LEVERAGING THE CLOUD WITH MICROSOFT AZURE

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Infoxchange is a not for profit organisation that has supported hundreds of non-profits to use both cloud and infrastructure technologies:
Common not-for-profit challenges

- Effective ways for staff & volunteers who work out of the office to access systems and information
- Reliable, cost-effective online systems or backups
- Consistent funding for ICT
- Access to affordable technical resources and knowledge
IT should help you achieve your mission

Flexible IT
Maximize technology investments, minimize complexity and cost

Optimized business processes
Enable more efficiency and faster decision making

Business continuity and security
Protect against unexpected interruptions, data loss and modern security threats
Building the business case for moving to the Cloud

Reduce or eliminate server upgrades and refreshes
saving costs of servers, software and IT support

Provides scalability and flexibility
which allows you to respond to opportunities and only pay for what you need

Defend against hardware failure
with cloud solutions so there’s no need to worry about your server failing and your data is protected in the cloud

Single location for information for all staff to collaborate
across all locations leading to increased efficiency

Access systems and information from any location or device
which provides flexibility and reduce travel costs
Common technology requirements of NFPs.....

- **Risk management**
  - User management and password policies
  - Intranet and collaboration tools

- **Business Systems**
  - Finance, HR, payroll & donation management
  - Document management, images, videos & archiving
  - Email, calendars and contacts
  - Internet connectivity and remote access
  - PC’s, laptops, monitors, printers & scanners
  - Telephony & Mobile devices

- **Devices and access**
  - Firewall, anti-virus and security
  - Backup and disaster recovery
  - Intranet and collaboration tools
  - Rostering and time and attendance systems
  - Video conferencing, instant messaging
  - Newsletters and mass communications
  - Public website and social media

- **External communications**
  - Client Management system
  - Member portal and external information sharing
  - Reporting and reconciliation of funding
  - Customer relationship management system

- **Client information & service delivery**
  - Internet connectivity and remote access
  - PC’s, laptops, monitors, printers & scanners
  - Telephony & Mobile devices
  - Newsletters and mass communications
  - Public website and social media
  - Client Management system

- **Technology Requirements**
  - Internet connectivity and remote access
  - PC’s, laptops, monitors, printers & scanners
  - Telephony & Mobile devices
  - Newsletters and mass communications
  - Public website and social media
  - Client Management system
  - Member portal and external information sharing
  - Reporting and reconciliation of funding
  - Customer relationship management system
When we own the technology

- Regular maintenance
- Install upgrades
- In-house expertise
- Limited scalability
- Disaster recovery
- Up-time requirements
What if we could outsource to experts?

» Reliability
» Backups
» Security compliance
» Always up-to-date
» Enterprise quality servers
» Expandability
» Only pay for what you need
The Cloud or local infrastructure

<table>
<thead>
<tr>
<th>Cloud (Microsoft Azure)</th>
<th>Local Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing monthly costs</td>
<td>Initial upfront capital purchase</td>
</tr>
<tr>
<td>Reliant on internet</td>
<td>Reliant on local network</td>
</tr>
<tr>
<td>Hosted externally</td>
<td>Stored locally</td>
</tr>
<tr>
<td>Automated updates</td>
<td>Ongoing maintenance required</td>
</tr>
<tr>
<td>Combined software/hardware</td>
<td>Purchase software and hardware</td>
</tr>
<tr>
<td>Consider offline access</td>
<td>Offsite Backups required</td>
</tr>
<tr>
<td>$5000 Azure credit</td>
<td>Donated software/licenses through Connecting Up</td>
</tr>
</tbody>
</table>
Trends in Infrastructure design

On-premises—built and managed infrastructure

Cloud—flexible, remote infrastructure
What is Microsoft Azure? (in Microsoft marketing terms)

Microsoft Azure is a technology platform that allows you to develop compute or data storage tasks in the cloud at any scale and on-demand using a pay-as-you-go plan.

Some examples include web applications, backup and storage, disaster recovery, mobile applications, and virtual machines.

What this means for a small business is that you now have the computing power of a much larger business without having to invest in a large IT staff or server hardware. You can dream bigger than you have before.
What is Microsoft Azure? (in real practical terms for NFPs)

Microsoft Azure is a paid service for IT infrastructure or server hosting that some community organisations may use instead of using on premise servers.

Microsoft host their servers in data centres all around the world including in Sydney and Melbourne so your data can be stored in Australia.

Azure is a flexible platform that allows you to pick and choose what services and infrastructure you require so generally each organisation will use it differently and pay different costs.

It is accessible over the internet so will require a good quality network connection if you want to store information in Microsoft Azure and you will probably also need new routers to connect via a VPN.
What can I do with Microsoft Azure? (in Microsoft marketing terms)

**Compute**
- Virtual machines
- Cloud Services
- Service Fabric
- Batch
- Scheduler

**Storage and backup**
- Storage blobs and files
- Backup
- Import/Export
- Site recovery

**Network**
- Virtual network
- Express route
- Traffic manager

**Data**
- SQL DB
- Document DB
- Search
- Tables

**Web and mobile**
- Web apps
- Mobile apps
- Apps API
- Logic apps
- API management

**Analytics**
- Machine learning
- HD Insight
- Stream analytics
- Data factory

And more….
What can I do with Microsoft Azure? *(in real practical terms for NFPs)*

1. Server hosting eg domain controller/file archives
2. Backup storage
3. Business continuity/ disaster recovery
4. Website hosting
5. Application hosting
# Microsoft Cloud Options

## SaaS
- **Office 365**
- **Yammer**
- **Microsoft Dynamics 365**
- **Microsoft Intune**

## PaaS
- **Your PATS application**
  - **Your business logic and code**
  - **Web and mobile backend**
  - **Data and advanced analytics**
  - **Event streaming and messaging**

## Azure IaaS
- **On premises**
  - **Active Directory**
  - **Your on-premise business application**

## Move-in ready
- **Office 365**
- **Microsoft Intune**
- **OneDrive for Business**
- **Dynamics 365**
- **Visual Studio Team Services**
- **Azure Site Recovery**
- **Yammer file sharing**
- **Azure Backup**

## Some assembly required
- **Azure Content Delivery Network**
- **Azure Media Services**
- **HDInsight**
- **Azure SQL Database**
- **Azure SQL Database**
- **Microsoft SQL Server on an Azure VM**
- **Azure Cosmos DB**
- **Azure Data Lake Store**

## Build from the ground up
- **Azure Storage (files)**
- **Azure Storage (blobs)**
- **Azure Storage (queues)**
- **Azure Storage (tables)**
What you don’t need Azure for?

Many community organisations have hosting or software services for systems or applications that means they don’t need Microsoft Azure for these purposes:

<table>
<thead>
<tr>
<th>System type</th>
<th>Online service example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>Office 365 or Gmail</td>
</tr>
<tr>
<td>Documents</td>
<td>OneDrive/SharePoint or DropBox</td>
</tr>
<tr>
<td>Finance System</td>
<td>Xero or MYOB online</td>
</tr>
<tr>
<td>Website</td>
<td>SquareSpace or Wordpress hosted</td>
</tr>
<tr>
<td>Client Management System</td>
<td>Supportability or SRS</td>
</tr>
<tr>
<td>CRM</td>
<td>Salesforce or Dynamics CRM Online</td>
</tr>
<tr>
<td>eNewsletter or survey tool</td>
<td>Mailchimp</td>
</tr>
<tr>
<td>Social Media</td>
<td>Facebook or Instagram</td>
</tr>
</tbody>
</table>
## Application hosting options

<table>
<thead>
<tr>
<th>Type</th>
<th>Local server infrastructure</th>
<th>Public cloud SaaS</th>
<th>Hosted Azure infrastructure</th>
<th>Hosted Azure web app</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example</strong></td>
<td>Windows Server 2012</td>
<td>Salesforce, Dynamics, Xero</td>
<td>RDP server, Azure SQL, SQL Server</td>
<td>Website in Azure with .net apps or templates</td>
</tr>
<tr>
<td><strong>Login</strong></td>
<td>AD and VPN</td>
<td>Cloud based at provider</td>
<td>Rely on local AD</td>
<td>Either</td>
</tr>
<tr>
<td><strong>Data storage</strong></td>
<td>Local server storage</td>
<td>With provider</td>
<td>In Azure</td>
<td>In Azure (e.g. Azure SQL, flat files)</td>
</tr>
<tr>
<td><strong>Advantages</strong></td>
<td>Familiar</td>
<td>Pay per user. Provider manages updates</td>
<td>Fixed rate Control of data storage</td>
<td>Pay for what you usescalable</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>Not easily accessible remotely</td>
<td>No control over data storage country or format</td>
<td>Largest server requirements, highest cost</td>
<td>Largest development costs</td>
</tr>
</tbody>
</table>

**Type**
- **Example**
- **Login**
- **Data storage**
- **Advantages**
- **Disadvantages**

- Local server infrastructure: Windows Server 2012
- Public cloud SaaS: Salesforce, Dynamics, Xero
- Hosted Azure infrastructure: RDP server, Azure SQL, SQL Server
- Hosted Azure web app: Website in Azure with .net apps or templates
- Login: AD and VPN
- Data storage: Local server storage
- Advantages: Familiar, Not as reliant on internet, Pay per user. Provider manages updates, Fixed rate Control of data storage
- Disadvantages: Not easily accessible remotely, Requires management, No control over data storage country or format, Can be expensive to migrate, Largest server requirements, highest cost, Largest development costs
# Internet connectivity scenarios

<table>
<thead>
<tr>
<th>Example Scenarios</th>
<th>Connection</th>
<th>Performance &amp; Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small office of 5 staff wanting to use Microsoft Azure to host a server</td>
<td>ADSL 10/.9</td>
<td>Poor performance on ADSL</td>
</tr>
<tr>
<td>• Email in Office 365 but wanting to remove local server</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cloud hosted application for finance, CRM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation of 30 staff, 20 in central office, other 10 across 3 remote offices.</td>
<td>Ethernet 20/20</td>
<td>Should perform appropriately depending on amount of data transfer. May require upgrade to 50mb or fibre if performance degrades</td>
</tr>
<tr>
<td>Central has symmetric 20Mb ethernet link, others have business grade ADSL2 with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annex M for improved upload. VPNs. QoS prioritisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Email in Office 365 and SharePoint Intranet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cloud hosted client management and finance systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hosted server in Azure for domain controller and file archive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Managed VPN on high grade router</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi site organisation of over 100 staff accessing central systems from cloud</td>
<td>Fibre 100/100</td>
<td>Should perform adequately at main offices with fibre however performance may be unreliable at remote locations on 4G</td>
</tr>
<tr>
<td>based applications and video conferencing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Office 365 for email, SharePoint Intranet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• File server at head office for large files (marketing department)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Central client management system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cloud hosted finance system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Managed site to site VPNs at each location with high grade routers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hosted VOIP system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Fibre connection 100mb/100mb at key offices /4G at remote locations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Case Study – National NFP using Azure

Organisation
National not for profit organisation with over 100 staff with main offices in Melbourne and Sydney and small office in Brisbane and Perth and mobile workforce.

Preferences
The organisation had a strong preference to not have server infrastructure and to use cloud based applications and laptops for all staff.

Requirements
The organisation mostly used online systems such as Office 365 and Salesforce however also required a central management of PCs, print management, storage of archives and backups.

Solution
Microsoft Azure was implemented for a domain controller, site to site vpn, storage of backups and file server archive.
The Design

Azure Sydney data centre
- Domain Controller
  - A2 VM
- File/Print Server
  - A2 VM + 600GB storage

Secure credential sync
- Public Internet
- Exchange Online
- Sharepoint Online
- Office365 tenant

- Sydney office
  - Azure Supported router
  - Windows 10 Laptop
    - Domain joined
    - Office 2016
  - Windows 10 PC
    - Domain joined
    - Office 2016
  - Network printer

- Melbourne office
  - Azure Supported router
  - Windows 10 Laptop
    - Domain joined
    - Office 2016
  - Windows 10 PC
    - Domain joined
    - Office 2016
  - Network printer

- Direct access
  - Email and documents
  - Azure Gateway

100Mbps + Internet
- site-to-site VPN
- Site-to-site VPN
## Sample Azure cost summary

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Description</th>
<th>Purpose</th>
<th>Estimated monthly cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual server</td>
<td>2x Standard virtual machine(s), A2 (2 cores, 3.5 GB RAM, 135 GB disk, $0.288/hr) size: 744 hours</td>
<td>Hosted Domain controller, file archive, print, AAD connect</td>
<td>$428.33</td>
</tr>
<tr>
<td>VPN Gateway</td>
<td>Standard tier, 744 gateway hours, 100GB outbound internet</td>
<td>Manage secure data transfer between Azure and Office</td>
<td>$191.51</td>
</tr>
<tr>
<td>Storage</td>
<td>600Gb storage. Basic tier, LRS redundancy, 100000 transactions</td>
<td>Storage of 600Gb of files and backups</td>
<td>$61.14</td>
</tr>
<tr>
<td>Microsoft support</td>
<td>Support</td>
<td>Ongoing support from Microsoft team</td>
<td>$36.94</td>
</tr>
</tbody>
</table>

**Monthly Total**  
$717.92

**Annual Total**  
$8,615.08

**Annual Total minus $5000 credit**  
$3,615

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/](https://azure.microsoft.com/pricing/calculator/)
Select your region

Each region requires the following to support VMs

» Resource Group
» Virtual Network and local subnet
» Gateway for VPN
» Storage account with or without geo-redundancy
» Virtual Machines
Virtual machine sizing and options

- Set a default local username and password
- Choose a size from pre-defined options showing monthly cost estimates
- Usage billed by hour and can be changed (reboot required)
- Other options available
Sign up process for existing Office 365 customers

1. Activate your Azure AD subscription from Office 365 Admin Center (If you are using Office 365. It is recommended you add the Azure grant to the Office 365 Azure AD tenant)

2. Login to Connecting Up portal to obtain validation token (https://www.connectingup.org/blog/microsoft-azure-credits-now-available-eligible-not-profit-organisations

3. Enter token into eligibility portal (http://eligibilityweb.azurewebsites.net/#/ngohome
   Use the Office 365 Admin email as Account Owner LiveID. This is where the confirmation email will be sent containing an activation link.

4. Ensure you are signed in as Office 365 admin when clicking the activation link to access the Azure credit (Credit Card required)

5. Log in to the Azure portal to start creating (http://portal.azure.com)
Roadmap and what’s next?

Top considerations prior to moving to Azure

» Does the system you need have a hosted option? (eg MYOB online or Office 365) If so how do the costs compare with self hosting?

» Is what you are trying to move compatible with Azure?

» Are your routers compatible with Azure?


» Do you need to upgrade your internet connection? If so can you upgrade and what will be the cost?

» Are you eligible for the $5000 credit?

» What will the total cost of moving your infrastructure to Azure be (including VPN) and how does that compare with buying a server?
Top tips for designing your technology solution

1. Base your design on your future business model
   What will your organisation look like in 5 year? How will your staff work? Will you grow?

2. Determine your requirements for applications
   What systems do you need? Are these systems available in the cloud?

3. Know how your staff need to work
   Are staff accessing information from remote locations or home or on mobile devices?

4. Stage the transition and do what adds most value first
   When does your current infrastructure reach end of life? What system is most urgent?

5. Consider a hybrid model of both cloud and infrastructure
   What local infrastructure do you need in the short term? What cloud systems can I move to easily?

6. Get expert advice
   Do you have a staff member, board member or support provider that has expertise in this area?

7. Build the business case and compare with local server and hosted options?
   How can you justify any costs, effort or change – reduce risk, decrease costs, improve performance?
THANK YOU

PLEASE GET IN TOUCH

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