Adaptive Protocol Acceleration

An application user on a LAN generally experiences fast response times. However, when using the same application over a WAN, the user will typically experience far longer response times. Many client-server applications rely on application protocols that were designed for environments where the user and application server are in close proximity. However, when users move to branch offices, network latency is introduced between the server and the desktop. In such cases, the application's design limitations are exposed and performance suffers.

Adding network bandwidth might seem like the natural answer to improve the application's performance. The problem with this approach is that bandwidth cannot solve performance problems caused by latency and protocol inefficiencies. Citrix Branch Repeater™ is fluent in several application protocols including ICA, CIFS, MAPI, FTP, and HTTP. By automatically optimizing the behavior of these protocols, it provides LAN-like application performance across the WAN.

How It Works

Citrix Branch Repeater immediately detects supported application protocols and applies the most efficient optimization methods. These include proxying client-server handshakes, reducing protocol chattiness, and optimizing payload. In the case of CIFS, the protocol used for Windows file sharing, Branch Repeater accelerates "drag and drop" file transfers, folder copying, and directory browsing by significantly reduces the number of round-trips. By analyzing the pattern of requests from the client and predicting the next action, Branch Repeater can perform safe read-ahead and write-behind operations to improve the performance of CIFS by 10x or more.

Consider a client attempting to request a 20MB file over a WAN. Without CIFS protocol acceleration the CIFS client read limit might be as small as 4KB, requiring thousands of reads to retrieve the entire file. For a cross-continental WAN link this behavior adds several minutes of unnecessary wait time. With CIFS protocol acceleration, instead of making thousands of requests, Branch Repeater is able to read the data in much larger chunks. Now users are able to retrieve the file over the same WAN in a fraction of the time.

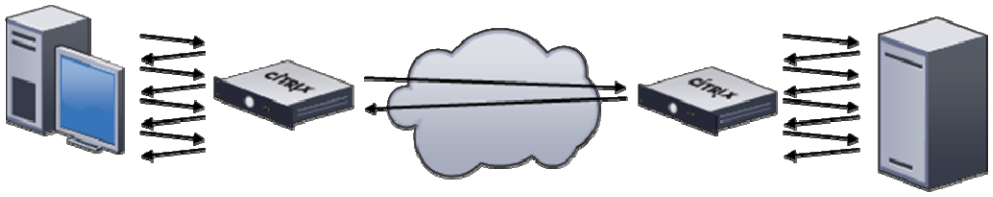

Figure 1 Eliminating protocol chattiness between a client and remote server

In order to develop the highest performing and most robust acceleration possible, Citrix has licensed protocol specifications from Microsoft. As a result, all optimizations maximize performance, are completely transparent to both the client and the server and never compromise data integrity.

Key Benefits

Extend collaborative workflows and improve productivity on a global scale

Citrix Branch Repeater accelerates files and application data over the WAN between dispersed branch offices. Users spend time using the application instead of waiting for it and distributed teams can easily exchange project files to colleagues across the globe.

Capitalize on cost savings with IT resource consolidation

Expenses such as power, maintenance, and administration account for a large portion of the Total Cost of Ownership (TCO) of server and storage infrastructure. Significant cost savings can be achieved by removing this equipment from branch offices and consolidating it into a small number of datacenters so long as performance is not jeopardized.

Protect data centrally

By speeding data delivery to branches, corporate file shares and other enterprise data can be stored centrally. This makes it easier to replicate to a protected facility to meet regulatory or corporate mandates for data security and disaster recovery.

Summary

Upgrading WAN bandwidth cannot solve performance problems caused by inefficient application protocols. Citrix Branch Repeater provides specialized protocol accelerators for several common client-server applications whose performance degrades due to high WAN latency. These acceleration techniques work in concert with Branch Repeater's other application-independent optimizations. Together they deliver dramatically faster application performance and a high-definition application experience to branch users everywhere.

Additional Resources

- Visit http://www.citrix.com/branchrepeater
- Courses – http://www.citrix.com/training
- Knowledgebase – http://www.citrix.com/kb