

West Bay Semiconductor Inc.



Sun Ray™ EDA Solution Success Story

Key highlights

Company

West Bay Semiconductor Inc.

Industry/Market

- Optical networking semiconductor design, development, and marketing

Applications/Solutions

- Electronic design automation (EDA)

Products/Services

- Technical Compute Farm (TCF)
- Sun Ray™ ultra-thin clients
- Sun™ Grid Engine software
- Sun Enterprise™ 450 server
- Sun Ultra™ 60 workstations
- Sun StorEdge™ A1000 disk arrays
- Sun Solaris™ 8 Operating System

Key Business Solutions

- Reduced total cost of ownership (TCO)
- Successfully pooled compute resources
- Lowered IT initial and operational costs
- Improved productivity in EDA cycle
- Reduced EDA cycle time
- Simplified IT maintenance

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– Dr. Chong Ong, Engineering Manager, West Bay Semiconductor Inc.

One of West Bay Semiconductor’s key objectives is addressing an important issue in its industry — that of cycle time. In facing this goal, part of West Bay’s leadership strategy to carving out a place for its products has been to adopt Sun Microsystems’ new generation networked electronic design automation (EDA) computing environment.

Based in Vancouver, BC, Canada, West Bay Semiconductor is focused on making the high-density optical networking chips for the growing optical networking systems market (www.westbaysemi.com). West Bay’s cutting-edge, application-specific standard products (ASSPs) are designed for synchronous optical networks/synchronous digital hierarchy (SONET/SDH) telecommunications and data communications networks. The company also provides high-density semiconductors for optical transport network (OTN)-based systems, including dense wavelength division multiplexing (DWDM).

How to Leverage the Network to Improve Cycle Time and Costs

A key question for West Bay has been how to fully leverage the network to improve cycle time and costs. “We knew that if we pursued a traditional EDA development environment, costly compute power would be locked up in desktop workstation silos,” explains Dr. Chong Ong, Engineering Manager, West Bay Semiconductor. “Consequently, much of our compute power would sit on individual engineers desktops, effectively wasting its full potential.”

“After introducing centrally managed, stateless Sun Ray ultra-thin clients as the universal access device, West Bay experienced truly major administrative savings that came from zero administration of the engineers desktops.”
 – Dr. Chong Ong, Engineering Manager,
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Like many companies, West Bay could not tolerate down time or pay for full custom system administration, so the company focused on a model that would pool compute power and effectively connect it to engineers desktop displays. Having grown from six to 39 employees recently and still expecting growth, it was also more important than ever to minimize the company’s system administration costs.

West Bay recognized that in order to achieve its vision, it needed to partner with Sun Microsystems, who had been quickly developing a network-centric approach to desktop computing. Sun’s workstation experts had over five years experience addressing issues of total cost of ownership (both acquisition costs and operational costs).

First to Deploy

“We were in the enviable position to be among the first in the world to deploy the Sun™ solution,” notes Dr. Ong. West Bay quickly became the world-class authority on Sun’s new generation networked EDA computing environment. “We are proud that we can claim to be among the first companies in the industry to realize the computing model with zero administration on the desktop,” adds Dr. Ong.

Sun’s Technology Streamlined Compute Power and System Administration

“Sun’s new generation environment for networked EDA computing enabled us to focus our compute power and system administration in one place,” elaborates Dr. Ong. “We were able to eliminate the high costs of individual engineer’s workstations, reduce maintenance and IT management costs, and improve productivity.” In designing a forward-looking EDA development environment, West Bay leveraged Sun Microsystems’ recently developed technologies. The heart of Sun’s new capabilities lay in three technologies.

- The Technical Compute Farm (TCF) is a centralized, sharable computing resource that provides power on demand in an affordable, reliable manner. TCF hardware is a preconfigured, turnkey compute farm solution. This single rack is powered by the 64-bit Solaris™ 8 Operating System, and incorporates highly scalable processing power, storage, and networking components configured to improve CPU and memory use.
- The Sun Ray™ ultra-thin client connects the users’ shared Compute Farm servers to EDA desktop displays, inexpensively. It enables centralized administration while delivering a rich user experience. Sun Rays clients provide instant access to multiple platforms including, the Solaris Operating System, Java™ technology, UNIX® platforms, and mainframes.
- Sun Grid Engine software aggregates available compute resources and delivers compute power as network service. It is the key to managing the competing interests of EDA engineers’ workgroups.

TCF comes as a prebuilt system in a Sun rack, with well-known hardware and reliable Cisco networking equipment. Technical Compute Farms are delivered ready to go live the moment they arrive, with nothing to install. The true beauty of Sun Ray ultra-thin clients is that they require no client administration or upgrades, while at the same time putting the power of the server at the users' desktop. Since engineers' desktops are centrally configured with little personalization, there is also great similarity across accounts, which reduces the total cost of ownership.

In a typical network that does not have distributed resource management software, workstations are used less than 20 percent of the time. To combat this lack of utilization, Sun Grid Engine software finds a pool of idle resources and harnesses it productively, so an organization gets as much as five times the usable power out of systems on the network. Increased productivity translates to more compute jobs, more simulations, more refined designs, and more products delivered faster.

An interesting feature of the Sun Ray ultra-thin client architecture is that all client seats are interchangeable. Sun provides smart cards to access Sun Ray ultra-thin clients and the Sun Ray server software enables access to the engineers' session, regardless of which Sun Ray ultra-thin client is being used. "Now, we can have public Sun Ray ultra-thin clients anywhere in the company, so our engineers can check the status of simulations and troubleshoot wherever they encounter each other," says Dr. Ong.

This "hot-desking" collaborative feature has reduced cycle time and increased productivity at West Bay. Engineers can access a problematic session at their peers' desk simply by inserting their own smart card into their colleague's Sun Ray machine to instantaneously view and discuss the session in question.

High Availability, Increased Productivity, Reduced Downtime, and Zero Administrative Costs

West Bay engineers found the Sun Ray ultra-thin client delivered equivalent performance to their desktops, specifically their Ultra™ 60 workstation. Furthermore, the company received this performance without the expense and effort of maintaining a traditional desktop system.

"Another important result was that our project benefited from the high availability of the new EDA network computing environment, which is crucial in reducing cycle time," says Dr. Ong.

"After introducing centrally managed, stateless Sun Ray ultra-thin clients as the universal access device, West Bay experienced truly major administrative savings that came from zero administration of the engineers desktops," concludes Dr. Ong.

In the last several years, the IT ideal of zero administration has emerged for desktop clients. For West Bay, zero desktop administration has crossed over from ideal to daily reality.

About Sun Software

From the desktop to the data center, the focus of Sun software is on delivering the most complete, end-to-end solution for enabling customers to reduce complexity, provide continuous access to Web services, and lower the cost of computing. Whether it's development, deployment, or management, Sun's award-winning software — including Java technology, the Solaris Operating System, Sun ONE middleware, and N1™ technology — continues to revolutionize the industry and create new value for customers.

For more information on Sun software, please visit sun.com/software.

About Sun

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