumePlacementStrategy, if required • Integrate Portworx metrics with a supported external monitoring solution, if required • Provide official Grafana dashboards for Portworx, if required • Configure Portworx-level encryption, if required • Deploy and test AutoPilot rules, if required • Deploy PX Central, License Server, and Monitoring Server, if required • Integrate the deployed Portworx clusters into PX Central, if required • Data collected for inclusion in report

Report	• PDF report detailing 1. Design decisions 2. A visual representation of the implementation 3. A log of any modifications made which would aid future deployments 4. As-deployed YAML 5. Day 2 operations list • Project closure

Scoping Parameters

- Installation of up to three Portworx clusters on similarly platformed, supported kubernetes solutions (for example, three installations on Rancher or three installations on Openshift, but not a combination of the two). Please contact servicessalesdesk@purestorage.com for clarification before purchase, if required
- This service includes the design, installation, and configuration of the following Portworx Products:
  - Portworx Enterprise or
  - Portworx CSI for FlashArray/ FlashBlade or
- No maximum number of nodes per cluster
- This service does not include installation on the Nomad platform. Please contact servicessalesdesk@purestorage.com for installation quotes on this platform
- Installation of a single PX Central instance
- All services are delivered remotely
- All services are delivered in English
- This service does not include the provision of an external etcd cluster, should a customer opt for it
- This service must be consumed within 12 months from the order being accepted by Pure Storage. Upon expiration, no refunds of prepaid service fees will be provided

End User Responsibilities

- To provide an environment which meets all the minimum requirements for PX Backup
- To ensure the necessary network is in place to make the PX Backup GUI available
- Any environmental remediation outside of the scope of PX Backup including, but not limited to, Kubernetes, networking, security, operating system, hypervisor, storage (including SAN configuration)
- The full, timely completion of the Installation Readiness Checklist. Failure to complete this form or providing inaccurate information will lead to implementation delays which may be chargeable.
- Provision of a team to cover all skills required for deployment, who have the required level of access to make the appropriate changes
- The attendance of all interested parties in the design workshops
- Provide appropriate advanced notice of a change to the agreed schedule

Assumptions

- Customer has purchased the required amount of licenses and has received them in a suitable format.
- For Portworx CSI: The network connectivity between the kubernetes cluster and the FlashArray/FlashBlade has been successfully tested.

Out of Scope

- FlashArray/FlashBlade management network exists
- PX Backup design and implementation
- PX DR design and implementation
- Portworx integration with any automation tooling
- Helm-based installations of Portworx
- Travel and expenses are to be invoiced off of actuals after the conclusion of this Service
- Performance testing
- Anything unrelated to Portworx
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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Portworx Health Check Service

Expert assistance and validation of your Kubernetes persistent storage based on the Portworx Enterprise platform.

Highlights

- A Full health check of an existing Portworx implementation

Flexibility

- Work with Pure Storage service team to implement according to your schedule

Outcomes

- Comprehensive report and recommendations.

Enterprise applications running on Kubernetes have non-negotiable business requirements like high availability, data security, backup and disaster recovery, strict performance SLAs and hybrid/multi-cloud operational considerations.

Portworx provides a purpose-built, enterprise-class container infrastructure for Kubernetes-based platforms which includes a scalable, redundant, automated, distributed storage layer that allows for deploying stateful containerized applications efficiently. Application data migration, snapshots, data backups, topology awareness, and other enterprise features make Portworx an invaluable technology for customers with application containerization projects.

The End User Experience

Pure Storage Services is an integral part of the Pure Storage Customer Experience (CX) team and is missioned with helping customer organizations evaluate, activate and innovate their IT solutions.

The Portworx Health Check Service, delivered by Pure Storage Services, includes a comprehensive health check and recommendation report for up to three Portworx Clusters.

Portworx Health Check Delivery Methodology

Stage	Owner	Task
Health check	Pure, End User, Partner (if applicable)	A health check will be performed on your existing Portworx enterprise cluster(s). This health check will include analysis of the adoption and deployment of the following features: • Disaster recovery • Capacity management • PX-Central • Backup and restore • Security As well as assessing the operational process for: • Key-value database(etc'd) deployment configuration • Infrastructure deployment • Volume and storage pool management • Monitoring • Support Once the health check is complete, a report is provided to the customer including recommendations.

Scoping Parameters

- All Services are delivered remotely
- This Service is valid on up to a maximum of three Portworx clusters
- This Service must be consumed within 12 months from the order being accepted by Pure, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

The following items must be in place or provided for Pure Storage Services to quickly and successfully deploy the Portworx environment:

- Pure Storage Service requires that the End User has command line access to their Kubernetes-based clusters so settings can be remotely reviewed via teleconference.
- It is important that we have access to End User resources who are responsible for administration of the Kubernetes cluster, including compute nodes, networking, etc.

- To keep projects on schedule and ensure the necessary personnel will be available, it is important that both parties adhere to agreed-upon schedules and provide ample notice of any changes to those schedules.

Out of Scope

- Kubernetes design and implementation
- Portworx solution design and implementation
- Support for production application deployment
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SERVICE BRIEF

Pure Storage Dark Site Health Check

Array Evaluation for Dark Site Customers

Highlights

- On-Site Evaluation (Health Check) of your FlashArray..

Flexibility

- Work with Pure Storage Services to implement according to your schedule.

Outcomes

- Health-check report with recommendations

Whether for security or regulatory reasons; Pure Storage customers may have a requirement to operate their Pure Storage equipment within a restricted data center, whereas the kit is air-gapped and is prevented from establishing an external connection.

In these scenarios any proactive monitoring solutions such as dial-home or Pure1® (Pure Storage cloud-based as-a-service data-management platform) are not permitted. The only way to proactively monitor or validate an array is by attending site to carry out a visual inspection. Pure Storage Services offers a dark site Evaluation (Health Check) Service for Pure Storage arrays and provides a dedicated Subject Matter Expert onsite to validate your equipment.

The End User Experience

Pure Storage Services helps you realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

Dark Site Health Check Work Products

- Evaluation/ Health Check of in-scope arrays.
- Healthy Check Report and Recommendations.

Dark Site Health Check Delivery Methodology

Stage	Owner	Task	Method
Planning	Pure Storage	Obtain any array information (version, model & serial number)if possible Check whether there are any existing Service Cases open for array(s)	Onsite
On-Site Evaluation	Pure Storage, End User	Perform Pure Storage standard Health Check on in-scope array(s), including: • Checking for error messages • Checking for drive wear level • Checking self configuration, type & version • Checking drive type(s), data pack information & firmware versions • Checking array data capacity & configuration	Onsite
Post Health-Check	Pure Storage	Perform Pure Storage standard Post-Health Check activities, including: • Reviewing open tickets requiring break fix work • Providing Pure Storage standard Health Check Report • Providing recommendation(s) or applicable best practices	Onsite

Scoping Parameters

- This resource that Pure Storage dispatches to site will not be a security cleared resource
- The service is applicable to a single site only (any in-scope arrays must be located at the same site).
- The customer will provide a site contact to work with the Pure Storage resource during the visit.
- Maximum of two Purity upgrades per array within a 12 month period.
- The service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- On a timely basis & within the agreed schedule, arrange site access for the Pure Storage resource.
- Arrange for a competent, qualified site contact to be available to assist the Pure Storage resource throughout the duration of the activity, on a timely basis.
- On a timely basis & within the agreed schedule provide any access to the Pure Storage arrays and/ or any other equipment, tools resources, as required.

Out of Scope

- Health Check or validation of any none in-scope Pure Storage FlashArray.
- Any performance monitoring or recommendations.
- The service is valid for up to a maximum of four FlashArray.
- The health check is limited to the Pure Storage FlashArray in scope & does not cover other technology within the environment.
- The service is valid for a single site visit only.
- The service is not valid for any net new FlashArray installations.
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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

SafeMode Quick Start Service

Rapidly deploy immutable snapshots asynchronous replication, and SafeMode guided by Pure Storage Services

Highlights

- Understand SafeMode Technology
- Learn best practice with our experts
- Enable greater data protection via immutable, instant Purity snapshots.

Flexibility

- Work with Pure Services according to your schedule.

Outcomes

- Asynchronous replication between FlashArray//X & FlashArray//C or
- Snapshot offload to FlashBlade via NFS
- Increased protection via SafeMode enablement.

Ransomware attacks remain a top concern for business and IT leaders due to the severe impact they can have on access to critical data. The consequences can include paying attackers, struggling with decryption tools, or relying on uncertain backups. Despite investing millions in securing data entry points, many organizations overlook the importance of enhancing data protection. While backups protect against disasters, corruption, or deletions, ransomware can overwhelm existing systems. Pure Storage® SafeMode™ adds an extra layer of protection by complementing snapshot immutability with its irreversible function. The Pure SafeMode Quick Start Service helps users quickly enable this enhanced data protection.

The End User Experience

Pure Storage Professional Services is an integral part of the Pure Customer Experience (CX) team and its mission is helping End User organizations evaluate, activate and innovate their IT solutions.

The SafeMode Quick Start Service is designed for End Users looking to configure SafeMode as part of a Ransomware Recovery Bundle, whether with a new FlashArray//X and FlashArray//C, or a new FlashArray//X and FlashBlade.

SafeMode Quickstart Work Products

- Configure asynchronous replication between a new FlashArray//X and a new FlashArray//C or
- Configure snapshot offload via NFS from a new FlashArray//X to a new FlashBlade
- Deploy example snapshot and replication policies via Protection Groups
- Demonstrate Protection behavior before and after SafeMode enablement
- End User deck with background information and deployment configuration

SafeMode QuickStart Delivery Methodology

Stage	Owner	Task	Method
Initiation	Pure Storage End User	• Confirm the customer has met all prerequisites for asynchronous replication or offload. • Ensure all hardware is racked and cabled correctly • Agree Delivery Schedule	Email
Quickstart Workshop	Pure Storage	• Discuss the anatomy of an attack & how this informs your protection group settings. • Introduce SafeMode & how it protects your snapshots. • Explain SafeMode enablement process.	Video Conference
Replication Configuration SafeMode Enablement	Pure Storage	• Configure a single protection group with both local & replication schedules(with replication either via asynchronous replication to FlashArray//C, or via Snap to NFS for offload to FlashBlade).Test behavior is as expected. • Work with Pure Storage Support to enable SafeMode • Demonstrate Protection behavior before & after SafeMode enablement.	Video Conference
Closure	Pure Storage	• Provide a sanitized Workshop Deck summarizing snapshot, replication or offload settings, and SafeMode configuration.	MS PowerPoint Deck

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SERVICE BRIEF

Storage Assessment and Optimization Workshop

Start with a focused analysis of your data-storage environment and drive transformation into the core of your operations.

Highlights

- Comprehensive analysis of data storage environment
- Storage experts view of your storage infrastructure
- Excellent storage planning tool

Flexibility

- Work with Pure Storage services team to implement according to your schedule

Outcomes

- In-depth analysis of current storage environment
- Recommendations to address your unique storage requirements
- Use of industry best practices to identify any gaps in your data storage plan

The Assessment and Optimization Workshop offered by Pure Storage Services is a comprehensive infrastructure discovery and analysis service designed to provide storage managers with valuable insights for making informed decisions. The workshop focuses on key objectives such as predicting storage usage and growth, lowering total cost of ownership, and maximizing return on investment. It also aims to mitigate risk, improve system stability, and enhance business continuity, while optimizing performance and speeding up technology adoption to increase agility. Additionally, the workshop supports the refinement of business and operational processes to drive efficiency and the implementation of automation solutions to reduce management overhead.

The End User Experience

Through the phases of the End User engagement, the Pure Storage Services team provides services and solutions to enable you to achieve your business outcomes. The Pure Storage Services Assessment and Optimization Workshop service is designed for End Users that want to evaluate their storage environment to provide the necessary information and analysis to make informed decisions.

Storage Assessment and Optimization Workshop Work Products

- **Pre-implementation planning:** Our team will conduct discovery to review your storage management needs, challenges and vision.
- **Document:** The Pure Storage team will review and document your storage infrastructure, application and data requirements.
- **Assess and Advise:** Pure Storage will assess your current storage environment against your needs, identify any coverage gaps and present our findings and recommendations.

Storage Assessment and Optimization Workshop Delivery Methodology

Stage	Owner	Task	Method
Discovery	Pure Storage, End User	• Understand End Users goals • Complete site survey • Identify tools	Teleconference, Onsite
Analysis	Pure Storage, End User	• Run necessary tools to gather data • Analyze current storage environments	End User site, Data center site
Reporting	Pure Storage, End User	• Review completed data storage reports • Identify any gaps and make recommendations • Discuss remediation(s)	Teleconference, Onsite
Close-out	Pure Storage, End User	• Confirm that all service work products are completed as planned	Teleconference, Onsite

Scoping Parameters

- Supported arrays:
    - HDS,USP,VSP and AMS
    - HP, 3PAR, EVA and EX
    - Dell EMC VNX, VNXe, VPLEX, XtremIO, VMAX
- Scope is limited to 10 arrays, additional charges are to be quoted when the environment exceeds 10 arrays or the requirement is complex.

End User Responsibilities

- Executive support and timely engagement of key stakeholders and technical SME's (storage, database, application and system administrators)
- Share information about infrastructure, business and operational processes when requested such as, but not limited to:
    - Data center topology and high-level design
    - Application silos and domains
    - Provide SAN topology diagrams where available
    - Capacity utilization reports and growth statistics
    - Provide performance and capacity utilization
    - CMDB reports, software/ firmware levels and service life
- Allow access to the storage environment, for data collection and analysis
- Answer questions promptly as and when arise

- Allow the installation and running of any required data collection tools

Out of Scope

- Cloud environments
- Application layer analysis
- Host operating system analysis
- Financial analysis
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SERVICE BRIEF

Storage Automation Advisory Workshop

Workshop to guide strategy for implementing automation frameworks for storage systems.

Highlights

- Guidance on automation frameworks for storage systems

Flexibility

- Work with Pure Storage professional services according to your schedule.

Outcomes

- Tailored presentation including recommendations
- Demonstration of storage automation modules

The ongoing success of high-level initiatives such as digital transformation, artificial intelligence, and the Internet of Things (IoT) makes it beneficial for organizations to focus on technologies that enable these efforts. As the pace of change accelerates, these investments become ever more critical to remaining competitive.

Pure Storage's automation advisory service provides guidance to help with your strategy for implementing automation frameworks within your storage environment. This service not only offers scalable, elastic services to applications and developers but also minimizes, and can even eliminate, the need for human intervention. Pure Storage empowers you to use different automation frameworks efficiently by leveraging existing tools, plugins, and other assets.

The End User Experience

Pure Storage Services is an integral part of the Pure Storage Customer Experience (CX) team and its mission is helping End User organizations evaluate, activate and innovate their IT solutions

Storage Automation Advisory Service Work Products

- Storage Automation Workshop Presentation with Recommendations
- Storage Automation Demonstration - Provision of Quick Start Automation Modules

Storage Automation Advisory Delivery Methodology

Stage	Owner	Task	Method
Discovery planning	Pure Storage, End User	• Complete pre-engagement questionnaire • Define customer requirements of workshop	Teleconference
Workshop	Pure Storage	Deliver tailored tailored storage automation advisory workshop, including: • Introduction to Storage automation (Automation 101) • Benefits of Storage automation in an Enterprise Organization • How to scale storage automation for FlashArray and FlashBlade fleets. • Reusing storage community modules for storage automation (RestAPI, available Plug-ins etc)	Teleconference
Storage automation demonstration	Pure Storage	• Live demo of basic automation program on Pure Storage architecture.	Teleconference
Recommendations	Pure Storage	• Provide workshop presentation deck including proposed next steps and recommendations.	MS PowerPoint deck

Scoping Parameters

- All Services will be delivered remotely
- Workshop to be based on feedback from the Pre-Engagement Questionnaire
- End User has secure access to the internet to view Pure Storage automation repositories
- This Service must be consumed within 180-days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.

End User Responsibilities

- Completion of pre-engagement storage automation questionnaire
- Arrange for workshops with End User's key stakeholders and technical subject matter experts
- Provide secure access to internet to view automation code repositories

Out of Scope

- FlashArray or FlashBlade Storage 101 training
- FlashArray or FlashBlade Disaster Recovery or Business Continuity Training

- Custom Automation module design, creation and delivery
- Any Automation of 3rd party vendor Storage
- 3rd party module maintenance or support
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- This service not available to Dark Sites

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SERVICE BRIEF

Time and Materials Services

Maximize return of investment (ROI) by leveraging our best of breed technical experts.

Highlights

- Reduce Time to Value
- Reduce Time to Deploy

Flexibility

- Pure Storage services are agile and able to perform a variety of services to meet any project requirements.
- Implement according to your schedule

Outcomes

- These services do not provide any fixed work product or outcomes and are solely based on time and materials.

Whether you are planning your next-generation storage system, need specialized know-how for a major storage deployment, or want to optimize the investment in your digital transformation, Pure Storage services has the expertise to assist.

Time and Materials (T&M) Services in Scope

Pure Storage will provide resources on a time and materials basis for the agreed duration to assist in deploying and managing their environments.

Typical activities may include, but are not limited to:

- Solution design, engineering and operational readiness
- Migration planning, execution and support
- Implementation
- Architecture and consultancy
- Health, compliance, performance and best practice analysis & advisory
- Optimization and enhancement
- Integration and Automation
- Disaster recovery and business continuity
- Program and project management

Scoping Parameters

- These Services are solely based on a Time and Materials and do not provide any fixed Work Product or outcomes.
- All resources provided will have a deep knowledge of Pure Storage products and technologies and will be highly skilled in various third-party products or tools, however, the requirement for any specific skill set must be agreed in writing in advance of purchase.
- Services are delivered remotely unless otherwise agreed with Pure Storage. If there is a requirement for Pure Storage resources to be on site, billable expenses shall apply in accordance with following:
    - The location and expected schedule must be agreed with Pure Storage prior to purchase
    - Travel time (time to reach an End User location from the nearest Pure Storage site) is chargeable
    - Where additional travel and expense costs apply, charges shall include the following expenses: airfares and train travel will be economy, hotels will be of a 3-star standard, reasonable costs will be itemized for meals and other expenses.
- During the delivery of services, any changes to the scope of the services must be requested by the End User's authorized representative in writing. Pure Storage will assess the impact of the change on the services, which may require purchasing additional days.

End User Responsibilities

- End User will provide the access to the premises, systems, documentation and appropriate End User personnel (with the relevant skill and knowledge) required to deliver the services.
- End User shall notify Pure Storage personnel in writing of any special health and safety hazards.
- Provision of any software or third party licenses that may be required and connectivity for the management tasks on the arrays identified, before the commencement of the Services
- End User will be responsible for maintaining all disaster recovery processes and necessary back-up so that it can reinstate the data in the event of an unplanned outage.
- Any cabling or physical connectivity requirements.

Pure Storage Responsibilities

- Pure Storage will promptly notify End User of any risks or issues relating to the delivery of the Services and will exercise all reasonable endeavors to mitigate the impact of any changes or delays to the Services.
- Provide resource(s) to cover the Activities outlined in the Scoping Parameters section above.

Working Hours and Time Reporting

Time and Materials engagements are purchased in increments of one day. The engagement of the resource(s) is on a professional working time basis. Pure Storage normal business hours are Monday to Friday, 09:00 to 18:00 including a lunch hour. Saturdays, and between 18:00 to 09:00 on weekdays are charged at 1.5x. Sundays and Public Holidays are charged at 2x.

Pure Storage requires a minimum notice period of 5 business days for any resource required during normal business hours, and 10 business days for any resource required outside of business hours. All work will be scheduled as close to your requested dates as possible by a suitably qualified resource. Customers will be notified by email of the dates when your work can be carried out. An email confirmation is required within 48 hours to book the resource otherwise Pure Storage will cancel the scheduled resource and further arrangements will need to be made with the relevant notice period applied.

Electronic timesheets will be sent for signature, detailing the elapsed hours spent delivering Services. The increment for time reporting will be a half-day (4 hours) for remote delivery, and 1 day (8 hours) for on-site delivery. Travel time is included, and billable. The only exception to these minimum increments, would be related to remote project management or cadence conference calls, during periods when no other actions can be scheduled. Response is required within 5 working days or the timesheets shall be deemed automatically accepted.

Cancellation or change of scheduled Time and Materials work with less than 2 working days' notice shall still be charged at the applicable rate.

The Time and Materials engagement will complete when all days have been consumed, or will expire 12 months from the date of receipt of purchase order by Pure Storage. Upon expiration, no refunds of prepaid services fees will be provided.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

VMware Integration Enablement

Unleash the Power of Your VMware Environment with Pure Storage: Fast, Simple, and Always On

Highlights

- Analysis and recommendations on implementation of Pure Storage into your VMware environment
- Integrate ESXi best practices to fully realize the benefits of Pure technology

Outcomes

- Participate in guided conversations detailing best practices for using VMware and Pure Storage.
- Explore best practices and discuss how these can benefit your specific environment.
- Receive expert assistance with configuration and integration.

Pure Storage® is the data platform for VMware solutions with integrated virtualization, automation and orchestration that can help you virtualize all your data center apps and desktops.

Pure Storage, a VMware Elite Technology Alliance Partner, has a comprehensive suite of VMware integration tools and functionality. Our solution delivers the performance and enterprise features for customers to simplify and re-energize their existing VMware deployments or create a powerfully new all-flash virtualized infrastructure.

The End User Experience

End users will experience a transformative improvement in their virtualized infrastructure through best-practice configuration and integration with Pure Storage arrays. Here's what end users can expect:

Enhanced performance: Faster application performance with low-latency storage and optimized data paths, ensures smooth operations for virtualized environments.

Reduced complexity: Simplify management with integrated solutions that streamline deployment and administration of both VMware and Pure Storage systems.

High availability: Leverage built-in redundancy and failover capabilities, ensuring maximum uptime for critical applications and workloads.

User-friendly management: The integration simplifies management, making it more intuitive for IT administrators. This, in turn, translates to faster deployment, allowing end users to focus on their core tasks without waiting for resources.

Data protection: Utilize advanced data protection features, including snapshots and replication, to effortlessly safeguard virtual machines and critical data.

VMware Integration Enablement Work Products

- One-day workshop covering VMware features and best practices
- Workshop slide deck with best practices
- Four-hour hands-on best practice configuration session
- Four-hour hands-on plugin integration session
- Four-hour hands-on storage integration session

VMware Integration Enablement Delivery Methodology

Stage	Owner	Task	Method
Planning	Pure Storage and End User	• Pure Storage will share a pre-engagement questionnaire to understand the customer environment. • Workshop materials will be updated and enhanced based on the provided information.	Teleconference, Email
Workshop	Pure Storage and End User	Pure Storage will deliver a one-day workshop covering: • VMware Management Plugins • VMware Analytics • VMware vRealize Suite (AIRA) • VMware Site Recovery Manager • Pure Storage VMware Best Practices • NVMe over TCP • Virtual Volumes • ActiveCluster	Onsite or Teleconference
Best Practice Analysis	Pure Storage and End User	Pure Storage will deliver a four-hour, hands-on technical review session, to give guidance on best practice configuration.	Onsite or Teleconference
Plugin-in Integration	Pure Storage and End User	Pure Storage will deliver a four-hour, hands-on technical session to Identify, install, and configure any required Pure Storage plugins, including: **Pure vSphere Plug-in** • Deployment of the Pure Storage vSphere plugin • Connection of the plugin to a maximum of two vCenters • Receive an overview and demonstration of the plugin features **VM Analytics** • Deployment of the Pure Storage collector • Connection of the connector to your existing VMware infrastructure • Receive an overview and demonstration of the plugins features within Pure1® **vRealize Suite** • Installation of the Pure Storage vROPS Management Pack • Configuration of the FlashArray™ adaptor **Site Recovery Manager SRA** • Deployment of the Pure Storage SRA • Connection of site recovery manager to vCenter • Creation of a single site recovery manager protection group	Onsite or Teleconference

Storage Integration	Pure Storage and End User	Pure Storage will deliver a four-hour session to help identify any storage improvements and provide configuration assistance with the following types of storage: **NVMe over TCP** • Configuration of NVMe network interfaces on a single FlashArray. • Creation of up to a maximum of 4 NVMe FlashArray Volumes. • Configuration of NVMe storage adapter on a maximum of 4 ESXi hosts. • Creation of a maximum of 4 NVMe datastores. **Virtual Volumes** • Registration of up to two storage providers on a single vCenter. • Creation of up to four vVol datastores. **ActiveCluster** • Creation of a synchronous replication link between two FlashArray systems. • Creation of a stretched pod between the FlashArray systems. • Configuration of a maximum of four ActiveCluster datastores.	Onsite or Teleconference
Closure	Pure Storage and End User	• Pure Storage will follow up on any open questions. • Pure Storage to provide VMware Integration Enablement slide deck along with a report detailing the work carried out and findings during the service engagement.	Teleconference/ Email

Scoping Parameters

- This service is designed to be delivered only for VMware supported versions of VMware vSphere 7.x and 8.x.
- The service can be delivered either onsite or remotely.
- This service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid services fees will be provided.

End User Responsibilities

- Complete the pre-engagement questionnaire document.
- Ensure engagement and attendance of relevant teams and subject matter experts in the workshop.
- Ensure access to systems along with technical resources for hands-on sessions.

Out of Scope

- VMware Cloud Foundation (VCF) and VMware vSphere Foundation (VVF) are not supported and out of the scope of this service.
- Design and documentation of specific architectures.
- Any required network configuration between the Pure Storage arrays and virtual environments.

- Any additional hardware requirements for advanced features such as NVMe.
- Implementation and configuration of customer-specific environments.
- Integration of third-party software.
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Pure Storage VMware NVMe Enablement Service

Enable NVMe within your VMware environment

Highlights

- Enable NVMe-oF as a protocol within your environment

Flexibility

- Work with the Pure Storage Services team to implement according to your schedule.

Outcomes

- NVMe-oF enabled within your VMWare environment

NVMe, or nonvolatile memory express, is a storage access protocol and transport protocol for flash and next-generation solid-state drives (SSDs) that delivers high throughput and fast response times for a variety of traditional and modern workloads. While all-NVMe server-based storage has been available for years, the use of non-NVMe protocols for storage networking can add significant latency. To address this performance bottleneck, NVMe over Fabrics, or NVMe-oF, extends NVMe's performance and latency benefits across network fabrics, including Ethernet and Fibre Channel.

The End User Experience

Pure Storage Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure Storage Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

VMware NVMe Enablement Service Work Products

- Configuration of either NVMe over TCP or NVMe over FC storage network protocol.
- Configuration of a maximum of 2 FlashArrays.
- Configuration of a maximum of 10 NVMe Datastores.
- Configuration of a maximum of 10 ESXi hosts.

VMware NVMe Enablement Service Delivery Methodology

Stage	Owner	Task	Method
Pre-Planning Design	Pure Storage End User	• Kick off Call • Data Collection and Future Design Template	Teleconference Email
Configuration	Pure Storage	• Enable and Configure NVMe over TCP or NVMe over FC on FlashArray(s) up to a maximum of 2. • Enable and Configure NVMe over TCP or NVMe FC on up to a maximum of 10 VMware ESXi hosts. • Deploy NVMe datastores into VMware.	Remote
Post-Configuration	Pure Storage End User	• Share Future Design Template • Knowledge Transfer	Teleconference Email

Scoping Parameters

- This is a remotely delivered Service
- This Service must be consumed within 180-days from the order being accepted by Pure Storage, at which point it will expire. Upon expiration, no refunds of prepaid Services fees will be provided.
- The service is only applicable to the following: FlashArray//XR3 or XR4, FlashArray//CR3 or CR4, FlashArray/L/X running at least Purity 6.5.x or the latest green LLR/ER release.
- A pair of NVMe-over TCP supporting Ethernet NICs or NVMe over FC Fibre channel cards must be available in the FlashArray
- To use NVMe over TCP, the service requires an Ethernet network running at least 10Gbps
- ESXi hosts must contain either NVMe over TCP supporting Ethernet cards or NVMe over FC supporting Fibre channel cards.
- VMware vSphere environment must be running a minimum software version of 7.0 U3.

End User Responsibilities

- Provision a new storage network If no existing storage networks are available to configure for NVMe over TCP or NVMe over FC.
- Ensure spare NVMe over TCP or NVMe over FC capable ports are available in the FlashArray(s)
- Ensure NVMe over TCP or NVMe over FC capable ports are available in all ESXi hosts
- Ensure vSphere is running 7.0 U3 or later in order to support NVMe/TCP (vSphere 8.0+ recommended)

Out of Scope

- All VMware vSphere versions prior to 7.0U3
- vVol datastores are only supported for use with NVMe over TCP in Purity 6.6.2 onwards.

- Migration of any Virtual machines onto new datastores.
- ActiveCluster & ActiveDR Datastores are not currently supported with NVMe over TCP.
- Any required cabling between the FlashArray(s) and ESXi hosts
- Any required network configuration
- Any required Fibre channel zoning.
- Installation of any new required network or Fibre channel cards
- Anything not expressly set forth in the Work Product section of this document, or in an applicable statement of work is out of scope for Pure Storage.

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Pure Storage, Inc., 2555 Augustine Drive, Santa Clara, CA 95054

SERVICE BRIEF

Veeam and Pure Storage Integration Enablement

Unmatched data protection, rapid recovery, and cyber resilience with seamless backup solutions

Highlights

- Learn how to utilize the latest technologies to reduce backup and restore times.
- Discover how immutable snapshots secure your data against cyberattacks.
- Gain insights into the seamless integration of Veeam with Pure Storage FlashArray and FlashBlade.
- Invest in a comprehensive knowledge transfer to support and optimize your current deployments.

Outcomes

- Participate in guided conversations detailing best practices for using Veeam and Pure Storage.
- Explore best practices and discuss how these can benefit your specific environment.
- Receive expert configuration guidance.

Our knowledge transfer workshop offers an in-depth overview of integrating Pure Storage® arrays with Veeam Backup & Replication, combining ease of management with all-flash performance for superior backup, restore capabilities, and protection against ransomware. This service equips your team with the knowledge to implement best practices, safeguarding your data while maximizing efficiency and accelerating your return on investment. Veeam and Pure Storage technologies work seamlessly together to enhance application availability and performance. This ensures rapid restores, effective ransomware mitigation, and minimized operational risk.

The End User Experience

End users will experience a transformative improvement in their interaction with backup and restore processes through the integration of Pure Storage arrays and Veeam Backup & Replication. Here's what end users can expect:

Seamless backup operations: The integration of Pure Storage all-flash performance ensures that backups are completed quickly and efficiently, often in a matter of minutes. This means end users won't experience disruptions in their daily activities due to ongoing backup processes.

Rapid data recovery: In the event of data loss, corruption, or other disruptions, end users can expect near-instantaneous data restoration. This quick recovery capability ensures that they can get back to work with minimal interruption.

Enhanced reliability: The use of the Veeam Universal Storage API (USAPI) and Pure Storage validated storage targets, guarantees consistent and reliable backups. End users can have confidence that their data is securely backed up and can be restored accurately.

User-friendly management: The integration simplifies backup and restore management, making it more intuitive for IT administrators. This translates to faster issue resolution and less downtime as IT teams can quickly address and resolve any data-related problems.

Simplified operations: The streamlined process means that end users benefit from a simplified, hassle-free experience. The complexity of traditional backup and restore procedures is replaced with a simple and efficient system, allowing end users to focus on their core tasks without worrying about data protection issues.

Veeam Integration Enablement Work Product

- One-day workshop covering Veeam features and best practices.
- Workshop slide deck with best practices.
- One-day hands-on best practice configuration session.

Veeam and Pure Storage Integration Enablement Delivery Methodology

Stage	Owner	Task	Delivery
Planning	Pure Storage and End User	Pure Storage will share a pre-engagement questionnaire to understand the customer environment. Workshop materials will be updated and enhanced based on the provided information.	Teleconference and Email
Workshop	Pure Storage and End User	**Veeam components:** Architecture overview, Pure plug-Ins, repository types, proxy transport modes. **New features in Veeam12:** Snapshot replication, snapshot archiving, direct-to-object backups. **Veeam with FlashArray:** Repository and backup job configuration, SafeMode protection, and recovery. **Veeam with FlashBlade:** Repository and backup job configuration, SafeMode protection, and recovery. **Backup duplication:** ActiveCluster, backup copy job, Scale-Out Backup Repository (SOBR) capacity tier, FlashArray replication. **Additional Veeam options:** Instant VM recovery, Veeam DataLab, SureBackup, Secure Restore.	Onsite or Teleconference
Hands-on session	Pure Storage and End User	Pure Storage will deliver a one-day hands-on technical session covering: **Best practice assessment:** Ensure your Veeam environment is configured using the recommended best practice settings. **Configuration assistance:** Provide expert assistance with the configuration of Veeam features including: • Backup jobs • Backup duplication • SafeMode • Pure Storage plugin • Array-based snapshot backups	Onsite or Teleconference
Closure	Pure Storage and End User	Pure Storage will follow up on any open questions. Pure Storage to provide Advisory Workshop slide deck with end user	Teleconference and Email

Scoping Parameters

- The Service can be delivered either onsite or remotely.
- This Service must be consumed within 12 months from the order being accepted by Pure Storage, at which point it shall expire. Upon expiration, no refunds of prepaid Service fees will be provided.

End User Responsibilities

- Complete the pre-engagement questionnaire document.
- Ensure engagement and attendance of relevant teams and subject matter experts in the workshop.

Out of Scope

- Design and documentation of specific architectures.
- Implementation and configuration of customer specific environments.
- Integration of third-party software.
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