Microsoft

Everything You Ever Wanted To Know About IaaS

But Were Afraid To Ask

William Bellamy
Principal Escalation Engineer

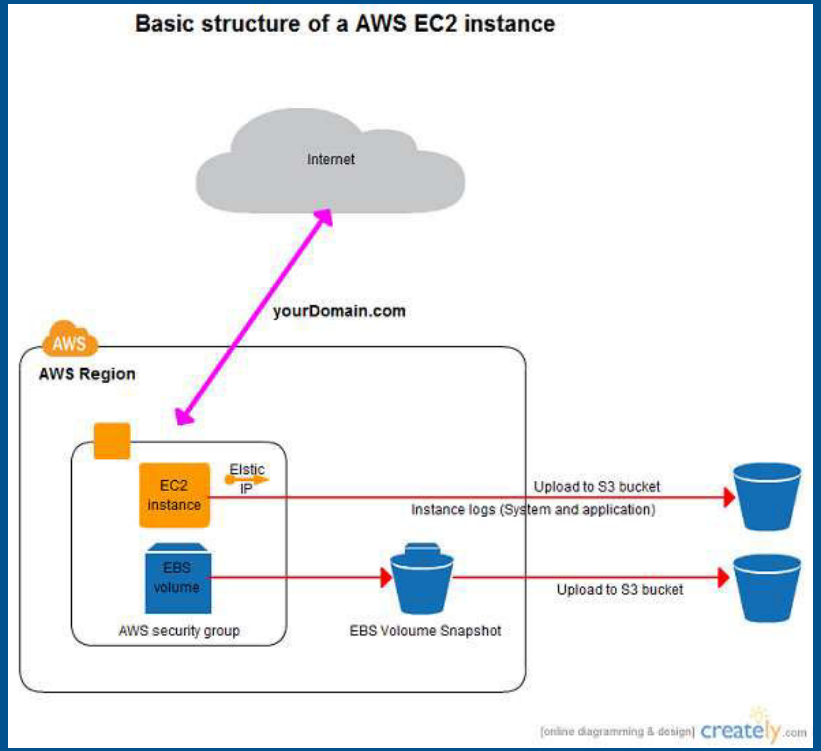
The Birds

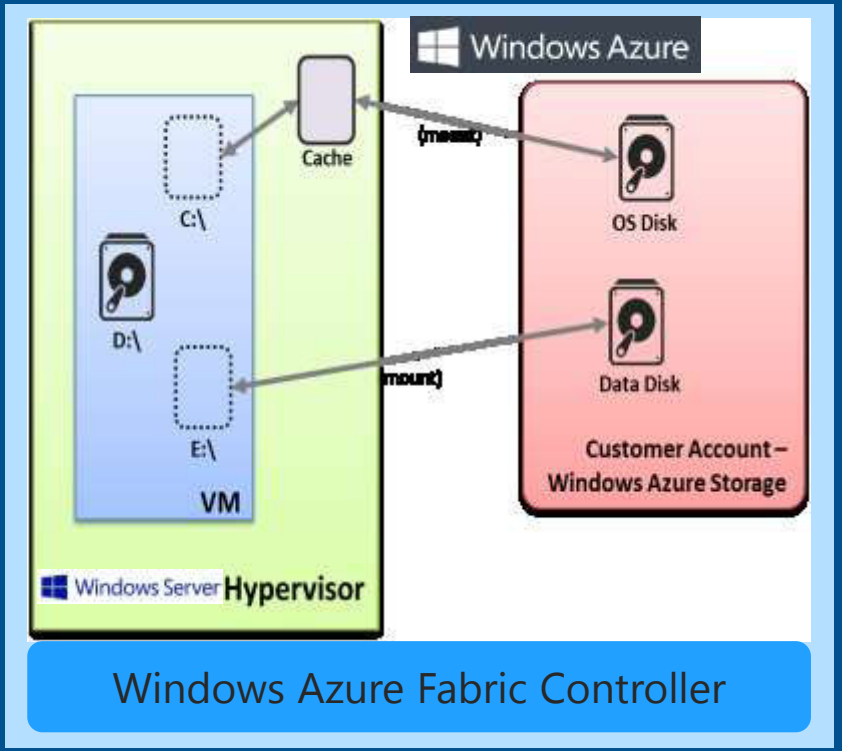
PC

Server

Hyper-V

& The Bees

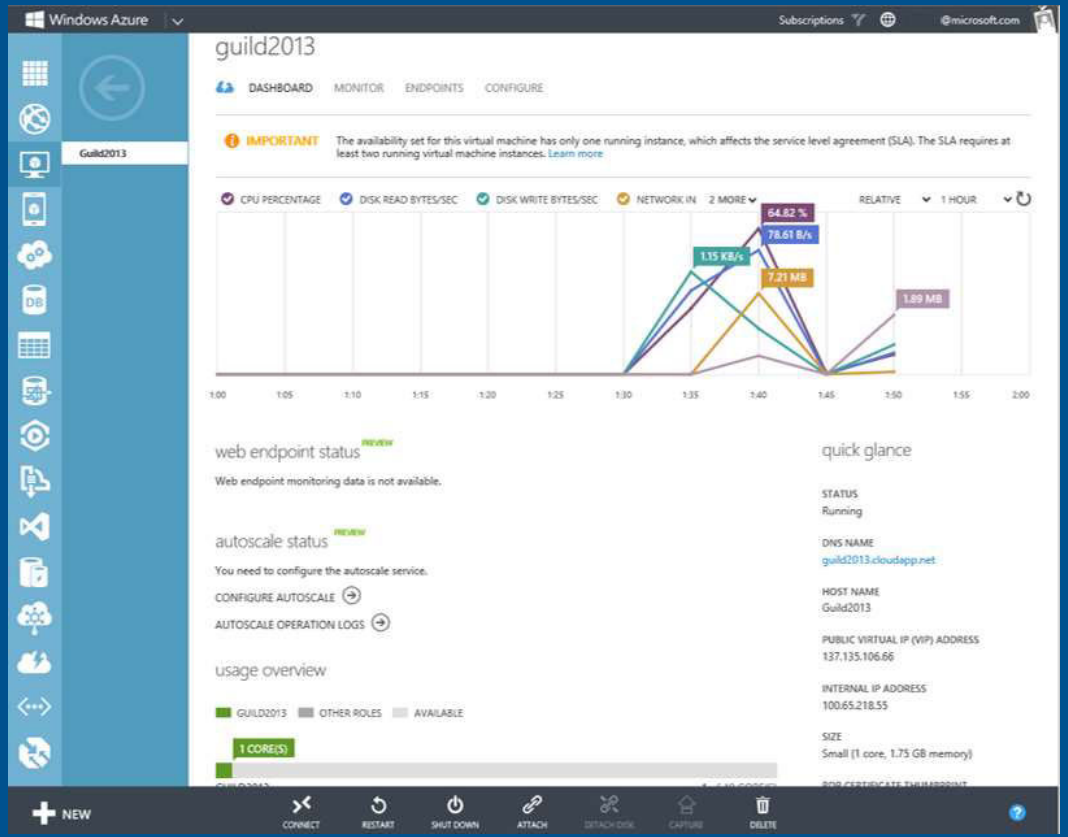

Basic structure of a AWS EC2 instance
Internet
yourDomain.com
AWS
AWS Region
EC2 instance
Elstic IP
EBS volume
AWS security group
Upload to S3 bucket
Instance logs (System and application)
EBS Voloume Snapshot
Upload to S3 bucket
[online diagramming & design] creately.com


Windows Azure
Cache
C:\
D:\
E:\
VM
OS Disk
Data Disk
Customer Account – Windows Azure Storage
Windows Server Hypervisor
Windows Azure Fabric Controller

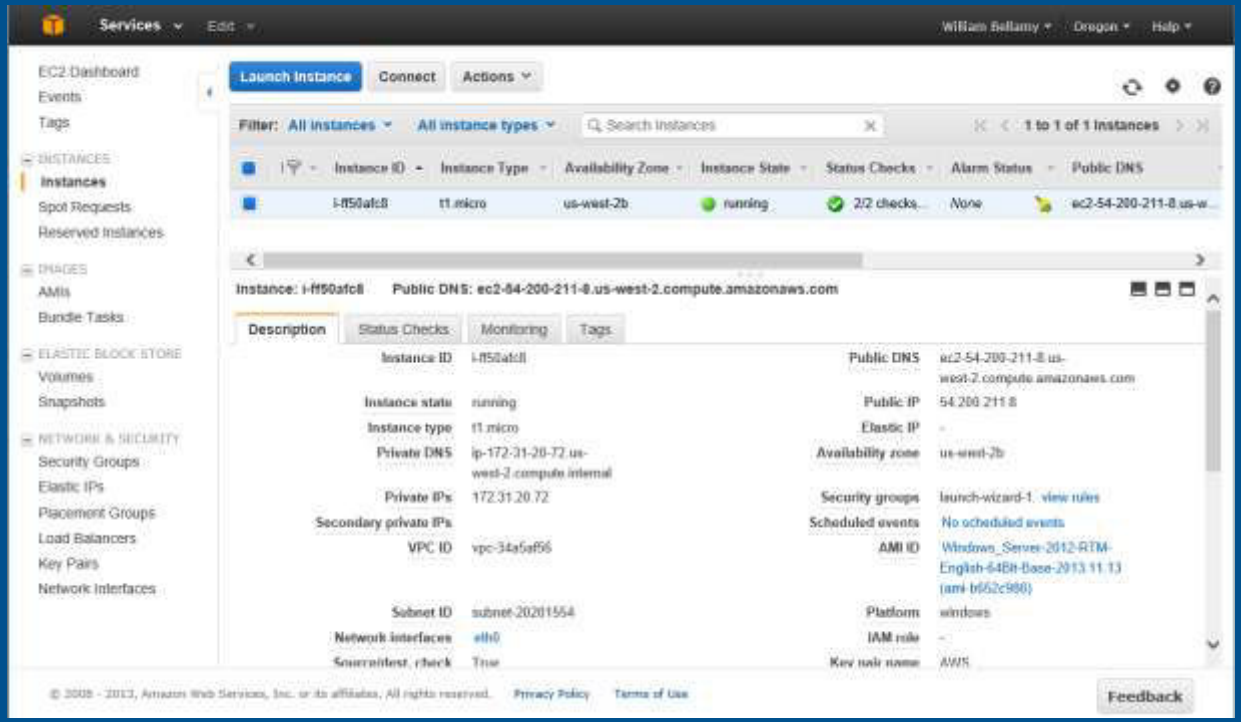
Where Can I Get Some Azure?

Where Can I Get Some EC2?

What Does Azure Look Like?



What Does EC2 Look Like?



What Can Azure Run?

- *Windows Server 2012 R2 Datacenter*
- Windows Server 2012
- Windows Server 2008 R2
- Server Software: SQL Server, *SharePoint*, *BizTalk* KB 2721672
- Linux: CentOS 6.2, OpenSUSE 12.1, SUSE Linux Enterprise Server SP2, Ubuntu 12.04 KB 2805216
- Use Windows Server Hypervisor to create your own VHD then upload it to blob storage
- Community created image from VM Depot

What Can EC2 Run?

- Linux: *Amazon Linux*, CentOS, *Debian*, *Oracle Enterprise*, *Red Hat Enterprise*, SUSE Linux Enterprise, Ubuntu
- Windows: Windows Server 2012, Windows 2008 R2, Windows 2008
- Use Windows Server Hypervisor to create your own VHD using Amazon EC2 API tools
- AWS Marketplace – Application Servers

How Big Can Azure Grow?

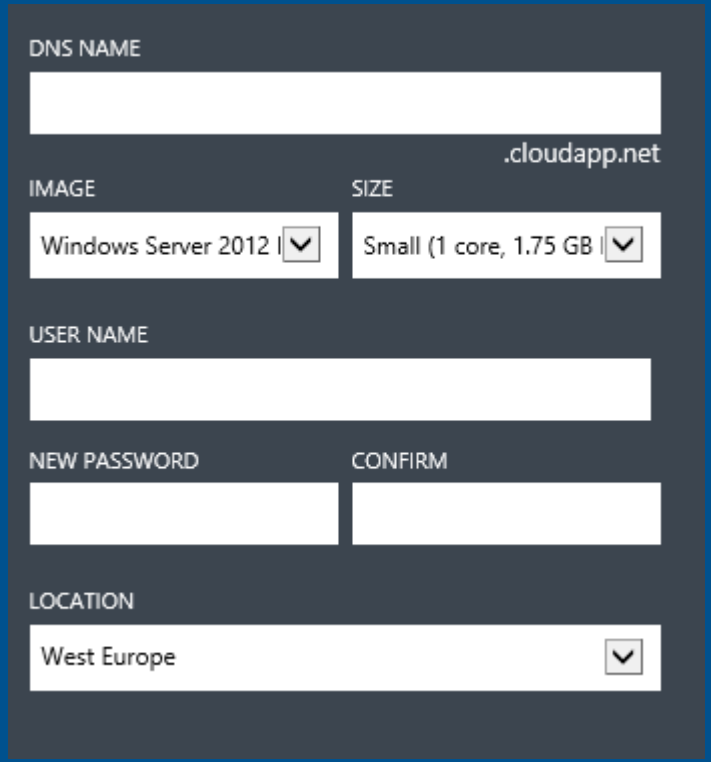
VM Size	CPU Cores	Memory	Disk Space C:	Bandwidth	# Data Disks
Extra Small	Shared	768 MB	20 GB	5 (Mbps)	1x 500 IOPS
Small	1	1.75 GB	70 GB	100 (Mbps)	2
Medium	2	3.5 GB	135 GB	200 (Mbps)	4
Large	4	7 GB	285 GB	400 (Mbps)	8
Extra Large	8	14 GB	605 GB	800 (Mbps)	16
A6	4	28 GB	285 GB	1,000 (Mbps)	8
A7	8	56 GB	605 GB	2,000 (Mbps)	16

Each Data Disk Can be up to 1 TB

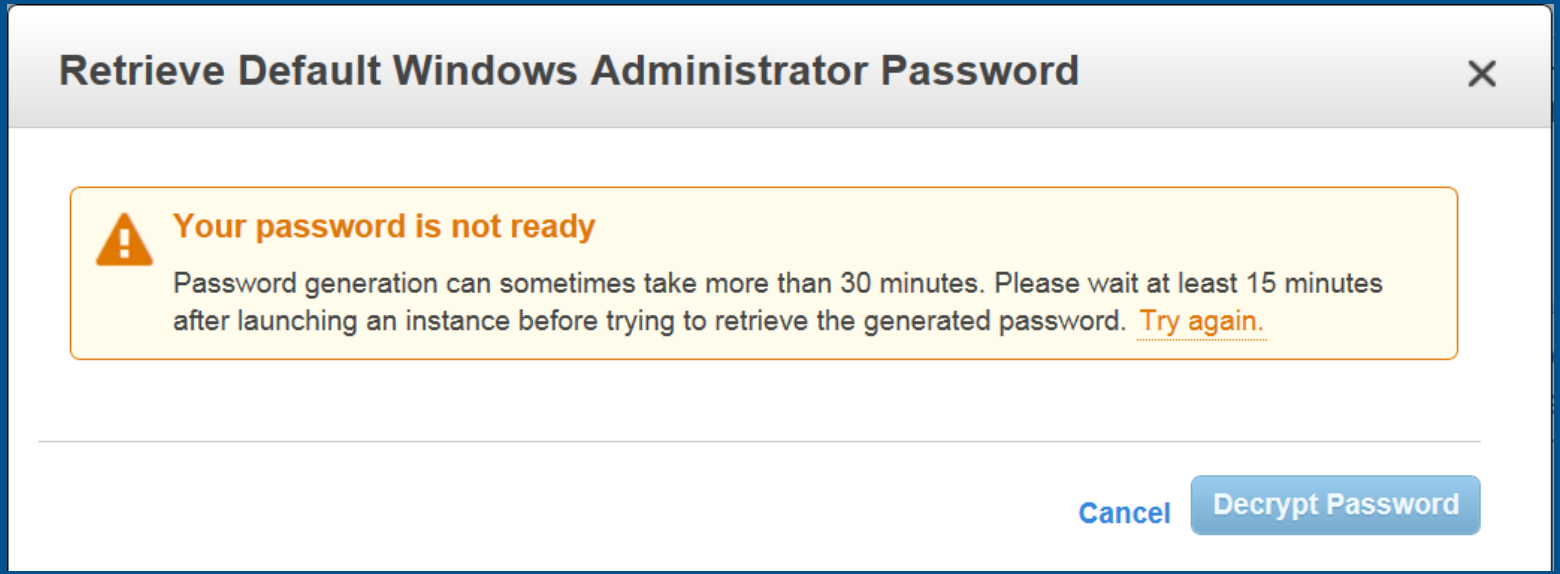
How Big Can EC2 Grow?

Instance Family	Instance Type	Processor Arch	vCPU	ECU	Memory (GiB)	Instance Storage (GB)	EBS-optimized Available	Network Performance
General purpose	m3.xlarge	64-bit	4	13	15	EBS only	Yes	Moderate
General purpose	m3.2xlarge	64-bit	8	26	30	EBS only	Yes	High
General purpose	m1.small	32-bit or 64-bit	1[1]	1	1.7	1 x 160	-	Low
General purpose	m1.medium	32-bit or 64-bit	1	2	3.75	1 x 410	-	Moderate
General purpose	m1.large	64-bit	2	4	7.5	2 x 420	Yes	Moderate
General purpose	m1.xlarge	64-bit	4	8	15	4 x 420	Yes	High
Compute optimized	c3.large	64-bit	2	7	3.75	2 x 16 SSD	-	Moderate
Compute optimized	c3.xlarge	64-bit	4	14	7	2 x 40 SSD	Yes	High
Compute optimized	c3.2xlarge	64-bit	8	28	15	2 x 80 SSD	Yes	High
Compute optimized	c3.4xlarge	64-bit	16	55	30	2 x 160 SSD	Yes	High
Compute optimized	c3.8xlarge	64-bit	32	108	60	2 x 320 SSD	-	High
Compute optimized	c1.medium	32-bit or 64-bit	2	5	1.7	1 x 350	-	Moderate
Compute optimized	c1.xlarge	64-bit	8	20	7	4 x 420	Yes	High
Compute optimized	cc2.8xlarge	64-bit	32	88	60.5	4 x 840	-	10 Gigabit[4]
GPU instances	g2.2xlarge	64-bit	8	26	15	1 x 60 SSD	Yes	High
GPU Instances	cg1.4xlarge	64-bit	16	33.5	22.5	2 x 840	-	10 Gigabit[4]
Memory optimized	m2.xlarge	64-bit	2	6.5	17.1	1 x 420	-	Moderate
Memory optimized	m2.2xlarge	64-bit	4	13	34.2	1 x 850	Yes	Moderate
Memory optimized	m2.4xlarge	64-bit	8	26	68.4	2 x 840	Yes	High
Memory optimized	cr1.8xlarge	64-bit	32	88	244	2 x 120 SSD	-	10 Gigabit[4]
Storage optimized	hi1.4xlarge	64-bit	16	35	60.5	2 x 1,024 SSD[2]	-	10 Gigabit[4]
Storage optimized	hs1.8xlarge	64-bit	16	35	117	24 x 2,048[3]	-	10 Gigabit[4]
Micro instances	t1.micro	32-bit or 64-bit	1	Variable[5]	0.615	EBS only	-	Very Low

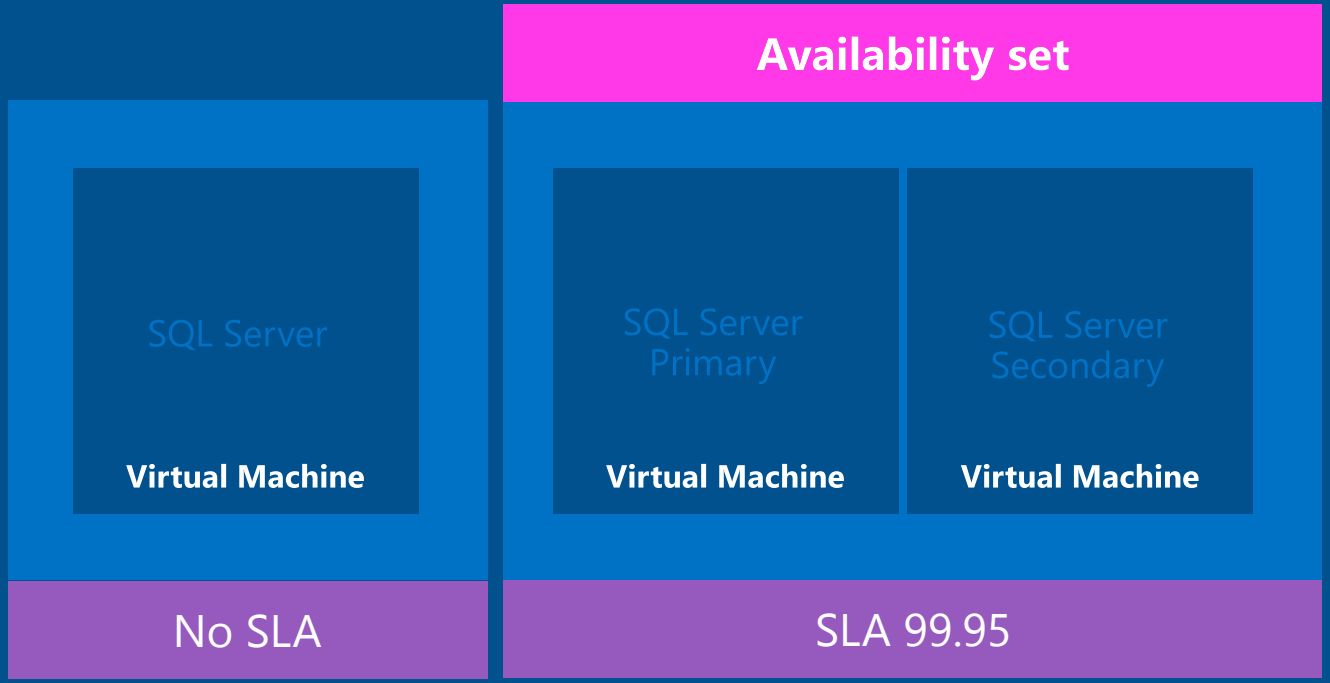
Is Azure Safe?



Is EC2 Safe?


Retrieve Default Windows Administrator Password
Your password is not ready
Password generation can sometimes take more than 30 minutes. Please wait at least 15 minutes after launching an instance before trying to retrieve the generated password. Try again.
Cancel
Decrypt Password

How Can I Keep Azure Up?



How Can I Keep EC2 Up?

- "Monthly Uptime Percentage" is calculated by subtracting from 100% the percentage of minutes during the month in which Amazon EC2 or Amazon EBS, as applicable, was in the state of "Region Unavailable." Monthly Uptime Percentage measurements exclude downtime resulting directly or indirectly from any Amazon EC2 SLA Exclusion (defined below).
- "Region Unavailable" and "Region Unavailability" mean that more than one Availability Zone in which you are running an instance, within the same Region, is "Unavailable" to you.
- "Unavailable" and "Unavailability" mean:
  - ***For Amazon EC2, when all of your running instances have no external connectivity***.
  - For Amazon EBS, when all of your attached volumes perform zero read write IO, with pending IO in the queue.
- A "Service Credit" is a dollar credit, calculated as set forth below, that we may credit back to an eligible account.

How Much Does Azure Cost?

COMPUTE INSTANCE NAME	VIRTUAL CORES	RAM	PRICE PER HOUR
Extra Small (A0)	Shared	768 MB	**$0.02** (~$15/month)
Small (A1)	1	1.75 GB	**$0.09** (~$67/month)
Medium (A2)	2	3.5 GB	**$0.18** (~$134/month)
Large (A3)	4	7 GB	**$0.36** (~$268/month)
Extra Large (A4)	8	14 GB	**$0.72** (~$536/month)
A5	2	14 GB	**$0.40** (~$298/month)
A6	4	28 GB	**$0.80** (~$596/month)
A7	8	56 GB	**$1.60** (~$1,191/month)

How Much Does EC2 Cost?

Region: US East (N. Virginia)

	Windows Usage
General Purpose - Current Generation	
m3.xlarge	$0.702 per Hour
m3.2xlarge	$1.404 per Hour
General Purpose - Previous Generation	
m1.small	$0.091 per Hour
m1.medium	$0.182 per Hour
m1.large	$0.364 per Hour
m1.xlarge	$0.728 per Hour
Compute Optimized - Current Generation	
c3.large	$0.233 per Hour
c3.xlarge	$0.466 per Hour
c3.2xlarge	$0.932 per Hour
c3.4xlarge	$1.864 per Hour
c3.8xlarge	$3.728 per Hour
Compute Optimized - Previous Generation	
c1.medium	$0.225 per Hour
c1.xlarge	$0.900 per Hour
cc2.8xlarge	$2.970 per Hour
GPU Instances - Current Generation	
g2.2xlarge	$0.767 per Hour
GPU Instances - Previous Generation	
cg1.4xlarge	$2.600 per Hour
Memory Optimized - Current Generation	
m2.xlarge	$0.518 per Hour
m2.2xlarge	$1.020 per Hour
m2.4xlarge	$2.040 per Hour
cr1.8xlarge	$3.831 per Hour
Storage Optimized - Current Generation	
hs1.4xlarge	$3.580 per Hour
hs1.8xlarge	$4.931 per Hour
Micro Instances	
t1.micro	$0.020 per Hour

How Much Does Azure Support Cost?

	INCLUDED	DEVELOPER	STANDARD	PROFESSIONAL DIRECT[1]	PREMIER[2]
		$29	$300	$1,000	
		purchase	purchase	purchase	
Billing & Subscription Management	✓	✓	✓	✓	✓
Community Forums	✓	✓	✓	✓	✓
Service Dashboard	✓	✓	✓	✓	✓
Web Incident Submission		✓	✓	✓	✓
Unlimited Break/Fix (24x7)[4]		✓	✓	✓	✓
Fastest Response Time[4]		<8 hours	<2 hours	<1 hour	<15 min[3]
Phone Support (Call Backs)			3/Month	Unlimited	Unlimited
Support Account Management				Pooled	Assigned
Priority Handling				✓	✓
Escalation Phone Line				✓	✓
Advisory Support				Limited	Full
Onsite Services					✓
Developer Mentoring					✓

How Much Does EC2 Support Cost?

	Basic	Developer	Business	Enterprise
Customer Service - 24x7x365	✔	✔	✔	✔
Support Forums	✔	✔	✔	✔
Documentation, White Papers, Best Practice Guides	✔	✔	✔	✔
Access to Technical Support	Support for Health Checks (what's this?)	Email (local business hours)	Phone, Chat, Email, Live Screen Sharing (24/7)	Phone, Chat, Email, Live Screen Sharing, TAM (24/7)
Primary Case Handling	Technical Customer Service Associate	Cloud Support Associate	Cloud Support Engineer	Sr. Cloud Support Engineer
Named Contacts (what's this?)		1	5	Unlimited
Response Time		<12 hours	<1 hour	<15 minutes
Architecture Support (what's this?)		Building Blocks	Use Case Guidance	Application Architecture
Best Practice Guidance		✔	✔	✔
Client Side Diagnostic Tools		✔	✔	✔
Identity Access Management (IAM) (what's this?)			✔	✔
Access to Support API - Beta (what's this?)			✔	✔
3rd Party Software Support - Beta (what's this?)			✔	✔
AWS Trusted Advisor - Beta (what's this?)			✔	✔

	Basic	Developer	Business	Enterprise
Pricing	Included	$49/month	Greater of $100 - or - 10% of monthly AWS usage for the first $0-$10K 7% of monthly AWS usage from $10K-$80K 5% of monthly AWS usage from $80K-$250K 3% of monthly AWS usage from $250K+ Pricing example	Greater of $15,000 - or - 10% of monthly AWS usage for the first $0-$150K 7% of monthly AWS usage from $150K-$500K 5% of monthly AWS usage from $500K-$1M 3% of monthly AWS usage from $1M+ Pricing example

Beware of rising usage fees

Why Azure Is Better

- Security: Administrator name changed, Windows Update on, Latest OS available.
- Hybrid configurations: seamlessly move VMs to the cloud
- Unified management interface: System Center 2012 R2
- Integrated development environment: Visual Studio 2013
- Geographic redundancy: 2 data centers per region
- Enterprise Support: Trusted Windows experts

Find Out For Yourself

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