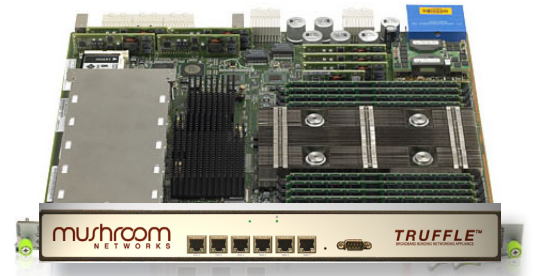


# BROADBAND BONDING SERVICE

## Enabling Uplink Bonding



The BBS (Broadband Bonding Service) is an OPTIONAL add-on subscription service. It is designed to provide additional bonding capabilities to Mushroom's customer premises equipment, the TRUFFLE BBNA, that would normally bond http downlink traffic and would provide session based load-balancing for any other type of traffic without BBS. BBS will further enable the TRUFFLE BBNA device at customer's office with bonded Internet access for all types of Internet traffic in both uplink and downlink direction. With BBS, the customer unit will create a bonded IP tunnel to one of the BBNA servers that is located in a high 9s reliability colo data center (POP in picture below) to enable the uplink and downlink bonding.

## FEATURES

**Aggregated capacity** - All uplink and downlink traffic from and to the BBNA CPE device will have the aggregated bandwidth of the combined Internet access links even for single connections, such as a single VPN. Bonding will work even with access lines from different ISPs.

**Link failure recovery** - In case of Internet access line failures in one of the Internet access lines during an active session, the system recovers the ongoing session by redistributing the load (including the lost packets) over the available access lines, even for the sessions in progress, without loss of data integrity.

**Improved network reliability** - Automatic failover at the BBNA CPE protects against failures of one or more access link outages, as it will not cause failure of the aggregated access link as long as at least one access link is still active, resulting in less downtime for the

connection between BBNA devices.

**Transparent installation** - The existing Local Area Network in the office location does not require any changes. All the installation and configuration is handled through the BBNA web based user interface.

**Inbound Traffic Continuity** - Static IP addresses at the data center device can be mapped to customer's local IP addresses and can be used for inbound traffic such as web-servers, VPN servers or any server application. This will enable the continuity of a session even during a disconnect of access lines that are bonded, as long as one of the lines are up.

**Advanced QoS algorithms** - All traffic routed through the BBNA server is intelligently managed to prioritize real-time traffic. Additionally a unique set of proprietary algorithms are implemented to improve traffic latency metrics and these metrics can

