

Decentralized or central UPS?

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Is a single, larger UPS better, or is it best to have multiple, smaller UPSs? Naturally, the answer is that it depends on a number of factors. In a decentralized (also known as distributed) UPS configuration (see Figure 2), multiple UPSs support a handful of devices or perhaps only a single piece of equipment. Decentralized UPSs typically use plug and play connections and are usually less than or equal to six kVA. In a central UPS configuration (see Figure 1), a larger UPS supports multiple devices. A centralized UPS is typically hardwired into an electrical panelboard. The following tables include a number of factors to consider when making a decision between a decentralized and central UPS. In the end it's often best to simply go with the strategy that you are comfortable with.

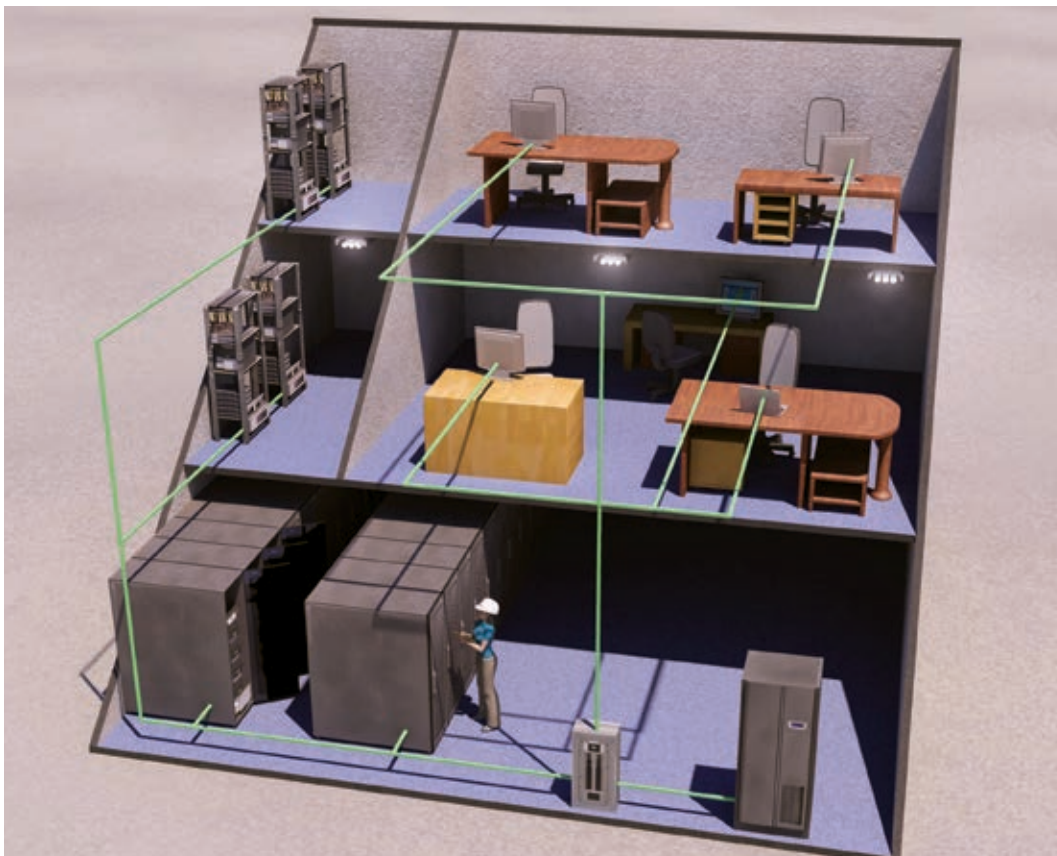
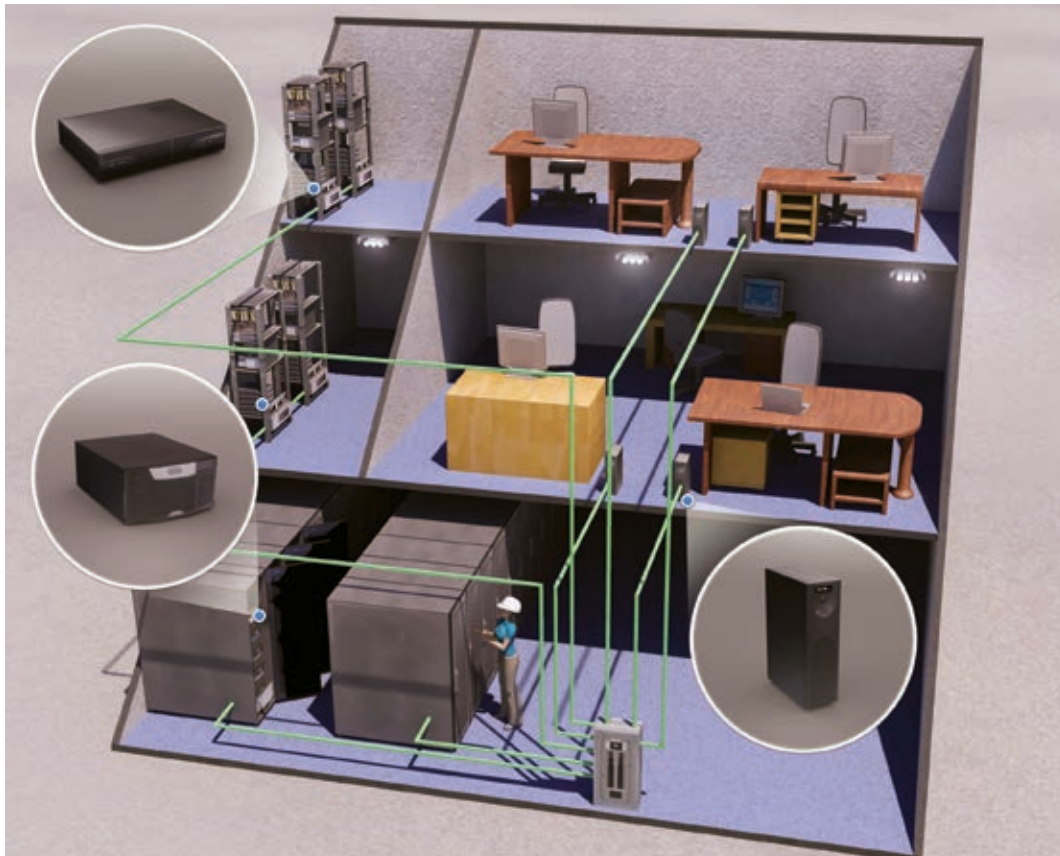


Figure 1

Central UPS

| Why you'd choose a central UPS solution | Why you wouldn't |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Typically, the sales and service life of the UPS is longer. | A single UPS can mean single point of failure. You can overcome this concern with an N+1 or N+X UPS for redundancy. |
| A single UPS is easier to monitor, service and maintain than lots of smaller UPSs. | The single UPS may not be close physically to the equipment it will protect. A single electrical distribution panel may not feed all equipment. |
| Larger UPSs will be three-phase and/or 208V, 400V or 480V and often result in more efficient operation and lower operating costs. | There is no space for a large UPS. |
| A central UPS is often housed away from high traffic areas. As a result, it's less easily disrupted, accidentally damaged or maliciously interfered with. | A central UPS generally requires a trained service technician or electrician to service, maintain or install. |
| A central UPS can be located where cooling is more tightly controlled. Remember, heat is the enemy of the batteries inside a UPS. | A central UPS may incur higher installation and wiring costs. |
| Though a technician may need to replace the batteries, you only have to worry about a single UPS. A distributed UPS configuration may result in various models that require different batteries. Do you want to take the time to replace the batteries on five to 20 UPSs? | |



Combining the configurations

It's important to keep in mind that decentralized and centralized power protection deployment strategies aren't necessarily mutually exclusive. The two strategies can be used in combination to provide redundancy to mission-critical applications. For example, an entire facility may be protected by a large, centralized UPS, but a specific department such as a 24x7 call center may have decentralized UPSs as well to provide redundant protection and possibly extend runtime for call center equipment.

Figure 2

Decentralized UPS

| Why you'd choose a decentralized UPS configuration | Why you wouldn't |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No rewiring is required. Use existing wall sockets. Easy plug and play installation. Can also be redeployed easily if IT systems are moved. | If a generator supports the building, smaller standby and line-interactive UPSs may not be able to function while it's running. |
| Requires lower capital outlay and installation costs. Fits within IT manager purchase limits. Generally don't need to approve a large capital expense. Will most likely not require additional installation costs from electrician. | No central panelboard exists or there's no room for the UPS. |
| You have no idea how much your company will grow and don't want to get locked into a particular UPS. | You don't want to monitor or service a bunch of UPS units. A decentralized design may require more time and focus to keep up with replacing batteries and maintaining multiple UPSs. |
| You already have a number of smaller UPS units that are fairly new and you don't want to discard them. (Most UPS manufacturers offer a trade-in program.) | You want a single UPS that can be shut down using emergency power off. Also, a decentralized design may not offer redundancy and other capabilities provided by a larger, central UPS. |
| Power conditioning is implemented at the point of use, which mitigates any electrical disturbances that may be coupled into the distribution wiring of a centralized system. | Adding redundancy, extended runtime or maintenance bypass functionality to multiple UPSs can be costly. |
| Diverse applications within a building may require varying levels of power protection and functionality. For example, extended runtime can be configured for specific applications, eliminating the need to add additional battery modules for less critical equipment. | Multiple audible alarms/alerts may be irritating. |