# $6/Month Windows Servers In Microsoft Azure

# What I’m Going Over

1. How inexpensive servers in Microsoft Azure are
2. How I get Windows servers for $6/month
3. Why Azure hosted servers are way better
4. Learning Azure without being overwhelmed

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- Virtual CTO to clients
- Microsoft Partner Cloud Solutions Architect (P-CSA)
- MCSA: Cloud Platform (70-535/70-533)
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# The Perception

Hosting Servers in the Cloud is

**Crazy Expensive**

We can do it

**SO MUCH CHEAPER In-House**

# The Reality

Hosting Servers in Azure is

**LOW COST**

an

**AMAZING VALUE**

and better than what you put in-house

# A Few Things Out of the Gate

- I spec my Azure virtual server CPU's to run at an average of 40-60% utilization.
- I snooze my Azure servers when possible to save the client money.
- I ONLY buy the storage I need RIGHT NOW.
- I use burstable servers when I can.

# Why are On-Premises Systems Overpowered?

- Need to last 6 years – don’t want to get in trouble
- Not sure how much processing power you’ll need
- Not sure how much memory you’ll need
- Not sure how much disk space you’ll need

# Azure: Only get what you need RIGHT NOW

- Buy the compute you need RIGHT NOW
- Buy the storage you need RIGHT NOW
- Incrementally increase/decrease power as you need it
- Endless storage and storage “tiers”
- Azure only gets less expensive…..and faster

# Azure Servers Only Get Cheaper and Faster

Real-world, in production servers at clients, running 24x7x365, OS drive only, HDD – data drive prices to follow

***Important Point: prices INCLUDE all Windows Server OS and CAL licensing in subscription***

**D Series**

*(Heavy continuous workloads, SSD)*

SQL, RDS, Business Apps

- Gen 1: $245/month
- Gen 2: $220/month (11% less than Gen 1)
- **Gen 3: $169/month (24% less than Gen 2)**

**A Series**

*(Light continuous workloads, HDD)*

SQL, RDS, Business Apps

- Gen 1: $80/month
- **Gen 2: $58/month (28% less than Gen 1)**

**B Series**

*(Light bursty workloads, HDD/SSD)*

DC, File, Small databases

- **Gen 1: $17/month (!!!!)**

# Azure Servers Only Get Faster

**D Series**

*(Heavy continuous workloads, SSD)*

SQL, RDS, Business Apps

- Gen 1: Intel Xeon E5 v2 @ 2.2Ghz
- Gen 2: Intel Xeon E5 v3 Haswell with Turbo Boost 2.0 @ 3.1Ghz
- Gen 3: Intel Xeon E5 v4 Broadwell with Turbo Boost 2.0 @ 3.5Ghz

**A Series**

*(Light continuous workloads, HDD)*

SQL, RDS, Business Apps

- Gen 1: AMD Opteron 2.1Ghz
- Gen 2: Could not find information

**B Series**

*(Light bursty workloads, SSD/HDD)*

DC, File, Small databases

- Gen 1: Intel Xeon E5 v3 Haswell with Turbo Boost 2.0 @ 3.1Ghz

# Prices Running Servers During Business Hours

Real-world, in production servers at clients, running **Business Hours**, OS drive only, HDD, Windows OS and CALS

| | |
|---|---|
| **D Series**<br>*(Heavy continuous workloads, SSD)*<br>SQL, RDS, Business Apps | Gen 3: **$55/month** ($169) |
| **A Series**<br>*(Light continuous workloads, HDD)*<br>SQL, RDS, Business Apps | Gen 2: **$19/month** ($58) |
| **B Series**<br>*(Light bursty workloads, SSD/HDD)*<br>DC, File, Small databases | Gen 1: **$6/month** ($17) |

# What hardware are you getting for your money?

# What are you getting for your money?

- Window Server + CALS with consumption
- Disaster recovery for FREE
- A massive high availability rack cluster
- 200+ blades/nodes
- Massive SAN
- Your server VHD files replicated on 2 other rack clusters (fault zones)
- Massive battery array
- Massive gas generators
- Perimeter security and guards
- Continuous hardware upgrades
- Professional hardware management 24x7x365
- 99.9% uptime SLA – financially backed

# Azure Storage is Cheap, Robust and Endless

Minimum: 3 copies of VHD's real-time replicated on 3 different SANs in 3 different rack clusters

## HDD

- 512GB Disk: $26/month
- 1TB Disk: $49/month

## SSD

- 512GB Disk: $87/month
- 1TB Disk: $160/month

## Backup

- 1TB Locally redundant: $60/month (3 replicas in 1 region)
- 1TB Geo redundant: $110/month (6 replicas in 2 regions)

# Data Tiers for Even CHEAPER Storage

Single folder storage – no subfolders – typically a folder with a TB's of images, drawings, videos or backup files

## Cool

- Data accessed a few times a month
- 1TB  $18.50  (62% less than HDD!)

## Archive

- Data accessed a few times a year
- Offline storage – must be mounted to cool storage
- 1TB  $2.50  (86% less than Cool storage!)

# Traditional File Storage

File folders that include subfolders

## Azure Files

- SMB “File share as a service”
- No server required
- Can do a traditional drive mapping
- 1TB  $72

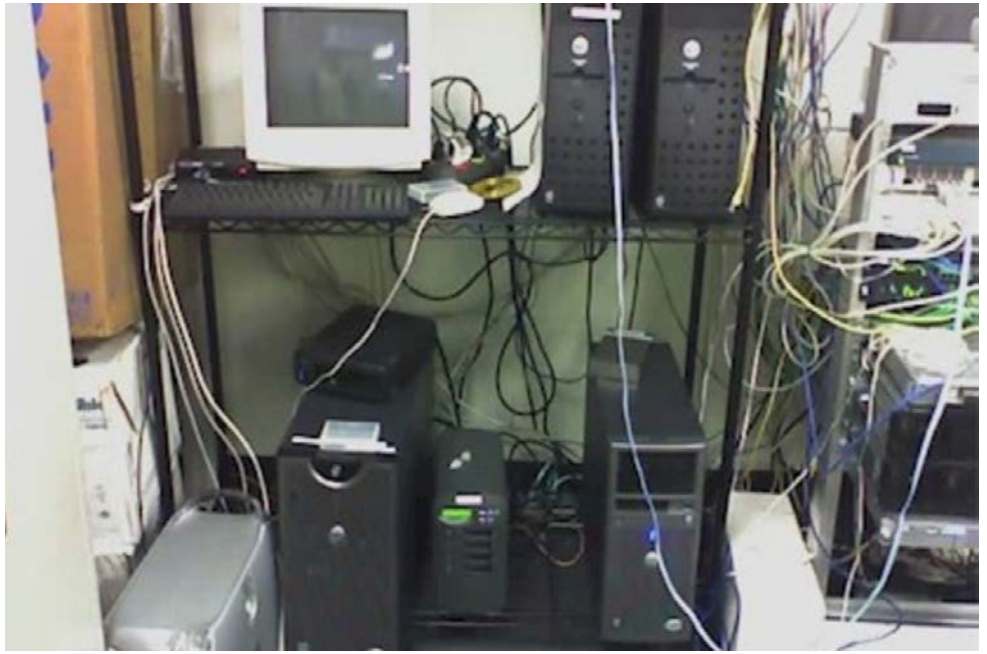
## Azure FileSync

- Sync all your on-premises file server data
- File server becomes local hot file cache
- Cold files removed from local file server but stay in Azure
- 1TB  $75 (1 server)

# Azure Fault Tolerance

# What hardware are you getting for your money?

# Often Seen On-Premises Server Racks



# Microsoft Azure Data Center and Server Racks

# Hosting Comparison: Host Failure - Azure

- Azure Virtual Server Hosting
  - VM's moved to any of the 100-200+ host servers in that rack within minutes
  - Microsoft manages hardware replacements – not you

# Hosting Comparison: **Rack Failure - Azure**

- Azure Virtual Server Hosting
  - No RAID configuration needed
  - You have 2 synchronously updated, replicated VHD file copies in 2 other racks with their own SAN
  - Azure spins up your VHD files in one of the other 2 racks with in 10’s of minutes to 1 hour

# Hosting Comparison: **Power Outage - You**

- Azure Virtual Server Hosting
  - Connect back in from home (laptop or home computer)
  - Connect in from coffee shop (laptop)
  - Your field/remote workers won't be stranded

# Hosting Comparison: **Power Outage - Azure**

- Azure Virtual Server Hosting
  - Run on a massive battery array until giant gas generators start
  - Run on gas generators until power is restored to the data center

# Hosting Comparison: Site Disaster - You

- Azure Virtual Server Hosting
  - Built-in/free disaster recovery
  - Connect back in from home (laptop or home computer)
  - Connect in from coffee shop (laptop)
  - Your field/remote workers won't be stranded

# Hosting Comparison: Site Disaster - Azure

- Azure Virtual Server Hosting
  - Option to replicate 3 additional copies of your VHD's or backups to peering data center
  - Chicago's geo-redundant peer is San Antonio
  - Recovery virtual network in peering data center from geo-redundant backups
    - Azure Site Recovery Option

# SLA for Single-Instance Virtual Machine

## Monthly Uptime Calculation and Service Levels for Single-Instance Virtual Machines

"**Minutes in the Month**" is the total number of minutes in a given month.

"**Downtime**" is the total accumulated minutes that are part of Minutes in the Month that have no Virtual Machine Connectivity.

"**Monthly Uptime Percentage**" is calculated by the percentage of Minutes in the Month in which any Single Instance Virtual Machine using premium storage for all Operating System Disks and Data Disks had Downtime.

Monthly Uptime % = (Minutes in the Month - Downtime) / Minutes in the Month X 100

The following Service Levels and Service Credits are applicable to Customer's use of Single-Instance Virtual Machines:

| MONTHLY UPTIME PERCENTAGE | SERVICE CREDIT |
|---|---|
| < 99.9% | 10% |
| < 99% | 25% |
| < 95% | 100% |


- March 2018 version 1.8
- **VM with SSD Storage**

- < 99.9% = Under 43 minutes = SLA met
- > 99.9% = Over 43 minutes = 10% credit
- > 99% = Over 7 hours = 25% credit
- > 95% = Over 36 hours = 100% credit

# Why Azure over On-Premises


- Very low cost
- No hardware to maintain or refresh - ever
- Windows Server license and CALS included
- Easily add Microsoft SQL Server (server and CALS) to subscription
- Very cost efficient
- Use only what you need right now and only when you need it
- No on-premises disaster recovery needed
- Far more robust and secure system than you can purchase and build
- Easily switch to new lower-cost/higher-power compute series
- Easily increase or decrease power of system with business needs
- Endless storage with ultra low cost storage tiers

# When We Integrate a Company:

1. List the servers and determine how much power and storage is needed
2. Determine how many users are concurrently accessing the servers
3. Determine if any servers can be “snoozed” to save the customer money
   - Any servers that are not really used much after hours?
4. Determine if we need to virtualize any Windows apps
5. Determine if there are any servers that cannot be migrated
6. Determine if we need a local large file cache
   - Is there extensive use of 10 - 100MB+ files?

# Internet Connection is KEY

1. Confirm size of your Internet connection (bandwidth)
   - Prefer 100Mb fiber (1Gb if we can get it!)
   - Prices: $500 - $1,300/month

2. Confirm speed (latency)
   - Prefer 10ms or less
   - Can work with 60ms or less
   - Over 60ms – need to use remote desktop services

3. Backup internet
   - Prefer coax cable Internet backup
   - Cellular wifi with Verizon option

# Learning Azure

Without getting overwhelmed……

- **Microsoft Azure Administrator Course**
  - 100% Free from Microsoft
  - Video + slides
  - Orientation
  - Virtual Networking
  - Building Virtual Machines
  - Security
  - Scaling
  - 23 hours + practice labs (est. 30-40 hours)
  - 70 hours: 2 hours x 4 days a week (3 months)
  - You just need to make it a priority in your life
  - It’s “boring-exciting”
  - Complete MCSA: Cloud Platform (70-535/70-533)

- **Register for your free Azure subscription**
  - $200 credit for 30 days
  - 12 months of free services
    - 1 Windows VM w/ 64GB SSD running 24x7
    - 1 Linux VM with 64GB SSD running 24x7
    - 5GB File Storage
    - 5GB Blob Storage
    - 250GB Azure SQL Database
    - 5GB Azure Cosmos DB (NoSQL)
    - Load Balancer
    - Virtual Networking
    - Automation/Scheduler (turn VM’s on and off)
    - Security Center (advanced server security system)

# Can Xerillion help us with this?

- You bet!
- Save you time, money, mistakes, security issues…..
- Gold Microsoft Cloud Partner
- Azure certified engineers

- Get up to $3,000 from Microsoft for a smal Azure project
- Get up $95,000 from Microsoft for a large data center migration

- Schedule an initial call:
  - Email: support@xerillion.com
  - Call: 847-995-9800
  - Website form: www.xerillion.com


Exciting time to be an IT Pro!
Exciting time to work with Microsoft!

# Thanks for watching!

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