

DEPLOY IT INFRASTRUCTURE AT ANY LOCATION

HPE, Schneider Electric team up to deliver prefabricated Modular Data Centers

SUMMARY

Prefabricated modular data centers (MDCs) are purpose-built to accommodate IT deployments outside of traditional data centers. MDCs allow businesses to reduce initial capital investments while future-proofing those investments and enable the business to dedicate more capital to the IT inside. MDCs can be deployed outside or within any open structure, like an empty warehouse.

BUSINESS PROBLEM

Most companies require some form of core data center, as not all systems nor all data can be on the cloud. Long-term capital investment in data centers exposes businesses to capital use risks. Often they must invest in empty space, whether to expand existing capabilities or enter into a new geographic area. Buildings, however, are constructed with an intended useful life of at least 40 years. IT managers are not able to project what their IT needs will be in 10 years, much less building managers projecting what building infrastructure will be required to support them. Construction managers, have to guess all future capacity requirements such as physical space and power and cooling. As companies move compute outside of central data centers, this uncertainty increases further.

The most efficient data centers match available power and cooling capacities to the actual IT consumption. An empty data center not only represents an inefficient

use of capital but also inefficient and more expensive operations. Similarly, as IT evolves and advances, data centers quickly become obsolete. New IT cannot be deployed, even though the building has become mostly empty, because either power or cooling may be at capacity. Even if capacity exists, often power and/or cooling distribution has to be replaced as new IT is deployed.

In other cases, especially high-performance computing (HPC) environments, new technology cannot be deployed without completely retrofitting the data center—effectively shutting down operations until it is complete.

Companies want to deploy IT footprints only on an as-needed basis, with the ability to grow when needed. Whether building new, or retrofitting existing, investing in a data center directs capital away from upgrading IT.

SOLVING THE BUSINESS PROBLEM

Hewlett Packard Enterprise and Schneider Electric have partnered together to solve the problem of evolving space and power and cooling infrastructure.

Prefabricated MDCs are purpose-built for IT deployment. Today, customers only deploy what they need, or have a budget for. As the technology evolves, or their technology footprint grows, new MDCs can be deployed. MDCs can be custom-built around specific technology such as HPC or specific business need such as disaster recovery sites.

Solution brief



FIGURE 1. MDC deployed at NASA Ames Research Center

If a business runs out of physical space, new IT modules can be added. Similarly, if further power or cooling capacity is required, it can be added. As the technology evolves, new MDC can be added that accommodate the new technology. An existing MDC can then be retrofitted or replaced, without affecting IT operations in other modules. If a business has remote locations, or many different locations, MDCs can be deployed at each while being centrally monitored and managed from head office.

MDCs can also be deployed outside, even in harsh environments, and reinforced for deployments in earthquake or hurricane zones. They can be used to convert an empty warehouse or airplane hangar into a data center. In some cases, MDCs can be initially set up in one location and then moved to another, as the customer needs.

ROI is achieved through reduced initial capital investment and efficient ongoing operations.

- Fire detection and protection systems dedicated to the IT.
- Power and cooling distribution within the enclosure.
- Remote monitoring, security and building automation systems
- Depending on the size and type of the deployment
 - Power and Cooling systems can be contained within the same IT enclosure
 - Power and cooling systems may be separate enclosures

With HPE and Schneider Electric, all prefab, modular data centers deployments are eligible for proactive maintenance, comprehensive warranty/support and remote monitoring/predictive response.

All prefab, modular data centers can be offered within HPE GreenLake program.

Our reference customer site is at NASA Ames supporting new HPC deployments:

hpe.com/us/en/newsroom/press-release/2019/08/hpe-builds-nasa-new-supercomputer-to-support-future-human-mission-to-moon.html

nas.nasa.gov/assets/pdf/NAS_Modular-Supercomputing_Fall2019.pdf

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FIGURE 2. Interior of a MDC

THE SOLUTION

Prefabricated, modular data centers consist of:

- IT Enclosure
 - For outdoor deployments, these are steel building modules that hold multiple racks and are structurally reinforced to protect IT from the external environment (hot, cold, rain, or snow).
 - Indoor deployments use a fire rated enclosure to separate the IT from the building.
 - The MDC may be a single enclosure for a single row of racks or can be multiple enclosures together to create “white space” of multiple rows.

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