

Mobile Servers and their importance in uniting design teams with “thin clients”

By Braden Taylor

Engineers, technicians, and designers have always had to travel to where their projects are located. Whether it is a major construction project, or a collaboration on a wastewater system, design engineers may spend anywhere from a few days to months at a time away from their normal offices. Some consulting engineers spend virtually all of their time traveling from one project to the next.

The computing power a mobile engineer needs has been difficult to come by. Today, some high-end laptops can make acceptable engineering workstations. Many of these Mobile Workstations or Mobile Supercomputers give users the requisite power and computational capabilities they need to complete their projects and assignments, gather data,

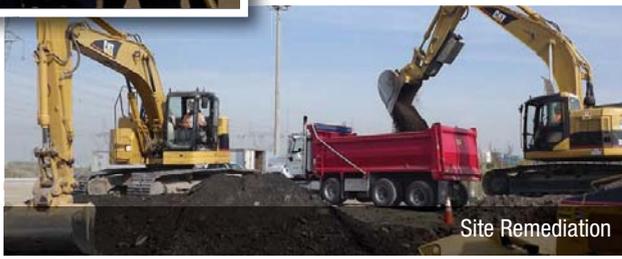


The Panther 5SE is designed for world wide deployment and easy network set up.

process data and manipulate complex models. The problem with many of these workstations is that they can be rather large, heavy and cumbersome.



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Most professionals already carry a laptop with them that could serve as a low-to middle-end engineering workstation replacement.

There are several ways of supplementing a laptop for engineers who travel, but need more horsepower for their work. One is cloud computing, which allows the client to control processing that is done on a remote server or server cluster, accessible through the Web. A second option is to take advantage of local computing power, by joining the network at the current work location. Then, the engineer can connect to the

home office network via the Internet.

However, connecting to the local network, if there is one available, opens the door to security issues on both sides of the connection. For the engineer, it is necessary to protect the intellectual property being developed. Joining a new network provides an entry point into the system. For the local network, whether a partner's or a customer's, letting a system not under its direct control

become part of the network may not be suitable for the organization's security policies.

A third option is beginning to emerge. It involves not only engineering laptops as client workstations, but "thin clients", which are computers that depend heavily on other computers, and their server, to fulfill their computational roles. To bring this hardware together, engineers are utilizing a full-fledged computer network and at least one server with enough scalability, capacity and performance to take on many different types of design requirements and projects, including analysis and simulation. The idea is to take your entire computing environment with you, including servers, workstations, thin clients and network infrastructure.

This is not as difficult as it may sound. Most professionals already carry a laptop with them that could serve as a low-to middle-end engineering workstation replacement. Routers need only be as large as the number of Ethernet ports they have, and cabling can be pur-



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chased inexpensively at their destination, or shipped separately.

The server might be a more challenging prospect. At the heart of the engineering-on-the-go or server-on-the-go concept is the Mobile Server. It is a capable engineering server that can provide the computational back end for design and low- to mid-range analysis and simulation tasks. While it might be odd to think of a laptop as a server, what really matters is the power of its components.

Eurocom has begun coupling its EUROCOM Panther 5SE Mobile Server with teams utilizing thin clients. A Panther 5SE Mobile Server is an all-in-one, 12lbs (5.5kg), easy to carry around system based on Intel Xeon E5-2600 v2 processor technology with integrated display, keyboard and built-in internal battery (UPS).

The Panther 5SE is designed for world wide deployment and easy network set up. It is easy to transport, move around and relocate, as it can fit into a single carrying bag because of its all-in-one, compact design.

The Intel Xeon 12-core processors include exceptional multi-tasking capability and additional L3 cache for speeding up data and instruction transfers. Being upgradeable, the system can also

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incorporate up to two NVIDIA Quadro, GeForce or AMD Radeon graphics processing units. These can also be used to execute applications designed to make use of fast GPUs. While these systems often only offer 32 GB of memory and 6 TB of RAID 0/1/5/10 storage, that's enough for many types of functions.

With a series of Thin or Zero clients

to provide the computational and graphics capabilities of a high-end workstation, project teams are combining up to 10 or even 20 thin clients, that are basically being powered by the Panther 5SE and its massive scalability, capability and robustness.

Together with engineering laptops, these servers can form the backbone of a network that can serve many design engineering and lower-end analysis functions. In addition to computational resources, it can provide centralized and protected access to other networks and the Internet, enforce security policies, provide access to storage, and offer a number of other functions.

Engineers can now take their own full network with them on project deployments. An individual can put a server and an engineering workstation laptop in a carry-on bag, and have the beginnings of a network set up on-site within a few minutes.

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