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CASE STUDY

Broadcom® Layer7™ Cloud-Native API Security for a Major North American Bank's Azure OpenShift Migration

A North American Bank

CLIENT PROFILE

Industry: Financial

CHALLENGE

To remain competitive and align with a company-wide cloud adoption strategy, the bank was required to modernize its robust, on-premises Layer7 API security infrastructure and execute a complex migration to a cloud-native deployment on Microsoft Azure OpenShift.

SOLUTION

The bank executed a complex migration, successfully transitioning its on-premises OAuth/OIDC implementation to a cloud-native deployment on Microsoft Azure OpenShift, leveraging the Broadcom Layer7 API Gateway and OTK.

Introduction

In an increasingly competitive banking landscape, a major North American bank recognized the strategic imperative to modernize their API security infrastructure. This case study chronicles the bank's successful journey from an on-premises OAuth/OIDC implementation to a cloud-native deployment on Microsoft Azure OpenShift, leveraging the Broadcom® Layer7™ API Gateway and OAuth Toolkit (OTK).

The project demonstrates how a major financial institution can execute a cloud migration with minimal disruption, achieving deployment readiness in months. From the initial planning to the deployment of both development and QA environments (so far), the project is a testament to both the maturity of Layer7's cloud offerings and tooling, and the collaborative partnership between the bank and Broadcom.

The Bank's Layer7 Foundation

The bank has maintained a long-standing investment in Layer7 technology, establishing a robust on-premises deployment that has served as the cornerstone of their API security strategy. Their existing infrastructure includes the following components:

- A dual-zone OTK deployment model
- Layer7 API Gateways and OTKs across multiple environments
- An off-box Oracle database serving as the token store
- Multiple environments for development, UAT, pre-production, and production

This mature deployment model demonstrated the bank's confidence in Layer7's capabilities. When the team began evaluating and upgrading to a cloud-native deployment on Azure with Kubernetes in 2024, it marked the beginning of a broader transformation initiative.

BENEFITS

- **Operational excellence:** Includes self-healing infrastructure and declarative configuration.
- **Scalability and performance:** Includes horizontal pod autoscaling and multi-zone resilience.
- **Cost efficiency:** Includes reduced infrastructure overhead and simplified licensing.

RESULT

- **Accelerated deployment:** Achieved deployment readiness for both development and QA environments within months of initial planning.
- **Smooth go-live:** The development environment went live in Q4, 2025, accepting traffic with no immediate issues and demonstrating strong deployment stability. The critical UAT go-live milestone was met shortly after.
- **Cloud-native architecture:** Successfully modernized the API security infrastructure, establishing a robust, cloud-native deployment of Broadcom Layer7 API Gateway and OTK on Microsoft Azure OpenShift.
- **Strategic benefits:** Positioned the bank to realize long-term benefits including operational excellence, enhanced scalability and performance, increased developer productivity, cloud-native security, and cost efficiency, which were the objectives of the cloud transformation.

The Path to Cloud Evaluation

After successfully upgrading their existing Layer7 API Gateway and OTK, the bank shifted its focus to evaluating two new Layer7 offerings:

- **Layer7 API Gateway deployed as a Helm Chart:** To enable native deployment on Kubernetes.
- **Graphman API:** A modern solution for Layer7 API Gateway configuration management.

While competing priorities deferred the Graphman evaluation, the Helm-based Layer7 API Gateway deployment evaluation was successfully completed.

The successful Helm-based Layer7 API Gateway deployment evaluation was a critical step. This achievement aligns directly with the bank's organizational mandate to transition to Microsoft Azure as part of a company-wide cloud-adoption strategy, with the Layer7 API Gateway's cloud-native capabilities perfectly supporting this strategic move.

Rapid Azure OpenShift Evaluation

The bank's evaluation of Azure OpenShift was executed with remarkable speed and efficiency, taking approximately two weeks.

- **Platform:** Azure Red Hat OpenShift
- **Deployment:** Helm Chart
- **Support:** Minimal engagement (one or two Zoom meetings and a few support tickets)

The Layer7 API Gateway Helm deployment model proved its maturity and self-service capability through the Broadcom team's hands-off approach during the evaluation. A key organizational goal is to reduce operational dependencies, and the bank's team achieved this by successfully deploying, configuring, and validating the Layer7 API Gateway with very little external assistance.

Production Readiness and Go-Live Milestones

The development environment's go-live in Q4, 2025 was notably smooth. The environment began accepting traffic with no immediate issues reported, a strong indicator of deployment stability.

In October and early November before the go-live, a few support tickets were raised, resulting in several customer communications. The Broadcom support team engaged proactively, and all issues were resolved expeditiously. This collaborative approach ensured that the project stayed on track for a critical UAT go-live milestone after the development environment's go live, also in Q4 2025.

Conclusion: The Benefits of Layer7 on Kubernetes

The bank's successful migration to Azure OpenShift exemplifies the transformative potential of deploying Layer7 API Gateway and OTK on Kubernetes. Organizations considering a similar journey can expect the following benefits.

Operational Excellence

- **Self-healing infrastructure:** Kubernetes automatically restarts failed containers and replaces unhealthy nodes, ensuring high availability.
- **Declarative configuration:** Infrastructure-as-code practices enable version-controlled, auditable configuration management.

Scalability and Performance

- Horizontal pod autoscaling: Automatically scale Layer7 API Gateway instances based on traffic demand.
- Resource optimization: Kubernetes resource quotas and limits ensure efficient utilization of compute resources.
- Multi-zone resilience: Native support for distributing workloads across availability zones for disaster recovery.

Developer Productivity

- Graphman API integration: Programmatically manage Kubernetes deployed Layer7 API Gateway policies and configurations through modern REST APIs.
- GitOps workflows: Integrate Layer7 API Gateway configurations into CI/CD pipelines for continuous deployment.

Cloud-Native Security

- Secrets management: Native integration with Kubernetes secrets and external vault solutions.
- Network policies: Fine-grained control over ingress and egress traffic at the cluster level.

Cost Efficiency

- Reduced infrastructure overhead: Consolidate workloads and eliminate dedicated hardware requirements.
- Pay-as-you-go scaling: Cloud-native deployments align costs directly with actual use.
- Simplified licensing: Containerized deployments have a 3-1 licensing benefit compared to VMWare OVA form factor gateways.

Looking Ahead

The successful transition of the bank's Broadcom Layer7 API Gateway and OTK from on-premises systems to Azure OpenShift deployments is a clear demonstration that robust, enterprise-grade API security is fully achievable on cloud-native platforms, maintaining both high reliability and a strong security posture. The Layer7 API Gateway and OTK on Kubernetes offer a proven, secure framework for modern API management as organizations continue their digital transformation.

Looking ahead to the next year, the bank plans to investigate Layer7 Operator as a way to streamline deployment configuration management. The bank also plans to integrate the Graphman API to establish and maintain their definitive repository source of truth.

For more information about deploying Layer7 API Gateway on Kubernetes, visit the [Layer7 GitHub Repository](#) or contact your Broadcom representative.

For more information, visit our website at: www.broadcom.com

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