ORACLE

Billing and Revenue Management Cloud Native Deployment

Today's Chief Information Officer is faced with the challenges of developing and deploying applications at Internet speed and positioning the business to capitalize on innovative new business models, all while reducing operational costs. These challenges are increasingly being met with cloud native applications, a clear indicator being the production use of cloud native growing more than 200% in the past year as per the Cloud Native Computing Foundation.

IMPORTANCE OF CLOUD NATIVE TO MONETIZATION

5G will open a world of new possibilities from autonomous driving to remote surgery to widespread virtual reality applications. In this new connected digital world, service providers across industries including communications, cloud, media, and financial services, need every ability to monetize an array of new services and business models – quickly and at massive scale. Key business issues needed to be addressed are:

- How to stay ahead in an ever-increasing competitive landscape with the agile launch of differentiated price plans?
- How to utilize cost efficient, resilient and secure use of hardware and software resources in a highly automated environment?
- How to enable easy scalability that can handle the extreme volumes of transactions generated by 5G and future digital services with flexible monetization?

The answer: modern monetization which provides a DevOps aligned, cloud native architecture enabling a foundation for IT agility and scalability to support future 5G-enabled digital services and emerging business cases.

"Equifax selected cloud native deployment of Oracle Billing and Revenue Management to support our critical transformation imperatives of adopting cloud native architectures that increase operational efficiency and automation by aligning with DevOps principles. This positions our business for greater agility, speed and innovation while reducing operational costs."

Gautam Tulsian,

SVP & CIO-Global Finance

BRM Key Business Benefits

BRM Cloud Native combines the features and extensibility of BRM with the agility and efficiency of cloud native:

- **Design, test and deploy faster:** easier installs, agile service development and launch
- **Operate more efficiently:** run on Oracle Cloud Infrastructure, simplified upgrades
- **Seamlessly manage growth:** efficient scaling, foundation for the digital future

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CLOUD NATIVE MODERN MONETIZATION

Oracle Communications Billing and Revenue Management (BRM) is a modern monetization solution that provides real time convergent charging and end-to-end revenue management for communications and any digital business and is foundational to the digital commerce operations of leading telecommunications and enterprise customers. BRM provides a cloud native deployment option which combines the features and extensibility of BRM with the agility and efficiency of modern cloud compute infrastructure.

BRM cloud native deployment supports a Kubernetes-orchestrated, Docker containerized multi-service architecture enabling service providers to design, test and deploy faster through easier installs while facilitating continuous integration / continuous delivery and DevOps practices for agile service development and launch. It enables more efficient operations by taking advantage of modern cloud infrastructure and is best deployed on Oracle's industry-leading Cloud Infrastructure with its autonomous capabilities, adaptive intelligence and machine learning cyber security. BRM seamlessly manages business growth utilizing efficient scaling and simplified upgrades in a cloud native deployment while providing a foundation for the 5G digital future and evolving market demands.

DESIGN, TEST AND DEPLOY FASTER

Cloud native BRM provides Docker container images such as including BRM, Elastic Charging Server, 5G HTTP/2 Gateway, Diameter Gateway, Radius Gateway, Offline Mediation, Pricing Design Center, Billing Care and the Business Operations Center.

Figure 1: End-to-end cloud native combining the features and extensibility of BRM with the agility of cloud

Easier installs. Cloud native BRM environments can now be replicated extremely quickly using the same Helm chart. The charts simplify the installation of BRM and its dependencies into a Kubernetes cluster. The installation process can instantiate an Oracle database schema using an initialization container for new deployments or can connect to an existing database schema. Customers also have the flexibility to select the Oracle database deployment option of their choice, whether it is a physical or containerized database.

Incorporate BRM configuration and extension support. Reduce errors in the design and test phases through DevOps automation. This is enabled by externalized configuration of each POD centralized in the Helm chart and by extending the base BRM images with custom libraries where required through Docker image layering.

Key BRM CNE Features

- Kubernetes-orchestrated containerized multi-service architecture
- Container runtime provided by docker
- Helm charts simplify installation of BRM and its dependencies into a Kubernetes cluster
- Incorporate the EFK stack for centralized logging and visualization comprising ElasticSearch, fluentd and Kibana
- Choice of Oracle database: physical or containerized
- Utilize any CI/CD pipeline to support the rapid launch of differentiating services
- Incorporate BRM configuration and extension support
- Best deployed on Oracle's industry-leading Cloud Infrastructure with its autonomous capabilities, adaptive intelligence and machine learning cyber security
- Supports industry standard cloud native technologies for volume / cluster networking and logging and monitoring
- Kubernetes services and deployments to enable simpler upgrades and configuration changes
- Efficient scaling utilizing Kubernetes inbuilt horizontal scaling

"The industry is rapidly transforming to address new business requirements and to lower operating costs. Service providers and enterprises that adopt cloud native architectures such as Kubernetes-orchestrated containerized microservices, are seeing marked improvements in their operations from increased agility and the scalability that cloud native provides."

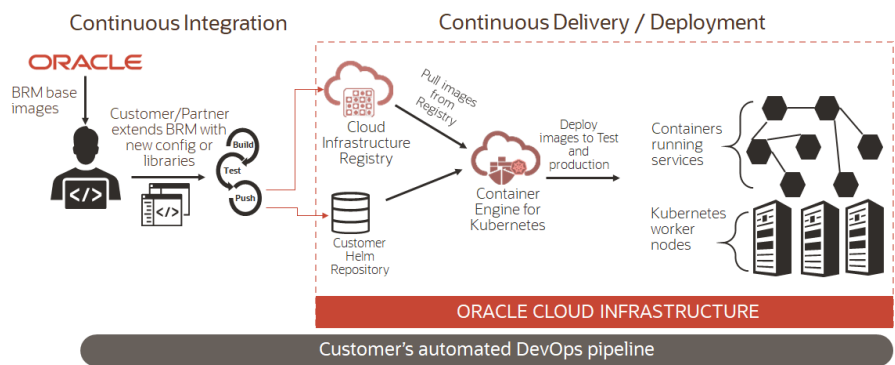**Karl Whitelock,** *Research Vice President, IDC*

Figure 2: BRM CNE integrates with any CI/CD workflow

Utilize any CI/CD pipeline to support the rapid launch of differentiating services. Easily deploy multiple environments across development, test and production leveraging environment details captured in Kubernetes config maps.

OPERATE MORE EFFICIENTLY

Deploy in modern cloud infrastructure. Cloud native BRM can be deployed on any private cloud infrastructure behind a firewall, but also any public cloud infrastructure, and best deployed on Oracle Cloud Infrastructure (OCI). OCI is the industry-leading cloud infrastructure enabling customers to take advantage of autonomous capabilities, adaptive intelligence and machine learning cyber security.

Industry standard cloud native technologies. Cloud native BRM takes advantage of industry accepted cloud native technologies such as Docker as the container runtime, Kubernetes for container orchestration, Helm for packaging and deployment, and the EFK stack for centralized logging and visualization comprising ElasticSearch, fluentd and Kibana. The cloud native deployment option retains the features and extensibility of BRM whilst taking advantage of the agility and efficiency of cloud native infrastructure and tooling.

SEAMLESSLY MANAGE GROWTH

Simpler updates. Cloud native BRM uses Kubernetes services and deployments combined with Helm charts to enable simpler updates and configuration changes, enabling customers to quickly benefit from the latest innovations. Kubernetes makes rolling out (and rolling back) new configuration changes easy using Helm, which creates and updates deployments and services.
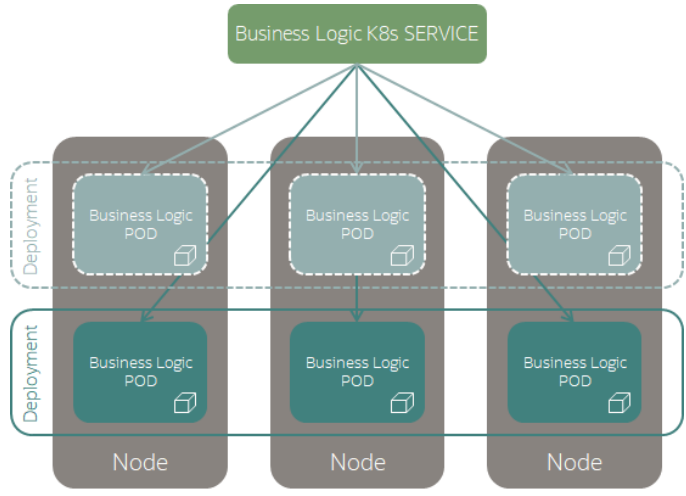

Figure 3: Simpler updates and configuration changes

Typical Use Cases and Target Improvements

Vanilla Installs

On-prem days
Manual processes to install & configure app

Cloud native hours
Automated using Docker containerized images

Environment Replication

On-prem days
Manual processes to install & configure app

Cloud native hours
Use k8 to spin-up replica environments in hours

Launching New Services

On-prem Several months
Separated Dev and Production platforms High risk of errors

Cloud native Several days
DevOps & CI/CD Pipeline. Low risk + automated rollback

Service Failures

On-prem Possible outages
Traditional hardware on-prem

Cloud native Self-healing
K8 self-healing on cloud infrastructure or on-prem HW

Upgrade

On-prem
Non-trivial planning to offset risk. Greater planned downtime

Cloud native
Simpler upgrades using K8. Minimal / zero planned downtime

Scaling

On-prem days/weeks
Educated guess, manual process, planning, HW provisioning

Cloud native hours
Efficient scaling based on available k8 node resources

DATASHEET | Oracle Communications Billing and Revenue Management Cloud Native Deployment Option

Efficient scaling. A key principle of cloud native applications is the ability to efficiently scale multiple service instances, whether that is "up" to support new capacity demands, for example charging operations during busy seasons, or "down" to free up capacity when certain applications are not required to be running. Cloud native BRM utilizes Kubernetes inbuilt horizontal scaling for multi-replica PODs where the number of POD replicas is specified via Kubernetes configuration.
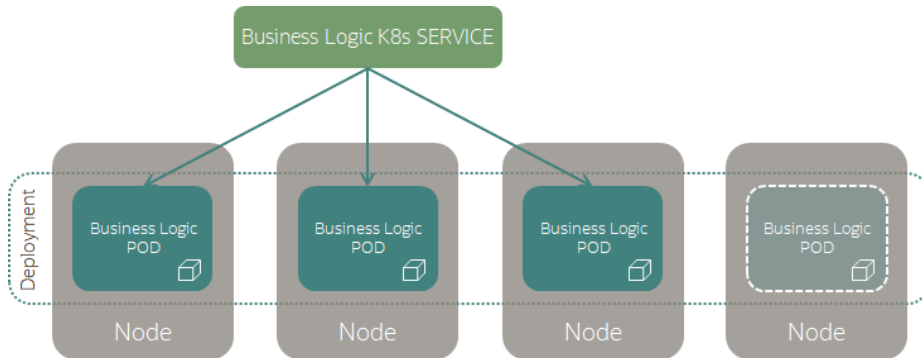

Figure 4: BRM utilizes Kubernetes inbuilt horizontal scaling for multi-replica PODs

SUMMARY

Service providers and enterprises are increasingly seeking greater control over their operations and freedom from expensive managed services. DevOps practices are becoming the new normal as IT organizations reap the benefits of rapidly standing up new instances, automating operations to reduce costs and improve security, and reacting quickly to competition by rapidly incorporating changes. Cloud Native architectures increase operational efficiency by improving hardware utilization and scaling in real-time with increase in business events to capture revenue.

The BRM cloud native deployment option combines the features and extensibility of BRM with the agility and efficiency of cloud infrastructure with a DevOps aligned, multi-service architecture. BRM lays a foundation to enable the business to monetize future 5G-enabled digital services and emerging business cases.

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