Virtualization in a Multipurpose Commercial Data Center

Gartner Data Center Conference

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Hostway Corporation

- Global Provider of Infrastructure, Platforms, and Web Enabled Business Applications
  - Operations in 14 Countries in North America, EMEA, APAC
  - 6 Commercial Data Centers in North America, 6 Global
  - 40,000+ Servers Under Management

- Heterogeneous Data Center Environment
  - Infrastructure as a Service (IaaS)
  - Cloud Computing Platforms (PaaS)
  - Software as a Service (SaaS)
  - Internal Hostway Applications
Drivers Toward Virtualization and Cloud

- Reduce Operating Costs
  - Server consolidation
  - Automation

- Increase Reliability, Scalability, and Performance
  - Dynamic allocation of resources
  - Distribution of workloads, redundancy, and optimization

- Provide Additional Functionality to End Customer
  - Self service and end user control
  - Mobility and portability
  - Interoperability
Trends in Virtualization and Cloud

• Public Cloud
  – Ease of use, open interfaces, cost effectiveness

• Private Cloud
  – Focus on security, control, predictability

• Hybrid Public – Private
  – On-premise / off-premise (federation)
  – Shared and dedicated resource allocation

• Not “One Size Fits All” – Optimized Platforms
Challenges

- **Design**
  - Software – hypervisor, management tools, UI, integration
  - Hardware – host configuration, networking, storage
  - Lack of proven best practices
  - Buy versus build

- **Roadmap**
  - Prioritization and timing of functionality
  - Interoperability and lack of standards
  - Market and vendor noise
Transforming the Data Center for Virtualization

• Physical Plant
  – Density, power, and cooling

• Geo-Redundancy and Optimization
  – Application and data replication
  – Edge caching and delivery

• Network Design
  – Segmentation and security
  – Storage and resources / services

• Retrofit Versus New Build
Cloud at Hostway

- Application Cloud(s)
  - SaaS
  - End User Experience

- Platform Cloud(s)
  - Services
  - Utilities
  - Integration

- Infrastructure Cloud(s)
  - Compute
  - Storage
  - Network / Transport

- Internal Cloud
  - Administration
  - Assurance
  - Back Office
Detailed Design Example

- Deploy Microsoft Hyper-V with System Center Suite to enable virtualization of customer dedicated servers
- Support both Linux and Microsoft standard distros
- Integrate provisioning and administration of related network and physical resources:
  - IP Addresses, Security, Load Balancing, Storage
- Provide a user self service web interface that supports a multi-tenant cloud environment
- Integrate the platform with existing back office systems to automate ordering, support, payments, and utility charging
Project Goals

- Reduce physical, electrical, & cooling footprint for customer dedicated servers
- Automate build and configuration processes
- Enable customers to instantiate, configure, & manage their own compute resources
- Enable high availability, portability, and of server and network resources
- Provide a flexible foundation for future applications and optimization
Benefits and Results

- 1,700 virtual servers deployed in six months
  - 41 physical hosts with N+2 redundancy
  - Automated fail-over & live migration
  - Support for Linux & Windows
- Custom user self service portal
  - Provision & manage server instances
  - Public and private image libraries
  - Storage management
  - IP address management
  - Snapshots and monitoring
- **Fulfillment reduced from 24 hours + to 20 minutes on average**
- **Scheduled downtime virtually eliminated**
## Financial Overview

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Why Brocade?

• Single Vendor to Support Full Range of Requirements:
  • Transport and Transit Network (NetIron Core Routers)
    – Port density / price per port
    – Footprint consolidation
  • Edge Routing (End of Row Switches)
  • Load Balancing (ServerIron)
  • Specialized Applications
    – SSL acceleration
    – DDoS mitigation
• Easy to do Business With
  – Ease of procurement, use, cost, support
QUESTIONS?

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