Microsoft Azure Cloud:

Office 365 Migration

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1. Introduction

1.1 Abstract

This paper titled, Cloud: Office 365 Migration, explores the implementation of an enterprise mail service from local servers to the cloud. It touches on the practical and theoretical aspects of computer communications and networking. Specifically it builds on the principles of the building a server in cloud for emails instead of using the third party web services. Furthermore, it works with the hand-on configuration of the client-server network architecture.Focusing on the area of enterprise mail services, it will so provide specialized information on the related data communications and networking processes. This paper will finally discuss the need for Hybrid Cloud, explaining the advantages of blending local server and cloud architectures for an enterprise.

1.2 Summary

The internet is changing the way we conduct business and interact as a society. Traditionally, hardware and software are fully contained on a user's computer. Nowadays, with cloud computing, you are allowed to access your data and programs outside of your own computing environment. Rather than storing your data and software on your personal computer or server, it is stored in the "Cloud." This could include applications, databases, email and file services. One of greatest advantages of mobile cloud services is the fact that it can help decrease recurring information technology costs that are associated with fixed 'hard-wired' broadband services and the necessary information and communication technologies infrastructure.

For example, Office 365 which is a Microsoft (MS) product. It's suite of software applications, tools, and services providing a full collection of productivity applications and tools to services a enterprise or a business environment. The traditional desktop tools such as

Microsoft suite that consist of MS Word, MS PowerPoint, MS Excel, and MS Outlook are available for both local and offline use via the browser. Office 365 will integrate with your existing Active Directory and other network services to provide a seamless single sign-on experience. Therefore, will look closely at the transiting local server to the cloud. Understanding how the migration process from the local server to Office 365.

1.2.1 Section Outline

Section 1. first outlines the background and history of Office 365.

Section 2. states the deployment and installation detail during implementation.

Section 3. compares the pros and cons of the local server and cloud server.

Section 4. Conclusion and recommendation.

1.3 Background

Office 365 is a cloud base or thin client line of subscription services offered by Microsoft, as part of the Microsoft Office product line. The brand encompasses plans that allow the use of Microsoft Office software suite over the life of the subscription, as well as cloud-based software as a service (SaaS) product for business environments, that hosted their own Exchange Server, Skype for Business Server, and SharePoint among others. One of the many features and benefits is that all Office 365 plans include automatic updates to their respective software at no additional charge, as opposed to conventional licensing for these programs - where new versions require a purchase of a new license at a additional cost.

The Office 365 service consists of a number of products and services. All of Office 365's components can be managed and configured through an online portal under "Admin Center." Users can be added manually, imported from a CSV file, or Office 365 can be set up for single

sign-on with a local Active Directory using Active Directory Federation Services or Azure Active Directory. More advanced setup and features require the use of PowerShell scripts.

1.4 History

Figure. 1.1 Historical Timeline of Cloud
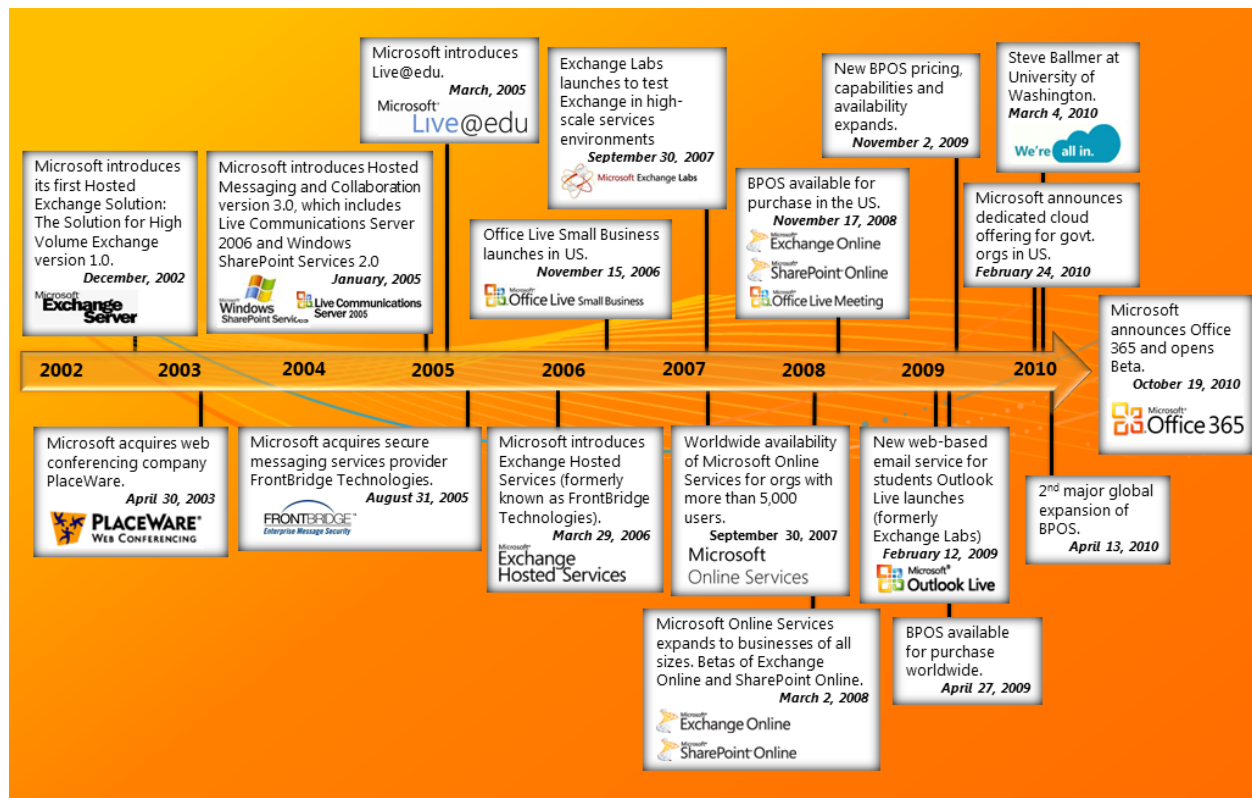
Figure. 1.1 Historical Timeline of Cloud. As shown above, Microsoft executives were pondering the possibilities of hosted applications as far back as 2003 to 2004, when Microsoft began making a handful of key strategic acquisitions in this arena.

By the time 2007 rolled out, Microsoft quietly was offering Microsoft-hosted versions of Exchange, SharePoint and Live Meeting (the result of Microsoft's Placeware acquisition) to the first few paying customers, which included Energizer, XL Capital and a handful of other enterprise accounts. It was not until late 2008, however, that Microsoft officially launched

Business Productivity Online Suite (BPOS), they bundle all of these services, as a package or suite. At this stage, Microsoft's Online Services, such as BPOS was a subsidiary for Microsoft. The company was still leading with software products, not services. Unfortunately, at this point no one was thinking about the cloud or cloud services.

In October 2010, Microsoft first announced Office 365 beginning with a private beta with various organizations, leading into a public beta in April 2011, and reaching general availability on June 28, 2011. Facing growing competition from Google's similar service Google Apps, Microsoft designed the Office 365 platform to "bring together" its existing online services Business Productivity Online Suite, (BPOS) into "an always-up-to-date cloud service" incorporating exchange server (e-mail), SharePoint (for internal social networking, collaboration, and a public web site), and Lync (for communication, and VoIP for conferencing).

2. Implementation

Implementation demonstrates the migration from a local server to the cloud server via Office 365. Although this section focuses on the cloud migration, it will begin with a description of how to configure the local server for emails in a client-server network.

Figure. 2.1 Create a User and Password in Local Server Active Directory
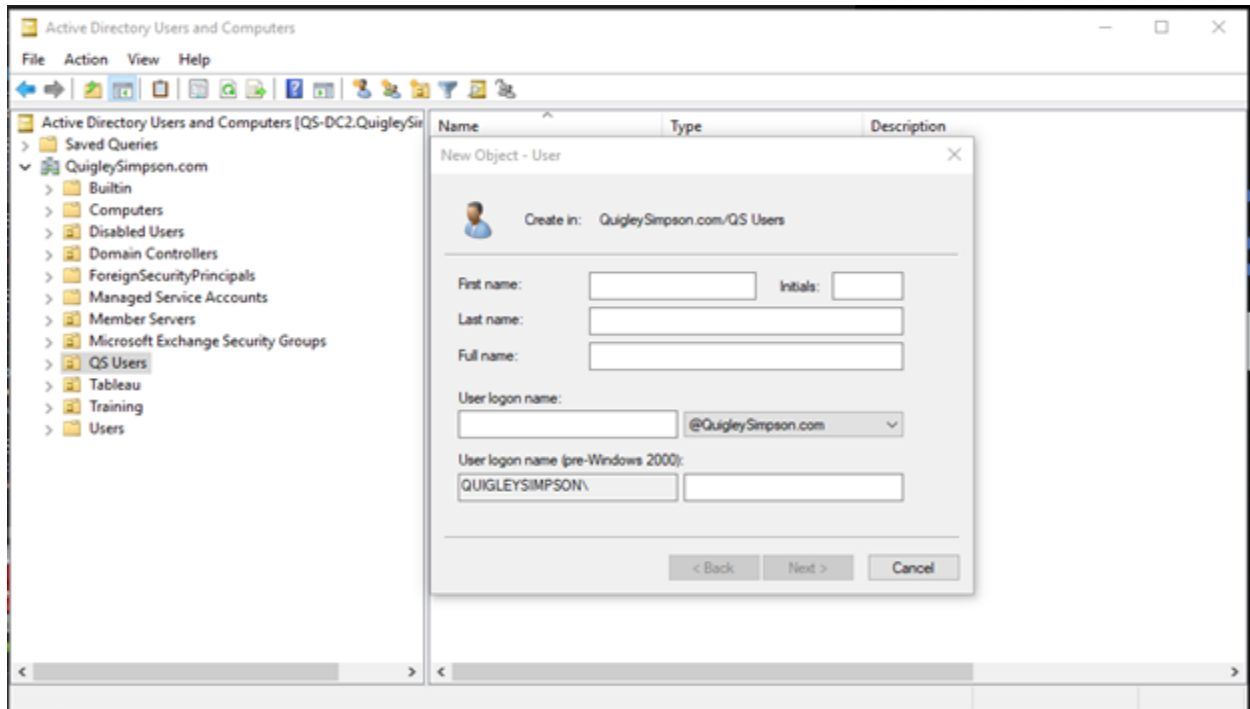
Figure. 2.1 Create a User and Password in Local Server Active Directory. Configuring the User and Password in Local Server Active Directory can be done via Control Panel > Setting> Accounts or simply the Computer Management Tool.

Figure. 2.2 Granting Group or Policy Permission to User
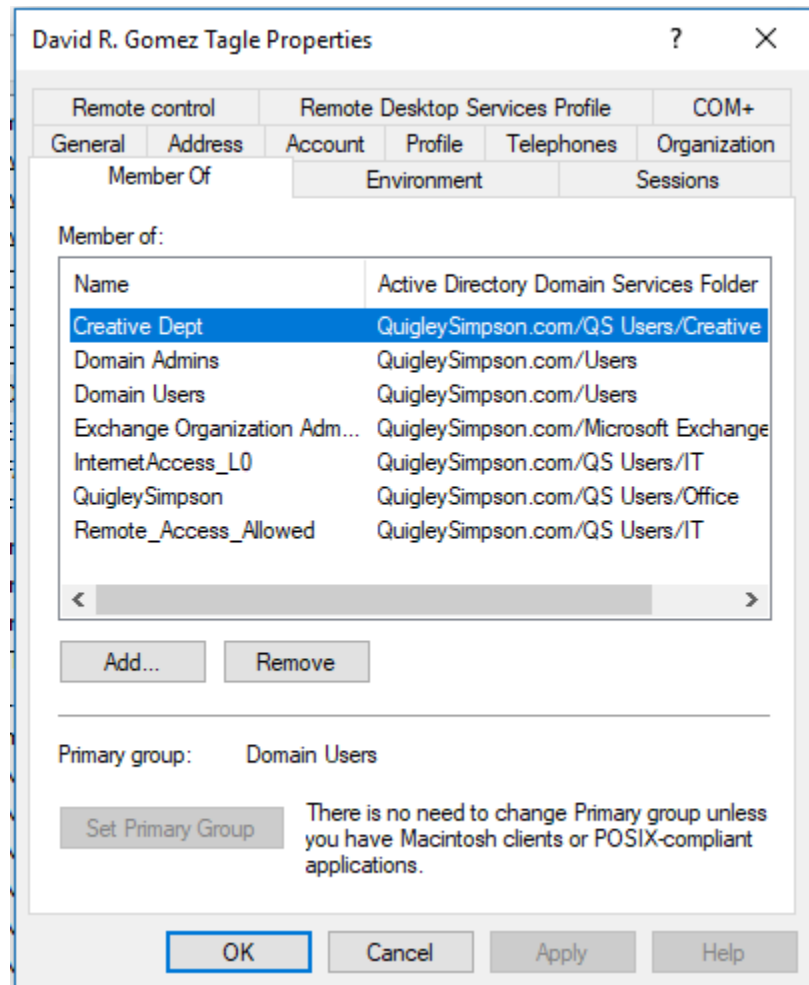
Figure. 2.2 Grant Group or Policy Permission to User. In this Client-Server Architecture, the User (David) will be given Group or Policy permissions involved with the groups he is a member. The window allows the administrator to add or remove users from Groups.

Here are the following steps how to migrate from a local server to online exchange server such as the Office 365. Migrating from Microsoft Exchange Server 2003, 2007, 2010, 2013, 2016 to Office 365 can be achieved in the simplest way via a cutover migration. That is a cutover from one service to another and hence that name. The entire migration is an easy to follow 4 step process as laid out below. Administrators should have enough information for them to plan

the migration to Office 365. Microsoft recommends using the Exchange Deployment Assistant for all migrations. This will cover most of the migration scenarios and makes the migration process hassle-free.

2.1 Installation

For instance, when you open this tool, you will be asked a set of questions and when you carefully complete those by answering and clicking Next arrows, you will get a step by step guide generated. You should read that completely, understand and keep it handy until your migration is complete. The next step is to ensure that your existing Exchange (2007, 2010 or whatever you have) supports Outlook Anywhere (RPC over HTTP) and Autodiscover. You can use the guide in Step #1 to verify your Exchange setup. Once the setup is verified, open Microsoft Remote Connectivity Analyzer Tool and select the Outlook Anywhere (RPC over HTTP) test. If the test is successful, you can go straight to the next step. Unless you have any warnings/errors, resolve those with the help of the guide and proceed.

Here are the configuration instructions for a cutover migration.

2.1.1 Steps

1. Login to Office 365 Admin Centre

2. Open Exchange Admin Centre & Click Migration

3. Click the + drop down menu and select Migrate to Exchange Online

4. Select Cutover migration (supported by Exchange Server 2003 and later versions)

5. Enter on-premises account credentials (this is the same account that you gave full access permissions to on all the mailboxes)

Figure. 2.3 Local Exchange Server 2016 - Populate the User to Generate Email


Figure. 2.3 Local Exchange Server 2016 - Populate the User to Generate Email. The figure is the screenshot prior to migration using Local Exchange Server 2016.The window shows the steps to make a new user mailbox entry boxes to enter First name, Initials, Last name, Display name, and etc.

Figure. 2.4 Options to Migrating Inboxes
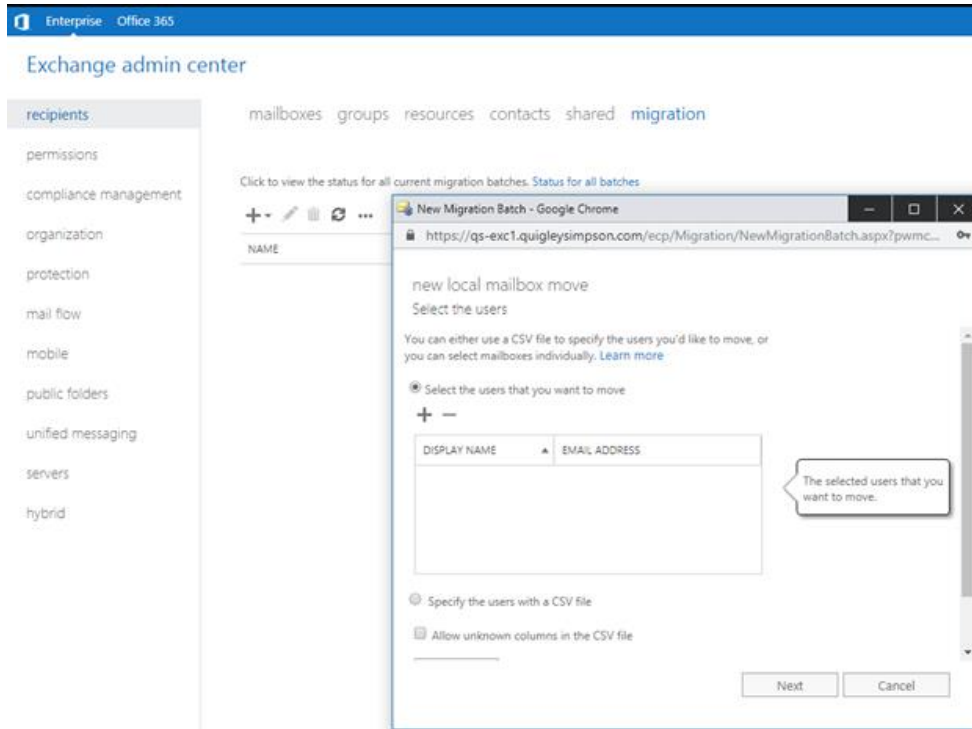
Figure. 2.4 Options to Migrating Inboxes. This figure includes some of the options used when migrating inboxes from local server to Office 365. This window is used when a new local mailbox should be migrated to the cloud using the plus and minus signs.

Figure. 2.5 Office 365 - Online Exchange Admin Center
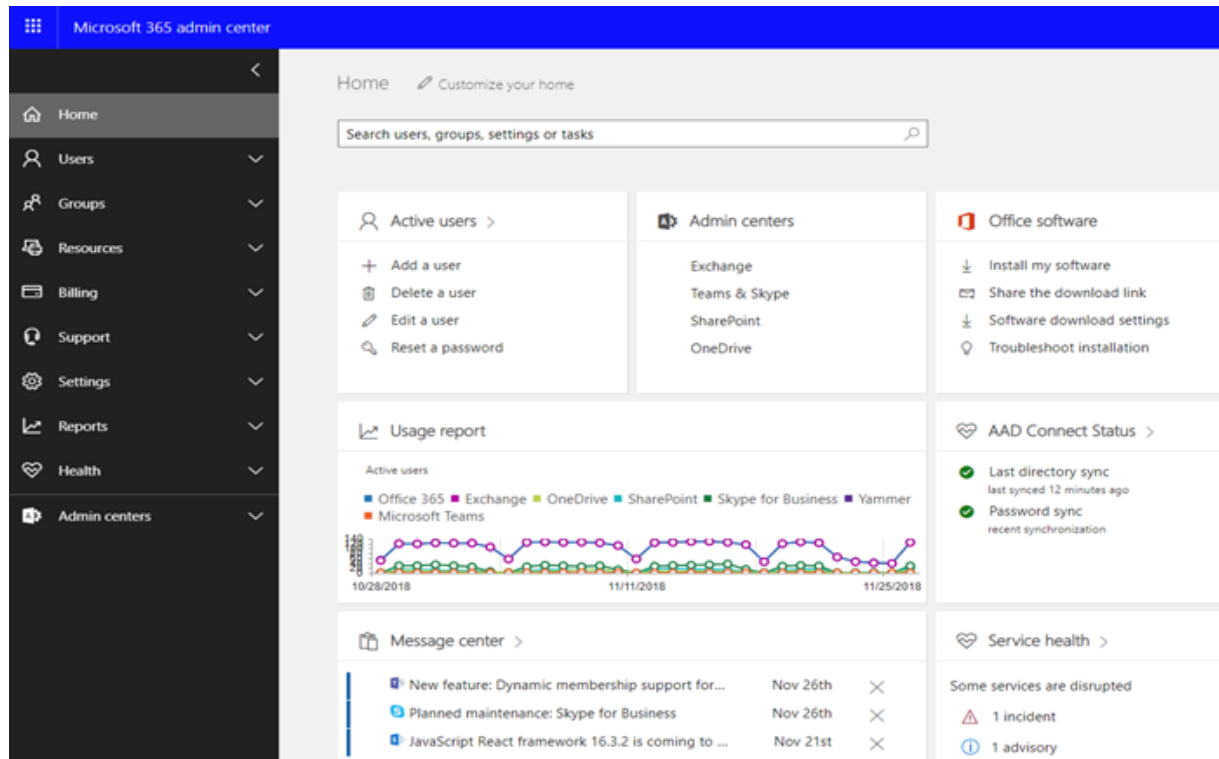
Figure. 2.5 Office 365 - Online Exchange Admin Center. This window is used to provide Administrative privileges to the Emails on the Cloud. It functions as Dashboard and includes tabs for Home, Users, Groups, Resources, Billing, Support, Settings, Reports, Health, and Admin Centers.

Figure. 2.6 Office 365 - Online Exchange Admin Center - Options / Tools
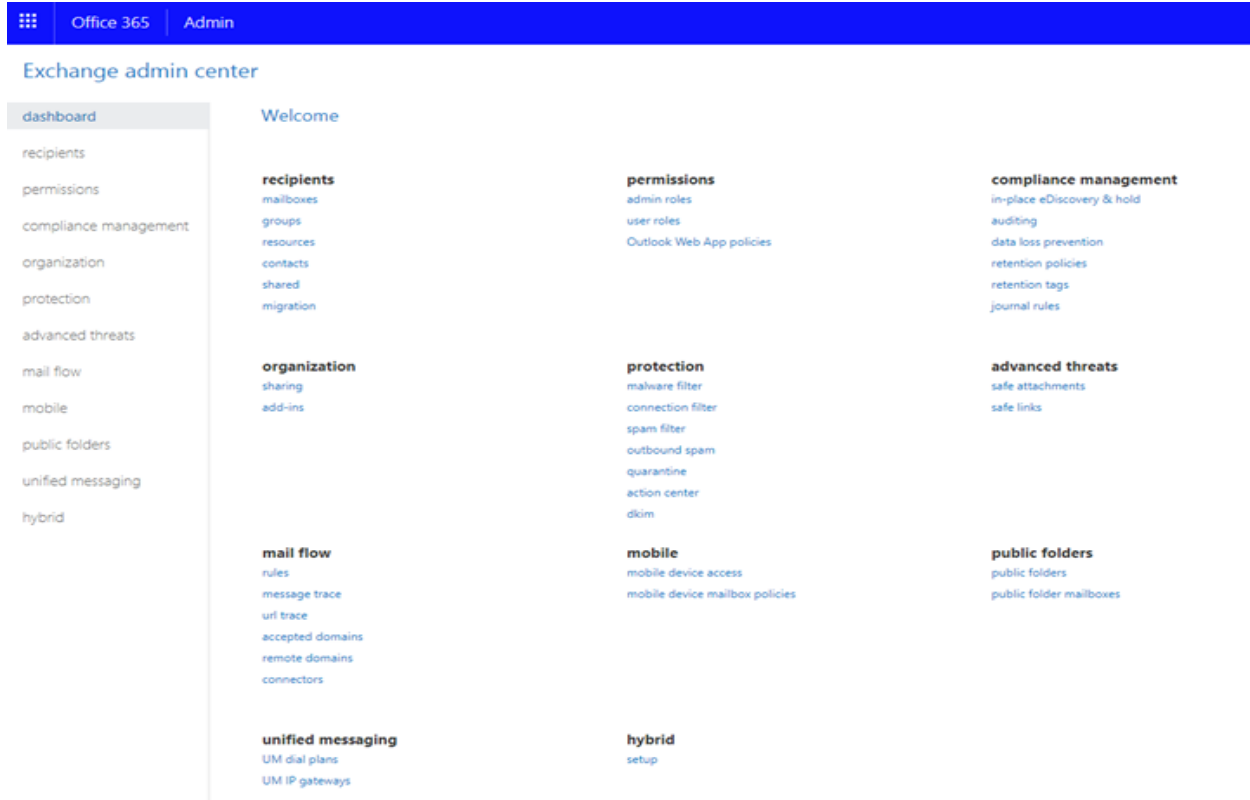
Figure. 2.6 Office 365 - Online Exchange Admin Center - Options / Tools. This window

provides all the options and tools for Administrative privileges to users and email accounts.

If you have configured properly, Autodiscover should resolve the on-premise Exchange Server

and the RPC Proxy Server.

2.1.2 Steps

1. Enter a name for New Migration batch

2. Select a user to get a report once the migration is completed. Multiple accounts can be

   selected. If you are ready to start the migration, then automatically start the batch. If

   you are not ready to start the migration, then select manually start the batch later.

3. Click New. The new migration batch is created and the status is set to sync.

4. Depending on the number of accounts and the amount of data, this can take some time to migrate. Migration details can be viewed by clicking View Details under the Mailbox Status providing sight to the accounts being provisioned in Office 365 as well as the start of the sync from Exchange 2007 to Office 365.

2.2 Deployment

The below illustration shows the main steps you will perform during a cutover migration. Organizations that have migrated to Office 365 have implemented various types of solutions and capabilities to support their use of the platform as depicted here. Once all the accounts are synced from your Exchange server to Office 365, you will get a report emailed. You are about to complete the migration process. You now have to do the following:

2.2.1 Steps

1. Migrate Public Folders

2. Assign Office 365 licenses

3. Manage Active Directory from user profile

4. Complete

Figure. 2.7 Online 365 Online Exchange - (Migrate from Local Server to Cloud Base)
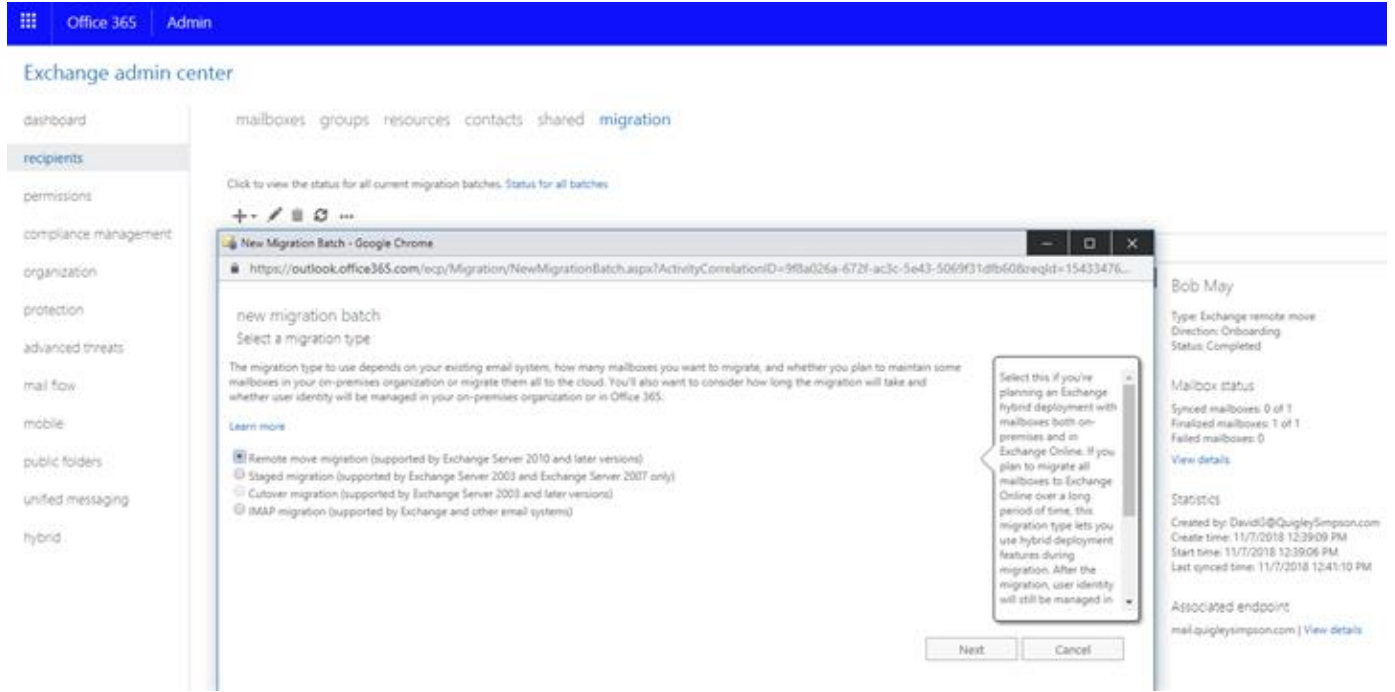
Figure. 2.7 Online 365 Online Exchange - (Migrate from Local Server to Cloud Base). This

figure shows the new batch migration and options from local server to cloud. Here the Box

checked is "Remote move migration (supported by Exchange Server 2010 and later versions)".

Figure. 2.8 Migration Status Window

Figure. 2.8 Migration Status Window. This window shows the status of migration of all the accounts from the local server to cloud server.This figure shows the Statuses of Migration as well as the Statuses of Total, Synced, Finalized, and Failed.

Figure. 2.8 Online Exchange (Group Policies, Product License, Security, and Rules)
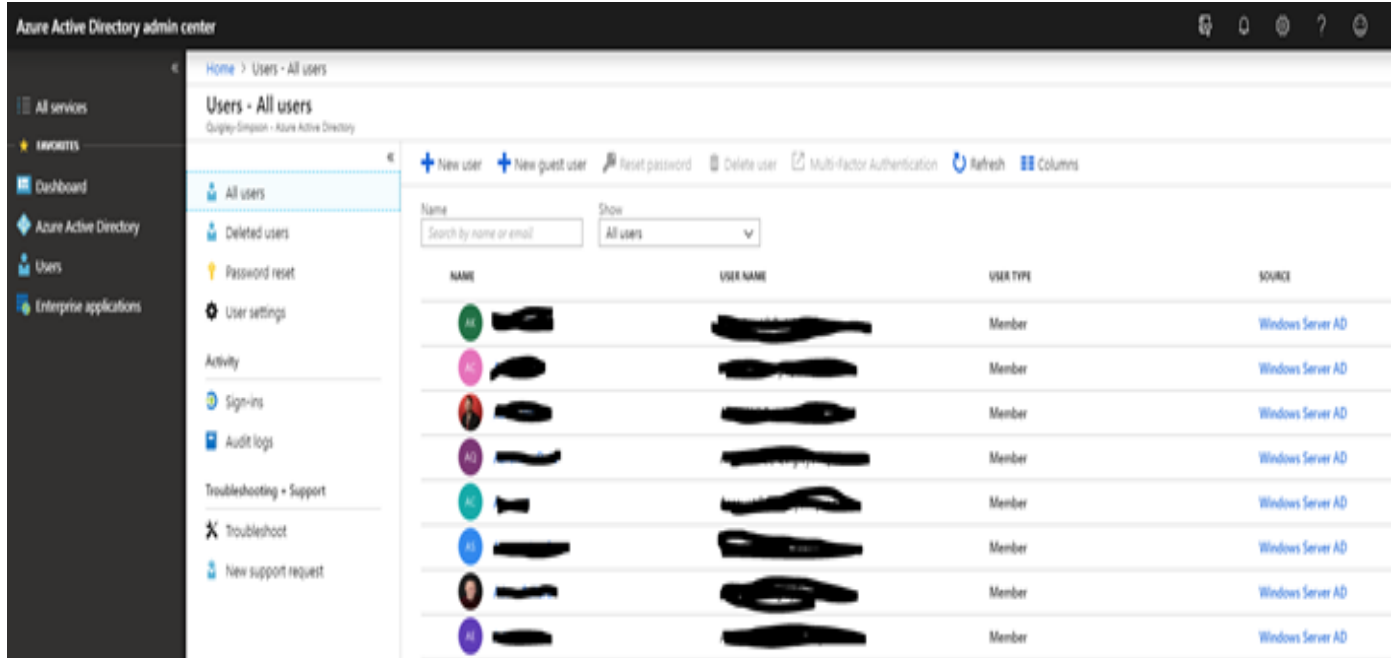

Figure. 2.8 Online Exchange (Group Policies, Product License, Security, and Rules). This

figure shows the screenshot to Give User Permissions on Cloud. This figure shows Username,

Email Address Aliases, Product licenses, Group memberships. Sign-in Status, Office Installs,

Roles, and Contact information.

Figure. 2.9 Azure Active Directory - Computer/Users on the Cloud

Figure. 2.9 Azure Active Directory - Computer/Users on the Cloud. This is the active

directory with names and usernames crossed out for security reasons. This window has tabs for

All users, Deleted users, Password reset, and User Settings. This window also has the function to

create New users and New guest users.

Whether it on a local network or the cloud, the Active Directory is used to manage

usernames and passwords for access to resources on the network. In Microsoft Azure, you can

login to your user profile on the cloud to access the Active Directory and \manage your

resources. When using the Active Directory on Office 365 via Microsoft Azure, you are a AD

user and can create access for others by using the AD controller control settings.

3. Advantages and Disadvantages

3.1 Local Server

A local server is one that provides a service by running an application which is on the same machine as the client application. The local server arrangement is common on a standalone machine that is not connected to any network. For example, when the network is down and a user is still able to access http://localhost with a browser, then there is a local web server active on the same machine. http://127.0.0.1 also produces the same result on the browser because 127.0.0.1 is an IP loopback address - all requests to 127.0.0.1 are actually sent to a server application which is in the same machine as the client.

3.1.1 Pros

- Gives you physical control over your backup
- Keeps critical data in-house. No third party has access to your information.
- No need to rely on an Internet connection for access to data.
- Can be more cost-effective for small to mid-sized companies.

3.1.2 Cons

- Requires a capital investment in hardware and infrastructure.
- Needs space in your office for a rack or server room/closet, in addition to dedicated IT support.
- Maybe more susceptible to data loss during disaster situations due to its in-house location. How often you take the data offsite will reflect how much data you'll lose in an emergency.
- No uptime or recovery time guarantees.

3.2 Cloud Server

A cloud server is a logical server that is built, hosted and delivered through a cloud computing platform over the Internet. Cloud servers possess and exhibit similar capabilities and functionality to a typical server but are accessed remotely from a cloud service provider. A cloud server may also be called a virtual server or virtual private server.

3.2.1 Pros

- No need for onsite hardware or capital expenses. Well-suited to smaller companies that may outgrow storage too quickly.

- Storage can be added as needed. Solutions are often on-demand, so you only pay for what you need.

- Backup and restore can be initiated from anywhere, using any computer, tablet, or smartphone.

- Data can be backed up in the cloud as regularly as 15-minute intervals, minimizing data losses in disaster situations. Small data set recovery time is improved.

3.2.2 Cons

The costs of the data recovery could outweigh the benefits for companies that are not as dependent on uptime and instant recovery.

- Every organization will have a limit to data that can be stored in the cloud due to storage availability and cost.

- If the Internet goes down on your side or on your cloud provider's side, you won't have access to any of your information.

- Full data recovery could prove very time-consuming and impactful on systems.

4. Conclusion

## 4.1 Enterprise Solution - Hybrid Cloud

Hybrid cloud is a cloud computing environment that uses a mix of on-premises, private cloud and third-party, public cloud services with orchestration between the two platforms. By allowing workloads to move between private and public clouds as computing needs and costs change, hybrid cloud gives businesses greater flexibility and more data deployment options.The implementation of a hybrid local server and cloud architecture creates a perfect combination that includes the best of both services. Local server maintenance and management is often very costly and expensive.Thus, Hybrid Cloud allows enterprises to scale computational resources according to their immediate needs and influx of usage. Hybrid Cloud enables consumption driven service provision and it can offload the management of many applications to the cloud service provider. Many enterprises find it costly to train and find human resources that have the skills to deal with new applications, incentivizing the need for cloud.

Hybrid cloud mitigates a certain real or perceived risk of a purely public cloud deployment while still granting the agility and flexibility of cloud services. Local servers are more expensive and faster but cloud servers are generally cheaper and slower in speed. In order to take advantage of this security and mitigate the issue with speed, the only way is to have a backup on premises for the data you are most likely to need to restore. Many cloud backup products perform hybrid backups, as they start by making a local copy of the backup data, so the backup finishes quickly. Then the local backup is replicated to the cloud storage to complete the protection. This local copy used by the backup software will only be the changes since the last backup, so not really enough to protect against bulk data loss. The backup software would need to consolidate a few sets of change data to protect all the files you are working with regularly,

which are the files you need restored fastest. This would be a good approach for backups that happen entirely on the computer with limited storage capacity, where there isn't an on-premises backup appliance. In the case of contingency disaster recovery, Hybrid Cloud servers offer a more secure way to save data with faster speeds.

4.2 The Future of the Hybrid Cloud Solution

The future of the Hybrid Cloud Solution will vary depend on the organization and industry that uses it. In the case of large and established organizations like universities or banks, the Hybrid Cloud solution may be viable option considering the investments that they already have in legacy systems and on-site server architecture. For smaller companies and startups, a full Cloud solution may be the better suited in order to avoid costs of physical servers as well as maintenance and management.

Figure. 4.1 Graph of Hybrid Cloud Market
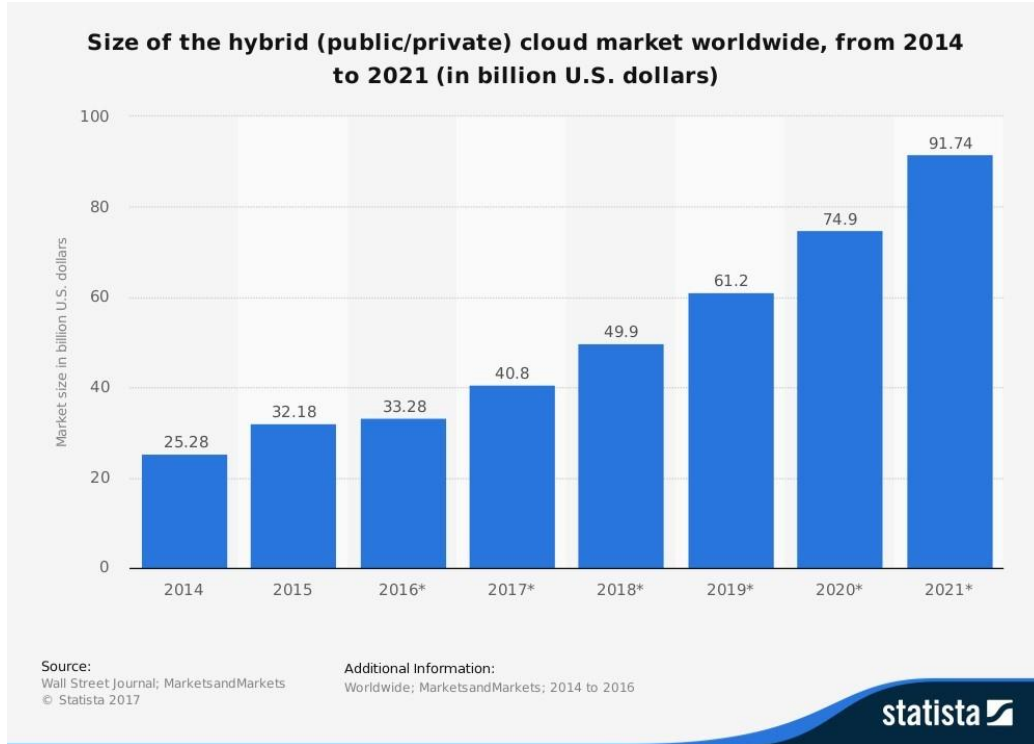
Figure. 4.1 Graph of Hybrid Cloud Market. The Market shows to have steady growth into 2021. Currently today we are estimated between $49.9-61.2 B worldwide.

The Hybrid Cloud service architecture is here to stay. Legacy systems are as likely to disappear as the computer itself. Much of the same goes for Cloud systems as their prevalence increases with technology giants such as IBM, Google, Microsoft, Apple, and Amazon. Together, the two services provide an optimal solution for companies across various industries worldwide.

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