PURESTORAGE®
Uncomplicate Data Storage, Forever

WHITE PAPER

Selling a Platform & Solution Versus Selling a "Unit"

An overview of Solutions and Use Case selling & addressing our portfolio, with perspective from nearly 20 years of customer experience

Contents

Introduction

As some background, I am writing this as an individual with over 20 years of experience, primarily in the customer/service provider space, before moving over to vendors in pre-sales and architecture roles. I have worked in organizations ranging in size from SMB to multibillion-dollar companies and many verticals such as SLED, banking, healthcare, federal government, and high tech. Based on my experience as an IT engineer or architect in these organizations and industries, I understand that they face many similar issues to resolve for the business.

Why Are We Talking to Customers

When we consider why we end up talking to prospects for Pure Storage, we should understand why we are speaking with them. Every potential user of Pure needs storage, but they are trying to find a storage array that meets the specific needs of their environment – whether their need is performance, capacity, physical space, or cost. These customers are trying to find the correct fit for their environment, and we should consider how we can best help them in that effort.

Considering how our customers consume our storage, all but the largest customers do not use their arrays for a single use case or run only a specific type of workload. We also know from experience that customers who acquire Pure for their environments are likely to move additional workloads to the new array once they experience the performance and the ease of management. However, as we talk about customer satisfaction and NPS scores, which explain why customers love Pure Storage for their use cases, we sometimes focus too much on how a specific storage array can meet a specific need for a particular customer.

Providing Solutions

Customers are looking to provide solutions to address the technology needs within their organizations; this should be the same way we pitch Pure Storage to them – as a component of their solution. We have many individuals at Pure Storage focused on architecting solutions for customers (we even call them Solutions Architects, funny enough). While they are all based around Pure Storage to fulfill specific needs, these solutions are not complete with only a Pure product. No customers can run their entire infrastructure by simply buying a Pure Storage array. Therefore, we should consider not only the component that we sell but also the overall needs that customers are trying to support. When our Solutions Architects work to address these customers' needs, we put significant effort into the design, testing, and validation, leading to our solutions that address the same real-world use cases that customers run in their organizations.

When we are addressing customers running any workload - such as virtualization, Kubernetes, databases, SAP, healthcare applications, or even AI/ML - there is a significant investment in knowledge and subject matter expertise required to define the technical requirements in these solutions. In addition, further experience is required to design, build, and validate the solutions. Also consider the additional required investment in the hardware we leverage in our solutions labs. When you think of all these requirements, you can see how much inherent cost can be required even to begin to build these solutions around those same real-world use cases that customers are trying to address. The costs can be a constraint for most organizations when we think about customers having multiple or conflicting use cases within their environment. Between the requisite knowledge, hardware, and time to deploy these workloads, only the most mature and well-funded customers may be able to test their infrastructure and ensure that their components are compatible, along with the infrastructure being appropriately configured for each use case.

Solutions First Approach

To best support our prospects or customers, we should leverage a solutions-first approach to truly showcase what Pure Storage can bring to our customers and ensure they get the utmost performance and benefit from their investment in our technology. The solutions approach intends to determine the prospect's needs and recommend the right products and components to accommodate them. If we focus solely on a single infrastructure component that supports the customer's use case, then we are not addressing their complete needs. Understandably, we are not a partner or reseller that focuses on selling every piece of equipment a customer uses within their data center. Still, we have discovered their current and future needs during the early stages of the sales process. While we try to address these customer requirements with the correct storage unit for their ongoing needs, there is a limit to the exact versions of software and hardware, plus specific connectivity that has been tested and validated.

Solutions Use Cases

While working on our solution use cases, we work to design, test, and validate a workload that customers run within their environments. We also focus on following the best practices of the vendors whose hardware & software are part of this solution. As a summary of these deployments, we ensure that we document the versions of all hardware & software used within the solution, along with any configuration required for the final solution. Finally, we run testing for functionality and performance to demonstrate the expected results after deploying the solution use case.

However, it can be challenging to document the exact detail of every hardware component used, the logical design of how each component is connected, and the exact configuration of the hardware that exists outside of the workloads, which are the core of the solution use case. Much of the difficulty in documenting additional detail encompasses the environment specifics, such as a wiring diagram of each component, additional configurations for devices like ethernet/fiber-channel switching, and exact configurations for servers/virtual machines as a base for the solution.

Our Lab within Pure

For our solutions architects, we have lab gear connected and configured for mixed use with multiple devices or environments running on the same Pure units. Note that this may not be the case if we need dedicated performance testing to validate specifics like throughput or application performance under load, but that is an exception. This data point is beneficial to understand that many solution use cases are run concurrently, and the array performance can handle all the workloads that may be running. Yet it can become difficult to separate any contention within the overall environment that may affect the application workload in the solution use case. This situation is the reality of running workloads within a data center that every customer must face in the real world and our storage arrays are more than capable of giving these workloads the performance they need to run simultaneously. However, we cannot present the most precise picture based on the reality of our lab environment and these concurrent workloads.

Storage is not the only component required for customers to run workloads within an environment. We are working to provide solutions to meet customers' real-world needs to run workloads with a dependable performance at scale. Thus, the next step for us to take to address these details is to discuss a platform approach.

Our Platform - FlashStack

For Pure Storage, we have a platform (jointly built & tested with Cisco Systems) designed to provide all the storage, compute, and networking components and connectivity. FlashStack is our platform that can handle any footprint from a small scale to an entire data center. FlashStack is composed of Cisco UCS (computing resources), Cisco Nexus & MDS (networking resources), and Pure Storage to run any workload customers need. In addition, the specific components for computing, network, or storage can all be selected to meet any specific physical environment needs or constraints that a customer has, which can encompass anything from capacity, performance, bandwidth, footprint, power & cooling, etc.

The FlashStack platform is not a traditional converged infrastructure solution and does not have strict requirements for specific hardware models, software versions, and even firmware versions the way that most converged solutions are typically restricted. That means that a customer has the flexibility to pick components to meet their specific needs. This distinction also made Pure Storage refer to FlashStack as a "reference architecture plus" rather than another converged infrastructure. This flexibility within the platform components means that whether those specific needs are related to computing, networking, or data storage, they have many options for each component and customization of the hardware to match their requirements.

Compute can come in the form of either blade or rack mount servers with varying processing power or memory options, and can be further customized to include additional components like GPUs if they need workloads like VDI or AI/ML. Networking can come in ethernet with bandwidth options from 10 to 100Gbps, or fiber channel with bandwidth options from 8 to 32 Gbps, or a customer can forego networking for their connectivity between compute and storage. Naturally, we are much more versed in the options offered to a customer when we discuss storage, as every product in the Pure Storage portfolio is capable of being a component within the FlashStack platform. We give this overview not to dig into specific hardware components or connectivity options supported for the platform. Instead, we want to provide an overview of the capabilities with simplicity to help understand the platform overall and why we should discuss FlashStack with prospects to address their workload needs.

Flexibility

Now we understand that computing and networking resources are flexible based on the customer's need and preference for form factor or protocol. That flexibility also means that this platform can be customized and utilized to meet the requirements of multiple types of workloads and their specific best practices. Without going into much technical depth on the platform's underlying management, the environment's compute side can be architected and designed for ease of operations for multiple workloads based on the use of policies and the profile-driven design of Cisco UCS. Even when we layer in ethernet or fiber-channel networking for connectivity and Pure for data storage, the UCS compute platform still controls network and storage at the computing layer in a policy-based assignment.

One short and straightforward explanation of the concept is that blade or rack servers with a specific policy assigned get network adapters for ethernet & FC, and they can map to boot LUNs on any specific target storage array. That means that any customer has the option to leverage the type of network fabric chosen for connectivity to their data storage. They also have a simple method for ensuring that every server within the environment is automatically assigned the correct network adapters and gets the right policy to leverage boot from SAN on the correct storage array. We do not restrict customers to specific versions or connectivity requirements but rather provide a compatibility matrix of what has been tested and validated. Thus customers are free to design and deploy their environment in any manner that best fits their infrastructure operations, and both Pure & Cisco fully support it.

FlashStack Use Cases

Now that we understand the basic concept and components that make up the platform, we want to discuss how we build upon FlashStack for solution use cases. One of the main benefits of FlashStack as a platform lies within the joint effort & resources that Cisco and Pure invest in the Cisco Validated Design (CVD) program. When we look at the Executive Summary of CVDs, we can understand their focus based on customer needs:

"Cisco Validated Designs (CVDs) consist of systems and solutions that are designed, tested, and documented to facilitate and improve customer deployments. These designs incorporate a wide range of technologies and products into a portfolio of solutions that have been developed to address the business needs of our customers."

Understanding the Validated Design Process

Upon the acceptance of the initial proposal, the solutions requirement is the first document created for each CVD. This document intends to describe specific details, including the business use case for the solution, the customer experience, and perceived features and benefits for the customer. In addition, this document is where we lay out the high-level listing of the application workloads that we address within the design, other technologies leveraged within the design, such as the use of hybrid cloud and automation/orchestration, and why businesses would deploy the solution. Following this, we define the requirements, which begin with the customer experience, before getting into the high-level definition of hardware components and software versions.

The process moves to the technical requirements document upon completion of the solutions requirement document. This second document is where we define the details of each deployment, including the specific hardware models to be used in the design. Next, we specify the verification items, including specific focus areas to be validated and the major workload objective of the project. The technical requirements document also details any specific requirements for connectivity (including protocols), compatibility, and functionality that the design must meet. The document also lists any hardware/software component failures the solution must be capable of withstanding, plus any assumptions made or caveats identified. Following these details, the document presents the logical component layout, the test methodology with its success criteria, and any specific performance results to capture as part of the design validation.

A significant amount of initial detail is laid out within these governing documents, which becomes our guidelines for the specific design developed to address each solution use case. This overall process produces a document containing hundreds of pages covering the design at an architectural and logical level, configuration and deployment of all components, and any performance data gathered after deployment is completed.

As you can see from the description above, significant investment is placed into the design process at each state, including the initial proposal, solutions/technical requirements documents, solution deployment and validation, and the final documentation of the entire solution. However, this is not the only investment made into these designs by Pure & Cisco; we are also heavily invested in the hardware to build and test each environment. When we build out an environment for a solution use case in a CVD, we require the specific hardware for each component used within the design. The entire environment is deployed from a clean/initial configuration to the end state of the solution. For new hardware, the initial state is as unboxed and installed for the first time. In the case of existing hardware, it starts from wiping any previous configuration, then confirming existing cabling or installing new cabling for connectivity. In either scenario, a large footprint of dedicated hardware is utilized to build these designs, as would be deployed within a FlashStack that a customer would deploy if the same components from the design are used.

The Core of the Validated Designs

At the core of each validated design, we begin with evaluating a solution use case based on specific customer scenarios and ensure that we are deploying workloads that customers run in a real-world fashion. We also incorporate the best practices and additional integrations that complete a proper end-to-end design as would be used by customers. These designs provide an additional benefit since partners can use them as a step-by-step deployment guide to provide customers with a well-planned and tested infrastructure that has the backing of Cisco Support due to it being a CVD used as a reference architecture for the deployment. Some customers utilize a CVD to deploy an environment when they purchase the equipment list without a partner providing installation or professional services. I state that as a previous customer that deployed their first SAP HANA TDI environment with no prior experience, by relying on a CVD to advise how to accomplish building a business-critical infrastructure and still having vendor support for the result. Even Cisco sales teams encouraged this process for customers to be able to deploy such infrastructures with best-in-class enterprise gear while being able to leverage significant cost savings on services from partners.

Benefits of CVDs to Customers

The CVD program, in which Pure & Cisco invest heavily, focuses on providing value to customers with these end-to-end design and deployment guides. We provide customers with reliability through our extensive testing and ensuring that performance expectations are met when the solution is deployed. As a result, there is less risk for customers inherent within the solutions covered by these designs; the risk is removed of components not working as advertised or expected since the entire deployment had been tested and had vendor support behind it. Due to the level of comprehensive detail provided in these solutions, customers have everything covered, from the aspect of a bill of materials to design and configuration, and deployment, meaning that we leave no guesswork to customers. Finally, there is a guarantee that solutions deployed against a CVD work as specified and have the backing of vendor support if any issues are encountered within a customer environment.

When comparing the environments we leverage to build solutions use cases, we have the prescriptive environment built and tested within these CVDs designs, versus the multiple use environments where we deploy many other solutions and designs. After understanding the detail involved in FlashStack-based designs, it should be easier to understand the level of confidence we have in CVDs built upon the FlashStack platform. As customers need to deploy additional workloads, they can leverage other CVDs for those specific applications and environments to deploy an overall environment modularly to provide all required connectivity and functionality for their organizations. Our CVDs provide listings of specific hardware components to deploy a particular use case; still, due to the platform's flexibility, customers can choose which components and form factors or connectivity options they want to deploy. They can still be confident in the compatibility and testing that Pure and Cisco have performed. As the customer has additional needs for storage capacity, additional performance and capabilities, and integration with new technologies, we can provide all functionality provided by any Pure product within the FlashStack platform.

Conclusion

In the end, you should now understand more about the significant investment and effort placed into FlashStack, as well as the solutions we deploy and test on the platform. In more recent efforts to help customers deploy these validated solutions into their environments more efficiently, we are bringing Infrastructure as Code to FlashStack CVDs to provide easily automated deployments of this infrastructure with minimal customer effort. Also, to provide customers with new functionality around infrastructure administration and operations, orchestration, and even managed Kubernetes environments, we have integrated FlashStack with Cisco Intersight – the current SaaS management platform that Cisco hosts for actual centralized data center management. These new focuses are a continuation of the years of focus that has gone into enabling customers to consume the FlashStack platform. We want to provide resources that every customer can deploy in a tested fashion, provide their organizations the capabilities of running any workloads they require, and achieve the best time-to-value when deploying the platform.

After reading this guide, you should better understand FlashStack in terms of selling a platform and solution to prospects or current customers. You should see the increased value provided to customers when presenting an end-to-end solutions design that has been tested and validated, along with the platform that can provide for the current and future infrastructure needs. When having these conversations with customers based on providing solutions, we can ensure that Pure is a long-term component providing for the needs of their organization. This customer conversation is much more profound when we can incorporate all the features and functionality provided by any Pure product, as these are all supported and capable of being included within a FlashStack environment. The solutions and platform-focused approach helps solidify Pure Storage as a core dependency within customer environments. It also keeps Pure as a central element in their future purchases, rather than having a singular focus on a point product sale during a specific engagement.

About the Author

Joe Houghes is a Senior Solutions Architect in the Portfolio Solutions team within Pure Storage, focused on solutions on the FlashStack platform and automation and integration. He has experience from over 20 years in Information Technology across various customer/vendor organizations with architecture and operations. His expertise covers computing, networking, storage, virtualization, business continuity and disaster recovery, cloud computing technologies, and automation and integration across many applications and vendor platforms.

Pure Storage, Inc.
650 Castro Street, #400
Mountain View, CA 94041

[Publication number and date here]