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E X P O

Cloud Computing with Windows Azure using your Preferred Technology

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- Windows Azure Platform
 - Windows Azure Storage
 - Windows Azure Compute
 - Service Bus and Access Control Service
 - SQL Azure

- Azure Interoperability Demo
- Real-world Customer Demo

- Summary, Questions, Wrap-up

Provide a Flexible Services Platform with Internet Scale

- ✓ Simple scenarios are simple – complex scenarios are possible
- ✓ Services hosted in Microsoft's data centers
- ✓ Designed for high availability & scalability

Base it on Internet Standards

- ✓ Multiple protocol support including HTTP, REST, SOAP, AtomPub
- ✓ Broad investment in open, community-based access to Azure services

Extend Your Existing Investments

- ✓ Familiar tools, languages, and frameworks
- ✓ Provides the choice to build on-premises, cloud, or hybrid solutions
- ✓ Integrate with existing assets such as AD and premises applications

Windows Azure Platform

 Windows Live  Microsoft Office Live  Microsoft Exchange Online  Microsoft SharePoint Online  Microsoft Dynamics CRM Online

Windows Azure Platform

 Windows Azure platform
AppFabric

Service Bus

Access Control

...

 Microsoft SQL Azure

Database

Analytics

Reporting

...

Compute

Storage

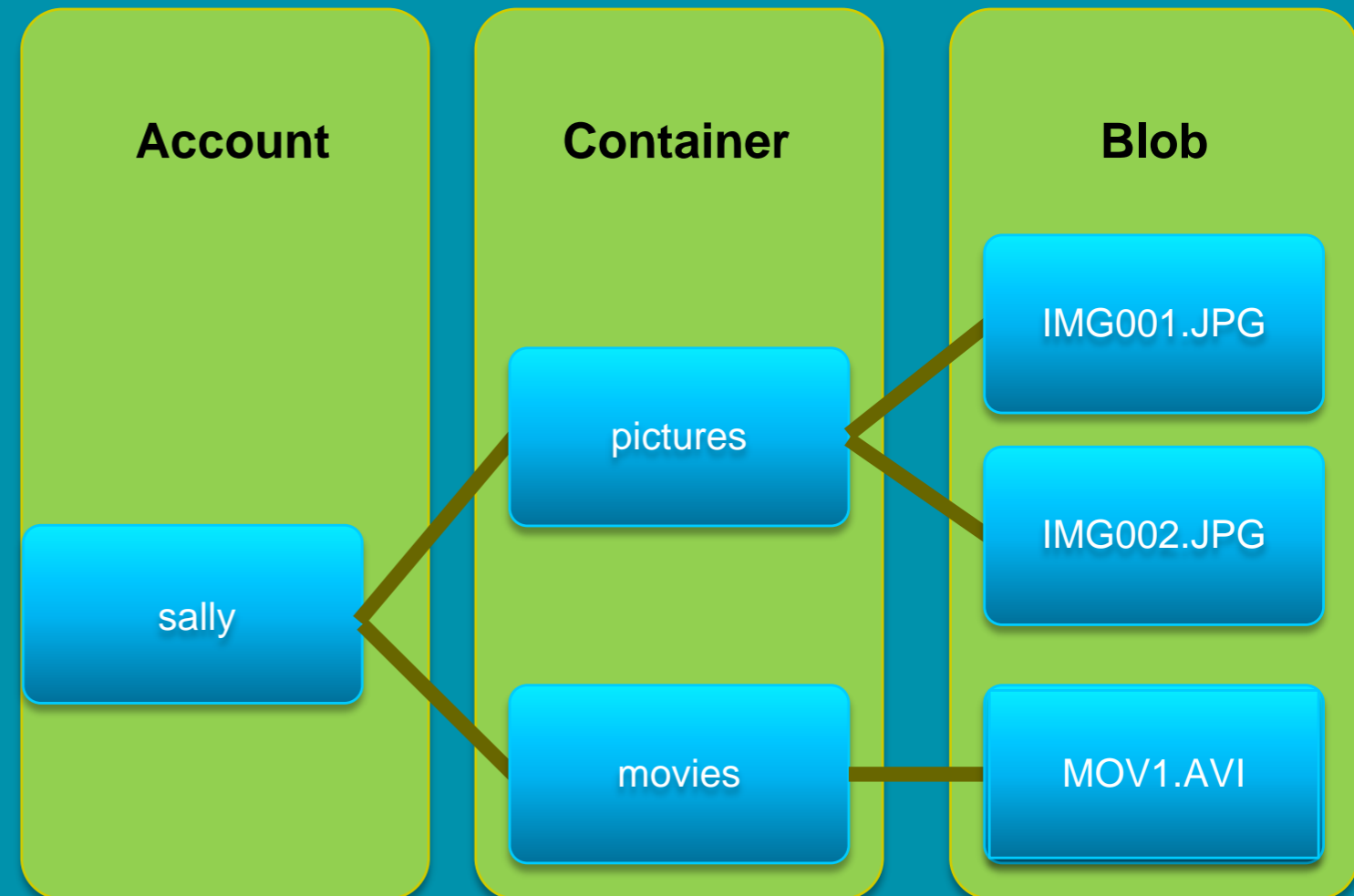
Manage

...

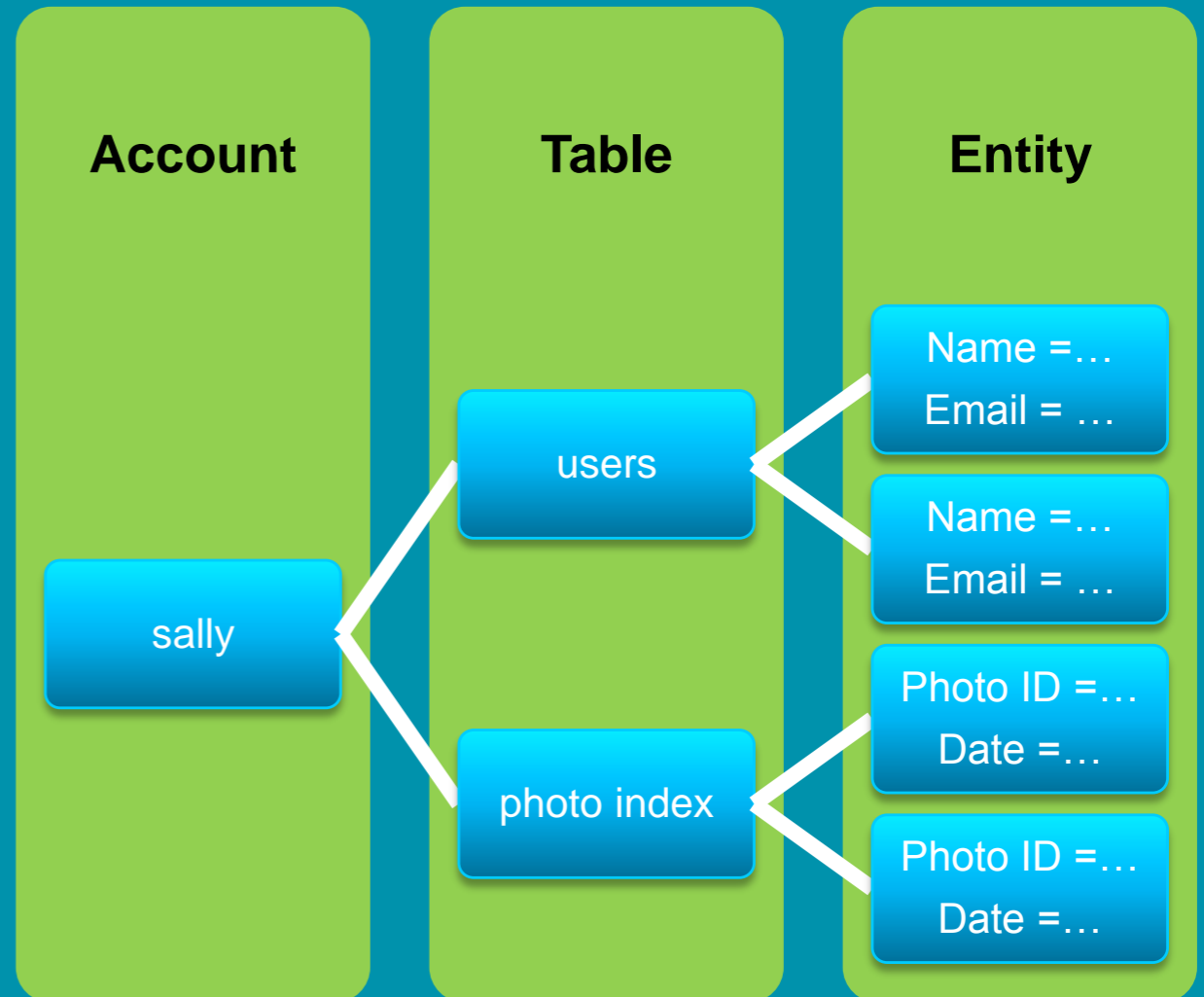
 Windows Azure

- Storage
 - Durable
 - Scalable (capacity and throughput)
 - Highly available
- Rich storage concepts
 - **Blobs** Provide a simple interface for storing named files along with metadata for the file
 - **Tables** Provide structured storage. A Table is a set of entities, which contain a set of properties
 - **Queues** Provide reliable storage and delivery of messages for an application
- Simple and familiar programming interfaces
 - REST (HTTP and HTTPS)
 - .NET accessible

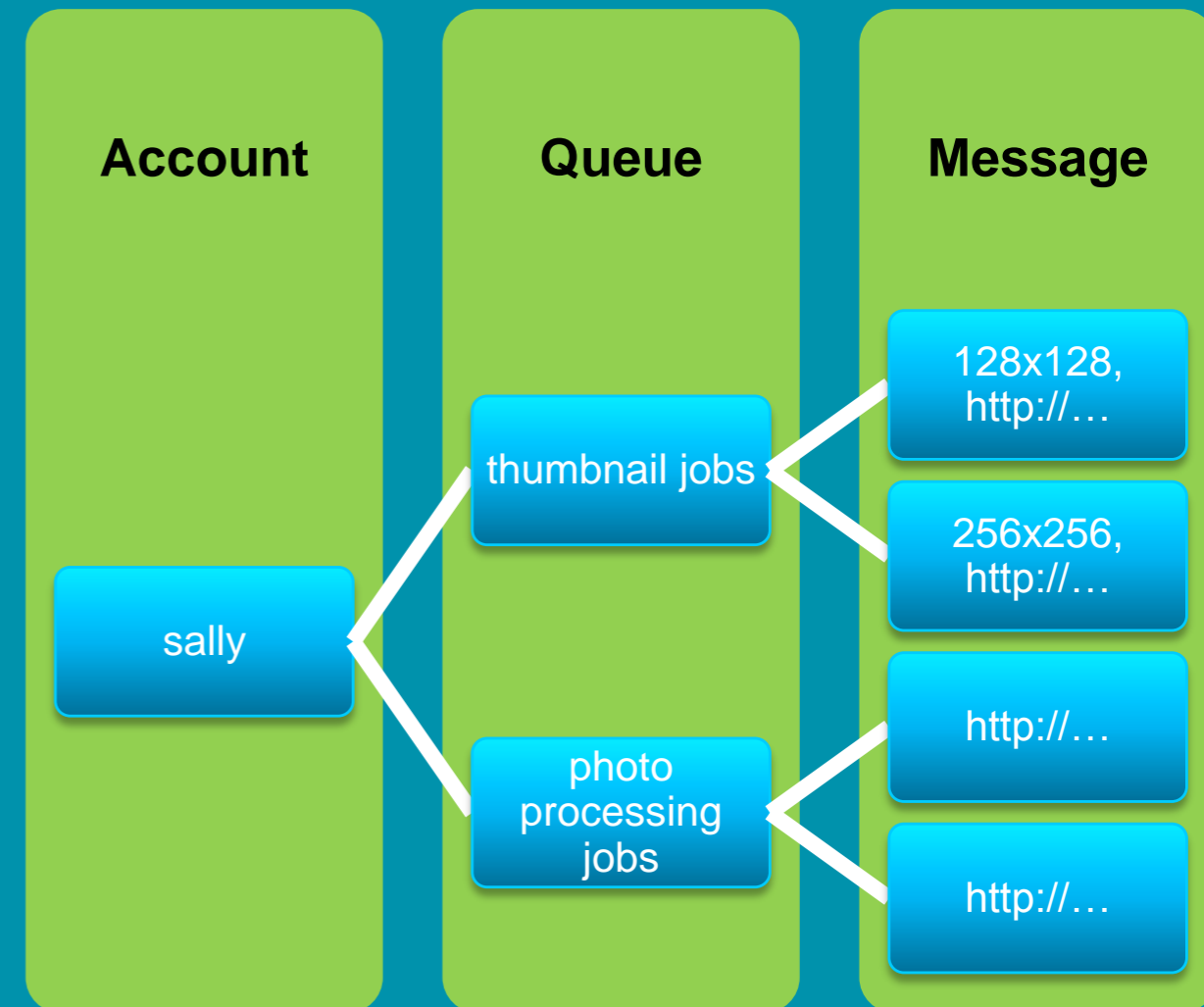
- Store large objects (currently up to 50GB)
- Associate metadata with blob
 - Metadata is <name, value> pairs, up to 8KB per blob
 - Set/Get with or separate from blob data bits
- Standard REST Interface
 - PutBlob
 - GetBlob
 - DeleteBlob



- Provides structured storage
 - Massively scalable tables
 - Billions of entities (rows) and TBs of data
 - Automatically scales across servers as traffic grows
 - Highly Available
 - Anywhere at Anytime access to your data
 - Durable
 - Data is replicated at least 3 times
- Familiar and easy to use programming interfaces
 - ADO.NET Data Services – .NET 3.5 SP1
 - .NET classes and LINQ
 - REST - with any platform or language



- Provide reliable message delivery
 - Simple, asynchronous work dispatch
 - Programming semantics ensure that a message can be processed at least once
- Queues are highly available, durable and performance efficient
- Access is provided via REST



Overview

- Enables PHP developers to take advantage of the Microsoft Cloud Services Platform – Windows Azure.
- Open source project being contributed to Zend Framework (<http://framework.zend.com>)

Features

- PHP classes for Windows Azure Blobs, Tables & Queues (for CRUD operations)
- Helper Classes for HTTP transport, AuthN/AuthZ, REST & Error Management
- Manageability, Instrumentation & Logging support

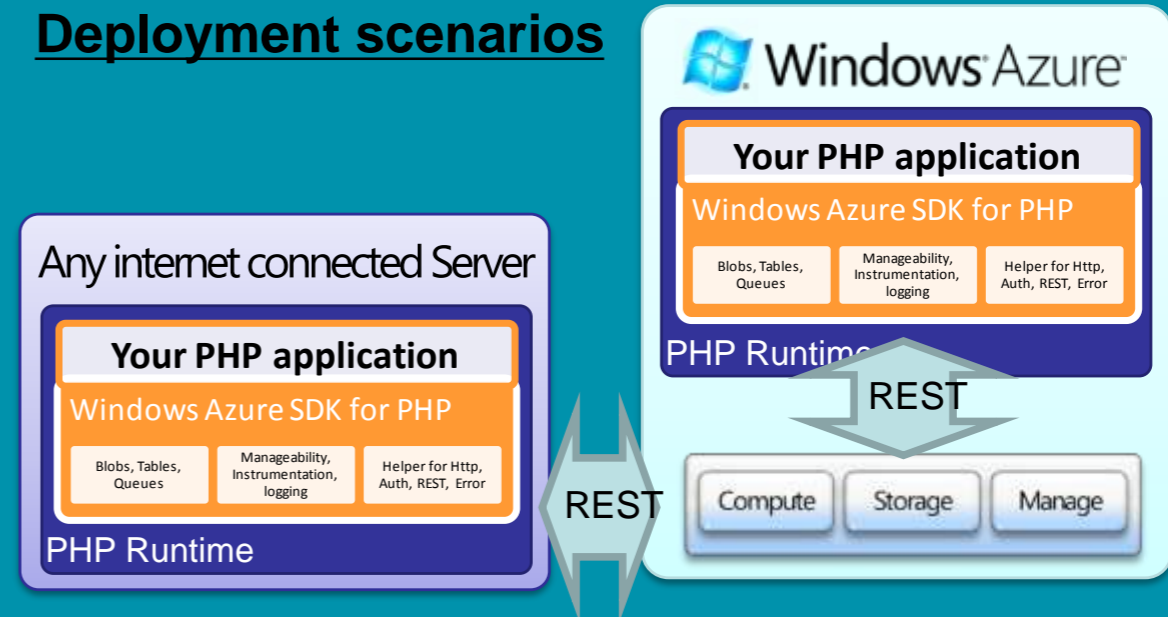
Project site:

- <http://phpazure.codeplex.com/>

Logical architecture



Deployment scenarios



Overview

- Enables Java developers to easily leverage Windows Azure Storage service in their applications
- The Windows Azure SDK for Java gives developers a speed dial to leverage Windows Azure Storage services.
- This SDK is used in the Eclipse Tools for Azure project to develop the Azure Explorer feature.

Features

- Java classes for Windows Azure
- Blobs, Tables & Queues
- Create, Read, Update, Delete operations

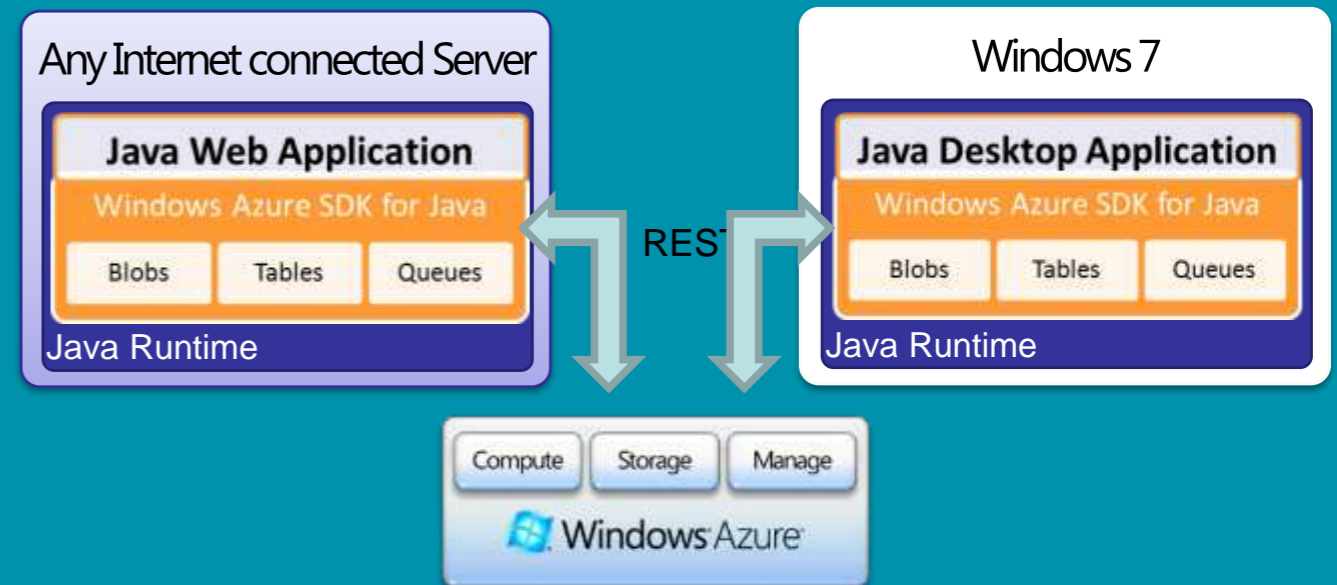
Project site:

- <http://www.windowsazure4j.com>

Logical architecture



Deployment scenarios

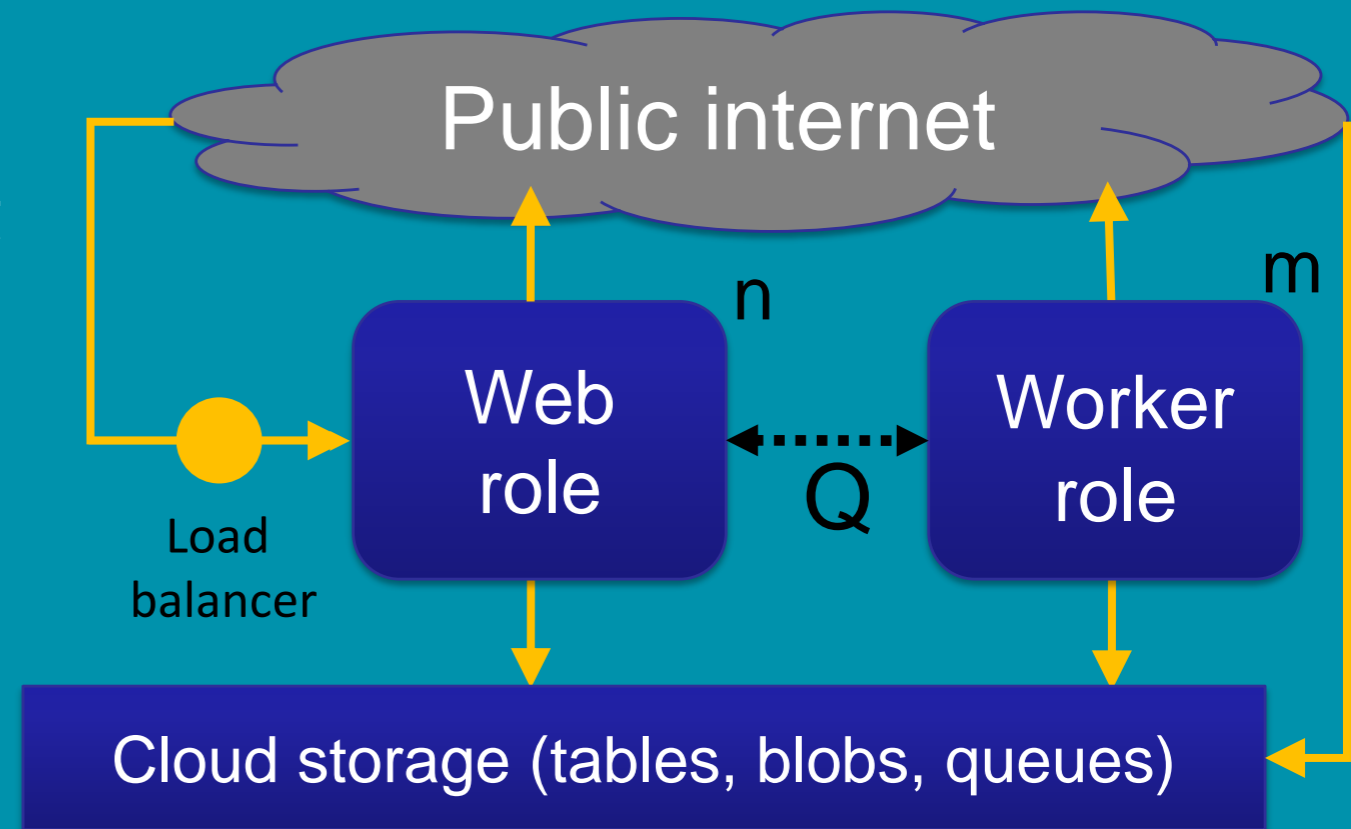


- Web role

- Web farm that handles request from the internet
- Push work items onto storage queue

- Worker role

- Process work item off storage queue



Windows Azure Tooling for Eclipse

- Plug-in leverages PDT framework
- Provides first class PHP web application targeting Microsoft Cloud Platform -Windows Azure
- Includes All the Plumbing abstractions for PHP development (PHP Stack, SQL Support, Windows Azure Storage support)
- Development Sandbox (Simulate cloud on your laptop)
- One Click deployment to Cloud

Eclipse Galileo

PDT 2.1/Eclipse PHP

Java Runtime

Windows Azure Tools for
Eclipse

Windows Azure Explorer

Development and Test environment: Windows 7, Vista, Server 2008

Windows Azure SDK

.NET Framework 3.5 SP1

IIS 7.0 & SQL Server Express

Deployment and runtime environment

Compute

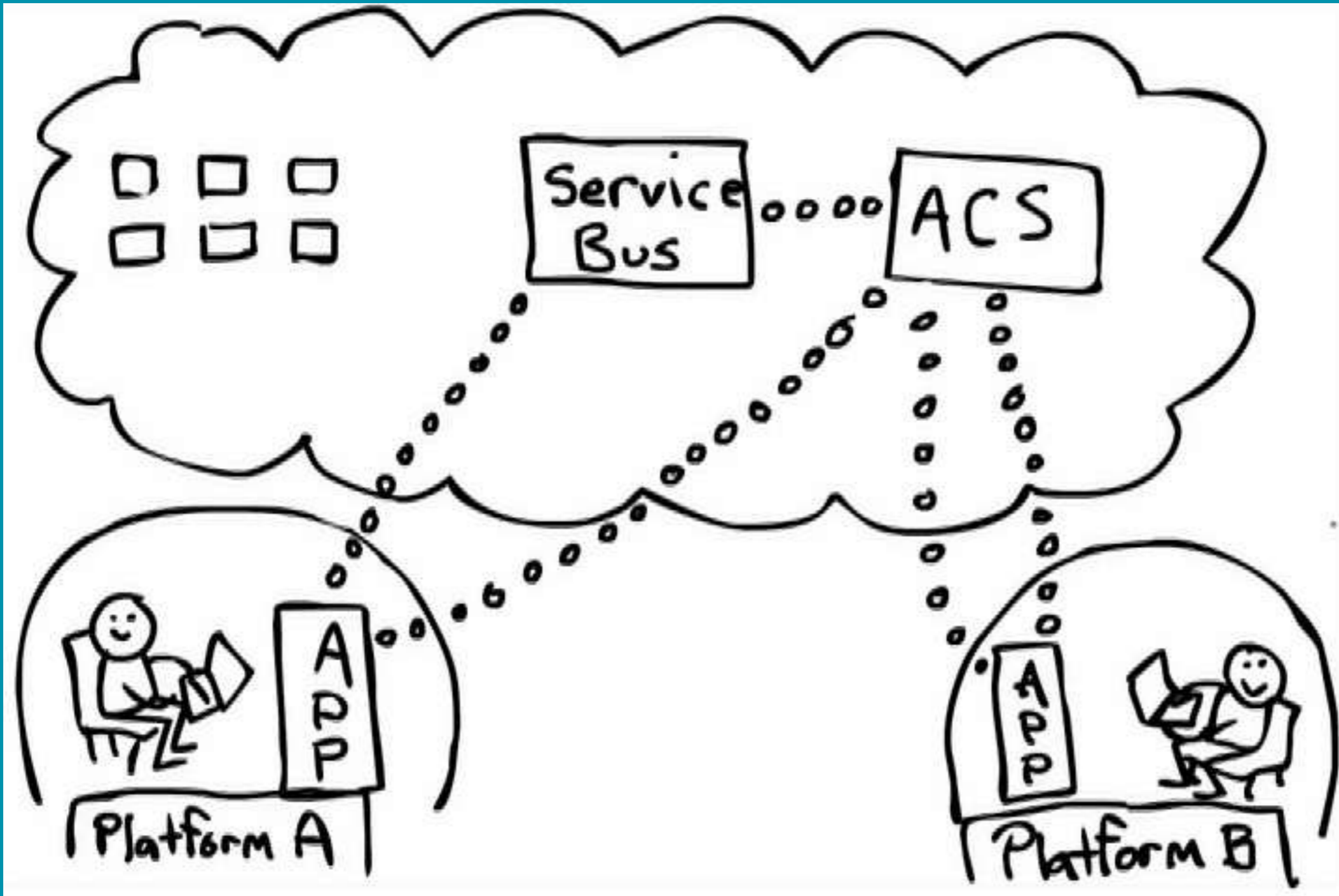
Storage

Manage



Windows Azure

Service Bus and Access Control Service



Using ACS and Service Bus with PHP, Java, and Ruby

Goals of these community-based projects

Enable Java, PHP, and Ruby developers to leverage the Windows Azure AppFabric

- ✓ extend their Java and Ruby applications by using the Microsoft cloud services
- ✓ platform to build, deploy and manage reliable, Internet-scale applications

Open source software development kits (SDKs) including:

- ✓ a set of libraries, tools, Prescriptive guidance
- ✓ sample applications
- ✓ enhance productivity for Java, PHP, and Ruby developers

AppFabric SDK for Java

www.jdotnetservices.com

AppFabric SDK for PHP

www.dotnetservicesphp.com

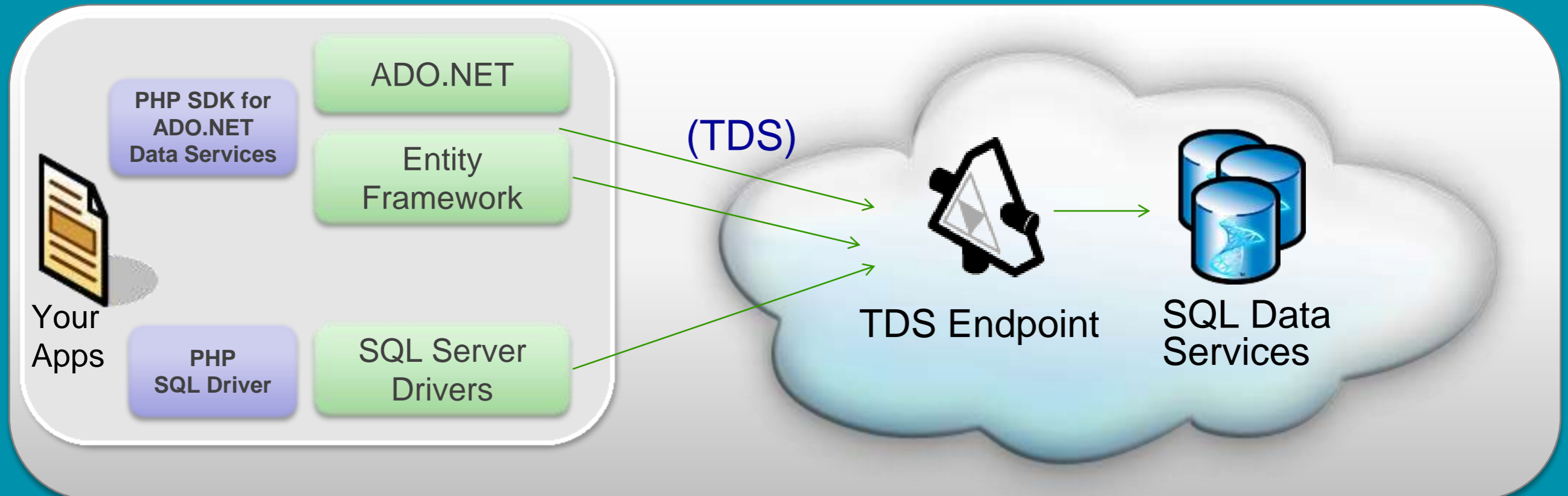


AppFabric SDK for Ruby

www.dotnetservicesruby.com

Contributors: Persistent Systems, Schakra Inc, Thoughtworks, and Microsoft

- Familiar SQL Server relational database model
- Support for existing APIs and tools
- Built for the cloud with high availability and scale
- Interoperable with PHP, Ruby, and Java



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EXPO

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Demo

*Developing for the Windows Azure Platform
in **PHP** using the **Eclipse IDE***

Three New Projects featured:

- 1. ACS and Service Bus SDK for PHP**
- 2. Bing 404 Error Toolkit for PHP**
- 3. SQL CRUD Application Generator**

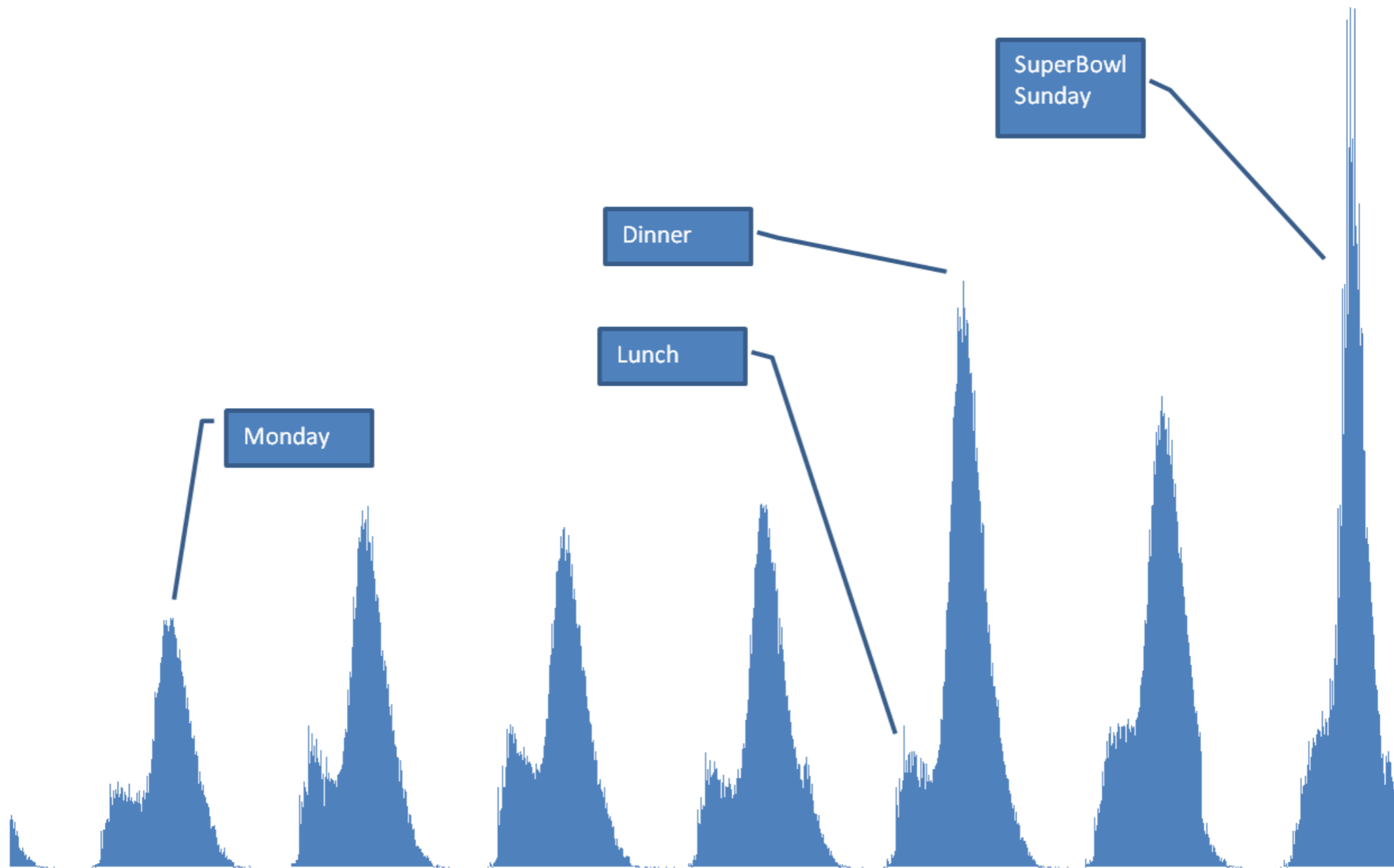
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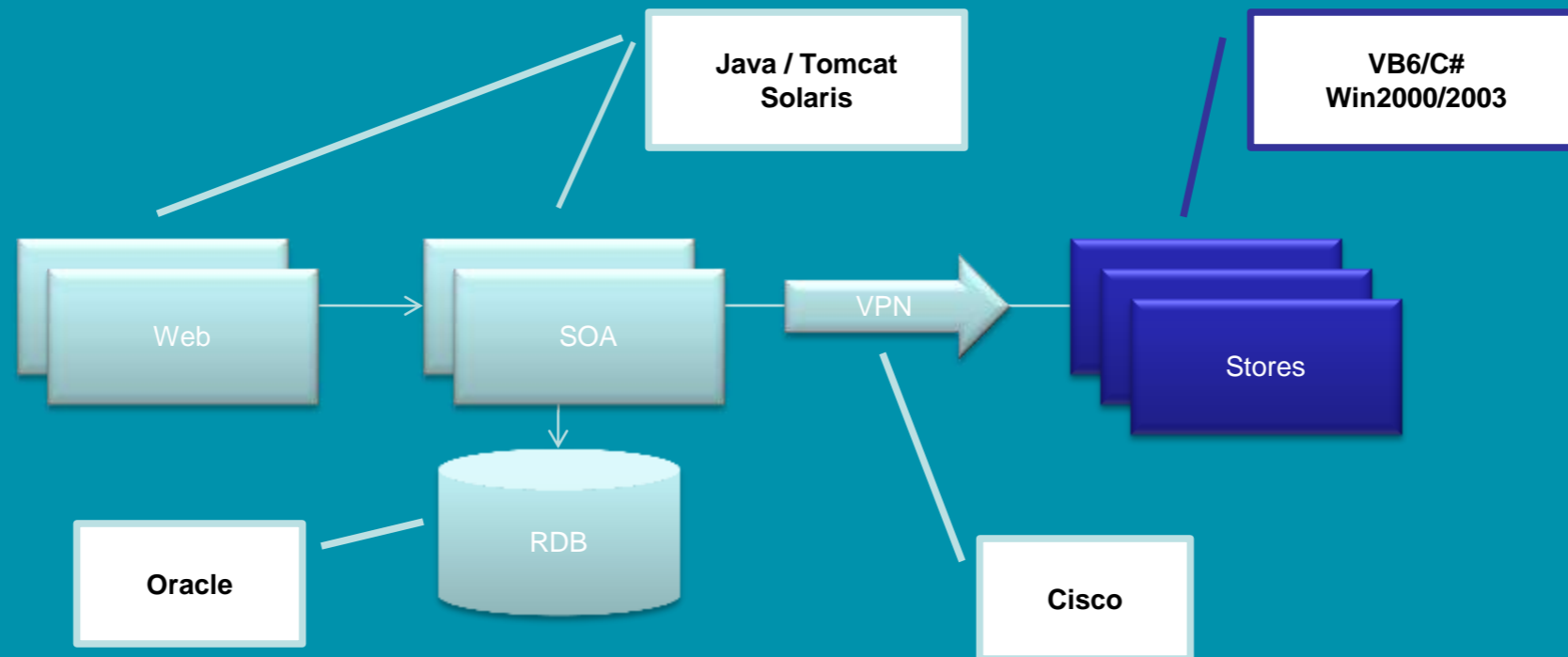


Tim Wise
eCommerce Services Manager
Domino's Pizza LLC

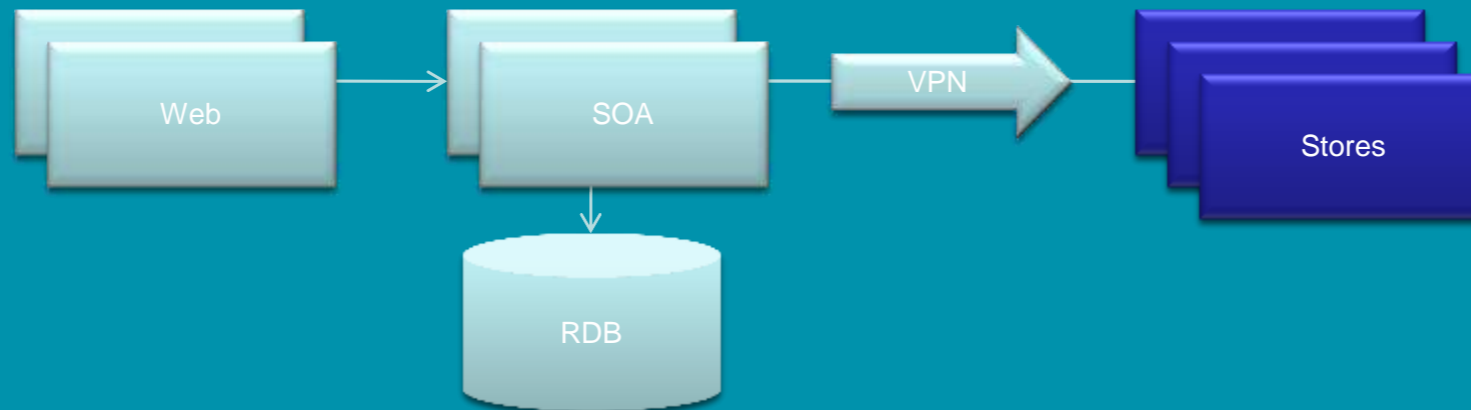
The Problem – Serious Spikes



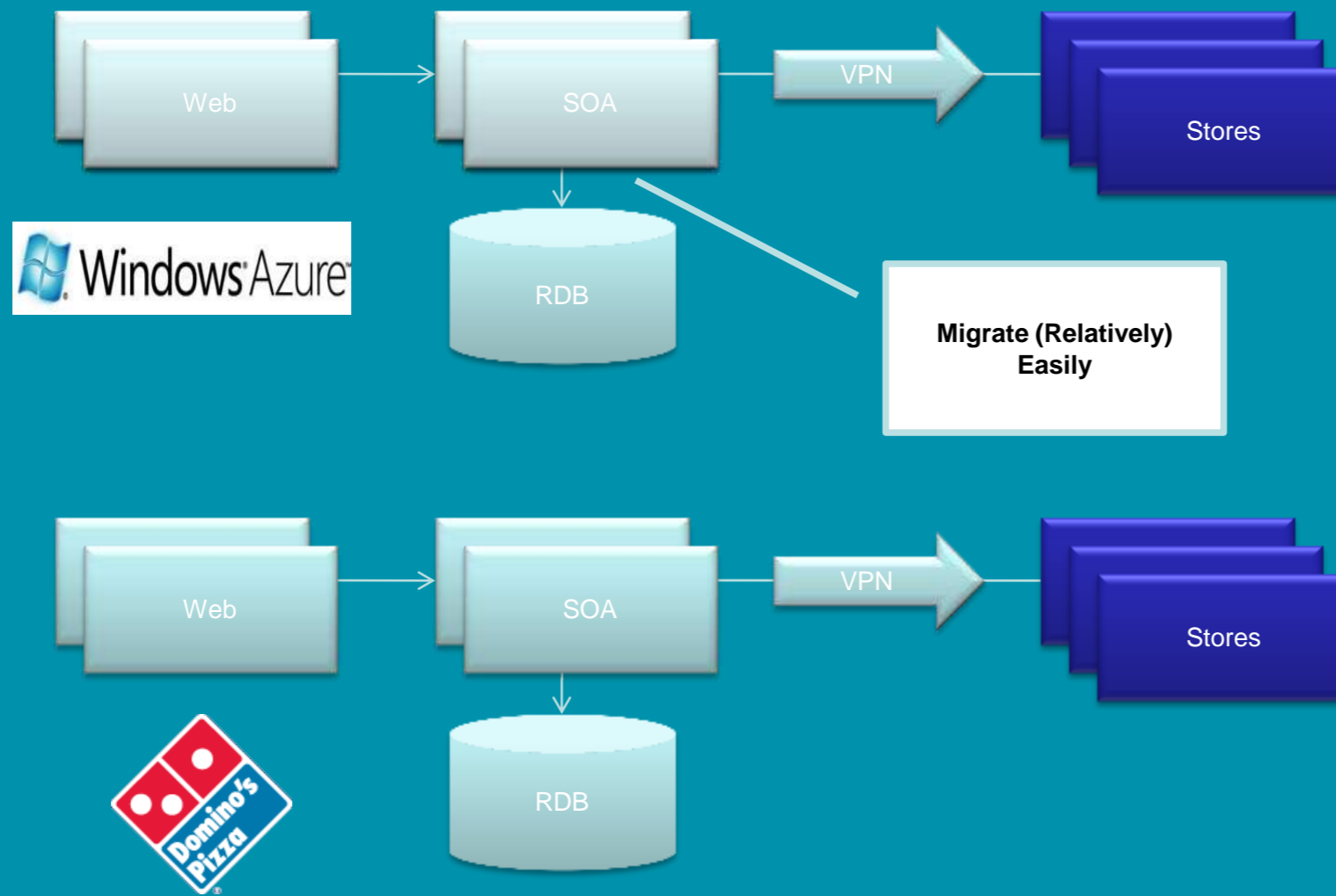
Current Architecture



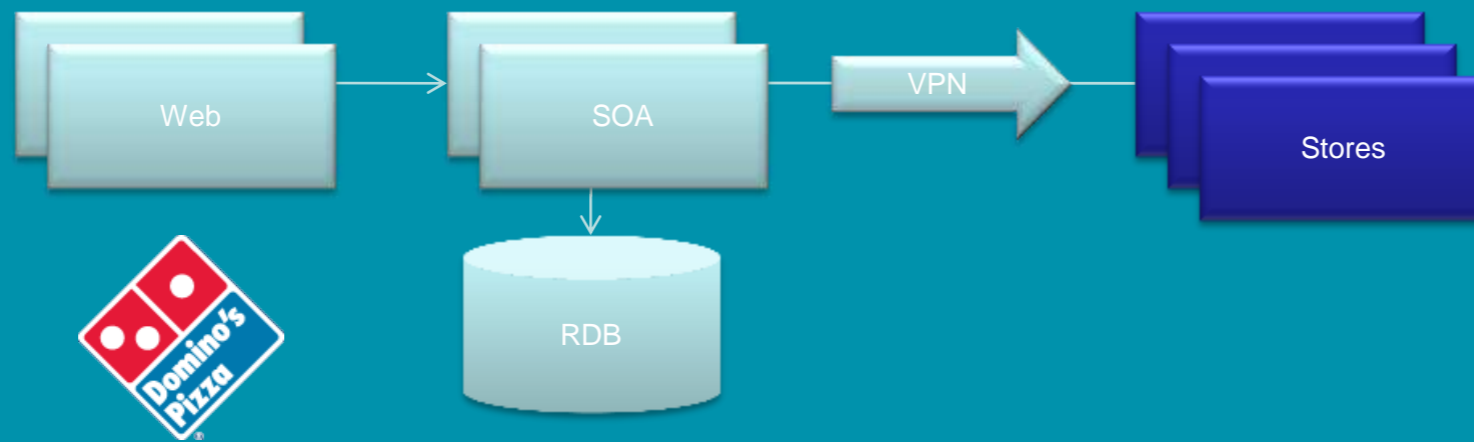
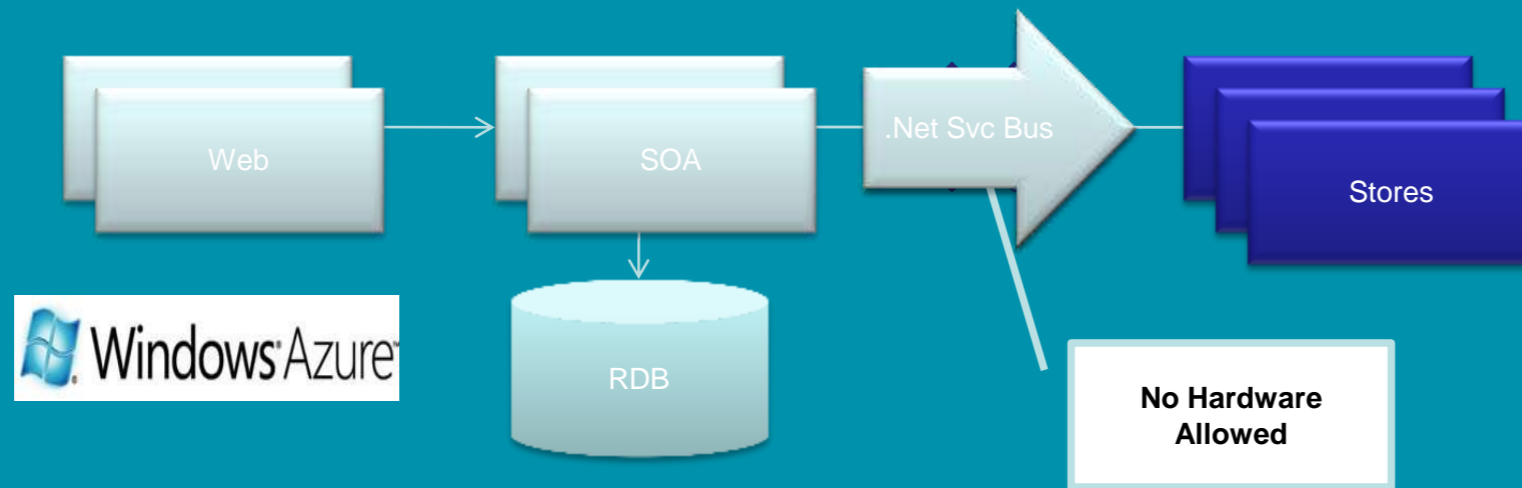
Co-Deployed Architecture

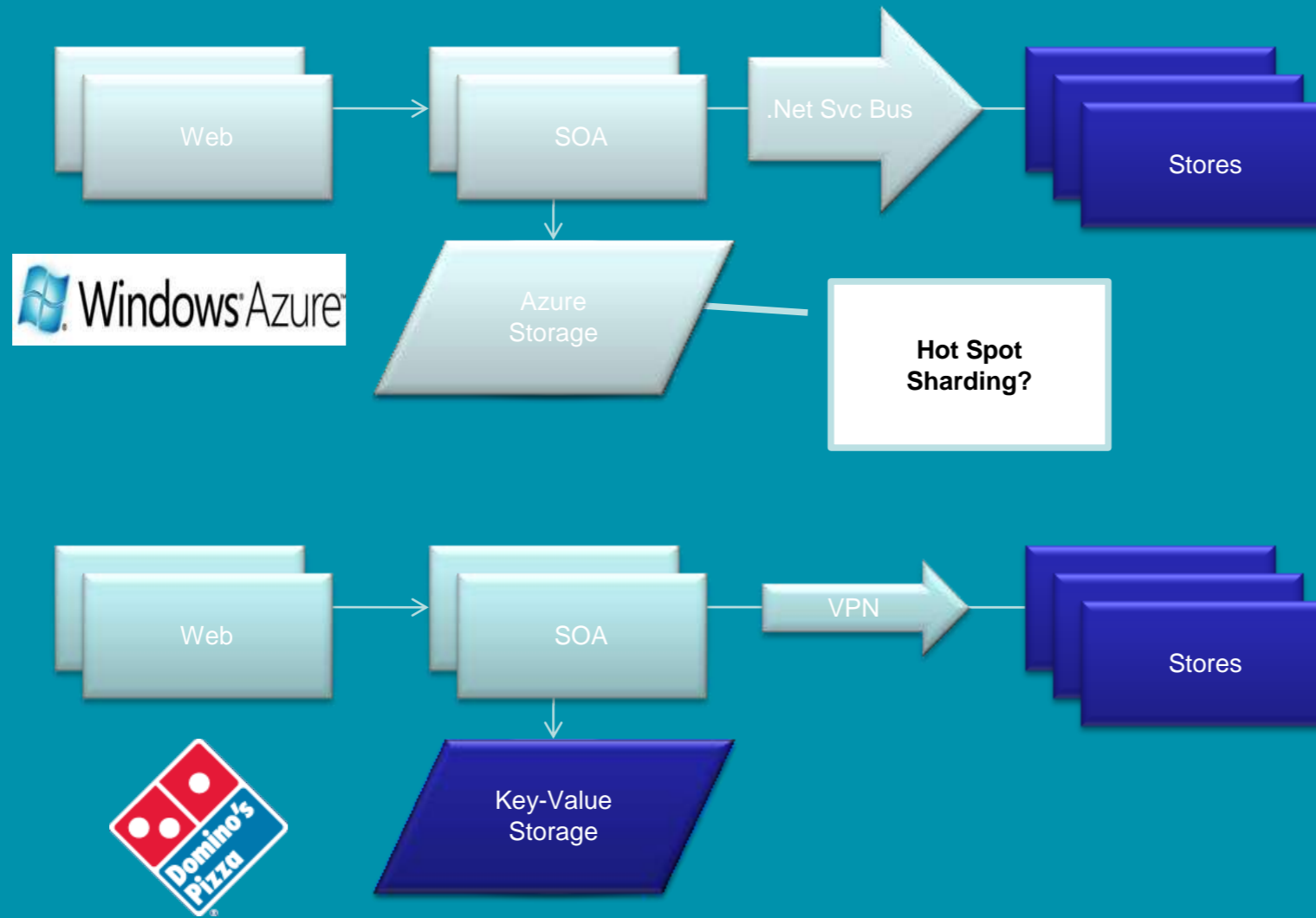


Azure Runs Java

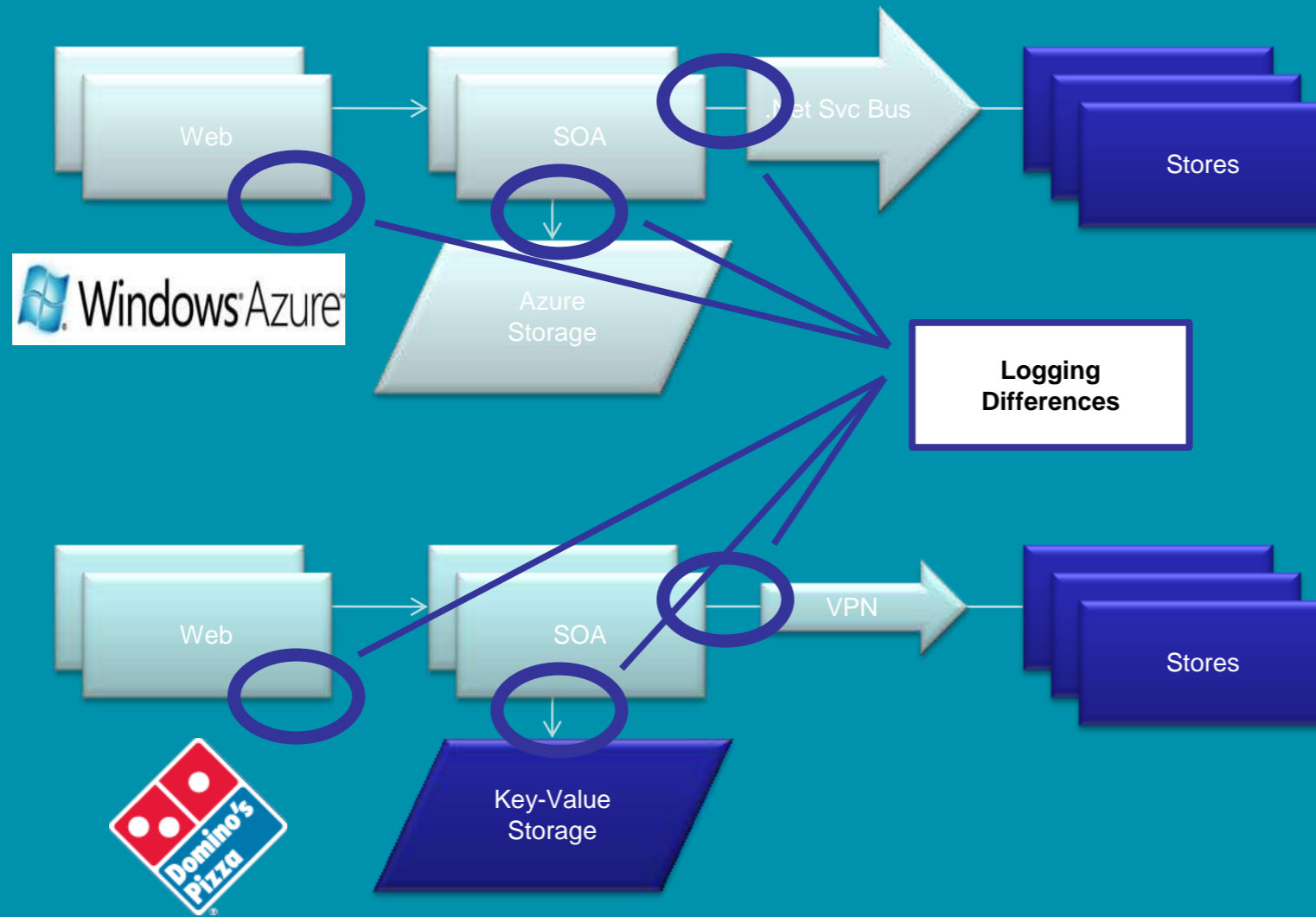


Connection Issues

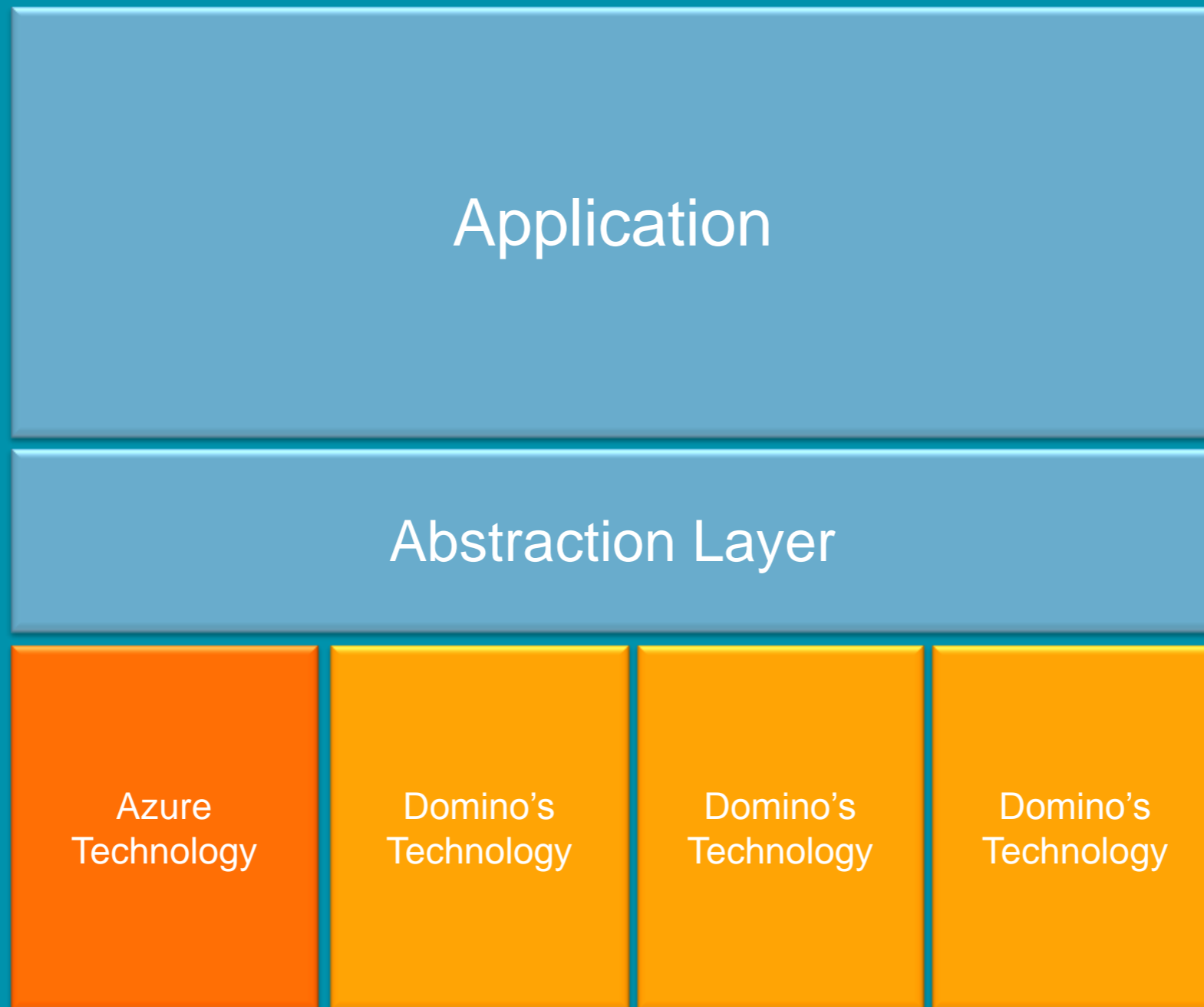




Pain in the Cloud



Solution: Abstraction Layer





- Java runs in Azure.
- .Net Bus provides VPN like connectivity.
- Azure storage technologies are easily abstracted.
- Logging and debugging in the cloud takes special focus.

- Windows Azure Platform is designed for Interoperability from the ground-up
- Windows Azure Tools for Eclipse
- SDKS for
 - Windows Azure Storage in PHP & Java
 - PHP SDK for ADO.NET Data Services
 - PHP, Java, Ruby SDKs for Access Control and Service Bus
- Samples & Tools
 - CRUD Application Wizard for PHP (Targets SQL Server, SQL Azure, and Windows Azure Tables)
 - Bing 404 Error Toolkit for PHP Developers
- Dominos Pizza: Real world Java Application running on Windows Azure
- For more about Windows Azure Interoperability
 - Go to: <http://www.microsoft.com/windowsazure/interop>

■ More Information

- Windows Azure Platform

<http://www.azure.com>
<http://www.microsoft.com/windowsazure/interop>

Interoperability @ Microsoft

<http://www.microsoft.com/interoperability>

- Interoperability Technical Bridges

<http://www.interoperabilitybridges.com>

- Interoperability Team Blog

<http://blogs.msdn.com/interoperability>

■ Contact

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Toolkit for PHP with ADO.NET Data Services

A bridge between PHP and .NET using RESTful services

Overview

- Enables PHP developers to easily use RESTful services to consume data coming from ADO.NET Data Services
- ADO.NET Data Services* is a technology used to expose a wide range of data sources through a RESTful service interface

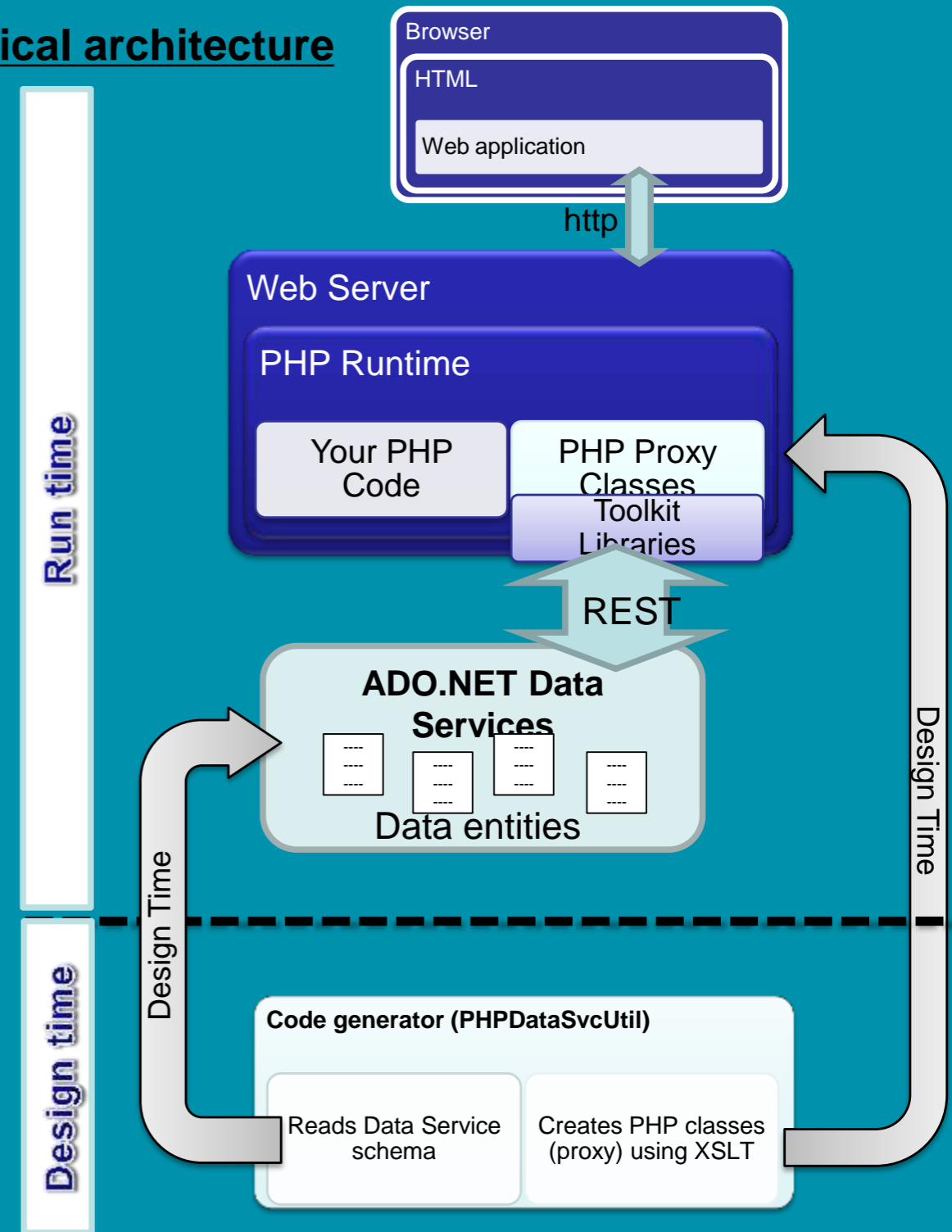
Features

- Code generator (PHPDataSvcUtil)
 - Reads Data Services metadata
 - Creates PHP classes (proxy)
- Rich set of Query & Data manipulations methods
 - easier use of data from the Data Service

Project site:

- phpdataservices.codeplex.com

Logical architecture



* ADO.NET Data Services: formerly known as Project "Astoria".
More info at: <http://msdn.microsoft.com/en-us/data/bb931106.aspx>

Logical architecture

