puppet

# **Autostructure** achieves federal compliance by delivering a solution built on Puppet Enterprise

CASE STUDY

autostructure

## Industry

Information technology services, public sector

## Customer Environment

Microsoft Windows Server

## Challenge

Autostructure needed a compliant solution for hardening Windows servers. In addition, the firm dealt with clients with manual and siloed processes, resulting in time-consuming infrastructure provisioning that was error-prone and exposed vulnerabilities.

## Results

- Developed a Windows-hardening Puppet module to ensure compliance
- Merged multiple data centers for its client, the United States Forest Service (USFS) of the United States Department of Agriculture (USDA)
- Accelerated changes to applications on infrastructure services with better quality and less downtime

## Merged data centers for the United States Forest Service (USFS)

Autostructure is a DevSecOps consulting firm located in Pontiac, Michigan specialized in serving clients in the public sector. The firm was tasked with modernizing the USFS's data center service and retiring legacy data centers. While there were many barriers to this project, the biggest challenge was setting up and configuring hosting services. Provisioning of environments took over a month to complete. The process was handled manually with multiple handoffs. This resulted in many errors and security vulnerabilities.

"There wasn't a great tool in place for data center management," said Bryan Belanger, principal consultant of Autostructure. "Instead, there were about 15 individual tasks handled by multiple resources with lots of manual handoffs." This created a lack of consistency across the board, making the process to provision environments difficult and lengthy.

Using a solution built on Puppet Enterprise, Autostructure helped the USFS break down the silos and streamline its provisioning process. This helped the USFS deploy changes to its applications on secure infrastructure services in minutes with more quality and less downtime.

"Puppet allowed us to take full advantage of our technology platform and limit the amount of human error, accelerating our time of delivery," said Belanger. "Thanks to Puppet, our team can move a lot faster with increased accuracy on behalf of our clients."

## Developed module for Windows to achieve government compliance

Autostructure works with clients, like the USFS, which operate in industries with high standards of compliance. The consulting firm needed a solution to enforce security and compliance policies.

Previously, Autostructure had not found any solutions that satisfied client needs for hardening Microsoft Windows Server. In addition, their de facto Group Policy solution did not report exceptions to policies or allow easy migration of existing policies. To solve this challenge, Autostructure developed a Windows-hardening module for Puppet that adhered to the Security Technical Implementation Guide (STIG). "We have a heavy focus on security and compliance because we have many clients in the public sector," said Belanger. "Puppet is a key component for us to be federally compliant. It allows us to ensure our clients obtain and keep their Authority to Operate (ATO)."

Puppet also ensured all policy exceptions were reported. Without auditing, it was difficult for Autostructure to know if an exception happened. "With Puppet, we can now easily identify a starting point for further research when there is a policy exception," said Belanger. "It's the best configuration management tool on the market because it is easy to implement for non-Windows experts and it monitors, enforces and reports compliance, helping us meet the demands of our clients with ease."

**"We have a heavy focus on security and compliance because we have many clients in the public sector. Puppet is a key component for us to be federally compliant."**

**Bryan Belanger**
principal consultant of Autostructure

## Leveraged Puppet Bolt to fix damaged repository configurations and upgrade Kubernetes cluster

When Autostructure's datacenter provider damaged repository configurations during a patch, the only solution available was to have someone log into each server individually and edit the configuration file manually. Autostructure also needed to upgrade its Kubernetes cluster, but the process was error-prone and would take more than 10 hours because tasks could only be run one at a time. Autostructure turned to Puppet Bolt, an open source and agentless automation tool, to solve these challenges.

With the help of Puppet Bolt, Autostructure fixed more than 1,000 servers within five minutes. In addition, the firm upgraded its Kubernetes clusters within four hours, which included coding the tasks. "We love using Puppet Bolt because it leverages our existing Puppet roles and classifications," said Belanger. "This allows us to easily make changes to large groups of servers and upgrade Kubernetes clusters quicker, which is often a pain if done manually."

> **"Puppet is the best configuration management tool on the market because it monitors, enforces and reports compliance. It helps us meet the demands of our clients with ease."**
>
> **Bryan Belanger,** principal consultant of Autostructure

## Top outcomes from using Puppet

- **Reduced provisioning tasks from weeks to minutes**
- **Reduced environment baseline errors to zero**
- **Fixed damaged repository configurations for more than 1,000 servers within five minutes**
- **Upgraded Kubernetes clusters within four hours compared to 10 hours**
- **Reduced time when deploying changes to applications on secure infrastructure services from months to minutes — this applies to both patching and deployment**
- **Developed a solution to enforce and monitor federal compliance on Windows servers**

## Want to see more of Autostructure's Modules?

Visit the Puppet Forge