

# Virtual Leased Line

## Connecting to Colos & Branch Offices



The Virtual Leased Line (VLL™), is a bonding solution for businesses that would like to connect to their colocations (colos) in multi-tenant Internet Data Centers (IDCs) or to connect to their branch offices. When Truffle devices are paired over the public Internet (one at the head-quarter office and one at the branch office/colo), the Internet access pipes on each side will be bonded to create a virtual fat IP pipe that will connect the two locations. VLL is the most efficient and cost effective way to connect a colo/branch office to head-quarter office. Various types of Internet access lines, from same or different Internet Service

Providers (ISPs) can be bonded to create a virtual IP pipe that has high-performance, low cost and improved reliability. Truffles installed on branch office locations will enable bonding of up to 4,5,8 or 12 Internet access lines, providing improved bandwidth in both uplink and downlink directions. Truffle also bonds the downlink HTTP traffic for faster Internet access at each of the locations from the public Internet. Truffle provides this higher access capacity and more reliable point-to-point IP access at a cost much lower than alternative single Internet access lines.

### VLL FEATURES

**Aggregated point-to-multipoint capacity**

All uplink and downlink traffic between the head-quarter office and branch office/colo location(s) will use the aggregated bandwidth of the combined Internet access links.

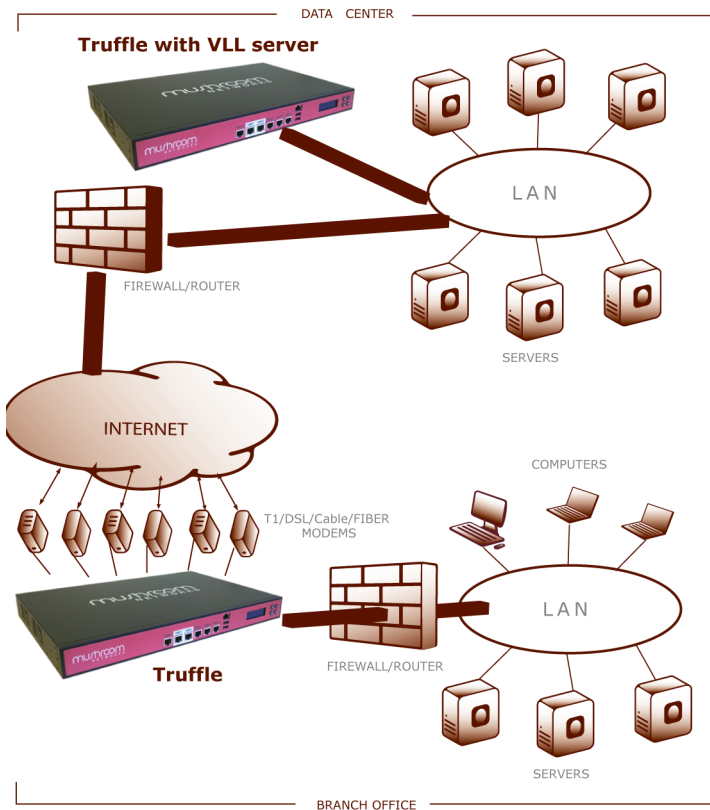
**Link failure recovery** - In case of Internet access line failures in one of the Internet access lines, VLL recovers the ongoing session by redistributing the load over the available access lines, even for the sessions in progress, without loss of data integrity.

**Improved network reliability** - Automatic failover 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 Truffle devices.

**Transparent installation** - The existing Local Area Network in the head-quarter office or the branch office/colo does not require any changes. All the installation and configuration is handled through the BBNA user interface.

**No coordination with ISP** - No new equipment or software is necessary from the Internet Service Provider(s). A user-friendly web-based management interface is provided for quick and easy configuration and system monitoring.

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



## TRUFFLE HARDWARE SPECIFICATIONS

Mechanical Dimensions	438(W) x 292.1(D) x 44(H) mm, 17.25"(W) x 11.5"(D) x 1.73"(H)
Weight	10.4 lbs.
Input Power Requirement	200W full-range ATX
USB ports	2 (for cellular data card and future software uploads)
LAN ports (10/100/1000 baseT, auto-sensed)	2 RJ-45 Ethernet connector. One LAN port as fail-to-wire to WAN port in case of power outage.
WAN ports (10/100/1000 baseT, auto-sensed)	4 RJ-45 Ethernet WAN ports. 4 more or 8 more RJ-45 Ethernet WAN ports addon option.
Certifications	FCC, CE, RoHS-5, ICES-03, UL, cUL
Operating Temperature Range	32 - 104 F, 0 - 40 °C
Operating Humidity Range	20-90% RH
Storage Temperature Range	-4 - 158 F, -20 - 70 °C

## TRUFFLE SOFTWARE SPECIFICATIONS

Max throughput	Base: 300 Mbps (standalone), 100 Mbps (peered) Performance Pack: 940 Mbps (standalone), 250 Mbps (peered)
Max number of concurrent IP sessions	150,000 (600,000 with the performance pack addon)
Device management	-Web based management -SNMP -Remote syslog -Email Alerts
DHCP and DNS servers	-DNS relay -Parallel DNS optimization -Support for DHCP server
DDNS	-Support dynamic DNS for multiple interfaces
WAN configurations	-Support for various configuration modes: static, PPPoE, DHCP, Passthrough. -Selectable "failover-only" or "aggregate" modes for cellular data card and other WAN ports. -User configurable WAN interface binding
Routing	NAT and IP Forwarding, QoS and inbound/outbound VoIP quality management
UPnP	Support for peer-to-peer applications

## TRUFFLE ADDON OPTIONS

Base model	4 Ethernet WAN ports, VLL client license
4 WAN ports addon	4 additional Ethernet WAN ports
8 WAN ports addon	8 additional Ethernet WAN ports
VLL Server license addon	VLL Server license addon
Performance pack addon	Additional performance: 940 Mbps (standalone), 250 Mbps (peered), 600,000 concurrent IP connections

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