SOLUTION BRIEF

Fortinet and Oracle Partner to Offer Secure Cloud-based Enterprise Resource Planning

Executive Summary

Companies are taking advantage of the scalability and cost savings provided by cloud architectures to support their digital innovation initiatives. Many organizations are already using Oracle applications on-premises or in the cloud. These include E-Business Suite (EBS), PeopleSoft, and JD Edwards.

Oracle and Fortinet have partnered together to help organizations to implement zero-trust security across their on-premises and cloud environments, enabling better automation and consistent security. This includes the development of a reference architecture for running Oracle applications, such as EBS, PeopleSoft, and JD Edwards, in OCI secured by Fortinet solutions. Fortinet Dynamic Cloud Security enables organizations to take advantage of higher flexibility and cost savings as compared to on-premises or other cloud-based solutions.

Benefits of Fortinet Security Solutions for Oracle Applications in OCI

- Threat detection based on analysis of 10 billion daily alerts
- Zero-day threat, OWASP Top 10, and distributed denial-of-service (DDoS) attack detection
- Consistent security policies across clouds and data centers
- Secure cloud on-ramp for enhanced network performance

Introduction

Oracle's ERP cloud applications include EBS, PeopleSoft, and JD Edwards. Each of these meets a different set of business needs.

Figure 1: The Oracle ERP cloud applications.

EBS is a suite of integrated business applications provided by Oracle for automating customer relationship management (CRM), enterprise resource planning (ERP), and supply chain management.

PeopleSoft applications serve human resource departments in large corporations. These applications include human resource management systems (HRMS), CRM, financials and supply chain management (FSCM), and enterprise performance management (EPM).

JD Edwards EnterpriseOne is a cloud-based ERP and supply chain management solution that provides ERP applications and tools for finance, consumer goods, human resources, distribution, and manufacturing sectors. JD Edwards is designed to meet the needs of small and midsize businesses (SMBs) as well as those of large enterprises.

OCI Offers Familiar Features with Improved Performance

Oracle ERP applications run in OCI just like they do in an on-premises data center. This means organizations retain the value of their investments in ERP licenses, customization, and training as they migrate to OCI. Whether they use Oracle's Infrastructure-as-a-Service (IaaS) or Database-as-a-Service (DBaaS) offerings, organizations can take advantage of all of the benefits of Oracle's cloud infrastructure:

- **Lower total cost of ownership (TCO).** Hosting EBS or PeopleSoft on OCI offers a TCO that is 38% lower than an on-premises deployment.[1,2] Hosting EBS on OCI offers a TCO that is 44% lower than a similar deployment on AWS[3] and hosting PeopleSoft on OCI offers a TCO that is 52% lower than on AWS.[4]
- **Improved service-level agreements (SLAs).** OCI offers SLA-backed performance guarantees 20-30% better than an on-premises deployment.[5]

- **Consistent quality of experience (QoE).** Applications hosted on OCI are accessible to organizations worldwide, eliminating variability across the enterprise.
- **Better support for innovation.** Cloud-based infrastructure provides greater flexibility, scalability, and agility than on-premises infrastructure, with its associated IT management and CapEx burdens.
- **Improved reliability and operational efficiency.** Oracle Cloud Autonomous Database uses machine learning (ML) to eliminate the human labor, human error, and manual tuning associated with database maintenance.

When migrating ERP applications to the cloud, it is essential to provide enterprise-level threat protection for the applications and their associated data. Oracle has partnered with Fortinet to provide best-of-breed security solutions that deploy natively within OCI. This provides several important security benefits:

- **Lower risk and improved compliance.** Fortinet broad, integrated, and ML-automated threat protection minimizes the impact of breaches and protects the privacy and integrity of customer data.
- **Easier end-to-end security management.** Lean IT teams benefit from single-pane-of-glass visibility and management of on-premises endpoint systems and cloud-based infrastructure.
- **Easy, consistent provisioning.** OCI-native Fortinet solutions are available via the Oracle Cloud Marketplace. Tight integration between Fortinet and OCI facilitates consistent, error-free configuration and minimizes security gaps.
- **Simplified billing.** Oracle customers can use Universal Credits within the Oracle Cloud Marketplace to pay for Fortinet solutions and services on OCI.

Advantages of Moving to OCI

- Lower TCO
- Improved SLAs
- Consistent QoE
- Better support for innovation
- Improved reliability and operational efficiency

Advantages of Securing OCI with Fortinet

- Lower risk and improved compliance
- Easier end-to-end security management
- Easy, consistent provisioning
- Simplified billing

Reference Architecture and Use Cases

To help organizations achieve optimal performance and security in OCI, Fortinet and Oracle have published a security reference architecture.

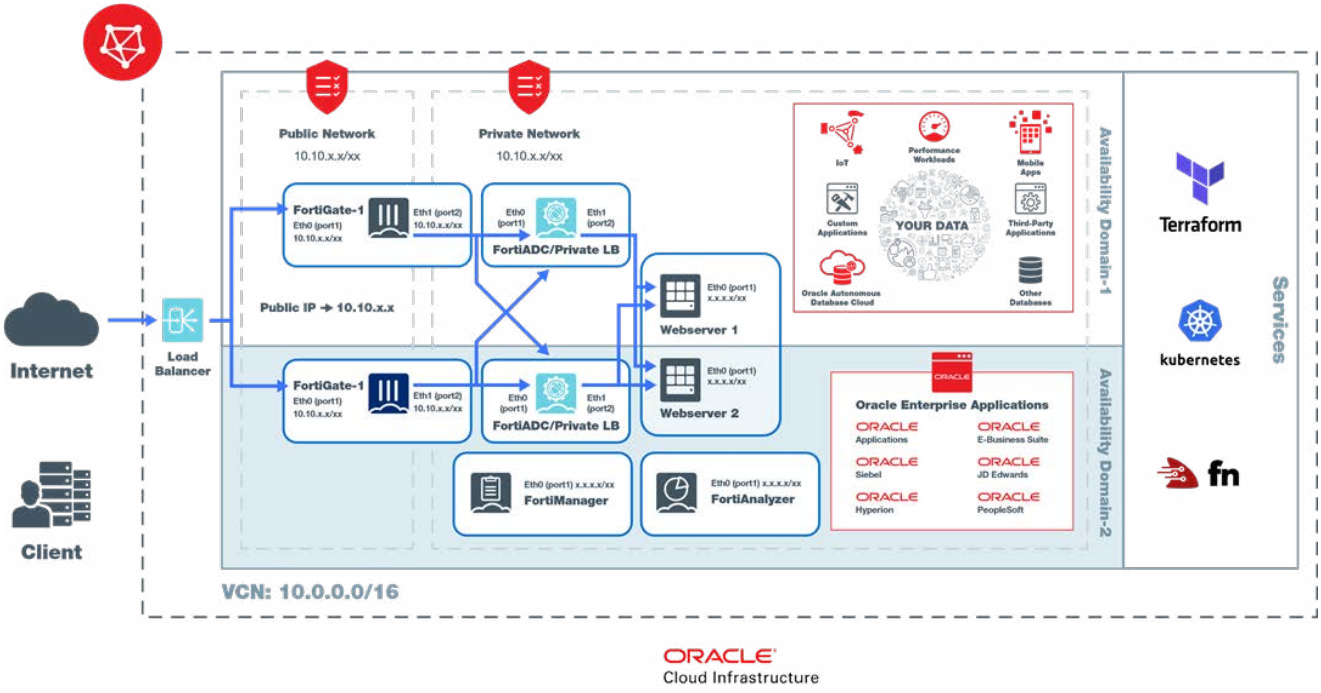

Figure 2: Reference architecture for securing Oracle applications with Fortinet solutions on OCI.

Many organizations using Oracle applications have reaped significant benefits by transitioning from on-premises deployments to ones hosted in OCI with security based on this reference architecture. These benefits include both improved performance and security compared to existing on-premises deployments.

1. **Increased Scalability, Flexibility, and Performance**
   The state of Texas directed the Texas Comptroller of Public Accounts to implement a statewide ERP system. With the need to support payroll for 100 agencies and 156,000 employees, the private cloud solution that the comptroller was testing proved inadequate. To achieve the required scale, the comptroller opted to host PeopleSoft on OCI. This gave them the level of scalability, flexibility, and performance they needed to effectively onboard and support all state agencies on the new system.
2. **Regulatory Compliance and Simplified Security Management**
   An identity management provider transitioned their on-premises EBS to OCI to take advantage of the increased scalability, performance, and system availability. As part of this transition, this organization adopted Fortinet solutions to secure its new cloud investment. By making the shift to a Fortinet-secured OCI deployment from on-premises data centers, the company improved employee and back-office productivity while maintaining regulatory compliance for protecting sensitive data and simplifying the management of on-premises and cloud-based infrastructure.
3. **Business Continuity and Disaster Recovery**
   St. Petersburg College, a multisite Florida college, decided to migrate its PeopleSoft applications to OCI. By deploying Fortinet solutions in OCI, the college was able to meet its strict internal security requirements. They also leveraged a FortiADC application delivery controller to meet the college's network visibility and security requirements. The transition to OCI enabled the college to achieve 99.9% application availability in a disaster-prone area and take advantage of significant time savings when testing new applications.

Components of a Secure Cloud ERP Solution in OCI

(Shared Customer Security Model for applications in OCI)

- Oracle PeopleSoft, JD Edwards, or E-Business Suite in Oracle Cloud (OCI)
- Fortinet FortiGate VM NGFW in OCI
- FortiADC load balancer
- FortiWeb VM web application firewall
- FortiManager centralized management platform
- FortiAnalyzer centralized logging and reporting solution

Securely Making the Move to OCI

Shifting Oracle applications, such as EBS, PeopleSoft, and JD Edwards, to OCI is the ideal choice for organizations already using these applications. By securing these applications with Fortinet solutions, available in cloud-native form factors on OCI and as physical appliances, organizations can transition from on-premises to OCI while ensuring security.

Security is a shared responsibility between the customer and OCI. Fortinet provides security products to protect Oracle applications from security threats outside and within tiers by deploying a zero-trust environment. For example, the Oracle PeopleSoft and Fortinet security solution blueprint is a hub-spoke design where PeopleSoft tiers can be implemented.

Each spoke virtual cloud network (VCN) and the hub includes a FortiGate NGFW. FortiGate NGFWs protect application environments from north-south traffic (e.g., internet connectivity, on-premises to OCI virtual private network [VPN]/FastConnect connectivity, outbound network address translation [NAT] internet connectivity, etc.). Also, FortiGate NGFWs provide east-west traffic monitoring between PeopleSoft tier spokes.

FortiADC load balancers act as a reverse proxy that inspects all traffic flows before they arrive at the origin web application. FortiADC comes predefined with OWASP Top 10 and compliance rules.

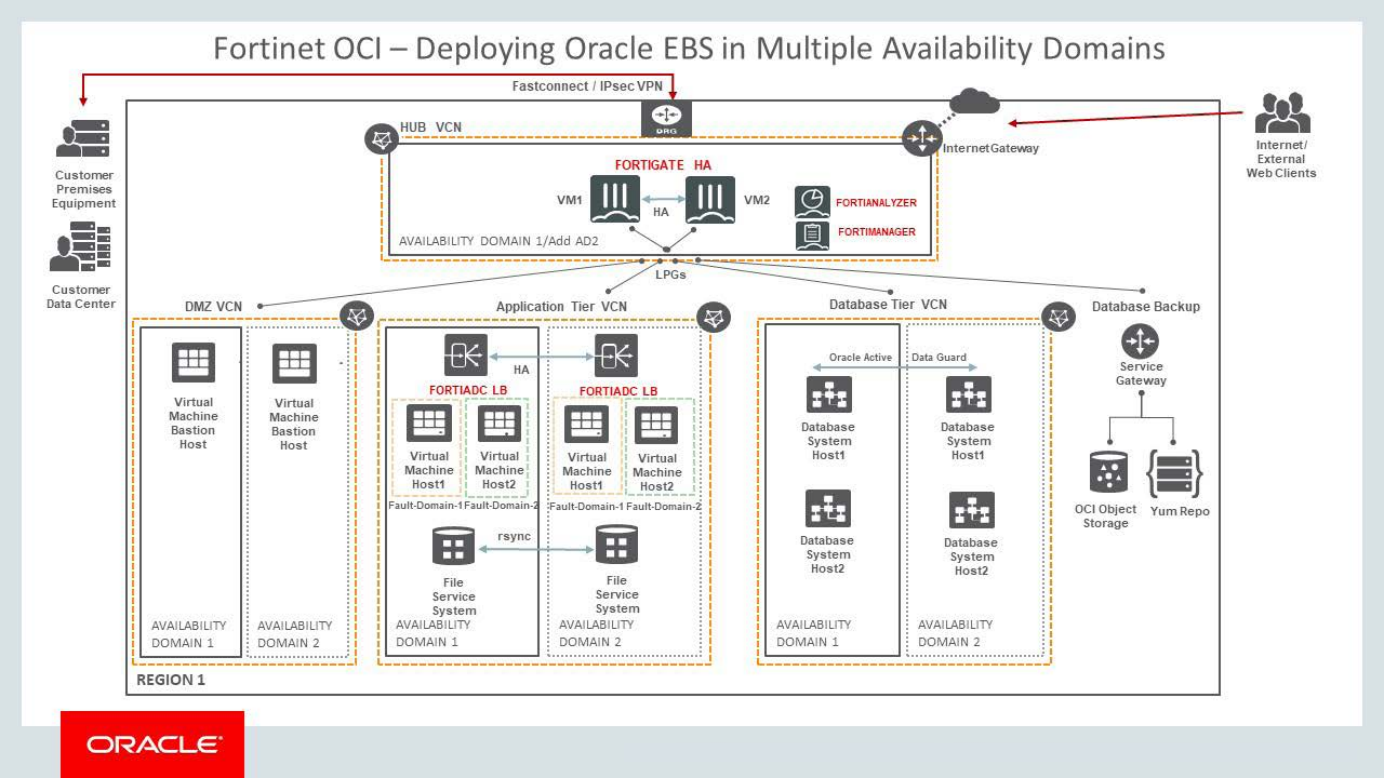

Figure 3: Oracle PeopleSoft and Fortinet Security Solution Blueprint.

Reaping the Benefits of Secure Cloud-based Infrastructure

By moving ERP to OCI, Oracle ERP customers achieve much higher performance, scalability, and flexibility than is available in an on-premises deployment. By securing this cloud-based deployment with FortiGate VM NGFWs, organizations not only secure their OCI deployment but also achieve centralized and simplified configuration and monitoring across all deployment environments. This is due to the single-pane-of-glass visibility provided by the Fortinet Security Fabric.

Customers can benefit right away from the integration and reference architectures provided by Oracle and Fortinet to implement zero-trust security across their environments, take advantage of automation, and benetfit from the flexibility and significant cost savings compared with other on-premises or cloud-based security solutions.

[1] "PeopleSoft on Oracle Cloud Infrastructure VALIDATED SOLUTION GUIDE," Oracle, May 30, 2019.

[2] "EBS on Oracle Cloud Infrastructure VALIDATED SOLUTION GUIDE," Oracle, October 24, 2019.

[3] Ibid.

[4] "PeopleSoft on Oracle Cloud Infrastructure VALIDATED SOLUTION GUIDE," Oracle, May 30, 2019.

[5] Based on Oracle internal calculations.

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