

ProCurve Networking by HP  
**PowerHouse Museum**



"I'm delighted with the ProCurve solution. It was an open tender and we had no preconceptions about what we were going to use. ProCurve won the contract through merit and hard work. I have to admit it was a surprise win as I did not know much of ProCurve at the time. In hindsight, ProCurve is an obvious winner in terms of technology, reliability, performance, support and plain value for money."

George Rossi  
Former Network Administrator  
PowerHouse Museum

## Abstract

When Australia's PowerHouse Museum embarked on its most substantial network upgrade in years, it went through a rigorous tender process that compared the performance, reliability and lifetime total cost of ownership (TCO) offered by all major vendors. As a result of this analysis, the Museum selected a ProCurve solution based, in part, on its ability to provide a lifetime TCO that is 30-40 percent lower than all others. The ProCurve Networking by HP Solution also simplified the security of the Museum's temporary wireless networks and allows the organisation to stream live full-screen video to blockbuster exhibitions.

## Highlights

Across the globe, museums are dramatically increasing their use of information technology and the innovative Powerhouse is no exception. For example, it has barcoded a large part of its collection to allow staff to record the movement of each object using wireless handheld devices. As with most modern organisations all its administrative functions are integrated and linked through its data network.

"The quality and reliability of our data network is a direct contributor to our operational performance", stated George Rossi, who was the Powerhouse museum's Network Administrator at the time.

"However, operational issues were not the only reason that we chose to seriously upgrade our infrastructure. In fact, it probably was not even the *main* reason. The key factors were the relentlessly demanding requirements of each new blockbuster exhibition and conferences that we hosted. Add to this the public's recognition of the PowerHouse as the premier technology and design museum in Australia and you will appreciate the pressure we were under to make sure that we chose an infrastructure that could grow with our needs."

The heritage status of the PowerHouse Museum site required some innovative thinking from Network Administrator George

Rossi and his team when designing and implementing this infrastructure. For example, the interior of some parts of the museum are so high that wireless access points mounted in the ceiling of this former power station can only be reached with an indoor crane. And while some of the buildings are just 20 metres apart, the only way to connect them without disfiguring the buildings is to run 80 metres of cable from one ceiling to the ground and then three floors up to the next ceiling. Add to this the requirement to consult heritage experts before a single brick is removed and one can appreciate the unusual complications faced by the PowerHouse Museum team

Therefore, when in 2003 a networking equipment vendor decided to terminate a range of switches that the PowerHouse had installed, the decision about how to replace them was not taken lightly. The unique circumstances facing the PowerHouse Museum as well as the major upgrade that it was about to undertake made it imperative that the PowerHouse made the right decision.

After accurately defining the Museum's current and future needs, Mr Rossi asked a number of network integrators - each working with a different major networking vendor - to submit proposals in response to an open tender. Through a careful process of comparison and elimination, Mr Rossi was surprised to discover that the ProCurve solution's Total Cost of Ownership over the anticipated life of the equipment was a clear 30-40 percent lower than any other vendor.

It sounds like a simple decision but for a government-funded organisation, the process of preparing a tender and comparing proposals is detailed and exacting.

"We have to adhere to probity," explained Mr Rossi. "We have to show that what we're doing doesn't reflect our personal view but

**Customer at a Glance**  
Specialising in technology and design, the PowerHouse is Australia's premier and probably most famous museum. It has a collection of 385,000 objects of which some three percent are on display at any one time at the Museum's exhibition centre in the inner Sydney suburb of Ultimo. In addition to this landmark site, the Museum is responsible for the Sydney Observatory in The Rocks and manages a high-tech warehouse in the suburb of Castle Hill.

With its rare collection of extraordinary objects presented in iconic buildings, the PowerHouse Museum has always been popular with the general public. Its reach, however, has grown tremendously in the recent past with its hosting of exhibitions that have showcased the science behind blockbuster films like *Star Wars* and *Lord Of The Rings*.

objectively obtains best value for the organisation, conforms to government regulations and statutes and follows government purchasing guidelines. Mostly we define a functional outcome for the equipment," he says. "How the vendors meet it technically is up to them."

The PowerHouse Museum invited six network integrators, each working with a different vendor, to submit proposals. Of these, five submitted bids. The first requirement was that the successful bidder demonstrates a high level of service and support infrastructure in Australia, allowing Mr Rossi to narrow the field from five to three.

The Powerhouse then graded the proposals against the functional specifications in the tender. All three proposals exceeded the tender's mandatory technical requirements but two of the three promised to go much further. The ProCurve submission and one other created so much network capacity that the PowerHouse would be able to stream live full-screen video into exhibitions, rather than using stand-alone video playback devices.

"If you want live video to arrive at a workstation at a specific time and not look jerky and have proper sound then you have to set up quality of service (QoS) and make sure both the workstations and servers have the capacity and architecture to stream this stuff at the rate you're going to need," explained Mr Rossi. "Even with Gigabit Ethernet, if you're running on a single PCI bus then the video is contending with all the other stuff that's trying to get through the backplane, and without sufficient backplane capacity, you're not going to get the throughput that you might expect."

Mr Rossi did not exclude any of the three vendors at this stage of the decision-making process, as all three exceeded the functional requirements in the tender. However, the additional backplane capacity that was offered by the ProCurve solution and one other proposal certainly was attractive.

The PowerHouse Museum then compared the three remaining proposals according to their expected lifetime TCO.

The three proposals involved similar up-front costs but radically different costs of service and support.

"ProCurve guarantees its equipment for its entire life!" said Mr Rossi. "We looked at equivalent service and support packages from the three vendors and also we at how they offer maintenance, whether they do it through a third-party or keep it in-house," said Mr Rossi. "We did a costing over five years and although the capital costs initially were within 10 percent of each other, the service and support brought the ProCurve solution's TCO down considerably over the life of the switches."

On this basis, the PowerHouse Museum eliminated two of the three remaining proposals and selected the infrastructure design that was based around the ProCurve solution.

"I'm delighted with the ProCurve solution," said Mr Rossi. "ProCurve was a clear head and shoulders above its competitors. I am confident of the abilities of our new infrastructure to help ensure that we are able to maintain the premier status of the Powerhouse Museum"

### Implementing the ProCurve Networking by HP Solution

In Mr Rossi's words, migrating to the new platform was "a doddle."

The PowerHouse Museum established a second network backbone around the ProCurve switches and then moved its PCs from the old backbone to the new, one-by-one. The process was simple and painless and Mr Rossi found that he did not need to contact ProCurve or the network integrator to create and upload the initial configurations.

### What Makes it Work Hardware

- ProCurve Routing Switch 9300 Series
- ProCurve Switch 2600 Series
- ProCurve Switch 2800 Series
- ProCurve Switch 5300xl Series
- ProCurve Switch 4100 Series
- ProCurve Networking Wireless Access Point 420

### Software, Services & Support

- Lifetime warranty with next day advance replacement\*
- Software updates, Telephone and email technical support\*\*
- Comprehensive network design and configuration services \*\*

\*available in most countries, on most products for as long as the original customer owns it.

\*The ProCurve Routing Switch 9300m series and Secure Access 700wI series have a one-year warranty with extensions available.

\*\*for the most up to date information go to [www.procurve.com](http://www.procurve.com).

In a short time, about 300 network nodes went from 10 to 100Mbps, and a world of new possibilities opened up to the PowerHouse Museum.

The first new possibility is in the area of desktop software management. When the PowerHouse Museum moved from Novell Netware to Windows Networking, the expectation was that the network would be used to deploy upgrades to desktop software. Over a 100Mbps network, it typically takes five minutes to deploy an upgrade to every desktop, Mr Rossi said. Over a 10Mbps network, it would have taken so long that this convenient and effective model of desktop software management would not have been feasible.

The second new possibility is in the area of high quality multimedia. For example the photography department has now invested in Hasselblad equipment that is able to capture 22MB images because moving huge images around the network is now practical with the ProCurve solution,

This explosion of multimedia is not limited to internal requirements of digital photography. In October 2005, the PowerHouse Museum opened "Inspired! Design across time," a new permanent exhibition incorporating live streaming video, which investigates how designers, technologies and businesspeople come together to create new objects.

"It's got the highest network component of any exhibition so far," said Mr Rossi. "All the computers run remotely and they all provide stuff from central servers."

The third new possibility is in the area of wireless networking, which has been made secure and easy to manage with the new solution.

It's well known that there's a lot of anxiety about how to ensure the security of wireless

networks. In fact, of the 14 different wireless networks that Mr Rossi can detect in the vicinity of the PowerHouse Museum, none provide adequate protection.

For the PowerHouse Museum, the task of securing wireless networks is potentially even harder. This is because wireless is not just for staff or those using mobile barcode readers to monitor the location of objects. It is also for the general public that hire the PowerHouse Museum's facilities for conferences. During such events, delegates may well be expected to bring their own laptops, each supporting a different wireless security standard. If the PowerHouse Museum tried to manually configure each laptop on arrival, many conferences would be over by the time all delegates were securely online.

It sounds daunting but PowerHouse Museum found the answer was simple: rely on the ProCurve switches rather than a wireless-specific security standard for network authentication. The switches provide a simple and secure interface for every delegate, regardless of how their laptop is configured.

The ease of use, power and cost-effectiveness of the ProCurve solution has affected every aspect of how the PowerHouse Museum works with data, from creating a temporary wireless network for conferences through to streaming full-screen video into blockbuster exhibitions.

"It works seamlessly, it's beautiful!" said Mr Rossi.

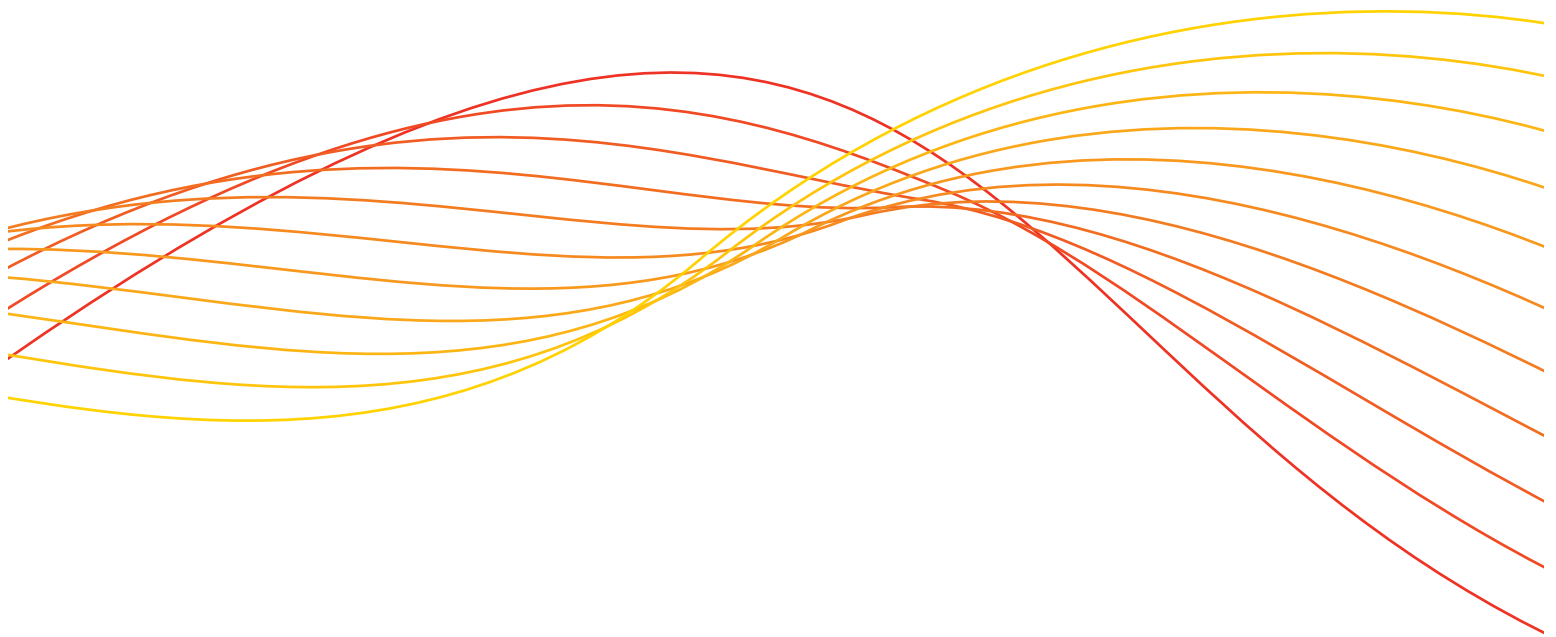
### Business Benefits

- PowerHouse Museum's competitive edge maintained
- 30 to 40 percent lower total cost of ownership over life of product
- Video streaming to exhibitions now possible
- Software upgrades deployment to the desktop now possible
- Working with multimedia now practical
- Security and performance of temporary wireless networks now guaranteed

### About ProCurve Networking by HP

The ProCurve Networking business unit of HP is a supplier of enterprise networking solutions comprising wired and wireless networking products, services and solutions – including WAN routers, Ethernet switches, routing switches, wireless access points and network management applications – which allow customers to build networks based on open standards that meet current and future needs for security, performance and reliability.

The ProCurve Networking Adaptive EDGE Architecture™ is a unique design strategy that creates a secure, mobile, multi-service network by placing intelligence at the edge—where users connect and policies are enforced. This innovative approach creates a dynamic network infrastructure designed to keep up with advancing technology and user needs while protecting business investments.



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