SALTSTACK®

Sterling Talent Solutions Automates DevOps and Orchestrates Data Center Operations

SaltStack Enterprise case study

About Sterling Talent Solutions

Sterling Talent Solutions is an industry leading background investigation service for employers and organizations worldwide. With 20 offices in nine countries, the Sterling team of more than 3,500 employees serves 50,000 customers around the world, including a quarter of the Fortune 100.

Sterling has been in business for more than 40 years and competes against hundreds of background screening companies but has worked hard to maintain a competitive edge through the most advanced technology available. Sterling is known for its speed, accuracy, compliance, technology and integrations and service, none of which is possible without a modern and agile infrastructure and application environment.

Stephan Looney, Sterling Talent Solutions IT director, and the talented team of Sterling engineers, administrators and IT operators understand that keeping a competitive advantage through technology requires substantial automation and an evolved DevOps approach to service delivery.

Selecting SaltStack® Enterprise

To help automate the work of IT, and the Sterling Talent Solutions business, Stephan had to find tools fit to automate the job at hand across about 1000 systems. He was first introduced to SaltStack at a previous job when tasked with finding a replacement for BMC Bladelogic. They needed something scalable, pluggable and had accessible and reliable cross platform support for heterogeneous operating systems and clouds. They found that SaltStack met all their needs and when compared to Bladelogic, SaltStack required about one tenth of the time to implement and about one tenth of the cost to license and support.

Stephan, a self-proclaimed "Linux guy," joined Sterling, a .Net shop, in late 2014. At that time the Sterling IT team realized they needed to create and optimize DevOps processes to maintain and accelerate the company's competitive edge. They also wanted to get their developers out of production infrastructure while still providing agile and rapid self service for application delivery.

They knew a legacy systems management tool wouldn't work for them. They also discovered that the other contemporary configuration management tools had too much of a dev-centric orientation, and limited ability to scale high and wide. SaltStack is easy to implement, offers much more than just configuration management, provides solid Windows support alongside robust Linux support, and delivers quality integration with almost all cloud providers.

So the Sterling team quickly decided on SaltStack Enterprise integrated with WSUS, an artifact repository for Wintel systems, Splunk, and Git as their go-to automation suite.

Automate all the things

As the business of Sterling Talent Solutions grew, so did the job of providing and maintaining the digital backbone necessary to support and accelerate the growing business. Manual IT administration is slow, costly and riddled with errors.

SaltStack automation is critical to the work of Sterling IT and is used to help orchestrate:
- Fast, repeatable and reliable code deployments for both .Net and Linux environments
- Dev team self service with near-instant builds of dev / QA / production environments
- Automated patching of Linux, UNIX and Wintel systems
- Change control and management
- Single-tool abstraction of system deployments to physical, virtual or cloud infrastructure
- Fully automated operations for the NOC and 24x7 IT support operations

Consistent application configuration and migration

Sterling Talent Solutions uses a SnapLogic platform to provide external customers and partners with dozens of pre-built integration components between HR tools and public data sources. These SnapLogic servers are critical to the Sterling business. They have two dozen SnapLogic servers to build and maintain and prior to SaltStack they were configured and managed manually with no automation to help.

Stephan said, "We would spin up a dev environment and no two servers would have the same configuration. So we decided we'd have the team build one SnapLogic box manually, have the team document the entire process, and then turn it over the documented process to the ops team to automate the build. Of course there were a bunch of missing steps in the process and it didn't work. So we came up with the idea to create a Git repository of the vendor install directory and capture all of the unique Snaplogic configuration deltas in SaltStack. By mirroring the deployment and proper configuration in a SaltStack formula, a job that used to take hours, was now less than six minutes or a pot of coffee, whichever came first."

In 2016 Sterling embarked on a migration from old data centers in Atlanta to new data centers in Virginia. Using the SaltStack formula for the SnapLogic servers they were able to automate the migration of these servers from the old data centers to the new data centers seamlessly with no downtime to the external customer-facing SnapLogic-supported customer offerings.

Securing Windows

Stephan said, "Windows is excellent when configured well, but it generates snowflakes quickly, and it can be difficult to maintain. So our challenge was to manage a GUI environment through a command-line tool with its roots in Linux.

"Doing Windows configuration management and patching will break things if you're not careful. The problem with WSUS is if let to run autonomously it pushes patches in a black box style giving the admin no visibility into the status of the patch, or the system it is running on."

So Sterling integrated SaltStack with WSUS and now has full visibility and control of the Windows patch lifecycle. WSUS will publish and distribute Windows patches but SaltStack picks up where WSUS left off finishing the job. Stephan said, "With SaltStack we orchestrate the full and necessary process for patch management, filling in all the gaps left by WSUS. SaltStack can check patch status and get results back in YAML format, reboot servers within maintenance windows if they need it, then run a "get updates" against the patch to see if there is anything else that needs to be done.

"We also use SaltStack to blacklist or whitelist patches using the patch UID for more-targeted, one-off patch management. Many times you just can't run the entire batch from Microsoft. SaltStack provides us with much more control over Windows environments that are already very temperamental.

Sterling Talent Solutions case study

To be able to manage both Windows and Linux with command and control abstracted to any operating system or cloud all from from the same tool is huge for us."

Automating night ops and support tasks

A significant reason for Sterling's selection of SaltStack Enterprise was to empower the non-administrators in the IT organization working night operations and the support desk with the power of a SaltStack self-service portal. Stephan said, "SaltStack is extremely flexible and can be configured to automate just about any job. But this flexibility can be difficult for the less technical, Windows-oriented members of our team. And if the power of SaltStack ends up in the wrong hands bad things can happen.

"SaltStack Enterprise gives the systems administrators on the team the ability to create the automation routines and then make them available as a push-button job in the console only to those authorized to do the work. We've already done the work on the backend solving for the majority of NOC and support desk tasks. When we customize SaltStack to our needs, make it easily consumed by the appropriate people on the team, good things happen. Especially when systems administrators would rather be sleeping instead of backing up the night ops folks."

Currently 30 Sterling employees use SaltStack Enterprise to run more than 80 predefined jobs across their environment. These are jobs like server and service restarts, service requests, or the delivery of a fully patched and compliant server stack build in 13 seconds.

The future of Sterling IT with SaltStack Enterprise

Giving the power of SaltStack to the people has reduced calls to Stephan's team of systems administrators by more than 50 percent, allowing the team to focus on new initiatives that had previously always been on the back burner. Stefan and team are now able to get to more R&D projects such as the deployment of a fleet of IoT appliances in their data centers, or even getting back to writing code.

His team now has time to also work on a project to automate even more of the team's data center support load by injesting Splunk events into SaltStack for orchestrated diagnosis and remediation. Stephan said, "If the support desk can call the end user and tell them about an impending issue before the end user ever has a chance to call the support desk, this would be ideal."

They are also beginning to do more with SaltStack event-driven automation by using the SaltStack Reactor to intelligently orchestrate infrastructure based on cloud events. The machines are beginning to manage the machines.

SaltStack Enterprise Support

The extensive scope of SaltStack capability has made it a mission-critical element of Sterling IT operations. Stephan said, "We've wrapped our entire patch, compliance, deployment and configuration automation workload around SaltStack, and we realized that we needed 24x7 support with direct phone line access. As we engaged the SaltStack support organization we began to realize that they were becoming an invaluable extension of our team and the amount of knowledge and best practices we receive from the engagement are invaluable.

"For example, we had a particular issue with SaltStack migrating VMware virtual machines. We spent a couple of weeks trying to figure it out but we should have just called SaltStack support. Once we did call them they had us up and running within 45 minutes.

"Or another time we broke our SaltStack infrastructure during a weekend but were still able to get SaltStack on the phone within 20 minutes and they helped us get fixed immediately. We probably should have reached out proactively for help before ever breaking things."

SaltConf - The SaltStack annual user conference

"SaltConf is simply a great event. The networking is incredible and helped the Sterling Talent Solutions team define our DevOps model using SaltStack as the orchestration and automation engine. We came away from SaltConf16 using SaltStack in new and even more powerful ways. The experience was priceless and we plan to send the whole team next year."

SaltStack, Inc.
3400 N. Ashton Blvd., Suite 110
Lehi, UT 84043
USA

+1 801.207.7440
info@saltstack.com
www.saltstack.com

Produced in the United States of America

♺ Please Recycle