



**DOTNETNUKE™**  
**CONNECTIONS**

# ▶ Creating a New DotNetNuke install in the cloud

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# ▶ Agenda

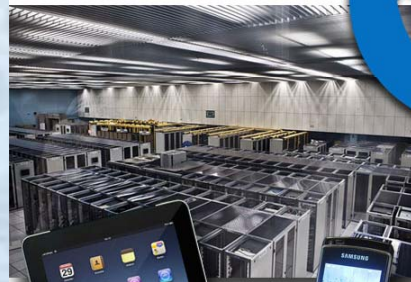
- Why Cloud Computing?
- Popular Cloud Services
- DotNetNuke in the Cloud
  - Current state of play
  - What you can do and can't do
- Creating a new DotNetNuke install
- Comparing with other hosting solutions

# ▶ What is the cloud?

- Computing resources shared across the internet and available on demand
- For websites : storage, processing, database management
- Shared resources/applications/storage (Google Docs, Windows Live)
- VM instances in the cloud (OS in a box)

# Why Cloud Computing?

- Flexible pricing
- Choice of commitment period
- Logical progression back to where computing started
  - Centralised computing, remote terminals



# ▶ Popular Cloud Offerings

- Windows Azure
  - Hosted Web Application Platform
  - Sql Azure
  - App Fabric
- Amazon
  - Elastic Compute Cloud (EC2) + Elastic Block Store (EBS)
  - Elastic Load Balancing
  - Simple Storage Service (S3)

# ▶ Windows Azure - Overview

- Websites are run with 'Web Role'
- Web services are run with 'Worker Role'
- Applications are packaged and uploaded to Azure.
  - Includes config file for application
  - Web resources (images, pages, files)
- Sql Azure - flavour of Sql Server used in Azure
- Azure VM Roles coming 'by end of Calendar year 2010'

# ▶ Windows Azure and DotNetNuke

- Cannot run DNN in a Web Role
  - DNN needs to create/modify files, Web Role permissions do not allow
- Cannot create DNN database in Sql Azure
  - More restricted Sql Command set
  - Some permission scripts, table create commands

## ▶ Windows Azure and DNN

- Can't use non-Windows based solutions (Google App Engine)
- Azure is changing quickly, still a young platform - but currently not much use for DNN platform

# ▶ Windows Azure and DotNetNuke

- Sql Azure:
  - Converter for Sql Databases  
<http://sqlazuremw.codeplex.com/>  
Works on installed database, not on script
- Windows Azure
  - Hosted Worker Role
  - Loads site from VHD and wraps it
  - Dynamically creates config settings  
<http://code.msdn.microsoft.com/hwcworker>

# ▶ Windows Azure and DotNetNuke - Now

- Possible, but technically difficult
- Pricing is prohibitive
- Difficult to make a strong business case
- Possible to just host Db on Sql Azure, but latency + cost are an issue
- Azure Storage Services for content storage

# ▶ Windows Azure and DotNetNuke - Future

- DotNetNuke 6.0 Sql Script will be Azure compliant
- DotNetNuke Corp are working with Microsoft on Azure compatibility
- Azure VM Roles will give full Virtual Server / Sql Express / IIS
- Azure VM Pricing not yet known

## ▶ DotNetNuke Cloud Solutions Available Today

- DotNetNuke Hosting Companies are moving towards Cloud Computing
- PremiumDNN.com - cloud based integrated DNN hosting environment
- PowerDNN - 'private clouds' - advanced, flexible web farm.
- Suitable for people seeking 'Full Service' hosting

# ▶ Amazon Web Services (AWS)

- Storage
  - Simple Storage Service (S3)
  - Elastic Block Store (EBS)
- CDN
  - Cloudfront
- Computing
  - Elastic Compute Cloud (EC2)
  - Elastic Load Balancing
- Database
  - Simple Database / Relational Database Service

# ▶ Amazon Web Services and DotNetNuke

- S3 Storage for storing static content
- Some DNN modules have built-in S3 support
- Cloudfront used with S3 as a CDN
- Can build and deploy Amazon EC2 instances as DotNetNuke installs
- EC2 Sql Server Instances for database storage

# ▶ How to use DotNetNuke in the cloud today

- For Offsite (and off-website) storage
  - S3/Azure Storage for resource storage (images, video, etc)
  - S3/Azure Storage for backups and other administrative storage
- For hosted databases
- For hosted VM setups
  - EC2 (now) Azure VM (future)

# ▶ Creating DotNetNuke install on Amazon EC2

- AMI :Amazon Machine Image
  - Variety of Memory/CPU/Disk combinations
- Windows 2008 VM with Sql Server Express and IIS 7.5
- Windows Sql Server 2005 Express or Standard, Windows Sql Server 2008
- 'High-CPU Medium' Instance minimum setup for DNN site
- Can go up to 23Gb mem, 1.6Tb storage

# ▶ Creating a DotNetNuke install on Amazon EC2

1. Create AWS account - existing Amazon accounts work OK
2. Create EC2 instance
3. Obtain Administrator Password
4. Connect via RDP
5. Upload DNN install package
6. Enable and start Sql Services

## ▶ Creating a DotNetNuke install on Amazon EC2

7. Extract DNN installation to file location
8. Configure "Network Service" user to have full control over folder
9. Create IIS website, configure Application Pool
10. Run DotNetNuke install wizard using the public DNS address provided

# ▶ Creating a DotNetNuke install on Amazon EC2

11. Setup your DNS settings to use elastic IP Address provided
12. Upload skins, modules
13. Start using the site

Total time taken should be about 1 hour from start to finish.

# ▶ Creating a DotNetNuke install on Amazon EC2



# ▶ Creating a DotNetNuke install on Amazon EC2

- Things to watch out for:
  - Use a hosted SMTP server for your email, Gmail works well
  - Use Elastic IP's so DNS doesn't have to update if you have to restore to a new server
  - EC2 instances can die and be unrecoverable (no reset button). The instance should be built on EBS, and should be backed up externally.
  - Unlike traditional hosting, can't ask for a reboot of the machine.

# AWS Dashboard

Amazon S3 | **Amazon EC2** | Amazon VPC | Amazon Elastic MapReduce | Amazon CloudFront | Amazon RDS

## Navigation

Region: US East

### > EC2 Dashboard

#### INSTANCES

> **Instances**

> Spot Requests

#### IMAGES

> **AMIs**

> Bundle Tasks

#### ELASTIC BLOCK STORE

> **Volumes**

> Snapshots

#### NETWORKING & SECURITY

> **Elastic IPs**

> Security Groups

> Placement Groups

> Load Balancers

> Key Pairs

## My Instances

Launch Instance

Instance Actions

Reserved Instances

Show/Hide

Refresh

Help

Viewing: All Instances

All Instance Types

1 to 1 of 1 Instances

	Name	Instance	AMI ID	Root Device	Type	Status	Lifecycle	Security Groups	Key Pair Name	Mon
<input checked="" type="checkbox"/>		i-b7db8bdd	ami-c5e40dac	ebs	m1.small	running	normal	dnnTest	amazonec2keypair	disal

1 EC2 Instance selected

EC2 Instance: i-b7db8bdd

Description

Monitoring

Tags

AMI ID:	ami-c5e40dac	Zone:	us-east-1b
Security Groups:	dnnTest	Type:	m1.small
Status:	running	Owner:	381486546162

## ▶ Building a Load Balanced Web farm

- Use DotNetNuke professional to gain access to web farm caching provider
- EC2 instances are used in the Web farm
- Best to use separate, hosted Sql Server instance on EC2

# ▶ Building a Load Balanced Webfarm

- Use Elastic Load Balancing (ELB) to distribute traffic amongst EC2 instances
- Can use Auto-Scaling to increase usage up and down according to demand - saving cost
- Command line tools and API to manage scaling
- Load balancing separate cost to instances

# ▶ Cloud vs Shared Hosting

- Performance : Amazon has high uptime, fast connections, ability to choose location internationally
- Support : tools, information available, one-on-one support extra
- Tools : operating system and nothing else
- Missing : No DNS, no email, no website building tools

# ▶ Cloud vs Shared Hosting

- Shared hosting : individual support tickets is normal
- Shared hosting : Control Panels for configuration of Domain names, DNS management, email, website building tools (ie, pre-installed DNN)
- Shared hosting : No automatic scaling

# ▶ Amazon EC2 Costs

- Prices per hour, Windows EC2 instance
  - Small instance \$0.12 / hour (\$87 /mo)
  - Medium, high CPU \$0.29 / hour (\$211 /mo)
- Price per year, reserved instance EC2
  - Small instance = \$227.50 (\$19 /mo)
  - Medium, high CPU = \$455.00 (\$38 /mo)
- Plus storage (S3), plus data transfer, plus other services (Cloudfront etc)

# Amazon EC2 Costs



NEW! - Amazon RDS [Read Replicas](#) and [reduced pricing for DB Instances](#)

Choose region:  Language:

INTERNET DATA TRANSFER: Inbound is free until November 2010  - Outbound is 1GB free per region per month

**Amazon EC2**  
Amazon S3  
Amazon SQS  
Amazon SNS  
Amazon CloudFront  
Amazon SimpleDB  
Amazon VPC  
Amazon Elastic MapReduce  
Amazon RDS  
AWS Import Export  
AWS Premium Support

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers. Amazon Elastic Block Store (EBS) provides persistent storage to Amazon EC2 instances.

**Amazon EC2 On-Demand Instances:**

**Amazon EC2 Reserved Instances:**

Instances	OS	Type	Term	Usage
1	Windows	High-CPU Medium	1 yr term	0

**Amazon EBS Volumes:**

Volumes	Provisioned Storage	Average IOPS in volume	Snapshot Storage*
1	20 GB-month	0	15 GB-month of Storage

**Elastic IP:**

Number of Elastic IPs:

Elastic IP Non-attached Time:  Hours/Month

Number of Elastic IP Remaps:  Times/Month

**Amazon EC2 Bandwidth:**

Data Transfer In:  GB/Month

Data Transfer Out:  GB/Month

Regional Data Transfer:  GB/Month

Public IP Address:  GB/Month

**Elastic Load Balancing:**

Number of Elastic LBs:

Amazon EC2 Instance Profile:  GB/Month

**Estimate of Your Monthly Bill**

Show First Month's Bill (include all one-time fees, if any)

Item	Amount
Amazon EC2 Service (US-EAST)	\$ 459.25
AWS Data Transfer In	\$ 0.00
AWS Data Transfer Out	\$ 0.60
<b>Total One-Time Payment:</b>	\$ 455.00
<b>Total Monthly Payment:</b>	\$ 4.85

**Common Customer Samples**

- Marketing Web Site
- Web Application
- Media Application
- HPC Cluster
- Disaster Recovery and Backup
- European Web Application

Reset All

- Simple Monthly Calculator
  - Allows accurate estimation of costs
  - Use all services (EC2, S3, EBS etc) and calculate both first month and ongoing monthly bill.

# ▶ Future of Cloud Services

- Azure VMs - Calendar Year 2010
  - Windows Server Virtual Machine Roles on Windows Azure.
- “Private clouds” - running Azure OS on private server farms
- Cloud-connected storage built-in to Desktop OS like Windows
- Will get to faster & easier deployment
  - one click servers
- Folder Providers in DNN using cloud storage

# ▶ Should you use Cloud services with DotNetNuke?

- Need server admin skills & knowledge
- Best for larger scale operations
- High bandwidth / load - cloud-connected storage best way forwards
- Convergence of DotNetNuke future and Cloud Computing

# ▶ Questions?



- Feedback Forms  
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