

# MyGovCloud@PDSA

## Catch The Drift!

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Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics (on-demand self-service, broad network access, resource pooling, rapid elasticity, measured service)

- National Institute of Standards and Technology (NIST)

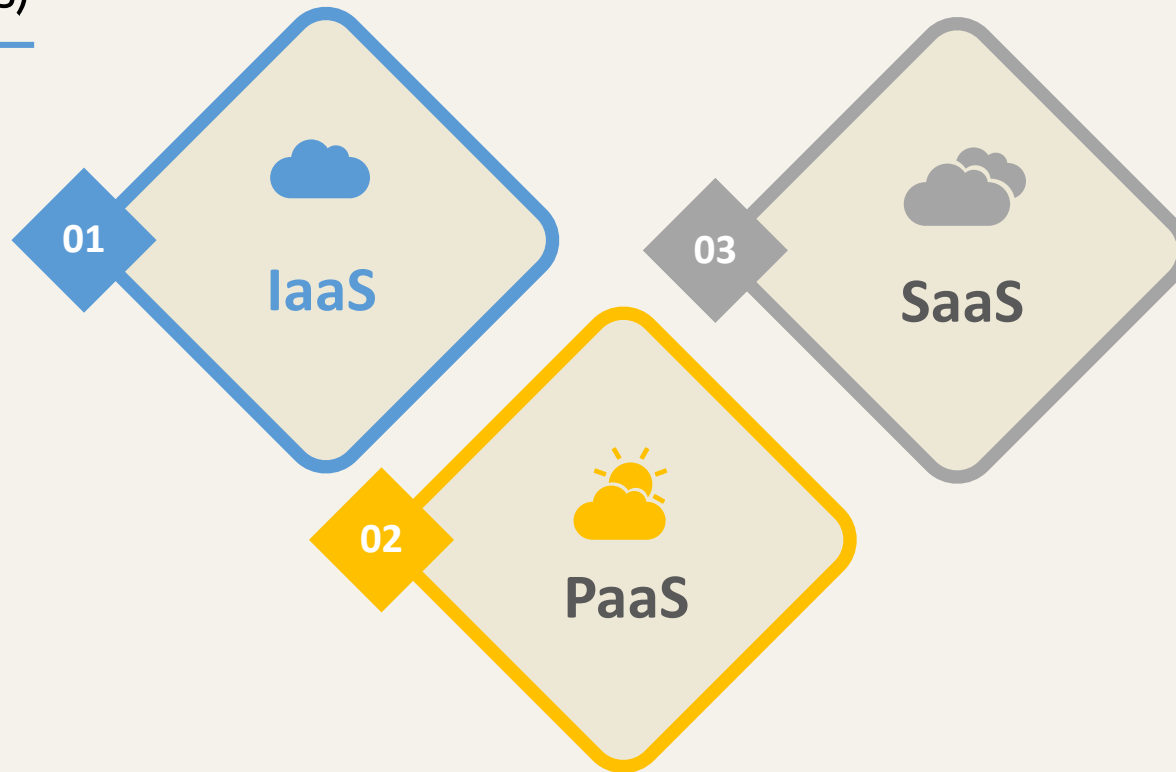


# Cloud Services Model

Different cloud models offer different levels of abstraction and management, depending on an organization's needs and requirements.

## Infrastructure as a Service (IaaS)

- Provides virtualized computing resources (CPU, Memory, storage, network and security) over the internet.
- MyGovCloud@PDSA: full IaaS services



## Software as a Service (SaaS)

- Provides software applications over the internet, accessible through a web browser or mobile application.
- MyGovCloud@PDSA: Government Unified Communication (MyGovUC), Digital Document Management System (DDMS), Sistem Pengurusan Maklumat Sumber Manusia (HRMIS) dan MyMesyuarat.

## Platform as a Service (IaaS)

- Provides platform for developing, deploying & managing applications over the internet.
- MyGovCloud@PDSA: Open Source Development and Capabilities (OSDeC)

# Cloud Services Model

Responsibility matrix based on PKPA Bil. 01-2021

IaaS	PaaS	SaaS
Data	Data	Data
Application	Application	Application
Database	Database	Database
Operating System	Operating System	Operating System
Virtualization	Virtualization	Virtualization
Network & Storage	Network & Storage	Network & Storage
Data Center	Data Center	Data Center

Responsibility legend:

Agency
Cloud Service Provider

# Cloud Implementation Model

## 01 Private Cloud

- Private on-Premise
- Private off-Premise
- MyGovCloud@PDSA

## 02 Public Cloud

- Public on-Premise
- Public Off-Premise

## 03 Hybrid Cloud

- Public & Private
- Private & Private
- Public & Public

Different types of clouds offer different advantages and disadvantages, depending on an organization's needs and requirements. Public clouds are cost-effective and scalable, but may present security concerns. Private clouds offer greater control and security, but may be more expensive and less scalable. Hybrid clouds allow organizations to leverage the benefits of both public and private clouds, but may present integration challenges.

# Cloud Benefits

01

## Scalability

On demand (up/down) resources need with cost optimization.

02

## Efficiency

Increase agency's efficiency where core services are more focused

03

## Effectiveness

Increase governance and cost effectiveness based on current requirements and prioritization.

04

## Pay Per Use

Billing based on components/functions used in cloud services only.

05

## Flexible

Flexibility in developing and implementing ICT services via remote access and current technology.

06

## Availability

Reduce downtime risk in ICT services implementation and resources can be accessed from anywhere, at any time, and on any device.

07

## Environmental Care

Reduce number of on-premise data centers to retain environmental sustainability and avoid greenhouse effect.

# Cloud Adoption

## 01 Cloud Security

Cloud security is a major concern for organizations considering cloud adoption. Risks include unauthorized access, data breaches, and data loss. Mitigation strategies include data encryption, access control, and compliance with industry standards and regulations.



### Access Control

Restrict access based on user ID and roles within agency only.



### Data Backup & Recovery

Cloud Service Provider includes backup & recovery features in cloud service.



### Data Encryption

Data transformed into unreadable format before it is transferred to and stored in the cloud.



### Compliance

Implementing cloud financial & accounting system in government agencies should comply to SAGA Compliance (JANM), Arahan Keselamatan (CGSO) and PKPA Bil.01-2021

# Cloud Adoption

## 02 Cloud Migration

Cloud migration is a complex process that requires careful planning and execution.



### Challenges

- Legacy System
- Data Migration
- Application Compatibility
- Vendor Lock-in

Vendor lock-in happened when agency highly dependent to current service provider due to specific technology used in product development. Agency can't easily move to a different vendor in the future without experiencing high costs, legal constraints, or technical incompatibilities.



### Best Practices

- Evaluate the complexity of application and data.
- Planning, testing and phased migration.
- Start small and simple but think big.
- Develop migration strategy that meet business goal and technical requirement.
- Be prepared to manage change - both planned and unplanned.
- Manage cloud properly - optimize resources, reduce cost and improve performance consistently.
- Ensure data portability and interoperability

“Pembekal hendaklah mengeksport data kepada format spreadsheet mengikut keperluan kerajaan sepanjang tempoh kontrak. Pembekal hendaklah memastikan data yang dieksport telah diterjemah kepada maklumat yang boleh difahami dan boleh digunakan untuk menjana penyata kewangan.”



# MyGovCloud@PDSA

PKPA Bil.01-2023 Dasar Perkhidmatan Pengkomputeran Awan Sektor Awam

# MyGovCloud@PDSA

PKPA Bil.01-2023 Dasar Perkhidmatan Pengkomputeran Awan Sektor Awam

Terbuka kepada:

- a) Kementerian;
- b) Jabatan Persekutuan;
- c) Pejabat Setiausaha Kerajaan Negeri, termasuk agensi di bawah Kerajaan Negeri (bukan saran sendiri);
- d) Badan Berkanun Persekutuan di bawah saran;
- e) Badan Berkanun Negeri;
- f) Pihak Berkuasa Tempatan; dan
- g) Lain-lain mengikut pertimbangan Ketua Pengarah MAMPU.

Pengecualian kepada:

- a) Kompleksiti arkitektur sistem yang melibatkan pengintegrasian peralatan khusus seperti peralatan perubatan, sistem audio visual, sistem pengimbas dan pengimejan, Radio Frequency Identification (RFID), kamera pengawasan trafik dan peralatan penapisan filem;
- b) Sistem yang memerlukan *latency* rangkaian kurang dari 3 *milliseconds* (ms) bagi penyimpanan serta capaian data;
- c) Sistem yang menggunakan data yang telah diklasifikasikan sebagai RAHSIA dan RAHSIA BESAR; dan
- d) Sistem yang tertakluk kepada akta yang melarang data ditempatkan di luar premis Agensi Sektor Awam.

# MyGovCloud@PDSA

PKPA Bil.01-2023 Dasar Perkhidmatan Pengkomputeran Awan Sektor Awam

Perkhidmatan Utama:

a) Menawarkan perkhidmatan IaaS mengikut pakej berikut:

STANDARD	ENTERPRISE	PREMIUM
<ul style="list-style-type: none"><li>• Persekitaran pembangunan</li><li>• Persekitaran pengujian</li><li>• Sistem pemantauan rangkaian</li><li>• Storan</li></ul>	<ul style="list-style-type: none"><li>• Persekitaran <i>production</i></li><li>• Sistem pemantauan rangkaian</li><li>• <i>Backup</i></li><li>• Storan</li></ul>	<ul style="list-style-type: none"><li>• Persekitaran <i>production</i></li><li>• Persekitaran DRC</li><li>• Sistem pemantauan rangkaian</li><li>• <i>Backup</i></li><li>• Storan</li></ul>

b) Menawarkan perkhidmatan PaaS untuk tujuan membangunkan dan menguruskan aplikasi dengan menggunakan perkakasan dan perisian seperti berikut:

- Operating system (OS);*
- Replication tools;* dan
- Anti-virus

c) Menawarkan perkhidmatan SaaS bagi perisian yang boleh digunakan terus tanpa perlu dipasang pada pelayan yang lain seperti berikut:

- Government Unified Communication (MyGovUC) (e-mel);*
- Digital Document Management System (DDMS);* dan
- MyMesyuarat.

# MyGovCloud@PDSA

PKPA Bil.01-2023 Dasar Perkhidmatan Pengkomputeran Awan Sektor Awam

Perkhidmatan Sokongan:

- a) Kawalan keselamatan fizikal PDSA meliputi bangunan, ruang kerja serta mekanisme pemantauan dan pencegahan ancaman seperti pencerobohan dan kebakaran.
- b) Kawalan keselamatan logical PDSA di peringkat rangkaian, perkakasan dan sumber ICT.
- c) Capaian melalui *Secure Socket Layer* (SSL) *Virtual Private Network* (VPN) bagi operasi pengguna secara remote kepada server dengan selamat tanpa kehadiran ke premis PDSA.
- d) Kemudahan penempatan peralatan ICT (co-location) agensi di PDSA sekiranya diperlukan.
- e) Khidmat nasihat pembangunan dan pengurusan DRC
- f) Khidmat nasihat penyediaan dokumen Disaster Recovery Management (DRMP) dan dokumen Disaster Recovery Technical Plan (DRTP).
- g) Pengujian simulasi pemulihan bencana.
- h) Pemantauan dan pelaporan ke atas penggunaan, pengoperasian sumber-sumber dan ketersediaan infrastruktur ICT yang disediakan mengikut keperluan.

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PKPA Bil.01-2023 Dasar Perkhidmatan Pengkomputeran Awan Sektor Awam

Kategori Permohonan:

- a) Permohonan Baharu – bagi Agensi Sektor Awam yang pertama kali memohon untuk menggunakan perkhidmatan MyGovCloud@PDSA.
- b) Permohonan Pertambahan Perkhidmatan – menambah perkhidmatan utama dan sokongan daripada Agensi Sektor Awam yang telah sedia ada menggunakan perkhidmatan MyGovCloud@PDSA.
- c) Permohonan Peningkatan Sumber – pertambahan atau perubahan kepada sumber seperti CPU, memori dan storan bagi pengguna perkhidmatan MyGovCloud@PDSA sedia ada.

Rujuk PKPA Bilangan 1 Tahun 2023 bagi tatacara permohonan bagi semua kategori.

Pertimbangan kelulusan atas permohonan:

- a) Peruntukan sumber yang optimum bagi permohonan baharu dan pertambahan perkhidmatan;
- b) Peruntukan sumber secara berperingkat berdasarkan penggunaan semasa bagi peningkatan sumber;
- c) Pengagihan bandwidth secara guna sama dan best effort; dan
- d) Penerimaan dan semakan laporan stress test, performance test dan penetration test yang telah dilaksanakan oleh agensi.



# Sekian Terima Kasih

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