

Qualcomm reduces CDMA chip design and test simulation runtimes with HP Integrity Servers and SUSE Linux

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– Mike Broxterman
Staff IT Engineer Manager
QUALCOMM CDMA Technologies



QUALCOMM®

As one of the industry's original pioneers, QUALCOMM Inc. is a leader in developing and delivering innovative digital wireless communications products and services based on the company's Code Division Multiple Access (CDMA) digital technology. It supplies solutions and services to more wireless product manufacturers than any other chipset producer worldwide. QUALCOMM's success is due in part to the company's decision in 1995 to create the QUALCOMM CDMA Technologies (QCT) Division to specifically design and develop CDMA chipsets. With several hundred engineers, it currently has the largest CDMA engineering organization in the wireless industry today.

The right tools for the job

Electronic Data Automation (EDA) design applications are key tools for QCT's engineers in designing and testing new chips. The group uses a range of EDA software, including packages from Synopsis and Cadence. Typically the simulations are highly complex and take a very long time to complete - some can last days. As each simulation commences, the application checks for a valid

Solutions for the Adaptive Enterprise.



At a glance:

Company: Qualcomm Incorporated – Qualcomm Code Division Multiple Access Technologies Division (QCT)

Headquarters: San Diego, California

Founded: 1985

Size: A 2003 FORTUNE 500® company, traded on The Nasdaq Stock Market® under QCOM.

Telephone: 858-587-1121

URL: www.qualcomm.com

Primary business: The largest provider of 3G chipset and software technology in the world, with more than 233 million 3G chipsets shipped. QCT supplies more than 50 customers with solutions for over 450 commercial 3G wireless devices, partners with nearly 60 3G network operators around the globe, and has the largest CDMA engineering team in the wireless industry.

license, which is allocated for the duration of the execution. If the group can halve the time needed to complete each simulation, productivity can be greatly increased, and costs reduced.

EDA licenses are expensive—as high as a million dollars. The Company's legacy Sun systems had served QUALCOMM well but the group needed to start investigating new server solutions to supplement its infrastructure for both increased performance—to get more value from the software licenses—and to have more available memory to run specific applications.

Powerful HP Integrity Servers

QUALCOMM already had a strong relationship with HP—the Company's existing infrastructure included a HP ProLiant DL585 running Linux and hosting EDA simulations. The previous legacy servers limited QUALCOMM to eight gigabytes per CPU. If a simulation needed 96 gigabytes then QUALCOMM had to purchase 12 processors. With the HP Integrity Servers, there are no such restrictions.

To increase productivity and reduce ongoing licensing costs, the 12 HP Integrity Servers, models rx5670 and rx4640, all running SUSE Linux were purchased, and QUALCOMM is confident that the HP Integrity Servers can flexibly scale to continue to meet the company's growing computational demands.

HP's tier one support structure and the remote management capabilities for the HP Integrity Servers made the decision to purchase even more persuasive. The HP Integrated Lights-Out (iLO) management functionality makes it easy to remotely manage the servers.

Enhanced simulation throughput and productivity

The HP Integrity Servers proved that their reputation for superior performance on Linux was not unfounded, QUALCOMM achieved an immediate 45 percent reduction in simulation runtimes on the servers. Some of the runtimes dropped from 16 hours to just over eight, enabling QUALCOMM to initiate twice the simulations within one working day.

Mike Broxterman, Staff IT Engineer Manager for QUALCOMM CDMA Technologies, said, "HP Integrity Servers enable us to get much more value out of our EDA large memory software jobs, and this represents greater productivity for our design engineers. The flexibility and scalability of these systems also optimizes memory-intensive applications. With these servers as part of our infrastructure, QUALCOMM remains highly effective in the development and production of industry leading CDMA chipsets."

Challenges

- Reduce the time to run complex EDA simulations, which could often take days.
- Get more value from EDA software licenses, costing up to a million dollars.
- Increase available memory to run specific applications.
- Increase design engineers' productivity.

Solution

- 12 HP Integrity Servers, models rx5670 and rx4640 running SUSE Linux.
- HP's tier one support.
- Remote management using HP Integrated Lights-Out management.

Results

- Immediate reduction in simulation runtimes, some runtimes dropped by as much as 50%.
- Representative reduction in software license costs.
- Removed computational memory barriers on key simulations.

For more information on how working with HP can benefit you, contact your local HP sales representative, or visit us through the Internet at our worldwide web address:
<http://www.hp.com/linux>

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