Pliant

The Need for Zero Touch Provisioning

And The Pliant Approach

Executive Summary

Virtual IT infrastructures offer compelling benefits, including on-demand provisioning, more efficient management, and lower costs. The goal is to make data centers and network resources faster, easier, and less expensive to deploy.

However, managing modern IT environments has its challenges. With cloud-based resources, for example, many organizations are driving their deployments and management with container orchestration systems such as Kubernetes. But those systems are complex, with seemingly endless choices for resource configuration and provisioning. When the wrong choices are made by DevOps or IT people upstream, the downstream impacts on uptime, performance, and operating costs are not good.

In the physical IT realm, human error in provisioning is a long-standing problem that persists today. In network infrastructures, legacy devices are still commonplace. Configuring them requires hands-on work by skilled IT professionals, which is costly and inefficient. Yet an even bigger problem is human error.

How big is this problem? An answer was provided in a <u>recent report</u> published by the <u>Uptime Institute</u>, which found that over the past three years, 40% of organizations suffered major infrastructure outages directly caused by human error.

40% of organizations had major outages due to human error. **85%** of them stemmed from people not following procedures.

Some 85% of them stemmed from IT people failing to follow procedures. The fact is, these mistakes are happening all too often. The resulting downtime can quickly negate any hoped-for cost savings and crush productivity. Those are outcomes that enterprises simply can't afford.

Tech Brief

The good news is that technological advances have ushered in a solution to this problem. It's called 'zero touch provisioning' or ZTP for short. This paper discusses the basics of ZTP, describes how the technology works, and outlines some popular use cases. It also describes Pliant's advanced, yet easy-to-use Zero Trust Provisioning Solution.

Zero Touch for IT, Minimal Touch for Others

ZTP has become an industry buzzword that is listed on many products' feature lists. However, as is the case with many buzzwords, it's somewhat overstated. Here's some clarification.

Taken literally, ZTP would provide a way to configure and provision IT services and resources — in data centers, network infrastructures, and elsewhere in technology stacks – without any human involvement.

What ZTP actually refers to is not needing a skilled IT person onsite to configure and provision a resource so it's ready for operations. Instead of requiring local, hands-on technical expertise, ZTP enables all kinds of IT resources – both virtual and physical – to be fully configured and provisioned through fully automated and centrally managed workflows.

With physical devices, for example, they still need to be racked, connected, and powered up. That's where human involvement ends with ZTP. And all of those initial steps can easily be done by a non-technical person, such as a branch office manager. Then the ZTP solution takes over and completes the full configuration remotely. With cloud-based or virtualized resources, the non-IT person is required to do even less.

With ZTP, enterprises can achieve full data center and network infrastructure automation without IT help onsite. That translates into more effective IT operations, less downtime, better utilization of valuable IT staff, and lower operating costs.

A Closer Look at Typical Provisioning Problems

Pre-configuring resources in-house offers the advantage of using local staff to perform the initial configurations and upgrades which can reduce additional travel expenses and overtime pay. This also allows for an almost plug-and-play deployment once the equipment arrives at the new location. The downside to this method is manual configuration by local IT staff can introduce misconfigurations which may render the device non-usable when it reaches the remote destination. In addition, there are heightened security risks incurred when shipping anything with sensitive data.

Shipping equipment with factory default settings eliminates the security risk but places the burden of configuring and provisioning entirely on the remote staff and does not mitigate errors that tend to happen when configuring devices manually. This can equate to higher travel expenses and additional overtime pay, not to mention reduced staff back at the main office.

<u>Required Resources</u> – Without ZTP, someone with the requisite technical skills needs to either configure locally and ship the device, or go on-site and manually configure a device such as a router, switch, or server. The first steps are racking it, connecting it to the network, and booting it up with the default factory configuration for basic operations.

Next, the IT or DevOps person downloads a file from the network (either a configuration file or script) that specifies configuration settings and parameters for that specific device.

If the IT or DevOps person gets the right software image information and the correct configuration file, the configuration and provisioning stand a good chance of being successful.



This multi-step process is repetitive, laborious, and boring, with the risk of human error in every step. Whether local or on-site, if the person skips a step, takes a shortcut, or uses the wrong files, settings, or parameters, the configuration goes south, the provisioning process fails, and it's back to square one.

With zero touch provisioning, aside from any racking, powering on, and making any necessary networking connections, all other steps are handled in well-defined, error-free, and fully automated processes.

To be effective, ZTP solutions need to provide broad coverage of devices, systems, and other technologies. That means having automated workflows for all the popular physical and virtual resources that now make up most IT environments and technology stacks.

Broad coverage with pre-built and tested ZTP workflows is where Pliant stands out.

The Pliant ZTP Solution – Overview

Based on the <u>Pliant Orchestration Platform</u>, Pliant's ZTP Solution provides enterprises with simplified and streamlined ways to leverage the power of automation and orchestration in their provisioning processes. With its powerful yet intuitive capabilities, the Pliant ZTP Solution enables teams to shed their outdated, error-prone, and costly provisioning approaches. With the Pliant Solution, enterprises gain new automated, integrated, and connected provisioning that is centrally managed, highly efficient, costeffective, and error-free.

For IT and DevOps teams, the Pliant ZTP Solution eliminates the manual and repetitive tasks associated with configuration and provisioning, and the frustrating humanerror factor. By automating these important but low-value tasks, the Pliant ZTP Solution frees up technical team members to focus on more strategic initiatives.

Powering the underlying Pliant Orchestration Platform are thousands of abstracted APIs from popular products. The resulting low-code 'action blocks' make it easy and flexible for users to produce whatever automated configuration and provisioning processes and workflows they need. It's also fast to create and deploy automated provisioning processes with the Pliant Solution, with results delivered in just hours, not days or weeks.





Popular Use Cases



Bare metal, multi-vendor server provisioning

Pliant offers workflows for Dell/HP/SuperMicro servers that automate the process of upgrading the BIOS, the network drivers, RAID controllers, and then the installation and configuration of a hypervisor or OS on the new server – all error-free.

Network turn-up/provisioning

Automate the configuration of new network devices such as switches and routers or restore default configurations using workflows with validated configuration settings, for error-free deployments.





Virtual compute provisioning

Pliant orchestration offers the best bare metal server configuration, network turn-up, and virtual machine creation by ensuring that all the steps in these provisioning processes are completed in error-free ways. Pliant workflows for VM creation validate that the underlying hardware, networks, IP address infrastructure, DNS, etc. are all configured correctly prior to virtual machine creation.

Conclusion

The downtime in modern IT environments caused by human error in the provisioning of both virtual and physical resources is an avoidable problem. So is the suboptimal use of IT and DevOps teams' time handling this task, and tracking down and fixing mistakes.

Zero touch provisioning solutions offer a smarter and more effective approach, one that is up to par with the automation that is increasingly present in modern IT environments. Pliant's ZTP Solution offers advanced capabilities with outstanding ease of use, which is why it is gaining rapid momentum in the market.

Contact Pliant Today

Your organization has already digitized its data centers and large portions of its network infrastructure. Isn't it time that you brought the same level of automation to bear on your provisioning processes?

Take the first step to learn more about the Pliant Zero Touch Provisioning Solution. <u>Contact our team</u> of experts today.



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