

# LOAD SHEDDING

---

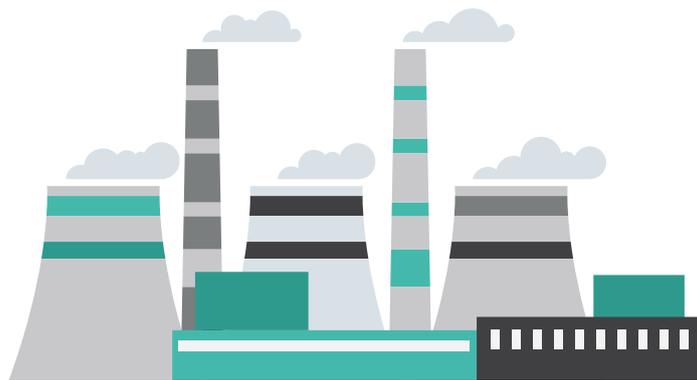
how to save your equipment, your data and  
*ultimately your business*

---

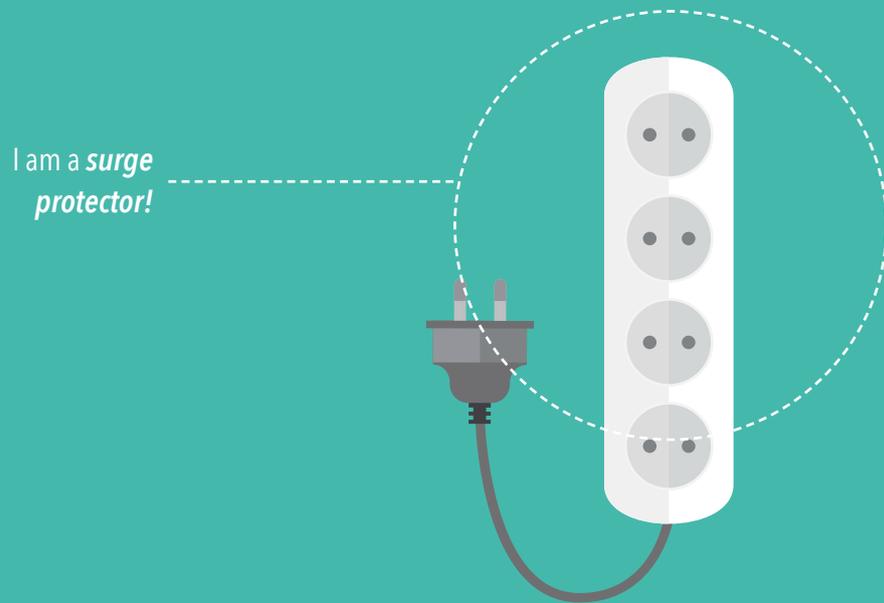
**Dial a Nerd**

# INTRODUCTION

— “The power system is severely constrained today due to unforeseen technical problems at power stations”. This press release from Eskom is one we’d all better get used to because it’s not going away in the near future. South Africans are resilient and creative, and ultimately we will resolve this issue but for the moment we need to be realistic and take necessary precautions to ensure we can continue to work as efficiently as possible. Below we provide some information on possible measures you can adopt in your business.



# HARDWARE



I am a *surge protector!*

---

## LEVEL ONE PROTECTION: THE SURGE PROTECTOR

Surge protectors are the first line in protecting your hardware. These inexpensive devices normalize spikes and surges in power before they get to your equipment.

When purchasing a surge protector, the lower the let-through voltage, the better your equipment will be protected. It is also wise to purchase a surge protector that has a warranty that not only covers the surge protection device, but the equipment that it is protecting. It is quite common for surge protectors to blow when a big surge is experienced - this is normal. Rather lose a device like this than the sensitive electronic equipment you've plugged into it!

Note: Many surge protectors do not provide surge protection on every outlet. Be sure to verify that each outlet you plug electronic equipment into is surge-protected.

## LEVEL 2 PROTECTION: THE UNINTERRUPTIBLE POWER SUPPLY

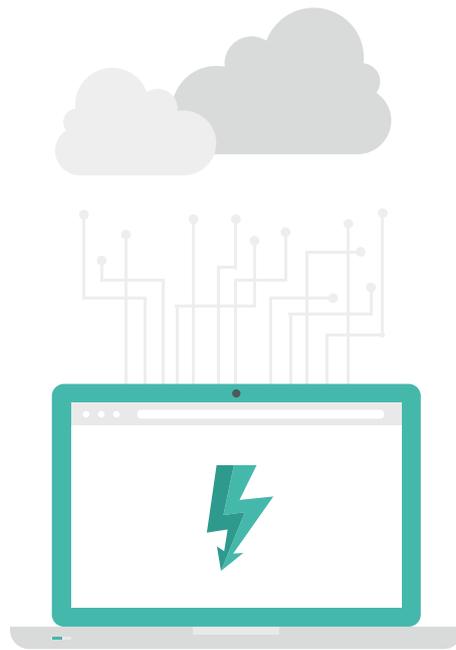
The next level of protection is an uninterruptible power supply (UPS). UPS prices start at under R500 for very simple devices that provide protection for a computer, to hundreds of thousands for large server rooms. A UPS is essentially a battery that allows users to continue working with no interruption in the event of a brownout, blackout, or overvoltage. The key word is Uninterruptible. This means that when the power goes off, power is maintained. In real terms, this time allows a user enough time to hit the save button, close applications and shutdown the computer. More expensive models allow you to continue working for a longer period but perhaps a better option for longer black-outs is a Generator (see point 3). Better quality UPS's have a 'power management' feature which can sense a blackout and safely shut down computers or servers connected to them, writing unsaved data to disk, and issuing shutdown commands to the operating system.

Good quality UPS's also protect against surges and will provide a clean, steady supply of electricity to your equipment. They can also blow in the event of a large power surge but will protect your equipment which is of much more value.



Modern UPS units have a USB output which is able to report it's status to your computer. For example, a small UPS which is able to keep your computer running for 15 minutes can be set (using software) to shut the machine down when there are only 2 minutes of battery remaining. This means that you could spend 10 minutes finishing up a document, or if using a 3G connection, firing off those final emails. Alternatively, you could set your computer to standby or hibernate - useful for when the power goes off and you are not around to save your open documents.

When buying a UPS, you will notice a VA rating. This rating refers to the load you can put on the UPS, not the capacity of the batteries. 600VA is small and 3000VA is quite large by comparison. The easiest way to determine what size UPS you need is to consider the following: how many watts are you going to load the UPS with and how long do you expect the UPS to run for. APC is a reputable manufacturer of UPS devices and provide a simple calculator to help: [http://www.apc.com/tools/ups\\_selector/ZA/za/home/device](http://www.apc.com/tools/ups_selector/ZA/za/home/device)



Lastly, a lot of businesses put their servers and usually desktops onto UPS's but not many people think of putting the network infrastructure on too. The cost is not much extra and can save you a lot of trouble. If the power goes down, routers, firewalls and switches are still powered so you can carry on accessing the Internet or using the network. This becomes essential for businesses that utilize Cloud based services.

During load shedding, most businesses rely heavily on laptops and mobile devices. A quick fix for extending your working time is to use a power bank. These devices use a battery to supply USB power to connected devices. <http://www.powerbanks.co.za/> has a good range of products to choose from.

---

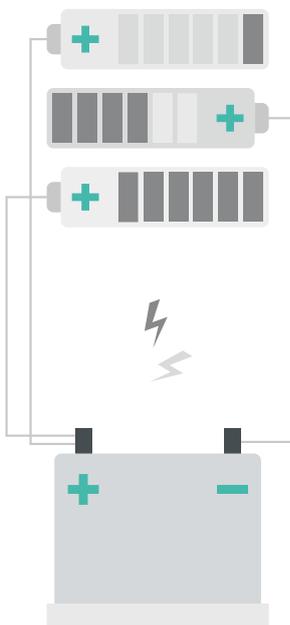
### LEVEL 3 PROTECTION: EMERGENCY POWER GENERATION EQUIPMENT

A step up from Uninterruptible Power Supply is a generator. This equipment is usually powered by Petrol or Diesel fuel, and can provide power for extended periods. In a small installation, a portable generator is placed outside your business/home and extension cords are run from the generator to critical equipment and portable lights. For more complex environments, or permanent installations, the generator is permanently mounted, and connected to the main power supply for the building. This is something a registered electrician can provide guidance and quotes on.

The cost of generators varies depending upon your needs. They can also be rented or leased.

Note that generators require regular maintenance and testing, just like a car. Most entry to mid-level generators will also produce spikes when they start so it is recommended that you have a UPS in addition.

A note on Inverters: these are not ideal for computer environments as they are what we refer to as "offline" devices. Inverters have a place running non-critical devices like televisions, lights and fridges. If the power is drained from the battery and the inverter stops providing power, these appliances simply turn off; there is no need to save data and no operating system that requires a graceful shutdown. They also do not intelligently control power fluctuations and more sensitive electronic devices could suffer.



# SOFTWARE

Cloud solutions are becoming increasingly popular; most businesses have at least explored the options and, in many cases, adopted them. There are a variety of reasons for this, but one of the biggest ones for us South Africans is that anything hosted in the Cloud is much more likely to carry on running when Eskom isn't. Desktop computers are more vulnerable to electricity outages because they immediately require alternative sources of power, but the majority of business users these days also have laptops and or other battery powered mobile devices.

***The Cloud:***  
Now with load-shedding protection!



If you are equipped with back up Internet access in the form of a shared 3G/4G/LTE modem, you will be able to access applications in the cloud and so will all of your colleagues. The virtual network that is created with this set up is a scalable, long-term way to ensure productivity during periods of no electricity.

One of the most common cloud based services is Office365 from Microsoft. Email is the most common integration and the cloud-based version mimics the physical server version of Microsoft Exchange. Additionally, calendars, shared folders and multiple other services can be used too. Below is a summary of two of the more important cloud based functions that Office365 provides.



### *Office 365*

is cloud based and has numerous versions to suit your needs

---

## **DOCUMENT COLLABORATION:**

With Sharepoint in the cloud, all staff can access documents and everything will be up to date. In contrast, in a server bound environment you can still work offline but everyone's data starts to go in different directions and collaborative efforts become a lot more complicated. In addition to that, no backups are being done or everyone is backing up separately which can lead to new problems. With Sharepoint or a similarly reliable cloud based solution, you can always access the most up-to-date version of the documents you need.

Besides the data integrity issue, the temptation to bypass security measures such as firewalls can lead to theft of data, data loss and other security breaches.

---

## HOSTED APPLICATIONS:

Some more prevalent examples of hosted applications are Sage One Accounting by Pastel or Sales Force CRM. Users access these applications from a browser, which means you can use any device with virtually any Internet connection. If you are already using a non-cloud based application and you don't want to move away from it then simply move it to a 'Virtual Machine' in the Cloud. This is a partition on a remote server, usually provided by an Internet Service Provider that allows you to install any software you wish and access it virtually. This type of hosting usually requires a fast Internet connection and may not be accessible from every device.



Besides the other advantages hosting provides, like automated backups, this would allow your business to carry on essential business functions from any computer with an internet connection (a laptop with a 3G connection or even from a mobile device for example).