

SERVICES TO SERVICES

HOW MICROSOFT AZURE CAN MODERNISE YOUR IT INFRASTRUCTURE

Joey Lau | 9 November 2017

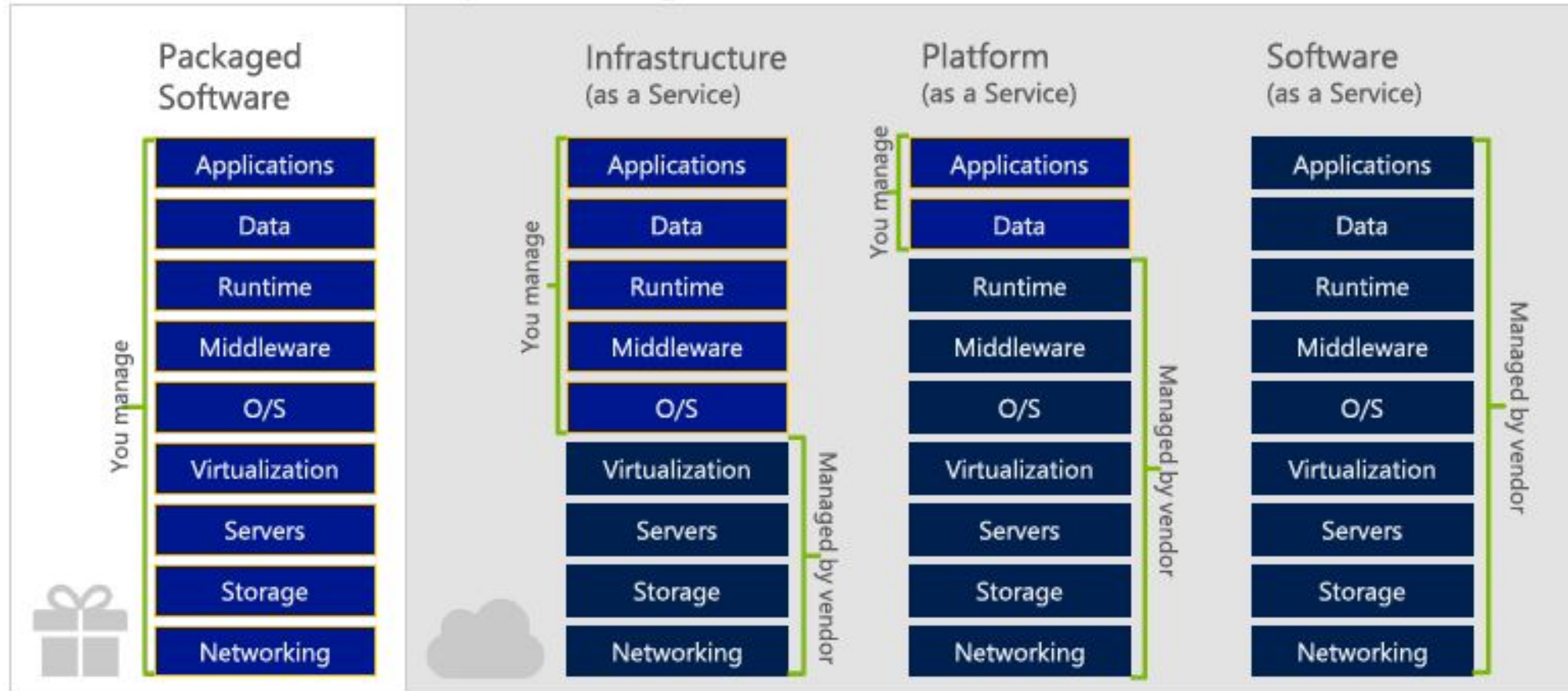
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Sign up for your \$5000 Azure Grant

1. Register your non profit status with ConnectingUp (AU), Techsoup (NZ)
2. Obtain your TechSoup token
3. Visit: <http://eligibilityweb.azurewebsites.net/#/ngohome> and enter your token
4. Set up Office 365 non-profit trial (if not already using it)
5. Activate Azure AD subscription
6. Return to <http://eligibilityweb.azurewebsites.net/#/ngohome> and enter your token
7. Select Azure: enter Office 365 tenant admin email as the Account Owner Live ID
8. Microsoft will email you within 24 hours with a link to activate Azure
9. Sign in with your Office 365 tenant admin credentials before activating
10. Credit card details required at sign up and will be charged if usage exceeds \$5000



Servers to Services



Examples

Server

Switch

Router

Air conditioning

Microsoft Azure

Amazon Web Services

IBM Softlayer

Google Cloud

Azure SQL

Azure Domain Services

Office 365

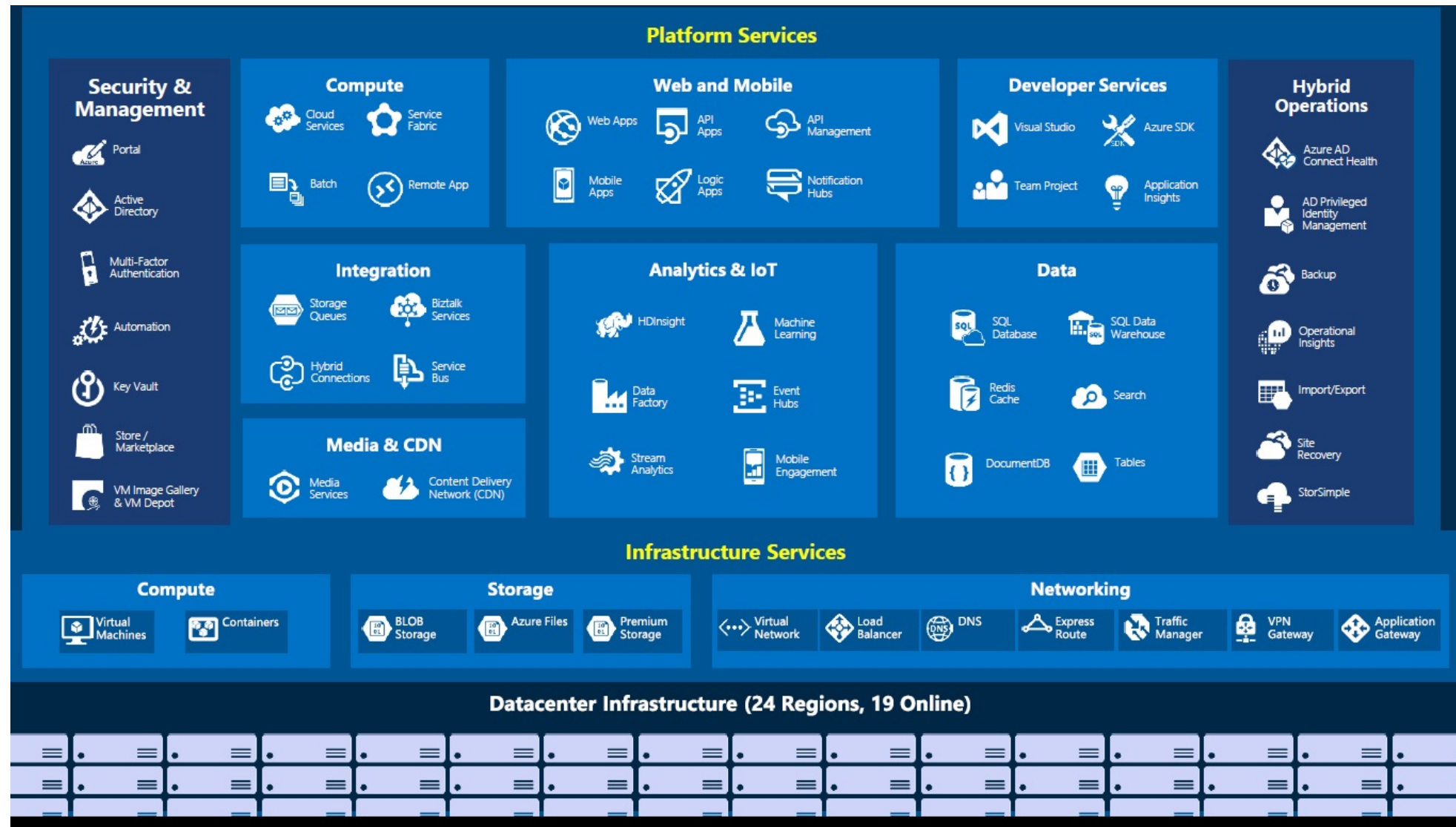
Salesforce

Google Apps

Xero



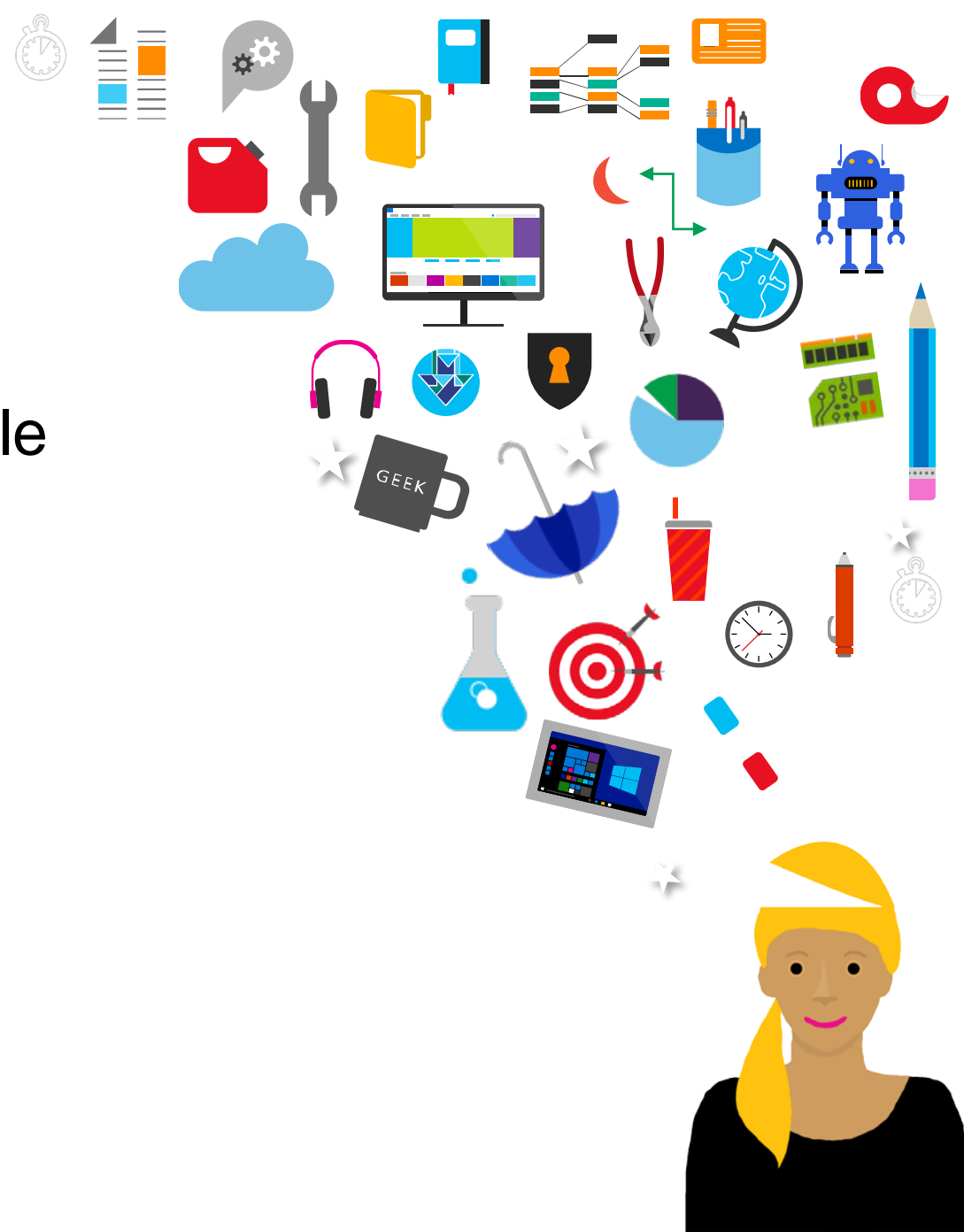
What is Microsoft Azure



What can I do with Microsoft Azure?

(in real practical terms for NFPs)

1. Server hosting e.g. domain controller/file archives/RDP Server
2. Backup storage
3. Business continuity/ disaster recovery
4. Database hosting
5. Website hosting



Azure IaaS Virtual Machines

- » Scale from 1 Core/768MB RAM (\$22/month) - 32Core/448GB RAM (\$9,144/month)
- » No minimum commit. Switch tiers up and down as needed (Reboot required)
- » Both Windows and Linux OS supported
- » New Ev3 class VMs can run Hyper-V role to host nested VMs
- » Use Availability sets to ensure 99.9% uptime SLA
- » Deploy in 45 mins using portal.azure.com, PowerShell, or ARM templates
- » Price differs based on region (US West cheapest, Australia more expensive)
- » Price has fallen 29% since 2015 (A2 @ \$0.288/hr vs A2_v2 @ \$0.203/hr)



Azure Virtual Networking

- » Azure VMs runs off IPv4 virtual network with static or dynamic IP options
- » Azure Virtual Gateway & Supported router when site-site or user VPN needed
- » <https://docs.microsoft.com/en-au/azure/vpn-gateway/vpn-gateway-about-vpn-devices>
- » Network Security Groups for virtual firewall on top of OS firewall
- » Load balancing and Application firewall options
- » Cost based on SLA, Throughput, and number of VPN tunnels required

	Type	SLA	VPN Gateway throughput	VPN Gateway max IPsec tunnels	Max Point to Site Connections
Basic	Route-Based or Policy-Based	99.9%	100 Mbps	10	128
VPNGW1	Route-Based	99.95%	500 Mbps	30	128
VPNGW2	Route-Based	99.95%	1,000 Mbps	30	128
VPNGW3	Route-Based	99.95%	1,250 Mbps	30	128

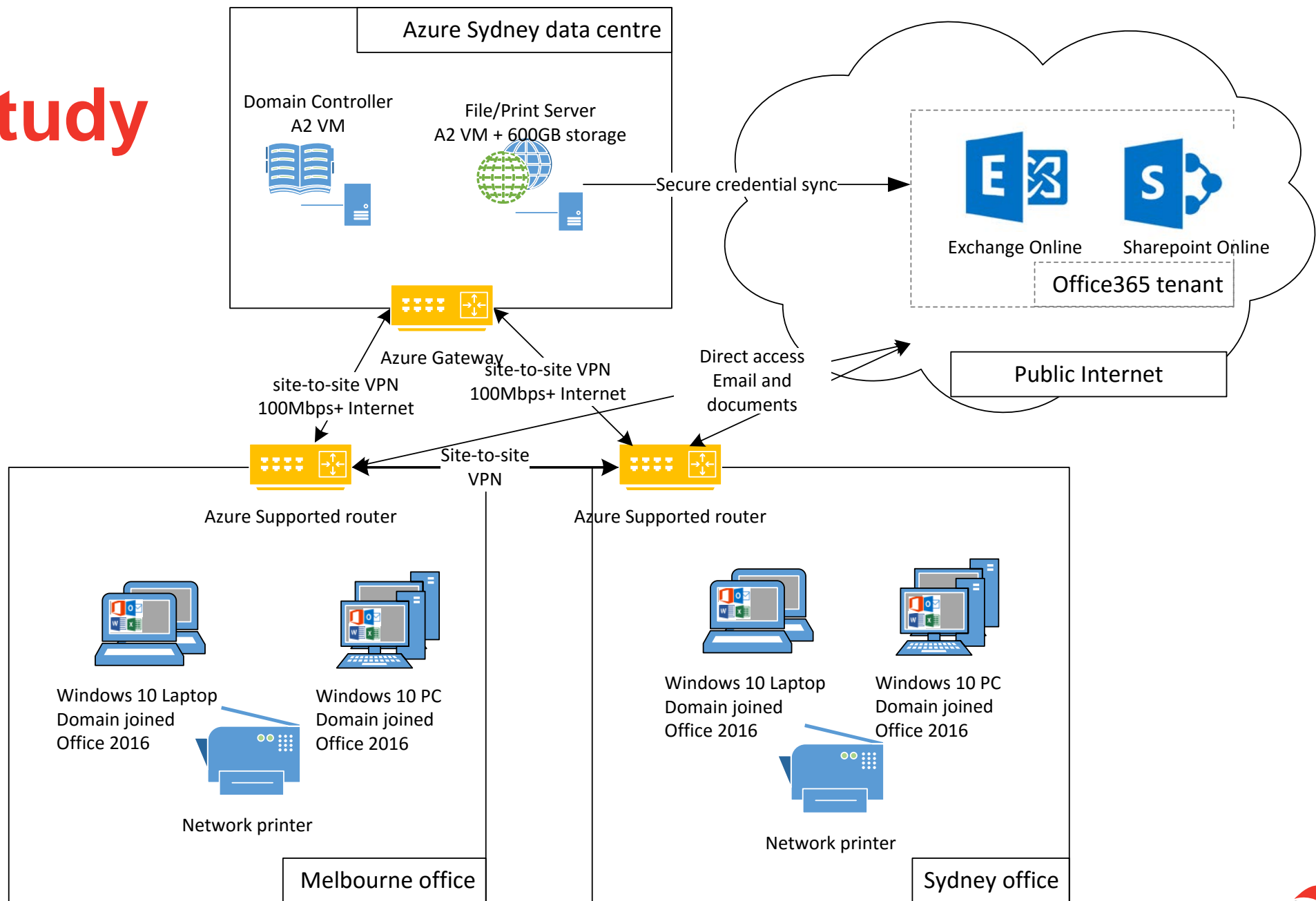


Azure storage

- » Basis for Azure VMs, Databases, Web Apps, and backups
- » Standard or Premium (SSD) tiers depending on performance needs
- » Default level of redundancy (LRS) keeps 3 copies in same data centre
- » Geo redundancy available at added cost
- » Access via storage keys with encryption available
- » Can store files directly into containers using HTTPS or SMB3.0 (No NTFS permissions)
- » Each Azure VM comes with a 127GB OS disk with the option of adding 1TB disks for extra storage (e.g. F:\)



Case Study



Azure Backup and Recovery

- » Stored directly in Microsoft Azure Storage
- » Allow you to set region and retention
- » Local Agent required on server (Windows 2008 R2 or higher)
- » Scratch space required on local server. At least 5% of capacity
- » System State backup available through advanced settings.
<https://docs.microsoft.com/en-us/azure/backup/backup-azure-system-state>
- » Azure Site Recovery to replicate Hyper-V Servers in Azure (Server 2012 R2 or higher)
- » Azure matches a VM size based on your on-premises VM
- » Only charged VM costs when you fail over



Azure SQL

- » PaaS replacement for SQL Servers, either on-premises or as Azure VMs
- » MS handle patching of SQL Server and base Operating System
- » Start at \$7/month for 2GB DB size. Maximum of 4TB (\$9000+ /month)
- » 99.9% SLA or higher
- » Change tiers without downtime
- » Applications must support connecting to Azure SQL. Talk to your app vendor
- » Geo replication and automatic backups available, and included in some service plans
- » Manage in portal or using traditional SSMS tool



Azure AD Domain Services

- » PaaS replacement for Domain Controllers
- » MS handle patching of DCs and uptime
- » Uses Azure AD username and password as an AD identity
- » User, password, group changes through same interface as Office 365 accounts
- » Tied to a single virtual network.
- » Can have multiple Domains in the same Subscription through different networks
- » Domain join Azure VMs and desktops via VPN for Group Policy
- » Integrates with Azure AD Multi-Factor Authentication (\$1.78 user/month)
- » Starting at \$142.14/month



Hosting your public website

- » Azure web apps support wordpress and many popular platforms
- » Or create a blank web app and connect via FTP, Visual Studio or Github
- » Supports .Net, PHP, Node.JS, Python, Java, Classic ASP, or any FastCGI handler
- » Deployment slots for seamless switching between dev and production
- » Automatic daily backups

F1 Free	B1 Basic	S1 Standard	P1 Premium (Preview)	P2 Premium (Preview) ★	P3 Premium (Preview)
-	1	1	1	2	4
Core	Core	Core	Core	Core	Core
1.75	1.75	1.75	1.75	3.5	7
GB RAM	GB RAM	GB RAM	GB RAM	GB RAM	GB RAM
1 GB Storage	1 GB Storage	50 GB Storage	BizTalk Services	BizTalk Services	BizTalk Services
5 SNI, 1 IP	5 SNI, 1 IP	5 SNI, 1 IP	250 GB Storage	250 GB Storage	250 GB Storage
Up to 10 instances *	Up to 10 instances *	Up to 10 instances *	Up to 20 instances *	Up to 20 instances *	Up to 20 instances *
Auto scale	Auto scale	Auto scale	Subject to availability	Subject to availability	Subject to availability
Daily Backup	Daily Backup	Daily Backup	20 slots	20 slots	20 slots
Web app staging	Web app staging	Web app staging	50 times daily Backup	50 times daily Backup	50 times daily Backup
Traffic Manager	Traffic Manager	Traffic Manager	Traffic Manager	Traffic Manager	Traffic Manager
Geo availability	Geo availability	Geo availability	Geo availability	Geo availability	Geo availability



Implementation considerations

- » Budget will be allocated, including time and dollars
- » Bandwidth is adequate. Especially to deal with outbound traffic increase
- » Application licensing is transferable to run on cloud services (e.g. License Mobility)
- » Supported router for site-site VPN
- » Only Windows Server 2008 R2 SP1 and higher can run as an Azure VM
- » Test your deployments 2 weeks before go-live day. You may need MS Support to deploy in certain locations



Reasons you might still need a server

- » Centralised workforce
- » Large files (e.g. hi res images or video)
- » Low bandwidth Internet connection
- » Prefer fixed or upfront costs (even if higher)
- » Pursuing hybrid approach for complex server environments



WHAT COULD

AU\$5000 GET ME

IN AZURE?



Azure Case study cost summary

Service Type	Description	Purpose	Estimated monthly cost
Virtual server	2x Standard virtual machine(s), A2v2 (2 cores, 4 GB RAM, 135 GB disk, \$0.203/hr) size: 744 hours	Hosted Domain controller, file archive, print, AAD connect	\$301.35
VPN Gateway	Standard tier, 744 gateway hours, 100GB outbound internet	Manage secure data transfer between Azure and Office	\$191.51
Storage	600Gb storage. Basic tier, LRS redundancy, 100000 transactions	Storage of 600Gb of files and backups	\$61.18
		Monthly Total	\$554.04
		Annual Total	\$6,648.53
		Annual Total minus \$5000 credit	\$1,648.53

Support from Microsoft available from \$36.94/month

All prices shown are in Australian Dollar (\$). This is a summary estimate, not a quote. For up to date pricing information please visit <https://azure.microsoft.com/pricing/calculator/>



Move a small 2 tier app into Azure

Service type	Custom name	Description	Estimated Cost
Virtual Machines	1 virtual machine(s) x 744 hours: A1 v2: 1 cores, 2 GB RAM, 10 GB disk	SQL VM for database not compatible with Azure SQL	\$72.02
Storage	Block Blob Storage type, LRS redundancy, Standard – Blob Storage account tier	1TB SQL Storage based on VM template	\$26.99
AADDS	Free tier, per-user MFA billing model, 0 MFA user(s), 25001-100000 directory objects	Azure AD Domain Services for users to log in with Office 365 credentials	\$142.14
Virtual Machines	1 virtual machine(s) x 744 hours: A2 v2: 2 cores, 4 GB RAM, 20 GB disk	RDP VM (1 - 4 users) for application access	\$150.67
		Monthly Total	\$391.83
		Annual Total	\$4,701.91
		Annual Total minus \$5000 credit	Zero

Support from Microsoft available starting at \$36.94/month

All prices shown are in Australian Dollar (\$). This is a summary estimate, not a quote. For up to date pricing information please visit <https://azure.microsoft.com/pricing/calculator/>



Move a 2 tier app into Azure + Azure SQL

Service type	Custom name	Description	Estimated Cost
Azure SQL	Single Database, Standard tier, S0 level, 10 DTUs, 250 GB storage per DB	Azure SQL DB up to 250GB	\$21.02
AADDS	Free tier, per-user MFA billing model, 0 MFA user(s), 25001-100000 directory objects	Azure AD Domain Services for users to log in with Office 365 credentials	\$142.14
Virtual Machines	1 virtual machine(s) x 744 Hours, A2m v2: 2 cores, 16 GB RAM	RDP VM (5 - 10 users) for application access	\$255.86
		Monthly Total	\$419.02
		Annual Total	\$5,028.28
		Annual Total minus \$5000 credit	\$28.28

Support from Microsoft available starting at \$36.94/month

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Backup and Replication

- » Backup cost based on number of servers plus storage at \$0.03/GB

<https://azure.microsoft.com/en-gb/pricing/details/backup/>

Region:	Currency:
Australia Southeast	Australian Dollar (\$)
SIZE OF EACH INSTANCE	AZURE BACKUP PRICE PER MONTH
Instance < or = 50 GB	\$6.369 + storage consumed
Instance is > 50 but < or = 500 GB	\$12.74 + storage consumed
Instance > 500 GB	\$12.74 for each 500 GB increment + storage consumed

Example: If you have 1.2 TB of data in one instance, then the cost would be \$38.22 plus storage consumed. You would be charged \$12.74 for two 500 GB increments and \$12.74 for the remaining 200 GB data.

- » Site Recovery to Azure \$31.85/month per VM plus storage at \$0.10/GB

<https://azure.microsoft.com/en-gb/pricing/details/site-recovery/>



More information and free events

- » Microsoft Tech Summit. Sydney. 16 & 17 November
 - <https://www.microsoft.com/en-au/techsummit/sydney>
- » Azure Discovery Days between 13 November – 12 December
 - Sydney, Melbourne, Canberra, Brisbane, and Perth
 - Wellington (NZ), and Auckland (NZ)
 - Details & Register at: <https://azure.microsoft.com/en-au/community/events/?query=azure+discovery+days>
- » Azure website <https://azure.microsoft.com>
 - Technical documentation
 - Sign up for free trial
 - Contact sales
- » Pricing calculator: <https://azure.microsoft.com/en-gb/pricing/>



Where to next?

- » Research the parts of Azure that might be relevant to you
- » Talk to your software vendors about support for hosting their applications in Azure
- » Register for a Microsoft event
- » Sign up for a free trial and visit the Azure Marketplace
- » Sign up for non-profit Office 365 and Azure grant



Questions





THANK YOU!