



CASE STUDY



SOLUTION OVERVIEW

Fortive was facing time consuming and manual dependencies that created a bottleneck for multiple business units to gain access or request new AWS accounts and resources. CDW was engaged in facilitating the creation and delivery of an Account Factory for Terraform module with corresponding build processes and packaged tools. In addition to creating a vended account, the solution also creates managed and unmanaged VPCs in multiple regions, a GitHub Repository, and a Terraform Cloud Workspace, which is tied back to GitHub with respective teams.

Drivers

- Enablement of on demand cloud resource and account provisioning for operating companies and business units
- Existing Bottlenecking of manual processes and configuration for requests
- Continued growth and expansion through M&A activity

Summary

The platform that CDW designed delivered:

1. Account Factory for Terraform (AFT) used to create new accounts
2. ServiceNow Cloud Request Interface Process for AFT
3. Customization methods for environments and accounts
4. Automated process to build approved cloud infrastructure
5. Five repositories of operational Terraform and supplemental python and shell scripts
6. Documentation focused on delivered components, usage, builds, and continuous operations

AUTOMATED PIPELINES AND PROCESSES

The automated build system integrates with AWS, GitHub Enterprise, Terraform Cloud, and ServiceNow to provision a new AWS account tied to the Management account of the organization with the appropriate guardrails and ability to customize builds, infrastructure, network, and security settings.

Cloud Assets delivered via Automated Pipelines and Processes:

- AWS Organizational Unit
- Account Factory for Terraform (AFT)
- AFT-Management account
- Vended accounts
- Networking Resources per vended account
- Two regions
- Two peered or un-peered VPCs (one per region)
- Four Availability Zones
- Multiple subnets (t-shirt sizes)
- Transit Gateway connections
- SNS Topics

AWS Security Integrations

- Security/Identity controls
- SSO integration in vended accounts
- Role assignment for users/groups
- Inherited IAM roles for build process
- RBAC methods through AD-OU integration

OUTCOME

CDW delivered a holistic account vending machine leveraging many of the required aspects from Fortive Security. The product relies on Terraform automation to provision the AWS accounts, inculcating a slew of python build and shell scripts used as pre or post steps to convey or populate information for build and administrative functions. During development, dozens of build tests (and phase tests) were conducted with GitHub pushes as the initiator, TerraformCloud in build and AWS organizations. As AFT was developed, many accounts were provisioned and destroyed. Cleanup tasks have been completed with two sandbox accounts remaining as proper builds and beta environments. The delivery is composed of the five repositories' code and documentation, this document, hand-off, and the AWS Account Factory for Terraform integrated with ServiceNow, GitHub Enterprise, and Terraform Cloud.

- Developed self-service capabilities for operating companies and business units to access cloud resources and new accounts
- Provided a simplified provisioning solution that is optimized for low-cost maintenance and operations
- Enablement toward adoption of common tools, standards, and approaches

With ServiceNow as an integral part of ordering and tracking the AWS account, the following actions were completed:

1. Self-service order form was created in ServiceNow to gather request inputs
2. Request workflow was produced to allow authorization and kickoff of build
3. Integration of account vending/automated provisioning for updates and status
4. ServiceNow ability to kick off creation of root email for new AWS Account
5. ServiceNow creation of manual task assigned to MS365 team