

**RICHMOND, THE AMERICAN INTERNATIONAL UNIVERSITY IN LONDON, INC.**

## **Disaster Recovery Policy**

Version 2.0 – March 2023

---

# Contents

<b>Introduction.....</b>	<b>2</b>
<b>DR Solution Overview .....</b>	<b>3</b>
2.1 Business Requirements .....	3
2.2 Physical Servers .....	3
2.3 Virtual servers .....	3
2.4 Veeam Backup and replication .....	3
2.5 Infrastructure diagram .....	4
<b>The DR Environment .....</b>	<b>5</b>
3.1 Partial site recovery.....	5
3.2 Full site recovery .....	5
3.3 Azure Cloud services .....	5
3.4 Internet links .....	5

## Introduction

IT services is considered a critical component in the daily operation of the Richmond university, with servers and services hosted on site and in Azure Cloud.

Richmond University has implemented a Disaster Recovery (DR) solution to ensure continuity and quick recovery of critical data and services in the event of a major outage.

This document, the Disaster Recovery policy; provides an overview of the DR solution and the steps that will be taken in response to and for the recovery from any disaster affecting IT services. In addition, the policy outlines the role of Veeam backup and briefly explains the key components of the IT infrastructure at Richmond University.

## DR Solution Overview

### 2.1 Business Requirements

The current solution provides an RPO (Recovery Point Objective) of up to 24 hours. (This is a maximum time as a DR test has never been fully completed).

A specific RTO (Recovery Time Objective) is currently estimated between 4-8 hours for on-site servers. And up to 24 hours for Azure Cloud servers.

### 2.2 Physical Servers

There are two physical servers, a domain controller and a backup server. Services running on the domain controller are setup to synchronise with the virtual servers hosted both onsite and on Azure Cloud. The design ensures load balancing and redundancy for Active Directory and other core network services. Should the physical domain controller become unavailable, other virtual servers will continue to serve users requests without impact on IT services.

In the event of failure of the backup server, including the loss of data, there will be no disruption to IT services. The lost backup data can be restored from another repository located on the first floor comms room.

### 2.3 Virtual servers

The majority of the critical servers are hosted on Azure Cloud for high availability and to facilitate remote access. The remaining virtual servers are hosted on-site, and are located in the ground floor comms room, with synchronisation of data between on premise and Cloud instances as required.

### 2.4 Veeam Backup and replication

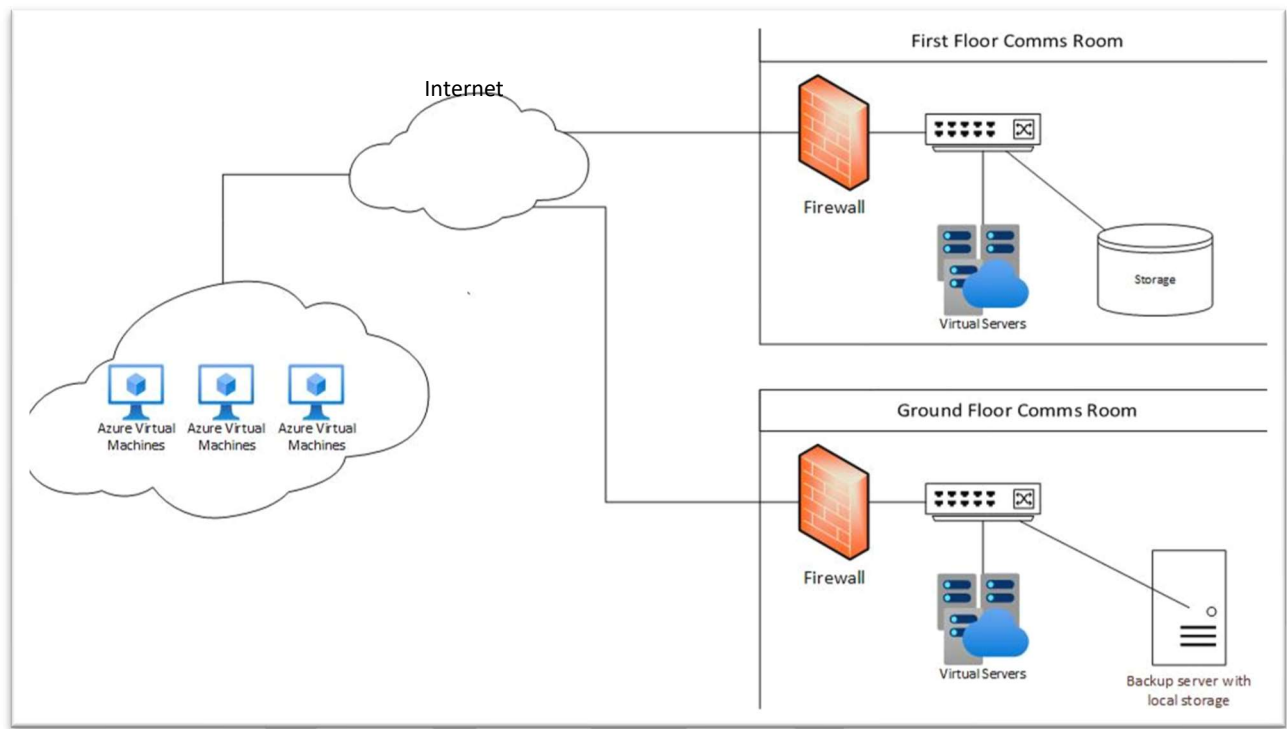
The solution utilises Veeam Backup and Replication which is responsible for backing up all critical data. This includes on-site and Azure virtual servers, as well as physical servers on-site.

Veeam server stores backup data to a dedicated storage server located on the ground floor. Another copy of the backup data is copied to another storage server located on the first floor comms room.

The backup jobs run nightly and maintain 7 days of restore points. The same applies to the backup copy jobs, which are set to run subsequently.

## 2.5 Infrastructure diagram

The following diagram provides an overview of the IT infrastructure and how the key components are connected.



## The DR Environment

The DR solution was designed to protect against partial or complete loss of IT services for either on-site or Azure Cloud services.

### 3.1 Partial site recovery

The IT infrastructure at Chiswick campus, comprises of two comms rooms located on the ground and first floor.

In the event of a major incident that would result in a loss of access to IT services hosted on the first floor comms room, a restoration process of the affected server/s will be initiated to restore the affected server/s to the ground floor comms room using the backup data located on the ground floor.

Similarly, if the comms room on the ground floor is no longer available. The backup copy stored on the first floor comms room can be used to restore server/s to the first floor comms room and restore connectivity to IT services.

A major incident that would affect either of the comms rooms could mean that users also lose wired and wireless connection. An example would be a power outage which would mean the absence of network equipment (switches and Access Points) which handle user traffic. If a power outage affects the first floor comms room, users would need to relocate to the ground floor to gain access to the network. The same solution would apply if the ground floor comms were affected by power outage.

### 3.2 Full site recovery

In the event of a major disaster that could lead to the loss of IT services in both comms rooms, virtual servers hosted on Azure Cloud will continue to provide remote users with IT services via Remote Desktop. As most critical servers are hosted in the Azure Cloud, users will still be able to access important services.

Depending on the nature and duration of the incident, servers could be rebuilt in Azure Cloud.

### 3.3 Azure Cloud services

Azure Cloud services is a robust and resilient cloud solution. In the unlikely event of the extended unavailability of cloud services, local site backups could be used to restore affected services to a new Azure Cloud region or a new cloud provider.

### 3.4 Internet links

IT infrastructure at Chiswick campus benefits from two BT internet links coming from different Exchange locations. One is connected to each comms room with seamless redundancy provided by PaloAlto firewalls. Users will not experience loss of service should one line go down. In the unlikely event of the loss of both lines, a temporary access internet could be provided using an emergency wireless SSID, such as a mobile hub.

## Revision History

<b>Version</b>	<b>Change</b>	<b>Author</b>	<b>Date of Change</b>
1.0	Initial version	ChetRughani	27-12-17
1.1	Minor amendments	Mike Hallas	03-01-28
2.0	Significant revision following removal of DRaaS solution, hybrid operation model with Azure and move to Chiswick Park	Ibraheem Abdul-Razzaq	30-03-23