POLICY AND GUIDANCE
Do not Photocopy

Document Information Classification: Unrestricted

Title:	**Supporting Utilities Management**
Effective Date:	**07 Jun 2019**
Reference Number:	**ISMS-09-02**
Version Number:	**1.0**
Owner:	**Information Security Manager,**
Review Date:	**07 Jun 2021**

Table of Contents

1. Purpose

Equipment should be protected from power failures and other disruptions caused by failures in supporting utilities (e.g. electricity and telecommunications).

This document defines the approach to protecting the utilities supporting the TRE to minimize disruption to the TRE service.

2. Scope

Electricity and air conditioning are in the scope of this policy.

All other supporting utilities (e.g. gas, sewage, water supply) are out of scope of this policy

3. Responsibilities

There are no additional responsibilities for this policy.

4. Procedure

4.1. Power supply protection and backup

Mains electricity for all the IT infrastructure within the TRE server room is provided by a UPS device at all times. This means the server rack Power Distribution Units (PDU) are only connected to the UPS. The UPS is connected to a dedicated mains electricity socket on the wall inside the TRE server room.

In the event of a main electricity outage, the UPS switches to on-board batteries that can provide 20 minutes of electrical supply to the PDUs installed on both server racks in the TRE. This ensures that all servers and network devices remain continually powered on without interruption in the event of a total failure of the mains power to the TRE server room.

Both the UPS and the PDUs contain surge protection circuitry which means all IT infrastructure is protected from abnormal electrical conditions at all times.

In the context of data management, the most critical components of the TRE infrastructure are the OpenStack Cloud IAAS and the NetApp Storage Appliance. Both these components have dedicated management servers installed on separate networked machines within the two server racks. The UPS has a built-in Ethernet network adaptor. There is an Ethernet CAT5 cable that makes a direct physical connection from the UPS directly to a network adaptor on the OpenStack Management Server. If the mains supply to the TRE server room at Vaughan House fails, the UPS initiates a clean-shutdown request directly to the OpenStack Management Server. This ensures all the virtual machines [servers] running in the TRE are shutdown in a controlled manner such that all running processes are correctly halted, and data written to hard disks before the operating system begins its shutdown.

4.2. Temperature Control and Monitoring

The TRE server room temperature is regulated to an acceptable low value by a standalone air cooling unit. This device is installed within the server room and has no connections to the environment outside the server room. Its sole purpose is to circulate and cool air in the server room.

The University of Manchester Division of Estates have installed, and support a Building Management System (BMS) within the TRE Server Room at Vaughan House. It is configured only to monitor environmental conditions in this server room and to perform actions if specific conditions arise.

If the room temperature exceeds 35ºC, an SMS 'text' message is sent to the mobile phones belonging to the TRE Operations Management and the TRE System Administrator. Additionally, University Estates Security are notified, and they will enter the Vaughan House building to investigate the cause of temperature rise. As they do not have access to the TRE server room, they must make a judgement on whether there is a fire related incident or not, for example by detecting heat and smoke when in close proximity to the server room door.

The BMS Controls Supervisor within Estates is James Collins. His contact details are within the corresponding Q-Pulse supplier record.

During working hours, if the BMS generates an alert and a member of the TRE Operations team is available to immediately enter to the TRE server room to investigate; this should be done without delay. If the cause of temperature rise is obvious and it is possible to rectify the problem immediately, for example if the room cooling unit wasn't able to sufficiently cool air because a cover had fallen over the air intake, then the procedure is to solve the problem and frequently monitor the room temperate until it has settled down to normal ambient temperate (close to 20ºC). If it is not possible to easily establish the cause of the problem, a member of the TRE Operations team must send a message to all TRE users to warn them that the service might become unavailable and that they should save any work they are doing and log off. If it subsequently becomes essential that the TRE service is powered down, a follow-up message must be sent to TRE users to notify them of the immediate outage. Messages to TRE users must be sent from the tre-support@manchester.ac.uk mail box.

5. Cross-referenced ISMS Documents

Number	Type	Title
<NO DATA>	<NO DATA>	<NO DATA>

6. Appendices

None