

## Data / Computer Recovery Guidelines

This document contains general guidelines for restoring computer operating following certain types of disasters. It should be noted these guidelines will not fit every type of disaster or every organization and that you may need to seek outside help to recover and restore your operations.

This document is divided into five parts. The first part provides general guidelines which are independent of the type of disaster, the next three sections deal with issues surrounding specific disaster types (flood/water damage, power surge, and physical damage). The final section deals with general recommendations to prepare for the next disaster.

### General Guidelines

These are general guidelines for recovering after any type of disaster or computer failure. If you have a disaster recovery plan then you should be prepared, however there may be things that were not covered to help you recover. This section is divided into two sections (computer system recovery, data recovery)

#### Computer System Recovery:

The first step is to get your physical computer systems running again. Depending on the type of damage your computers may need to be replaced.

1. Do not power up the equipment without understanding what happened to the equipment. If you power the equipment up it could cause damage to the hard drives and make it impossible to recover any of the data. The next three sections will talk about how to handle the hard drive based on the type of damage.
2. Your first step is to restore the computing equipment. If you do try to power on the existing equipment it is best to remove the hard drive(s) first to make sure the system will power on. Once you have determined the system powers on you can reinstall the hard drive and power the system back on. Hopefully everything works at that point. Note this should not be tried in the case of a water or extreme heat damage.
3. If the computer will not power on then you can either try to fix the computer or in many cases it is easier, quicker, and cheaper to purchase a replacement. You can also look at moving some of your computing systems to a cloud environment. A cloud-based approach allows you to “rent” computing resources that are located in secure and reliable data centers. The cloud services are great for web sites and other public facing systems. In some cases you might even be able to migrate your entire computing infrastructure to the cloud.

### **Data recovery:**

Data recovery is the most critical part of this process. The goal is to recover the critical data needed to restore your operations.

1. After installing the new computer you will need to restore your data. If you have a backup you can restore your data from the backup at which point you should be operational. One issue that comes up is that the new computer may have newer versions of software and therefore the data from the backup may need to be converted. Also depending on your back up method you will need to make sure your computer has the software and hardware needed to read the backup.
2. If you are moving to a cloud infrastructure you still may need to restore the backup to a computer and then move the data to the cloud.
3. If you do not have a backup then you will need to try and recover the data from your hard drive(s). This can be a very complex task and depending on the type of damage may not be possible. There are many companies that focus on recovering data from damaged hard drive and they can charge up to several thousand dollars depending on the type of damage. Of course your drive may be so damaged that it cannot be recovered.
4. Once everything is operational you should make a new backup. Do not over write your old backup.

### **Guidelines for Specific Damage**

Depending on the type of damage you may need to take additional steps beyond what was outlined above.

#### **Flood / Water Damage Recovery**

This is often the worst case scenario for computer equipment. There are a couple of changes and additions to the general guidelines when dealing with this type of damage.

1. Do not power the equipment on. If the equipment was under water there is virtually no chance to get the equipment running again. You will need to purchase new equipment.
2. The hard drive cannot be restored without expert help. If you have a backup you will need to retrieve it from the off-site storage facility and install it to the new equipment. If you do not have a backup then there are companies that can try to recover the data. You will need to contact them immediately to find out how to handle the drive. The water damage can corrode the hard drive; time is critical. They may even suggest you place the hard drive in water. Keeping the hard drive wet will prevent further corrosion of the platters. The cost of this type of data recovery can run several thousands of dollars.

### **Power / Surge Damage Recovery**

Most computers are designed to withstand power surges. If you follow the general guidelines of first powering on the system without the hard drive and then trying it with the hard you should be able to recover. Other types of equipment like network devices (switches, routers, etc.) may not handle the surges as well, so be prepared to replace your networking device(s).

### **Physical Damage Recovery**

Depending on the physical damage, your system may start up. Again follow the general guidelines above. Laptops sometimes have a harder time surviving physical damage. Fire or excessive heat can be the most damaging to the computer. In many cases the computer may not survive, but the hard drive will. The hard drive can be removed and the data restored to a new computer.

### **Next Steps**

1. Update your disaster recovery plans based on any lessons you may have learned or create a plan if you do not have one.
2. Make sure your old backup and the new backup are moved off site that is secure and readily accessible.
3. Off-site computer systems