



Complex Application DevOps Integration and Installation Automation

The Problem

Our client is an independent software vendor making the transition from SaaS-only to providing on-premise and private cloud installations. It had been offering software only in a multi-tenant cloud service, but found that its customers in regulated industries required secure, on-premise, or virtual private cloud installations. Prior to our engagement, the need to install components of the software across a minimum of five servers, each configured with dozens of packages, caused delays in implementing Proofs-of-Concepts, disrupted the sales process, and created an ongoing support burden for both the support team and their end-user organizations.

The Solution

OpStack performed an analysis of the situation, designed, and then constructed an extensible automation platform for our ISV client that:

- Installs the client’s software in on-premise, or virtual private cloud environments.
 - ➔ Runs interactively or unattended.
 - ➔ Prompts users for any missing configuration elements.
- Performs validation of prerequisites.
- Leverages a major open source orchestration tool to:
 - ➔ Install or upgrade the operating system, supporting packages, and application components as needed for each server in the customers environment.
 - ➔ Fully configures DNS, SSH, firewalls, and VPNs to support the application.
 - ➔ Distributes SSH keys across the configuration.
 - ➔ Allows for site-specific selection of repositories for standard packages.
- Supports installation on multiple Linux distributions and all major cloud providers.
- Centralizes all site-specific options to a single configuration file.
- Logs all steps and, on any error, allows for correction and restart from that or any earlier checkpoint in the process
- The solution works in both Internet-accessible and air-gapped environments.
- Extends our client’s CI/CD stack to include versioning and packaging of tagged releases.

Notification	Pagerduty	Teams	xMatters	e-mail	Slack	NOC	Manage & Notify
Enterprise Platforms	Office 365	Microsoft	G-Suite	ServiceNow	Slack	Zoom	
Observability	Splunk	Nagios	NetworkMiner	AppDynamics	Azure Log Analytics	Prometheus	Monitor
Security	Cisco	Nessus	Tripwire	Qualys	Carbon Black	CrowdStrike	
Operating Systems	Red Hat	CentOS	Rocky Linux	Linux (Debian)	FreeBSD	Unix	Run
Compute	HPE	Cisco UCS	Dell	IBM	Lenovo	White Box	
Storage	EMC	Pure	HPE	SPAR	NetApp	White Box	
Databases	Oracle	MS SQL	PostgreSQL	MySQL	MongoDB	IBM DB2	
Identity & Access	AD	Okta	Vault	Cyberark	IBM ISAM	SiteMinder	
Cloud	AWS	Azure	GCP	IBM	Digital Ocean	VMware	
Orchestration	Ansible	OpenStack	Saltstack	Puppet	Kubernetes	Custom	
Testing	Locust	Selenium	HP Loadrunner	IBM Rational	JMeter	JUnit	Test
Source Control	Azure DevOps	GitLab	GitLab	Bitbucket	SVN	Antifactory	Build
Scripting / Programming	Python	JavaScript	Java	Go	Perl	Ruby	



The Result

- Reduction of average install-time from one week to under an hour.
- The installed application topology for systems built in the cloud, on-prem with Internet connectivity, and on-prem and without access to external repositories is now identical -- simplifying product documentation and standardizing support procedures.
- Business impact is both faster time-to-revenue for new clients and lower support costs for the installed base.

