



The UNIVERSITIES *at Shady Grove*

Universities at Shady Grove Office of Information Technology Disaster Recovery Plan

Site Contacts

The Universities at Shady Grove (USG), Office of Information Technology (OIT) contact information for the individuals and their corresponding departments are available in the Notifications Policy 1.010 located in the Emergency Preparedness Plan (EPP). These individuals will be contacted in a timely manner in the event of a disaster that affects USG and its IT resources, and, as necessary, may be asked to represent other IT department tasks if the situation and needs arise.

Critical Hardware

If there is an event that causes damage to USG critical hardware or Fileservers and Printer Service, resulting in an outage, replacement hardware will be required to return the services to normal operation. The vendor, model, and configuration of each device must be cataloged so that a proper replacement can be obtained and deployed in a timely fashion. There should be a procedure for obtaining a replacement for each part, first from the available spares currently kept in building I and III, and secondly from the vendor which the hardware was purchased. A list of vendors can be obtained from IT Services which is updated regularly, and kept in both the building server rooms.

Critical Services

Critical services must be identified. In the event of a disaster, those recovery procedures that bring these services back online should be prioritized. The disaster recovery team should be made aware of what, if any, disaster recovery plans the owners of those services have in place to ensure that the disaster recovery team's response is appropriate and productive.

USG provides several critical services. The first is the intercampus connectivity supplied by USG Network and Telecommunications. Almost all of USG infrastructure is served by this service, and any disaster that affects USG inside the campus site, by definition, affects this service. The shared Internet connectivity is the second critical service supplied by UMATS. This service is in multiple locations within the campus, but the loss of one of them may result in degraded service, and the loss of all of them would result in an outage. Therefore, in the event of a multiple-building disaster, those buildings with Internet connectivity would have priority in recovery operations, and in the event they cannot be brought back online in a timely fashion, priority will be given to providing an alternate source of connectivity. Second is support for certain IVN services. These services will need their configuration backed up and servers earmarked for replacement, should something happen to the site where they are located (currently UMCP.) This service is current offered through UMATS and College Park respectively. File and Print

service is another resource offered by USG and current housed in building III and replicated in building I for redundancy. If either building renders a loss, building I would suffice for recovery. If the campus is a total loss, appropriate designation by Karen Mitchell, Director of Finance and Administration or Stewart Edelstein, Executive Director would provide details regarding the use of UMBI/CARB or UMCP as a recovery location. Other critical services used but not housed by USG are Email, Financial Information Systems, Students Information Systems and Calendaring. All services are offered and supported by UMCP and joining partners.

Redundancy

The USG site Local Area Network and Wide Area Network (LAN/WAN) is designed to provide seamless and uninterrupted throughput of voice, data and video transmissions under normal conditions as well as during events that would cause service outages to information resources. Redundancy is configured from separately distributed uninterruptible electrical power supplies (UPS) connected to both building and emergency (generator) supplied power in every campus telecommunications closet. Dual powered and dually paired Etherchannel high-speed network links to Building I and the second in Building III. Redundant (WAN) connection to two robust and physically path separated entranced terrestrial Gigabit Ethernet connections to the University of Maryland Academic Telecommunications System (UMATS) state-wide WAN and finally connecting to the Internet.

Communications

VoIP voice system rides on USG's redundantly designed network infrastructure and employs many redundant topology strategies. These include, dually connected and physically separated (Building I and Building III) voice gateways, call managers and voice mail access and storage servers. These two building separated voice gateways are each connected to our local voice service provider via their own diverse path digital links. As with the above events, the loss of either one of these three core voice service providing equipment, resulting from power loss, connectivity severance, system configuration crashes, etc., will prove unnoticeable and transparent to our users as the redundant systems will seamlessly take over the in-progress and proceeding voice calls. If our local service provider fails us for whatever reason, USG has a many, in-service plain, old telephone service (POTS) analog red emergency phone sets strategically placed in accessible within our three buildings.

Spare Inventories and Locations

In order to repair or replace equipment damaged in a disaster, a list of all spare equipment and where it is warehoused must be kept up to date. This list must be checked regularly for accuracy, and checked to ensure that there is at least one spare of every critical part that may fail available and especially that any critical hardware that is not protected by vendor contract has a spare of either the same model or some equivalent available (needs to be reworded). USG in conjunction with UMATS and UMCP will work to ensure prompt replacement of critical hard hardware and serve as a spare placement reservoir. Such spares can also be salvaged from other buildings within the USG campus if a total disaster was negated.

Since the loss of a site may mean the loss of several identical devices, a lost site might require more equipment than the spares inventory can cover. In this case, the recovery phase may require time budgeted for acquiring replacement parts from the vendor. The alternative is to have sufficient spares to cover any site, but the cost of doing so is not reasonable, considering the time frames for receiving replacement parts versus that for replacing a devastated site. A disaster that destroyed all the equipment in a site would generally require several orders of magnitude, more time for the site to recover from, or for an alternate site to be prepared, than ordering a replacement part would reasonably take.

Vendor Contact Information

Should a part need to be replaced, the vendor for that part will need to be contacted (either for direct replacement or to refill the spares inventory.) A list of vendor contacts can be found in IT Services. The USG OIT budget should contain a reserve sufficient to recover a site after a major disaster.

Disaster Recovery Process

The response to an emergency consists of the following phases:

1. Preparation
2. Response
3. Recovery

Preparation

Preparation consists of ensuring that a plan is in place and that it is well understood. It also entails making sure as many details are thought through and taken care of as possible before an event takes place. For the most part, preparation for a failure on the USG campus is built into the network. The loss of any single circuit will at most result in the loss of connectivity to one building; however, no loss of connectivity should occur based on redundancy measures in place across campus buildings. Further preparation is made by keeping archives of configurations and files of equipment and digital documents at UMCP on regular bases.

Response

This phase covers the immediate response to an emergency. Incident Response Team should analyze the situation and decide which measures should be placed in motion and what unforeseen problems there are and how they can be handled. Loss of the primary site (Camille Kendall Academic Center) will be handled by the removal of any salvageable equipment to the alternate site on campus if feasible or UMBI/CARB if the entire campus is not affected; otherwise UMCP becomes the default location. Hardware issues will be handled first from spares inventory and second from replacement hardware from the vendor. Circuit and Internet connectivity issues must be handled through the service providers (UMATS/UMCP). USG staff will work with these service providers to ensure service recovery as soon as possible. Vendor contact information is available in IT Service department. If a remote network node is lost, and the location it was in cannot be reconstructed in a timely fashion, USG will work with UMATs to rebuild our point of presence in a location to be designated by Karen Mitchell, Director of Finance and Administration or Stewart Edelstein, Executive Director. USG will work with Jeff Huskamp, Chief Information Officer of UMCP to provide resources onsite which will house in addition to their services USG's data resource servers for administrative staff. This site may be prearranged between USG and the remote site, or decided upon afterwards by surveying the available surviving space. In either case, it must meet basic power, environmental, and infrastructure access requirements.

Recovery

In the response phase some services may be left in a degraded or even nonoperational state. During the recovery phase these services are brought back online and made fully operational again. In addition, services brought back during the response phase via alternate means are, where applicable, returned to their original state. Recovery will rely on external factors, such as the physical rebuilding of the site, the restoration of tele-connectivity, the arrival of replacement parts from the vendors, and the reinstallation, reactivation, and recertification of hardware and services.