



---

## Highlights

- Schlumberger tested and approved IBM BNT RackSwitch 10 Gigabit Ethernet switch for its high-performance computing environment
  - IBM BNT RackSwitch delivers 10 Gigabit Ethernet performance on par with InfiniBand
  - IBM BNT RackSwitch delivers a single converged fabric without sacrificing performance
- 

# Schlumberger uses IBM BNT RackSwitch for HPC

*RackSwitch 10 Gigabit Ethernet switch supports high performance computing environment*

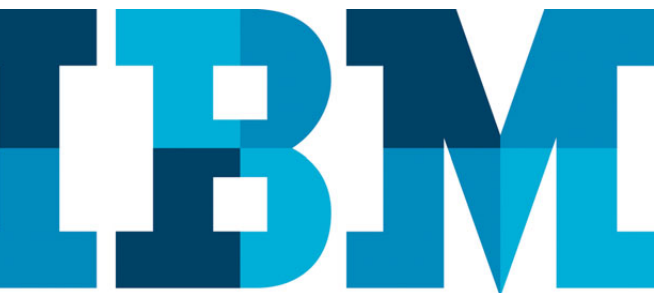
Schlumberger Limited is the world's leading oilfield services company, supplying technology information solutions that optimize reservoir performance for customers working in the oil and gas industry operating in 80 countries. Schlumberger is trusted to deliver superior results and improved Exploration & Production (E&P) performance for oil and gas companies around the world.

Schlumberger tested and approved the IBM BNT® RackSwitch™ 10 Gigabit Ethernet (GbE) switch for its high performance computing (HPC) environment after determining that the RackSwitch delivers 10 GbE performance on a par with, and in some instances better than, InfiniBand.

Knowledge, technical innovation and teamwork are at the core of Schlumberger's values. For more than 80 years, Schlumberger has focused on leveraging these assets to deliver solutions that improve customer performance. With 25 research and engineering facilities worldwide, Schlumberger emphasizes developing innovative technology that adds value for customers.

Through a network of technology centers worldwide, Schlumberger maintains the service industry's longest commitment to technology and innovation. Designed, built, and tested to exacting standards, Schlumberger's advanced tools and products are used around the world in a wide range of applications.

Schlumberger's [Abingdon Technology Centre \(AbTC\)](#), a center of excellence for reservoir simulation and production software, develops software that helps oil and gas companies to make better decisions on development



**IBM Systems and Technology**  
**Solution Brief**

of reserves. Simulation helps to quantify reserves and distribution within the formation rocks and to predict changes over the life of the reservoir. Production decisions involve where and how to drill and operate wells, and how to most safely and efficiently bring oil and gas to the surface.

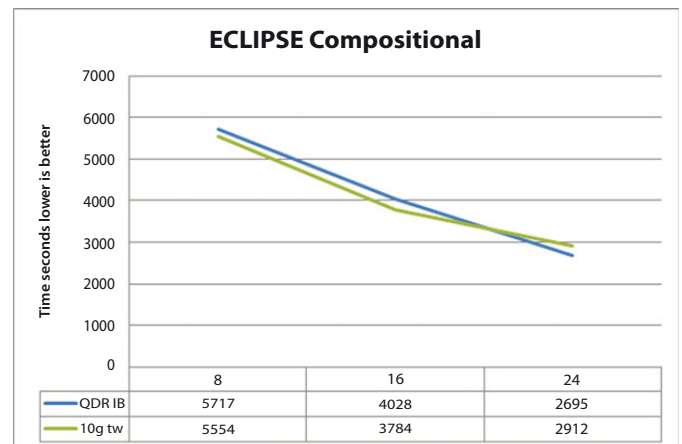
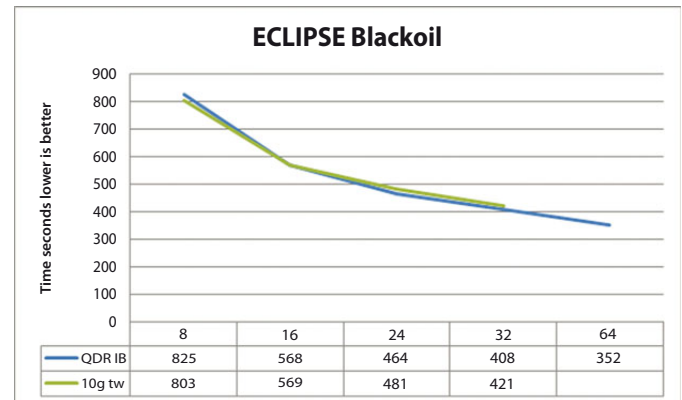
Schlumberger Information Solutions (SIS) provides oil and gas software and services to solve today’s tough reservoir challenges by enabling the creativity of geoscientists and engineers through innovative workflows and comprehensive global services. SIS enables oil and gas companies to improve business performance, reduce exploration and development risk and realize the potential of the digital oil field.

ECLIPSE\* Black Oil and ECLIPSE Compositional software from SIS operate on high-performance servers, and in the past this HPC environment used InfiniBand for high-speed networking. The HPC environment required high throughput, low latency, quality of service and failover.

InfiniBand met these requirements; however it also needed specialized skills to configure and support, as well as an additional management element, leading to a high-cost end-to-end solution. On the other hand, because Ethernet is a widely accepted networking standard, network administrators are familiar with it, and management frameworks and best practices are well understood. In addition, switch and adapter costs are affordable through the dynamics of a high-volume global market.

With the rise of 10 GbE, Schlumberger realized that the IBM BNT RackSwitch could provide an option for clients to leverage the advantages of a standards-based network fabric. However, Schlumberger wanted to make sure that it would not sacrifice performance, so the company determined to independently test the IBM BNT RackSwitch top-of-rack switch versus InfiniBand.

Abingdon Technology Centre conducted the performance testing of 10 GbE versus InfiniBand using a 64-core IBM System x® iDataPlex™ cluster running Linux and ECLIPSE Black Oil and ECLIPSE Compositional software with the IBM BNT RackSwitch low-latency 10 GbE switch and Chelsio S310 network adapters offering iWARP. The results proved that the RackSwitch 10 GbE solution performs on a par with QDR InfiniBand.



Having conducted these tests, Schlumberger recognized the benefits of using an Ethernet fabric instead of InfiniBand. As a result, Schlumberger has certified the IBM BNT RackSwitch as part of the recommended solution when using ECLIPSE Black Oil or ECLIPSE Compositional software.

With 10 GbE plus the iWARP protocol, the IBM BNT RackSwitch delivers a single converged fabric ([Unified FabricArchitecture](#)), which is the holy grail of managing network technologies in a HPC environment. The IBM BNT [RackSwitch](#) family delivers low-latency, scalable and reliable 1, 10 and 40 GbE solutions at a very competitive price point. This breakthrough will enable clients in the oil and gas sector to implement high-speed, low-latency, low-power and low-cost data center networking in HPC environments, and take advantage of a standards-based approach made possible now that 10 GbE performs as well as InfiniBand.

## **IBM RackSwitch**

The IBM BNT RackSwitch top-of-rack 1, 10 and 40 GbE switches reduce the total cost of ownership of data center and cloud computing infrastructures, overcome network overload and enable scale-out data center economies. Using RackSwitch, data center and cloud computing architects can standardize on a unified and affordable rack-level network infrastructure to provision and scale out Web 2.0 environments, high-performance cloud clusters and virtualized data centers. The IBM BNT [RackSwitch product family](#) incorporates innovative Virtual Machine-aware [VMready®](#) software to extend virtualization by mirroring the benefits of server virtualization within the network at the rack level. The RackSwitch also saves energy

through rack-friendly cooling and alleviates management pain by removing complexity through simplified management and fabric convergence.

## **Why IBM?**

### **IBM System Networking**

The value proposition for IBM System Networking is to provide the essential network-connectivity solutions under the IBM brand to connect servers to servers, servers to storage and storage to storage. IBM System Networking offers a compelling alternative for clients seeking more efficient data centers with the greatest business value and lowest total cost of ownership for their data center networks.

### **Intelligence and speed at the edge of the network**

IBM data center solutions equipped with IBM System Networking products bring intelligence and speed to the edge of the network—the essential access, distribution and aggregation layers where servers are connected to the data center network.

### **IBM BNT products**

IBM BNT RackSwitch top-of-rack Ethernet switches are closely integrated with IBM servers and storage to support dynamic workloads that require high-speed and low-latency performance, such as cloud computing, business analytics and high performance computing (HPC). A full line of IBM BNT Ethernet switches deliver high-performance networking for the IBM BladeCenter® platform. Innovative VMready virtualization-aware networking delivers security and performance for highly virtualized data centers. [BLADEHarmony®](#) Manager provides a user-friendly interface for managing hundreds or thousands of switches, including in multivendor, virtual environments.

## For more information

To learn more about IBM BNT products, visit [ibm.com/systems/networking/](http://ibm.com/systems/networking/) or contact your IBM marketing representative or IBM Business Partner.



---

© Copyright IBM Corporation 2011

IBM Systems and Technology Group  
Route 100  
Somers, NY 10589

Produced in the United States of America  
June 2011  
All Rights Reserved

IBM, the IBM logo, ibm.com, BladeCenter, BNT, BLADEHarmony, and VMready are trademarks of International Business Machines Corporation in the United States, other countries or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at [ibm.com/legal/copytrade.shtml](http://ibm.com/legal/copytrade.shtml)

Other company, product or service names may be trademarks or service marks of others.



Please Recycle

---