



HyperCX
Bento

TECHNICAL INFORMATION

HYPERCX® BENTO

HYPERCONVERGED CLOUD SOLUTION



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ENABLING THE PROFOUND BUSINESS TRANSFORMATION

CREATING A RIPPLE EFFECT OF QUALITY, SERVICE, AND EFFICIENCY

The cloud networking products of the present era go beyond the centralized administration, control, and visibility of the network, as the provision of numerous opportunities for businesses to compete as equals with industry giants has been made feasible. Business administrators require cloud-based business solutions that are capable of achieving more - flexibility, scalability, security, collaboration, and integration - with less - IT requirements, rack space, power consumption, installation, hardware, maintenance, solution support, personnel and upgrade costs. Sharing documents for workplace collaboration is significant, but it is essential to provide work-related data to employees, even when they are not present at the workplace. As organizations adopt infrastructure-as-a-service (IaaS) applications and are not content by good enough, big enough, or profitable enough, fulfilling their needs require a bespoke solution.

HYPERCX® BENTO – DATA AND THE USER GETTING PERSONAL

HyperCX® Bento, Virtalus's private cloud, infrastructure-as-a-service offering, enables higher efficiency for the provision of enhanced performance of the deployed application workloads on the private cloud. It is a hyper-converged cloud platform that enables increased usability of the available resources. It leverages bare metal containers and an industry-leading hyper-converged design to rapidly deploy, run, and control application workloads on the go without any prior knowledge regarding the platform. HyperCX® Bento has been designed to streamline the deployment, administration, and scalability of the data centre.

HYPERCX® BENTO – DATA AND THE USER GETTING PERSONAL

- » **Increased Performance** - Through an optimized and integrated SAN SDS.
- » **Increased Efficiency** - HyperCX® Bento makes better use of the available resources by leveraging bare metal containers, full virtualization support, and a hyper-convergent design.
- » **Ease of Use** - Rapid deployment of workloads without any prior knowledge of the platform.
- » **IaaS Capabilities** - Offering IaaS capabilities through ACLs, multi-tenancy support, quotas, users and group management.
- » **High Availability (HA)** - On Network, Compute (VM and containers automatic migration), and Orchestration.
- » **Rescheduling Failed VMs** - Takes a maximum time of 240s on failed host (Compute HA).
- » **Maximum Recovery Time** - For failed orchestrator is 6s.
- » **VM Deployment Speed** - A maximum of 3 VMs are deployed every 10s per host.
- » **Data Replication** - Replica 2 is leveraged on the cluster.
- » **Security** - OpenVPN-based VPN, SSH Asymmetric Cypher by default, and Network Traffic Isolation through VLANs.
- » **Isolation of cluster's services using containers** - Supports one node failure.



HYPERCX® PLATFORM SUBSYSTEMS

HYPERCX® ARCHITECTURE IS CLASSIFIED INTO FIVE MAJOR SUBSYSTEMS:

NETWORK SUBSYSTEM:

Provides connectivity to all cluster components and workloads. Constitutes one or more switches and one or two physical firewalls.

1 or 2 switches with the following features:

- » Stackable (in case of two or more switches)
- » LACP support
- » VLAN support
- » SNMP support
- » Port speed defined at compute nodes

1 firewall deployed on top of a server with the following characteristics:

- » 12 CPU Cores
- » 16GB RAM
- » 2 x 500GB HDD on RAID1 configuration
- » 2 NIC cards with same speed than client and management network.
- » Single LACP bond among all NICs
- » LAN and WAN networks will be defined using VLANs
- » Network isolation using VLANs
- » **Optional:** A second firewall for High Availability (HA) using CARP and pfSync

Two or more networks:

- » **Management:** For instances, containers, storage and compute nodes. Can access the internet. Can be accessed through VPN.
- » **Client:** One or more networks to be set-up and configured for client's VMs

MANAGEMENT SUBSYSTEM:

HyperCX® leverages a monitoring system tightly integrated to all its components, offering:

- » Proactive and reactive monitoring.
- » Failure, accounting and performance monitoring.
- » Active and passive probes.
- » Optional email notifications.

COMPUTE SUBSYSTEMS:

HyperCX® being a hyper-converged platform, shares the same cluster between workloads and the rest of the subsystems (storage, management, compute and orchestration). The cluster has the following characteristics:

- » Three nodes or more.
- » At least two NICs per node.
- » Different storage technologies.
- » Bare metal support for KVM and LXN hypervisors

STORAGE SUBSYSTEM:

A Software Defined Storage (SDS) solution deployed as a Storage Area Network (SAN) is used with the following characteristics:

- » Bare metal installation.
- » Replicated data.
- » Performance optimized for VMs and containers.

ORCHESTRATION SUBSYSTEM:

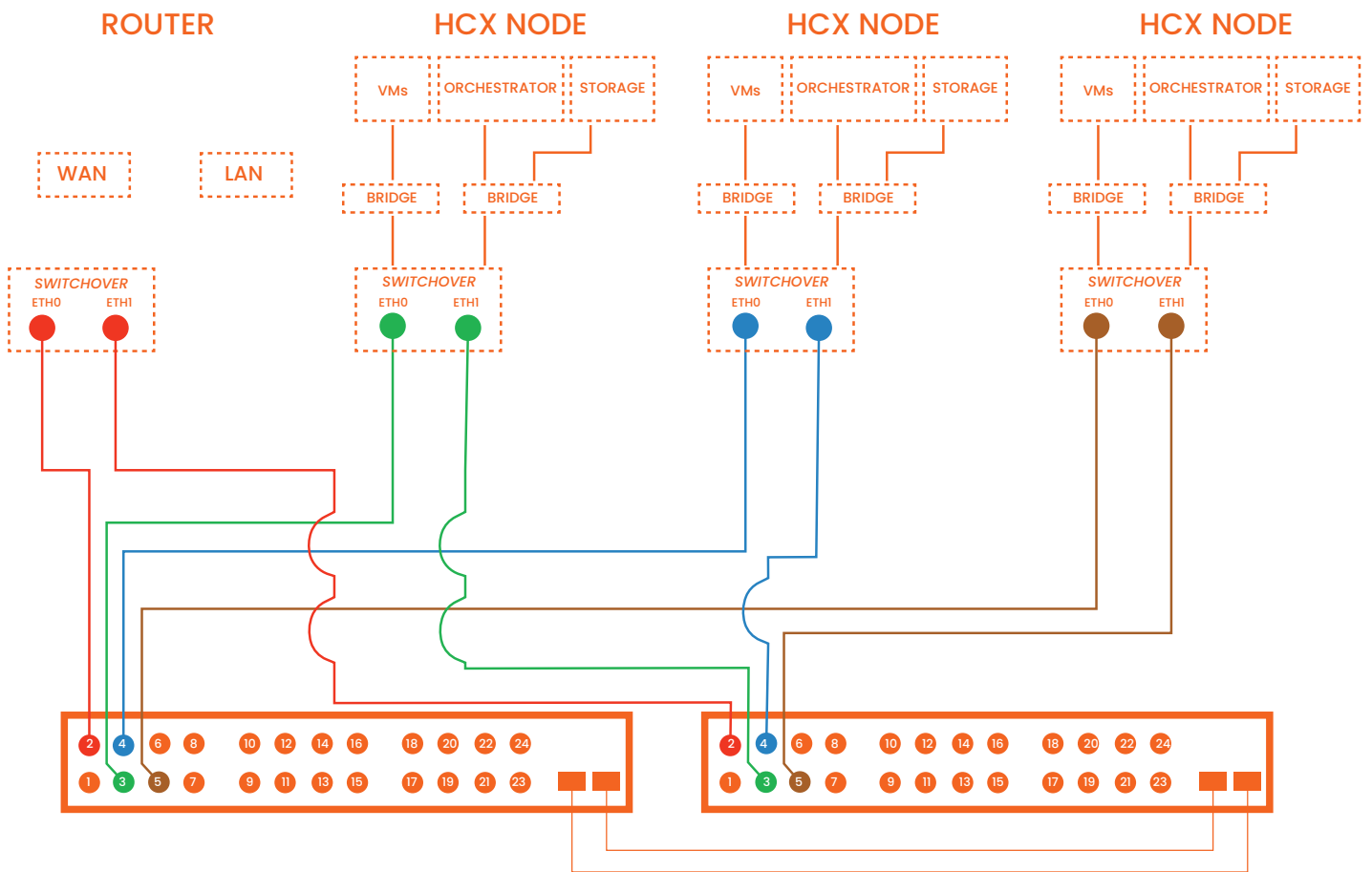
HyperCX®'s orchestrator comprises the following features:

- » Three instances on HA configuration.
- » Isolated inside containers

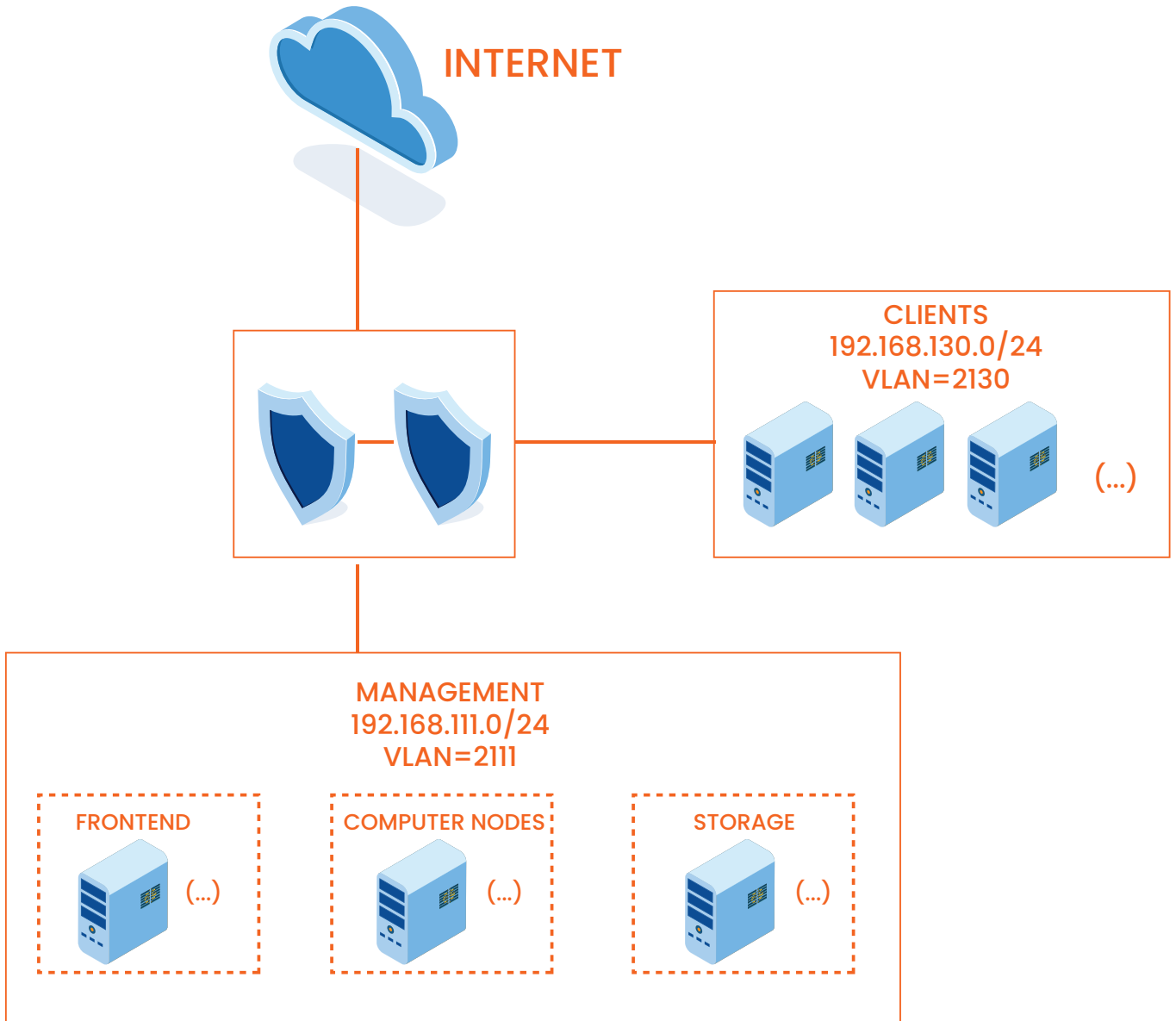


PHYSICAL DESIGN:

Components are interconnected as described on the following diagram:



LOGICAL DESIGN:



CLUSTER FEATURES

HYPERCX® BENTO IS ALL THAT YOU NEED FOR BUSINESS TRANSFORMATION

- » **Enhanced workplace productivity** - Strategic business outcomes, technology optimization and ongoing organization ennoblement through the integration of compute, storage, visualization, and networking.
- » **Enhanced security** - Improved data security through OpenVPN-based VPN, SSH Asymmetric Cypher by default, and network traffic isolation through VLANs.



CONCLUSION – CLOUD IS MEANT TO STAY

Virtalus has been relied upon as instrumental in numerous successful implementations that have transformed our clients and enabled them to compete as equals with industry giants. They have been able to provide exemplary services to their customers faster, at an affordable cost and in a more efficient manner. This would not have been made feasible without cloud technology. The cloud is meant to stay.