

Building Hyper-V Cloud Solutions with Microsoft

Laurent Bonnet

Client Architect & Advisor
Microsoft France/DPE
laurenbo@microsoft.com

CTO, <http://maplateformeweb.com>



/laurenbo on:
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Microsoft Hyper-V Cloud “Building” Momentum



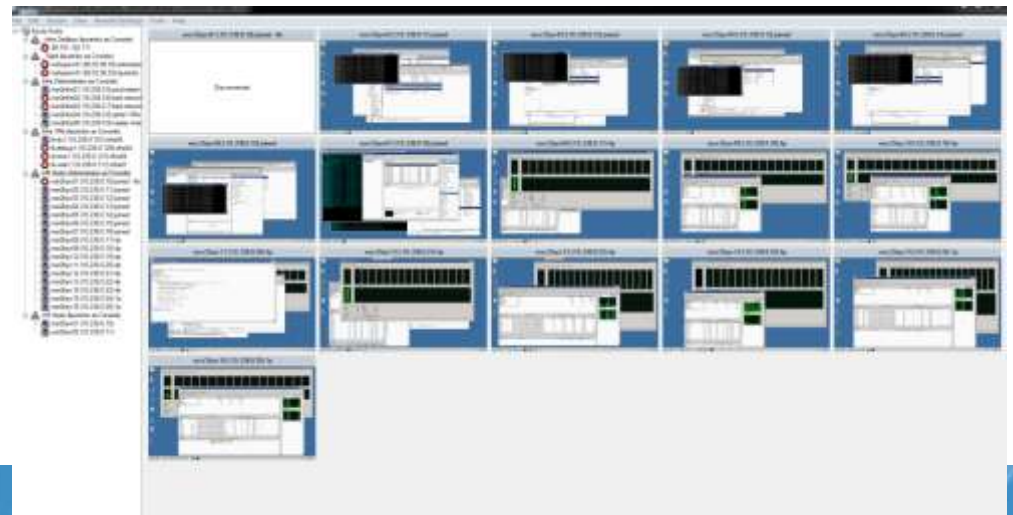
- 10 Offers in FY11
- 70 Offers since launch in FY09
- 61 in Pipeline
- 30% are Tier-1 service providers
- 40% VMware compete projects
- 11 Trained SIs

Overview

- Part 1: The Dynamic Datacenter Vision
- Part 2: Understanding the Dynamic Datacenter Toolkit - DDT :-)
- Part 3: Understanding DDT Management Services
- Part 4: DDT Hardware and Infrastructure Requirements
- Part 5: DDT Extensions – Linux, etc.

My background: <http://maplateformweb.com> – codename Rainbow

Return of Experience
from the design
& operations of a
5 000 VM public cloud



DDT: foundation for a generic, multi-tenant Cloud Computing Infrastructure

SLA Driven

Automated Management

Distributed and Elastic

Infrastructure Fabric



Dynamic Datacenter Toolkit - Definition

Agile, dynamic and flexible out-of-the-box to:

- Respond quickly to changing business needs
- Enable hosters to capitalize on new opportunities

Designed to automate common tasks: Orchestrate System Center products

Detailed setup and guidance for hosters:

- To eliminate deployment blockers
- To accelerate technology adoption

Supported by community via MSDN Code Gallery

- <http://code.msdn.microsoft.com/>
- Custom engagements by S.I.s and MCS



DDT is not...

- An out-of-the-box solution
- A product

<http://www.microsoft.com/systemcenter/en/us/dynamic-data-centers.aspx>

DDT OOB control panel: back-office portal sample view

Welcome To Contoso Hosting Control Panel Powered By Microsoft Dynamic Data Center Toolkit

Home **Servers** Application Monitoring contoso

My Servers +

- ContosoMVM +
- Streaming** +
- MVMDemo +
- HA-VM-01 +

Streaming


Summary System Alerts Software Updates Backup and Restore Performance Monitoring Snapshots

System Health Overview

System Health Active Alerts Performance System Backup Software Update

Streaming 0

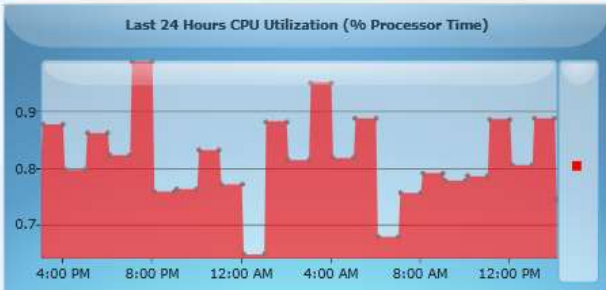
Virtual Machine Controller



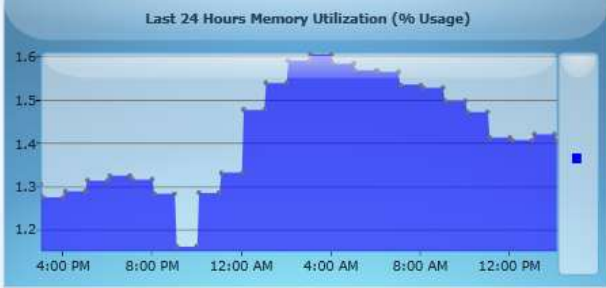
Start Stop Pause Reset Snapshot

System Performance

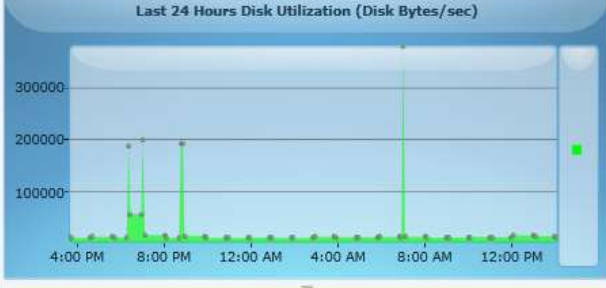
Last 24 Hours CPU Utilization (% Processor Time)



Last 24 Hours Memory Utilization (% Usage)



Last 24 Hours Disk Utilization (Disk Bytes/sec)



System Properties

PropertyName	PropertyValue
Install Type	Full
Is Virtual Node	
Principal Name	STREAMING.contosohosting.com
DNS Name	STREAMING.contosohosting.com
NetBIOS Computer Name	STREAMING
NetBIOS Domain Name	CONTOSOHOSTING
IP Address	10.5.18.52, fe80::a08e:6baf:7ec4:139f
Network Name	STREAMING.contosohosting.com
Active Directory SID	S-1-5-21-3465563656-3002480737-2691637897-11
Virtual Machine	True
DNS Domain Name	contosohosting.com
Organizational Unit	CN=Computers,DC=contosohosting,DC=com
DNS Forest Name	contosohosting.com
Active Directory Site	Default-First-Site-Name

Dynamic Datacenter Toolkit - Benefits to "End" Customers

Provisioning & Deployment

- Deploy Servers, Networks, Appliances, Services
- Flexible Self-Management

24x7 Monitoring

- Gathering performance information to better address SLA fulfillment and infrastructure usage
- Customer self-monitoring

Flexible Adaptation

- Easy adjustment of environment & provisioning of new resources
- Storage, bandwidth are dynamically adjustable to address needs

Dynamic Datacenter

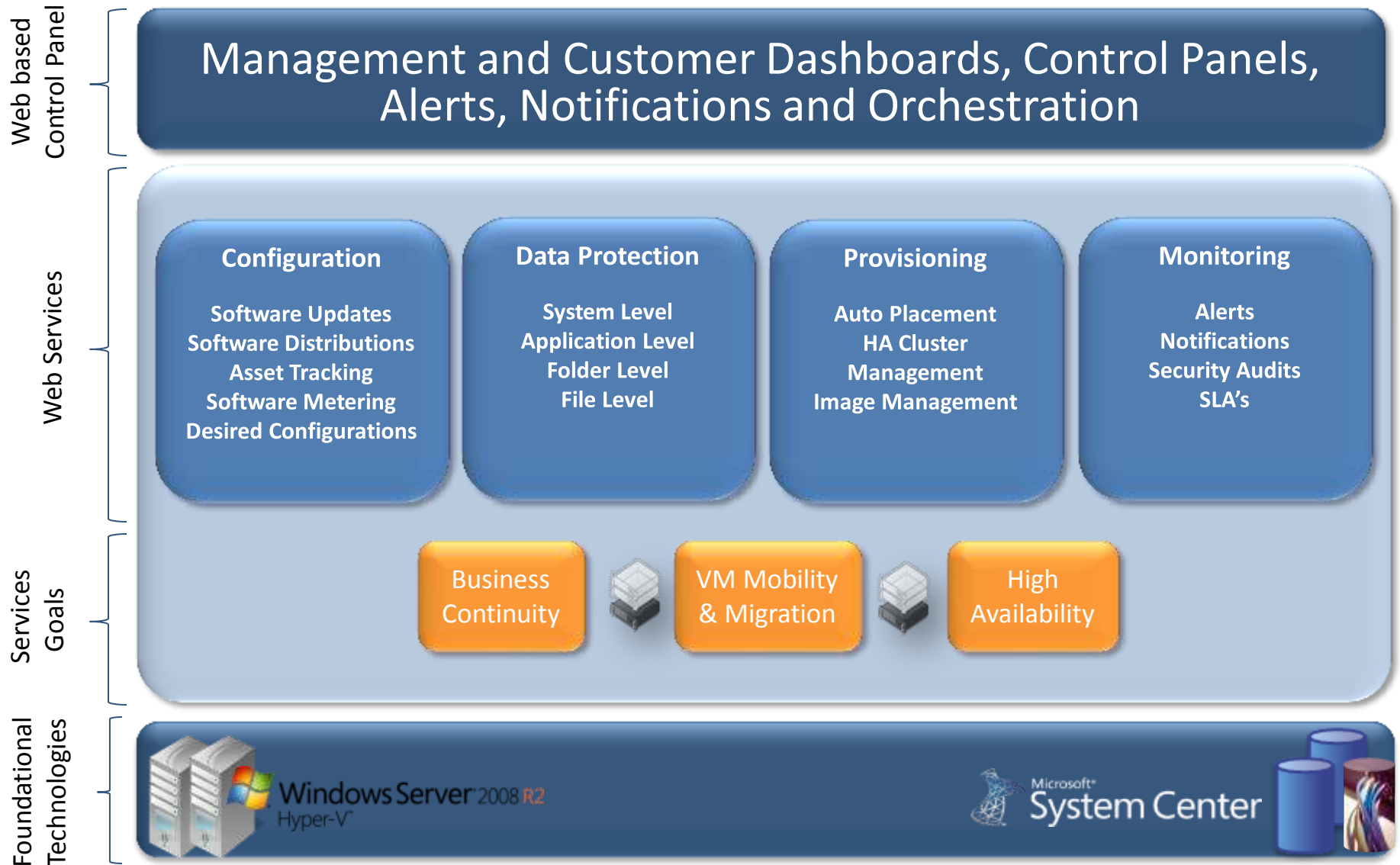
Protecting

- AntiVirus, Spam filters, firewalls
- Backup
- Ensuring 99.9% uptime and physically secured infrastructure

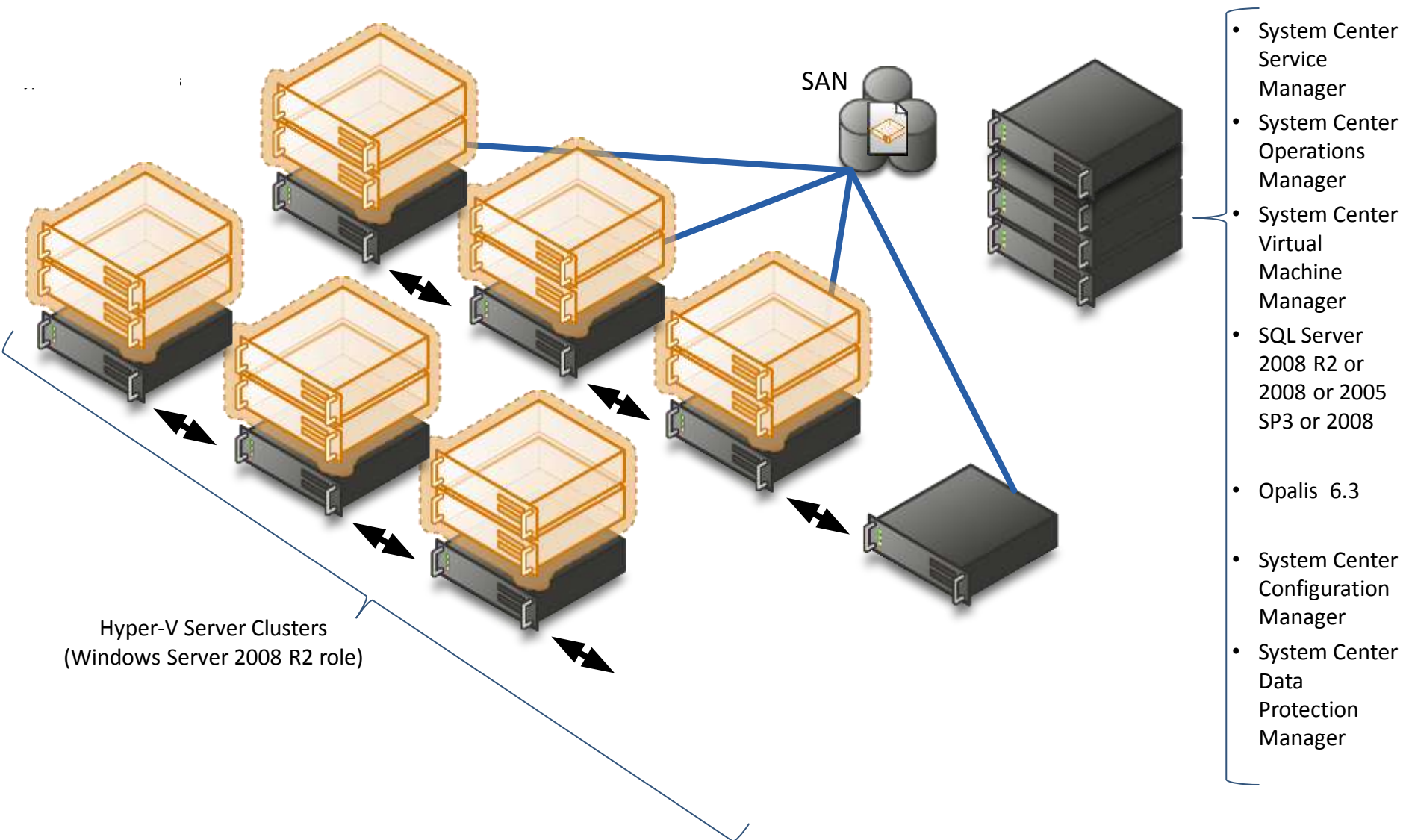
Optimizing

- Continuous monitoring proactive adjusting or moving servers to new hardware with little or no negative impact
- Allocation of 'right' resources based on needs, rather than under/over allocation
- Allows for optimal deployment of infrastructure

DDT - Logical Solution Architecture



DDT Implementation - Physical Architecture



Dynamic Datacenter Alliance: Hyper-V Cloud Partner Ecosystem Momentum

Dynamic Provisioning

DDT

System Center Virtual Machine Manager Self Service Portal 2.0

Deep integration including : **HP, NetApp, Citrix, Compellent, Intel, F5 Networks and V-Kernel**

Integrated Management

Microsoft System Center

System Center Alliance > **100% growth in past year** to 150 partners
22 Performance and Resource Optimization (PRO) packs; **15 packs since VMM R2 including HP, Dell, IBM, Brocade, QLogic, Emulex and APC**

Platform

Windows Server 2008 R2
Hyper-V

Innovation on Hyper-V supporting Cluster Shared Volumes, Storage Virtualization, Provisioning, Conversion, Assessment and more with partners including: **Datacore, Double-Take, CA, Citrix, NetApp, CA, CommVault, Symantec, Sanbolic** and others



Network



Storage



Compute

More than 304 NICs qualified with Windows Server; 160 since R2 release

More than 1,600 storage arrays certified with Hyper-V; 700 since R2 release

More than 1,800 servers certified with Hyper-V; 780 since R2 release

Replication partner cluster integration including HP, HDS, NetApp, EMC, and Double-Take

Numerous Joint Solution Blueprints available for with partners including:

HP, Dell, NetApp, Cisco, Citrix, EMC, Hitachi Data Systems

DDT – 3rd party extensions for Linux

Leveraging our interoperability partnership with Novell provides monitoring and management for SUSE Linux and full support for SLES as well as Red Hat, Red Hat compatible binaries, and JBoss.

DDT

Customer Facing Self-Service Portal

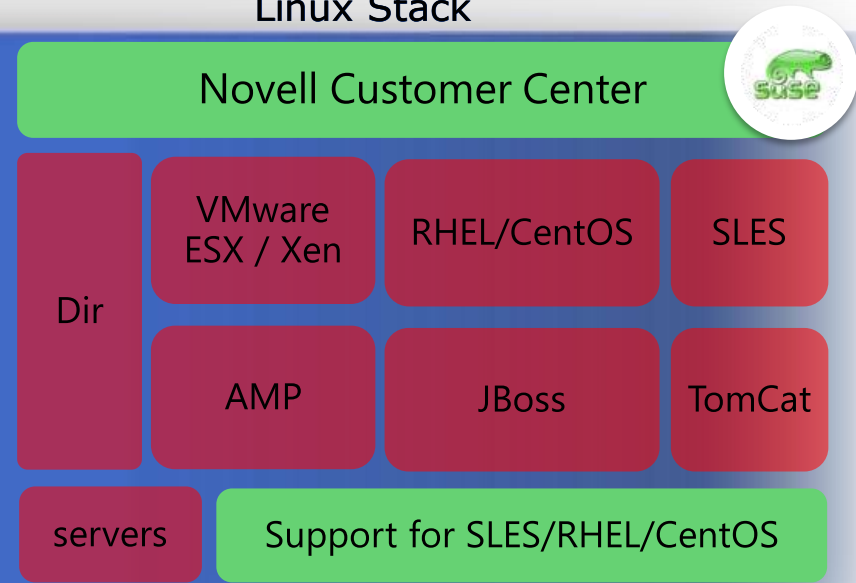
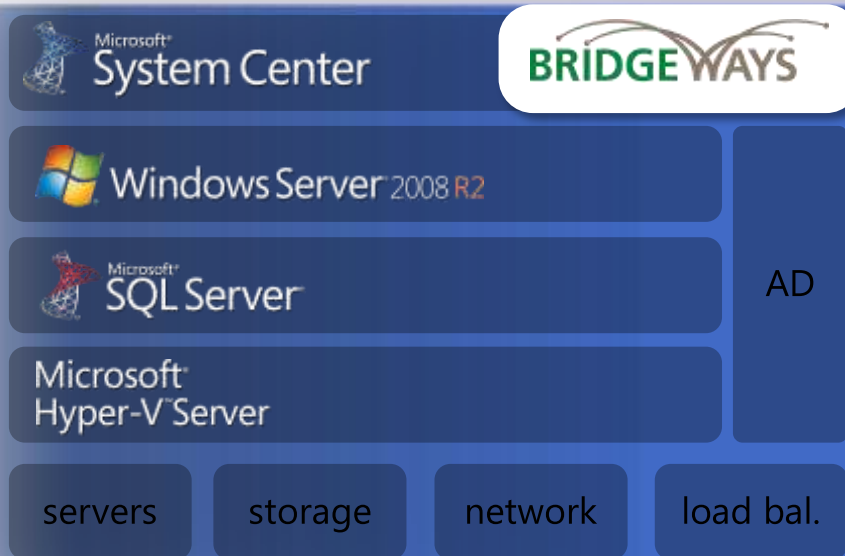


{exposed web services – fully configurable UI}

Windows Stack

Linux Stack

Infrastructure



DEMO – SOUS RESERVES 😊

Tenant (customer) onboarding
Quota request & allocation
Self-Service VM Provisioning
VM Supervision

Resources

- Entry point: <http://www.microsoft.com/dynamicdatacenter>
- Before the technical stuff
 - Have a look at case studies. [Link to case study published at microsoft.com/casestudies](http://microsoft.com/casestudies).
 - And some video case studies. Each video is 2+mins. on microsoft.com/videos since April 28th 2009.
 - [MaximumASP Video](#)
 - [Applied Innovations Video](#)
 - And a nice 3 min value proposition video [Link to download the video](#) and Intranet [Link to download the deck](#)
- When you want to dig into the big thing...
 - Getting Started – latest version 3.0 beta (published 2010-12-01): on <http://code.msdn.microsoft.com/ddc>
 - Self-running (canned) demo is at [this link](#)
 - Live demo accessible from the internet: to be announced
 - To learn how to show live demo, watch the [self-running demo](#). It's a 7 min video.
- Upcoming 4-day training led by DDC authors in Amsterdam 6-9th december

QUESTIONS?