

# Network Management Disclosure

## LEGAL

### **SPECTRUM'S DESCRIPTION OF NETWORK MANAGEMENT PRACTICES, PERFORMANCE, AND COMMERCIAL TERMS FOR DEDICATED INTERNET (AS OF NOVEMBER 20, 2011)**

The Federal Communications Commission ("FCC") has adopted rules that require broadband Internet access service providers such as Time Warner Cable's parent, Charter Communications Operating, LLC and its subsidiaries providing the services ("Spectrum"), to publish certain information about their services. See 47 C.F.R. §§ 8.1-8.11. In accordance with those rules, this document provides information concerning three aspects of the dedicated broadband Internet access services that Spectrum provides to customers through the federal E-Rate program: (1) the practices that Spectrum employs to manage its network, (2) key performance characteristics of Spectrum's dedicated Internet access service offerings to E-rate customers, and (3) certain commercial terms applicable to these services. These disclosures are intended to provide information to schools and libraries that currently purchase Dedicated Internet Access service through participation in the federal "E-rate" program (or that may do so in the future), as well as to providers of applications, services, and content that make use of Spectrum's network to reach users.

The broadband marketplace is dynamic and constantly changing. While this document is intended to be thorough and current, Spectrum expects to continue evaluating its approach to network management in response to changes in technology and Internet usage, and it reserves the right to adopt new or different network management practices. Spectrum will provide updates regarding such changes when warranted, and the information provided in this statement may be revised and updated from time to time. In addition, other aspects of Spectrum's services—such as prices and performance capabilities—are subject to change. Updated information can always be found by visiting Spectrum Business' website at [enterprise.spectrum.com](http://enterprise.spectrum.com).

#### I. NETWORK MANAGEMENT PRACTICES

Spectrum endeavors to provide its customers and others who use its network with quality service. To further this goal, Spectrum utilizes various tools and techniques to address external factors that may undermine the quality of network performance.

##### A. Network Congestion

Spectrum's Dedicated Internet Access service is provided using dedicated facilities and bandwidth and is often provided pursuant to service level agreements. Accordingly, customers generally will not be impacted by network congestion.

##### B. Device Attachment Rules

Spectrum's Dedicated Internet Access service is provided over the Ethernet platform. As such, Spectrum utilizes specialized Ethernet equipment, in particular Metro Ethernet Forum ("MEF") certified Network Interface Devices that meet specific requirements for Ethernet Operations, Administration, and Maintenance functions. Depending upon the size and scale of a particular customer's needs, Spectrum utilizes these approved devices to support customers' Dedicated Internet Access services. The devices terminate the Spectrum Ethernet service, including the Dedicated Internet Access service, and are managed by Spectrum, not by the customer. In addition, Dedicated Internet Access customers must have a router, switch, or other device that, at a minimum, can host and route the IP addresses utilized by that customer and its end users. Spectrum's Dedicated Internet Access customers are responsible for ensuring that their router(s), switch(es), or other device(s) are capable of meeting Border Gateway Protocol version 4 ("BGP4")

and can accommodate the number of IP routes and simultaneous sessions typically associated with BGP4. Customers are responsible for the configuration, control, and filtering of their BGP connections.

### C. Network Security Measures

Spectrum actively seeks to address the threats posed by harmful and unwanted traffic and thus to protect the security and integrity of its network and its customers. Indeed malicious software (often referred to as “malware”) such as viruses, worms, spyware, and distributed denial of service (“DoS”) attacks not only can adversely affect the network, but also can result in harm to customers’ computers and the quality of the service they receive, compromise their data, and harm third parties as well. Unwanted communications such as spam can lead to similar problems.

Spectrum provides a range of tools to its customers to enable them to respond to such risks, offering both free and premium options for anti-virus and anti-phishing software, spyware, and adware. In addition, Spectrum offers its Dedicated Internet Access customers Managed Security Solutions services that provide customers with all of the features of firewall services, such as encryption, user authentication, access controls, and IP VPN services. More information about these offerings can be found at <https://mss.twcbc.com/>.

All inbound e-mail is scanned for viruses, and messages found to contain viruses are discarded. In addition, to reduce spam, Spectrum limits outbound e-mails to a set number of messages a day and checks all inbound e-mail against a series of reputation services in order to identify and block known spammers, consistent with common industry practices. All inbound e-mail is spam-scanned, and messages tagged as spam are deposited in a special spam folder, accessible by webmail.

In addition, Spectrum employs certain practices on a case-by-case and as-needed basis to protect its network and its customers against distributed Denial of Service (“DDOS”) attacks. These practices (which could include limiting traffic to DNS and DHCP servers) could be triggered if Spectrum detects traffic levels that significantly exceed certain baselines; the applicable thresholds are not disclosed here, in order to ensure that these security practices remain effective and cannot be deliberately circumvented. Further, in accordance with common industry practices (and in response to demonstrated harms), Spectrum may on occasion and for limited periods of time inhibit certain Internet ports that are commonly misused to harm networks, although this in no way prevents any Spectrum customer or broadband Internet access user from accessing lawful Internet content.

### D. Application-Specific Behavior

Spectrum does not prevent users of its service from sending and receiving the lawful content of their choice; running lawful applications and using lawful services of their choice; or connecting their choice of legal devices (subject to the discussion above), provided that such applications and services do not harm the network or the provision of broadband Internet access services, facilitate theft of service, or harm other users of the service. Similarly, Spectrum does not impair or degrade particular content, applications, services, or non-harmful devices.

## II. PERFORMANCE

### A. Description of Spectrum’s Dedicated Internet Access Service

Spectrum’s Dedicated Internet access service provides the capability to connect to the Internet over Spectrum’s fiber-based infrastructure and provides bandwidth dedicated to the customer’s exclusive use. It is primarily intended for business customers, although it is also available to schools and libraries. Dedicated Internet Access service is designed for an office with more than 20 users or that uses technology requiring high availability and low latency. Dedicated Internet Access services can be customized with additional services such as web-hosting, domain name services, static IP, email, and managed security services.

Spectrum’s Dedicated Internet Access service is often provided pursuant to service level agreements, which include performance capabilities that are tailored to the needs of the particular customer. As such, the precise performance metrics will vary. One important component of

broadband performance is throughput speed. As a general matter, Dedicated Internet Access service is available with throughput speeds of between 5 and 100 Mbps, upstream and downstream. Another technical aspect of broadband performance is “latency”—the average time for a data packet to travel from one point on the network to another. Again, generally speaking, Dedicated Internet Access service is offered with latency between 40 and 50 milliseconds (ms).

When offered in conjunction with a service level agreement, Dedicated Internet Access is provided with assurances that customers will actually experience the performance capabilities assured by Spectrum. For information concerning the performance metrics applicable to your service or available from Spectrum, please consult your service order or contact a customer service representative, or visit [enterprise.spectrum.com](http://enterprise.spectrum.com).

#### B. Description and Impact of Specialized Services

The FCC’s rules require us to address services that share bandwidth with broadband Internet access services, but that do not necessarily include broadband Internet access capability or are not primarily intended to be used for that purpose—a category the FCC calls “specialized services.” Customers of Dedicated Internet Access may purchase some of these services. However, because Dedicated Internet Access is provided over dedicated facilities and is often subject to performance assurances, it will not be impacted by any specialized service, and vice versa.

### III. COMMERCIAL TERMS

The terms of service for Spectrum’s Dedicated Internet Access service are set forth in the materials specific to that service and are also available on Spectrum’s Business Class website at <http://enterprise.spectrum.com/legal>. The information below highlights three specific issues that the FCC has directed broadband Internet access service providers to address.

#### A. Pricing

Dedicated Internet Access is provided pursuant to customer specific agreements. As such, there are no standardized prices for this offering, and the price will vary depending on your particular needs. Current subscribers can find pricing information concerning their service on their monthly bill or by contacting a customer service representative. Prospective customers can obtain pricing information for Spectrum’s Dedicated Internet Access offering by contacting a customer sales representative or visiting [enterprise.spectrum.com](http://enterprise.spectrum.com).

#### B. Privacy

Spectrum’s privacy policy applicable to its Dedicated Internet Access service is available at [enterprise.spectrum.com](http://enterprise.spectrum.com).

#### C. Redress Options

Customers. If you have any questions about Spectrum’s Dedicated Internet Access service or any questions or concerns regarding any of the information set forth above and wish to contact a customer service representative, please visit Spectrum’s Customer Service page at <http://enterprise.spectrum.com/legal>.

Providers of applications, services, and content. Providers of applications, services, or content with questions or complaints about Spectrum’s policies in connection with its Dedicated Internet Access service should contact Internet.Access.Policies@twcable.com.