

Technical Description

Managed Services: Router and Firewall

Optimize performance. Maximize results.

As technology evolves, so does the need for reliable, high-performance, high speed connectivity. The burden placed on a company's network resources may exceed their existing IT capacity and expertise, leaving little for developing innovations that drive the business forward. Our Managed Router with a Stateful Firewall service allows an organization to outsource the time-consuming and complex tasks of network management to trusted experts who can ensure optimal performance, so the business is empowered to focus on what it does best.

Comcast Business Managed Services provide a high touch model to support the full lifecycle of router management, including:

- Fully managed onboarding experience
- Technical consultation and solution design
- Optimized configuration and installation
- Monitoring and management
- Equipment maintenance and replacement as necessary
- Ongoing solution support

Managed Router from Comcast Business

Comcast Business Software Defined Managed Router is a connectivity service that leverages software defined networking (SDN) and network function virtualization (NFV) to create a flexible, reliable and easy to manage IP network over public internet infrastructure.

Our Managed Router is offered over the Comcast SDN/NFV platform where we can add and combine technology partners and services in a highly integrated fashion. It includes a high performance software routing engine, embedded stateful firewall capabilities and future support for third party virtual network functions.

Product overview

The Comcast Business Managed Router sits at the customer premises between the LAN and the network. Our router is available over internet circuits and can handle a variety of protocols to help you meet your performance requirements. The router includes a stateful firewall with standard templates or customization capabilities to meet your specific network requirements. Stateful inspection keeps track of each connection in the state table, with three standard capabilities: Disable, Normal and Strict.

Service Features

Professional Design

- Optimized network efficiency and application performance
- Network design that scales to meet customers' future needs
- Professional support to ensure network design and installation goes smoothly

Monitoring and Management

- 24X7X365 monitoring
- Proactive alarming and notification of potential issues
- Security updates and patches
- Firmware updates

Ongoing support as your business grows

- Support for configurations changes as customers' network needs change and grow
 - New applications
 - Changing performance requirements

Cost and resource efficiencies

- Equipment rental model reduces costs and eliminates the need for capex
- Single source for Connectivity and Router means you won't get caught in the middle between your connectivity provider and your router provider
- Support is provided for all US locations, in and out of Comcast territories
- Comcast Business is responsible for installation, maintenance and repairs of the router - we even cover the cost of a technician sent to your location

Technical Specifications

For detailed technical product specifications, please refer to Managed Router Technical Specifications document.

Managed Router. Comcast will provide robust, flexible, high powered universal customer premise equipment (uCPE) based on x86 hardware that is vendor and service agnostic and allows Comcast to deploy virtualized network functions (VNFs) as needed based on customer requirements.

Underlay Connectivity. The Comcast Business Managed Router leverages public internet (Comcast on-net Layer 3 internet access services over fiber or Comcast provided off-net Layer 3 internet access) to provide connectivity between sites.

Managed Router Firewall. Comcast will provide a Layer 3/Layer 4 stateful firewall as part of the standard deployment to provide security to customer sites. Stateful packet firewall is included at no additional charge.

Service Orchestration. Comcast provisions, configures, and monitors the Managed Router service via a resilient, multi-tenant cloud based element control platform.

Digital Experience. Customers have access for configuration and network service reporting via the Comcast Business digital experience on desktop and mobile platforms.

QoS Management. Comcast Business Managed Router allows customers to prioritize egress traffic based on customer provided IP differentiated services code point (DSCP) marking into six prioritization queues. Prioritization only occurs on traffic toward the Managed Router virtual private network (VPN).

IP Address Allocation. The uCPE will use a single public IP address provided from the underlay service. Customers can provide their own public IP address ranges.

Border Gateway Protocol (BGP) Routing. Comcast Business Managed Router supports private peering BGP-4 routing to efficiently multi-home across multiple sites. The service can use a public autonomous system number (ASN) or a private ASN provided by the customer.

Monitoring, Technical Support and Maintenance

Network Monitoring. Comcast monitors all Comcast Services purchased by a customer on a 24x7x365 basis.

Technical Support. Comcast provides customers a toll-free trouble reporting telephone number to the customer Enterprise Technical Support (ETS) that operates on a 24x7x365 basis. Comcast provides technical support for service related inquiries, but does not offer consulting or advice on issues relating to CPE not provided by Comcast.

Escalation. Reported troubles are escalated within the Comcast ETS to meet the standard restoration interval described in the Service Level Objectives. Troubles are escalated within the Comcast ETS as follows: supervisor at the end of the standard interval plus one hour; manager at the end of the standard interval plus two hours; director at the end of the standard interval plus four hours.

Maintenance. Comcast's standard maintenance window is Sunday through Saturday from 12:00 a.m. to 6:00 a.m. local time. Scheduled maintenance is performed during the maintenance window and will be coordinated between Comcast and the customer. Comcast provides a minimum of 48 hours notice for non-service-impacting scheduled maintenance and a minimum of seven days' notice for service impacting planned maintenance. Emergency maintenance is performed as needed.

Service Level Objectives

Comcast provides Service Level Objectives for the service, including network availability and mean time to restore. The service objectives are measured monthly from the Comcast point of demarcation.

Service Availability. Availability is a measurement of the percentage of total time that the service is operational when measured over a 30-day period. Service is still considered operational under scenarios where the managed router controller cannot reach the customer site uCPE. In this scenario, traffic can still traverse a site but the ability to make configuration changes may be limited.

Managed Router Services	
Availability	>99.99%

Managed Router Service availability is subject to underlay service availability.

Mean Time to Restore. Mean Time to Restore is the average time required to restore service to an operational condition as defined by the technical specifications in Section 1 of this document. In the Comcast footprint, the Mean Time to Restore objective is four hours for electronic equipment failure from the time a trouble ticket is opened with the ETS. Outside the Comcast footprint, the Mean Time to Restore objective is next day replacement or better for electronic equipment failure from the time a trouble ticket is opened with the ETS.

On-Net Overlay Services	
uCPE Mean Time to Restore (On-Net)	4 hours
Off-Net Services	
uCPE Mean Time to Restore (Off-Net)	Next day replacement

Customer Responsibilities

Customers have the following responsibilities related to the installation, support and maintenance of the service.

Provide an operating environment with temperatures not below 55 or above 85 degrees Fahrenheit. Humidity shall not exceed 90 percent at 85 degrees Fahrenheit.

Provide secure space sufficient for access to one standard, freestanding equipment cabinet at each of the customer facilities, no further than 50 feet from the customer router or switch interface.

Provide power including UPS AC power equipment, circuit sizing to be determined, if applicable.

Provide emergency local generator backup service, if applicable.

Provide access to the buildings and point of demarcation at each customer location to allow Comcast and our approved contractors to install uCPE. Provide access to each location for regular (8:00 a.m. to 5:00 p.m.) and 24-hour emergency service and maintenance of Comcast's equipment and facilities.

If interfacing with a third party IP service, provide, install and maintain a device that is capable of routing network traffic between the service and the customer's layer 3 VPN.

Customer must provide a point of contact (POC) for installation, service activation and any maintenance activities.

Why Comcast Business

Comcast Business partners with today's distributed enterprises to do more than just improve network performance metrics. With dynamic solutions, expansive resources and leading expertise, Comcast Business is able to help forward thinking companies create value in their core business by leveraging the Internet and network dependent technologies fueling competition. Through simplified management and advanced solutions, Comcast Business can help drive key business initiatives from digital transformation and customer experience to cloud and security.

Key differentiators

- Nation's largest converged IP network
- Best first mile to last mile coverage
- Gigabit speeds that deliver lightning-fast bandwidth
- Class of service enabled backbone
- Diverse paths and high availability options
- Bandwidth scaling
- Customer-defined security policies

For more information, visit <http://business.comcast.com>