



Guideline on Management of Virtual Server Environment in IIUM Data Centre

IIUM ICT GUIDELINES

PREPARED FOR:

International Islamic University Malaysia

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Document Change Log

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1. OBJECTIVE

This ICT guideline shall apply to all staff members of the University who are using the virtual server facility in IIUM. This is to ensure that the virtual server 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” |
| ITD | Information Technology Division. |
| ITD Management | Director, Deputy Directors and Head of Units of ITD. |
| CD/IO | Chief Digital/ Information Officer |
| ITD Director | Information Technology Division Director |
| HOU | Head of Unit |
| Campus Data Centre Management Authority | The Data Centre Management Team at IIUM Gombak Campus, Kuantan Campus and Pagoh Campus |
| System Administrators | System administrator is a person who responsible for management of the virtual server or physical server |

3. GUIDELINE STATEMENTS

3.1 Virtual Server Environment

- 3.1.1 The management of the infrastructure for the virtual server environment is under responsibility of Campus Data Centre Management Authority.
- 3.1.2 The virtual machine provision is for hosting the University’s official applications and services only. Research based system development is not allowed to be hosted in the virtual server environment.
- 3.1.3 The request for creating, deleting or modifying the virtual servers’ specifications must be submitted formally to the Campus Data Centre Management Authority.
- 3.1.4 A specific system administrator must be specified by the requester for every virtual server requested. It is the responsibility of the system administrator to ensure the virtual server is patched or updated accordingly.

- 3.1.5 The approval of the request is subject to the availability of the resources of the virtual server environment and on the specification requested.
- 3.1.6 The supported operating system of the virtual servers to be provisioned is based on the operating system listed in Section 3.2.
- 3.1.7 ITD reserves the right to modify the given virtual server specification based on current virtual server environment either in an individual case or in general.
- 3.1.8 ITD reserves the right to suspend the virtual server provisioned without notice in the event that the virtual server is in any way affecting the operation, performance and security of the virtual server environment and infrastructure.

3.2 Virtual Servers Operating Systems

- 3.2.1 The operating systems installation that are currently supported by the Campus Data Centre Management authority are as follows:

| No | Types of OS | Remarks | Services Provided |
|----|---------------------|---|---|
| 1 | Windows environment | <ul style="list-style-type: none">Windows Server 2016 and above onlyMust provide the valid license and documentation | <ol style="list-style-type: none">Windows installationIP address assignmentEnable auto updateAntivirus software installation (based on license availability) |
| 2 | Open source | <ul style="list-style-type: none">Centos 7Almalinux 8Ubuntu 20.04 LTS and above (Gombak and Pagoh)Ubuntu 11 and above (Kuantan)Ubuntu 22 and above (SASMEC) | <ol style="list-style-type: none">OS installationIP address assignmentBasic Php, Apache and Mysql/MariaDB Installation (for Gombak, Pagoh and SASMEC only) |

Note:

- All other special configuration of the virtual server must be performed by the specific system administrator
- A copy of the overall architecture of the service delivered by the provisioned virtual server must be provided for the Campus Data Centre Management Authority's reference

3.3 Backup of Virtual Server

3.3.1 Virtual Server Backup at Gombak Campus

- a) Due to resource limitation, the regular backups for the provisioned virtual servers will be only be available for the servers the listed in the ICT Critical Services;
- b) The system administrator of the virtual servers is responsible to arrange for testing the backup of the virtual servers with the help of the Campus Data Centre Management Authority;
- c) The daily backup will store copies of the incremental changes of the servers for 14 days consecutively. In addition, the backup also will be done monthly and for every 6 months;
- d) As for the servers that are not listed in the ICT Critical Services, it is the responsibility of the system administrator of the virtual servers to back up the latest data resides in the server;
- e) The Campus Data Centre Management Authority will back up the state of the provisioned virtual server twice a month depending on the availability of the backup resources (one retention point);

3.3.2 Virtual Server Backup at IIUM Kuantan Campus

- a) The Campus Data Centre Management Authority will back up the state of the provisioned virtual server once in every 2 months depending on the availability of the backup resources (one retention point);
- b) The system administrator of the virtual servers is responsible to arrange for testing the backup of the virtual servers with the assistance of the Campus Data Centre Management Authority.

3.3.3 Virtual Server Backup at SASMEC@IIUM

- a) The daily backup will store copies of full backup for servers not in cluster type mode (especially server with database installed) with 2 retention period;
- b) For cluster mode servers, backup schedule is done by rotation of number of servers in the cluster, for instance, if the cluster of 3 servers, the backup schedule is day 1 and day 4 for server #1 and day 2 & 5 for server #2 and so on;
- c) For non-moving data servers like monitoring servers, smtp server, load balance which are configuration fix, the backup scheduled is once in a month full backup type.

3.3.4 Virtual Server Backup at IIUM Pagoh Campus

- a) The Campus Data Centre Management Authority will back up the state of the provisioned virtual server once in every 2 months depending on the availability of the backup resources (one retention point);
- b) The system administrator of the virtual servers is responsible to arrange for testing the backup of the virtual servers with the assistance of the Campus Data Centre Management Authority.

3.3.5 Virtual server backup is not available for the virtual servers' provisions for the purpose of proof of concept or testing environment purposes.

4. IMPLEMENTATION AND NON-COMPLIANCE

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. ENFORCEMENT

This guideline is applicable to all users and system administrators that are involved in the virtual server's environments management and usage, and any infringement of the guideline may subject to disciplinary actions.

6. MAINTENANCE OF GUIDELINE

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

7. RELATED POLICIES/STANDARDS/PROCEDURES/GUIDELINES

7.1 This guideline shall be read together with the following or any documents which recently arrived:

- 7.1.1. ICT Regulation
- 7.1.2. IIUM ICT Policy
- 7.1.3. Policy on Responsible use of ICT Resources
- 7.1.4. ICT Critical Services
- 7.1.5. Any other related ICT Policy and Guidelines