ACICE
ADMM Cybersecurity and
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UPDATE ON
THE CYBER DOMAIN

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Moving to the Cloud – Benefits and Barriers

OVERVIEW

Cloud computing has transformed the way organisations store, access and share information, collaborate and manage computing resources. While the COVID-19 pandemic has accelerated cloud adoption, reliance on cloud technologies is set to increase as hybrid work arrangements continue. Hence, it is important to understand what cloud computing is, and the benefits and risks that it can bring to the organisation.

"Cloud adoption is speeding up in 2023, with the worldwide spending on public cloud services to grow by 20% from 2022." – According to Gartner

WHAT IS CLOUD COMPUTING

Cloud computing refers to storing and accessing data and software over the Internet instead of a device's hard drive. With internet access, authenticated users can utilise resources in the cloud anytime, anywhere. Typically, a cloud service provider (CSP) makes these resources available for either a monthly subscription fee or pay-as-you-use. The top three CSPs are Amazon AWS, MS Azure and Google Cloud Platform (GCP). Together, they control a combined 65% of the cloud computing market share in 2022.

The three most common models of cloud services are:

　　a.　　<u>Software as a Service (SaaS)</u>.　SaaS is software, an app or a set of apps that are delivered to end users via the internet. Common examples include Office 365 and QuickBooks Online.

　　b.　　<u>Platform as a Service (PaaS)</u>. This cloud service involves an application-development platform offered to developers or organisations that includes computing, memory, storage, database and other app services. PaaS can be used to develop software for internal use or offered for sale.

　　c.　　<u>Infrastructure as a Service (IaaS)</u>.　IaaS provides computing, memory, storage, networking and related software as a cloud service to replace conventional on-premises hardware.

BENEFITS OF MOVING TO CLOUD

Cloud computing allows organisations to operate more efficiently and effectively. Here are some benefits of moving to the cloud:

Faster Deployment and Scalability
Cloud-based services can be deployed and retracted within hours or days compared to the weeks, months or years needed to plan, buy, build and implement new IT infrastructure within the organisation. Moreover, cloud services allow organisations to scale their resources according to their needs, providing flexibility and scalability.

Accessibility
Cloud-based solutions provide remote access to the organisations and their employees, allowing flexibility and accessibility. This is also cost-efficient as lesser physical space is needed for the organisation's operations.

Eliminate End-of-Life Concerns
Organisations will not need to worry about end-of-life timelines for critical hardware and software as they can pay for cloud capabilities and updates whenever available. They can also access the latest technologies without signing long-term contracts.

Leveraging new technologies
Lastly, migrating to the cloud allows organisations to take advantage of new technologies such as machine learning (ML) and artificial intelligence (AI) which are not feasible on-premises.

BARRIERS TO CLOUD MIGRATION

Although the benefits of moving to the cloud are immense, there are some barriers to cloud migration that organisations should be aware of. Listed below are some of the barriers and ways to mitigate them:

Cost Concerns
Costs may rise during the migration process due to unexpected factors such as complications from migrating to a new environment and re-training of staff to operate new technologies. Fully understanding and mapping out the requirements of the migration will help to reduce costs arising from unforeseen circumstances

Security Concerns
Organisations may have security concerns as they may not be comfortable with sharing information to a third-party vendor which they do not have control over. The Shared Responsibility Model (SRM) that the major cloud vendors such as Amazon, Google and Microsoft adopt will address this issue as the SRM requires the cloud provider and cloud user to define which entity will be responsible for which aspects of cloud security. Typically, vendors are responsible for securing the underlying system infrastructure such as data centres

and networks, as well as the availability of core cloud services including computation instances and system patch management. Organisations are responsible for securing the data stored in the cloud with strong encryption and to ensure that their applications and software do not contain any open vulnerabilities or misconfigurations for threat actors to exploit. With this layered approach, security gaps will be minimised as both vendor and organisation work together to ensure a comprehensively secured cloud computing environment.

Dependence on Internet Connectivity
Cloud computing relies heavily on a stable internet connection as downtime or poor connectivity can disrupt operations. Hence, organisations should ensure that the internet connectivity is always available through a reliable internet service provider and put in place contingency plans to ensure constant internet connectivity.

Limited control and Vendor Dependency
Since the cloud infrastructure is owned by a single cloud vendor, organisations may have limited control over their data, applications and services. Vendor lock-in may become a concern when migrating away from a specific cloud provider or when integrating other services. Hence, it is important to have a proper end-user license agreement (EULA) and exit strategies in place to mitigate vendor dependency risks.

CONCLUSION

There are many benefits by moving to the cloud. However, there are also some risks associated with the move and transition to the cloud environment. By understanding the risks and having a well-developed plan with cloud expertise, organisations can make the move into cloud a seamless one.

"Cloud security is the fastest-growing segment in the IT security market, with a projected growth of nearly 27% from 2022 to 2023." **– According to Statistica**

Contact Details

All reports can be retrieved from our website at www.acice-asean.org/resource/.

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