



EBOOK

Simplify Amazon Web Services Automation with Puppet

July 2017



Contents

Introduction	03
How Puppet Enterprise helps accelerate cloud migration.....	04
Provision AWS infrastructure reliably and consistently.....	06
Adopt DevOps practices on the AWS Cloud.....	07
Secure your AWS Cloud environments	09
Puppet Enterprise on AWS: ServiceChannel	10
Ease of adopting Puppet Enterprise on AWS	11
Get started	12

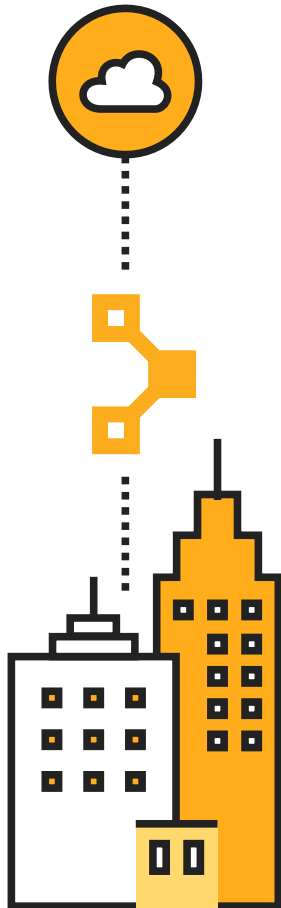
Introduction

Puppet gives organizations a simple and reliable way to standardize and automate software delivery and operation — on the cloud, in the data center, or in a hybrid environment. This ability to use a single platform across all environments can help your company accelerate the process of migrating to the cloud, and realize the full benefits of Amazon Web Services (AWS).

Puppet Enterprise helps organizations provision, configure, and manage their infrastructure and applications across all environments: public, private and hybrid cloud. It provides situational awareness so you know what changed, when, and why.

The Puppet language is human-readable, and lets you define how you want your infrastructure and applications to look in code. The ability to define your infrastructure as code lays the foundation for your DevOps practice. With your infrastructure as code, you can apply agile development best practices to share, review, test, and deploy changes to your infrastructure in an automated delivery pipeline. Puppet Enterprise also enforces the desired state of your infrastructure so you can be confident that you are always in compliance.





How Puppet Enterprise helps accelerate cloud migration

Leveraging the agility and flexibility of the AWS Cloud presents an opportunity for your organization to transform the way it provisions, configures, and manages your infrastructure to reliably deliver better software, faster.

On the cloud, resources must be elastic to accommodate fluctuations in demand, while security and compliance policies must be enforced to ensure continuous compliance. It's much easier to take advantage of the dynamic and highly scalable capabilities of AWS, and keep your infrastructure and data secure, when you implement modern DevOps tools and processes.

Puppet Enterprise lays the foundation for modern DevOps practices, and simplifies migration from your on-premises data center to AWS. Puppet Enterprise lets you define your infrastructure as code once — and then you can deploy it anywhere, either on-premises or on the cloud. You can use the same configurations to manage both your AWS Cloud and on-premises workloads, reducing the complexity of managing mixed environments.

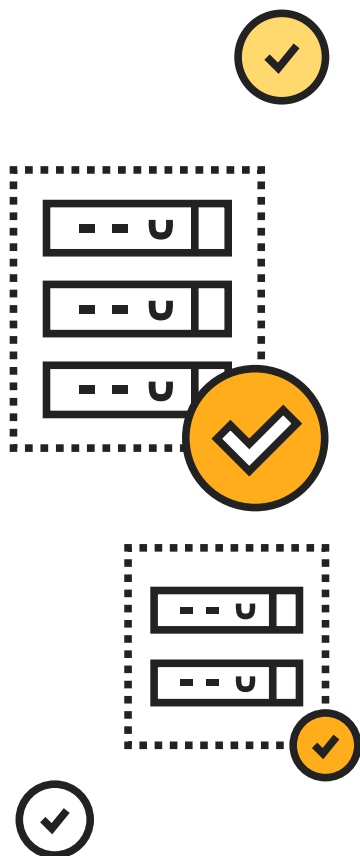
With your infrastructure defined as code, you can apply proven agile development best practices to infrastructure changes. You can share, review, test, and deploy your infrastructure code in an automated delivery pipeline, alongside your application code.

If you are planning to migrate a three-tier application to AWS, for example, Puppet Enterprise defines how your web server, application server, and database server should be configured, as well as the resources running on top of those servers. The application probably requires multiple environments for development, testing, staging, and production. To move that application and its environments to the AWS Cloud, you have two options: build your environments manually, or automate.

- If you build all your environments manually, it will likely take weeks or months to provision and configure everything. Without Puppet Enterprise in place, you will then have to manually manage each environment to make sure they all match the production environment, taking a lot of your team's time.
- If you define your infrastructure as code in Puppet, you can automatically provision all your environments in a consistent and repeatable way. A big added benefit: all your environments will be automatically managed from Day One. Any changes to those environments will be reported, so you know what changed, and whether it was due to drift or intentional change. A further benefit is that with your teams no longer spending time on manual monitoring and updates, they are free to work on higher value initiatives — which is better for your business.

Minimizing downtime is often a key driver in the migration process. Adopting the new processes and laying the foundation of automation necessary to migrate to AWS has the added benefit of enabling your organization to respond to user needs faster, and deliver services more securely at scale after you've migrated.





Provision AWS infrastructure reliably and consistently

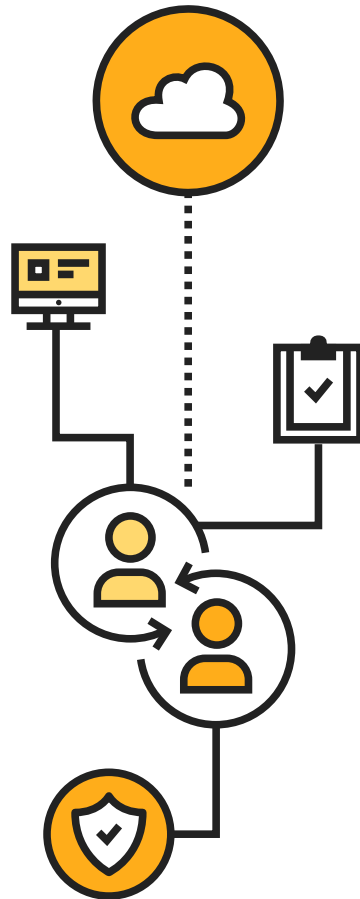
The Puppet supported AWS module allows you to describe the components of your infrastructure using the Puppet language, and then lets you create your AWS infrastructure in a consistent, repeatable way. You won't need to create new instances manually, so you'll avoid human errors — for example, forgetting to create a new security group.

The AWS module supports the following services:

- Amazon Elastic Cloud Compute (EC2) instances
- Elastic Load Balancing (ELB)
- Elastic IP addresses
- Security Groups
- Amazon Virtual Private Cloud (VPC)
- Autoscaling Groups
- Amazon Route53 DNS

With Puppet Enterprise, you know exactly what is going on with all your software on AWS, all the time. You get the automation you need to deliver software more rapidly, while maintaining quality, security, and compliance.

Adopt DevOps practices on the AWS Cloud



Many organizations spend the majority of their time making manual changes to their environments to ensure that they are all in sync. Moving to the cloud requires your team to learn new processes and skills to manage infrastructure at cloud scale.

One of the benefits of Puppet is that you can start small by configuring a baseline operating system and a handful of services, and then extend automation across your infrastructure over time. As you automate your infrastructure, you can begin laying the foundation for your DevOps practice. Puppet Enterprise lets you define your infrastructure as code, which is a fundamental requirement for the DevOps practices of sharing, reviewing, automated testing, and deployment.

Puppet is a common language that lets you describe how you want your infrastructure to look in its end state, instead of defining all the individual steps to get there. Because it is code, you can make changes quickly and easily and deploy them across hundreds of instances instantaneously, instead of making manual changes hundreds of times. And you can be sure the changes will be carried out consistently across your infrastructure. You can manage all resources — computing, networking, and storage — with a single tool.

This common language is fundamental to DevOps practices, because it allows all technical teams to collaborate and understand each other's work better — another core tenet of DevOps. These practices let you make changes with increased confidence, and recover more quickly from errors. With your tech teams spending less time on remediating errors or downtime, their time is freed up for higher-value work.

Teams that adopt DevOps practices gain some important benefits, including:

■ **Faster time to market**

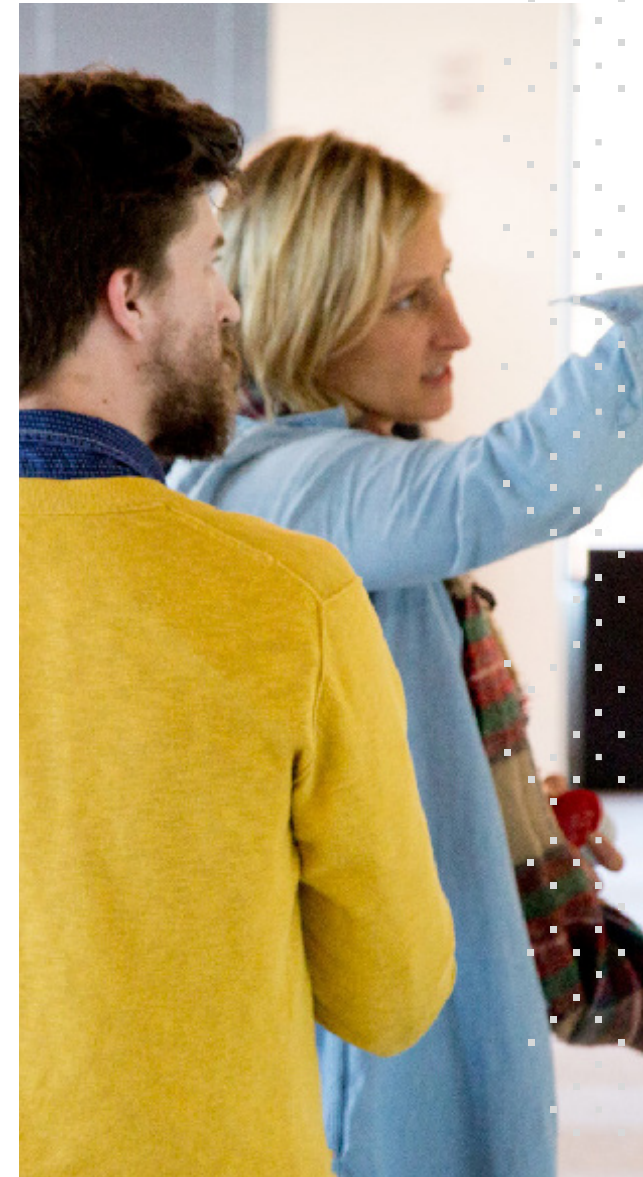
DevOps practices increase your organization's ability to innovate faster, more quickly adjust to changes in the marketplace, expand with greater efficiency, and drive better business results. Automating repetitive manual tasks allows your teams to focus on innovation. It allows you to make frequent updates and innovate more quickly, while lessening the risk of each deployment.

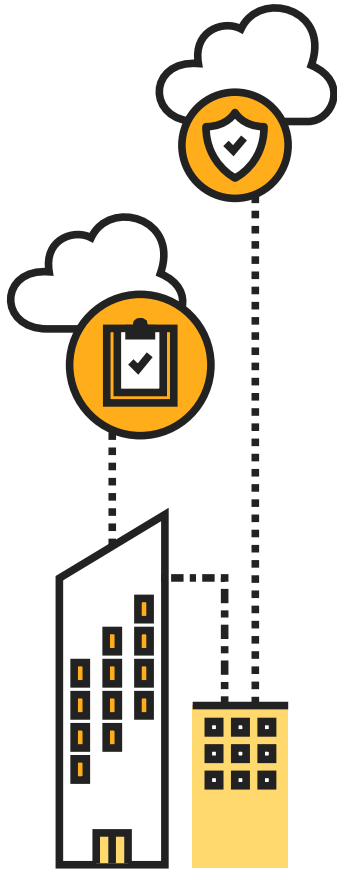
■ **Scalability**

Automated provisioning, configuration, and management with Puppet on AWS lets you scale quickly and reliably. You can automatically scale out your cloud infrastructure when you need to respond to increased customer demand.

■ **Improved cross-team collaboration**

One of the biggest benefits you will realize by implementing DevOps practices is improved collaboration across multiple teams, with less work done in silos. Automating the entire software delivery cycle with Puppet Enterprise not only increases reliability, but also helps accelerate the steps of delivery — without sacrificing stability or security. Your team will have more time to work on key projects that deliver real business value to your company.





Secure your AWS Cloud environments

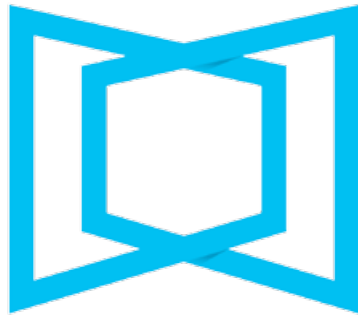
Organizations are often challenged with adhering to security and compliance guidelines across a large and constantly changing infrastructure managed by different teams and people. Puppet Enterprise ensures consistency in the enforcement of security policies and the fulfillment of compliance requirements across all your environments.

For example, [1-800-Flowers.com](https://www.1-800-flowers.com), a floral and gift retailer based in the United States — and one of the earliest retailers to start selling online — uses Puppet to define compliance requirements and ensure they are enforced. The automated cloud provisioning and deprovisioning delivered by Puppet Enterprise has helped 1-800-Flowers.com maintain consistent configurations — while remaining compliant — as the business grows.

Puppet Enterprise provides role-based access control so you can determine which team members are able to make certain changes. With Puppet Enterprise, all changes are reported, so it's easy to see which changes are made and who made them. Should unauthorized changes occur, Puppet is able to automatically remediate them, and provide reports on what occurred.

Security and compliance are sensitive topics when migrating to the cloud, but Puppet gives you the confidence to know that all your code is compliant and up-to-date. Any unauthorized changes will be remediated within 30 minutes to ensure the desired state is enforced.

The Puppet Enterprise console provides you full visibility into the state of both your AWS Cloud infrastructure and on-premises data centers, enabling greater control and situational awareness of the software you run and deliver.

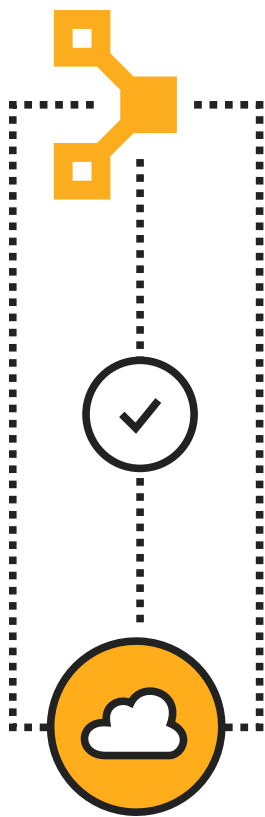


Puppet Enterprise on AWS: ServiceChannel

ServiceChannel, a facilities management software company, provides a cloud-based automation and reporting platform that helps more than 450 brands manage the performance of over 50,000 service providers across 220,000 locations worldwide. After Hurricane Sandy flooded its data center in 2012, ServiceChannel decided to build out a highly available and redundant system on the AWS Cloud.

ServiceChannel did not have any configuration management in place at the time, so over the course of a month they had to manually build all of their servers across nine different environments on AWS, with a few applications still being run in a separate data center. This led to their decision to work with Puppet to automate their cloud infrastructure.

With Puppet, ServiceChannel was able to create a fully automated pipeline to deploy, manage, and scale their AWS infrastructure, significantly cutting the amount of time they had been spending on manually updating their environments. By the time they moved the applications they had retained in their remaining data center, their automated DevOps practices helped them get this done in a matter of days, instead of weeks. This allowed their team to scale at a greatly increased rate, and provided the agility needed to help support the overall growth of the company.



Ease of adopting Puppet Enterprise on AWS

Puppet Enterprise can be easily launched from the AWS Marketplace, and it offers two payment options:

■ Pay-as-you-go license

- This payment model allows you to pay only for what you consume, without upfront costs or long-term investments. It includes the flexibility to use your existing AWS purchase agreement to buy Puppet Enterprise directly from AWS.
- To ensure easy and smooth setup, the Puppet Enterprise Amazon Machine Image (AMI) comes with Puppet Enterprise pre-installed, so it is automatically and securely configured while booting your EC2 instance.
- Includes scripts that enable you to automate common tasks and configure Puppet Enterprise to manage nodes anywhere: EC2, hybrid cloud, or on-premises.
- The Puppet Enterprise AMI is the fastest and easiest way to adopt automation for your AWS projects right away, without committing to a long-term contract.

■ Bring your own license

If you are already a Puppet Enterprise customer, you can bring your own licenses to the AWS Cloud and deploy Puppet Enterprise using the AMI available in AWS Marketplace.

Get started

Puppet Enterprise can automate your entire migration process to AWS and optimize your cloud infrastructure — no matter what software you are running, or where you are running it from — using a human-readable language to deliver a simple, reliable, secure solution, at scale.

[Puppet Enterprise](#)

[Puppet in AWS Marketplace](#)

No matter where you are working, Puppet is ready to work with you. We have offices in six countries on four continents around the world.

[Contact Us](#)

About Puppet

Puppet is driving the movement to a world of unconstrained software change. Its revolutionary platform is the industry standard for automating the delivery and operation of the software that powers everything around us. More than 35,000 companies — including more than 75 of the Fortune 100 — use Puppet's open source and commercial solutions to adopt DevOps practices, achieve situational awareness and drive software change with confidence. Headquartered in Portland, Ore., Puppet is a privately held company with more than 500 employees around the world. Learn more at puppet.com.



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