

Christmas is cloudy this year!



Building for the cloud: integrating an application on Windows Azure

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REALDOLMEN

Who am I?

- Maarten Balliauw
- Antwerp, Belgium
- www.realdolmen.com
- Focus on web & cloud
 - ASP.NET, ASP.NET MVC, PHP, Azure, VSTS, ...
 - MVP ASP.NET
- <http://blog.maartenballiauw.be>
- <http://twitter.com/maartenballiauw>



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Session Contents

- Cloud computing & Windows Azure
- Turtle Door-to-Door
- Online campaign & expectations
- Cost estimation
- Integrating Silverlight and Windows Azure
- Scaling
- Getting started
- Q&A

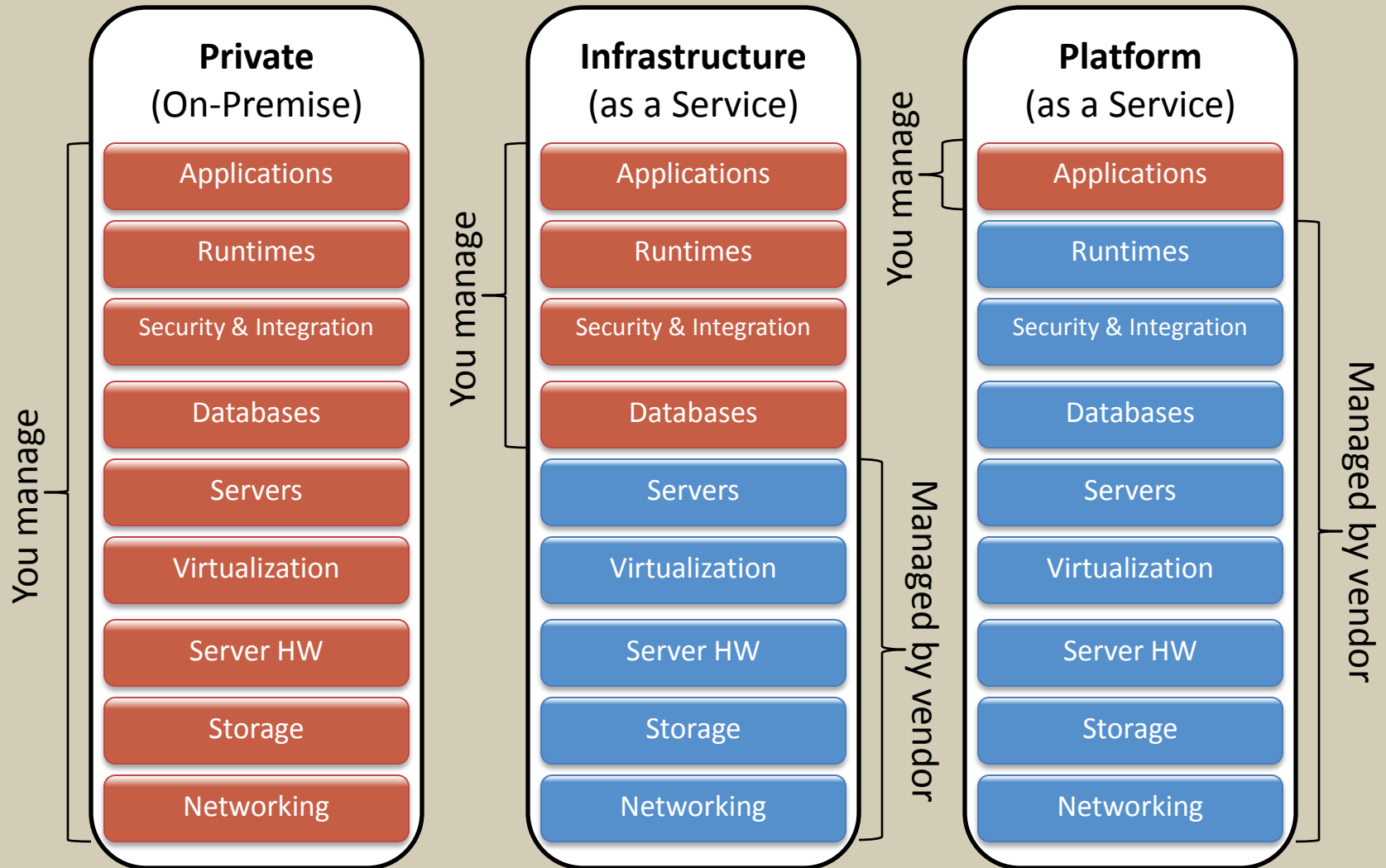
What's that cloud all about?

CLOUD COMPUTING & WINDOWS AZURE

Definition of cloud (NIST)

- On-demand self service
- Standardized access
- Location independant resource pooling
- Rapid elasticity
- Pay per use

Types of cloud services



Nice to meet you, Windows Azure



Windows Azure

- Applications can live here
- Storage can live here



SQL Azure

- "SQL Server in the cloud"



Windows Azure platform AppFabric

- Interconnect private and public cloud
- Regarding authentication and services



Codename "Dallas"

- Use 3rd party data in a cloud model
- Offer your data in a cloud model



Codename "Sydney"

- Something with VPN? Something with connecting to the cloud? Expect more at PDC 2010...

Technology support

- Supported by Microsoft:
 - .NET stack
 - PHP
 - Java
 - Ruby
- Not supported yet working smoothly:
 - MySQL
 - Memcached
 - Jetty (alternative JAVA server)
 - ...



The scenario for today

TURTLE DOOR-TO-DOOR

Turtle Door-to-Door (TDD)



- TDD ships packages around the globe in 48 hours
- TDD wants more consumers to use their service during end-of-year holidays

Turtle Door-to-Door (TDD)



- TDD decided to go for an online campaign
- An e-cards application with webcam support built in Silverlight 4

Application expectations...

- Social media experiment
- Building on word of mouth
- Estimates:
 - Up to 15.000 visitors per day?
 - Peak capacity required during office breaks & evening
- Campaign during November 2010 – January 2011

Where to host?

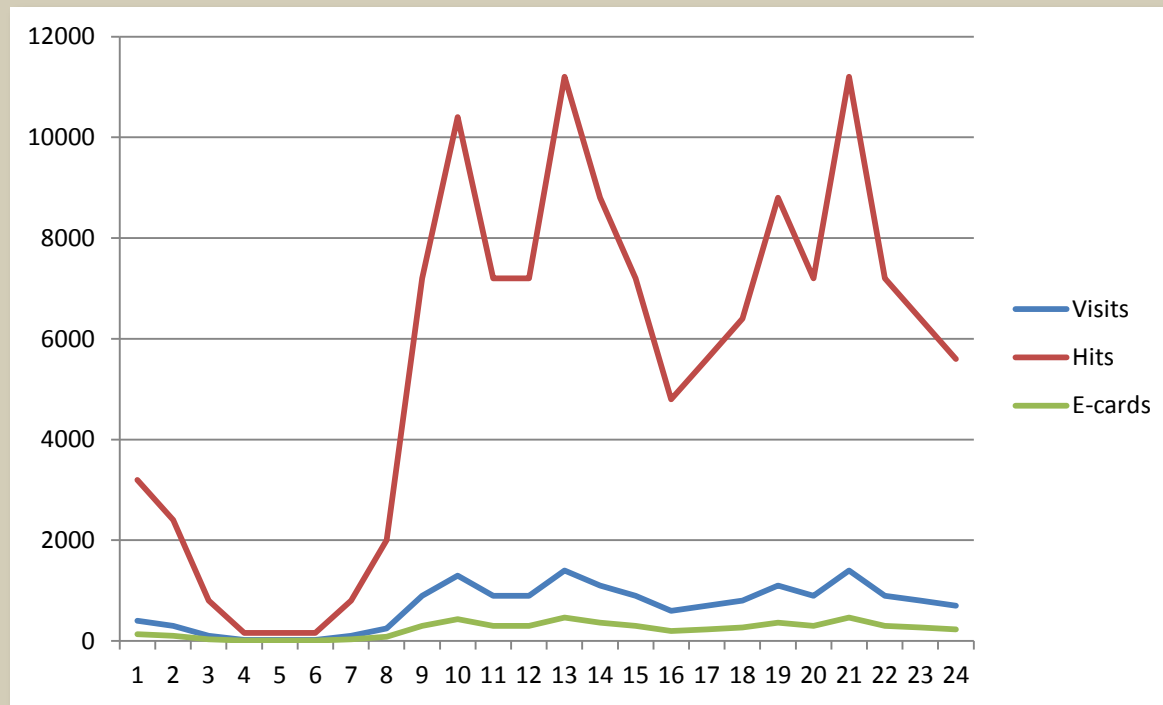
- Unknown & very variable amount of users
- Limited period: 3 months campaign
- Unpredictable peaks expected
- Dedicated servers? Or cloud?

What's the price?

ESTIMATE COSTS

Estimations...

- Estd. 15.000 unique visits per day at peaks
- Estd. 9.000 e-cards per day at peaks



The price tag with regular hosting

- Estimated peak capacity of 6 dedicated servers
- Meaning we have to order 6 dedicated servers...
- 3 month contract is OK (pfew!)
- But still 1.242 EUR per month...

The price tag with Windows Azure

- Based on estimation
- Based on using a smart scaling mechanism
 - Normal amount of instances is 2
 - 4 instances during office hours (09:00 - 17:00)
 - 6 instances during evening (20:00 - 23:00)

The price tag with Windows Azure

	# instances	# storage (MB)	# bandwidth (MB)
	3 (average)	1.075 MB	1.900 MB
Price per day:	6,99 EUR		
Price per month:	209,70 EUR	3,46 EUR	6,24 EUR
Price for campaign:	629,10 EUR	10,38 EUR	18,72 EUR
Total per month:	219,40 EUR	<i>(traditional hosting would be 1.242 EUR)</i>	
Total for campaign:	658,20 EUR	<i>(traditional hosting would be 3.726 EUR)</i>	

Windows Azure

AIMING FOR THE CLOUD

TDD Christmas Cards architecture

Silverlight

- Keep as-is

ASP.NET host

- Host on Windows Azure
- Implement scaling logic

Storage

- Replace with blob storage

Migrating TDD to the cloud

DEMO

Let's scale **smart!**

REDUCING COSTS

Scaling

- Easy on Windows Azure!

```
<Instances count="2" />
```

- Would be awesome to have this:

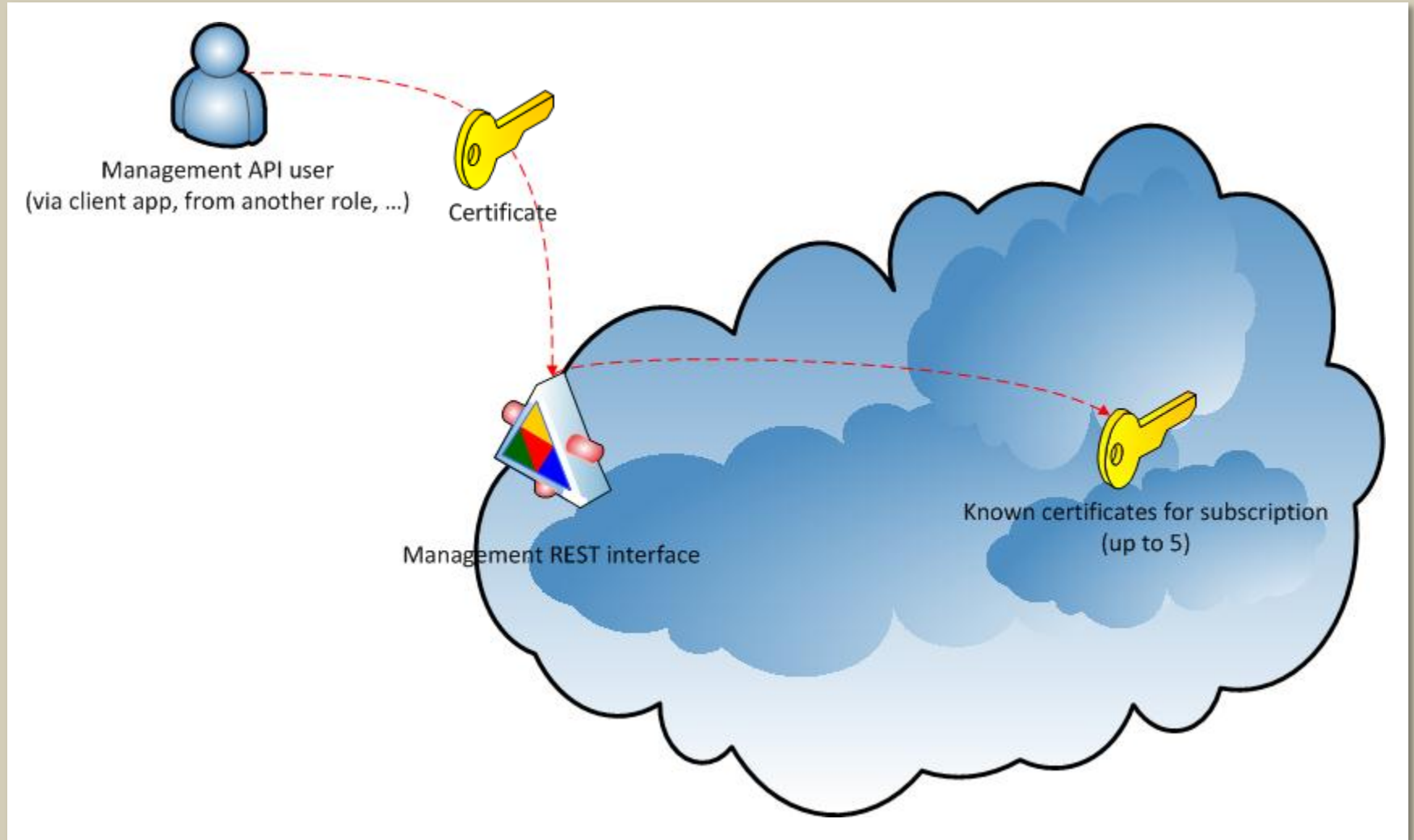
```
<Instances minInstances="3" maxInstances="10" />
```

- Not possible!
 - “When” should it scale?
 - “How” should it scale?
 - “Who” / “What” is responsible for scaling?

Management API

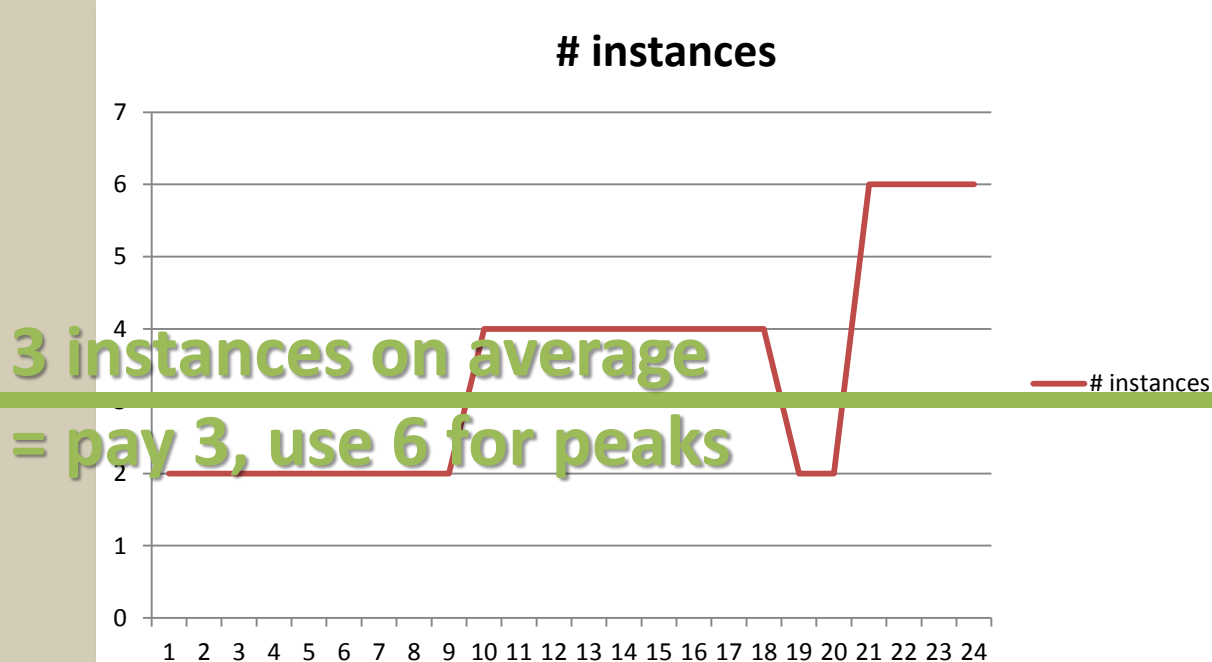
- Trough `Microsoft.Samples.WindowsAzure.Management.` *
- What it provides...
 - X509 client certificates for authentication
 - View, create, delete, swap, ... deployments
 - Edit configuration (and change instance count)
 - List and view properties for hosted services, storage accounts and affinity groups
- Also exists as
 - PowerShell scripts
 - Msbuild tasks (CI & auto-deploy anyone?)

Using the management API



TDD Scaling

- Normal amount of instances is 2
- 4 instances during office hours (09:00 - 17:00)
- 6 instances during evening (20:00 - 23:00)




Implement auto-scaling

DEMO

Deployment

DEMO



When the box is gray,
you're okay.

When the box is blue
a bill is due.

works on
my
cloud



It should!

**DOES IT ALL WORK IN
PRODUCTION?**

So TDD uses Windows Azure. What about **me**?

GETTING STARTED

3 simple steps...

1. Get an account
2. Get the tools
3. Play, learn, develop, deploy

Get an account

- You need a Windows Live ID (WLID)
 - Create one on <https://signup.live.com>
- Create an account on Microsoft Online Services Portal (MOCP) and buy Azure Subscription
 - <http://mocp.microsoftonline.com>
- There is an Introductory Special
 - (= Limited Amount at **No Charge**)
- Create your Azure Project
 - <https://windows.azure.com>

Windows Azure Platform Partner Offers

	Introductory Special - Partner	MSDN Special	Development Accelerator Core - Partner	Development Accelerator Extended - Partner	Consumption - Partner
Windows Azure					
Compute	25 hours (small compute instance)	750 hours (small compute instance)	750 hours (small compute instance)	750 hours (small compute instance)	€ 0,0809 per hour (small compute instance)
Storage	500 MBs of storage	10 GBs of storage			€ 0,1064 per GB stored per month
Storage transactions	10,000 storage transactions				€ 0,0071 per 10,000 storage transactions
SQL Azure					
Web databases	1 Web Edition ≤ 1 GB RDB				€ 6,7304 per database per month ≤ 1 GB RDB
Business databases	N/A				€ 67,367 per database per month ≤ 10 GB RDB
AppFabric					
Access Control transactions	100,000 Access Control transactions				€ 1,3408 per 100,000 transactions*
Service Bus connections	2 Service Bus connections			1 pack of 5 Service Bus connections	€ 2,6883 per connection
Data Transfers					
North America and Europe	.5 GB in / .5 GB out	7 GB in / 14 GB out	7 GB in / 14 GB out	7 GB in / 14 GB out	€ 0,071 per GB in / € 0,1064 per GB out
	No Charge	No Charge for MSDN members	€ 40,39/Month	€ 74,08/Month	Pay as you go

- Introductory Special**
- 25 hours (small instance)
 - 500 MB storage
 - 1 GB SQL Azure
 - 2 service bus connections
 - .5 GB data transfer
 - Free!

Get the tools

Upgrade your Internet experience

United States | Change | All Microsoft Sites

Search Microsoft.com

bing Web

Account | Support

Products	Resources	Case Studies	Offers	Developers	Partners
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The [Windows Azure platform](#) offers a flexible, familiar environment for developers to create cloud applications and services. With Windows Azure, you can shorten your time to market and adapt as demand for your service grows.

Windows Azure offers a platform that is easily implemented alongside your current environment.

- **Windows Azure**: operating system as an online service
- **Microsoft SQL Azure**: fully relational cloud database solution
- **Windows Azure platform AppFabric**: makes it simpler to connect cloud services and on-premises applications

ATTENTION CTP PARTICIPANTS: If you have a billing location in one of our initial launch countries, beginning February 1, 2010 any Windows Azure CTP account(s) not already converted to a commercial subscription will be deactivated. To avoid interruption of service you must upgrade your CTP account to a commercial subscription by visiting our [offers](#) page to get an account.

For further details, please view our [Commercial Rollout plan](#).

Get Started Now

The Windows Azure platform gives you:

- A **familiar** development experience
- On-demand **scalability**
- **Reduced time-to-market** for your applications

[Get Tools & SDK](#)

News

[Green EU citizens are being encouraged to contribute their own environmental observations to a website.](#)

[Early Azure adopter sees financial benefits of cloud computing](#)

[Microsoft Pioneers Cloud Framework As A Service](#)

[All News](#)

Whitepapers

[Introducing the Windows Azure platform](#)

[Introducing Windows Azure](#)

[Windows Azure and ISVs - A Guide for Decision Makers](#)

Videos

[Windows Azure Overview](#)

[Windows Azure Storage Overview](#)

Events

Meet Microsoft leaders, experts, customers and partners who are already working with the Windows Azure platform at one of the upcoming live events:

[U.S. Cloud Computing Event](#)

www.azure.com

You're a PHP guy/girl?

- Do the previous
- Get the Eclipse tools at <http://windowsazure4e.org>



Play, learn, develop, deploy

- Huge amount of training resources
 - 52 training videos on msdev.com
 - <http://www.msdev.com/Directory/SearchResults.aspx?keyword=azure>
 - 28 videos on msdn.microsoft.com
 - [http://msdn.microsoft.com/nl-be/windowsazure/ff798080\(en-us\).aspx](http://msdn.microsoft.com/nl-be/windowsazure/ff798080(en-us).aspx)
- Watch weekly Cloud Cover show on channel9
 - Best practices, tips & tricks from the field ...
 - <http://channel9.msdn.com/shows/Cloud+Cover/>
- Download Windows Azure Training Kit
 - Detailed walkthroughs in many development scenarios
 - <http://www.microsoft.com/downloads/details.aspx?FamilyID=413e88f8-5966-4a83-b309-53b7b77edf78&displaylang=en>

My head is filled with cloud now!

WHAT TO REMEMBER?

What to remember

- Windows Azure
 - Windows Azure
 - SQL Azure
 - Windows Azure platform AppFabric
- Perfect fit for peak scenario's & short campaigns
 - And for many more situations!
- Implement scaling! It will save your bill!
- Get started on www.azure.com

Q&A

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THANK YOU!



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