

IT

Developing Successful Azure PaaS Applications

Vaclav Hudec
vaclavh@microsoft.com
Microsoft



Agenda

PaaS vs. IaaS

Designing for PaaS

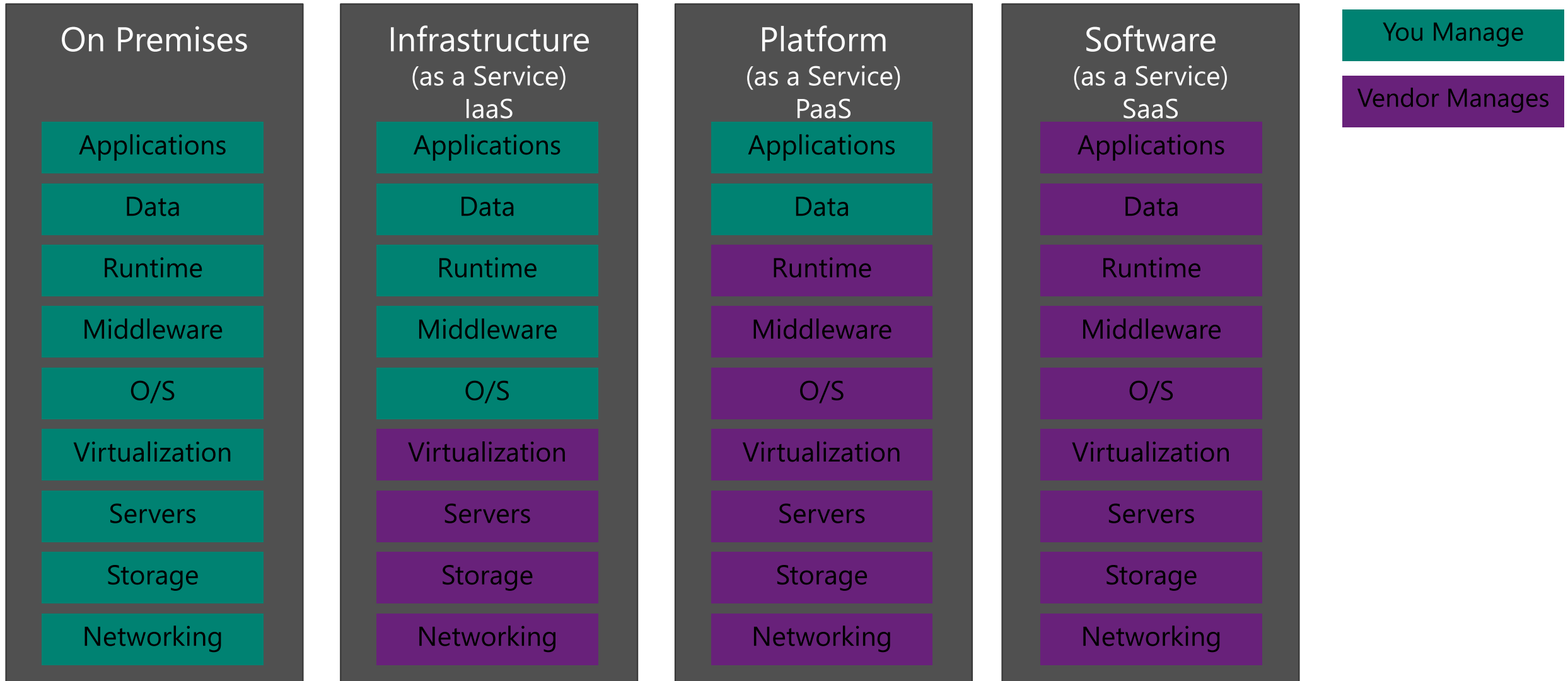
Testing in Azure

Supporting and Monitoring PaaS

Demo Azure

PaaS vs. IaaS

Cloud Services



Windows Azure Cloud Services (Stateless VM's PaaS)

A place for your application code to run...

Web role is simply a Virtual Machine with IIS pre-configured

Worker role is for non-web based processing code, back-end business processes

You can actually connect to your web/worker roles – they are just VM's

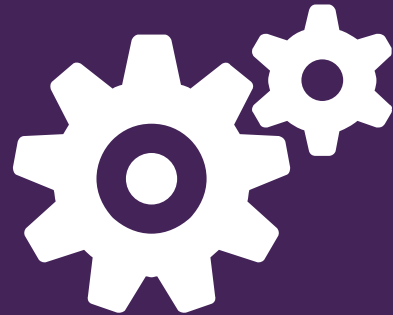
You package your code/artifacts and Windows

Azure bootstraps a VM, installs the code and starts up the VM for you. Load balances multiple instances

Web Role



Worker Role



Designing for PaaS

Paradigm Shifts

Multi-instance



Stateless



Design – Hybrid Connectivity

External Web Services

Available to the public

Service Bus (Relay)

Endpoint in Azure

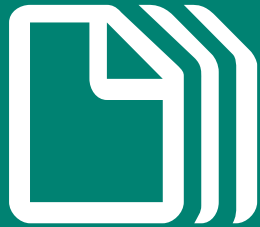
Design - Storage

Windows Azure SQL Databases

Subset of SQL functionality (No cross-database JOIN)

Shared resources

Azure Storage



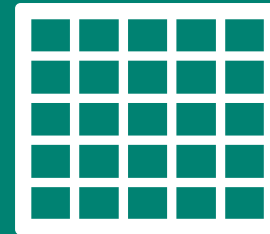
Blobs

Simple named files along with metadata for the file.



Drives

Durable NTFS volumes for Windows Azure applications to use. Based on Blobs.



Tables

Structured storage. A table is a set of entities; an entity is a set of properties.



Queues

Reliable storage and delivery of messages for an application.

Design - Messaging

Service Bus

Queues / Topics / Subscriptions

Azure Storage

Queues

Comparison Criteria	Windows Azure Queues	Service Bus Queues
Ordering guarantee	No	Yes - First-In-First-Out (FIFO) (through the use of messaging sessions)
Delivery guarantee	At-Least-Once	At-Least-Once At-Most-Once
Transaction support	No	Yes (through the use of local transactions)
Receive behavior	Non-blocking (completes immediately if no new message is found)	Blocking with/without timeout (offers long polling, or the " Comet technique ") Non-blocking (through the use of .NET managed API only)
Receive mode	Peek & Lease	Peek & Lock Receive & Delete
Exclusive access mode	Lease-based	Lock-based
Lease/Lock duration	30 seconds (default) 7 days (maximum)	60 seconds (default) 5 minutes (maximum)
Lease/Lock granularity	Message level (each message can have a different timeout value)	Queue level (each queue has a lock granularity applied to all of its messages, fixed for the lifetime of the queue)
Batched receive	Yes (explicitly specifying message count when retrieving messages, up to a maximum of 32 messages)	Yes (implicitly enabling a pre-fetch property or explicitly through the use of transactions)
Batched send	No	Yes (through the use of transactions or client-side batching)

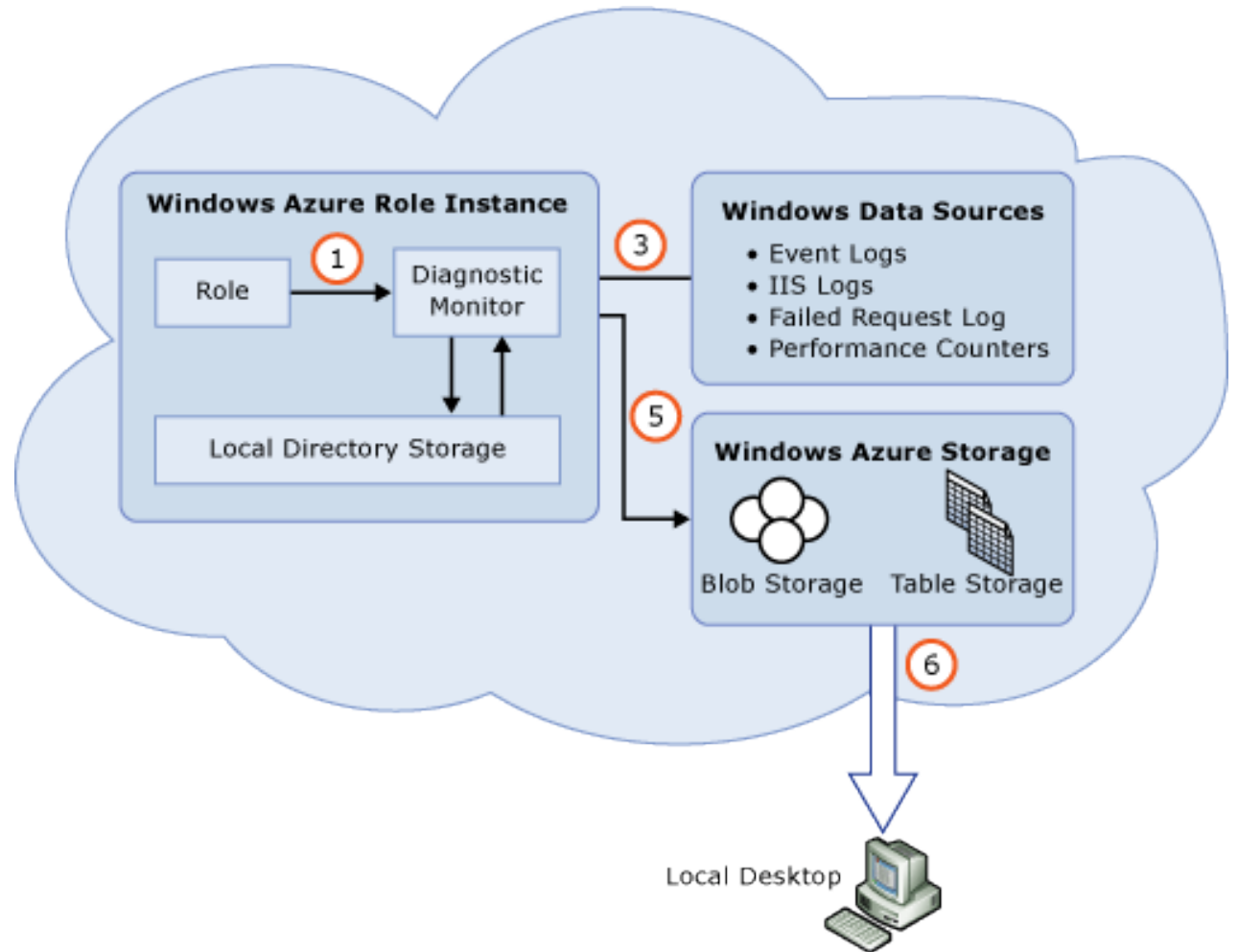
Design - Diagnostics

Windows Azure Diagnostics

Event Logs

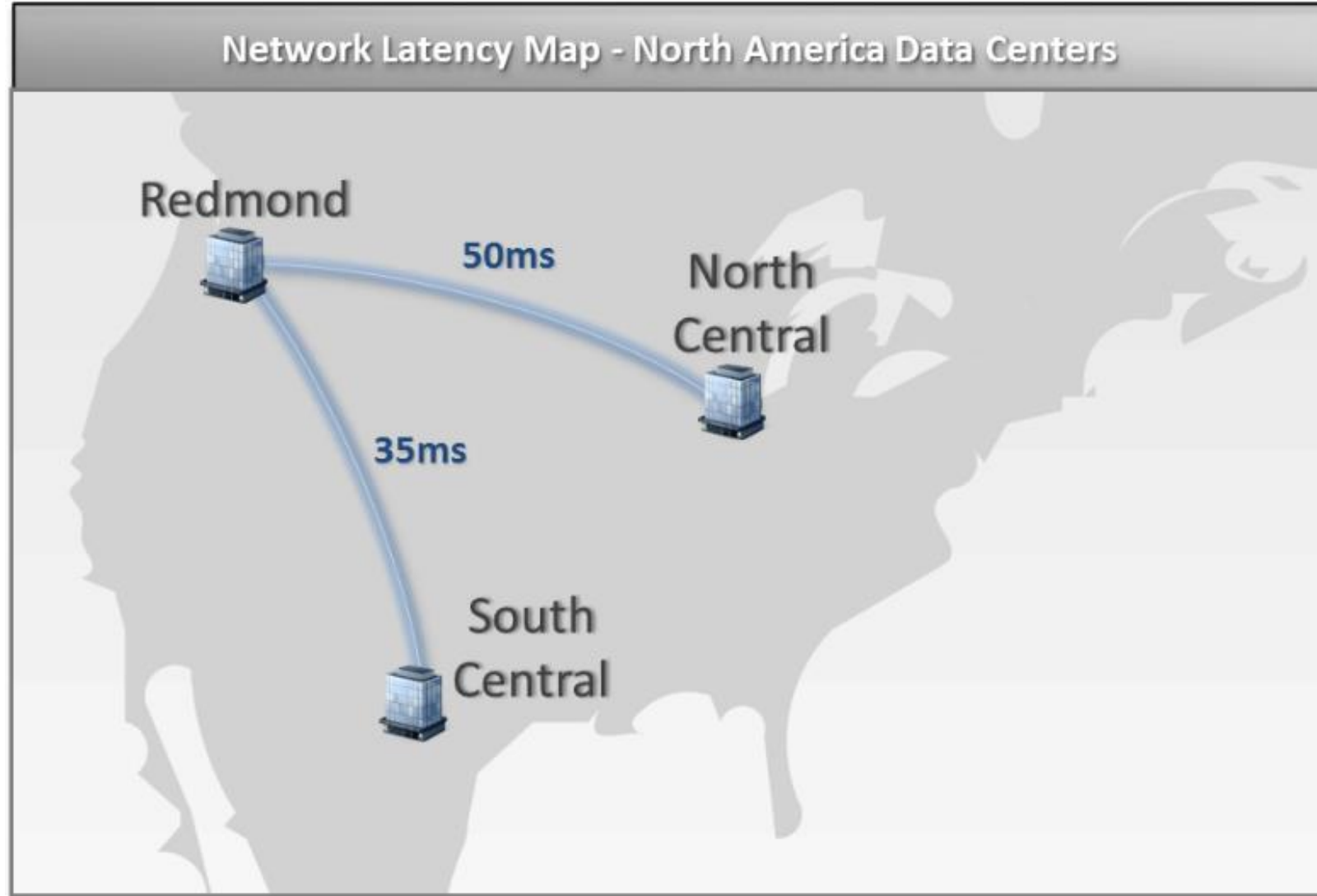
Performance Counters

IIS Logs



Testing PaaS

Latency



Load Testing

Bottleneck Detection

[P&P Auto-Scaling Application Block](#)

Instance Size Guidance

Smaller is better!

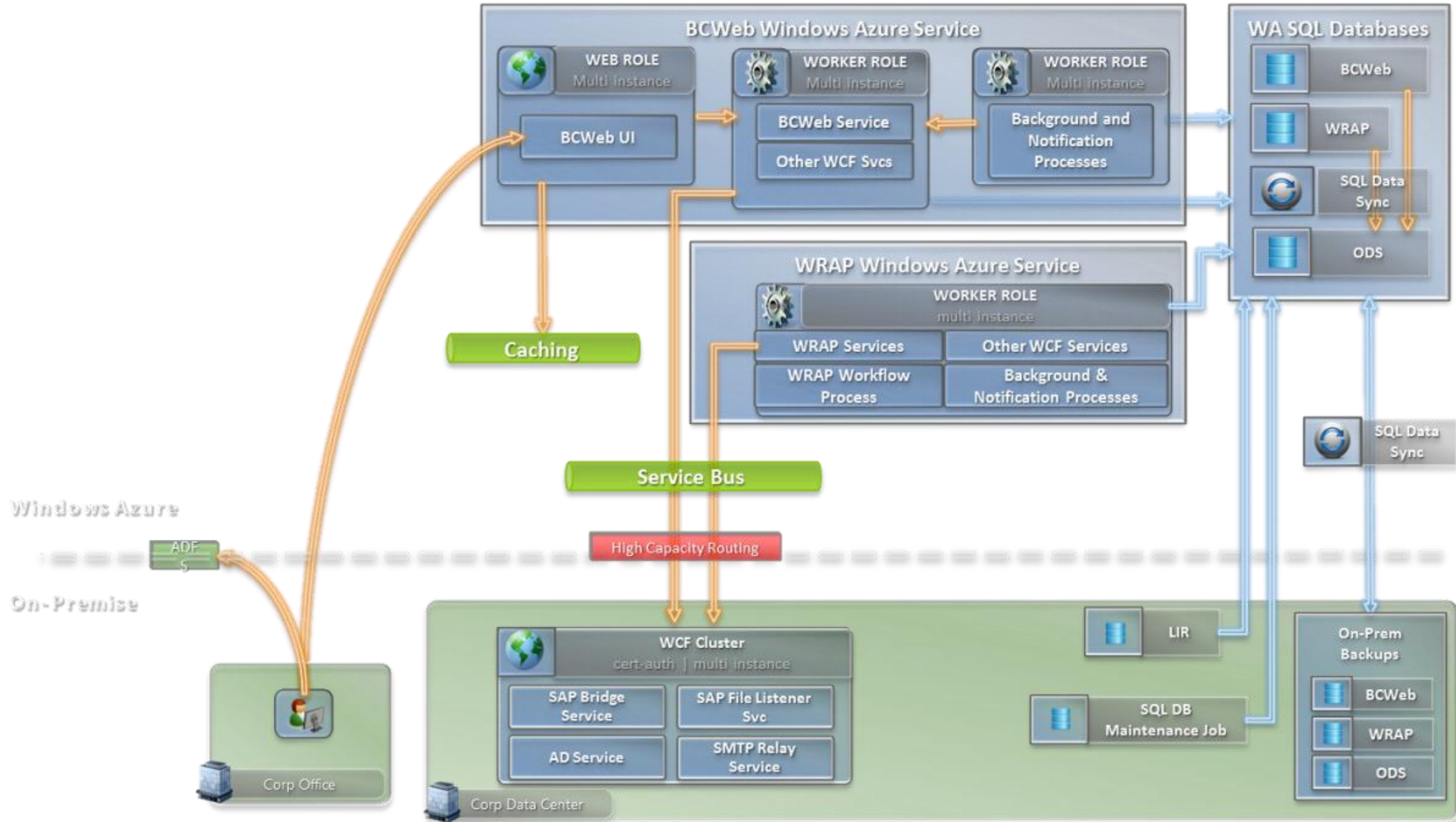
Demo Tools and Monitoring

Q & A

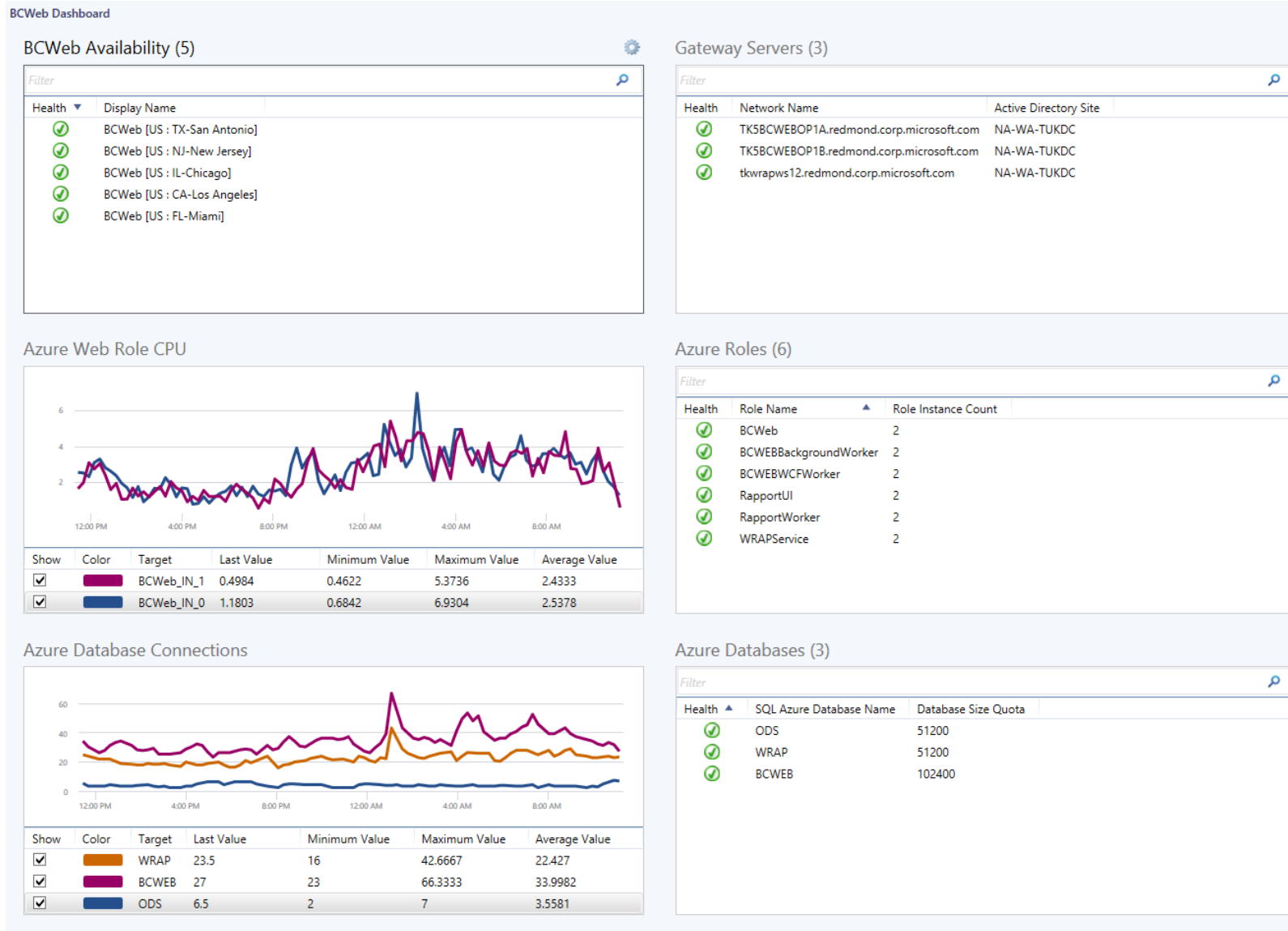


Appendix

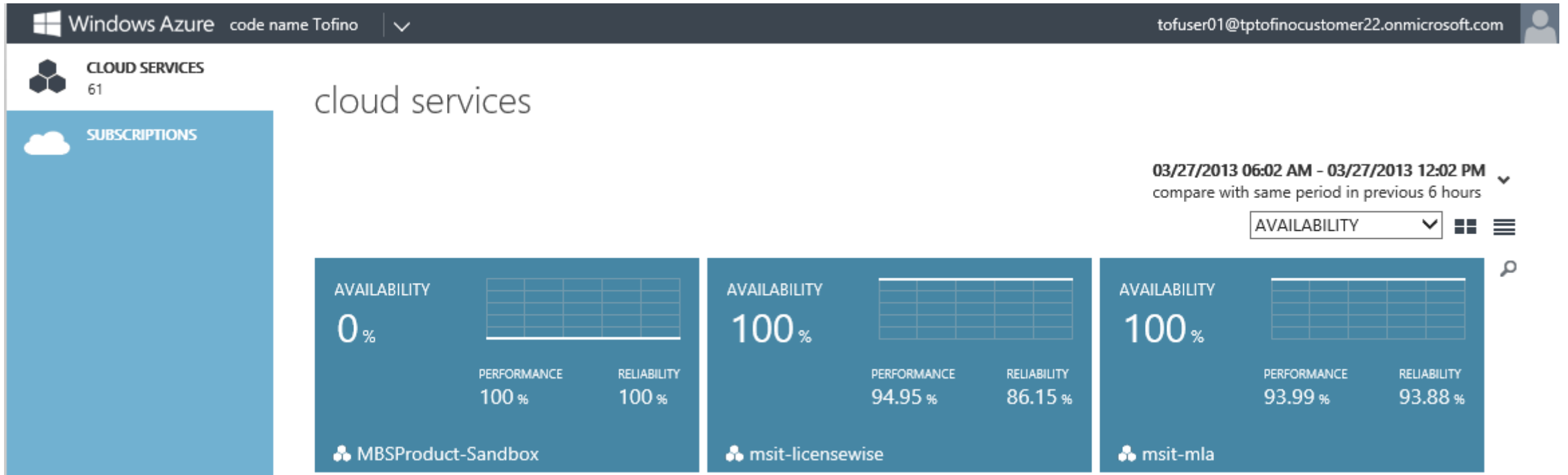
BCWeb In-Depth Architecture



Operations Manager Dashboards



Tofino



Azure Portal

Windows Azure | Subscriptions | erimat@microsoft.com

ALL ITEMS
WEB SITES 1
VIRTUAL MACHINES 0
MOBILE SERVICES 1
CLOUD SERVICES 62
SQL DATABASES 62
STORAGE 36
NETWORKS 0
SQL REPORTING 1
SERVICE BUS 16
MEDIA SERVICES 0
ACTIVE DIRECTORY 2

sql databases

DATABASES | SERVERS | SYNC **PREVIEW**

NAME	TYPE	STATUS	SUBSCRIPTION	LOCATION
Alert Sync Group →	Sync Group	✓ Good	NGT-LionelGo	North Central US
ECDM	Sync Group	ⓘ Not Ready	VLIT-DIT-ContentVault-1	North Central US
BCWEB_ODS_PROD_DATASYNC	Sync Group	⋄ Processing	VLIT-PROD-BCWEB	North Central US
WRAP_ODS_PROD_DATASYNC	Sync Group	✓ Good	VLIT-PROD-BCWEB	North Central US
SIT Bidirectional	Sync Group	❗ Error	VLIT-SIT-MLA-LW-1	South Central US
RTPDB	Sync Group	❗ Error	VLIT-SIT-OnlinePUR-SPUR-2	North Central US
BCWEB_TO_ODS_FQRUAT1	Sync Group	❗ Error	VLIT-UAT-BCWEB-1	North Central US
WRAP_TO_ODS_FQRUAT1	Sync Group	❗ Error	VLIT-UAT-BCWEB-1	North Central US
Alert Origin	Agent	✓ Online	NGT-LionelGo	North Central US
ECDM	Agent	✓ Online	VLIT-DIT-ContentVault-1	North Central US
tkSqastgsqsl	Agent	ⓘ Expired	VLIT-DUT-MLA-LW-1	South Central US
tkSQAstgsqsl	Agent	❗ Offline	VLIT-SIT-MLA-LW-1	South Central US
RTPdb	Agent	ⓘ Expired	VLIT-SIT-OnlinePUR-SPUR-2	North Central US
ODS_Azure_onprem_agent	Agent	ⓘ Expired	VLIT-UAT-BCWEB-1	North Central US
on_prem_ods	Agent	ⓘ Expired	VLIT-UAT-BCWEB-1	North Central US

Azure Service Dashboard

Windows Azure Service Dashboard

[To report a live site issue, click here.](#)

Current Status

The table below shows the health status of the Windows Azure Platform. If you want to receive notifications about incidents affecting any of the services, you can subscribe to the respective RSS feeds. To view a detailed incident report for a service that is not running as expected, mouse over the status icons for that service.

To view the status history of the services, click the "Show Historical Status" link. The arrows at the top of the table can be used to navigate through the service status history week by week. If you are only interested in viewing a selection of the services, click the "Manage Your Dashboard" link at the bottom of the page.

North Central US and South Central US regions are no longer accepting Compute or Storage deployments for new customers. Existing customers as of June 24th (for North Central US) and May 23rd (for South Central US) are not impacted. All other services remain available for deployment in those two regions. Two new regions, "West US" and "East US", are now available to all customers with the full range of Windows Azure Services, except for the Caching service.

[Show Historical Status](#)

All	Americas	Asia-Pacific	Europe	
CURRENT STATUS	SERVICE [SUB-REGION]		DESCRIPTION	RSS
✓	Access Control 2.0 [East Asia]		Service is running normally.	
✓	Access Control 2.0 [East US]		Service is running normally.	
✓	Access Control 2.0 [North Central US]		Service is running normally.	
✓	Access Control 2.0 [North Europe]		Service is running normally.	
✓	Access Control 2.0 [South Central US]		Service is running normally.	
✓	Access Control 2.0 [Southeast Asia]		Service is running normally.	
✓	Access Control 2.0 [West Europe]		Service is running normally.	