**Title: "VMware to Red Hat OpenShift Virtualization Migration" Subtitle: "Analysis & Proposed Solution for a Large European Bank" Author: "Gemini AI" Date: "September 2025"**

**Slide 1: Executive Summary**

**The Challenge:** A large European bank faces financial pressure from its current virtualization vendor, leading it to seek a new platform. The bank's environment consists of over 18,000 workloads on VMware Cloud Foundation, distributed across two physical data centers. A key requirement is to reuse existing hardware, with a focus on cost reduction and operational efficiency.

**The Solution:** Red Hat proposes a phased migration to OpenShift Virtualization, designed to transition approximately 16,500 in-scope VMs. This approach leverages the bank's existing Cisco and Dell hardware, modernizes key workloads (e.g., Datagrid, MongoDB, NodeJS) through containerization, and provides a clear path to enhanced operational consistency and security.

**Key Highlights:**

* **Phased Migration:** A three-year plan using a "Migration Factory" model to ensure a smooth transition.
* **Cost Optimization:** Significant savings through the elimination of legacy vendor licensing and the consolidation of VMs and containers on a single platform.
* **Enhanced Security:** Recommendations for advanced microsegmentation to meet the bank's security posture requirements.

**Slide 2: Current Environment Analysis**

**Workload Breakdown:**

* **Total Workloads:** ~18,000 workloads
* **Operating Systems:**
  + **70% Windows:** Windows 2016 (50%), Windows 2019 (30%), Windows 2022 (10%).
  + **25% Linux:** RHEL 7 (45%), Ubuntu Server (25%), RHEL 8 (20%).
  + **5% Other:** Solaris various (80%), OpenServer (20%).
* **Categorization:**
  + **In-Scope Workloads:** ~16,500 VMs for migration.
  + **Out-of-Scope Workloads:** ~1,500 VMs due to unsupported or end-of-life operating systems.

**Infrastructure:**

* **Data Centers:** 2 physical data centers (Naboo and Coruscant) with a DR site.
* **Hypervisors:** 254 total hypervisors (55% on Naboo, 45% on Coruscant)
* **Hardware:**
  + **Servers:** Dell Technologies is the preferred server vendor.
  + **Networking:** Cisco Nexus with a CLOS leaf-spine topology.
  + **Storage:** Dell PowerMax, PowerFlex, and Local Storage.

**Slide 3: Target Architecture & Migration Approach**

**Target Architecture:**

* **Unified Platform:** OpenShift Virtualization will serve as the single, unified platform for both virtualized workloads and native containers. This consolidates management and optimizes resource utilization.
* **Reuse Existing Infrastructure:** The solution is designed to leverage the bank's existing physical servers, networking, and storage, eliminating the need for new hardware procurement.
* **High Availability:** The architecture will be laid out with multiple failure domains and OpenShift clusters to ensure no single point of failure (SPOF) for critical workloads.

**Migration Approach:**

* **Phased Strategy:**
  1. **Foundation Phase:** Focus on building a "Migration Factory" for automation, testing, and developing migration plans.
  2. **Accelerated Migration Phase:** Scale out the migration efforts, leveraging the automated processes to transition VMs in a rapid, repeatable manner.
* **Migration Velocity:** The plan assumes a migration rate of approximately 20 VMs per day during the accelerated phase, with a total project duration of 3 years.
* **Workload Prioritization:** Workloads will be assessed for complexity, with easy and medium migrations prioritized in the initial waves.

**Slide 4: Data-Driven Migration Analysis**

**Workload Complexity Analysis:**

* **Easy:** 34% of VMs. These are prime candidates for the initial migration waves.
* **Medium:** 42% of VMs. These require more planning due to factors like larger size or specific application requirements.
* **Hard/Unsupported:** 24% of VMs. These include workloads with end-of-life operating systems or those requiring specialized handling, like some Solaris instances.

**Operating System Distribution (In-Scope):**

* The majority of in-scope VMs are running modern Windows Server and RHEL versions, which are well-supported on OpenShift Virtualization.
* The migration plan accounts for the need to evaluate non-RHEL Linux distributions like Ubuntu and SLES.

**Slide 5: Storage & Networking Transition**

**Storage Transition:**

* The bank's existing Dell PowerMax, PowerFlex, and Local Storage are all compatible with OpenShift Virtualization.
* Red Hat will work with the bank to ensure seamless integration and to optimize storage performance for the new platform.
* Data will be migrated using a rolling, in-place process.

**Networking Transition & Security:**

* **Current State:** The bank uses VMware NSX for microsegmentation.
* **OpenShift Integration:** While OpenShift Virtualization has built-in networking, granular VM microsegmentation is not available out-of-the-box.
* **Recommendation:** Partner with Tigera for a dedicated, advanced microsegmentation solution.
  + **Benefits:** Enforces zero-trust security, provides real-time visibility, and strengthens the overall security posture.

**Slide 6: Database & Application Migration**

**Key Workload Considerations:**

* **SAP HANA:** This workload is not certified to run on VMs on OpenShift Virtualization. The immediate recommendation is to deploy a dedicated RHEL cluster for these workloads.
* **Oracle RAC:** Red Hat will provide support and guidance to ensure a smooth transition for Oracle RAC workloads.

**Application Modernization:**

* **Prime Candidates for Containerization:** VMs running Datagrid, MongoDB, and NodeJS have been identified as ideal candidates for modernization.
* **Benefits of Containerization:**
  + **Optimized Resource Utilization:** Containers are more lightweight and efficient than VMs.
  + **Simplified Management:** Consistent operational model for both virtualized and containerized applications.
  + **Future-Proofing:** Positions the bank to adopt a more agile, cloud-native development model.

**Slide 7: Cost Analysis & ROI**

**Cost Components:**

* **Foundation Phase:** Initial project cost for building the migration factory and establishing processes.
* **Accelerated Migration:** Cost for the scaled migration squads and ongoing support.
* **Red Hat Subscriptions:** Ongoing subscription costs for OpenShift Platform Plus, which includes OpenShift Virtualization and other capabilities.

**Return on Investment (ROI):**

* **Reduced Vendor Lock-in:** The migration to OpenShift eliminates reliance on the current vendor and their associated licensing costs.
* **Operational Efficiency:** A unified platform simplifies management, automation, and scaling, leading to reduced operational overhead.
* **Improved Agility:** The ability to containerize applications unlocks new possibilities for rapid development and innovation, creating long-term value.

**Financial Model:** The total estimated cost for the project is a combination of implementation services and a 3-year subscription projection, offset by the savings from discontinuing the current vendor's expensive licensing and reducing operational complexity.