

Cloud Migration: Adobe on-premises software Solution to the Cloud with Microsoft Azure Integration, a SaaS solution.

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Abstract

As part of the Sarah Parisa Health Services (SPHS) initiative to improve Information Technology and provide an excellent end-user user experience, this business proposal clearly outlines the business value and benefits of migrating the organization to the Cloud. It identifies the need for SPHS's current solutions for legacy-to-cloud migration. Our organization has been under much pressure from the business for certain Adobe Creative Cloud (CC) products for several months. Some of the products and new fictionalities are unavailable in the older products to meet the business need. On top of this, the vendor has released a new version; they dropped support for the older versions and threatened non-compliance if we do not migrate to the cloud. If our organization does not migrate to the cloud, we will be forced to uninstall all the software, which would cause a major disruption to the business. Without an agreement, our organization would be forced to go to the market to replace the current software. The organization is finally in a place where all the tools, technologies and enterprise licensing needed to implement this solution are now available within its environment. So are proposing to move to the cloud, which is named the user model, to meet business needs and strategic business objectives, keep up with technological improvements, mitigate the risk, and comply with the industry's best practices.

Keywords: Cloud services, legacy-cloud migration, Admin Console, Microsoft Azure, SPHS:

1 Introduction:

Sarah Parisa health services is a flourishing organization of approximately 350 people in the south of Edmonton, Alberta, Canada. For years, our organization has been using "Serialized Deployment Methodology," which allows the software to be packaged with embedded serial numbers and pushed to end-user workstations. This allows us to manage the applications that will be installed as well as the system.

updates based on the kind of environment we operate. In 2012, Adobe moved from a serialized license model to a subscription-based Named User Licensing model, in which a unique identifier would identify every user of Adobe desktop software. Adobe wants to move from traditional Enterprise Licensing to a Named license - per user email. This is to support and better the increased integration of cloud services into desktop applications. New versions of Creative Cloud applications are released as part of the applicable licensing technology update and will only be available if deployed via Cloud-named user licensing. With this change, serial numbers will no longer function. Adobe gave us an exception to move to the user-based licensing by the end of the contract; if this does not happen, SPHS would be forced to uninstall all of the software, which would cause a major disruption to the business. Without an agreement, our organization would be forced to go to the market to replace the current software.

Expected Benefits

Cloud migration has several significant benefits for the organization.

- Opportunity to offer new products and functionalities
- Ability to scale up and down rapidly both for entire software systems and single applications and services and stay up to date on
- Access advanced applications direct access to Adobe Support right from the Enterprise dashboard
- Elimination of up-front commitment and ability to pay on a 'pay-per-use' basis.
- Improved End User Experience due to increased reliability /supportability and expanded features/application integration into workflows.
- Mitigation of end-of-life risk of Adobe Products
- Ability to leverage Adobe cloud to scale out desktop collaboration service more rapidly as required
- Performance: Moving into the cloud provides higher performance and customer satisfaction than traditional business processes.
- Productivity: As it manages the complexity of infrastructure, so improved productivity is more focused on a continuous process of growing business.
- Flexibility: It allows for optimizing costs and improving flexibility. can be accessed as per demand/need.

2 Related Work:

Cloud migration represents a fundamental change in how IT is provisioned and used. Organizations must consider the benefits, risks and effects of cloud computing on their organizations before moving forward.

Case studies provide an effective way to investigate these areas in real-life organizations. Related work in each of these three areas are:

Armbrust et al. argued that elastic- it is an important economic benefit of cloud computing as it transfers the costs of resource over-provisioning and the risks of under-provisioning to cloud providers. Motahari Nezhad et al. added that the potentially reduced operational and maintenance costs are also important from a business perspective. . . Earlier this year, Netflix announced they had finally switched off their last physical data center and completed their migration to the AWS Cloud. From an enterprise perspective, security, legal and privacy issues present a number of risks, as pointed out by detailed reports from the Cloud Security Alliance. Acon modernizes collaboration by migrating to Microsoft Teams.

A Toronto-based accounting firm had evolved from sharing a single staff desktop computer when the firm was founded 35 years ago to more recently having our on-premises IT infrastructure consist of a dedicated desktop or laptop computer for each team member with access to a shared drive on which secure data is stored. They are a small enough firm whose IT requirements have not required expansion beyond this hardware. Over the past two decades, they have purchased accounting, bookkeeping, communications, and security software stored in an on-premises environment and updated with new software releases as necessary. QuickBooks Desktop has been their principal accounting and bookkeeping software. They have purchased this software, updated it as necessary and maintained licensing requirements.

In recent years, the company has encountered increasing demand from clients for real-time access to their accounting and bookkeeping data, such as income and expense reports. Several clients have opted to use QuickBooks Online (QBO) and have requested assistance with navigating that environment.

When two tech-savvy team members joined the firm, they brought with them the drive to ensure that the company meets the increasingly digital demands of their clients so that they can remain competitive in a large sector and an evolving profession. To support that, they began investigating IT solutions that could meet their new needs.

The research was conducted on cloud-based accounting software providers that met the company security and pricing criteria. It was agreed that QuickBooks Online Accountant, offered as a SaaS subscription, would be the optimal service for their firm. As such, the firm embarked on the journey of migration to QuickBooks Online Accountant and was successful. These cloud-based software programs enabled their employees to remain productive and meet client needs without significant upfront capital investment. This was one of the most important of moving to cloud-based software.

The latest published figures show that creative Cloud has been available for almost a decade and continues to extend strong adoption worldwide.

3 Methodology:

This business proposal involved research, group discussion and subject matter experts' interviews between October and November 2022. Initially, all documents relating to the system under investigation were gathered and studied. The research work had six stages:

Phase 1: Perform internal security review and assessment. Review the Creative Cloud solution to ensure organizational Cloud security requirements are met and documented -

Phase 2: Perform Organizational Change Impact and develop effective corporate communications, end-expert sessions, and other training materials.

Phase 3: Develop Migration strategy: Migration users will be split into four phases based on their comfort with change and disruption:

Phase 4: The infrastructure costs and implementation of the system were calculated and evaluated based on related work. These were compared with those of a similar infrastructure setup on Microsoft Azure.

Phase 5: The company has an asset repository called Asset manager of all support and maintenance issues regarding the current Adobe products they support. This repository was manually researched, and all the support calls and internal knowledge that would potentially be affected by the migration were identified and analyzed. It is used for collaboration and knowledge management inside an organization.

Phase 6: The results from the above five phases were used to produce a bulletin and newsletter. The newsletter was presented to staff, and interviews were performed. The discussions started by giving the interviewees an overview of Microsoft Azure and Adobe Admin Console as they were only partially familiar with this cloud technology. Each interview was recorded, and a copy of each interview was produced. Some issues were identified and agreed upon using a stakeholder impact analysis. Stakeholder impact analysis is a method of identifying potential sources of benefits and risks from the perspectives of multiple stakeholders and is performed by analyzing the interview script. It comprises of:

Stakeholder Identification

1. Identifying changes and assigning roles and responsibilities using the RACI chart (Responsible, Accountable, consulted and Informed) and how to carry out the functions.
2. Identifying and analyzing stakeholder impact concerning stakeholders' time, resources, capabilities, and satisfaction.
3. Identify Statehooders' interest using Power-Interest Grid – Keep staff, manage closely, Monitor and keep informed

Scope:

- Location – **Across the organization**
- External users/internal – **Internal**
- Business timeline- **December 1st, 2022**
- License Model – **Enterprise Licensing**
- Win 10 Operating system

Out of Scope:

- Generic or Shared devices
- Win 7 devices

Transition Requirements

- Engagement Sessions
- Users receive training for Adobe Creative Cloud through Adobe Expert Sessions
- Security and Compliance policies are in place

4 System Design and Architecture:

To achieve this, the following needs to be put in place:

Connector Architecture AND Implementation Requirements

1. Federation setup between Adobe Cloud and SPHS as an Identity provider (authentication part)
 - Use Active directory federation and set up an on-premises server(s) to sync users to Adobe cloud (first, last names and email + group memberships)
2. User community sync to identify who shall have access to each Adobe product (manageable on-boarding/off-boarding mechanism on Adobe cloud)
 - Use Azure Active Directory Federation + Azure-Adobe automated provisioning feature, which syncs specific user group membership from Azure Active dire

tory to Adobe cloud.

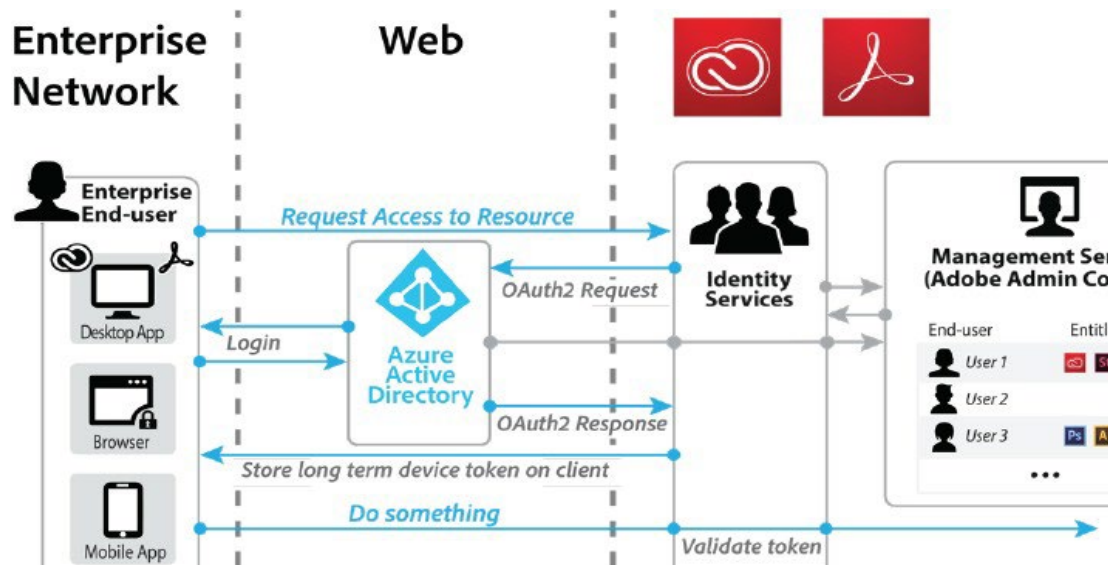
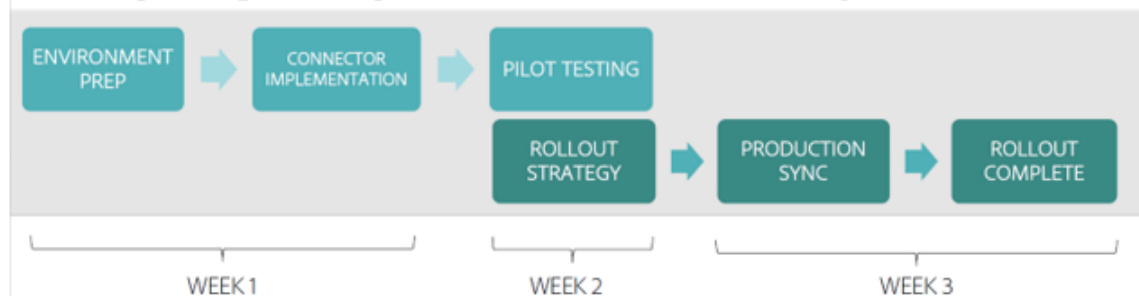


Figure 1

- The architecture diagram portrays the end-user's interaction with the Adobe Named User Licensing system when a customer is utilizing the Microsoft Azure Active Directory
- The end-user has the Adobe applications installed locally on their desktop or their mobile devices, and the software can be installed exactly as it's been done in the past.
- Instead of the license being serialized and embedded into the applications on the desktop, the license and entitlements are accessed via the Adobe Admin console

Proposed High-Level Implementation Plan/Timeline: 3 weeks Project Task Chart



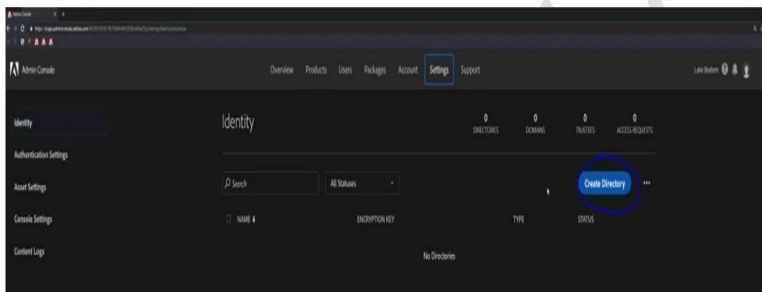
Implementation

Step-by-step guide of integrating Adobe with Azure AD to allow users to have a single sign-on experience using their user's Active Directory credentials when accessing adobe products.

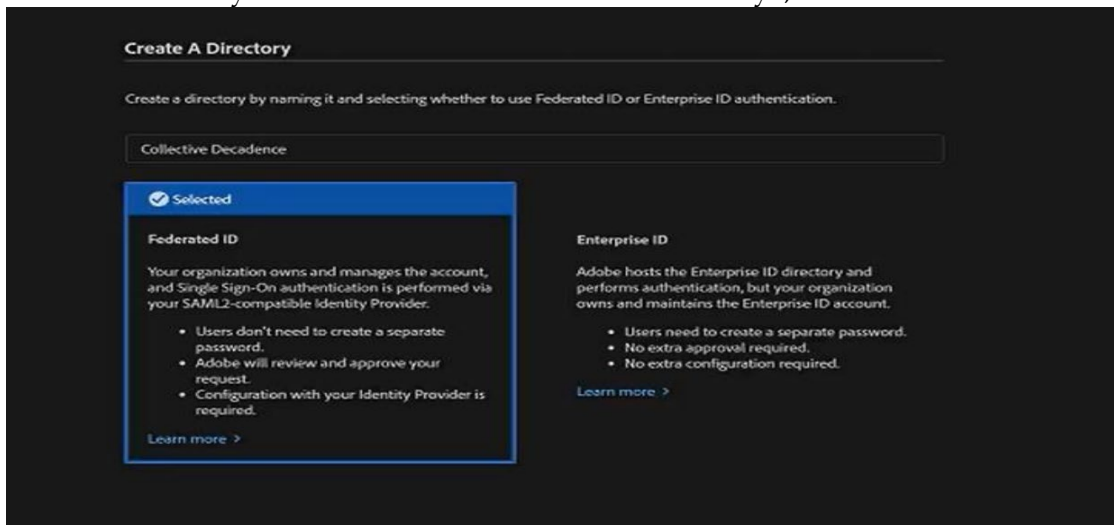
Adobe Integration with Microsoft Azure Active Directory

Adobe Admin Console Configuration:

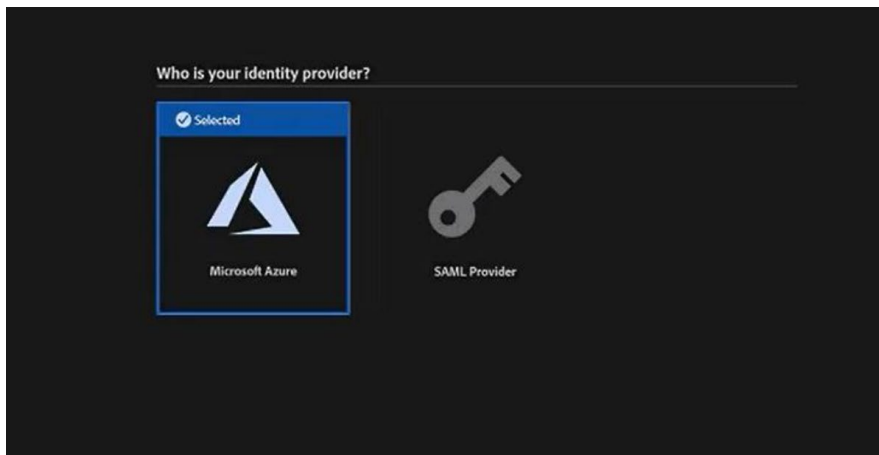
Log in to the Adobe Admin Console with the console Global admin account
Go to Settings, Identity, Create Directory



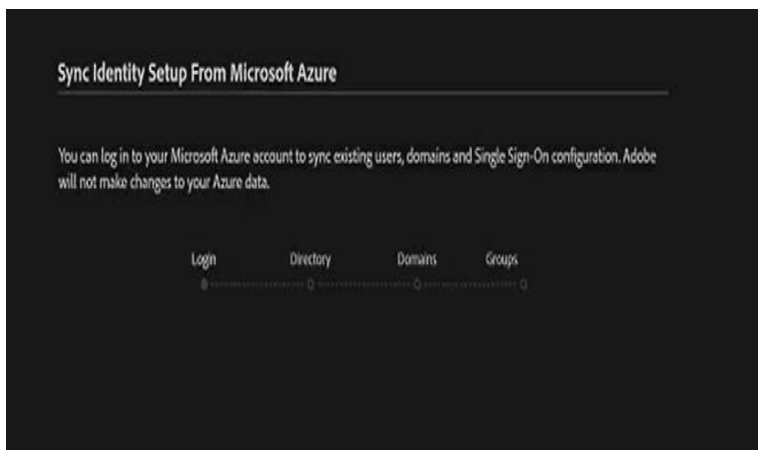
Give the Directory a name such as "SPHS Adobe Directory", and select Federated ID.



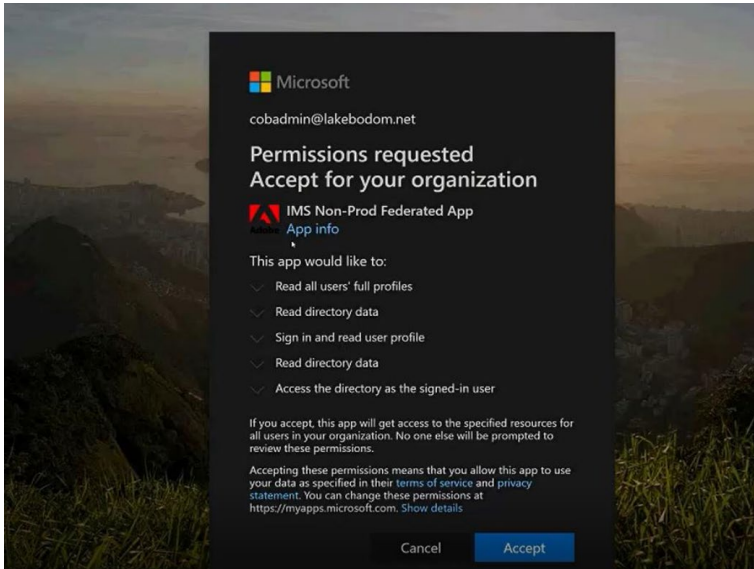
Choose Microsoft Azure



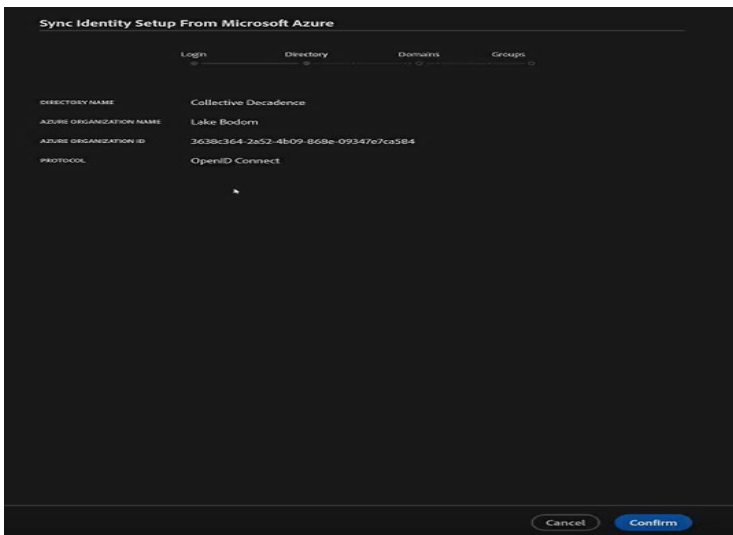
Log in to the Adobe Admin Console with the console admin account.



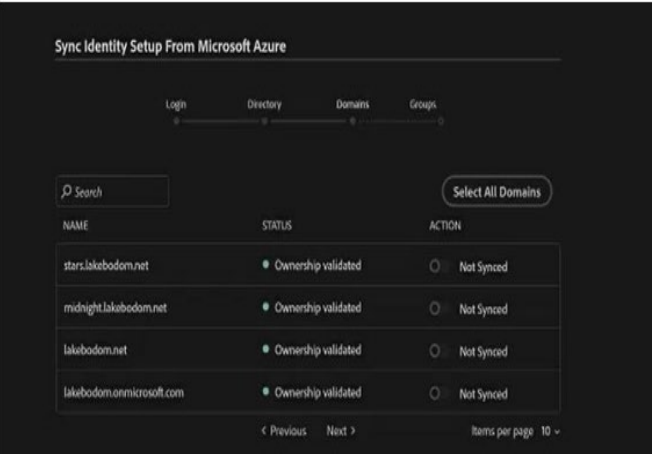
Accept to grant the permissions to Adobe app from Azure



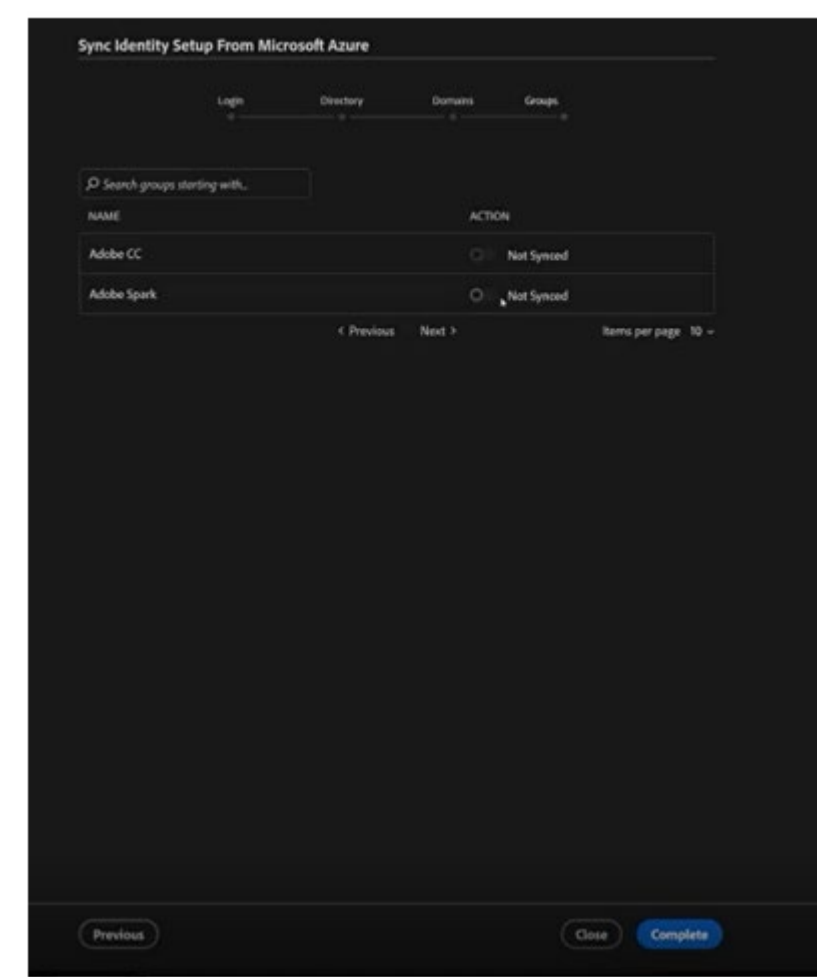
The page will be redirected back to the Adobe Admin console after clicking on Accept; it will automatically complete the rest of the process; click Confirm.



Choose the domains which you want to sync from Azure to Adobe, click Next



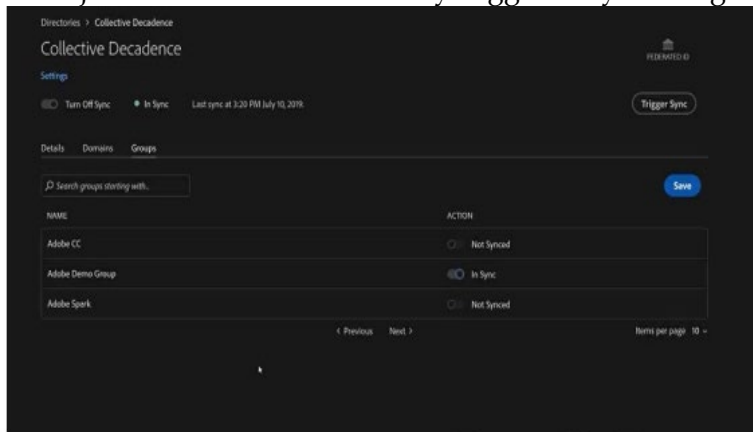
Choose the Groups which you want to sync from Azure to Adobe.



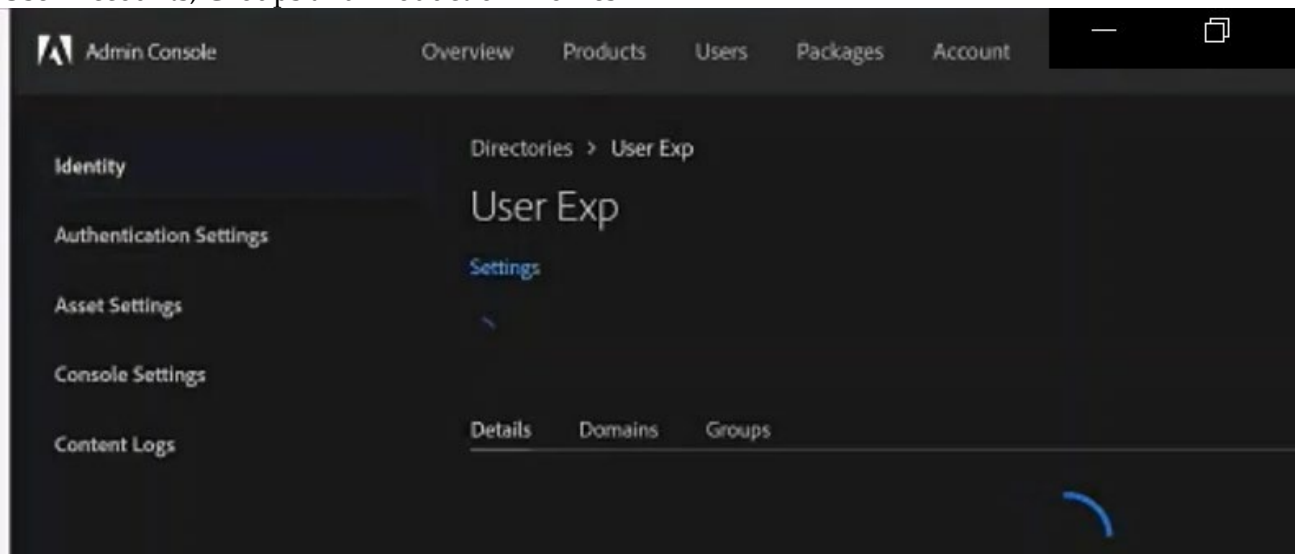
Click Complete.

Synchronization Cycles

The synchronization will automatically happen every 15 minutes; it is an incremental sync for all the objects. It can also be manually triggered by clicking on Trigger Sync.



User Accounts, Groups and Production Profiles



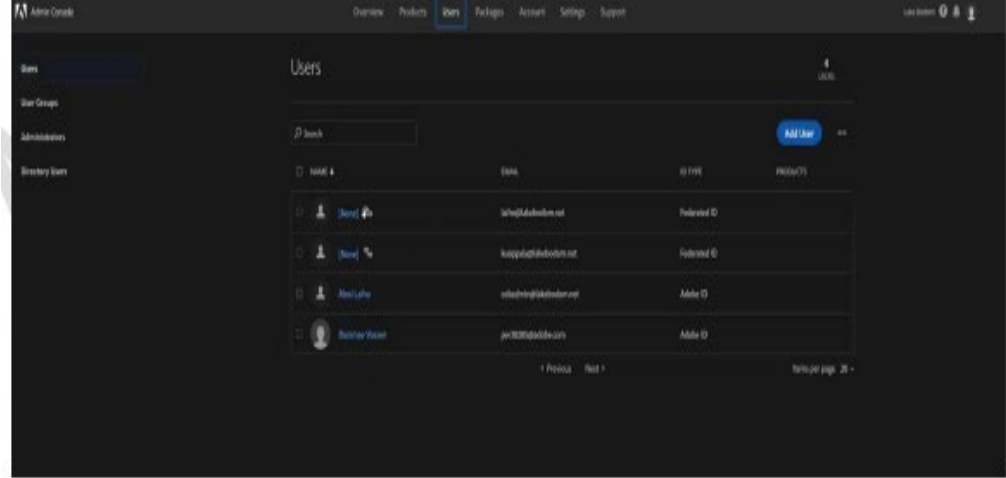
1. User accounts need to have the following attributes in Azure:

- ☐ User Principal Name (Compulsory)
- ☐ First Name (Optional)
- ☐ Last Name (Optional)
- ☐ Country (Optional)

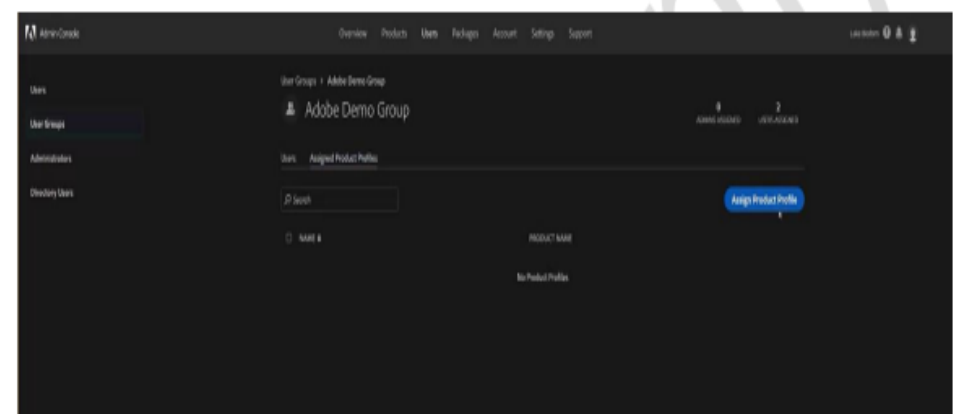
Example Groups/Products Mappings

AZURE AD DIRECTORY		ADOBE ADMIN CONSOLE		
Directory Group Name		User Group Name	Product Profile Name	Product Group Name
ADOBE_AcrobatPro		ADOBE_AcrobatPro	Acrobat Pro	Acrobat Pro DC (desktop only)
ADOBE_AfterEffects		ADOBE_AfterEffects	After Effects CC	After Effects CC - 100GB
ADOBE_Animate		ADOBE_Animate	Animate CC	Animate CC - 100 GB
ADOBE_Audition		ADOBE_Audition	Audition CC	Audition CC - 100 GB
ADOBE_Dreamweaver		ADOBE_Dreamweaver	Dreamweaver CC	Dreamweaver CC - 100 GB
ADOBE_Illustrator		ADOBE_Illustrator	Illustrator CC	Illustrator CC - 100 GB
ADOBE_InDesign		ADOBE_InDesign	InDesign CC	InDesign CC - 100 GB
ADOBE_Muse		ADOBE_Muse	Muse CC	Muse CC - 100 GB
ADOBE_Photoshop		ADOBE_Photoshop	Photoshop CC	Photoshop CC - 100 GB
ADOBE_Prelude		ADOBE_Prelude	Prelude CC	Prelude CC - 100 GB
ADOBE_Premiere		ADOBE_Premiere	Premiere Pro CC	Premiere Pro CC - 100 GB
ADOBE_AllApps		ADOBE_AllApps	Creative Cloud All Apps Suite	All Apps plan - 100 GB

2. Users and groups can be found under the Users menu on the Adobe Admin Console.

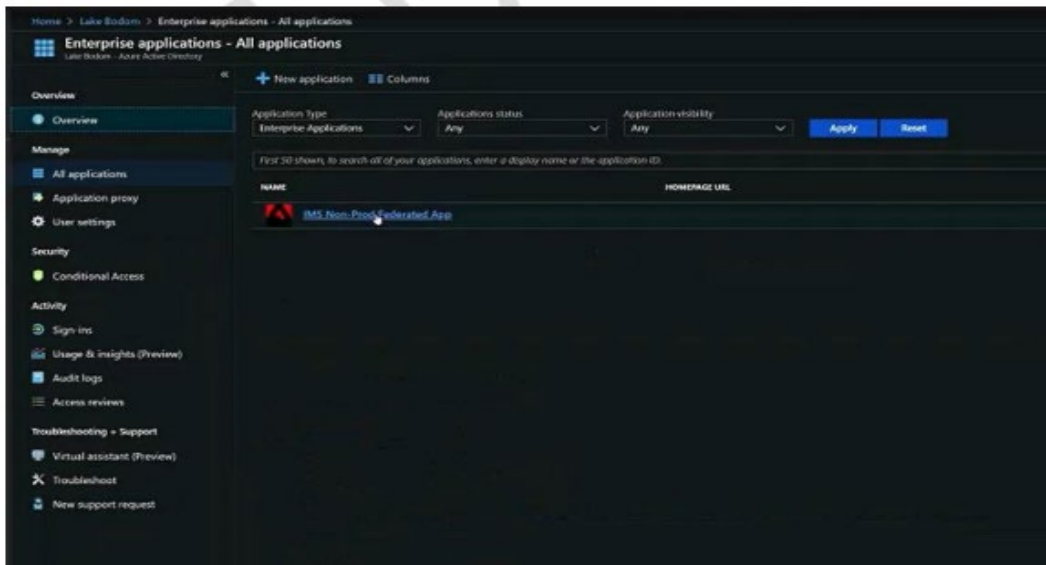


Click on a certain group, click on the “Assigned Product Profiles” tab, then click on “Assign Product Profile” to assign the licenses to this group.



Azure Enterprise Application

The integration creates an Enterprise application in Azure AD.

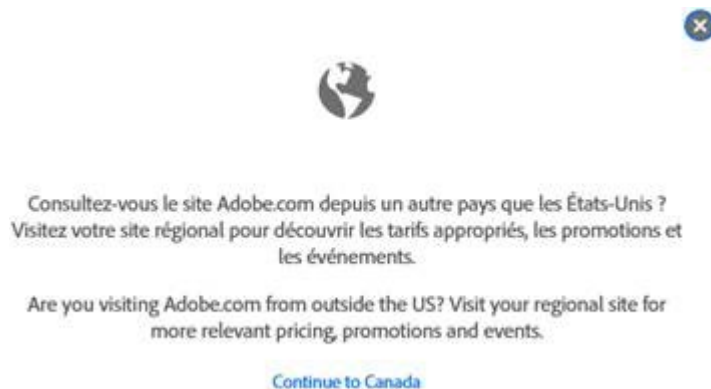


User Experience

Launching a New Adobe CC Applications

After a new Adobe CC application has been installed on the device and you launch it for the first time, you will be prompted with a Sign In window. Type in your full email address and click on “**Continue**”.

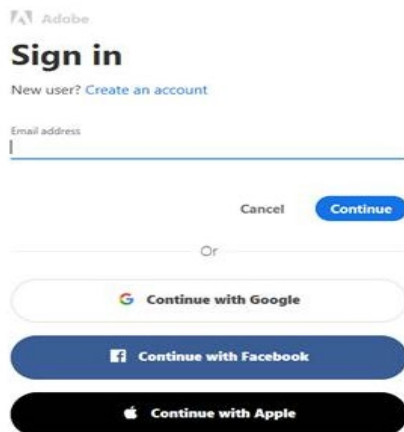
1. [Go to https://www.adobe.com/](https://www.adobe.com/)
2. Click on “**Continue to Canada**”.



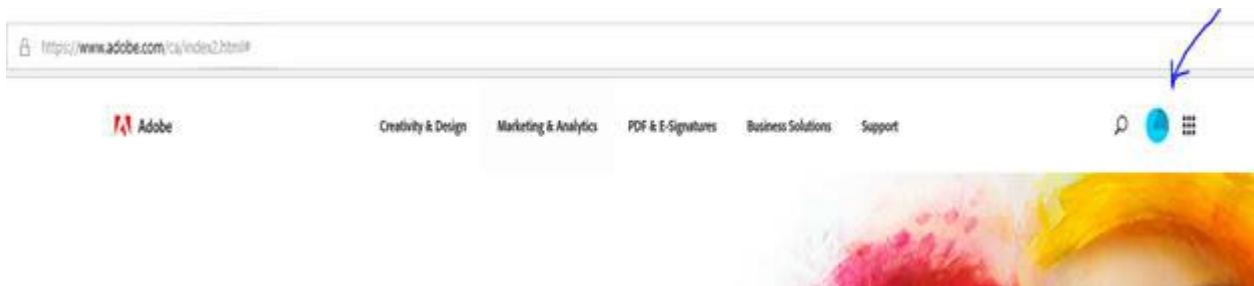
- 3.

After a new Adobe CC application has been installed, launch it for the first time, and you will be prompted with a Sign In window. Type in your full organization email address and click on “**Continue**”.

Firstname.Lastname@sphs.ca



Click on the Blue Icon on Right Hand Side, and on your account name to view the Profile and Plans.



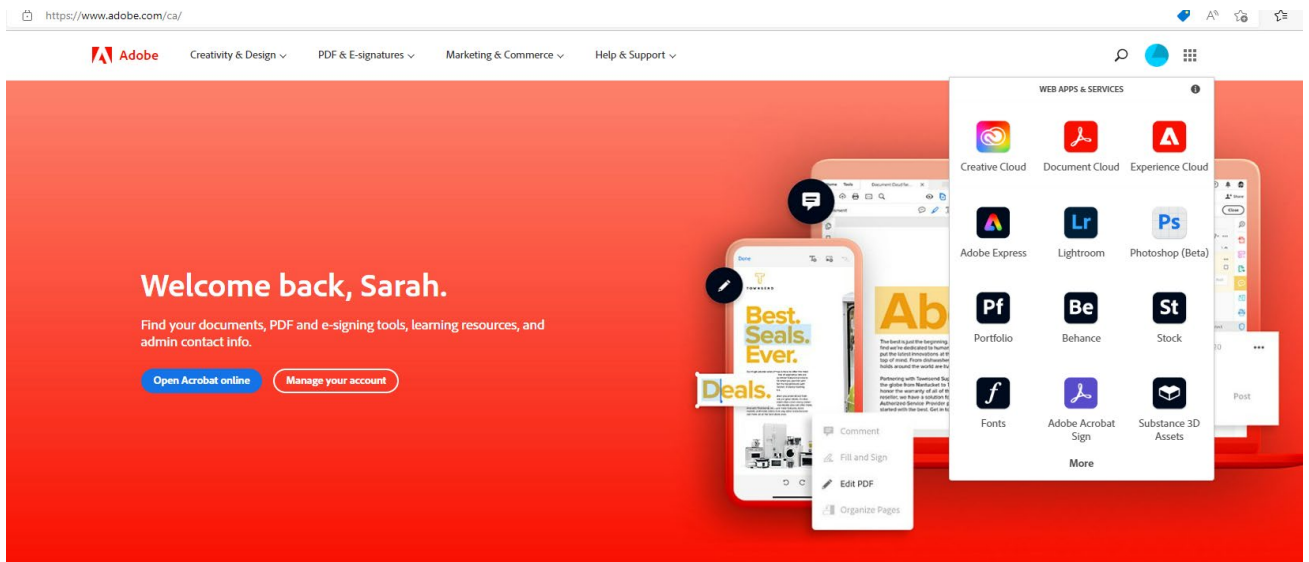
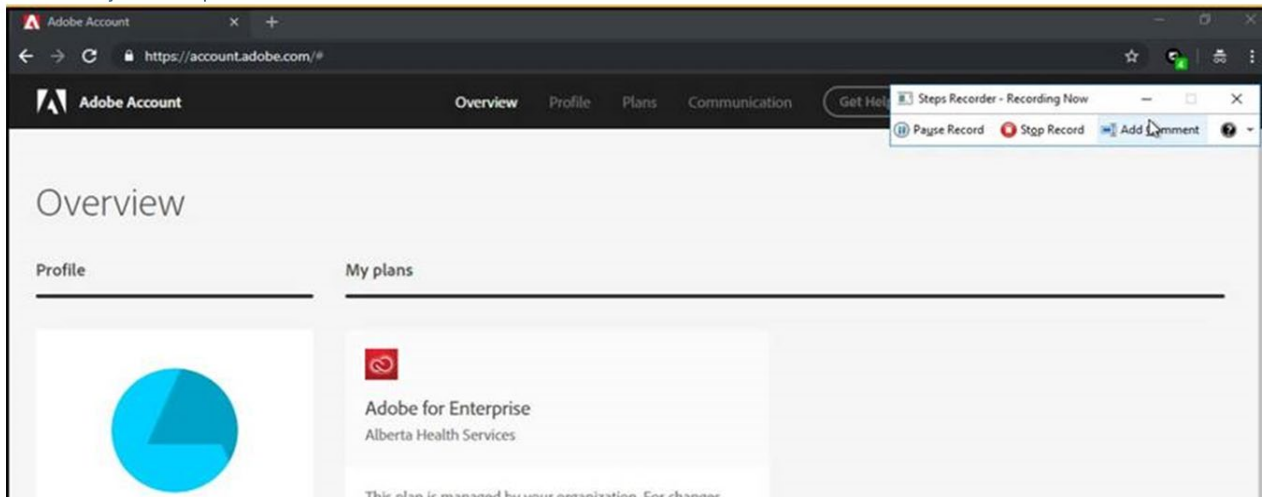
This account sign-in only happens once, which is applied to all devices within SPHS.

Once their ID has been validated within Adobe’s Azure Dashboard, those applications assigned to the client would launch without further authentications.

If an Adobe application has not been used in the past 30+ days, re-authentication will occur.

Note: There is a 90-minute delay between getting access and having the ability to sign into the application. Also, you will need to relogin to your PC.

The licensing process could take up to 24 hours to complete.






Welcome to your account, Sarah

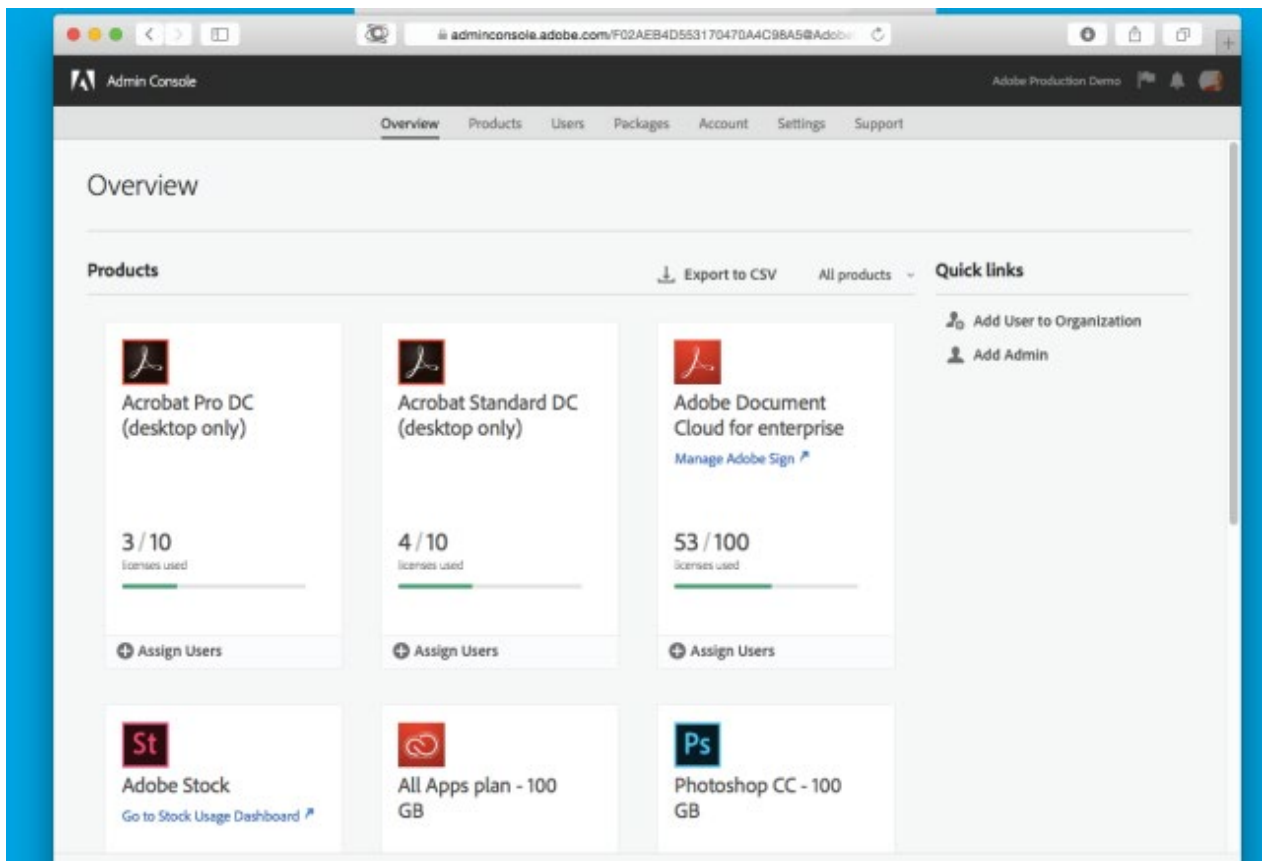
Your plan



Adobe for Enterprise

Included in your plan

-  Adobe Scan
-  Acrobat Reader
-  Acrobat DC Standard
-  Document Cloud Review Service



The screenshot displays the Adobe Admin Console interface. The top navigation bar includes links for Overview, Products, Users, Packages, Account, Settings, and Support. The main content area is titled "Overview" and features a "Products" section with a table of usage statistics. To the right of the table is a "Quick links" section with buttons for "Add User to Organization" and "Add Admin".

Product	Licenses used	Action
Acrobat Pro DC (desktop only)	3 / 10	Assign Users
Acrobat Standard DC (desktop only)	4 / 10	Assign Users
Adobe Document Cloud for enterprise	53 / 100	Assign Users
Adobe Stock	-	Go to Stock Usage Dashboard
All Apps plan - 100 GB	-	-
Photoshop CC - 100 GB	-	-

All users who try to use any Adobe application (exception is Adobe Reader) will be prompted to enter their email account once. This is to set up your account with Adobe corporation.

Conclusion

Implementing Cloud solution achieve significant benefits through an increased IT team and end-user productivity, maximizing software investments and lowering the total cost of ownership. Cloud computing brings a new level of life and innovation to the organization's business practice. In this project, the following were accomplished: federated log-in for Adobe users, tested Creative Cloud and Document services and ensured they were accessible and successfully deployed desktop software to all end users.

Named User Licensing allows end-users access to the applications and services they demand in ongoing projects while establishing the control IT needs to meet the organization's requirements. It also benefits from a simpler method to maintain compliance (no need to track serial numbers or count installations) and management of licenses and services through the Adobe Admin Console.

Implementing this solution aligns processes more closely with IT Asset Management and Cloud best practices, increases efficiency, ensures cost-effective purchasing decisions, and avoids negative consequences from non-compliance.

By realizing the above benefits, adopting, and Implementing cloud solutions would save the company a huge amount of dollars, face audits, and help manage the resource in an automated fashion with less effort.

Additionally, software metering as part of cloud features allows tracking application usage. It will enable the organization to identify where they could potentially save some money (by removing applications from computers that don't need them and paying less for licenses) or where they need to buy more licenses to get in compliance with the application.

Since customers and employees define value, SPHS must keep its software asset's safety as the central focus in all aspects of service delivery. The effectiveness of the myriads software asset management (SAM) tools adopted in providing any service can have a positive or negative, direct, or indirect impact on employees' and organizations' experience. Therefore, it is prudent to follow a disciplined approach to SAM tools as a business tactic for responding effectively and rapidly to ensure the best possible experience.

Using a cloud-based solution prevents problems organizations face that relies on on-premises infrastructure. With its established capacity for innovation, security, and cost savings, cloud migration should be fully embraced as the cornerstone of a digital transformation strategy.

SPHS must keep pace with innovation by migrating to the cloud, and minimizing this capability gap offers clear savings to organizations simply by not investing in outdated technology. After migration, we ensure that maintenance and monitoring plans are in place. Also, all necessary training materials and documentation are documented and communicated to all relevant stakeholders and users.

Limitations of the System

This project focuses on the Adobe products migration into the cloud.

There are a few limitations which are identified below:

- Many applications are not ready to be moved to the Cloud because the environment is not mature enough for this type of application, e.g. safety-critical software.
- Scaling up and down rapidly without performance loss on the user side is challenging.
- Large-Scale Distributed System – The connection between on-premise services and services hosted in the Cloud sometimes does not match service requirements.
- The license mechanism is not developed for shared devices.

There is a probability that some related work may have been missed. The project team uses discussion meetings to reduce the risk of validity.

Future Scope of the Project

- Work separation for teams - New roles and responsibilities lead to difficulties in the division of labour - Identify and Implement a RACI chart - (Responsible, Accountable, Consulted and Informed)
- Develop a better approach to knowledge sharing
- Clearer-defined SLA
- Improved knowledge sharing between teams
- Easier Cloud products adoption in the future
- More important team role in the organization, clearer vision of team objectives
- Simplify infrastructure maintenance

The future of cloud computing must be discussed with open-source and closed-source cloud environment and their set of security measures. Cybersecurity is a hot topic in all businesses these days, and it will remain significant in terms of cloud security standards adopted by cloud providers.

Migration issues and challenges

- Cultural shift - Changes in organizational culture and difficulties in the adoption of the new cloud approach
- Difficulty with making decisions – The involvement of several teams makes it difficult to make decisions
- Data Confidentiality and Auditability – Organization still consider Cloud as a more insecure environment than on-premises infrastructure
- Migration large amounts of data was challenging as well as accessing all the needed data from on-premises or from the cloud
- Lack of knowledge and experience with the cloud in a team and limited time for application creation
- Biggest challenges for cloud computing are data security, internet bandwidth, and the control of the IT infrastructure that customers are often reluctant to give up

- During migration, a problem arises as some operations or data are already moved into the cloud, and some are still available on-premises. So, ensuring the current system is operational, and the ongoing cloud migration process is taking place correctly needs careful attention.
- Interoperability becomes a problem as it is difficult to establish excellent communication between existing applications and newer cloud environments.
- Using cloud services, getting good with newer cloud procedures, and managing resources and cloud activities requires trained IT professionals who can work in the cloud ecosystem
- Users who are new to the new functionalities in Adobe Creative Cloud need an Adobe expert session to bring them up to speed.
- Getting the Azure and Adobe Admin Console environment set up is a bit challenging
- Insufficient network bandwidth prevents migration of most end users currently on VPN due to working from home.

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