

BT Openworld: Broadband Internet Access and Rich Content Portal

BT openworld

BT Openworld is British Telecommunications' international Internet business, delivering services to approximately 1.3 million customers in the UK. BT Openworld is one of the UK's leading Internet

Service Providers (ISPs), offering customers a choice of options to suit their Internet needs. BT Openworld broadband delivers high-speed Internet services to consumer and small business customers using Asymmetric Digital Subscriber Line (ADSL) technology.

BT Openworld uses Riverstone's RS 8600 routers in its Internet Data Centers to connect to the ADSL network and to deliver rich, interactive content. The Riverstone products provide an intelligent infrastructure that supports policy-based routing, load balancing, and Web-cache redirection within BT Openworld's Internet Data Centers to enable service delivery to consumer and business customers over the BT Openworld ADSL network.

The Business Challenge

BT Openworld provides always-on, high-speed broadband access to the Internet based on ADSL, expanding the Internet experience for its consumer and small business customers by providing on-demand access to rich content, services, and applications for consumers and small businesses. By using ADSL, BT Openworld enables users to download information, images, graphics, music, and video almost instantly. To ensure a wide range of rich content, services, and applications, BT Openworld has secured more than 60 partnerships with leading broadband service providers.

● “We were impressed by the ability of the Riverstone RS router products to meet our strict technical requirements.”

Mike Galvin
*Vice-President of Customer Service
and Operations, BT Openworld*

BT Openworld also offers a range of value-added services for small businesses. BT Openworld Powered offers online marketing solutions to enable small business customers to create and sustain direct online marketing relationships. BT Openworld delivers a range of Internet, email, and Subscriber Management System (SMS) applications that are presented as partner-branded services. BT Openworld Powered offers a number of partner-branded services, including virtual Internet services, wholesale value-added messaging services, wholesale SMS services, and portal services.

Broadband and mobile Internet access is creating an Internet experience that is altogether faster, more cost-effective, and compelling. Research shows that a small business broadband customer stays online four times as long as a narrowband customer stays and spends nearly three times as much on e-commerce. BT Openworld recognized that providing consumers and small business customers with a wide range of value-added services was vital to maintaining customer loyalty and essential to the success of itself and its partners.

The challenge that BT Openworld faced was to provide a robust and resilient network to deliver these value-added services and to support the vast number of content and application servers in its Internet Data Centers. The delivery of these services requires a content provisioning architecture that provides transparent caching for Web, news, and music and video services. Handling a large number of subscribers

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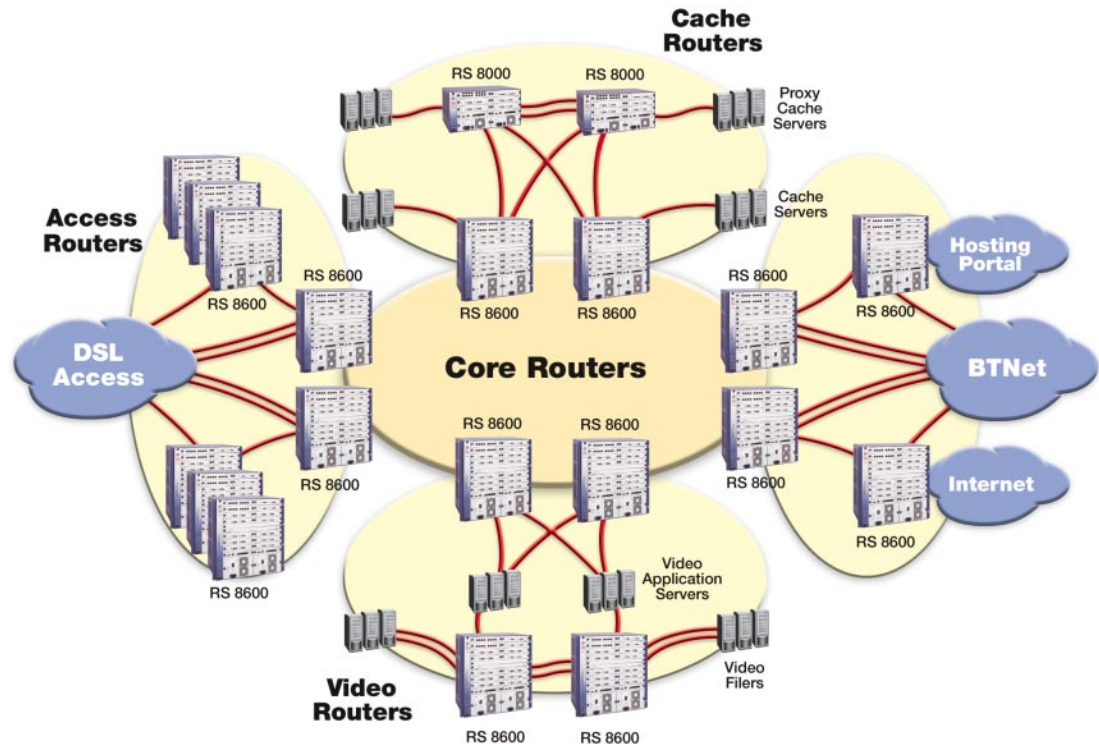
requires a highly-scalable solution that can maintain hundreds of thousands of flows and very high performance rates. In addition, BT Openworld's rapid deployment of broadband services to consumers and small business customers also required a proven solution that would meet strict design, build, test, and support criteria. Finally, the ability to support operational systems support requirements, such as per-flow billing and granular traffic engineering, would allow flexibility for any future service offerings.

The Solution

Riverstone recognized the need to provide a fully-redundant and resilient network infrastructure to support the hosting environment and to connect to BT's ADSL access network and backbone infrastructure. Riverstone proposed a solution based on the Content Provisioning Architecture. The solution consists of four main switching elements – core, access, cache, and video – with each element based on multiple RS 8600 routers, all with redundant control modules, switch fabric, and power supplies. Capacity can be doubled or tripled simply by adding more RS 8600 routers.

“The Web-cache redirection and load balancing features ensure that there are no bottlenecks within the hosting environment when delivering graphic and video-rich Web content to our customers.”

David Jack
BT Openworld



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The core of the switching infrastructure consists of RS 8600 routers providing Gigabit Ethernet aggregation, core, and policy routing for the access, cache, and video switches. RS 8600 routers with OC-12 ATM and Gigabit Ethernet interfaces connect the ADSL access network to the core infrastructure. The access switches also provide policy-based routing for Web traffic with load balancing to split traffic between multiple cache switches, as well as dynamic routing for other traffic.

Multiple RS 8600 routers provide transparent Web-cache redirection and load-balancing connections to multiple Web cache and network news proxy cache servers. This allows local storage of frequently accessed Web pages and services to reduce core network traffic. The BT Openworld service uses high-speed ADSL, providing customers with significantly improved access to the Web compared to dial-up access. The Web-cache redirection and load-balancing features ensure that there are no bottlenecks within the hosting environment when delivering graphic and video-rich Web content to its customers.

The video switches are comprised of pairs of RS 8600 routers to provide Gigabit Ethernet connectivity with load balancing to video application servers and file servers. The Riverstone solution is able to deliver over 2,000 concurrent streams of video, each at 384 Kbps, with the quality of service and reliability that BT Openworld customers expect.

Enhanced Broadband Services

BT Openworld's service initially offered single-user and multi-user access to rich content and applications at speeds up to 500 Kbps. BT Openworld now offers business users access at speeds of up to 2 Mbps, together with a range of interactive e-commerce business applications. Consumers now have the choice of a wide range of interactive services, including online music, video streaming, and multi-player online video gaming.

The ability of the content and application-hosting environment to cope with the deployment of these new services, and of future services such as interactive TV, was vital when BT Openworld was considering a network infrastructure partner. BT Openworld is confident that the network Riverstone has installed will give it the flexibility it needs to offer enhanced services to meet its future business plans.



The RS 8600 and RS 8000 Routers

**Metro Routers That
Convert Raw Bandwidth
into Profitable Services**

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