



Pure Storage Professional Services

# Service Brief Repository

March 2023

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## SERVICE BRIEF



# Time and Materials Service

## Highlights

- Evaluate. Activate. Innovate
- Pure Storage Services helps you maximize the value of your IT investments.
- Reduce Time to Value
- Reduce Time to Deploy

## Flexibility

- Pure 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 Material

Maximize Return on Investment (ROI) by Leveraging Pure's Best of Breed Technical Experts.

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 and our Pure authorized resellers have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business.

## Time and Materials (T&M) Services

This Service brief details the purchase of Time and Services only.

### Services in Scope

Pure will provide resources on a Time and Materials basis for the agree 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

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## 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's products and technologies.
- Pure has architects and consultants available who are 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. If there is a requirement for Pure resources to be on site, billable expenses shall apply in accordance with following:
  - The location and expected schedule must be agreed with Pure prior to purchase
  - Travel time (time to reach an End User location from the nearest Pure 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 End User's authorized representative in writing. Pure will determine how the change will impact the Services, which may result in additional days needing to be purchased.

## End User Responsibilities

- End User's 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 personnel in writing of any special health and safety hazards.
- Provision of any software or third party licenses that maybe 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 process 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 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. Customer 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 will cancel the scheduled resource and further arrangements will need to be made with the relevant notice period applied.

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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. Upon expiration, no refunds of prepaid Services fees will be provided.

## 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 Storage Professional 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](http://www.purestorage.com).

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## SERVICE BRIEF

# Storage Automation Advisory Workshop

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

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

Pure's Storage Automation Advisory Service provides guidance to help with your strategy for implementing automation frameworks within your storage environment which, as well as providing scalable, elastic services to applications and developers, also minimizes, and can even eliminate, the need for human intervention. Pure empowers you to make smart choices using different automation frameworks efficiently by leveraging existing tools/plugins and other assets.

## The End User Experience

Pure 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

## Service Overview

Pure Services will follow the engagement framework below during delivery of the Storage Automation Advisory Workshop Service.

### Highlights

- Guidance on automation frameworks for Storage Systems

### Flexibility

- Work with Pure Services according to your schedule

### Outcomes

- Tailored Presentation including recommendations
- Demonstration of Storage Automation Modules

Stage	Owner	Task	Delivery Method
Discovery / Planning	Pure End User	Complete Pre-Engagement Questionnaire Define Customer requirements of Workshop	Video Conference
Workshop	Pure	Delivery Tailored Storage Automation Advisory Workshop, including: <ul style="list-style-type: none"> <li>• Introduction to Storage automation (Automation 101)</li> <li>• Benefits of Storage automation in an Enterprise Organization</li> <li>• How to scale storage automation for FlashArray™ and FlashBlade® fleets</li> <li>• Reusing storage community modules for storage automation (RestAPI, available Plug-Ins etc)</li> </ul>	Video Conference
Storage Automation Demo	Pure	Live demo of basic Automation Program on Pure Storage architecture	Video Conference
Recommendations	Pure	Provide Workshop Presentation Deck including proposed next steps and recommendations	MS PowerPoint Deck

### Work Products

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

### 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

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## Scoping Assumptions

- 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 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.

## 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 3<sup>rd</sup> party vendor Storage
- 3<sup>rd</sup> party module maintenance or support
- Anything not listed in the above document, or in an applicable SOW will be out of scope for Pure
- Service not available to Dark Sites

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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 expert's view of your storage infrastructure
- Excellent storage planning tool

## Flexibility

- Work with Pure Services 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

IT stakeholders face ongoing challenges managing the rapid growth of structured and unstructured data in their environments. They need visibility of their data and a greater understanding of data uses in their storage environment to make informed storage and data management decisions.

The Assessment and Optimization Workshop from Pure Storage® Services is an infrastructure discovery and analysis service designed to provide storage managers with the information they need to make informed decisions about:

- Storage usage and growth forecasting
- Reducing total cost of ownership
- Maximizing return on investment
- Reducing risk, improving stability and business continuity
- Optimizing performance
- Accelerating technology adoption to increase agility
- Revising business and operational process to increase efficiency
- Deploying automation solutions to reduce management overhead

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## The End User Experience

Through the phases of the End User engagement, the Pure Services team provides services and solutions to enable you to achieve your business outcomes. The Pure 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.

### Service Overview

We start by conducting a site survey to understand your storage management needs, challenges, and vision. Next, the Pure team will review and document your storage infrastructure, application, and data requirements. Then we will assess your current storage environment against your needs and identify any coverage gaps. Finally, we present our findings and make recommendations.

### Approach & Work Product

Our approach sets your team up for success throughout the Service, from planning and discovery through analysis and reporting.

Stage	Owner	Task	Delivery Method
Discovery	Pure End User	Understand End User's goals Complete site survey Identify tools	Video Conference Onsite
Analysis	Pure End User	Run necessary tools to gather data Analyze current storage environment	End User site Data center site
Reporting	Pure End User	Review completed data storage reports Identify any gaps and make recommendations Discuss remediation(s)	Video Conference Onsite
Close-out	Pure End User	Review to confirm that all Service Work Products to ensure completed as planned	Video Conference Onsite

### Scoping Parameters

- Single site only
- Block Storage only
- Maximum of 10 storage arrays
- FC/iSCSI environments only
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided

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## Out of Scope

- Cloud environments
- Application layer analysis
- Host Operating System analysis
- File System analysis
- Financial Analysis
- Anything not listed in this document or an applicable Statement of Work

## Supported Arrays

- HDS USP, VSP & AMS
- HP 3PAR, EVA & XP
- HDS USP, VSP & AMS
- Dell EMC VNX, VNXe, VPLEX, XtremIO, VMAX

## End User Responsibilities

- Executive support and timely engagement of key stakeholders and technical SMEs (Storage, Database, Application and System Administrators)
- Share information about infrastructure, business, and operational processes when requested such as, but not limited to:
  - Data Centre 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
  - 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 they arise
- Allow the installation and running of any required data collection tools

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## Service Brief

# Splunk Optimization Services

Powered by the Kinney Group.

### Highlights

- Get the most out of your Splunk investment.
- Leverage Kinney subject matter experts.
- Gain actionable recommendations for your installation.

### Service Tier Options

- Choose from three levels of service.
- Utilize Pure's best practice benchmarks.
- Gain insights from your Performance Scorecard.

Enterprises both large and small face a wide variety of IT challenges when transforming their business. Ever-changing expectation and an increasingly complex regulatory and compliance environment can threaten and organization's ability to innovate and forge ahead

Splunk Enterprise and Premium Apps, including Enterprise Security, Splunk IT Service Intelligence (ITSI), Phantom, and Splunk User Behavior Analytics (UBA) address these challenges by monitoring and analyzing machine data from any source to deliver operational intelligence to optimize IT, security, and business performance. Next-generation technology from Pure provides the ideal framework for a high-performance, scalable and resilient Splunk platform for core Splunk Enterprise

Pure Services, in partnership with Kinney Group subject-matter experts can help you get the best results and optimized efficiencies from your Splunk investment, by providing a variety of Splunk Optimization Services.

## Splunk Optimization Service Tiers

Pure Services offer three tiers of Splunk Optimization Services:

### Small

The Splunk Optimization Small Service tier starts with reviewing your environment and comparing it to best practices per our current benchmark Splunk Reference Design. The final Work Product includes a Performance Scorecard that aligns with the need of your business and equips your team with actionable recommendations to optimize your Splunk environment.

### Medium

The Splunk Optimization Medium Service tier combines the optimization assessment with an optimization implementation based on our recommendations. At the end of this process, we will tune your Splunk environment tuned for optimal performance, security, and automation according to best practices per our current benchmark Splunk Reference Design.

## Medium

The Splunk Optimization Large Service tier combines assessment with an extended optimization effort, led by a dedicated project manager. This tier includes tuning your Splunk environment for optimal performance, security, and automation, according to best practices per our current benchmark Splunk Reference Design and your team's business needs. After tuning you get a 45-day post-engagement check-up and five months of our Expertise on Demand offering to ensure continued success.

## Delivered Services

	Small	Medium	Large
Performance Scorecard	Yes	Yes	Yes
Diagnosis findings recommendations	Yes	Yes	Yes
Architecture diagram	Yes	Yes	Yes
Data Migration Services	No	Yes	Yes
Weeks of included Services on a Time and Materials basis	No	3 Weeks	12 Weeks
Project management	No	Yes	Yes
Dedicated project management	No	No	Yes
45-day post-engagement review	No	No	Yes
Level 1 expertise on demand	1 Month	1 Month	5 Months

Table 1. Splunk Optimization Service tiers

## Pure Storage Platform Optimization

In addition to the items included in your chosen tier, the Delivery team will:

- Configure your existing Splunk environment to optimize Splunk performance on the Pure Storage platform.
- Migrate data from your current storage destination to a new Pure Storage platform and confirm data is in the right storage destination.
- Provide before/after reporting to highlight the value of migrating to the Pure Storage platform.

## Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.
- The service can follow a remote, on-site, or hybrid model

## End User Responsibilities

You are responsible for:

- Provisioning appropriate levels of network and system access to review configurations and settings on all Splunk servers and forwarders.
- Ensuring IT stakeholders with knowledge of business needs and the Splunk operational model are available for discussions and document reviews.
- Ensuring business stakeholders with functional and domain expertise are available for feedback and consultation during the implementation of reporting and searching.

## Out of Scope

Installation and configuration of any hardware or software components are out of scope for this service, as is configuration of any non Splunk software components. The scope of this Service does not include an upgrade of the Splunk platform. It also does not include the training of customer's resources.

Anything not included in this document or an applicable SOW is out of scope.

## About Pure Storage Services

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SERVICE BRIEF

# Splunk Enterprise Installation

Powered by the Kinney Group.

## Highlights

- Get the most out of your Splunk investment.
- Experience a seamless Splunk installation experience.
- Optimize and integrate your Pure arrays for Splunk.

## Service Tier Options

- Choose from three levels of Service.
- Utilize Pure's best practice benchmarks.
- Gain insights from your performance scorecard.

Organizations of all sizes face a variety of IT challenges when transforming their businesses. Ever-changing expectations and increasingly complex environments can threaten an organization's ability to innovate and forge ahead.

Splunk Enterprise and Premium Apps, including Enterprise Security, Splunk IT Service Intelligence (ITSI), Phantom, and Splunk user Behavior Analytics (UBA) address these challenges by monitoring and analyzing machine data from any source to deliver operational intelligence to optimize IT, security and business performance. With intuitive analysis features, machine learning, packaged applications, and open APIs, Splunk Enterprise is a flexible platform that scales from focused use case to an enterprise-wide analytics backbone.

Pure Storage® Services has partnered with the Kinney Group to provide an Enterprise Installation service which we designed to help teams to get started with Splunk to harness the value of data and start getting answers faster. The Pure Splunk Enterprise Installation Service comes in three tiers, based on installation size (Small, Medium, and Large).

## Splunk Installation Services

Pure Services follows a stringent and tried-and-tested methodology to ensure a seamless Splunk installation experience for you and your team, accelerating time to value and moving you towards the Modern Data Experience.



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Pure Storage's next-generation technologies, including FlashBlade®, provide a high-performance, scalable and resilient platform for Splunk.

Pure Services will optimize and integrate the Pure arrays for Splunk, including validating the sizing of the Pure Storage platform. We will also configure your Pure Storage platform for optimal operations with a new Splunk configuration using SmartStore.

## Splunk Installation Service Tiers

Pure Services offers three different options for installation Services based on the size of your environment and the needs of your business. Pure Services offers advanced support and optimization services to enable success well beyond the initial installation.

- Small:** Small deployments are best suited for those whose primary use case will be to monitor and improve their security posture and enhance detection of cyber threats, with limited use for infrastructure monitoring. Services include installing and configuring all Splunk components, including indexers, search heads, management nodes, and up to five data sources. The total daily ingest of Splunk data may not exceed 1TB per day.
- Medium:** Medium deployments are best suited for those planning to use Splunk to monitor their enterprise security posture and enhance detection of cyber threats, and where Splunk is considered a critical application for infrastructure and application monitoring. This Service includes installing and configuring all Splunk components, including indexers, search heads, management nodes, and up to 15 data sources. The total daily ingest of Splunk data may not exceed 3TB per day.
- Large:** The Large deployment is best suited for a multi-site Splunk implementation with high-availability and high-performance expectations. The Service includes installing and configuring all Splunk components including indexers, search heads, management nodes, and up to 50 data sources. The total daily ingest of Splunk data may not exceed 6TB per day.

	Small	Medium	Large
<b>Duration</b>	120 Hours	200 Hours	300 Hours
<b>Design scalable, resilient deployment architecture, using Splunk SmartStore</b>	Yes	Yes	Yes
<b>Develop storage, security, and data-retention policies with End Users</b>	Yes	Yes	Yes
<b>Install and configure Puppet enterprise and modules to lock Splunk configurations</b>	Yes	Yes	Yes

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<b>Install Splunk reference design architecture</b>	Low-maintenance deployment	High-performance, resilient deployment	High-availability, multi-site deployment
<b>Configure integration with directory services for authentication</b>	AD, LDAP	AD, LDAP	AD, LDAP, SSO
<b>Configure management servers to automate deployment of knowledge object</b>	Yes	Yes	Yes
<b>Configure data source and fine-tune field extraction for optimal performance and value</b>	Up to 5: Known Windows event and perfmon logs, out-of-the-box Unix logs, text files, and/or network events Make data CIM-compliant	Up to 15: Known Windows event and perfmon logs, out-of-the-box Unix logs, text files, and/or network events, cloud logs (AWS, GCP, Azure), network and/or logs Make data CIM-compliant	Up to 15: Known Windows event and perfmon logs, out-of-the-box Unix logs, text files, and/or network events, cloud logs (AWS, GCP, Azure), DB logs, network stream, and/or HEC Make data CIM-compliant
<b>Install and configure enterprise security</b>	Yes	Yes	Yes
<b>Build reports and alerts based on prioritized data</b>	Yes	Yes	Yes
<b>Knowledge transfer and training</b>	Up to 4 hours	Up to 8 hours	Up to 16 hours
<b>Level 1 Expertise on Demand</b>	1 month	1 month	1 month
<b>Project Management and technical oversight</b>	Yes	Yes	Yes

## Scoping Parameters

- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.
- The Service can follow a remote, on-site, or hybrid model

## End User Responsibilities

You are responsible for:

- Installing and provisioning all underlying hypervisor virtualization technologies and base operating system.
- Providing remote access to all appropriate computing environment (logins, SSH Keys, etc.).

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- Allowing access to the storage environment(s) for configuration and optimization.
- Providing all required licenses for Splunk Enterprise, Splunk Enterprise Security, and Puppet Enterprise.
- Providing the right level of access to Splunk servers and forwarders in a timely fashion. Pure's Services Consultant will require network and system access to configure servers, install forwarders, configure source devices, read logs, access data and applications, and allow necessary inter-system communication.
- Ensuring team members with appropriate knowledge of requirements and resources are available during the requirements phase.
- Ensuring resources with functional and domain knowledge are available for feedback and consultation during the development of the reporting and searching phase of the engagement.

## Out of Scope

- Physical installation and deployment of any Pure Storage Technology. Any installation work will require a separate installation SKU.
- Installation and configuration of any hardware or non-Splunk or non-Puppet software.
- Any additional training of customer resources.
- Anything not covered within this document, or an applicable SoW is deemed out of scope for Pure.

*Need support after the installation is complete? Expertise on Demand for Splunk is a subscription Service designed to assist you with your questions and operational execution related to your Splunk environment. In short? Top-level Splunk experts you can call when you need them, without having to keep a ninja on staff.*

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## SERVICE BRIEF

# SafeMode™ Quick Start Service

## 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 and FlashArray//C or
- Snapshot offload to FlashBlade via NFS
- Increased protection via SafeMode enablement

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

Ransomware attacks continue to be top of mind for business and IT leaders. And for good reason. They compromise access to your organization's lifeblood - data. Consequences can be dire: Pay perpetrators to (maybe) unencrypt your data, stumble with decryption tools, or gamble on recovering from backups. With millions of dollars spent annually to guard entry points to data, many still underestimate the strategic value of augmenting data protection.

Backups safeguard critical data against common scenarios like disasters, data corruption, or accidental deletions. But ransomware can stress existing data protection infrastructure further. Pure Storage® SafeMode™ provides an additional layer of protection, complementing the immutability of snapshots with its ineradicable function.

The Pure SafeMode Quick Start Service enables End Users to quickly enable and take advantage of this added data protection.

## The End User Experience

Pure 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

## Service Overview

The SafeMode Quick Start Service is applicable to End Users wanting to configure SafeMode as part of a Ransomware Recovery Bundles of a new FlashArray//X with a new FlashArray//C, or a new FlashArray//X with a new FlashBlade.

Pure Services will follow the engagement framework below during delivery of the SafeMode QuickStart Service.

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

## Work Product

- 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 behaviour before and after SafeMode enablement
- End User Deck with background information and deployment configuration

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## End User Responsibilities

- Ensure the hardware is ready to use and meets all pre-requisites for this service
- In order 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

## Scoping Assumptions

- Service limited to a maximum of one new FlashArray//X with one new FlashArray//C, or one new FlashArray//X with one new FlashBlade
- Both arrays are new, containing no data
- Service is limited to the configuration of a single protection group with up to ten volumes
- All Services will be delivered remotely
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.

## Out of scope

- ActiveCluster™ and ActiveDR™ configuration and deployment is not included in this service
- Anything not listed in the document or in an applicable SOW is out of scope for Pure

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## SERVICE BRIEF

# FlashArray™ SafeMode™ Advisory Workshop

Expert advice on recommendations for deploying data protection features on FlashArray systems.

### Highlights

- Understand SafeMode Technology
- Learn best practice with our experts
- Array assessment with implementation recommendations

### Flexibility

- Work with the Pure Services team to schedule a workshop with your teams according to your schedule

### Outcomes

- A four-hour workshop providing best practices and tailored advice for implementing data protection features

## SafeMode for Data Protection

Backups safeguard critical data against common scenarios like disasters, data corruption, or accidental deletions. However ransomware can stress existing data protection infrastructure further. Pure Storage SafeMode provides an additional layer of protection, complimenting the immutability of snapshots with its ineradicable function.

Pure Storage Services provides a four-hour workshop, designed to help customers understand, plan for, and implement SafeMode as part of a data protection strategy.

## The End User Experience

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

## Service Overview

Pure Storage Services will host a four-hour, remotely delivered workshop explaining how Pure Storage SafeMode technology can be used to protect valuable data. This will be delivered as a single half day of discussion, detailing and phased, logical implementation approach for both snapshots and SafeMode, tailored to the End User's environment.

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## End User Responsibilities

In order to keep Services 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 these schedules

## Work Product

**A workshop led by our experts:** Pure Services will host a four-hour, remotely delivered workshop explaining how Pure SafeMode technology can be used to protect valuable data. This will be delivered as a single half-day of discussion. This session will include the following topics:

- Snapshot technology overview
- SafeMode technology overview
- Best Practices for SafeMode implementation
- Snapshot retention recommendations based on attack timelines
- Assess the readiness of your environment for SafeMode implementation
- Recommend a phased, logical implementation approach for SafeMode

## Scoping Assumptions

- This Service is limited to a workshop session of up to four hours
- This Service is limited to a maximum of three arrays
- All Services will be delivered remotely
- This Service is considered complete at the end of the workshop
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.

## Out of Scope

- Design and documentation of specific architectures
- Implementation and configuration of snapshots or replication
- Integration of 3rd Party software
- Anything not listed in this document or an applicable SOW is not in scope for Pure

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## SERVICE BRIEF



# Pure FlashBlade//S Installation Service

Engage with Pure's Services to simplify FlashBlade//S installation.

**Highlights**

- Installation and configuration of Single-chassis FlashBlade//S
- Proactive 24x7 support
- Pure1® continuous monitoring and assistance

**Flexibility**

- Implement according to your schedule

**Outcomes**

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

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. Pure's Services Implementation and Integration Team can plan and execute a rapid deployment of your new FlashBlade.

Pure's Services use a strict methodology for deploying and configuring the Pure 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's Services exist to assist you in the realization of 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 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 FlashBlade//S

## SERVICE BRIEF

- **FlashBlade OS initialization:** Once your new unit is powered up, our team will perform basic configuration of the FlashBlade//S'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 NFS, SMB, or S3 File volumes.
- **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 Phases

Stage	Owner	Task	Delivery Method
<b>Pre-planning</b>	Pure, End-User, Pure authorized reseller (if applicable)	- Send installation checklist/network site planning guide and gather pre-install information	Teleconference, email
<b>Planning and document completion</b>	Pure, End-User, Pure authorized reseller (if applicable)	- Allocate Pure resources* for installation - Formally schedule installation - Request data center access/open required tickets	Teleconference, email
<b>Installation</b>	Pure, End-User, Pure authorized reseller (if applicable)	- Unpack FlashBlade//S chassis 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 the rack - Upgrade FlashBlade chassis and Purity//FB OS - Plug in appropriate network and management connections to the FlashBlade - Configure Fabric I/O Modules (FIOMs) - Configure Call Home Setup, Remote Assist, and Alerting Services	End User site, data center
<b>Post-installation</b>	Pure, 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

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

## Scoping Parameters

The installation is an on-site activity.

- You shall provision sufficient rack space and power (for installation).
- You 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.
- 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.

## End User Responsibilities

You 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

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

## About Pure's Services

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SERVICE BRIEF

# Pure FlashArray<sup>™</sup> Installation for Fusion

Work with Pure Service Professionals to install and prepare your FlashArray for operation in a Pure Fusion environment.

## Highlights

Comprehensive On-site installation

Prepare your FlashArray for Pure Fusion Onboarding

## Flexibility

Work with Pure Services to implement according to your schedule

Pure Storage<sup>®</sup> FlashArray is the first all-flash, 100% NVMe, shared accelerated storage designed for mainstream enterprise deployment. Changing the management paradigm, Pure Fusion gives you the ability to build self-storage clouds and self-provide your storage.

The Pure Storage<sup>®</sup> FlashArray installation service for Fusion is simple and cost-effective, ensuring that you get the full benefits of your Pure solutions quickly and effectively. Our installation service allows your IT Resources to stay focussed on their core priorities and the most value-add activities. Our expertise and proven process and methodology significantly reduce time to value and risk within your storage environment.

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



## Delivery Approach

Pure follows a proven and effective delivery methodology to deliver the FlashArray Installation in Fusion service.

Stage	Owner	Task
<b>Planning</b>	Pure, End User, Authorized Partner (if applicable)	<ul style="list-style-type: none"><li>- Gather pre-installation information</li><li>- Complete Installation Workbook with configuration details</li><li>- Confirm prerequisites addressed</li><li>- Schedule physical installation</li><li>-</li></ul>
<b>Installation</b>	Pure, Authorized Partner (if applicable)	<ul style="list-style-type: none"><li>- Rack and power up the hardware</li><li>- Install appropriate code on FlashArray (minimum Purity Version for Fusion is 6.3x)</li><li>- Configure Primary and Secondary Controllers</li><li>- Configure Phone-home</li></ul>
<b>Post Installation</b>	Pure, End User, Authorized Partner (if applicable)	<ul style="list-style-type: none"><li>- Execute post-installation health checks</li><li>- Validate Phone-home working</li><li>- Provide Knowledge Transfer</li><li>- Verify next steps for Pure Fusion Onboarding</li></ul>

## Work Product

- FlashArray installation and preparation for Fusion onboarding
- Knowledge Transfer (High-level introduction to Pure Fusion Concepts)
- Seamless handover to Pure Fusion Onboarding Team

## End-User Responsibilities

The End User shall provide the Pure Services Coordinator with the following information and Work Product before the engagement of a technical resource:

- A fully completed Pure Installation Workbook and Pre-Installation Site Checklist
- Confirmation of sufficient Rack space and power (Power Distribution Units (PDUs) for Installation)
- A fully configured SAN and management network and connectivity cables from the SAN (connection to the internet is critical)

## Scoping Assumptions



- 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.
- All services to be performed pursuant to the Pure Professional Services Addendum.

### Out of Scope

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

## About Pure Services

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#### SERVICE BRIEF

# Advanced Services to Support Proof of Concepts (POC)

Pure Professional Services support for System Engineer-led Proof of Concepts (POCs)

#### Highlights

- Services Team manages the lifecycle of POC services delivery
- Define Advanced Service Offerings selected are appropriate
- Vendor-Managed engagement

#### Flexibility

- Work with Pure Services to implement according to an agreed schedule

An End User may elect to engage a third party to perform proof of concept services (“POC Services”) whereby Pure performs services in a test environment with non-production data on non-production hardware, at no cost to the End User using Pure’s standard Services Guide for the duration of time set forth in the applicable quote. The performance of any POC Services is contingent upon: (a) the applicable Pure personnel confirming the End User’s readiness; (b) Pure leading the performance of the POC Services and its outcomes; and (c) Pure’s authorized personnel performing the work remotely.

#### The End User Experience

Pure Services 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.

Whether you are planning your next-generation storage system, need specialized know-how for a significant storage deployment, or want to optimize the investment in your digital transformation, Pure Storage Services and our Pure authorized resellers have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business.



## Advanced Services for POCs

Pure has made the following Service offerings available to be selected as part of an approved POC:

### **Active Cluster Enablement**

Proof-of-concept gains a "high-level" understanding of the customer's goals and expectations, evaluates their high availability (HA) requirements, and provides an ActiveCluster™/ ActiveDR™/Snapshot basic demo on how ActiveCluster/ActiveDR/Snapshot can address these requirements and provide clarity on how ActiveCluster/ActiveDR/Snapshot behaves in specific failure scenarios and a demo in the POC environment.

### **Storage Automation Advisory Service**

Proof-of-concept provides an Automation Consulting overview, sample use cases that the customer may elect to follow to automate, the technology used for automation, and low complexity customer automation examples in the POC environment.

### **Operational Readiness**

Proof-of-concept provides an overview of Pure's approach to performing a deep dive to develop a detailed blueprint and proposed design and improvements in the POC environment.

### **SafeMode™ Enablement**

Proof-of-concept provides an overview of snapshot and SafeMode technology and a demo of enabling SafeMode in the POC environment.

### **Data Migration Demonstration**

Proof-of-concept provides a migration demonstration in a Pure non-production environment or lab for block, file, and VM.

### **Facilitator**

Proof-of-concept provides oversight for key deliverables associated with the POC. The assigned resource will assist the SE with the orchestration of the POC and provide governance and drive accountability and completion of the POC.



## Work Product

The outcomes of each Service can be found in the table below:

Service	Work Product
<b>Replication Enablement</b>	A validated and operational ActiveCluster or ActiveDR or Snapshot POC environment
<b>Automation Consulting</b>	Storage Automation Recommendation Storage Automation Demonstration in Pure lab environment Technology used for automation
<b>Operational Readiness</b>	Low-level Design Workshop Test Plan & Test Execution Alerting & Monitoring Setup Basic configuration of storage to connect to host and Best Practices Basic BAU Knowledge Transfer Session
<b>SafeMode Enablement</b>	SafeMode technology Overview
<b>Migration Demonstration</b>	Demonstrate Pure Block, File and VM data migrations, in a non-production environment
<b>Facilitator</b>	Facilitation of overall POC Governance of POC Change Control (if applicable) Timeline Management

## Scoping Parameters

- POC scoping required. Not all services listed above need to be delivered for every POC.
- The scope of any POCs must be approved by Pure and the End User.
- PS Services are delivered on Pure arrays which are in a non-production environment with non-production data only.
- Any Advanced Services delivered as part of a POC will require further (paid) services to make it production ready.



## End User Responsibilities

- Ensure End User qualified and competent, key stakeholders and technical Subject Matter Experts are available for any meetings or workshops on a timely basis.

## Assumptions

- The SafeMode enablement Service is limited to a maximum of one new FlashArray//X with one new FlashArray//C, or one new FlashArray//X with one new FlashBlade.
- For the SafeMode service, both arrays are new and contain no data.
- The SafeMode service is limited to the configuration of a single protection group with up to ten volumes.
- At End User's request, thorough testing and trial of advanced services can be completed with non-production data. Pure shall not be liable for any loss and/or damage, including any data loss.
- 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.

## Out of Scope

- Any FlashArray configuration work not related to the ActiveCluster setup
- Physical installations of any FlashArray cabling
- Network configuration required in the customer environments
- SAN configuration required in the customer environment
- Disaster Recovery Testing
- Any server remediation work required
- Configuration of any 3rd party replication and DR management products
- Custom Automation module design, creation, and delivery
- Any scripting
- Service not available to Dark Sites
- Custom Automation module design, creation, and delivery
- Platform/Compute layer design
- Data Migration outside of demo
- Benchmark testing of a FlashArray's performance
- Anything not included in this document is out of scope



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**SERVICE BRIEF**

# FlashBlade//S® Capacity Add Service

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

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. Pure's Services Implementation and Integration Team can plan and execute a rapid deployment of your new FlashBlade.

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

**Highlights**

- Comprehensive Upgrade and Configuration

**Flexibility**

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

**Outcomes**

- Fully upgraded flash storage solution

# The End User Experience

Pure Services helps 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 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 FB//S.

## Service Overview

### Delivery Approach

Pure Services will follow the below engagement framework during delivery of the FB//S Capacity add service:

Stage	Owner	Activity
<b>Planning</b>	Pure, End-User	The Pure Services team will work with the End-User to validate: <ul style="list-style-type: none"><li>· End-User Contact Information</li><li>· Installation Address and Data Center Requirements</li><li>· Access and Change Control Requirements</li><li>· Introductory call to review the procedure and discuss expectations and requirements</li><li>· Schedule the Capacity Add activity</li></ul>
<b>Implementation</b>	Pure	On-site hardware installation Build and configure the additional FB//S Additional Capacity
<b>Post Implementation</b>	Pure, End-User	The Pure Storage on-site implementation Engineer will perform the Pure standard health check to validate that the FB//S Additional Capacity has been installed successfully and provide a demonstration via the End User via the Pure Graphical User Interface (GUI).



### **Work Product**

- Configuration of additional Capacity into FlashBlade//S array

### **Dependencies**

- Any additional Capacity must have been procured and be available on-site prior to the work

### **Scoping Assumptions**

- On-site activity only
- 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 fees will be provided.

### **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

### **Out of Scope**

- Anything not listed in the document or in an applicable SOW is out of scope for Pure

## **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](http://www.purestorage.com).

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## SERVICE BRIEF



# FlashArray™ File Services Enablement

Expert advice and assistance in quickly and efficiently deploying your FlashArray File (FA) Services environment

## Highlights

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

## Flexibility

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

## Outcomes

- Vendor & customer approved FA File Services solution design
- Design & Operations Guide
- Pure led end to end testing & Knowledge transfer

Pure Storage has integrated file protocols into the existing Purity stack, providing native file storage and access for FlashArrays (FA), integrating SMB and NFS protocols and multiprotocol access and a native file system into the Purity//FA operating system. 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.

Native FlashArray File ActiveDR replication provides a near-zero Recovery Point Objective (RPO) with Continuous Asynchronous Replication/

The Pure FlashArray File Services Enablement service enables End Users to quickly enable and take advantage of FA File Services, accelerating time to value.

## The End User Experience

Pure Services helps 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.

## Service Overview

With our FlashArray File Services 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 offer two tiers of FA File Enablement Service:

- Standard: File Service enablement on a single FlashArray
- Enhanced: File Services enablement on a pair of FlashArrays, including ActiveDR setup for File Replication

## Delivery Approach

Pure Services will follow the below engagement framework during delivery of the FA File Services enablement service:

Stage	Owner	Activity
<b>Technical Workshop</b>	Pure, End User	Introduction to FlashArray (FA) File Services Confirm all prerequisites for FA File Service enablement have been met Agree to functional & non-functional requirements Agree to Delivery Schedule
<b>Design &amp; Documentation</b>	Pure	Tailored Design & Operational Documentation will include the following content : <ul style="list-style-type: none"><li>· Architecture</li><li>· Requirements</li><li>· Virtual Interface Networking configuration and best practices</li><li>· NFS and SMB File System Provisioning</li></ul>



- Directory Services Integration for AD and LDAP services
- Snapshot Protection
- Quota Manager

ActiveDR for File Services (Enhanced)

<b>Enablement</b>	Pure	Configuration of an initial File Services environment, limited to the setup of a single NFS and SMB file system  Installation and configuration of ActiveDR for File Services (Enhanced only)
<b>Test &amp; Acceptance</b>	Pure	End-to-end test plan tracked against requirements and the design blueprint
<b>Knowledge Transfer</b>	Pure, End User	Knowledge Transfer Session for FA File Services, best practices and recommendations

## Work Product

Both the Standard and Enhanced Services provide the following outcomes:

- FA File Services Technical Workshop
- Enablement of a test FA File Services Environment
- FA File Services Design and Operations Guide
- FlashArray File Services Customer Configuration Output document (As-Built Design)

Work Product	Standard	Enhanced
<b>FlashArray File Service Enablement</b>	Single Array	Two Arrays
<b>Virtual File Network Interfaces Configured</b>	1	2



<b>File Systems Configured (NFS/SMB)</b>	2	2
<b>Managed Directories Configured (NFS/SMB)</b>	2	2
<b>Snapshot Policies Configured</b>	1	1
<b>Quota Management Policies Configured</b>	1	1
<b>Export Policies Configured (NFS/SMB)</b>	2	4
<b>ActiveDR PODs (including Replica-Link) Configured</b>	N/A	1
<b>Replication Network Interfaces Configured</b>	N/A	8

## Dependencies

- The in-scope FlashArray(s) must be running a minimum version of Purity 6.2.x for FlashArray File and Purity 6.3.x for ActiveDR for FlashArray File Services
- Formal approval must be obtained in advance from Pure Storage for the enablement of the FA File Service tunables.
- 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 (Standard)
- The environment must have four available physical ethernet ports (two per controller) per source and target FlashArrays, split across two network switches in an active/passive relationship to provide High Availability (Standard)

## Scoping Assumptions

- 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, 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 to test NFS and SMB access.
- Share information about infrastructure and business and operational process, when requested, such as but not limited to:
  - Data Centre 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)
- Access to skilled resources to assist with any design or environmental questions that arise
- 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 & Disaster Recovery Plans
- Platform/Compute layer design
- Physical installation or deployment of FlashArray
- Anything not listed in the document or in an applicable SOW is out of scope for Pure

## About Pure Services

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**SERVICE BRIEF**

# Pure Dark Site Health Evaluation

Array Evaluation for Dark Site Customers.

**Highlights**

- On-site Evaluation (Health Check) of your Pure Array.

**Flexibility**

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

**Outcome**

- Health-check report with recommendations

Whether for security or regulatory reasons; Pure Storage® Customers may have a requirement to operate their Pure 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's 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.

**The End User Experience**

Pure Services helps 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.

**Service Overview**

Pure Services offers a dark site Evaluation (Health Check) Service for Pure arrays and provides a dedicated Subject Matter Expert onsite to validate your equipment.

## Delivery Approach

Pure Services will follow the engagement framework during delivery of the dark site Health Check Service as detailed below:

Stage	Owner	Activity
<b>Planning</b>	Pure	<ul style="list-style-type: none"><li>- Obtain any array information (version, model and serial number) if possible</li><li>- Check whether there are any existing Service Cases open for the array(s)</li></ul>
<b>On-Site Evaluation</b>	Pure, End User	<p>Perform Pure standard Health Check on in-scope array(s), including:</p> <ul style="list-style-type: none"><li>- Checking for error messages and fault lights</li><li>- Checking drive wear level</li><li>- Checking shelf configuration, type and version</li><li>- Checking drive type(s), data pack information and firmware versions</li><li>- Confirming array serial numbers</li><li>- Confirming firmware versions / Purity upgrade requirements</li><li>- Checking array data capacity and configuration</li></ul>
<b>Post-Health Check</b>	Pure	<p>Perform Pure standard Post- Health Check activities, including:</p> <ul style="list-style-type: none"><li>- Reviewing open tickets requiring break / fix work</li><li>- Providing Pure standard Health Check Report</li><li>- Providing recommendation(s) or applicable best practices</li></ul>

## Work Product

The dark site Health Check Service provides Customers with the following outcomes:

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





## Scoping Assumptions

- The resource that Pure 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 resource during the visit.
- 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 fees will be provided.

## Customer Responsibilities

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

## Service Limitations

- The Service is valid for up to a maximum of four(4) FlashArrays.
- The Health Check is limited to the Pure arrays in scope and 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.



## Out of Scope

- Any changes or remediation work (for example Purity upgrades) are out of scope.
- Health Check or validation of any none in-scope Pure arrays.
- Any performance monitoring or recommendations.
- 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 fees will be provided.
- Anything not listed in the document or in an applicable SOW is out of scope for Pure.



## About Pure Services

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## SERVICE BRIEF

# Portworx® Single Cluster Installation Service

Rapid installation of Portworx, ensuring your cluster is ready for production workloads.

**Highlights**

- Understanding of Portworx components, features, and requirements
- Installation of a single Portworx cluster

**Flexibility**

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

**Outcomes**

- Portworx Installation Planning Workshop
- Installation of a single Portworx cluster
- Post-installation report

**Container Storage for the Enterprise**

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 the deployment of stateful containerized applications. Application data migration, snapshots, data backups, topology awareness, and other enterprise features make Portworx an invaluable technology for the End User with application containerization projects.

The Portworx Single Cluster Installation Service delivered by Pure Storage® Professional Services includes a Portworx Installation Planning Workshop and the installation of a single Portworx Cluster.

**The End User Experience**

Pure's Services are an integral part of the Pure Customer Experience (CX) team and is missioned with helping End User organizations evaluate, activate, and innovate their IT solutions.

**Services Overview**

This service encompasses two distinct elements:

1. A Portworx Installation Planning Workshop
2. A basic, single Portworx cluster installation

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# Delivery Methodology

Element	Owner	Topics Covered in Workshop	Delivery Method
<b>Portworx Installation Planning Workshop</b>	Pure, End User, Pure authorized reseller (if applicable)	<p><b>Deployment</b></p> <ul style="list-style-type: none"> <li>• Architectural Overview</li> <li>• Requirements               <ul style="list-style-type: none"> <li>◦ Infrastructure</li> <li>◦ Network</li> </ul> </li> <li>• Key-Value Database (etcd) Options</li> <li>• Storage</li> <li>• Volume               <ul style="list-style-type: none"> <li>◦ Replicas</li> <li>◦ Snapshots</li> <li>◦ Cloudsnaps</li> <li>◦ Stateful Backups</li> </ul> </li> <li>• High Availability (HA) and Disaster Recovery (DR) Strategies</li> <li>• STORK</li> <li>• Autopilot</li> <li>• CSI</li> <li>• Security</li> <li>• PX-Central</li> <li>• PX-Backup</li> <li>• Monitoring Portworx</li> <li>• Telemetry</li> <li>• Performance Considerations</li> </ul> <p><b>Capacity Management and Failure Recover</b></p> <ul style="list-style-type: none"> <li>• Adding Storage Capacity</li> <li>• Adding and Removing Nodes</li> <li>• Failed Storage Recovery</li> <li>• etcd Failure Recovery</li> </ul>	Teleconference
<b>Installation</b>	Pure, End User, Pure authorized reseller (if applicable)	<p>Following attendance of the Portworx Installation Planning Workshop and successful completion of the pre-installation questionnaire, Pure Storage will:</p> <ul style="list-style-type: none"> <li>• Install a <b>single</b> Portworx cluster on a <b>single</b> Kubernetes cluster</li> <li>• Deploy an example database, fail over that database, and remove that database to prove the health of the Portworx cluster</li> </ul> <p>The final stage is to gather information about the deployment to provide the End User with a post-installation report.</p>	Teleconference

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## Work Product

- Portworx Installation Planning Workshop slide deck
- Single Portworx Cluster Installation
- Post-Installation Report

## Scope Limitations

- The Portworx Installation Planning Workshop is provided during a single session of up to four hours
- The installation is limited to a single Portworx Cluster on a single supported Kubernetes Cluster
- Kubernetes Secrets only
- Installation is via Operator only
- This service 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

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

- Pure's Service requires that the End User has command line access to their Kubernetes-based cluster so the configuration can be remotely reviewed via teleconference
- The target Kubernetes-based cluster must be already deployed and running with at least three compute nodes
- It is important that Pure Professional Services have access to End User resources who are responsible for the administration of the Kubernetes cluster, including compute nodes, networking, firewalls, image repositories, etc.
- To keep services on schedule and ensure that necessary personnel are available, it is important that both parties adhere to the agreed-upon schedules and provide ample notice of any changes to those schedules
- If the End User has opted for external etcd for Portworx, this etcd cluster must be deployed before Pure Storage will start the installation of Portworx. Best practices and setup information for etcd for Portworx can be found here: <https://docs.portworx.com/reference/knowledge-base/etcd/>
- Full, accurate, and timely completion of the pre-installation questionnaire

## Assumptions

- A Portworx Enterprise license is required for use of PX-Enterprise features. If you don't have a valid Portworx license, we will use a trial license which is valid for one month
- All Services are delivered remotely

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## Out of Scope

- Kubernetes design and implementation
- Portworx solution design
- No work done on PX-DR, PX-Central, or PX-Backup
- OIDC integration
- Integration with external monitoring systems
- Support for production application deployment
- Anything not listed in this document

## About Pure's Services

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## SERVICE BRIEF

# Portworx® Health Check Service

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

## Container Storage for the Enterprise

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

## Services Overview

The Portworx Health Check Service, delivered by Pure Services, includes a health check of up to three Portworx Clusters.

### Highlights

- A full health check of an existing Portworx implementation

### Flexibility

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

### Outcomes

- Comprehensive Report and Recommendations

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## Delivery Methodology

Stage	Owner	Task	Delivery Method
Health Check	Pure , End User Partner (if applicable)	<p>A health check will be performed on your existing Portworx Enterprise Cluster(s).</p> <p>This health check will include analysis of the adoption and deployment of the following features:</p> <ul style="list-style-type: none"><li>• Disaster Recovery</li><li>• Capacity Management</li><li>• PX-Central</li><li>• Backup and Restore</li><li>• Security</li></ul> <p>As well as assessing the operational processes for:</p> <ul style="list-style-type: none"><li>• Key-value Database (etcd) deployment configuration</li><li>• Infrastructure deployment</li><li>• Volume and Storage Pool management</li><li>• Monitoring</li><li>• Support</li></ul> <p>Once the health check is complete, a report is provided to the customer, including recommendations</p>	Teleconference

## Work Product

- Comprehensive Portworx Health Check and Recommendations Report

## Scope Limitations

- 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. 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 Services to quickly and successfully deploy the Portworx environment:

- Pure 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

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## Assumptions

- All services are delivered remotely.

## Out of Scope

- Kubernetes design and implementation
- Portworx solution design and implementation
- Support for production application deployment
- Anything not listed in this document or an applicable Statement of Work is out of scope for Pure

## About Pure Services

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## SERVICE BRIEF

# Portworx Enterprise Design & Operational Readiness

## Highlights

- Understand Kubernetes-based persistent storage
- Learn best practices for Portworx
- Install Portworx in a sustainable and automated way

## Flexibility

- Work with Pure to implement according to your schedule
- Deploy on any Kubernetes Cluster

## Outcomes

- Integration of Portworx with Kubernetes or OpenShift
- Dynamic provisioning for RWX/RWO volumes
- Hands-on training on using Portworx on Kubernetes

Utilize expert assistance for implementing your Kubernetes persistent storage on Portworx.

Enterprise applications running on Kubernetes need high availability, data security, backup and disaster recovery, the ability to meet strict performance SLAs, and hybrid/multicloud operational considerations. Portworx provides a custom, enterprise-class container infrastructure for Kubernetes-based platforms. This infrastructure includes a scalable, redundant, automated, and distributed storage layer that lets you deploy stateful containerized applications efficiently. Features like application data migration, snapshots, data backups, and topology awareness make Portworx invaluable for application containerization projects.

## Approach

We work with your team on the deployment of Portworx on your Kubernetes-based cluster. You'll get a knowledge sharing session on how to use it, as well as advice on best practices for implementing Portworx on Kubernetes or Red Hat OpenShift. Our approach lets your team start leveraging the Portworx platform quickly and efficiently.

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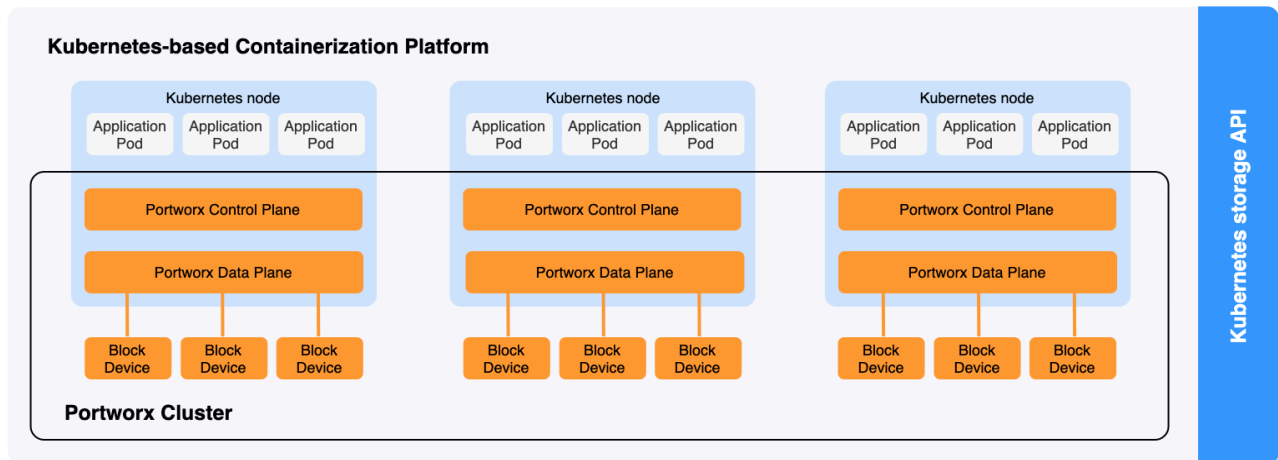


## Services Overview

The service covers the delivery of the Portworx Enterprise cluster and includes several phases to implement your Portworx Enterprise Storage solution:

Phase	Description
<b>Planning</b>	Our team will work with your experts to understand your container storage use cases as well as your technical and capacity requirements.
<b>Discovery</b>	We will hold a session to understand your environmental architecture and container storage needs. We'll also collect all information—like Kubernetes versioning and block storage configurations—required for implementation.
<b>Prerequisites</b>	Our team will help you to configure Service install prerequisites like compute-node block storage configurations and Kubernetes (or RedHat OpenShift) accesses. You may need to add new disks to your Kubernetes cluster nodes. See the “Service Prerequisites” chapter for a full list of prerequisites.
<b>Deployment</b>	We will deploy the Portworx Enterprise cluster.
<b>Testing</b>	We will perform tests to make sure that your Portworx cluster works as expected. This includes a number of tests related to stateful application deployments (like a database server with RWO volume, or a web server with RWX volume).
<b>Knowledge Sharing</b>	You'll get a hands-on session to help you start using Portworx on Kubernetes. The session includes real-life stateful application deployments using Kubernetes persistent storage.

## Solution Design



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## Work Product

Work Product under the Service includes:

Phase	Description
<b>Portworx Enterprise deployment</b>	We will deploy Portworx Enterprise on your Kubernetes-based cluster.
<b>Portworx Enterprise cluster</b>	We will configure and run a Portworx Enterprise cluster on your instance of Kubernetes based on our topology recommendations. The volume of data flowing through this configuration will be properly distributed between Portworx storage nodes according to topology-related settings. We will use an internal Portworx metadata service.
<b>Portworx and Kubernetes integration</b>	Your Kubernetes cluster will be properly integrated with the Portworx Enterprise cluster. This feature will allow your application teams to immediately manage storage requests by using the standard Kubernetes persistent storage model (PV/PVC). PERSISTENTVOLUME / PERSISTENTVOLUMECLAIM
<b>Hands-on training</b>	<p>We will show how you can use Portworx storage on a Kubernetes-based environment. Pure's Services will deliver this as a day of training with real-life examples. This training will include at least the following topics:</p> <ul style="list-style-type: none"><li>• Portworx architecture overview</li><li>• Portworx on Kubernetes architecture overview</li><li>• Requesting Portworx storage on Kubernetes</li><li>• Using RWO volumes</li><li>• Using RWX volumes</li><li>• Resizing volumes</li></ul>

## End User Responsibilities

For Pure's Services to quickly and successfully deploy the Portworx environment, our team will require:

- **Access to infrastructure:** Our team needs remote access to your Kubernetes/ RedHat OpenShift clusters and infrastructure. You will need to provide admin Kubernetes access rights and SSH access to all Kubernetes compute nodes.
- **A working Kubernetes cluster:** Kubernetes (or RedHat OpenShift) must be already deployed and running with at least three compute nodes.
- **Correct block storage configuration:** We will require you to add at least one 200GB disk to every Kubernetes compute node available (while the total number of disks is dependent on your capacity requirements). Additionally, we will require a 64GB disk on at least three compute nodes to store cluster metadata.

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- **Assistance during implementation:** For Pure to complete implementation work and debug any issues we may uncover we need access to those who are responsible for various parts of the infrastructure. This will include people who have admin access rights to Kubernetes cluster, its compute nodes, networking equipment, etc.
- **Timely participation:** To keep projects on schedule and ensure the necessary personnel will be available, both parties will adhere to agreed-upon schedules and provide ample notice of any changes.

## Limitations

Please note the following limitations:

- The Service supports one Kubernetes (or RedHat OpenShift) cluster.
- The Service supports up to 20 Kubernetes compute nodes.
- The Service includes one day of knowledge sharing for up to 10 participants.
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.

For a successful install, please be aware that:

- A Portworx Enterprise license needs to be in place. If you don't have a valid Portworx license, we will use a trial license which is valid for one month.
- Hands-on knowledge sharing will use the Portworx cluster implemented during Service delivery.
- All Services will be delivered remotely.

## Out of Scope

The following items are out of scope for this Service:

- Kubernetes design and implementation
- Portworx backups design and implementation
- Portworx DR design and implementation
- Anything not listed in this document or an applicable SOW
- Travel and expenses are not part of this Service unless otherwise agreed to by Pure. Travel and expenses are to be invoiced off of actuals after the conclusion of the Service.
- The Portworx PSE shall not be responsible for working on End User's technical environment and Kubernetes ecosystem or any other system or software beyond the scope of Portworx products.

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## SERVICE BRIEF

# Portworx DR Design & Operational Readiness Service

### Highlights

- Understanding of Container application Disaster Recovery Service with Portworx
- Fast DR implementation for common workloads

### Flexibility

- Work with the Pure's Services team to implement according to your schedule
- Services can be deployed on any Kubernetes cluster (including OpenShift)

### Outcomes

- Critical workloads protected by Pure's robust Disaster Recovery Service
- End User IT staff have skills to implement and manage Portworx Disaster Recovery Service
- Efficient Disaster Recovery testing and validation for common workloads
- Highly reliable **asynchronous Data Replication** between Active and Standby Portworx Enterprise clusters

Design and implementation of stateful application disaster recovery solution using Portworx Enterprise on Kubernetes.

It is not easy to implement a container application disaster recovery solution because of its complexity. This complexity may be simplified by using Portworx Enterprise that provides a purpose-built, enterprise-class container infrastructure for Kubernetes-based platforms. Portworx includes a scalable, redundant, automated, distributed storage layer that allows deploying stateful containerized applications efficiently. Portworx comes with a number of enterprise features helping with stateful application disaster recovery implementation using native mechanisms.

Pure Storage® Services provide a rapid deployment and configuration methodology offering for stateful applications disaster recovery with Portworx, powered by Li9 Technology Solutions. Our approach accelerates the time to value for this technology and container-native persistent storage.

### Approach

Our Engineers will help your team to implement an application disaster recovery solution using existing Active and Standby Kubernetes clusters with Portworx Enterprise. We will demonstrate to you how the Service works on a number of sample stateful applications. Our approach enables your team to start leveraging the Portworx Disaster Recovery mechanisms quickly and efficiently.

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## Services Overview

This Service is a step by step process to deliver disaster recovery for target sample applications using Portworx Enterprise and PX-DR on Kubernetes-based platforms.

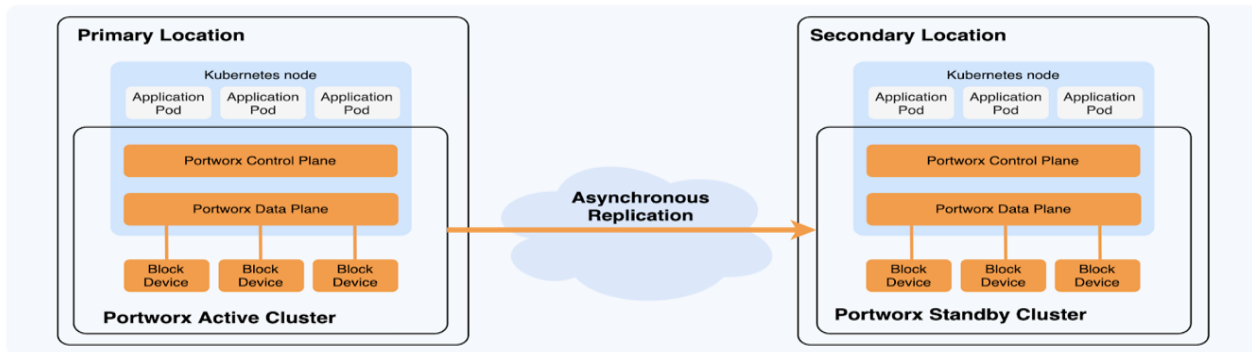
Phase	Description
<b>Planning</b>	Our team will work with your experts to understand your business application data resiliency goals and priorities, technical requirements, containerization storage use cases, and application disaster recovery requirements.
<b>Discovery</b>	Our team will perform a discovery session to understand your environmental architecture (focusing on Kubernetes, Portworx, and Networking layers). We will also collect all the required information to proceed with implementation.
<b>Prerequisites</b>	Our project team will help you to configure Service prerequisites. Please check for the full list of prerequisites in the "Service Prerequisites" chapter. At this stage, we will also validate that all prerequisites are met.
<b>Configure Disaster Recovery Infrastructure</b>	We will design and implement a Disaster Recovery Service using Portworx Enterprise Asynchronous replication. The Disaster Recovery will be implemented between Active and Standby Kubernetes + Portworx clusters for a number of standard applications.
<b>Testing</b>	We will perform a number of tests to make sure that the Stateful application Disaster Recovery Solution works as expected between Active and Standby locations.
<b>Implement Disaster Recovery for sample applications</b>	We will help you to make sure if Disaster Recovery is properly configured for common workloads. Our approach is to demonstrate to you disaster recovery mechanisms for several standard use cases.

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## Solution Design



## Work Product

Phase	Description
<b>Data replication (asynchronous)</b>	There will be asynchronous data replication between Active and Standby Portworx Enterprise clusters. All data written to the Primary location (Active) will be replicated asynchronously to the Backup location (Standby).
<b>Demo Applications Deployment</b>	We'll deploy a few applications to demonstrate Portworx Disaster Recovery functionality. The list of applications will include a simple web-site, SQL database, and NoSQL Database.
<b>Disaster Recovery</b>	We'll discuss the approach to Disaster Recovery configuration for all three basic applications, plan the replication configuration, discuss the recovery plan.
<b>Disaster Recovery Demo</b>	When the Disaster Recovery plan is ready and all demo applications deployed, we'll emulate Disaster events, and handle Recovery according to the Disaster Recovery Plan.
<b>Knowledge Sharing</b>	We'll provide a technical overview of Portworx Data Replication and Disaster Recovery functionality, covering all the necessary topics to help you work comfortably with the Portworx DR Service.

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## End User Responsibilities

The following items must be in place or provided for Pure PS to quickly and successfully deliver the Service:

- **Access to infrastructure:** The team needs temporary remote access to your infrastructure to complete the work involved. Target hosting platforms may vary. The Pure team will need appropriate access levels to the hosting platform.
- **Work on Service prerequisites:** The Service requires a number of End User-provided items. Please review the full list of prerequisites in the “Service Prerequisites” chapter.
- **Assistance during implementation:** For Pure to complete implementation work and debug issues we may uncover, we must have access to people at the End User staff side with responsibility for various parts of the infrastructure roles, including admin access rights to Kubernetes clusters, networking equipment, etc.
- **Timely participation:** To keep Service on schedule and ensure the necessary personnel will be available, both parties will adhere to agreed-upon plans and provide ample notice of any changes to those schedules.
- **Work on your training homework:** The training assumes that End User staff will do some activities offline, outside of training sessions.

## Prerequisites and Work Product

- **Portworx Enterprise license:** The service requires a valid End User Portworx Enterprise license.
- **Two Portworx on Kubernetes clusters:** The Service assumes two application delivery locations - Active and Standby. Each location should have a Kubernetes cluster with a Portworx Enterprise cluster. Every cluster should have at least 500Gb usable space of storage, 20 vCPU and 32GB of RAM, to run demo applications. If you do not have the second Kubernetes + OpenShift cluster we may deliver it with additional costs.
- **Portworx and Kubernetes software version:** Both clusters should be up and running with exactly the same software versions.
- **Network connectivity:** Data replication requires network connectivity between Primary (Active) and Secondary (Standby) locations. Ports 9001 and 9010 on the Standby cluster should be reachable by the Active cluster.

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## Limitations

- Service includes disaster recovery configuration between two locations
  - One Active location (Kubernetes + Portworx)
  - One Standby location (Kubernetes + Portworx)
- We use the following sample applications for demonstration purposes
  - A MariaDB database service on an RWO volume
  - Multiple nginx web servers on an RWX volume
- The following applications will be deployed for demo purposes:
  - Cassandra database
  - MySQL database
  - WordPress with MySQL database

## Assumptions

- All Services and training are delivered remotely.
- We will configure an asynchronous data replication.
- All End User prerequisites are delivered on time before the start of the project. Missing or incomplete items may cause Service delays and may incur additional charges.
- End User provides all necessary contacts, engineering support, and compute/network/storage resources continuously for a one-month time frame.
- 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

- The following items are out of scope for this Service:
  - Kubernetes design and implementation
  - Portworx Enterprise solution design and implementation
  - Disaster Recovery implementation for workloads not mentioned in this document or an applicable SOW
  - Clarify if all custom coding / scripting is excluded or should be included with limitations
  - Anything not listed in this document or an applicable SOW
- Travel and expenses are not part of this Service unless otherwise agreed to by Pure. Travel and expenses are to be invoiced off of actuals after the conclusion of the Service.

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- The Portworx PSE shall not be responsible for working on End User's technical environment and Kubernetes ecosystem or any other system or software beyond the scope of this service.

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## SERVICE BRIEF

# Portworx Backup Design & Operational Readiness Service

Design and implementation of application backup solution using PX-Backup on Kubernetes.

## Highlights

- Stateful container application backups with PX-Backup
- Ability to restore applications and data in event of failure

## Flexibility

- Work with Pure to implement according to your schedule
- Wide range of supported backup locations

## Outcomes

- Stateful container application data is protected
- End User IT staff have skills to efficiently manage Portworx backup solution
- PX-Backup installation, rules, and schedule policies are properly configured and verified

Container application data backup is a crucial component of any reliable solution since every business wants to ensure their applications are protected against any data loss. Portworx PX-Backup provides a number of enterprise features that enable reliable application backup implementation using native mechanisms. Portworx Enterprise provides a purpose-built, enterprise-class container infrastructure for Kubernetes-based platforms. Portworx includes a scalable, redundant, automated, distributed storage layer that allows deploying stateful containerized applications efficiently.

Pure Storage® Services provide a rapid deployment and configuration methodology offering for applications backup with Portworx, powered by Li9 Technology Solutions. Our approach accelerates the time to value for this technology and container-native persistent storage.

## Approach

Our Engineers will help your team to implement a stateful application backup solution using End User's existing PX-Backup software for applications running on a Kubernetes cluster with Portworx Enterprise as a storage layer. We will demonstrate to you how the solution works on a number of sample stateful applications. Our approach enables your team to start leveraging the PX-Backup mechanisms quickly and efficiently. Portworx on Kubernetes or Red Hat OpenShift. Our approach lets your team start leveraging the Portworx platform quickly and efficiently.

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## Services Overview

This Service is a step by step process to deliver application backup for target sample applications using Portworx Enterprise and PX-Backup on Kubernetes-based platforms.

Phase	Description
<b>Planning</b>	Our team will work with your experts to understand your business application data protection goals and priorities, technical requirements, container-native storage and containerization platform use cases, and application backup requirements.
<b>Discovery</b>	Our team will perform a discovery session to understand your environmental architecture (focusing on Kubernetes, Portworx, and Application data layers). We will also collect all the required information to proceed with implementation.
<b>Prerequisites</b>	Our team will help you to configure Service prerequisites. Please check for the full list of prerequisites in the "Service Prerequisites" chapter. At this stage, we will also validate that all prerequisites are met.
<b>PX-Backup Installation and Configuration</b>	We will ensure if the PX-Backup solution is installed and properly configured to support the required application backup functionality. Depending on your requirements we may install it as a standalone service or with an existing Portworx Enterprise cluster. We will also ensure that appropriate authentication mechanisms are used.
<b>Configure application backups</b>	This is the cornerstone of the Service. Our team will integrate PX-Backup with existing Kubernetes-based clusters, configure backup locations, and create backup rules for a number of target applications. Rules will include pre and post backup scripts to ensure your backup data is consistent. PX-Backup schedule policies will allow automatic data backups periodically.
<b>Backup tests</b>	We will perform tests to ensure the PX-Backup solution works as expected, backups are available, and test applications can be restored properly at a specific point in time.
<b>Restore tests</b>	We will perform restoration tests depending on your environment, we will cover restoration to the same namespace, custom namespace, show how to restore jobs and replace the existing resources.

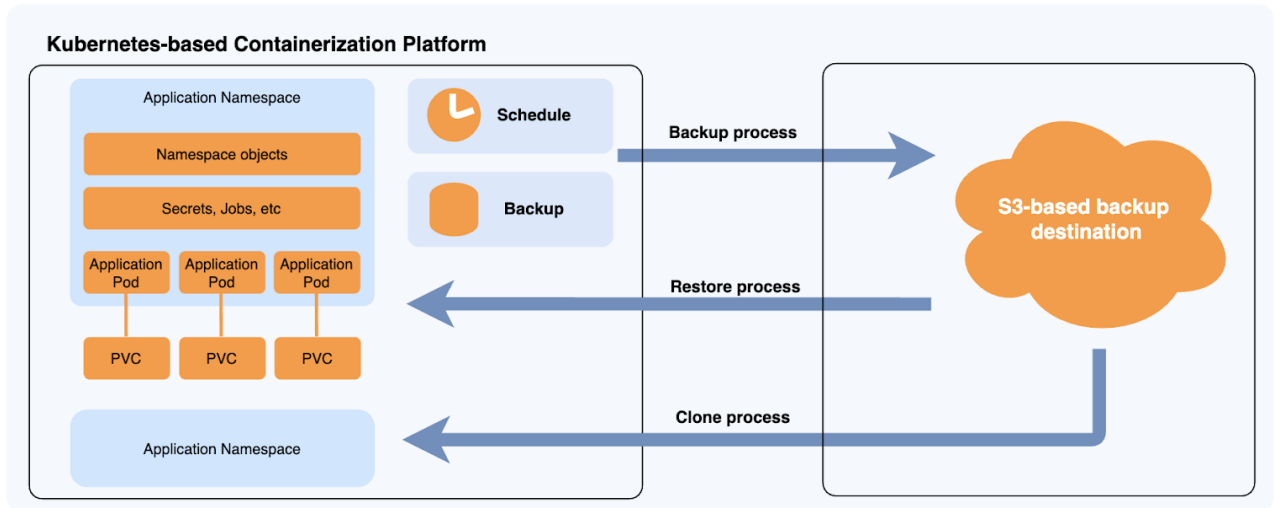
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## Solution Design



## Work Product

Work Product under the Service includes:

Phase	Description
<b>PX-Backup installation</b>	We'll install and configure the PX-Backup solution using End User's existing Kubernetes-based platform.
<b>Demo application deployment</b>	We'll deploy sample applications to demonstrate PX-Backup functionality, including a simple web-site, SQL database, and NoSQL database.
<b>Backup Rules design</b>	We'll create backup rules for a number of stateless and stateful applications to demonstrate the basic backup functionality, usage of Pre-exec and Post-exec rules, how to create backup schedules, and use of backup labels.
<b>Backup Restoration demo</b>	We'll remove the test data from the demo applications and the whole namespaces, then restore the deleted items to the same Kubernetes-based cluster, or to the new destination

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## Knowledge sharing

We'll provide a technical overview of Portworx Backup functionality, covering all the necessary topics to help you work comfortably with the Portworx backup solution.

## End User Responsibilities

For Pure's Services to quickly and successfully deploy the Portworx environment, our team requires:

- **Access to infrastructure:** The project team needs temporary remote access to your infrastructure to complete the work involved. Target hosting platforms may vary. The Pure Services team will need appropriate access levels to the hosting platform.
- **Work on Service prerequisites:** The Service requires a number of End User-provided items. Please review the full list of prerequisites in the "Service Prerequisites" chapter.
- **Assistance during implementation:** For Pure to complete implementation work and debug issues we may uncover, we must have access to people at the End User staff side with responsibility for various parts of the infrastructure roles, including admin access rights to Kubernetes clusters, networking equipment, etc.
- **Timely participation:** To keep the Service on schedule and ensure the necessary personnel will be available, both parties will adhere to agreed-upon plans and provide ample notice of any changes to those schedules.

## Prerequisites and Work Product

- **Portworx Enterprise and PX-Backup Licenses:** The Service requires valid End User Portworx Enterprise and PX-Backup licenses.
- **Portworx on Kubernetes cluster:** The Service assumes that the End User's Kubernetes-based platform is deployed and available, and the initial Portworx Enterprise (minimum version: 2.2) deployment is available and pre-configured.
- **Kubernetes access:** To perform configuration and all the following steps we need administrative access level to End User's current Kubernetes-based platform and the corresponding access to an S3 Object Storage, i.e., Storage that provides access to data with the Simple Storage Service (S3) protocol.

**Network connectivity:** PX-Backup requires configuring secure and reliable network access to an S3-compliant solution to store backups.

Object storage: For public cloud environments, such as AWS, GCE, Microsoft Azure, or any S3-compliant solution, End User credentials must be provided for configuring an object store as a backup location. The minimum size is 500Gb.

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## Limitations

- The following applications will be deployed for demo purposes:
  - Cassandra database
  - MySQL database
  - WordPress with MySQL database
- Only one backup destination from the following list will be used:
  - Azure Blob-Storage
  - Google Cloud Storage
  - On-prem S3-compliant Storage
- Hands-on knowledge sharing will use the Portworx cluster implemented during Service delivery.
- All Services will be delivered remotely.

## Assumptions

- All Services are delivered remotely
- All prerequisites are delivered on time before the start of the Service. Missing or incomplete items may cause Service delays and may incur additional charges
- The End User shall provide all necessary contacts, engineering, support and compute/network/storage resources continuously for a one-month time frame
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided.

## Out of Scope

The following items are out of scope for this Service:

- Kubernetes design and implementation
- Portworx Enterprise solution design and implementation
- Disaster Recovery implementation
- All custom coding / scripting is excluded
- Anything else not listed in this document or an applicable SOW

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## SERVICE BRIEF

# Block Data Migration Fast Start Service

## 'Fast Start' Block Data Migration Service

### Highlights

- 'Teach to Fish' approach
- Lower cost & Risk to Migration execution
- Expedite migration activities

### Flexibility

- Work with Pure Services to implement according to your schedule

This service offering takes a 'teach to fish' approach to enabling our End Users to perform their own data migrations to the Pure Storage platform while leveraging Pure Services team's deep expertise. This model not only lowers the cost and risk of such a transition, but allows our End Users to quickly capitalize on the industry-leading performance and cost-saving efficiencies in data center space, power, and cooling that they expect from their Pure investment.

## The End User Experience

Pure Professional Services will accelerate a customer's in-house migration onto Pure Storage by delivering best-in-class documentation and processes, complimented by pilot migrations and knowledge transfer. This fixed price service will deliver comprehensive documentation and pilot migrations for up to 6 servers of various operating systems and migration methods.

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## Service Overview

Pure will start the process by using a discovery questionnaire to confirm the project scope and project cost. The questionnaire will provide the input for the Service kickoff session.

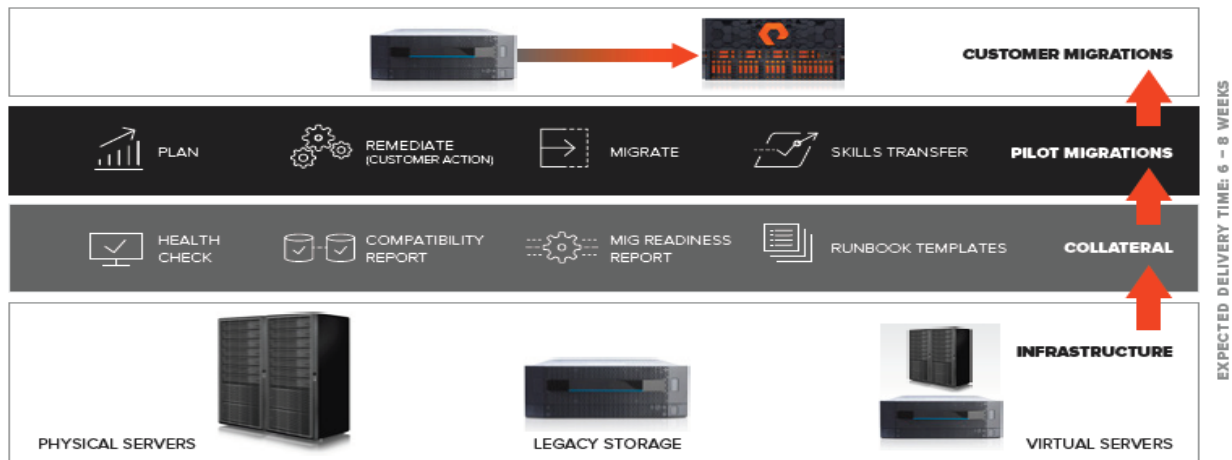
The Service lifecycle is as follows:

Phase	Description
<b>Kickoff Workshop</b>	Pure consultants will arrange a kickoff meeting to review the completed questionnaire, agree on the in-scope servers and migration methodologies, and set up governance for the project/engagement
<b>Discovery</b>	<p>A Pure technical consultant will analyze the End User-provided environmental information and output from the workshop to deliver the following documents:</p> <ul style="list-style-type: none"><li>• Remediation report on the in-scope servers</li><li>• Migration readiness report</li><li>• Runbook templates for the migration methods</li><li>• Populated runbooks for the target servers to be migrated</li><li>• Migration schedule</li></ul>
<b>Appliance Installation (if applicable)</b>	Upon End User acceptance of the migration plan, runbooks, and any remediation work being carried out, the Pure Services consultant will, if required, install and configure the agreed upon migration appliance in preparation for the pilot migrations.
<b>Pilot Migration</b>	The Pure Services consultant will work closely with the customer to deliver the pilot migrations using the runbooks. The migration events will include full skills transfer on the tools used.
<b>Knowledge Transfer</b>	The Pure project team will review all implementation collateral and answer any questions with respect to that collateral. There will be knowledge transfer throughout the engagement, especially at runbook creation and migration.

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## Work Product

The following deliverables apply to this Service:

- Runbook templates
- Agreed project plan
- Completed runbooks for up to six pilot migrations
- Remediation and migration readiness report
- Completion and closure document

## Scoping Assumptions

The following deliverables apply to this Service:

- Migration pilots will be performed on non-production data in one data center site
- Up to 50TB total migrated data and up to 6 servers across different operating systems and methods
- Up to 8 source storage ports in scope
- Migrations will be FC-FC or FC-iSCSI
- Migrations will take place in office hours (09:00am – 5:00pm)
- Data migration appliances are installed and configured in a single location
- Project duration is up to 8 weeks with migration events taking place within 4 weeks of commencement
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided

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## End User Responsibilities

The following End User Responsibilities apply to this Service:

- Provision of the servers for migration
- Server remediation (if needed, for example converting to standard MPIO)
- Change control
- Data center facilities for appliance installation (if needed)
- Access to infrastructure management systems
- Access to skilled resources to perform configuration and UAT tasks
- Provide remote access to the environment for monitoring of migration progress
- All host configuration activities

## Out of Scope

The following activities / deliverables are outside of the scope of this Service:

- No snapshots / clones to be migrated
- Physical relocation of any equipment
- Host pre-migration work (confidence reboots, etc.)
- Cable laying and physical connectivity
- Cross site migration
- Installation of any infrastructure apart from the in-scope appliances
- DR Testing
- Anything not covered in this document or an applicable Statement of Work is out of scope

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## About Pure Services

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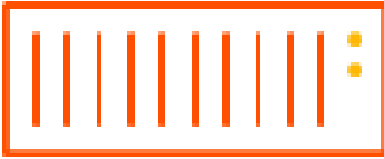
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## SERVICE BRIEF



# FlashStack® Installation Service

Enhance your Pure Storage® installation experience.

## Highlights

- End-to-end installation and configuration
- Proactive 24x7 CloudAssist support
- Pure1® continuous monitoring and assistance

## Flexibility

- Implement according to your schedule

## Outcomes

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

Pure 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's 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 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. We designed the FlashStack Installation Service for organizations that want to quickly activate the full potential of their systems. Services include:

- **Pre-implementation planning:** Our team will conduct discovery to review your environment, confirm configuration details, and schedule the install.
- **Hardware installation:** A Pure implementation engineer will unpack, rack, cable, and power up your new converged infrastructure.
- **FlashStack configuration:** The team will configure each individual component according to the FlashStack Deployment Guide.
- **Solution and network testing:** The team will test the entire FlashStack solution to ensure connectivity between the VMware hosts and their volumes living on the Pure FlashArray™.
- **Knowledge transfer:** After installation, the implementation engineer will work with your team to review the configuration from end-to-end, including VMware host instances on the Cisco UCS server, LAN and SAN network infrastructure configurations, and Pure FlashArray volumes that are accessible from hosts.

## FlashStack Installation Service Work Product

Stage	Owner	Task	Delivery Method
<b>Pre-planning</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Send installation checklist and gather pre-install information (FlashStack Installation Workbook)</li> <li>- Schedule site survey, if required</li> </ul>	Teleconference, email
<b>Planning and document completion</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Review completed document and site survey information</li> <li>- Allocate a Pure resource for installation</li> <li>- Formally schedule installation</li> <li>- Request data center access/open required tickets</li> </ul>	Teleconference, email
<b>Installation</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Execute onsite install in alignment to the FlashStack Installation Workbook details:</li> <li>- Rack and wire all components within the FlashStack Converged Infrastructure (CI) architecture into a single rack</li> <li>- Complete installation and configuration of FlashArray(s)</li> <li>- Standard installation and basic configuration of all Cisco components:               <ul style="list-style-type: none"> <li>o Cisco Nexus and MDS switches, including Fibre Channel SAN zoning.</li> <li>o Up to 2 Cisco UCS server chassis (max. of 16 servers)</li> <li>o Base VMware host software onto Cisco UCS servers</li> </ul> </li> </ul>	End User site, data center
<b>Post-installation</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Execute post-install health checks with Pure Support</li> <li>- Lead End User through GUI overview</li> </ul>	End User site, data center

### Scoping Parameters

- Sufficient rack space and power provisioned for installation
- The installation is an on-site activity
- 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.

### End User Responsibilities

Provide the Pure 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.
- End User to provide rack space and power (PDU) for installation.

### Out of Scope

Anything not listed and detailed in the deliverables section of this document is out of scope for Pure Storage.

## About Pure's Services

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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 Services to implement according to your schedule

### Outcome

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

Many legacy hardware Backup appliances are expensive to run (both in terms of maintenance costs as well as carbon footprint), suffer from very slow data recovery times, contain no native ransomware protection and can often be single use only. By moving your Backup environment to Pure technology, you can 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.

In order to accelerate any TCO savings however, it is important to avoid the expense of running two backup environments in parallel, whilst still catering for any long-term backup retention commitments you may have. Legacy hardware must be decommissioned and removed as quickly as possible. Pure is able to assist by identifying any existing backup data that needs to be proactively moved to Pure and by providing a plan and roadmap to success to enable you to successfully retire and decommission 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 Customer Experience (CX) team, we engage with organizations to evaluate, activate, and innovate their IT solutions.

# Service Overview

## Delivery Approach

Pure Services will follow the below engagement framework during delivery of the backup target modernization service:

Stage	Owner	Activity
<b>Discovery</b>	Pure	<p>Workshop to collect information regarding the in-scope backup environment:</p> <ul style="list-style-type: none"> <li>- Size of Backup environment</li> <li>- Backup schedules configured</li> <li>- Retention Policies</li> </ul>
<b>Analysis</b>	Pure, End User	<p>Analyze and review Backup data to identify and document:</p> <ul style="list-style-type: none"> <li>- Any Backup data requiring migration to Pure</li> <li>- Backup data not requiring migration (typically &lt;30 day retention policies)</li> </ul> <p>A knowledge transfer demonstrating proposed changes to environment and any impacts</p> <p>Proposed migration plan / basic runbook will also be published</p>
<b>Enablement</b>	Pure, End User	<p>Configure Pure arrays into the Backup environment</p> <p>Configure sample Backup job</p> <p>Configure Backup job Duplication (for sample job)</p> <p>Perform a Proof of Concept Backup data copy to Pure:</p> <ul style="list-style-type: none"> <li>- A single Veeam backup job (up to a maximum of 2TB in size)</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>- Up to 2TB of NetBackup images</li> </ul> <p>Perform a Backup Restore Test of the copied data, or a subset of data as per End User requirements</p>



## Work Product

Work Product	Description
Knowledge Transfer Deck	Overview of new Solution, proposed changes and any impact
Proposed Backup Migration Plan / Road to Success Document	As-Built-Design Identification of backup data requiring cloning to Pure 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	Configuration of New backup target using Veeam or NetBackup software as appropriate Configuration of a sample Replication Backup job
Proof of Concept / Demo copy job to Pure	Demonstration of a successful backup clone job to Pure
Successful Data Restore test	Successful data restore test of cloned data to confirm restore successful

## Scoping Assumptions

- The Service is only supported for End Users running on either NetBackup v9 or v10, Veeam v10 or 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 is not responsible for provisioning of any additional NetBackup Media server requirements. (OS Provisioning / Networking requirements)
- Pure will not make any changes to current backup policies - The backup jobs should be reconfigured to point to the Pure 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, but will be performed by the End User.
- Pure will demonstrate a single Veeam 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 will create one for purposes of the demonstration.
- Any in-scope Pure FlashArrays will be pre-installed and running a minimum of Purity 6.3.
- Any in-scope Pure FlashBlades will be pre-installed and running a minimum of Purity 3.3.
- Any in-scope Data Domains, or backup software should be upgraded to the latest stable code version prior to the engagement.
- End User 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 User must have a valid support contract with the Software vendor with appropriate Service Level Agreements.
- The target Pure array has been sized appropriately.

## End User Responsibilities

- Arrange access to skilled Resources and Subject Matter Experts.
- Assist Pure with 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.

### Service Limitations

- 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 target arrays.
- Any Pure 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 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 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. Upon expiration, no refunds of prepaid Services fees will be provided.

### Out of Scope

- DataDomains running Virtual Tape Libraries are not supported.
- DataDomains running in Governance mode are not supported.
- DataDomains running Cloud Tier are not supported.
- FlashBlade//S is not currently supported as a target device.
- Any Netbackup Master or Media server and OS patching requirements are out of scope.
- Any environments not running on either Netbackup v9 or v10, Veeam v10 or v11, as well as DDOS 6x or 7x are out of scope.
- Any changes to existing Backup policies are out of scope.



- Anything not listed and detailed in the Work Product section of this document or an applicable Statement of Work is out of scope.



## About Pure Services

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SERVICE BRIEF

# FlashBlade®

## Remote Installation Service

### Highlights

- Comprehensive installation and configuration
- Proactive 24x7 CloudAssist support
- Pure1® continuous monitoring and assistance

### Flexibility

- Implement according to your schedule

### Outcome

- FlashBlade installation

### Comprehensive remote installation and configuration of your FlashBlade

Pure Services provide a remote methodology for deploying and configuring the Pure 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 filled out by the End User prior to the Pre-Panning workshop.
- Setting up a pre-call introduction to discuss expectations and requirements for remote engagement and review the FlashBlade installation and thoroughly review the completed FlashBlade IWB.

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- 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 based 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 customer 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, they will configure the FlashBlade 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

- Assist the End User in determining the IP address of the system, then using video conferencing facilities, assist the customer in uploading the JSON based configuration to the array via API using either cURL or Postman tools (DHCP & API Methodology) using a customer provided computer.
- If necessary, perform upgrade following the then current upgrade procedures.

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

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## 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 CA 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 that:
  - The End User can access the GUI
  - The End User can create a data VLAN and data VIP
  - The End User can mount the FlashBlade data VIP from a client.
  - 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, 1VIP and confirm access through one client.

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## Engagement Process

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

Stage	Task	Delivery Method
<b>Pre-Planning</b>	Send Installation Checklist Gather pre-install information	Videoconference / Email
<b>Planning / Documentation Competition</b>	Review completed document Allocate a Pure resource for install and formally schedule	Videoconference / Email
<b>Installation</b>	Perform remote installation and configuration steps	Videoconference
<b>Post-Installation</b>	Execute post-install health checks with Pure support Pure engineer leads End User through GUI Overview	Videoconference / 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 location details
  - Site contact name
  - Site contact phone
  - 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 – IWB.

- Provide rack and power (PDU) locations designated for installation of system components
- Provide data network and management Ethernet connections (Optical/TwinAx) to the designated install location for connection to the FlashBlade.
- Provide fully configured End User side data and management networks prior to the start of install.

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## Scoping Assumptions

- 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

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

## About Pure Services

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## SERVICE BRIEF



### Highlights

- Support relocation of FlashBlade.

### Flexibility

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

### Outcomes

- Securely support relocation of your FlashBlade.

# Pure Storage FlashBlade Relocation Support Service

Minimize risk and securely relocate 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's 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's Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure End User Experience (CX) team, we engage with you directly to evaluate, activate, and innovate your IT solutions.

Staffed by engineers who know Pure products inside out, the FlashBlade Relocation Service team works closely with you to limit risk.

Pure's Services follow a strict methodology to relocate a Pure 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.

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## Service Overview

Stage	Owner	Task	Delivery Method
<b>Pre-planning</b>	Pure, 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
<b>Planning &amp; Document Completion</b>	Pure, End User, Pure authorized reseller (if applicable)	Review completed document and site survey information Request data center access/open required tickets	Video conference, email, Site Survey
<b>Relocation Preparation &amp; Installation</b>	Pure, End User, Pure authorized reseller (if applicable)	Pure Storage Professional Services will carry out the following activities:  <b>Origin Site:</b> <ul style="list-style-type: none"> <li>Conduct a health check the array</li> <li>Fully label components and cables</li> <li>Power down array, disconnect cabling and remove from rack</li> <li>Safely package the array and relevant parts</li> </ul> <b>Target Site</b> <ul style="list-style-type: none"> <li>Rack, cable and power up the array</li> <li>Reconfigure as required and validate connectivity</li> <li>Perform final health check</li> </ul>	End User site, data center site
<b>Post-relocation</b>	Pure, 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 to perform its obligations.
- Arrange for the shipment of the array between sites, including all Shipping, Insurance, Customs and Export responsibilities.
- Provide End User information/data to Pure. 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 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 personnel and or the performance of Services and Work Product listed herein.

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- Where work is required to take place in sensitive areas or locations subject to access controls, End User shall (i) make Pure 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 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 will not provide disaster recovery services for relocation support services and takes no responsibility for any loss or interruption of data.
- Where End User requires Pure 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 target site.
- Provide any needed connectivity cables to the rack location at target site.

## Out of Scope

- Shipment / 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.
- Anything not explicitly set-out in this document or an applicable SOW is out of scope.

## Scoping Assumptions

- 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.

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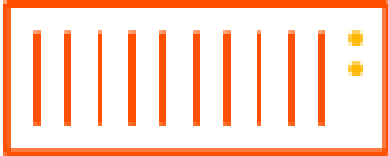
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## SERVICE BRIEF

# FlashBlade Multi-Chassis Installation Service



## Highlights

- End-to-end comprehensive installation and configuration of a Multi-chassis FlashBlade
- Proactive 24x7 CloudAssist support
- Pure1® continuous monitoring and assistance

## Flexibility

- Work with Pure's Services team to 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® 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. Pure's Services Implementation and Integration Team can plan and execute a rapid deployment of your new Multi-chassis FlashBlade.

Pure's Services follow a strict methodology for deploying and configuring the Pure multi-chassis FlashBlade 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's 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 outcomes. The FlashBlade Multi-chassis Installation Service is designed for organizations that want to quickly activate the full potential of FlashBlade. Services include:

## Multi-Chassis FlashBlade 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:** A Pure implementation engineer 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.

- **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.

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.

## Multi-Chassis FlashBlade Installation Delivery Phases

Stage	Owner	Task	Delivery Method
Pre-planning	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>• Send installation checklist / Network site planning guide and gather pre-install information</li> <li>• Schedule site survey, if required</li> </ul>	Teleconference, email
Planning & Document Completion	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>• Allocate a Pure resource for installation and formally schedule installation</li> <li>• Request data center access/open required tickets</li> </ul>	Teleconference, email
Installation	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>• Unpack the FlashBlade Chassis, XFM switches and components and ensure all components are present and functional</li> <li>• Mount the FlashBlade Chassis and XFM switches rails into the cabinet</li> <li>• Slide the FlashBlade Chassis and XFM switches onto the rails and secure to the racks</li> <li>• Upgrade XFM switches, FlashBlade Chassis Purity/FB OS</li> <li>• Connect cables between Chassis and XFM switches. Plug in appropriate network and management connections to the FlashBlade and XFM switches</li> <li>• Configure Fabric Modules and networking interfaces</li> <li>• Configure Call Home Setup, Remote Assist and Alerting Services.</li> </ul>	End User site, Data Center
Post-Installation	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>• Pure Engineer 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 (Fabric modules to XFM switches connectivity data network, mgmt. network)</li> <li>• Provide a detailed overview of the Pure Storage FlashBlade GUI FlashBlade and validate:</li> </ul>	End User site, Data Center

## SERVICE BRIEF

## SCOPING PARAMETERS

- Sufficient rack space and power provisioned for installation of a Multi-Chassis FlashBlade and XFM switches
- Fully configured End User side data and management networks prior to the start of install
- The installation is an on-site activity
- 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.

## END USER RESPONSIBILITIES

- Review and address requirements within the Network Site Planning Document
- Complete the Pre-Installation Workbook document 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 install.
- Provide data network and management Ethernet connections to the designated install location for connection to the FlashBlade Chassis and XFM switches.

## OUT OF SCOPE

- Anything not listed and detailed in the Scoping parameters section of this document 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's Services and our Pure authorized resellers 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](http://www.purestorage.com).

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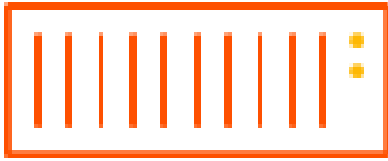
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## SERVICE BRIEF

# Pure FlashBlade® Installation Service

Engage with Pure's Services to simplify FlashBlade installation.

### Highlights

- Comprehensive installation and configuration of Single-chassis FlashBlade
- Proactive 24x7 support
- Pure1® continuous monitoring and assistance

### Flexibility

- 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® 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. Pure's Services Implementation and Integration Team can plan and execute a rapid deployment of your new FlashBlade.

Pure's 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's 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 Installation Service is designed for organizations that want to quickly activate the full potential of FlashBlade. Services include:

## FlashBlade 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:** We will unpack, rack, cable, and power up your new FlashBlade.



## SERVICE BRIEF

- **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:** We 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, 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. Acceptance testing and knowledge transfer complete the services.

## FlashBlade Installation Delivery Phases

Stage	Owner	Task	Delivery Method
<b>Pre-planning</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"><li>- Send installation checklist / network site planning guide and gather pre-install information</li><li>- Schedule site survey, if required</li></ul>	Teleconference, email
<b>Planning and document completion</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"><li>- Allocate a Pure resource for installation</li><li>- Formally schedule installation</li><li>- Request data center access/open required tickets</li></ul>	Teleconference, email
<b>Installation</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"><li>- Unpack FlashBlade chassis, XFM switches, and components; ensure all components are present and functional</li><li>- Mount FlashBlade chassis rails into the cabinet</li><li>- Slide FlashBlade chassis onto the rails and secure to the racks</li><li>- Upgrade XFM switches, FlashBlade chassis and Purity//FB OS</li><li>- Connect cables between chassis and XFM switches.</li><li>- Plug in appropriate network and management connections to the FlashBlade and XFM switches</li><li>- Configure Fabric Modules and networking interfaces</li><li>- Configure Call Home Setup, Remote Assist and Alerting Services</li></ul>	End User site, data center
<b>Post-installation</b>	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"><li>- 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.</li><li>- Provide a detailed overview of the Pure FlashBlade GUI and validate</li></ul>	End User site, data center

## Scoping Parameters

The installation is an on-site activity.

- You shall provision sufficient rack space and power (for installation).
- You 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.
- 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.

## End User Responsibilities

You 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

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

## About Pure's 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's Services and our Pure authorized resellers 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](http://www.purestorage.com).

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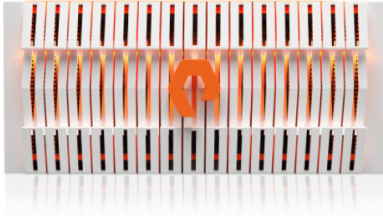
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## SERVICE BRIEF

# FlashBlade® Design and Operational Readiness

## Highlights

- Vendor approved detailed solution design using experienced Architects
- Accelerates Time to value

## Flexibility

- Work with Pure Services to implement according to your schedule

## Outcomes

- Pure FlashBlade Architecture & Physical Design
- Pure led end to end testing
- Operational Guide
- Knowledge transfer for rapid operation and adoption

Work with Pure Storage Services to improve FlashBlade Design and Operational Readiness.

At Pure Storage, our technology is radically simple, but we understand that customer environments are complex. Whether deploying a greenfield environment or integrating Pure technology into a production data center, engineering and operational readiness are time- and resource-intensive tasks that have a significant impact on time-to-value realization.

## The End User Experience

With our Solution Engineering and Operation Readiness service, our Technical Design Architects leverage their deep technology experience to de-risk and accelerate the operational readiness of your new solution, resulting in an approved, documented, and tested design that offers time-to-value performance, stability, and efficiency.

## Delivery Approach

Starting with a detailed design workshop, our Technical Design Architects work with you to build the requirements and high-level design of the purchased solution based on the information provided by you during the detailed design workshop. They'll cover subjects such as security, availability, advanced features, integration with external systems, management, and support, as may be applicable. The relevant information will populate your Detailed Design Document with functional and non-functional requirements, and a low-level

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blueprint of a solution for your review. The Detailed Design Document will be documented and executed with an end-to-end test plan. A Pure standard operations guide and advanced knowledge-transfer session is included as part of the process for operational readiness.

## Work Product

Deliverable	Format
Low-level Design Workshop / Kick off	Video Conference
Documentation of functional and non-functional requirements	Performed Remotely
Design Document	Performed Remotely
Test Plan	Video Conference / Onsite
Test Execution	Video Conference / Onsite
Operations Guide	Video Conference / Onsite
Advanced Knowledge Transfer Session	Video Conference / Onsite

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## Detailed Design Document

Content	Standard	Enhanced
Pure FlashBlade Architecture & Physical Design	Included	Included
Data Center Requirements – Power, Rack Space & Cooling	Included	Included
Physical and Logical Networking Requirements – Port allocation, speed, IP, and Firewall Requirements	Included	Included
User Access via Command Line Interface & Graphical User Interface	Included	Included
Basic Security & User Management: Integration with Directory Services address	Included	Included
Phone Home & Pure1® Design & Configuration	Included	Included
Alerting & Monitoring	Included	Included
Array configuration Best Practices & Standards	Included	Included
Snapshot Management Principles, Policy Definition & Standards	Included	Included
Guidance on integration with AI/ML	Included	Included
Advanced Security: Integration with Password Management Systems, Certificates & Key Management Systems	Not Included	Included
RestAPI Integration Demo & Knowledge Transfer	Not Included	Included
<b>Below only applicable when purchasing multiple FlashBlade Design &amp; Operational Readiness Services</b>		
<b>Replication Configuration &amp; Best Practices</b>		
<b>Disaster Recovery &amp; Snapshot/SafeMode Recovery Process</b>		

Note: A single instance of the FlashBlade Design and Operational Readiness Service is valid for design of a single array. Multiple instances of the service associated with additional arrays will include replication configuration & guidance as part of a multi-site deployment. Each additional instance of the service will include one secondary array and configuration of a single replication technology when executed as a single project.

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## Out of Scope

- Ethernet/IP.SAN Network design or diagrams
- Guest application or Server level design & Disaster Recovery plans
- Platform / Compute Layer Design
- Array installation or Deployment
- Scripting & Workflow integration
- Data Migration
- Any updates, upgrades, or changes to the environment outside of the final detailed design
- Anything not listed in the Work Product section of this document, or in an applicable SOW, is out of scope for Pure

## Scoping Assumptions

- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided
- Customer provides complete & correct information in a timely manner to enable Pure to prepare the detailed Design Document

## Customer Responsibilities

- Share in a timely manner, complete and correct information about infrastructure and business and operational process, when requested, such as but not limited to:
  - Data Centre topology & high-level design
  - Data Centre topology and high-level design
  - Application silos and domains
  - 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 (Storage, Database, System Administrators, Application)

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## SERVICE BRIEF



# Pure FlashBlade® Decommission Service

**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

Securely decommission a Pure Storage® FlashBlade.

Pure Storage® FlashBlade is the industry's most advanced storage for unstructured data. It consolidates complex data silos to optimize infrastructure and accelerates tomorrow's discoveries and insights. There are times when you may wish to securely decommission your FlashBlade. Pure's plan and execute this Service, working with you hand-in-hand to ensure success from start to finish.

Decommissioning a FlashBlade is the process of securely wiping the flash modules within the blade so that the data cannot be recovered. Naturally, you want to validate that your data was deleted successfully. We demonstrate erasure compliance using the Kroll On Track Erasure Verification, which reports results of using the NIST-specified test methodology to erase data from FlashBlade storage devices (including the array configuration data from the boot drive) and verifies data can no longer be retrieved, and that there is no remnant data.

**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 Customer Experience (CX) team, we help you to evaluate, activate, and innovate your IT solutions.

Pure's Services follow a strict methodology to decommission a Pure FlashBlade. The process extends through an initial scoping call, constructing a plan based on our understanding of the constraints and dependencies on-site to perform a safe and correct deconstruction.

## FlashBlade Decommission Service Work Products

Stage	Owner	Task	Delivery Method
Pre-planning	Pure, End User, Pure authorized reseller (if applicable)	Gather pre-decommission information Schedule site survey, if required	Teleconference, email
Planning and Document Completion	Pure, End User, Pure authorized reseller (if applicable)	Review completed document and site survey information Allocate a Pure resource for install and formally schedule Request data center access/open required tickets	Teleconference, email
Decommission	Pure, 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, End User, Pure authorized reseller (if applicable)	Execute post-decommission health checks with Pure Support Generate a Certificate of Erasure and share as	End User site, data center

### Scoping Parameters

- The decommission activity is an on-site activity.
- The decommission activity is for an individual FlashBlade
- 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.

### End User Responsibilities

- You shall provide us with the decommissioning information required.

### 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 Storage.

### About Pure's Services

Whether you are planning your next-generation storage system, need specialized know-how for a storage deployment, or want to optimize the investment in your digital transformation, Pure's Services and our Pure authorized resellers have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business.

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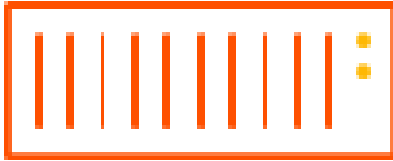
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## SERVICE BRIEF

**Highlights**

- Remote installation and configuration
- Proactive 24x7 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

# FlashArray//XL™ Remote Installation Service

Work with Pure's Services to remotely install your FlashArray//XL Array

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's 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's 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
  - 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.

- **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, 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 a End User provided computer.

Or

- 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 a 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 Users'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 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.

## Installation Delivery Phases

Stage	Activity	Owner	Delivery Method
<b>Pre-planning</b>	<ul style="list-style-type: none"> <li>- Send installation checklist</li> <li>- Gather pre-install information</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Videoconference, email
<b>Planning &amp; Documentation</b>	<ul style="list-style-type: none"> <li>- Review completed pre-install document</li> <li>- Schedule physical rack and stack / installation</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Videoconference, email
<b>Implementation</b>	<ul style="list-style-type: none"> <li>- Validate appropriate level of code is on the FlashArray//XL</li> <li>- Remotely configure primary &amp; secondary controllers via the Purity installation script</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Videoconference
<b>Post-installation</b>	<ul style="list-style-type: none"> <li>- Execute post-install health checks</li> <li>- Provide knowledge transfer with 10–20-minute walk through of FlashArray GUI to demonstrate basic tasks including: <ul style="list-style-type: none"> <li>• Create Host and Host Groups</li> <li>• Create Volumes</li> <li>• Connect the Host to the volumes</li> <li>• Open a Remote Assist Session</li> <li>• View Host Connections and show balancing (if hosts are present)</li> </ul> </li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Videoconference, email



## 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.

## 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
  - End User site location details
  - Site contact name
  - Site contact phone
  - Site contact email
- 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's Services

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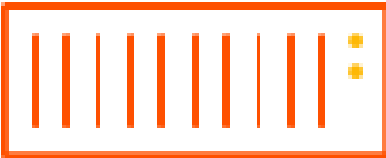
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## SERVICE BRIEF

**Highlights**

- Comprehensive installation and configuration
- Proactive 24x7 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

# FlashArray//XL™ Installation Service

Work with Pure's Services to successfully install Top-tier power for your most demanding apps.

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. With an all-new 5U chassis enabling greater cooling for more powerful CPUs, customers can expect a 65% increase in overall performance vs. FlashArray//X90

## 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 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 FlashArray series. Our approach can accelerate time to value and ensure that your environment is fully prepared.

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## FlashArray//XL 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:** 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 the SAN infrastructure and validate connectivity.
- **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.

## Installation Delivery Phases

Stage	Activity	Owner	Delivery Method
<b>Pre-planning</b>	<ul style="list-style-type: none"> <li>- Send installation checklist</li> <li>- Gather pre-install information</li> <li>- Schedule site survey, if required</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Teleconference, email, physical site survey
<b>Planning &amp; Documentation</b>	<ul style="list-style-type: none"> <li>- Review completed pre-install document</li> <li>- Review site survey information</li> <li>- Formally schedule physical install</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	Teleconference, email
<b>Implementation</b>	<ul style="list-style-type: none"> <li>- Rack and power up the hardware</li> <li>- Validate appropriate level of code is on the FlashArray//XL</li> <li>- Configure primary &amp; secondary controllers via the Purity installation script</li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	End User site, data center
<b>Post-installation</b>	<ul style="list-style-type: none"> <li>- Execute post-install health checks</li> <li>- Provide knowledge transfer with 10–20 minute walk through of FlashArray GUI to demonstrate basic tasks including:               <ul style="list-style-type: none"> <li>• Create Host and Host Groups</li> <li>• Create Volumes</li> <li>• Connect the Host to the volumes</li> <li>• Open a Remote Assist Session</li> <li>• View Host Connections and show balancing (if hosts are present)</li> </ul> </li> </ul>	Pure, End User, Pure authorized reseller (if applicable)	End User site, data center

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## Scoping Parameters

- This service is an onsite activity
- The array requires at least two people to lift / install
- 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

- You shall provide the Pure Services Coordinator with a completed Pure Storage Site Readiness and Pre-Installation Site checklist before engaging any Pure technical resource:
- Provide sufficient rack space (5U) and power (PDU) for the installation. Please note the array uses 4x C19 power connectors.
- Provide any management, replication, iSCSI and/or FC connections to the array.
- Configure the SAN (iSCSI/FC) and management network before the install begins.

## Out of Scope

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

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## 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 Services to implement according to your schedule

## Outcome

- Fully integrated flash storage solution
- Post-install health checks with Pure 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's Services Implementation and Integration 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 Services can help you realize the value of your IT investments, where 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 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).
- Pure OS upgrade: A Pure 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//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.

## Service Overview

### Delivery Approach

Pure Services will follow the below engagement framework during the FlashArray//X to FlashArray//XL upgrade:

Stage	Owner	Activity
<b>Planning</b>	Pure, End User	<ul style="list-style-type: none"> <li>Gather pre-install upgrade information / NDU Checklist</li> <li>Get Pure support approval and schedule OS upgrades</li> <li>Allocate and schedule a Pure resource for the NDU</li> <li>Request data center access/open required tickets</li> </ul>
<b>Upgrade</b>	Pure	<ul style="list-style-type: none"> <li>Confirm Purity versions upgrades as required</li> <li>Unpack the FlashArray//XL Upgrade Kit</li> <li>Install three 100G Mellanox Ethernet Card to FlashArray//X and FlashArray//XL</li> </ul>



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

<b>Post Upgrade</b>	Pure, End	Perform Post-Upgrade Procedures
	User	Remove FlashArray//X from rack, package and ship back to Pure

### Work Product

- Upgrade of existing FlashArray//X to a FlashArray//XL

### 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
- This service 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 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)

### **Service Limitations**

- The service is applicable to the upgrade of a single FlashArray//X.
- Only NVMe based systems are supported. SAS drives are supported. Any SAS drives 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. Upon expiration, no refunds of prepaid Services fees will be providedAny 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

### **Out of Scope**

- Anything not listed and detailed in the Work Product section of this document, or an applicable Statement of Work is out of scope for Pure Storage.





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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 Services to implement according to your own schedule

## Outcome

- 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, FlashArray//XL gives your business the freedom to innovate without storage as a constraint.

Pure's Services Implementation and Integration Team can help you benefit from even more performance capacity by helping to upgrade your existing FlashArray//X130 to a FlashArray//X170.

## The End User Experience

Through the phases of an engagement, the Pure 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.

# Services Overview

## Delivery Approach

Pure Services will follow the below engagement framework during the FlashArray//XL130 to FlashArray//XL170 upgrade:

Stage	Owner	Activity
<b>Planning</b>	Pure, End User	Allocate and schedule a Pure resource for the NDU Request data center access/open required tickets
<b>Upgrade</b>	Pure	Remove CTO Transfer PCIe cards to new controller Install new CTO and initialize Remove CT1 Transfer PCIe cards to new controller Install new CT1 and Initialize
<b>Post Upgrade</b>	Pure, End User	Perform Post-Upgrade Procedures Pack the replaced controllers, Flash Modules, and other unused parts, and ship them back to Pure Storage

## Work Product

- Upgraded FlashArray//XL170.

## Scoping Assumptions

- The Service is an onsite activity.

## End User Responsibilities

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



### **Service Limitations**

- 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.

### **Out of Scope**

- Anything not listed in the Work Product section of this document, or an applicable Statement of Work is out of scope for Pure Storage.



## About Pure Services

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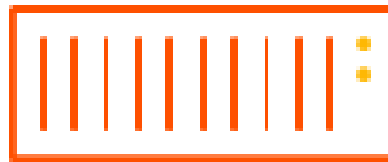
## SERVICE BRIEF

# FlashArray Remote Installation Service

Pure's Services

## Summary

Pure's Services provide a remote methodology for supporting End Users deploying and configuring the FlashArray//X and FlashArray//C 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.



**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 FlashArray Remote Installation Service Includes:

### Installation Preparation - Validate Account Information, Configuration and Hardware Ordered

The Pure Installation Team will work with Pure 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
- 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 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 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+VGA cable ports connected to a End User provided computer.

Or

- 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 a 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.

**Note: Initial configuration is guided by the Pre-Installation Checklist completed during the preparation phase.**

## Connect to the End User SAN Infrastructure and validate connectivity

Once the array is up and running, connectivity to the block storage network (FC or iSCSI) will be validated.

**Note: The End User is responsible for configuring and providing connectivity to FC and/or iSCSI SAN networks along with FC zoning configuration.**

- 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 Array shows IQNs on all iSCSI ports.

## Knowledge Transfer

After the array has been installed, the installer 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 FlashArray GUI guiding them to perform basic tasks, including, but not limited to:

- Changing the default pureuser password (if requested at the time of installation by the End User)
- How to create a Host and Host Group
- How to create a Volume
- How to connect the volumes to the defined hosts or host groups
- How to enable a Remote Assist Session on the array
- How to view Host Connections and show port balancing (if hosts are present)
- Demonstrate how to take snapshots
- Walk the End User through the other screens within the GUI
- If applicable, validate that the REST API is secured



## 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	Videoconference / Email
Planning / Document Completion	Review completed document Allocate a Pure resource for install and formally schedule	Videoconference / Email
Installation	Perform remote installation and configuration steps	Videoconference
Post-Installation	Execute post-install health checks with Pure support Pure engineer leads End User through GUI Overview	Videoconference / 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 location details
  - Site contact name
  - Site contact phone
  - 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

- 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 install.

## Scoping Assumptions

- 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.

### SERVICE BRIEF

## Pure Storage Contact Info

### Pure Storage Resources

For the purposes of this engagement, Pure Storage will provide a remote implementation engineer via videoconference facilities to support installation activities.

Pure Storage Responsibilities:

- Pure Storage resource coordination
- Project field documentation (if applicable)
- Status Reporting & Communication

## Contact Pure Storage – Implementation Specialist

If you have any questions on the services being performed at any time during this engagement, please contact Pure's Implementation team at [psinstalls@purestorage.com](mailto:psinstalls@purestorage.com)

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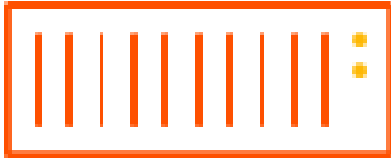
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SERVICE BRIEF



# Pure Storage FlashArray Relocation Support Service

## Highlights

- Support relocation of FlashArray.

## Flexibility

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

## Outcomes

- Securely support relocating your FlashArray.

Securely Relocate your Pure 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's 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's 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 products inside out, 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 FlashArray. 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.

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## Service Overview

Stage	Owner	Task	Delivery Method
<b>Pre-planning</b>	Pure, 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	Video conference, email, End User site, data center site
<b>Planning &amp; Document Completion</b>	Pure, End User, Pure authorized reseller (if applicable)	Review completed document and site survey information Request data center access/open required tickets	Video conference, email, Site Survey
<b>Relocation Preparation &amp; Installation</b>	Pure, End User, Pure authorized reseller (if applicable)	Pure Storage Professional Services will carry out the following activities:  <b>Origin Site:</b> <ul style="list-style-type: none"> <li>Conduct a health check the array</li> <li>Fully label components and cables</li> <li>Power down array, disconnect cabling and remove from rack</li> <li>Safely package the array and relevant parts</li> </ul> <b>Target Site</b> <ul style="list-style-type: none"> <li>Rack, cable and power up the array</li> <li>Reconfigure as required and validate connectivity</li> <li>Perform final health check</li> </ul>	End User site, data center site
<b>Post-relocation</b>	Pure, 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 to perform its obligations.
- Arrange for the shipment of the array between sites, including all Shipping, Insurance, Customs and Export responsibilities.
- Provide End User information/data to Pure. End User is responsible for the accuracy and completeness of all information it provides.

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- Prove access to appropriate End User personnel (with the relevant skill and knowledge) and facilities of End User and shall notify Pure 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 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 aware of any access restrictions and (ii) define and implement arrangements that 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 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 does not provide disaster recovery services and takes no responsibility for any loss or interruption of data.
- Where End User requires Pure 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 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.

## Out of Scope

- Shipment / 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.
- Anything not explicitly set-out in this document or an applicable SOW is out of scope.

## Scoping Assumptions

- 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.

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## About Pure's 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's Services and our Pure authorized resellers have the expertise to assist. Discover how your IT environment can achieve the outcomes that matter most to your business.

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## SERVICE BRIEF

# Non-Disruptive FlashArray™ Upgrades

Experience the ease of a non-disruptive upgrade from Pure Storage® 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's 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. Pure's Services Implementation and Integration 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 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.

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 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 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.

## SERVICE BRIEF

- **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 Services Work Product

Stage	Owner	Task	Delivery Method
Pre-planning	Pure , End User, Pure authorized reseller (if applicable)	Send NDU Checklist Gather upgrade information	Teleconference, 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	Teleconference, email
Installation	Pure , End User, Pure authorized reseller (if applicable)	Execute onsite upgrade (per SOW), site survey, and NDU questionnaire	Site, data center
Post-installation	Pure , End User, Pure 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. Upon expiration, no refunds of prepaid Services fees will be provided.
- The Installation is an on-site activity

## End User Responsibilities

- Review and address any recommendations from 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.

## Out of Scope

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



## About Pure Services

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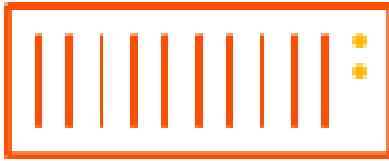
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## SERVICE BRIEF



# Pure FlashArray™ Installation Service

Work with Pure's Services for a simple install.

## Highlights

- Comprehensive installation and configuration
- Proactive 24x7 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 Services Implementation and Integration 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 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 FlashArray series. Our approach can accelerate time to value and ensure that your environment is fully prepared.

## FlashArray 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:** 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 the your SAN infrastructure and validate connectivity.
- **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.

## FlashArray Installation Delivery Phases

Stage	Owner	Task	Delivery Method
Pre-planning	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Send installation checklist</li> <li>- Gather pre-install information</li> <li>- Schedule site survey, if required</li> </ul>	Teleconference, email, physical site survey
Planning and document completion	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Review completed pre-install document</li> <li>- Review site survey information</li> <li>- Formally schedule physical install</li> </ul>	Teleconference, email
Installation	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Rack and power up the hardware</li> <li>- Validate appropriate level of code is on the FlashArray</li> <li>- Configure primary and secondary controllers via the Purity installation script.</li> </ul>	End User site, data center
Post-installation	Pure, End User, Pure authorized reseller (if applicable)	<ul style="list-style-type: none"> <li>- Execute post-install health checks</li> <li>- Provide knowledge transfer with 10–20 minute walk through of FlashArray GUI to demonstrate basic tasks including:               <ul style="list-style-type: none"> <li>• Create Host and Host Groups</li> <li>• Create Volumes</li> <li>• Connect the Host to the volumes</li> <li>• Open a Remote Assist Session</li> <li>• View Host Connections and show balancing (if hosts are present)</li> </ul> </li> </ul>	End User site, data center

## Scoping Parameters

The installation is an on-site activity.

- You shall provision sufficient rack space and power (PDU) for installation.
- You shall provide management, replication, iSCSI and/or FC connections to the array.
- You shall configure the SAN (iSCSI/FC) and management network before the install begins.
- You shall ensure appropriate cabling is available.
- 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.

## End User Responsibilities

You shall provide the Pure Services Coordinator with the following information and Work Product before engaging any Pure technical resource:

- A complete Pure Storage Site Readiness and Pre-Installation Site Checklist
- Rack space and power (PDU) for installation
- A fully configure the SAN (iSCSI/FC) and management network and connectivity cables from the SAN and management network to the rack location of array install

## Out of Scope

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

## About Pure's 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's Services and our Pure authorized resellers 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](http://www.purestorage.com).

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SERVICE BRIEF



# FlashArray™ Design and Operational Readiness

## Highlights

- Vendor approved detailed solution design using experienced architects
- End to end user acceptance testing and requirement fulfillment
- Reduce time to value
- Maximise return on investment

## Flexibility

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

## Outcomes

- Vendor & End User approved detailed solution design
- Full design documentation set
- Pure led end to end testing
- Operations guide/runbook
- Knowledge transfer

Reduce time to value and maximize return on investment with Pure Services.

At Pure, our technology is radically simple, but we understand that End User environments are complex. Whether deploying a greenfield environment or integrating Pure technology into a production data center, engineering and operational readiness are time- and resource-intensive tasks that have a significant impact on time-to-value realization. Creating a robust, resilient, and detailed solution design with limited technology experience is one of the biggest challenges many organizations face. Pure Services can help you gain detailed design, engineering, testing, and operational readiness.

## End User Experience

Pure Services helps 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.

## Service Overview

With our Solution Engineering and Operation Readiness Service, our Technical Design Architects leverage their deep technology experience to de-risk and accelerate the operational readiness of your new solution, resulting in a Pure-approved, documented, and tested design that offers maximum performance, stability, efficiency, and return on investment.

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## Approach & Work Product

Starting with a detailed design workshop, our Technical Design Architects work with you to build the requirements and high-level design of the purchased solution. They'll cover subjects such as security, availability, advanced features, integration with external systems, management, and support. This information will populate your Detailed Design Document with functional and non-functional requirements, and a low-level blueprint of your end solution. The solution design will be documented and executed with an end-to-end test plan tracked against requirements and the design blueprint. An operations guide and advanced knowledge-transfer session will meet the final requirements for operational readiness. Pure will provide guidance throughout for document approval or operational process.

Our approach sets your team up for success throughout the Service, from planning and discovery through analysis and reporting.

Work Product	Format
Low-Level Design Workshop / Kick-Off	Video Conference
Documentation of functional & non-functional requirements	Performed Remotely
Design Document	Performed Remotely
Test Plan to prove design and requirements are achieved	Video Conference / Onsite
Test execution	Video Conference / Onsite
Operations Guide	Video Conference / Onsite
Advanced Knowledge Transfer Session	Video Conference / Onsite

## Scope

Work Product	Standard	Enhanced
Pure FlashArray architecture & physical design	Included	Included
Data center requirements – Power, rack space & cooling	Included	Included
Physical and logical networking requirements – Port allocation, speeds, IP addresses & firewall requirements	Included	Included
User access via Command Line Interface & Graphical User Interface	Included	Included
Basic security & user management: Integration with directory services	Included	Included
Dial home & Pure1® design and configuration	Included	Included

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Alerting and Monitoring	Included	Included
Array configuration best practices and standards	Included	Included
Snapshot management principles, policy definition & standards, includes SafeMode, Snap to NFS and Snap to Cloud Snapshot	Included	Included
Guidance on integration with hypervisors	Included	Included
Volume provisioning best practices and standards	Included	Included
Advanced security: Integration with password management systems, certificates, key management systems		Included
Deployment and demonstration of Application Plugins (single host per type)		Included
Performance considerations and optimization including Quality of Service (QoS)		Included
REST API integration demo and knowledge transfer		Included
Storage volume provisioning testing for a single host of each deployed Operating System		Included
<b>Below only applicable when purchasing multiple FlashArray Design &amp; Operational Readiness Services:</b>		
Replication configuration and best practices; ActiveDR™, ActiveCluster™ or Async*	Included	Included
Disaster recovery and snapshot/SafeMode recovery process	Included	Included

Note: \* A single instance of the FA Design and Operational Readiness Service is valid for design of a single array. Multiple instances of the Service associated with additional arrays will include replication configuration & guidance as part of a multi-site deployment. Each additional instance of the Service will include one secondary array and configuration of a single replication technology when executed as a single project.

## Out of Scope

- Ethernet/IP/SAN network diagrams or design
- Guest application or server level design & Disaster Recovery Plans
- Platform/Compute layer design
- Array installs or deployment
- Scripting and Workflow Integration
- Data Migration
- Benchmark testing of a FlashArray's performance
- Anything not listed in this document or in an applicable Statement of Work

## Scoping Assumptions

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

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## End User Responsibilities

- Share information about infrastructure and business and operational process, when requested, such as but not limited to:
  - Data Centre 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/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)
- 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

## About Pure Services

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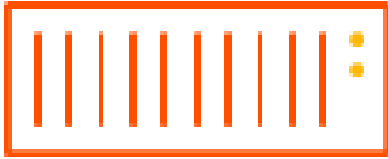
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## SERVICE BRIEF



# Pure FlashArray Decommission Service

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 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 the data was deleted successfully and is no longer retrievable. We demonstrate erasure compliance using the Kroll On Track 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's 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's Service follows a strict methodology for decommissioning a Pure FlashArray, 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 Service Work Product

Stage	Owner	Task	Delivery Method
Pre-planning	Pure, End User, Pure authorized reseller (if applicable)	Gather pre-decommission information Schedule site survey, if required	Teleconference, email
Planning and document completion	Pure, End User, Pure authorized reseller (if applicable)	Review completed document and site survey information Allocate a Pure resource for install and formally schedule Request data center access/open required tickets	Teleconference, email
Decommission	Pure, End User, Pure authorized reseller (if applicable)	Execute onsite decommission Pre-decommissioning check Securely erase the Flash drives Power down, disconnect, and unmount	End User site, data center
Post-decommission	Pure, End User, Pure authorized reseller (if applicable)	Execute post-decommission health checks with Pure Support Generate a Certificate of Erasure and share as required	End User site, data center

### Scoping Parameters

- The decommission activity is an on-site activity.
- The decommission activity is for an individual array
- 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.

### End User Responsibilities

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

### 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.

## About Pure's Services

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## SERVICE BRIEF



# Pure FlashArray™

## Capacity Add Service

Addition of capacity to an existing Pure Storage FlashArray.

**Highlights**

- Comprehensive upgrade and configuration

**Flexibility**

- Implement according to your schedule

**Outcomes**

- Fully upgraded flash storage solution

Pure Storage® FlashArray is the first all-flash, 100% NVMe shared accelerated storage designed for mainstream enterprise deployment. The Pure 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's Services exist to enable you to realize the value of your IT investments. As an integral part of the Pure 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 Service Delivery Approach

### Planning Phase

During the planning phase, the Pure Services Team will work with Pure Storage Account Team and the End User to confirm:

- End User Contact Info
- 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..)

### Implementation Phase

On-Site Hardware Installation

- 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, install the FlashArray Additional Capacity

### Post-Implementation Phase

- The Pure Storage on-site Implementation Engineer will perform the Pure standard health check to validate the FlashArray Additional Capacity has been installed and confirm with the End User using the Pure Graphical User Interface (GUI).

## Scoping Parameters

- On-site activity only
- 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.
- The service is applicable to in-family FlashArray Capacity Upgrades only

## End User Responsibilities

You will need to provide the Pure Services Team with the following information and work products before engaging any Pure Storage technical resource:

- Complete Pure Storage Site Readiness and Pre-Installation Site checklist
- Provision sufficient rack space and power (PDU) for capacity upgrade.
- Ensure appropriate cabling is available

## Out of Scope

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

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## About Pure Storage Professional 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 Storage Professional 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](http://www.purestorage.com).

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## SERVICE BRIEF

# Enhanced Block Data Migration

Migrate data rapidly and safely from any legacy block array.

## Efficiency

- Reduce pre-migration effort
- Achieve immediate Return on investment (ROI)
- Retire legacy storage faster

## Flexibility

- Run on any host / OS
- Support any application
- Migrate from any source storage array

## Simplicity and Safety

- Use a single, easy migration tool.
- Ensure a safer migration with automated provisioning

## Reliability

- Prevent application impact during provisioning with always-on quality of service

Pure Services aims to enable you to quickly realize the value of your Pure Storage<sup>®</sup> investments. As an integral part of the Pure End User Experience (CX) team, we engage with you to evaluate, activate, and innovate your IT solutions. Through these phases of customer engagement, we provide the services and solutions you need to achieve your business objectives.

## The End User Experience

Realizing the full value of the latest storage technology depends on how quickly, efficiently, and non-disruptively you can migrate data from legacy storage systems and bring it online. Whether you have physical or virtual host servers in your environment, Pure's data migration services ensure rapid deployment. With Pure's data-migration services coupled with our Evergreen Storage<sup>™</sup> Subscription to innovation, you can make all future upgrades without any planned downtime, performance impact, or data migrations, eliminating the cost and disruption forklift upgrades forever.

Most migration projects require you to make time-consuming and risky changes across the SAN, such as installing drivers at the host level. The process often requires downtime to deploy the solution, even as the acceptable migration window shrinks. That's why Pure helps you meet these challenges with a faster, simpler approach.

Pure Services provides solutions that seamlessly orchestrate the safe, secure, migration of your data from any storage platform to Pure, with minimum disruption to services, and no unplanned outages, accelerating time to value and increasing ROI.

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## Service Overview

The Pure Enhanced Migration Service utilizes migration tools such as specialized plug-and-go solutions, to enable dynamic, centralized and automated migration, without requiring any changes to your storage environment. With Pure Storage, you can accelerate application development and delivery, increase revenue, drive higher productivity, and create a sustainable advantage. Pure Storage FlashArray™ performance unleashes the power of real-time analytics and creates new, differentiated customer experiences.

During the process, our specialists apply our validated delivery methodology to understand your business needs and create a migration design and implementation strategy that meets your timeline and availability requirements. Starting with the kick-off, our migration specialists work with you to define a plan to align with your business needs. Next, the team performs a complete environment analysis, coupled with a migration design to meet the objectives in the plan. The full process is Project Managed to ensure success.

## Work Product

Stage	Activity	Delivery Method
<b>Kick-off</b>	Review high-level Service plan and introduce team. Confirm that business requirements align to scope. Establish Service status cadence to report progress.	Teleconference, email,
<b>Discovery, analysis &amp; Design</b>	Initiate the technical discovery and analysis. Schedule and conduct working sessions to finalize the technical migration plan. Conduct Service status meetings to report progress.	Remote
<b>Implementation</b>	Copy data, create baselines, and identify change rate for final cutover. Perform final cutovers.	Remote
<b>Closure</b>	Post-implementation review to confirm that all Service Work Products were completed as planned. Remove tools and appliances as required.	Teleconference, email,

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## Scoping Parameters

- Single Site Only
- Block data migration only (including VMs and RDMs)
- Fiber Channel (FC) / iSCSI environments only
- Minimum of three out of four weeks with weekends available for cutover
- All hosts compatible with Pure FlashArray
- Enhanced Block Migration single increment is limited to a maximum of 20TB allocated storage, 10 hosts, or 2 cutover events
- This service must be consumed within 12 months from the order being accepted by Pure. Upon expiration, no refunds of prepaid Services fees will be provided

## Out of Scope

- Publication of remediation report
- Publication of host migration runbooks
- Creation of snapshots or clones
- Cross / Multi-site migration
- Installation of hardware (excluding in-scope appliances)
- Decommission of legacy storage arrays
- Anything not listed in this document or applicable Statement of Work is out of scope

## End User Responsibilities

- Server remediation (if required)
- Change control request and approval
- Data center facilities (cabling laying, physical connectivity, networking)
- Provide Pure with access to infrastructure management systems where applicable
- Provide Pure with access to skilled resources to perform configuration and UAT tasks
- Provide remote access to the environment for monitoring or migration purposes
- Any host configuration
- Physical relocation of any equipment
- Host pre-migration work (confidence reboots, etc.)
- Removal of legacy zones and storage devices

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- Disaster recovery testing
- Backups and data integrity
- Provisioning of up to 4U of rack space, 4x IP addresses, up to 36 FC ports and cables, and up to 4x power connections to redundant power

## Simple, Transparent Pricing

Pure Services enables you to take advantage of outcome-based pricing based on three simple criteria: hosts in scope, cut-over events, and terabytes of data.

## About Pure Services

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SERVICE BRIEF

# Pure Storage Cloud Block Store™ in Microsoft Azure

Industrial-strength block storage delivered natively in the Azure cloud.

## Highlights

- Accelerate the deployment of your Pure Storage® Cloud Block Store for Microsoft Azure™
- Enable mission-critical applications to run seamlessly in the Cloud
- Achieve true hybrid operations

## Flexibility

- Implement according to your schedule

## Outcomes

- Fully deployed Pure CBS instance in your Microsoft Azure environment

Pure Cloud Block Store™ for Microsoft Azure is industrial-strength block storage delivered natively in the cloud. Powered by Purity software, Pure Cloud Block Store (CBS) enables mission-critical applications to run in the cloud seamlessly—while also making cloud storage more powerful for webscale applications. A true hybrid operation can be achieved with consistent data services, resiliency, Application Programming Interfaces (APIs), bi-directional mobility, seamless management, and orchestration.



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## The End User Experience

Pure accelerates the realization value of your Pure Storage product investment. As a strategic part of the Pure Customer experience team, our Pure PS portfolio features offerings to evaluate, activate, and innovate your IT Solution

By employing a delivery methodology informed by the 'best practice' experiences of early CBS adopters, Pure Professional Services will ensure your deployment of Pure Cloud Block Store into your Azure environment is done right.

## Delivery Methodology and Work Product

Stage	Owner	Task	Delivery Method
<b>Discovery &amp; Data Gathering</b>	Pure, End User, Partner (if applicable)	<p>Assistance with Completing Pure Cloud Block Store Pre-Installation Questionnaire</p> <p>In-Depth Orientation of Pure Cloud Block Store to Include the Following:</p> <ul style="list-style-type: none"> <li>• Pure Storage CBS Nomenclature</li> <li>• Pure Storage CBS Deployment Guide/Checklist</li> <li>• Feature Sets</li> <li>• Configuration and Operational Best Practices</li> <li>• Volume Creation Within CBS</li> <li>• Security Settings (Secure Shell (SSH), Rolled Based Admin and Network Security Groups (NSGs))</li> <li>• Data Migration Capabilities</li> <li>• High-Availability Concepts (If applicable)</li> </ul>	Teleconference / Email
<b>Design</b>	Pure, Partner (if applicable)	<p>Review and Validation of the Following:</p> <ul style="list-style-type: none"> <li>• Pure Cloud Block Store Deployment Requirements and Checklist</li> <li>• Azure Cloud Environment Readiness</li> </ul> <p>Scheduling CBS Implementation and Deployment</p>	Teleconference / Email
<b>Implementation &amp; Deployment</b>	Pure, Partner (if applicable)	<p>Configure Azure Cloud Environment as described in the Pure Cloud Block Store Deployment Guide</p> <p>Deploy and Configure Azure Cloud Block Store</p> <p>Configure Email Alerts or Simple Network Management Protocol (SNMP)</p> <p>Configure and Validate Active Directory Connectivity If applicable</p> <p>Creation of a Single Azure Resource Management (ARM) Template Image for Linux Utilising CBS Specific Configuration</p>	Teleconference / Email
<b>Post implementation</b>	Pure Partner (If applicable)	Deliver Post-installation Report	Teleconference / Email

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## 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. Upon expiration, no refunds of prepaid Services fees will be provided.

## End User Responsibilities

- Virtual Network (VNET) Requirements: An existing VNET or the ability to create a new VNET to host CBS, should it be required. Pure Storage can assist with this.
- Azure Identify Access Management (IAM) Roles: As part of the deployment process, Pure Storage will need access to the customer subscription to deploy CBS. This includes the Managed Application Contributor Role of:
  - The Subscription
  - The Resource Group
  - The subnet
- Datacenter to VNET Connectivity: For asynchronous data replication, networking connectivity should be either configured or feasible.
- Azure will automatically assign 15 IP addresses during deployment of each Pure Cloud Block Store instance and requires at least seven more for capacity upgrades. IP addresses will be defined and cannot be selected.
- The management and replication IPs must be accessible from physical arrays if testing async replication between the virtual and physical arrays as mentioned above. Network Address Translation (NAT) is supported for replication addresses
  - Management IP
  - iSCSI IP
  - Replication IP
  - System IP
- Please see the Pure Cloud Block Store Implementation Guide for additional requirements
- Perform a full working backup prior to the start of the services. Pure Storage are not responsible for back-ups or 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 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.

## Out of Scope

- Anything not listed and detailed in the Work Product section of this document, or in an applicable Statement of Work, is out of scope for Pure

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## About Pure Services

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SERVICE BRIEF



# Pure Storage Cloud Block Store™ in Microsoft Amazon Web Services (AWS)

## Highlights

- Accelerate the deployment of Pure Storage® Cloud Block Store for Amazon Web Services (AWS)
- Enable mission-critical applications to run seamlessly in the cloud
- Achieve true hybrid operations

## Flexibility

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

## Outcomes

- Fully deployed Pure CBS instance in your AWS environment

Industrial-strength block storage delivered natively within the AWS Cloud

Pure Storage® Cloud Block Store for Amazon Web Services (AWS) is industrial-strength block storage delivered natively in the cloud. Powered by Purity software, Pure Cloud Block Store enables mission-critical applications to run in the cloud seamlessly—while also making cloud storage more powerful for webscale applications. A true hybrid operation can be achieved with consistent data services, resiliency, APIs, bi-directional mobility, seamless management, and orchestration.



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## The End User Experience

Pure Services helps 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.

By employing a delivery methodology informed by the 'best practice' experiences of early CBS adopters, Pure Services will ensure your deployment of Pure Cloud Block Store into your AWS environment is done right.

## Delivery Methodology and Work Product

Stage	Owner	Activity
Discovery & Data Gathering	Pure, Partner (if applicable), End User	Assistance with completing Pure Cloud Block Pre-installation questionnaire
		In-depth orientation of Cloud Block Store, including: <ul style="list-style-type: none"> <li>• Pure Storage CBS Nomenclature</li> <li>• Pure Storage CBS Deployment Guide/Checklist</li> <li>• Feature Sets</li> <li>• Configuration and Operational Best Practices</li> <li>• Volume Creation Within CBS</li> <li>• Security Settings (Secure Shell (SSH), Rolled Based)</li> <li>• Admin and Network Security Groups (NSGs)</li> <li>• Data Migration Capabilities</li> <li>• High-Availability Concepts (If applicable)</li> </ul>
Design	Pure, Partner (if applicable)	Review and validation of the following: <ul style="list-style-type: none"> <li>• Pure CBS Deployment Requirements</li> <li>• AWS Cloud Environment Readiness</li> </ul>
		Schedule CBS implementation and deployment
Implementation & deploy	Pure, Partner (if applicable)	Configuration AWS Cloud Environment as described in the Pure CBS Deployment Guide
		Deploy and Configure Cloud Block Store in AWS
Post Implementation	Pure, Partner (if applicable)	Delivery Post-installation Report

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## End User Responsibilities

- VPC Requirements: An existing VPC or the ability to create a new VPC to host CBS, should it be required. Pure can assist with this.
- IAM Permissions: As part of the deployment process, Pure will need to create IAM policies. The End User agrees that Pure 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.
- IP Addresses: The following IP addresses will be required for each instance of Pure Cloud Block Store. AWS will automatically assign 15 IP addresses on deployment and requires at least seven more for capacity upgrades. These cannot be chosen. You acknowledge that this is acceptable. The management and replication IPs must be accessible from physical arrays if testing async replication between the virtual and physical arrays as mentioned above. NAT is supported for replication addresses
  - Management IP
  - iSCSI IP
  - Replication IP
- Please see the Pure Cloud Block Store Implementation Guide for additional requirements
- Perform a full working backup prior to the start of the services. Pure 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.

## 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. Upon expiration, no refunds of prepaid Services fees will be provided

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## Out of Scope

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## About Pure Services

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## SERVICE BRIEF

# Purity ActiveDR™ Workshop

Accelerate your ActiveDR deployment with Pure Services

## Highlights

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

ActiveDR delivers continuous, or near synchronous, replication between two FlashArray™ arrays within or across disparate data centers. ActiveDR enables a near-zero RPO (Recovery Point Objective) that is much lower than traditional asynchronous replication based on periodic snapshot differencing. A lower RPO means failover to a disaster recovery site will incur only a minimal amount of data loss.

ActiveDR replication is continuous and asynchronous, meaning that it does not require that the target array acknowledge every write from the application before the write is confirmed to the host, and therefore there is no latency impact on the front-end host applications due to any distance between the arrays.

Pure Storage Professional Services team apply our validated delivery methodology to work with the customer to complete a custom statement of work for the design, implementation, and validation of the customer's ActiveDR solution.

## The End User Experience

Pure Services enables customers to realize the value of their IT investments. As an integral part of the Pure Customer Experience (CX) team, we engage with businesses to Evaluate, Activate and Innovate their IT solutions to expand on Pure's Modern Data Experience.

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Through the phases of the Customer Experience, we provide a number of services and solutions to enable customers to achieve their business outcomes.

ActiveDR Implementation is a service provided to customers that want to Activate the business continuity and replication features of the FlashArray. We start by conducting a Discovery and Readiness assessment to create a concise scope of work and schedule, to align with your business High Availability requirements. Next, the Pure team completes their analysis and design for your approval. Customer-directed failover testing and knowledge transfer complete the services provided.

### How we can help get you started

Pure Storage Professional Services provides comprehensive offerings to ensure you can maximize the power of this high-availability architecture and minimize any disruptions related to planning and/or configuration oversights.

Pure follows a structured methodology to deploy and configure Purity ActiveDR. Our approach accelerates your effective time to value by ensuring that your environment is configured and optimized to leverage ActiveDR's asynchronous-replication technology.



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## ActiveDR Advisory Workshop

ActiveDR, although simple to deploy on Pure FlashArray™ platforms, relies on several interdependencies within your environment. Prior to deploying any new or expanded ActiveDR solution, it's important to thoroughly review these to understand how they may affect the overall environment during different DR scenarios.

Conduct Pure's ActiveDR Advisory Workshop at such a time that you can execute any infrastructure recommendations made in the report before you put the environment into production. The workshop includes either a remote or on-site discovery and readiness assessment. The ActiveDR consultant will consolidate findings in a report specific to your environment and cover items to consider when deploying ActiveDR within it. Our team will share this report with you during a follow-on session. As part of the workshop, the ActiveDR consultant will:

- Gain an understanding of your goals and expectations.
- Evaluate your high-availability requirements and how ActiveDR fits.
- Execute a comprehensive review of the end-to-end topology and identify all interdependent components
- Provide clarity on how ActiveDR behaves in specific failure scenarios.
- Gain a thorough understanding of your end-to-end environment, including storage, host, LAN, SAN, and WAN elements.
- Gain insight into the scope, size, and complexity of the deployment effort.

Following the engagement, the consultant will provide recommendations on how best to move forward to accomplish the goals identified in the workshop.

## Infrastructure Discovery

Prior to deploying ActiveDR, the Pure consultant will work with you to review the following infrastructure and associated configuration:

- Pure Storage FlashArray environment
  - Host, volume, snapshot review to ensure compliance with ActiveDR guidelines
  - Capacity review of existing FlashArrays to be used in the ActiveDR deployment
  - Current replication setup (if applicable)
  - SAN connectivity between sites
  - Pure1 proxy configuration
- Host environment, including:
  - Fiber channel MPIO settings / iSCSI connections
  - Connections to both storage arrays
  - Host and virtualization layer – VMWare, Hyper-V, Windows, etc.

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- Application suitability
- Network Configuration
  - ActiveDR (management and replication) network infrastructure compatibility
  - Confirmation that your network meets requirements for the number of IP addresses, firewall rules (if applicable), and physical port availability
  - Confirm that your network can meet the required RPO for ActiveDR
  - Forecast expected peak write throughput on replication links if applicable data is available for analysis
  - Forecast the impact of additional throughput on the current network, if applicable data is available for analysis
- ActiveDR Configuration
  - Overview and design considerations
  - Testing/failover/failback implementation and expectations
  - Array performance and capacity expectations
  - Best practice for implementations to 3rd party DR management tools

### Work Product

- The outcome of the advisory workshop will include a detailed report based on the environment condition on the date inspected with site-configuration recommendations relating to your high-availability goals and the failure scenarios identified in the workshop.

### Scoping Assumptions

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

### Out of Scope

- Any FlashArray configuration work not related to the ActiveDR setup
- Physical installations of any FlashArray cabling
- Network configuration required in the customer environments
- SAN configuration required in the customer environment
- Any server remediation work required
- Configuration of any 3rd party replication and DR management products
- Disaster recovery testing

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

## End User Responsibilities

- Provide the relevant teams to participate with the appropriate Storage/Networking/Server skills
- Provide adequate facility to be able to run the workshop, if delivered onsite (projector, whiteboard)
- Provide an internet connection if any demos are required

## 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](http://www.purestorage.com).

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SERVICE BRIEF

# ActiveCluster™ Implementation Services

ActiveCluster Advisory Workshops and Deployments.

Pure Storage® Purity ActiveCluster is a fully symmetric active/active bidirectional replication solution that provides synchronous replication for RPO zero and automatic transparent failover for RTO zero. ActiveCluster spans multiple sites, enabling clustered arrays and clustered hosts to be used to deploy flexible active/active datacenter configurations. ActiveCluster can run over either Fibre Channel or Internet Protocol. To make the most of this powerful business continuity feature of Purity, Pure Storage Customer Success offers comprehensive advisory and implementation services.

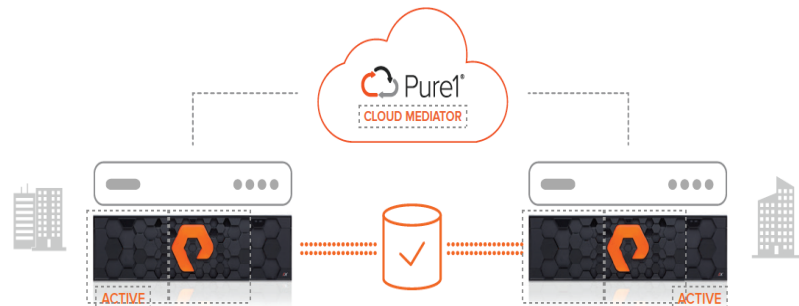


### Highlights

- Expert ActiveCluster Advisories, Deployments & Validation services

### Flexibility

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



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## The End User Experience

Pure Services provides a comprehensive set of offerings to ensure our customers are able to maximize the power of this HA architecture and minimize any disruptions which may occur due to planning and/or configuration oversights.

Pure 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's synchronous replication technology.

The ActiveCluster implementation suite of services includes the following offerings:

- ActiveCluster Advisory Workshop
- ActiveCluster Deployment and Validation Service

## ActiveCluster Advisory Workshop

ActiveCluster, although simple to deploy on Pure Storage FlashArray platforms, relies heavily on several interdependencies within the customer's environment. Prior to deploying any new or expanded ActiveCluster solution, these interdependencies need to be thoroughly reviewed to understand how they may affect the overall environment during different failure scenarios.

Pure's ActiveCluster Advisory Workshop includes a half- to full-day remote or on-site 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 customer during a follow-on session.

As part of the onsite workshop, the ActiveCluster consultant will:

- 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 (see Infrastructure Discovery).
- Provide clarity on how ActiveCluster behaves in specific failure scenarios.
- Gain a thorough understanding of the customer'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.

Following the on-site engagement, the Pure Storage consultant will:

- Provide recommendations on how best to move forward to accomplish End User goals as identified during the on-site session.
- Review these recommendations in a remote session with the End User.

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## Infrastructure Discovery

Prior to deploying ActiveCluster, the Pure ActiveCluster consultant will work with the customer to review the following infrastructure and associated configuration:

- Pure Storage FlashArray environment
  - Capacity review
  - Host, volume, snapshot object review
  - Current replication setup (if any)
  - SAN connectivity between locations
  - Pure1® proxy configurations
- Host environment, including
  - Fiber Channel MPIO settings / iSCSI connections
  - Connections to both storage arrays
  - Host and virtual OS – VMWare, HyperV, Windows, etc.
  - 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

## Work Product:

The outcome of the advisory workshop will include a detailed report with site configuration recommendations based upon the desired HA goals and failure scenarios identified in the workshop. Based on the findings, customers may choose to engage Pure PS in a follow-on **ActiveCluster Deployment and Validation service**.

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# ActiveCluster Deployment and Validation Service

Based on the findings of an ActiveCluster Advisory Workshop, the Pure Storage team will work with the customer to complete a custom SOW for the design, deployment, and validation of the customer's ActiveCluster solution.

## Service Overview

Delivery Phase	Description
<b>Discovery</b>	Conduct a 1/2 day advisory workshop as per the services description under 'ActiveCluster workshop'
<b>Design</b>	<ul style="list-style-type: none"><li>Review and confirm the results of the ActiveCluster Advisory Workshop output with key stakeholders.</li><li>Develop an ActiveCluster execution plan including hosts, hostgroups, and volumes to set up for ActiveCluster replication. (Limited to hosts, hostgroups, or volumes.)</li></ul>
<b>Deployment</b>	<p>During the deployment phase, the Pure will execute the plan identified in the design phase, leveraging the following high-level approach:</p> <ul style="list-style-type: none"><li>Array configuration<ul style="list-style-type: none"><li>Confirm arrays are at the appropriate Purity//FA operating system version to support ActiveCluster. If they are not, perform the upgrade.</li><li>Run an ActiveCluster pre-deployment health check to ensure link bandwidth meets recommended MBs/sec and latency requirements.</li><li>Activate ActiveCluster on the Array and establish synchronous replication connections between the arrays to be used in the ActiveCluster solution.</li></ul></li><li>ActiveCluster configuration<ul style="list-style-type: none"><li>Identify host and volumes.</li></ul></li><li>Host configuration<ul style="list-style-type: none"><li>Advise customer on host configuration changes needed for up to 10 hosts</li></ul></li><li>Network configuration<ul style="list-style-type: none"><li>Advise customer on recommended network configuration changes.</li></ul></li></ul>
<b>Validation</b>	<p>Once the ActiveCluster configuration has been deployed, the Pure Storage consultant will work to validate the operational integrity of the ActiveCluster configuration through a series of post-configuration checks, including:</p> <ul style="list-style-type: none"><li>Verify arrays are fully supported.</li><li>Confirm there are no hosts or hostgroups within pgroups.</li><li>Check object counts among arrays to insure they are within recommended limits.</li><li>Check management ports to insure they are configured, enabled, and active. (ActiveCluster requires redundant HA network connectivity to ensure HA access to mediator.)</li><li>Review MTU consistency to ensure compliance with recommended settings.</li><li>Review array utilization and capacity levels</li><li>to insure they fall within the recommended targets.</li></ul>

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- Check active array source and target connectivity.
- Check array connectivity to Arcus/CCM for cloud mediator access.

The most critical component to ensure that the ActiveCluster solution has been deployed appropriately – and that the desired customer outcomes are met – will require a complete failure scenario testing. To complete this effort, the Pure consultant will require the customer to schedule a set of customer-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 failures
  - Stretched SAN fabric outage (FC/ISCSI)
  - SAN Interconnect (between sites)
  - SAN single site outage
- Host failures (single and multiple host failure)

## Work Product

The outcome of an engagement will be:

- A validated and operational ActiveCluster environment
- 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.

## Out of Scope

- Any FlashArray configuration work not related to the ActiveCluster setup
- Physical installations of any FlashArray cabling
- Network configuration required in the customer environments
- SAN configuration required in the customer environment
- Disaster Recovery Testing
- Any server remediation work required
- Configuration of any 3rd party replication and DR management products
- Anything not included in this document or an applicable Statement of Work is out of scope

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## Scoping Assumptions

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

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