

## DataPrizm

A novel approach to data in-flight across the WAN

### BENEFITS

- Data obfuscation to avoid man-in-the-middle attacks
- Data splitting across up to eight disparate paths
- Maximization of existing network infrastructure without upgrading to higher bandwidth connections
- Inherent protection against link failure —load balancing over remaining active links
- Secure DataPrizm capability with dual encryption
- NIST-compliant AES-GCM-256 encryption
- NSA-compliant SIMON 256 encryption with 96-bit Initialization Vector (IV)

Vcinity's Ultimate X® (ULT X) and Radical X® (RAD X) family of products enable enterprise applications to have real-time access to geo-diverse data regardless of distance, volume, application or network capacity. RAD X enables enterprises to transform a WAN into a global LAN by extending LAN fabrics beyond the four walls of the data center. ULT X uses RAD X as its foundation resulting in an integrated data solution, which allows enterprises to instantly access and operate on data sets over any distance, without copying with local like performance.

DataPrizm™ is a key feature of RAD X that obfuscates data in-flight across multiple physical paths. Adding a layer of single or dual encryption enables Secure DataPrizm capability that provides a robust mechanism to secure data in-flight across the WAN.

### DataPrizm

RAD X's DataPrizm feature splits data flows equally across up to eight separate physical paths depicted by colors in Figure 1 (which shows two data flows split across four paths). RAD X-1040 supports eight such DataPrizms in a single system. The receiving RAD X then recombines the data flow delivering it to the target destination. The concept is similar to link aggregation by using disparate paths to communicate and the data is obfuscated in such a way that there is no single path with enough data to reconstruct the complete original data. When the packet size is larger than the segment size, each packet is segmented to further obfuscate the underlying data. Figure 1 shows an example of two flows being spread across four physical paths with segmentation of the larger packets (e.g., blue packet #1 segmented into 1A, 1B, 1C and 1D) using a single DataPrizm.

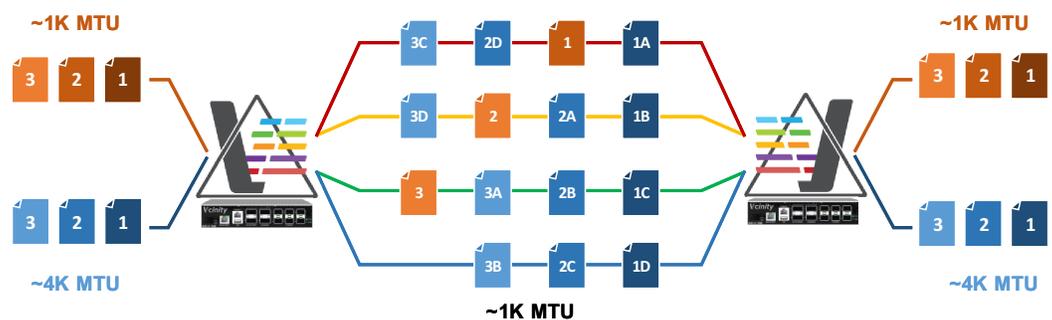


Figure 1. Single DataPrizm splitting two flows across four paths

## Key Benefits

### Eliminate Man-in-the-middle Attack

As only a percentage of the overall data is sent across one path between locations, the attacker cannot reconstruct the entire data flow by snooping on that path.

### Maximize Existing Network Infrastructure

Assuming each of the four paths in Figure 1 are 1 Gbps links, the overall goodput realized is the sum of the four links. Exploiting the ability of RAD X to drive a good put of >90% on each path, the cumulative benefit is the sum of the four paths (i.e., 4Gbps data flow). This allows existing networks and an enterprise's associated investment to be maximized fully before larger bandwidth connections are needed and deployed.

### Robust Failover

When one or more of the DataPrizm paths experience link failure, the traffic flow is restored by redistributing it evenly to the other operational links, resulting in minimal disruption to the traffic.

### Secure DataPrizm

RAD X adds a layer of security—with either AES-256 or Simon 256 encryption, or both in-line using two daisy-chained RAD X-1040 systems—for a dual encryption approach as shown in Figure 2. Each individual path can be encrypted with a different key and supports static keys as well as third party key orchestration and management via a KMIP REST API. This provides a level of security that allows traffic to be sent over public or non-secure networks with virtually no probability of being compromised.

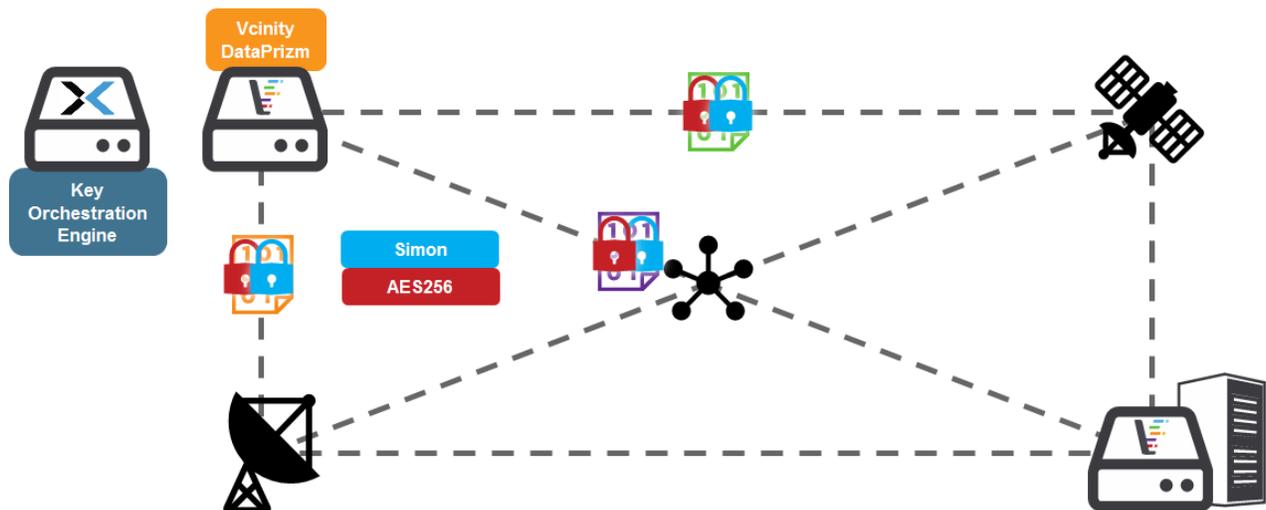


Figure 2. DataPrizm with dual encryption