4 STRATEGIES FOR STREAMLINING FLEXPOD DESIGN & DEPLOYMENT
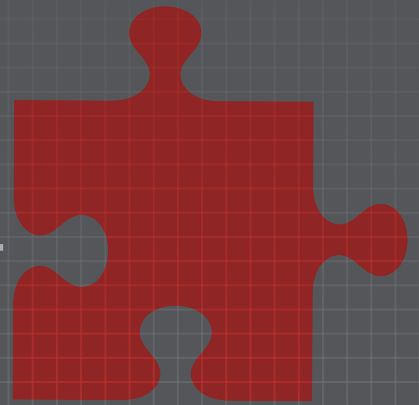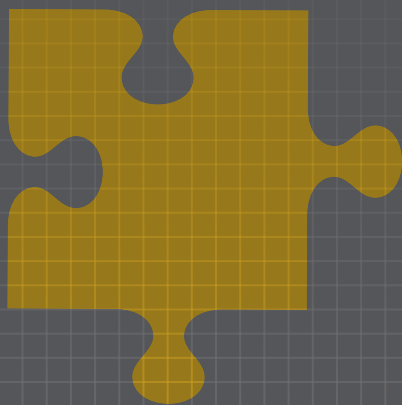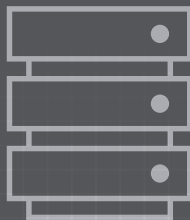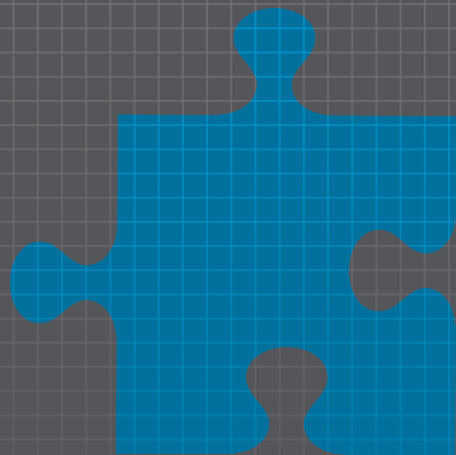
stratacloud

Deploying converged infrastructure systems such as FlexPod is a time-consuming manual process. The four strategies outlined in this white paper will help value-added resellers and systems integrators add efficiencies to their design and deployment processes.

Through the process of building an automation tool for day zero infrastructure configuration, the StrataCloud team has spent a lot of time thinking about how common practices for converged infrastructure (CI) design and deployment could be improved – specifically for our first supported CI system, FlexPod. We have learned that several common challenges – such as inadequate communication between technical solutions architects and deployment engineers, bottlenecks that arise when custom designs are required, time-consuming manual processes, adequately configuring infrastructure according to manufacturer's best practices and more – could be remedied with a few simple but deliberate process changes. In this white paper, we have outlined four strategies for improving the FlexPod design and deployment process.

Value-added resellers (VARs) and systems integrators have explained to us that because converged infrastructure designs are complex, lengthy documents, it's easy for the intentions of infrastructure architects who create those designs to get lost in translation. There are hundreds of details that an architect specifies for each design. Each of these has the potential to be misinterpreted by the deployment engineer, who ultimately uses the design to implement a converged infrastructure system for a customer.

Additionally, challenges can arise during implementation that require deployment engineers to call in experts who specialize in networking, servers or storage. Those difficulties are magnified, for both architects and deployment engineers, when a customer requests a highly customized design. Custom requests often require architects to begin a new infrastructure design from scratch, rather than modifying a tried-and-true design. Specifying the hundreds of details that go into a new design is a labor-intensive, time-consuming and potentially error prone process.

As the StrataCloud team developed SDI Install, we strove to come up with a new, more streamlined way to go about the design and implementation process, and to build software to guide VARs through it. We have found that many of the principles that drove the development of SDI Install prove useful, whether you are using an automation tool to apply them or not. When applied to traditional design and configuration practices, these principles can streamline the design process and increase installation efficiency.

The following four strategies can be applied to your next infrastructure deployment, regardless of whether you have embarked on an automation journey or are performing installations entirely manually. For full disclosure, we've also explained how StrataCloud applies these principles through software. You'll find those details at the end of each section.

1

GATHER AND STORE YOUR BEST DESIGNS CENTRALLY

VARs and enterprise IT teams add new infrastructure systems to data centers frequently. But they seldom record how the infrastructure designs that architects create perform in a live deployment scenario. This point is especially relevant for FlexPod converged infrastructure systems. FlexPod configuration is a complex, multi-step process that includes hundreds of variables that can differ from installation to installation. VARs tend to find and hone in on a handful of specific combinations that customers most frequently request. Likewise, if a specific FlexPod configuration works well for an enterprise IT team, they're likely to choose the same configuration again if they need to deploy a similar application in the future.

As a best practice, frequently used converged infrastructure system designs should be stored centrally, along with notes about each deployment, so others in the organization can access and benefit from them. Over time, you'll have a catalog of best-practice designs to choose from, along with notes about which designs have proved most effective during implementation. This knowledge will help speed the selection process anytime new infrastructure is needed.

We suggest coming up with a consistent organization method for these common designs, such as a shared file repository where all materials and related documents can be stored and accessed. The repository should include any reference materials from hardware manufacturers, such as reference architectures or validated designs, as well as wiring diagrams and any other documentation that is created at the time of configuration or later in the system's lifecycle.

> Frequently used converged infrastructure system designs should be stored centrally, along with notes about each deployment, so others in the organization can access and benefit from them.

HOW STRATACLOUD DOES IT

StrataCloud SDI Install includes a design tool called a blueprint builder, which enables architects to add existing designs or build new ones into locked, read-only configurations. Deployment engineers then access these blueprints within SDI Install at the build site, and the system configures the infrastructure exactly according to the blueprint. On site, the deployment engineer has the option to enter project-specific variables or upload a file containing them. While it may not be necessary to use an automation tool such as SDI Install for simple configurations, we have found that the simple practice of carefully maintaining design documents can save time and headaches for even the most straightforward installations.

BUILD DESIGNS WITH REPEATABILITY IN MIND
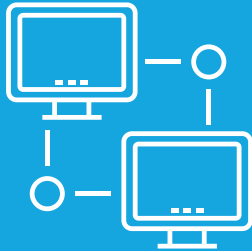
2

Configuration variables should be separated into two categories: one for the variables that are unchanging from design to design and another for variables that are unique to

Centrally storing best practice designs is a first step toward repeatability. Knowing what's been deployed and requested most often in the past can go a long way toward meeting customer needs more quickly in the future. But there's a simple way to take repeatability a step further that to do with how you store your configuration variables.

To make designs even more repeatable, configuration variables should be separated into two categories: one for the variables that are unchanging from design to design (we'll call these best-practice variables) and another for variables that are unique to each build (or site-specific variables), such as IP addresses, usernames, passwords and the like. Best-practice variables should be maintained in a master file in the central repository, so they can be accessed and implemented quickly. Site-specific variables should be maintained in a separate file that is created or edited for each new build.

Specifying site-specific variables in advance of day zero will help ensure a smooth installation, though it may be the case more often that these are entered manually by the deployment engineer at the build site. Though these variables are unique to each build, StrataCloud recommends documenting both best-practice and site-specific variables for each deployment and keeping track of these files centrally. A detailed record can prove invaluable down the road for both colleagues and customers, both for reference and if problems with the system arise.

HOW STRATACLOUD DOES IT

StrataCloud SDI Install was built to foster repeatability. Infrastructure system designs, or blueprints, are locked configurations that are maintained separately from site-specific details. Blueprints can be duplicated with a single click, modified as necessary and renamed to speed similar installations in the future and eliminate the need to manually duplicate work that has been done before. StrataCloud automatically keeps a record of each site-specific build in a project file, along with a detailed audit log of actions taken in the system. Blueprints, projects and audit logs can be accessed at any time.

3 IMPROVE COMMUNICATION BETWEEN ARCHITECTS AND DEPLOYMENT ENGINEERS

Architects and deployment engineers seldom interact, but facilitating these interactions could lead to competitive differentiation. At a basic level, it makes sense for architects to know the deployment engineers that will be implementing their designs and vice versa. But establishing rapport can also ensure smooth installations. Should questions arise during implementation about the statement of work, the deployment engineer can reach out to the architect. If the architect has a question about how a specific design performed in a production environment, he or she will know which deployment engineer to contact.

There are ways to facilitate two-way communication between architects and deployment engineers. Consider having deployment engineers shadow architects for a day so that they gain an understanding of what goes into creating a new infrastructure design. And allow architects to take a day now and then to travel with deployment engineers to the build site. A single day in the field helping a deployment engineer interpret a design can have a lasting impact. It may also be helpful for deployment engineers to take notes when issues arise and review them with the architect after the build is complete.

> Consider having deployment engineers shadow architects for a day so that they gain an understanding of what goes into creating a new infrastructure design.

HOW STRATACLOUD DOES IT

StrataCloud's job engine creates a detailed job log during installation that both architects and deployment engineers can reference after the build. The job log records the hundreds of steps that were taken to complete the installation. Architects can reference the log after a build has been completed to determine whether or not their design proved practical, and to ensure the design that was implemented matches the design that was promised to the customer. Deployment engineers can also reference these logs when implementing a particular configuration for the first time. Additionally, by codifying architect's designs as blueprints that are automatically applied at the installation site, SDI Install ensures nothing is lost in translation.
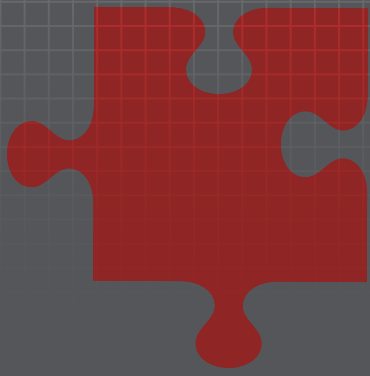
4 AUTOMATE SOME PROCESSES
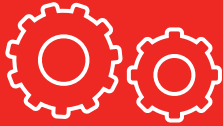
However you choose to use scripts, it's important to carefully validate that configuration was performed properly and that the hardware was cabled accurately.

Automation scripts can be useful for infrastructure configuration in some cases. The most significant advantage automation can provide is its ability to remove the potential for human error and thereby increase the reliability of infrastructure builds. There are three things to consider when weighing whether to write a script for configuration. First, how long and how many resources will it take to write? Second, how many times will you be able to run the script without having to modify it? And finally, is there a way to validate that the script performs properly, either through manual validation or by building error handling into the script?

Chances are, you will find writing scripts is only valuable for configuring certain components of your most commonly used designs. For FlexPods, StrataCloud recommends limiting the use of Powershell scripts to basic ESX or UCS Manager configuration and direct NX-OS scripts for Cisco Nexus configuration. However you choose to use scripts, it's important to carefully validate that configuration was performed properly and that the hardware was cabled accurately. Configuration errors may not become evident until the customer tries to use the system. Still, when selectively applied, scripts can save significant time during certain configuration processes.

HOW STRATACLOUD DOES IT

StrataCloud SDI Install is software that takes automated configuration one step further. In addition to automating configuration of the hardware components and hypervisor, SDI Install performs automated validation. Before configuration begins, SDI Install cross-checks configuration parameters against the hardware by verifying end-to-end connection mechanisms. Automated validation ensures that configuration is performed exactly as prescribed, and that all hardware is in place and has been cabled properly.

CONCLUSION

These four process changes can help you streamline the FlexPod design and deployment process, save time and strengthen communication among those involved throughout the service lifecycle within your organization. By making these changes, we hope you will quickly identify your most reliable designs and achieve more predictable results each time you design and deploy a converged infrastructure system.

stratacloud

About StrataCloud

StrataCloud is building a platform to enable cloud-like agility in enterprise data centers by enhancing the benefits of converged infrastructure. StrataCloud's platform automates converged infrastructure installation, simplifies application provisioning and provides centralized monitoring, enabling IT to deliver on-premises services with the speed, agility and consistency of the public cloud.

Learn more at www.stratacloud.com.

StrataCloud
53 Perimeter Center East
Suite 201
Atlanta, GA 30346
(888) 696-5725
www.stratacloud.com