ORACLE DATA SHEET

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Oracle Ravello Cloud Service

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Ravello is an overlay cloud that enables enterprises to run their VMware and KVM workloads with DC-like (L2) networking 'as-is' on public cloud without any modifications. With Ravello, enterprises don't need to convert their VMs or change networking. This empowers the business to rapidly develop and deploy existing DC applications on the public cloud without the associated infrastructure and migration cost and overhead.

FEATURES

- Run VMware & KVM VMs without modifications on public cloud
- Access datacenter-like networking with clean Layer 2 support on public cloud
- Choice of multiple public cloud providers (OPC, AWS, Google)
- No networking or storage changes needed
- Use blueprints to rapidly deploy application clones on public cloud
- Schedule automatic startup/shutdown to save operational cost
- Seamlessly move VMware/KVM workloads from on-prem to public cloud (across 3 leading clouds)
- REST API for automation and programmatic access

Cloud Journey Made Easy

Ravello's nested virtualization & networking overlay technology enables deploying the data-center based VMware & KVM workloads on Oracle Public Cloud, AWS and Google with a couple of clicks, offering following benefits:

- **Lift and Shift.** Ravello's cloud enabled hypervisor – HVX – enables rapid deployment of virtualized VMware & KVM workloads to public clouds without any network or storage re-configuration work. Ravello fully encapsulates the DC based virtualized application which can be moved from on-premises data center to public cloud using an intuitive UI with point-and-click simplicity.
- **Increased Agility.** Business needs are ever-changing, so too are the requirements – multiple copies of production applications are needed for development testing, staging, UAT etc. With Ravello, enterprises can run their DC based apps on public cloud 'as-is', and rapidly deploy multiple high fidelity clones of this environment on cloud using Ravello's innovative blueprinting capability.
- **Reduced Cost.** After moving VMware workloads to Ravello enterprises can save on CapEx and OpEx costs associated with running and managing a DC (including license and support costs for hypervisor (ESX) and management tools such as vSphere). Re-testing costs can be significantly reduced by using Ravello when migrating them from on-premises to the Cloud as the environment remains exactly as it was on-premise.

HVX Hypervisor Technology

Ravello is powered using a distributed hypervisor infrastructure called HVX. It enables encapsulation of a multi-VM application that can be run on any cloud (e.g., Oracle Public Cloud, Amazon Web Services and Google Compute Engine) without any changes whatsoever.

HVX consists of three technology components and a management layer, wrapped and offered as a complete solution. The technology components are a high-performance nested virtualization engine (or nested hypervisor), a software-defined network, and a storage overlay. The management layer manages the technology components, provides

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USE CASES

- Set up dev/test, staging, UAT environments for your DC applications on public cloud
- Spin up multiple secure and isolated training or lab environments in geographic locations closest to trainees
- Security test (penetration test, network test) a DC based application using its high-fidelity replica on public cloud
- Replicate on-prem VMWare environment in cloud for certification or acceptance test
- Enable agile collaborative DevOps environment in cloud

the user interface and API for all environment definitions and deployments and handles image management and enables monitoring. HVX enables enterprises and software vendors to replicate multi-VM application environments with complex networking in self-contained capsules in Smart Labs in the Public Cloud.

Nested Virtualization

An integral part of HVX is the industry leading high performance nested virtualization engine capable of running unmodified guests on top of already virtualized hardware.

Conventional hypervisors such as VMware ESX™, KVM and Xen are designed to run on physical x86 hardware and use virtualization extensions offered by modern CPUs (Intel VT and AMD SVM) to virtualize the Intel architecture.

HVX, on the other hand is a 'built for cloud' nested hypervisor that runs on cloud VM, where these hardware extensions are not normally available. HVX employs a technology called binary translation to implement high-performance virtualization that does not require these virtualization extensions.

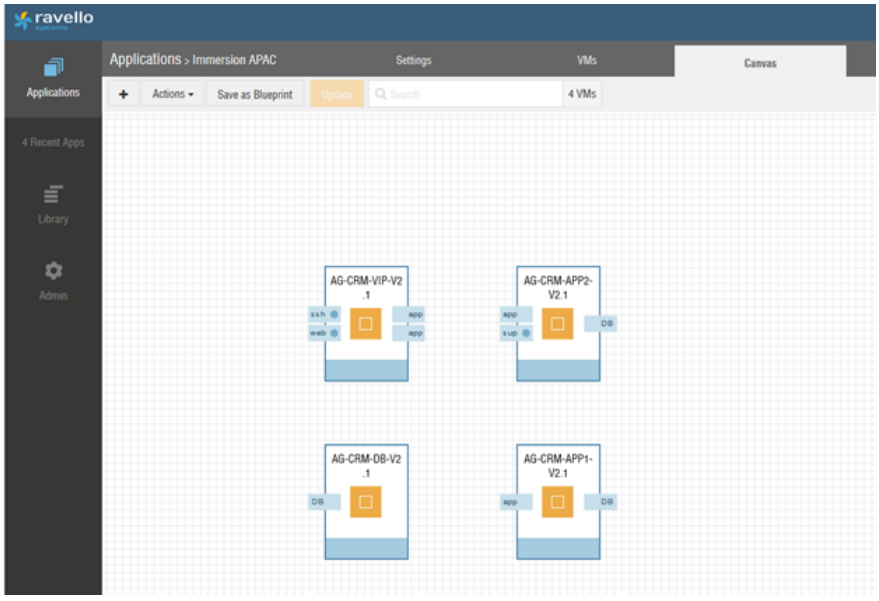

Figure 1. Shows a simple application with DB and Application servers.

Overlay Network

Ravello enables enterprises to run existing multi-VM applications unmodified in the cloud, not just single virtual machines. To make this possible, it utilizes a software-defined networking overlay that virtualizes the connectivity between the virtual machines in an application and exposes a clean Layer 2 network (including support for broadcast and multicast frames). The virtual network is completely user-defined and can include multiple subnets, VLANs, routers, and supplemental services such as DHCP, DNS

servers and firewalls. This overlay network functionality ensures that the application network setup on Ravello mirrors the network in the DC when moved. Ravello's virtual network can be made to look exactly like a datacenter network.

Further, one can even create their own network elements by uploading virtualized network and security appliances that implement the desired network function. For example, one can implement load balancing appliances and L2/L3 site-to-site or access VPN endpoints by importing the VMware or KVM network appliances from their favorite vendor.

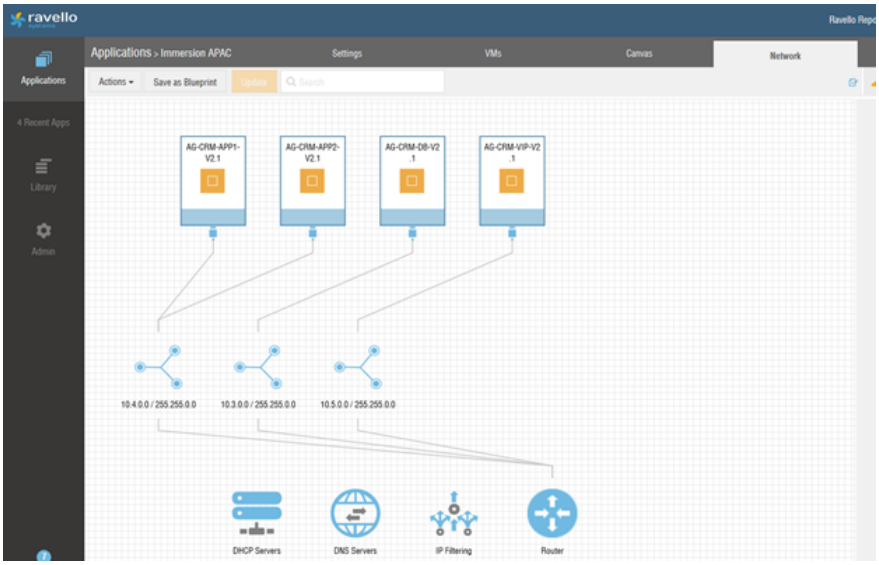

Figure 2. An example of network configuration automatically captured by Ravello.

Storage Overlay

Ravello's storage overlay solution focuses on performance, persistence and security. It abstracts native cloud storage primitives such as object storage and various types of block devices into local block devices exposed directly to the guest VMs. Everything from the device type and controller type to the location on the PCI bus remains the same. Hence it appears to the guest as if it was running in its original data-centre infrastructure. This allows the guest VM to run exactly as is, with its storage configuration as if it was running on premise.

Management

Ravello's management system is a highly available enterprise-grade system, which is deployed in the public cloud. It uses industry best practices in order to isolate different tenants, and eliminate any risk of data leak or data corruption.

The management system was developed with scalability, high availability and security as key architectural guidelines, while focusing on clear and simple UX of its rich RESTful API and web based UI.

In order to do so, it uses state-of-the-art technologies such as a mix of relational and non-relational databases, a distributed in-memory data grid and persistent queues for asynchronous processing, while employing cloud deployment best-practices for scale and availability.

Free Trial

You can request a free trial account to experience the Ravello's unique features and capabilities. For any questions please contact your local Oracle Cloud Infrastructure and Platform Sales Executive. The following is the URL for requesting the Free Trail account.

https://www.ravellosystems.com/

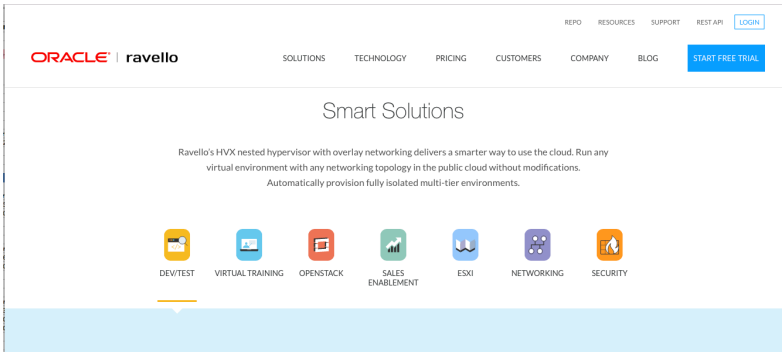

Figure 3. Request your Ravello trial account from this site

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