TRUFFLE EX series

Broadband Bonding™ Network Appliance

with cellular 3G/4G data card failover

The Truffle-EX series Software Defined WAN Orchestration and Broadband Bonding Appliance, enables cost-effective and self-healing Internet access for businesses, enterprise branch offices and other multi-tenant buildings. Aggregation and intelligent WAN orchestration of multiple Internet access lines boosts Internet performance and reliability. The Truffle-EX aggregates and intelligently orchestrates up to four (or optionally as many as eight or twelve) Internet lines to increase performance and up-time of applications and services that run over the Internet. Several T-1, DSL, cable modem, MPLS, metro-ethernet or fiber services from different ISPs can be aggregated to provide increased bandwidth. The Truffle EX provides higher access capacity at a cost much lower than a single Internet access service and is ideal to boost the performance and reliability of real-time and non-real-time applications running over IP networks.

TRUFFLE FEATURES

Downlink/uplink bonding in peered mode - Truffle bonds Internet access lines for all types of traffic (including encrypted traffic such as VPN) for aggregated downlink and uplink capacity when peered over the Internet with another Truffle with VLL server license located at the headquarter office or data center. For single office setups optional Broadband Bonding Service subscription enables downlink/uplink bonding.

Elastic Static IP – A static IP in the cloud is provided as part of the optional Broadband Bonding Service and is mapped onto the Truffle. This means that static IP is available for services and inbound network access even during WAN outages, as long as at least one of the WAN links is up.

Aggregated downlink capacity in standalone mode - When not peered with another Truffle device, all HTTP downlink sessions can be configured to use the aggregated bandwidth of the combined Internet access links, even in the case of a single HTTP session. For non-HTTP downlink sessions and all uplink sessions, Truffle provides session-based intelligent load balancing across the access links if not peered with another Truffle.

Self-healing WAN & Application Armor™ - In peered mode, in case of Internet access line failures, the Truffle keeps the ongoing sessions alive by making real-time per-packet routing decisions, even for the sessions in progress, without loss of data integrity. Additionally automatic failover protects against failures of one or more WAN link outages.

Software-Defined WAN Orchestration - Truffle's Software Defined Networking architecture enables quick and easy implementation of sophisticated WAN orchestration algorithms that are application specific. Truffle provides real-time traffic & bandwidth management features based on traffic type and various network metrics, including latency, jitter, packet-loss and many other custom parameters.

Traffic Shaping, Monitoring & Alerts - Traffic can be monitored via performance graphs over seconds/minutes/hours/days/months. Various realtime and non-realtime traffic types can be filtered and shaped. SNMP or non-SNMP alerts provide in depth network visibility and intelligence.

Advanced QoS algorithms & VOIP Armor – 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 real-time traffic metrics such as optimizing end-user experience (i.e. MOS score) of VoIP applications.

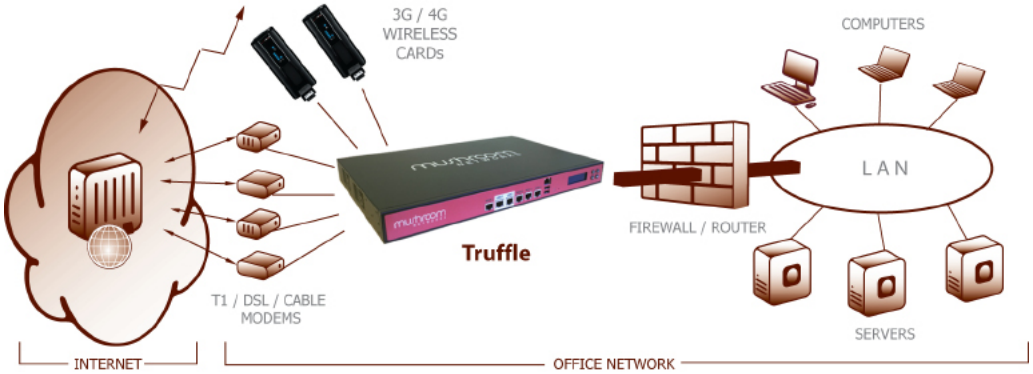
Dynamic DNS load balancing – Truffle can be configured to provide Dynamic DNS load-balancing for inbound requests for internally hosted servers such as web-server, ftp-server, mail-server etc.

2G/3G/4G cellular cards – can be added as WAN access links for additional reliability.

Transparent installation – Pass-through installation is quick and hassle-free and requires zero changes to the existing legacy firewall and zero changes to the existing LAN network.

Built-in Firewall & Router – Truffle can be configured either in pass-through to function inline with the existing legacy firewalls/routers or, if preferred, can be installed as the primary firewall/router.

Bridging to the Future



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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	80 plus 250W full-range ATX
USB ports	2 (for cellular data card and future software uploads)
LAN ports (GbE, auto-sensed)	2x 10 GbE fiber Ethernet connectors.
WAN ports (GbE, auto-sensed)	2x 10 GbE fiber WAN ports & 6 GbE copper WAN ports
Certifications	FCC, CE, ROHS2, UL
Operating Temperature Range	32 - 104 F, 0 - 40 °C
Operating Humidity Range	20-90% RH at 55 °C
Storage Temperature Range	14 - 158 F, -10 - 70 °C
Storage Humidity Range	5-95%, non-condensing
Cooling	Fan active cooling

TRUFFLE SOFTWARE SPECIFICATIONS	
Max throughput	10 Gbps (standalone), 800 Mbps (peered)
Max number of concurrent IP sessions	1,000,000
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
Firewall / Routing	Firewall with NAT and IP Forwarding, QoS and inbound/outbound VoIP quality management
UPnP	Support for peer-to-peer applications

TRUFFLE ADDON OPTIONS	
Base model	2x 10 GbE fiber Ethernet LAN, 2x 10 GbE fiber WAN & 6 GbE copper WAN, VLL client license
VLL Server license addon	VLL Server license addon
Failover over redundancy	Available via VRRP active-active installation

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