Guidelines for Management of Cloud Computing Services in IIUM

IIUM ICT GUIDELINES

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Document Change Log

Release Version	Date	Pages Affected	Remarks/Change Reference
Version 1.0	3/10/2022	-	Initial Document
Version 1.0	25/06/2025	-	Endorsement from ITD Management

Responsibility and Activity Log

Requestor	Description	Submission Date	Approval Date
Muhamad Hairulnizam Hasan	Initial Draft	3/10/2022	
Muhamad Hairulnizam Hasan	Endorsement from ITD Management	23/06/2025	25/06/2025

1. OBJECTIVE

The objective of this document is to provide a cloud computing service guideline for IIUM. This ICT Guideline shall apply to all KCDIOs who plan to subscribe to cloud computing services. This is to ensure that the cloud computing environment is managed through good governance and practices for the benefit of the University.

2. TERMS AND DEFINITIONS

Term	Definition
IIUM	The International Islamic University Malaysia, otherwise known as the "University".
KCDIO	Kulliyyah, Center, Division, Institute and Office
ITD	Information Technology Division.
ITD Director	Information Technology Division Director
DCR	Data Center and Cloud Management Unit
System Administrators	System administrator is a person who is responsible for management of the servers/services that is subscribed in the cloud
CSP	Cloud Service Provider
CFA	Cloud Framework Agreement
MSP	Managed Service Provider
CLOUD COMPUTING SERVICE	Cloud computing services are computing models that provide computing source configuration by demand, easy, secure, flexible, with competitive cost online through the internet network available

3. CLOUD COMPUTING SERVICE DEFINITION

Cloud computing services are computing models that provide computing source configuration by demand, easy, secure, flexible, with competitive cost online through the internet network available

4. GUIDELINE STATEMENTS

4.1 Cloud Computing Classification

Cloud computing services consist of three (3) implementation models:

Infrastructure as a Service (IaaS)	This service model is the provision of basic infrastructure for computing resources such as Central Processing Unit (CPU), memory (RAM), storage, security and virtual networking to support the operation of the user's application or software. This model allows users to manage and control the operating system (OS), storage, applications, and network components
Platform as a Service (PaaS)	This service model is the provision of a platform to develop application software over the Internet, as needed and subscription-based. CSP provides the necessary platforms in the system development cycle such as operating systems, development tools, databases, programming languages and libraries through the services provided. Users just need to use the platform to develop applications more easily and smoothly
Software as a Service (SaaS)	This service model is the provision of application software over the Internet, as needed and subscription-based. CSP is responsible for managing all ICT infrastructure, maintenance and security requirements. Users only need a connection to the Internet via a fixed device web browser or a move to configure the application as needed

4.2 Server requirement matrix

The server requirement will go through the following criteria matrix to determine whether the server will go to private cloud at IIUM Gombak campus or public cloud subscription.

CLASSIFICATION	VERY LOW (1)	LOW (2)	MEDIUM (3)	HIGH (4)	VERY HIGH (5)
Data classification	Unclassified	Restricted	Confidential	Secret	Top Secret
CPU requirement	2 cores	4 cores	8 cores	16 cores	>16 cores
Memory requirement	2GB	4GB	8GB	16GB	>16GB
Storage requirement	100GB	250GB	500	1TB	>1TB
Estimated Data transfer (monthly)	50GB <	50GB – 100GB	100GB – 500GB	500GB – 1TB	> 1TB
Scalability	None clustered	2 servers	3 servers	4 servers	> 4 servers
System architecture	Standalone without DB	Standalone with internal DB	Integration with other services	Integration with DB	Integration with other services and DB
Tolerance to downtime	>12 hrs	8 hrs – 12 hrs	4hrs – 8 hrs	1 hr – 4hrs	<1hr

The recommendation is based on the total score of the criteria matrix above:

Total Score	Recommendation	Explanation
8 - 20	Stay On-Prem	These systems generally have low resource requirements, high sensitivity, and may not benefit much from the flexibility and scaling advantages of the cloud.
20 - 30	On-Prem, on Cloud or Hybrid	These systems still have manageable resource requirements but may benefit from some cloud features like backup, high availability, and security. However, due to sensitivity or high downtime tolerance, they may still be best kept on-prem. Cloud migration can be considered, but a hybrid solution may be better (e.g., some workloads moved to the cloud, others stay on-prem).
30 - 40	On Cloud	These systems have significant resource requirements and/or scalability demands

		(e.g., high CPU, memory, storage, or data transfer). Cloud platforms are ideal here because they can offer elasticity, better disaster recovery, and reduced overhead costs for on-prem infrastructure. If these systems require integration with other services and tolerate minimal downtime, the cloud can support these needs efficiently.

4.3 Data Classification Process

The requester should refer to the Guidelines of Data Classification and Labelling from OSICS for data classification process.

4.4 Cloud Computing service subscription

4.4.1 The cloud computing service subscription is managed under CFA that has been signed between the Government and the appointed MSP.

4.5.1 The list and price of the cloud services offered by CSP are based on the catalog managed by MSPs.

4.4.3 KCDIOs must ensure that the Cloud Computing Services involving the storage of official documents or information are managed in accordance with security regulations and subject to compliance with information security management guidelines through cloud computing in public service or other directives issued by the Office of the Chief Security Officer Malaysia (CGSO).

4.3.4 The Proposal needs to be submitted to the appointed evaluation committee for approval/recommendation before proceeding with the MSP for subscription.

4.3.5 The cost of the cloud services shall be borne by the requestor.

4.5 Cloud Server Operating System

4.5.1 The operating system installations that are currently supported by DCR are as outlined in the Guideline on the Management of Virtual Server Management Environment in IIUM Data Centre

5. IMPLEMENTATION AND NON-COMPLIANCE

5.1 The Director of Information Technology Division holds the responsibility for the implementation of this guideline and shall take necessary actions in the event of violation of this guideline.

5.2 This guideline is applicable to all staff of the University and any infringement of the guideline may be subject to disciplinary actions.

6. ENTITY AFFECTED BY THIS GUIDELINE

IIUM communities that are involved in the cloud computing services environments management and usage are affected by this guideline

7. MAINTENANCE OF GUIDELINE

The Information Technology Division is responsible for the formulation and maintenance of this guideline

8. RELATED POLICIES/STANDARDS/PROCEDURES/GUIDELINES

This policy shall be read together with the following documents or any documents which recently approved:

8.1 ICT Policy
8.2 ICT Regulation
8.3 Policy for Procurement of ICT Resources
8.4 IIUM Financial Policy
8.5 Dasar Perkhidmatan Perkomputeran Awan Sektor Awam
8.6 Perolehan Perkhidmatan Pengkomputeran Awan (Cloud) Sektor Awam
8.7 Garis Panduan Pengurusan Keselamatan Maklumat Melalui Perkomputeran Awan (Cloud Computing) Dalam Perkhidmatan Awam
8.7 Guidelines on Data Classification and Labelling
8.8 ICT Security Procedure
8.9 ISO/IEC 27001:2022 Annex A 5.23