BATTERY BACKUP

DEFINITION: Battery backup alternatively known as Uninterruptible Power Supply (UPS), serves two primary functions:

A. It provides temporary power to a device or devices during a power outage thus allowing that device to continue to work.
B. Protection of equipment from power anomalies including power spikes and surges, brownouts and voltage sags.

BUSINESS APPLICIATIONS:

#1. The obvious reason for providing battery backup for your telecommunications system is to be able to make and receive phone calls during a power outage.

#2. A second less obvious but potentially more important purpose is to protect the equipment from electrical damage and ultimately, catastrophic failure.

#3. Most maintenance contracts and support plans do not cover equipment damage caused by electrical-related problems. A properly functioning battery backup system takes care of that issue.

ARE THERE MANY POWER FAILURES?

U.S. Power Failure Statistics:

- The average number of power outages sufficient to cause system malfunction per year at a typical site is approximately 15
- 90% of the outages are less than five minutes in duration
- 99% of the outages are less than one hour in duration
- Total cumulative outage duration is approximately 100 minutes per year

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REQUIRED BACK UP TIME:

Ideally, you would engineer a battery backup system to support every system in your business for a period of time that would exceed the longest possible power outage. However, the costs of such a system would be prohibitive.

Here are the points to consider:

A. What systems need to have battery backup:
   a. Phone System
   b. Applications Servers (ACD, call center, etc.)
   c. IP Phones

B. What is the purpose of the backup:
   a. System protection – just enough backup time to do an orderly shutdown?
   b. Keep system functional for a period of time? If so, what's the average length of power outage for your office?

BACKUP TIME VARIABLES: Exact backup times are impossible to determine as they are dependent upon the actual load placed on the system(s). Although a system may be rated at 350 watts, if the usage is very light it may only be consuming 2 50 watts, thus giving a longer "up" time.

INFRASTRUCTURE CONSIDERATIONS:

There are some equipment rooms that have not been designed to accommodate much equipment. As many UPS's are optimized for deep server racks and not for shorter internetworking equipment, they may not fit in your wiring racks. An alternative to rack mounting the equipment, most manufacturers make equivalent floor mount units.

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VOIP CONSIDERATIONS:

#1. If you power your IP phones locally, i.e. use a power brick at each phone location, in the event of a power failure, the telephones will quit functioning. This will even if you have a battery backup for your phone system as the actual phones will not have power.

#2. If you power your IP phones through Power Over Ethernet (POE) and the Power Over Ethernet devices and ethernet switches have battery backup, the phones will continue to function during a power outage.

#3. Some businesses utilize a hybrid approach of only providing POE for a portion of their phones, typically phones that can't afford to be down, such as executives, call center phones, etc. Thus in the event of a power outage, only a portion of the telephones become unusable.

MAINTENANCE & MONITORING

Most battery backup systems have monitoring software that provide real-time monitoring to ensure that the backup system is operating properly and that batteries are in good condition.

This monitoring capability is typically provided by a network or serial connection to a server or network. The software is then installed on a local PC that acts as the monitoring station.

BATTERY FAILURE

Battery backup systems are somewhat like data backup systems, in that many times they don't work when you need them most. UPS batteries do have a finite lifespan. It is highly recommended to test your battery backup system on a regular basis to assure proper operation.