

A CASE STUDY

How a Billion Dollar Global Consulting Firm Deployed a Centralized & Scalable Secrets Management Solution

A Case Study in Deploying a Multi-Region, Multi-Cloud Solution for
Teams and Landing Zones using HashiCorp Vault Enterprise

EXECUTIVE SUMMARY

When you're a global consulting firm with billions on the line, protecting critical systems, securing customer data, managing secrets, and effectively managing governance concerns is essential to your business. You need to ensure that you reduce the risk of breaches and data exposure. You have to be able to reassure your clients, and your bosses, that all their data and those of their customers is safe and protected. You need automation, redundancies and procedures in place that help to further protect your entire enterprise and increase efficiencies. Essentially, you need to deploy advanced security and secrets management systems that not only keep out the nefarious forces that lurk along the digital landscape but also increase productivity across modern DevSecOps structures.

But delivering on these objectives when you have a full workload, are managing a revolving staff, and must deal with budgetary concerns can be a challenge. Ask most technologists, innovators, CIOs and CTOs and chances are their team doesn't have the time or expertise required to devote to these kinds of big initiatives. They're so focused on managing the day-to-day that they need a partner to come in and take the lead.

That's where the award-winning team at River Point Technology (RPT) came in, our service offerings ensured that the consulting firm's tech team had a partner to help steer the way from Day 0 to Day 1 and onto Day 2. We orchestrated a successful engagement that resulted in a multi-continent, multi-cloud deployment of HashiCorp Vault Enterprise for Teams and Landing Zones. We were there to manage all the complexities and to ensure that everything continued to run smoothly after deployment so that the firm could indeed realize their goals.

Primary Business Objective

- Increase speed of DevOps teams by automating governance reviews, enabling self-service and streamlining security workflows.

Secondary Objectives

- Allow the organization to enable seamless collaboration among infrastructure, security and development teams and consistency across Google Cloud Platform (GCP), Amazon Web Services (AWS), Azure and on-premises deployments.
- Decrease risk and improve the security posture of key applications.
- Drive productivity by way of automated coding and policy enforcement across a modern DevSecOps structure.

THE SOLUTION

To ensure a successful implementation of Vault Enterprise, the consulting firm leaned on the team of experts at RPT. We were given an aggressive timeline to deploy Vault Enterprise on multiple public clouds, including AWS and Azure. Each cloud deployment used multiple regions for redundancy to create a single, multi-cloud replica set. Vault was deployed in both the US and EU. After a successful deployment, the company further relied on RPT to help them see continued success on Day 2 while also relying on us to provide application onboarding assistance.

Technical Goals

- Establish a multi-cloud, multi-region Vault Enterprise service to serve workloads in both the US and Europe.
- Store and consume credentials used for containerized deployments.
- Integrate with the CI/CD platform that provisions workloads to VMware environments.
- Automate the deployment of Vault Namespaces for teams as part of the landing zones created for application teams.

Project Summary

Design and implement eight (8) HashiCorp Vault Enterprise clusters running on for both production and non-production environments.

Challenges

- Lead times to obtain properly formatted TLS certificates for Vault nodes.
- Inclusion of additional packages on Vault nodes, such as DataDog
- Creation of namespace admin policy and other guardrails to be applied to each namespace.
- Permissions for Audit logging on the local host caused issues with replication after the file audit device was enabled.

Why HashiCorp Stack?

Deployment of all clusters was done using a centralized Vault module, and Packer build pipeline that was highly customized for the global organization, including the addition of DataDog agent and configurations for monitoring audit logs and telemetry. The module is stored in the firm's private module repository and deployed with Terraform Cloud using unique calling modules for each cluster. Both Vault and Consul nodes (backend) are deployed using Auto Scaling (AWS) or ScaleSets (Azure) to automate the deployment, management, and easily upgrade the cluster with new Packer images when built.

(Why HashiCorp Stack cont'd)

River Point Technology also assisted the client with creating an onboarding process and documentation. This material defines how internal application teams will onboard applications and use cases to their respective Vault Enterprise Namespace that is deployed as part of their application landing zone. The automation of namespaces is deployed using a different set of Terraform modules using the Vault provider.

THE OUTCOME

From the outset, the goals of the consulting firm in the desired time frame were ambitious. To achieve them it would require the precise coordination and dedication of a talented team of RPT experts. They would range from engineers, technologists, and solutions architects to programmers and project managers. Together they would shepherd the project to a timely deployment and were depended upon for the realities of Day 2. From both a technical and business perspective the project was a success.

Technical Outcomes & Deliverables

- Infrastructure as Code (IaC) to provision and/or configure Vault Enterprise clusters
- Deploy best-case architecture per reference architecture guidance
- Mount and configure Key/Value (KV) secrets engines in namespaces
- Mount and configure dynamic secrets engine
- Demonstrate core ACL concepts and configuration
- Demonstrate Sentinel capabilities
- Create policy templates for namespaces
- Review essential operational concerns including:
 - Backup and recovery
 - Disaster recovery cluster configuration and promotion
 - Seal management
 - Audit devices
 - HashiCorp Software Upgrades

"We're very pleased with the outcome of this project. Bryan and the RPT team have been great, very helpful and responsive and I'd love to work with them again on future projects."

-Cloud Engineer with Consulting Firm Client

Business Outcomes

This global consulting firm now has a state-of-the-art secrets management automation solution that is truly supported, centralized and scalable. With this advanced deployment of HashiCorp Vault Enterprise they can move faster, are more efficient and are finding true business value in their technology investment:

- **Risk Mitigation:** By implementing a consistent global disaster recovery (DR) plan, the organization is able to mitigate the risks associated with disruptions across regions. Creating a plan and centralizing processes has resulted in an enterprise workflow that prevents downtime and ensures consistency.
- **Teams at Scale:** We were able to eliminate “choke points” with one person running global operations. This provides standards regionally, giving business units the ability to operate independently. It also drives efficiency and enables organizations to be agile, flex and pivot quickly.
- **Global Operations Framework:** This enables the organization to manage multiple regions, platforms, and technologies across all cloud providers. It reduces risk, increases speed to market, and automates processes to give time back to field to support other initiatives.

ABOUT RIVER POINT TECHNOLOGY

River Point Technology helps enterprises tackle their most aspiring Cloud and DevOps projects with transformative capabilities redefining what is possible for their organization. River Point Technology was founded to support our clients at the crossroads of strategic vision, the ability to execute, and create successful Day 2 Readiness and Adoption outcomes. The River Point Technology teams bring a gamut of business and technical domain knowledge to enable success for your organization across the entire Cloud and DevOps lifecycle.

For more information, visit www.riverpointtechnology.com or visit our LinkedIn page <https://www.linkedin.com/company/river-point-technology-llc>.

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