UCtriX Pluto Appliances

Giving Enterprises a Bigger, Better, More Reliable WAN that Dramatically Lowers Cost per Packet

Dynamic Traffic Engineering UCtriX's dynamic bandwidth reservation is based on congestion prediction and constantly adapting to instantaneous available bandwidth. UCtriX also performs traffic shaping to remove burstiness with prioritization based on application class defined by configuration policies.

Benefits of UCtriX Pluto Appliances:

Optimized aggregate networks take advantage of diverse, abundant and affordable bandwidth sources without the reliability and predictability issues traditionally associated with broadband networks. The result? Next-generation enterprise WANs without compromise:

✤ Applications work without interruption, even in the case of link failure or network impairments such as high jitter, delay, or packet loss

✤ Reliable QoS is enforced over best effort networks that don't have inherent QoS

✤ Previously unused backup links are utilized to provide additional bandwidth, as each application session can use all WAN links

✤ Inexpensive network links can be added to supplement WAN connections, increasing available bandwidth at a low cost

In today's connected world, employees depend on a reliable, high quality network to get their job done. In many enterprises, losing a network connection means losing the ability to work and even poor quality connections means time lost to slow applications, dropped calls, and session timeouts. So companies are forced to over-engineer their network, over-subscribe to expensive WAN links, and over-pay for standby backup links just to avoid the disruption and costs caused by network problems. But with UCtriX Mercury Appliances, there is a way to achieve the bandwidth, reliability and quality today's connected enterprises require while staying under budget.

By leveraging network bandwidth from multiple sources — including existing WAN links and broadband connections — UCtriX lets businesses for the first time take advantage of the economics of broadband and the public Internet without sacrificing business-quality reliability and availability.

Mix WAN Performance with Broadband Pricing

UCtriX lets you mix and match different networks — like MPLS, ATM, Frame Relay and broadband Internet — to create an **optimized aggregate network** that performs much better than the most expensive single network in the mix, *but whose weighted average cost is much closer to the least expensive network in the mix*.

Increase Network Resilience with UCtriX

By aggregating multiple broadband or WAN links, measuring the upstream and downstream characteristics of each link, directing traffic to links that have the appropriate characteristics for each class of traffic, and reacting to changes in less than a second, UCtriX ensures that applications and users are not affected by poor quality or failed links.

Networks using UCtriX achieve:

• Enterprise class availability and reliability

• Significantly higher bandwidth

• Business quality performance

• Radically lower cost

Reliability

UCtriX's Resilient Multipath Connectivity delivers end-to-end network reliability and protected application performance for both TCP and UDP-based traffic. Powered by the rich information delivered by continuous health monitoring, UCtriX allows enterprises to reliably leverage "reasonable quality" networks — such as public Internet connections — even when such connections by themselves don't deliver the 99.95% to 99.99% reliability and packet delivery that a business expects from its WAN.

Resilient Multipath Connectivity provides multi-path multiplexing for both aggregating bandwidth and delivering end-to-end reliability, dynamically engineering around network trouble—not just outright link failure, but high packet loss or excess latency— as it occurs. It does stateful traffic steering via proprietary adaptive path selection algorithms, choosing the best path for each traffic type on a per packet basis. It can deliver greater individual flow performance by enabling packets, even from a single flow, to be intelligently distributed across multiple network paths covering multiple WAN connections. It adapts to loss, latency and jitter "network events" within ~250 milliseconds for domestic connections, or ~500-600 milliseconds even for longer-distance international connections. This sub-second response is more than fast enough to handle any IP application that can run on an IP WAN, and so must be able to tolerate some amount of congestion-based jitter.

Aggregate Links   **Apply Policies**   **Path Selection**   **Resilient Network**
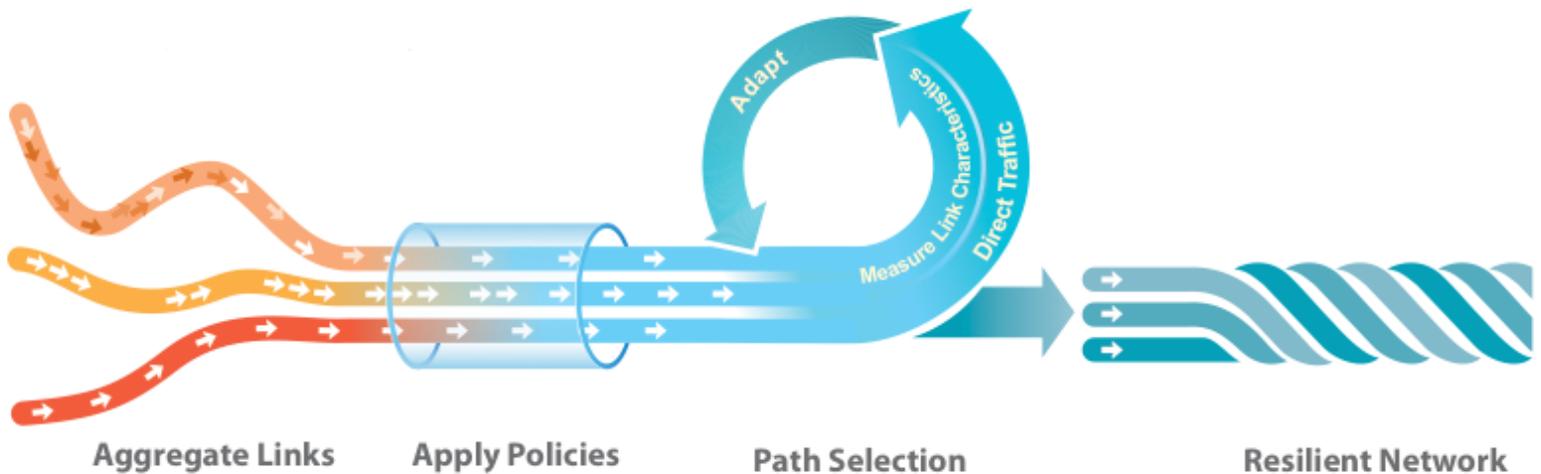
Quality

For real-time applications like VoIP and videoconferencing, UCtriX uniquely delivers ultra-reliable, cost-effective support. It routinely chooses network paths with the least packet loss and lowest jitter for such high-priority real-time traffic, and switches with sub-second response to a better path in the face of high loss or jitter delivering "platinum quality" connectivity.

UCtriX's technology addresses the challenging requirements of voice in a number of ways.

•A virtual conduit between two sites can have multiple classes of service, which allows VoIP packets to be assigned the appropriate priority relative to email or file transfers for instance. This guarantees that VoIP packets are not delayed in getting on to the WAN.

•At the start of a call, UCtriX will automatically pick the path that currently has the best characteristics for a voice call (low loss, low jitter). Since it continually monitors these characteristics of a path it can quickly reroute VoIP packets, within a fraction of a second, to a new path with minimum disruption in call quality.

•To offer the highest possible call quality it is possible to trade additional inexpensive bandwidth for 'platinum' quality voice. By replicating voice packets over two disparate paths across the network, suppressing duplicates at the receiving appliance, the destination appliance will use the most timely of two VoIP packets and be able to hide packet loss or excessive delay on either of the paths.

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