



企業軟體定義廣域網路解決方案

混合雲 | 廣域網路負載平衡 | 應用程式辨識 | 自動設置 | 堅不可摧的 VPN 連線 | 覆蓋網路動態路由 |
增加網路回程頻寬 | 多鏈路頻寬管理 | 內送網路流量負載平衡 | 內建 4G LTE

Q-Balancer 企業 SD-WAN 軟體定義廣域網路解決方案，內建智慧型負載均衡演算機制有效分配鏈路寬頻使用，可將低成本寬頻網路轉變為企業級廣域網路。使用者可透過 Q-Balancer 設備，基於企業業務策略將應用程式與廣域網路鏈路組合中的流量進行分類和控制，進而提高企業關鍵應用程式性能。Q-Balancer 設置採用政策性路由管理，所有應用程式均可在鏈路與頻寬方面上做適度配置，有效利用企業網路資源、完全控制網路資源、提高生產力。

應用交付

根據業務意圖，根據路由策略動態識別應用程式並自動將流量引導至其目標。

更高的靈活度

隨著業務的增長，使多站點企業能夠靈活地逐步增加 WAN 帶寬和新的分支機構。

網路性能

設備具同時使用多條廣域網路頻寬能力，讓所有使用者得以同時使用全部頻寬資源。

頻寬效率

具備管理網路優先權的能力，減輕不太重要的影響或與業務無關的應用程式大量消耗頻寬。

優勢

- > 改進應用程式交付。
- > 增強企業廣域網路可靠性與性能。
- > 透過低成本寬頻技術提高企業頻寬。
- > 使用頻寬管理，實現高效的頻寬利用率。
- > 透過內送流量負載均衡技術，改善企業網路對內送流量請求的可用性與回應時間。
- > 透過設備內建網路安全與加密機制，增強的數據安全性加密。
- > 零接觸設置。
- > 支援覆蓋網路動態路由，降低企業分支網絡成本與複雜度。
- > 穩定堅固的 4G LTE 網絡連線能力。

特色

混合廣域網路

除了傳統的廣域網路鏈路之外，Q-Balancer 還能使企業利用混合廣域網路方式為應用程序獲得低成本和快速回應的網路連線。在 Q-Balancer 所建構之混合廣域網路架構中，所有私有與公共廣域網路皆可設置為啟用狀態，進而實現更高的廣域網路可用性和效能。

應用程式辨識

透過應用程式辨識(Application Aware)與每一封包(Per- packet)應用程序路徑導引技術，可幫助企業網路通過寬頻網路、4G-LTE、MPLS 網路頻寬聚合，在任何廣域網路傳輸技術上，滿足那些對網路品質要求度高的即時應用程式例如：語音和視頻等等的最佳性能。

廣域網路負載平衡

Q-Balancer 廣域網路負載平衡在網路連線請求出現時，根據定義的路由策略，動態地將流量分配到負載最少或回應最快的鏈路。其動態路徑選擇 (Dynamic Path Selection, DPS) 智能地聚合多組廣域網路以加速應用程序交付，或將實時流量引導到私有和公共 WAN 上的最佳路由。在任何廣域網路中斷的情況下，DPS 會自動將流量轉移到備援線路，網路連線甚至不會被中斷丟棄。

堅不可摧的 VPN 連線能力

在站點到站點 VPN 網路中，如果主要廣域網路線路出現故障，則 VPN 流量將透過 Q-Balancer 的內建 VPN 負載平衡技術，無縫地將路由轉移到可用路徑；所有互聯網線路都設置為啟用狀態，因此分支機構始終能夠以頻寬完全聚合的速度訪問總公司與數據中心。

增加網路回程頻寬

Q-Balancer 使企業能夠獲得增加網路回程(Backhaul)容量的好處，並加速各地點之間關鍵應用的傳輸，並能夠聚合多個站點到站點的連接。

Q-Balancer 還通過分支網路公私有網路分流方式，從 MPLS 所建構的網路回程中，卸載送往公有雲的流量，從而節省了昂貴的回程頻寬。這有助於為關鍵應用程序保留頻寬加速應用程序交付。

多鏈路頻寬管理

Q-Balancer 基於策略路由的頻寬管理為關鍵應用程序分配足夠的帶寬並確保其優先權，而服務優先權對來自所有用戶的流量的應用程序之間的帶寬關係進行分類和優先權排序。所有應用程序都可以完全共享頻寬，但享有優先權之應用程序可以享受全速之連網能力。

內送網路流量負載平衡

由於廣域網路可能發生的故障或擁塞，進而導致企業自行維運的網路服務有時可能無法對外部連線請求提供服務。Q-Balancer 的內送網路流量負載平衡功能，提高了企業自行維運網路服務的可用性，透過偵測廣域網路狀態和回應時間，將外部請求定向到伺服器。

支援覆蓋網路動態路由

Q-Balancer 支持覆蓋網路(Overlay Network) 動態路由協定，例如：RIP、OSPF、BGP 等協定，企業降低採購維護多組網絡設備和僱用昂貴專業人士的需求，進而降低企業分支網絡的維護成本和複雜性。

內建嵌入式 4G LTE 與 GPS 模組

內建嵌入式 SIM 和 GPS 模組。透過工業用 4G 模組，建立 7x24 穩定的網路連線。GPS 可通過 TCP 埠口訪問，透過該埠口提供 NMEA 格式的即時地理位置數據，是車隊管理等應用的理想解決方案。

軟體功能

WAN Load Balancing

- Applications
- DNS
- Weighted Round-Robin
- By IP, By Connection, By Packet
- Downlink, Uplink, Total Traffic
- Persistent Routing
- Response
- Optimum Routing Path
- Redirect to Transparent Proxy
- Geolocation
- Priority
- Failover

Inbound Load Balancing

- Bottleneck Monitor
- Weighted Least Traffic
- Round-Robin by Weight
- Failover
- Priority
- Multi-Domains
- Multi-Records
- IPv4/ IPv6
- DNSSEC

Bandwidth Management

- Multi-WAN
- Source & Destination IP, Subnet, Geolocation
- Priority
- Minimum & Maximum Bandwidth
- Individual/Shared
- VLAN
- Schedule
- Applications
- DNS Domain Names
- Policy-Based

SD-WAN

- Secure Overlay Network
- Hybrid WAN
- Path Monitoring
- Dynamic Path Selection
- Network Controller
- Application-Aware Routing
- Auto-Provision Overlay
- Router Replacement

Security

- Stateful Firewall
- DNS Firewall
- Application Visibility and Control
- URL Filtering
- DoS Prevention
- Connection Limit
- ARP Spoofing Prevention

VPN Bonding

- VPN Bonding
- Automated VPN Tunnel Failover
- Seamless Fallback
- Private & Dynamic IP Support
- Overlapping Network Support
- Tunnel Encryption (DES, 3DES, AES)

Virtual Private Network

- IPsec:
 - Tunnel Encryption (DES, 3DES, AES)
 - Hash Algorithms (MD5/SHA-1)
 - Authentication Methods (Pre-shared key)
 - NAT Traversal
 - Tunnel Status
 - Dead Peer Detection
 - Perfect Forward Secrecy (D-H Group 1, 2, 5)
 - Domain Name Support for Tunnel End Points
 - Overlapping Network
 - Hub & Spoke VPN
 - VPN Tunnel Failover
 - VPN Load Balancing
 - Inter-operability with Other IPsec VPN Solutions
 - RIP v1/v2, OSPF, BGP
- PPTP & L2TP Servers

Networking

- NAT
- Server Mapping
- Static Route
- RIP v1/v2, OSPF, BGP
- DHCP Server/Relay
- DNS Server/Relay
- LACP (802.3ad) Bonding
- IEEE 802.1q VLAN
- WAN IP Address Assignment:
 - Static, PPPoE, DHCP, DDNS, L2TP, & PPTP
- Multiple Public IP Pass-Through
- IPv4/IPv6 Dual Stack
- L4 Server High Availability & Load Balancing
- Site Failover & Load Balancing
- WAN Compression
- Web Caching
- SIP & H.323 NAT Traversal
- Proxy for HTTP/HTTPS/FTP
- Overlay Routing for RIP/OSPF/BGP
- DNS Routing

High Availability

- VRRP
- Configuration Synchronization
- Firmware Version Synchronization

Flexible Licensing

- Stackable License Options
- Flexibly Increase Capacity as Needed

Device Management

- Web-based UI (HTTP/HTTPS)
- Compatible with browsers on Laptop/Tablet/Phones
- Command Line Interface (Serial, SSH)
- SNMP
- Firmware Upgrades via Web UI
- Automated Configuration Backup
- System Auto Recovery
- Automated Firmware Upgrades
- NTP Server
- Email Alert
- Built-in Diagnostic Tools
- GPS Activated

Logging and Reporting

- Real-time and Historical Monitoring
- Scheduled Email Reports
- Syslog Support
- Reports for:
 - IP, IP Subnets, IP Group, Sessions, WAN Status, URL, Users, Protocols, Interfaces, DNS, Load Balancing, QoS Quota, Packet Filtering, Cache, Authentication, Applications, System, Admin Events

型號與規格					
型號	QB-Mesh	QB-150	QB-300	QB-500	QB-2000
目標用戶	行動/偏遠/分支機構	分支機構	中小型企業	中大型企業	大型企業/數據中心/教育
建議使用者數 ¹	50 - 150	50 - 150	100 - 500	300 - 2000	1500 - 20000+
系統					
Throughput (bps)	500M	150 - 300M	300 -1500M	500 - 3000M	2- 20G
WAN Links	4 - 7	3 - 10	5 - 25	7 - 52	7 - 52
Max. Concurrent Connections	50K	50K	800K	2M	8M
Connections per Second	5K	3K	40K	150K	550K
硬體					
Network Interfaces (GbE)	4	4	6	8	8 - 24 ⁶
Hardware LAN Bypass (Pairs)	○	1	1	2	2 ⁶
User-defined Port	●	●	●	●	●
Embedded 4G LTE Modems ²	1 - 4	○	○	○	○
USB 4G Modems ³	1	1	1	1	1
Wi-Fi LAN Support ⁴	●	●	○	○	○
GPS Interface with Female Antenna Connector	●	○	○	○	○
Inbuilt Storage ⁵	●	●	●	●	●
體積					
Form Factor	Desktop	Desktop	1U	1U	1U
W x D x H (mm)	195 × 138 × 70	230 × 152 × 30	430 × 248 × 44	430 × 394 × 44	430 × 450 × 44
Net Weight (Kg)	2	2.2	7	8.2	8.5
環境					
Power Supply	External Adapter	External Adapter	Single	Single	Dual ⁷
Max. Power Consumption (Watt)	60	60	65	270	300
Operating Temperature (°C)	0 ~ +40	0 ~ +40	0 ~ +45	0 ~ +45	0 ~ +40
Storage Temperature (°C)			-20 ~ +70		
Humidity			10% ~ 90% RH, non-condensing		
Certifications			FCC, CE, RoHS		
Warranty			1-Year Limited Warranty		

¹ Recommendation for sizing purposes only. No software restrictions applied. ² Up to three 4G LTE modules can be added. ³ USB 4G Modem works as failover mode.

⁴ Wi-Fi LAN is an option to supported models. ⁵ Inbuilt storage is an option. ⁶ 10GbE/25GbE/40GbE/LAN Bypass is optionally supported via expendable LAN modules.

⁷ Redundant Power Supply is an option to supported models. ⁸ All specifications are subject to change without notice.

實體方案

ENTERPRISE ROUTERS



QB-2000

QB-2000 專為教育、大型企業和數據中心而設計，支持多達 52 組廣域網路和高達 20 Gbps 的吞吐量。大型組織可以使用 QB-2000 作為鏈路負載平衡器來確保網路連接，而在分散式網路架構中，QB-2000 可以用作中央網路控制器。



QB-500

QB-500 旨在為中型和大型企業和區域數據中心帶來高網路可靠性和效能。這款 1U 機架式設備最多可支持 52 組廣域網路和高達 3 Gbps 的吞吐量。QB-500 可保護企業免受任何潛在的網路故障和中斷等威脅。



QB-300

QB-300 專為中小型企業設計，支持多達 25 組廣域網路和高達 1.5 Gbps 的吞吐量。這款 1U 機架式設備可確保企業網路連線能力，同時為企業提供多項網路功能，包括路由、防火牆和頻寬管理等。



QB-150

QB-150 是一款緊湊型設計設備，適用於需要高頻寬的小型和分支機構。該項目設備最多支持 10 組廣域網路和高達 300 Mbps 的網路吞吐量。QB-150 具有一體化功能、低成本、高可靠性等優點。

MULTI-CELL ROUTER



QB-Mesh

QB-Mesh 的設計旨在為任何無固定線路之分支機構例如：偏遠地區分支機構、臨時店鋪、戶外專案、大型活動等等，即刻提供企業級廣域網路解決方案。QB-Mesh 憑藉其優越智能演算法和內建工業等級 4G LTE 模組，滿足分支網路使用者與關鍵應用的頻寬需求，確保業務暢通無阻。

虛擬方案

QB-V2000

The QB-V2000 is a virtual appliance running on VMware vSphere virtual server, and provides same functionality as the physical appliance of QB-2000.

Hardware Requirements:

Hypervisor Supported	VMware ESXi / ESX 5.0 or above
Minimum vCPU Required	2
Minimum Network Interfaces	2
Minimum Memory (GB)	2
Minimum Storage (GB)	2

訂購資訊		
產品	SKU	內容
QB-150 w/150Mbps	QB-150-1	QB-150-1 is a compact design appliance with 4 x GbE ports. Its base system supports 3 WAN links, 5 bonding tunnels, and 150 Mbps throughput.
QB-150 w/300Mbps	QB-150-2	QB-150-2 is a compact design appliance with 4 x GbE ports. It supports 10 WAN links, 20 bonding tunnels, and 300Mbps throughput.
QB-300D w/300Mbps	QB-300D-1	QB-300D-1 is a low-cost version of QB-300, equipped with 6 x GbE ports, and in compact design with dimension (260×178×44 mm). It supports 5 WAN links, 20 bonding tunnels, and 300Mbps throughput
QB-300D w/600Mbps	QB-300D-2	QB-300D-2 is a low-cost version of QB-300, equipped with 6 x GbE ports, and in compact design with dimension (260×178×44 mm). It support 25 WAN links, 350 bonding tunnels, and 600M throughput.
QB-300D w/900Mbps	QB-300D-3	QB-300D-3 is a low-cost version of QB-300, equipped with 6 x GbE ports, and in compact design with dimension (260×178×44 mm). It support 25 WAN links, 350 bonding tunnels, and 900M throughput.
QB-300D w/1200Mbps	QB-300D-4	QB-300D-4 is a low-cost version of QB-300, equipped with 6 x GbE ports, and in compact design with dimension (260×178×44 mm). It support 25 WAN links, 350 bonding tunnels, and 1200M throughput.
QB-300D w/1500Mbps	QB-300D-5	QB-300D-5 is a low-cost version of QB-300, equipped with 6 x GbE ports, and in compact design with dimension (260×178×44 mm). It support 25 WAN links, 350 bonding tunnels, and 1500M throughput.
QB-300 w/300Mbps	QB-300-1	QB-300-1 is a 1U rack-mountable appliance with 6 x GbE ports. Its base system supports 5 WAN links, 20 bonding tunnels, and 300Mbps throughput.
QB-300 w/600Mbps	QB-300-2	QB-300-2 is a 1U rack-mountable appliance with 6 x GbE ports. It supports 25 WAN links, 350 bonding tunnels, and 600Mbps throughput.
QB-300 w/900Mbps	QB-300-3	QB-300-3 is a 1U rack-mountable appliance with 6 x GbE ports. It supports 25 WAN links, 350 bonding tunnels, and 900Mbps throughput.
QB-300 w/1200Mbps	QB-300-4	QB-300-4 is a 1U rack-mountable appliance with 6 x GbE ports. It supports 25 WAN links, 350 bonding tunnels, and 1200Mbps throughput.
QB-300 w/1500Mbps	QB-300-5	QB-300-5 is a 1U rack-mountable appliance with 6 x GbE ports. It supports 25 WAN links, 350 bonding tunnels, and 1500Mbps throughput.
QB-500 w/500Mbps	QB-500-1	QB-500-1 is a 1U rack-mountable appliance with 8 x GbE ports. Its base system supports 7 WAN links, 50 bonding tunnels, and 500Mbps throughput.
QB-500 w/1000Mbps	QB-500-2	QB-500-2 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 850 bonding tunnels, and 1000 Mbps throughput.
QB-500 w/1500Mbps	QB-500-3	QB-500-3 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 850 bonding tunnels, and 1500 Mbps throughput.
QB-500 w/2000Mbps	QB-500-4	QB-500-4 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 850 bonding tunnels, and 2000 Mbps throughput.
QB-500 w/2500Mbps	QB-500-5	QB-500-5 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 850 bonding tunnels, and 2500 Mbps throughput.
QB-500 w/3000Mbps	QB-500-6	QB-500-6 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 850 bonding tunnels, and 3000 Mbps throughput.
QB-2000 w/2Gbps	QB-2000-1	QB-2000-1 is a 1U rack-mountable appliance with 8 x GbE ports. Its base system supports 7 WAN links, 100 bonding tunnels, and 2Gbps throughput
QB-2000 w/4Gbps	QB-2000-2	QB-2000-2 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 4Gbps throughput.
QB-2000 w/6Gbps	QB-2000-3	QB-2000-3 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 6Gbps throughput.
QB-2000 w/8Gbps	QB-2000-4	QB-2000-4 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 8Gbps throughput.
QB-2000 w/10Gbps	QB-2000-5	QB-2000-5 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 10Gbps throughput.
QB-2000 w/12Gbps	QB-2000-6	QB-2000-6 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 12Gbps throughput.
QB-2000 w/14Gbps	QB-2000-7	QB-2000-7 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 14Gbps throughput.
QB-2000 w/16Gbps	QB-2000-8	QB-2000-8 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 16Gbps throughput.
QB-2000 w/18Gbps	QB-2000-9	QB-2000-9 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 18Gbps throughput.
QB-2000 w/10Gbps	QB-2000-10	QB-2000-10 is a 1U rack-mountable appliance with 8 x GbE ports. It supports 52 WAN links, 5000 bonding tunnels, and 20Gbps throughput.
QB-V2000 w/2Gbps	QB-V2000-1	One-year license for QB-V2000-1, which runs on VMware ESXi platform, supports 7 WAN links, 100 bonding tunnels, and 2Gbps throughput.
QB-V2000 w/4Gbps	QB-V2000-2	One-year license for QB-V2000-2 supports 52 WAN links, 5000 bonding tunnels, and 4Gbps throughput.
QB-V2000 w/6Gbps	QB-V2000-3	One-year license for QB-V2000-3 supports 52 WAN links, 5000 bonding tunnels, and 6Gbps throughput.
QB-V2000 w/8Gbps	QB-V2000-4	One-year license for QB-V2000-4 supports 52 WAN links, 5000 bonding tunnels, and 8Gbps throughput.
QB-V2000 w/10Gbps	QB-V2000-5	One-year license for QB-V2000-5 supports 52 WAN links, 5000 bonding tunnels, and 10Gbps throughput.
QB-V2000 w/12Gbps	QB-V2000-6	One-year license for QB-V2000-6 supports 52 WAN links, 5000 bonding tunnels, and 12Gbps throughput.
QB-V2000 w/14Gbps	QB-V2000-7	One-year license for QB-V2000-7 supports 52 WAN links, 5000 bonding tunnels, and 14Gbps throughput.
QB-V2000 w/16Gbps	QB-V2000-8	One-year license for QB-V2000-8 supports 52 WAN links, 5000 bonding tunnels, and 16Gbps throughput.
QB-V2000 w/18Gbps	QB-V2000-9	One-year license for QB-V2000-9 supports 52 WAN links, 5000 bonding tunnels, and 18Gbps throughput.
QB-V2000 w/20Gbps	QB-V2000-10	One-year license for QB-V2000-10 supports 52 WAN links, 5000 bonding tunnels, and 20Gbps throughput.
QB-Mesh w/1*4G LTE	QB-Mesh-1	QB-Mesh-1 is a compact design appliance with 4 x GbE ports and 1 × 4G LTE module onboard. It supports 4 WAN links (via 3 x GbE + 1 x 4G LTE module), 7 bonding tunnels, and 500 Mbps throughput.
QB-Mesh w/2*4G LTE	QB-Mesh-2	QB-Mesh-2 is a compact design appliance with 4 x GbE ports and 2 × 4G LTE module onboard. It supports 5 WAN links (via 3 x GbE + 2 x 4G LTE module), 7 bonding tunnels, and 500 Mbps throughput.
QB-Mesh w/3*4G LTE	QB-Mesh-3	QB-Mesh-3 is a compact design appliance with 4 x GbE ports and 3 × 4G LTE module onboard. It supports 6 WAN links (via 3 x GbE + 3 x 4G LTE module), 7 bonding tunnels, and 500 Mbps throughput.
QB-Mesh w/4*4G LTE	QB-Mesh-4	QB-Mesh-4 is a compact design appliance with 4 x GbE ports and 4 × 4G LTE module onboard. It supports 7 WAN links (via 3 x GbE + 4 x 4G LTE module), 7 bonding tunnels, and 500 Mbps throughput.

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關於德餘

德餘科技致力於開發高度創新的網路解決方案。自成立以來，我們的目標即是為全球中小企業客戶提供優質網路解決方案，確保中小企業享有優質網路環境，並得以低成本打造高質量的企業廣域網路環境。通過與夥伴合作，德餘科技已經在 20 多個國家中為數千個客戶佈署 Q-Balancer 產品。