



Residential Gateway Deployment Strategy for the Future

As operators continue to bring more and more advanced IP services to customers, the new generation of residential gateways will need to continue its evolution to address those services. Residential gateway hardware and software designs should be taken into the consideration of not only supporting current services, but also future services and technologies. In addition, BEC understands that a residential gateway sits at a customer's home and is considered the first product that operator's customers experienced. Due to this unique strategic position, a residential gateway is required to bring an impression of quality service and user friendliness.

Several requirements should be considered when selecting a residential gateway:

High processing power for high bandwidth and advanced IP routing

The new generation of residential gateway system-on-chip (SoC) processors should pack a variety of features and power. BEC's Ultimum Multi-Service Gateway uses industry leading chip – Broadcom's latest and most powerful CPE processor chip. The improved processing power provides more headroom for additional software applications, enabling operators to offer more HD video streams, faster data, software based features and at the same time increase the reach to expand service areas.

Supporting multiple WAN technologies – DSL, FTTH, Ethernet, single/bonded pair

Today's average telco networks consist of multiple access technologies and variety of implementations, from ADSL to gigabit fiber. Although operators are constantly migrating to newer and better technologies, maintaining several different access technologies is inevitable depending on strategic and economic reasons. BEC's Ultimum Multi-Service Gateway is capable of supporting most access technologies available to the operators. Its advanced DSL chip & DMT code support ADSL2+ with long reach technology, its VDSL chip provides high throughput at 17a profile and long reach rate that enables HD video services up to 7000 ft. The operators can also leverage the G.bond technology in the BEC Ultimum to bond two pairs of copper lines to double the bandwidth for premium services. What is unique about Ultimum's main feature is that all the services can be auto detected and auto fallback without the need to reconfigure the gateway or CO ports. For fiber deployments the operators can enable customers with 100M or gigabit services by plugging in their Ethernet drop from the ONT to Ultimum gateway's gigabit Ethernet port.



Rich & Manageable LAN & WLAN features for the NOC and customers

BEC understands that it is the operator's preferred choice to maintain WAN side management and control of the equipment, while providing limited access to customers in the event of personalized settings such as Wi-fi password, LAN port forwarding etc. BEC's Ultimum addresses this by incorporating multi-level management control. It separates LAN configurations & WAN configurations by providing different levels of access to management GUI, both locally & remotely. BEC's SiteSmart smart phone applications for Android & iOS also provides a simple and user friendly configuration of LAN settings. The benefits of the features are reduced truck-roll, less service calls, and minimized operation costs.



Designed for centralized remote management or cloud services

Operators offering Triple play services today are either investigating or investing heavily in cloud delivery technologies, enabling their offering of variety of new services to customers. As the available network bandwidth increases the operator will be accessible to more opportunities of cloud-based services. BEC Ultimium supports latest industry standard TR-069 as well as BEC's own BECloud – a simple cloud-based management tool available to BEC customers. It's enhanced software, high processing power, increased memory size, advanced security and support of various connection protocols enables a great platform to support cloud-based services.

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Software & Other Value-added features

Several smart digital home, smart energy based value-added features are increasing in popularity among the operators and are being actively deployed in markets around the globe. Home Automation, home monitoring and security, energy services are areas of the main trends concerning future services. Flexible and unified operating system & software are an important aspect of such trend. Unified software platform can provide a common development environment that allows applications to be developed. BEC's BiNOS OS platform in the Ultimium service gateway is designed to be easily integrated and compliment with these service & technologies, particularly BEC's BESMart home automation & smart energy suite. The flexible OS platform for operators seeking 3rd party software integration and management can leverage these advantages.

All-in-one single box across networks and multiple services

Operators are in need of a single CPE device that works in multiple access network platforms regardless technology or chipset vendors for many reasons. Access technologies varied from time to time, and although there are industry-wide standards to ensure cross vendor interoperability. Individual vendors usually implement their technology in a different method. As we all know, each operator's network environment is unique, performance fine tuning is critical in these environments. Performance results can vary base on line or cable conditions, power source, firmware, chipsets, network configuration/setup etc. BEC's Ultimium is not only designed based on industry standard, it has also been successfully field tested in over 20 operators' networks. Many improvements and fine-tuning have been implemented to ensure it perform at its maximum in multiple networks and various conditions.

Requirement for greater flexibility for installation and service activation

With the greater emphasis on value service and increasing complexity of today's operator's network and even home networks, the hardware and software features on a residential service gateway must be even adaptable and flexible to reduce cost of deployment and maintenance. BEC Ultimium multi-service gateway is a single device that could intelligently recognize network settings and service type and automatically activate services. This is due to BEC's unique EZSO (Easy Sign-On) technology and its ability to store multiple network profiles in one device. Operators can choose truck-roll friendly installation via BEC's customized firmware service, or a customer self-install kit specifically designed for tier based services. Regardless the deployment or installation preferences, BEC's technical team will work with the operators to create an installation model that best fits their needs