Deploying Microsoft® SharePoint with Citrix® NetScaler®

Application Overview

Microsoft SharePoint is becoming ubiquitous in the enterprise as the information portal of choice. Everyone accesses SharePoint through a web browser.

WEB APPLICATION DELIVERY CHALLENGES

Enterprise-class applications such as SharePoint demand a carefully considered Application Delivery strategy, to help fulfill availability, scalability, performance, and security goals while delivering content to increasingly global work forces. Web-based applications like SharePoint challenge some of those goals:

- Web content connections can be short lived and large in number. This can cause data center server sprawl, since most operating systems don't scale well with a large number of short-lived TCP connections.
- Dense content served by SharePoint can demand many round-trips across a global enterprise network, potentially compromising application response time for remote users.
- SSL-encrypted access to SharePoint can drive server farm expansion and higher operational expenses due to the resource-hungry nature of SSL.
- The increasing trend of the perforated enterprise security perimeter may expose web servers and web-based applications to unknown attacks.

CITRIX NETSCALER SOLUTIONS FOR MICROSOFT SHAREPOINT USERS AND ADMINISTRATORS

Microsoft SharePoint delivery to a distributed workforce can be enhanced by Citrix NetScaler technology. For the very best-written enterprise applications, Citrix NetScaler can:

- Increase the productivity of users of the application, by overcoming WAN bandwidth delays with HTTP compression and TCP optimizations, and bypassing content-generation steps on the servers by serving cached content.
- Enhance the overall availability of the application with comprehensive load-balancing and content switching of redundant servers, including server health checking which can proactively remove a failing server from the available pool.
- Dramatically enhance the scalability of the application infrastructure with TCP and SSL offload, and caching for both static and dynamic content.

BENEFITS TO DEPLOYING MICROSOFT SHAREPOINT WITH CITRIX NETSCALER

Microsoft and Citrix collaborate on testing Citrix NetScaler with Microsoft SharePoint applications to deliver the benefits of a comprehensive application delivery strategy:

- SharePoint users can experience much higher productivity with Citrix NetScaler features such as HTTP compression provided by Citrix AppCompress,™ and HTTP content caching with Citrix AppCache.™ Cooperative testing with Microsoft indicated greater than 100% performance gains in page download times for simulated WAN traffic optimized with Citrix Netscaler.

- Deployment and administration of SharePoint can be faster and less expensive with Citrix NetScaler technologies such as TCP and SSL offload and TCP WAN optimizations. Customers have noted 150 to 1 ratios of client to server connections with Citrix NetScaler and realize reduced server deployment costs.

- The potential for data loss can be largely mitigated with Citrix Application Firewall.™

CÍTRIX®

INCREASING SHAREPOINT USER PRODUCTIVITY BY LOWERING APPLICATION RESPONSE TIME

When the enterprise depends on critical content-serving applications such as Microsoft SharePoint, user productivity must take the highest priority. Citrix NetScaler technologies can enhance productivity as follows:

HTTP Compression with Citrix AppCompress.™ Citrix AppCompress compresses HTML content such as HTML text and XML that is neither stored compressed nor compressed by the web or application servers. Decompression is provided in every web browser, offering performance benefits for every SharePoint user. Compression reduces the total number of data round trips, which is the biggest contributor to the latency. Testing with SharePoint demonstrated dramatic reductions in latency for simulated WAN users on individual links.

Latency Reduction with TCP Optimizations. Citrix NetScaler TCP optimizations can also increase user productivity by lowering wait times with TCP connection keep-alive, TCP window scaling, and TCP selective ACK. Citrix NetScaler delivers a combination of TCP optimizations that is specifically designed to maximize Web Application efficiency.

Assuring Productivity. Citrix EdgeSite™ for NetScaler offers proactive reporting of SharePoint response time and performance, enabling IT managers to spot potential SharePoint infrastructure performance issues before the help desk calls come in.

ENHANCING WEB APPLICATION AVAILABILITY

Load Balancing. Redundant Microsoft SharePoint servers enhance content availability. Citrix NetScaler's layer 4-7 load balancing ensures that each SharePoint server gets the right share of the application load. Citrix NetScaler offers the industry's widest range of load balancing algorithms including SNMP-based querying of each server's load, and then tuning the load-balancing equation based on the query results. Other products in the industry require complex programming mechanisms to offer such advanced load-balancing mechanisms.

Load-balanced servers and applications may be grouped by servers, services, or service groups. Service groups allow different classes of SharePoint content to be identified with a specific server or servers,

and treated as a logical entity by the Citrix NetScaler System, allowing different content server groups to be separately maintained. Users of content servers not facing maintenance can continue to work.

Advanced Traffic Management. The ultimate in intelligent traffic management enables an administrator to direct traffic to an appropriate server based on any combination of content in a request, whether in a header or payload. Citrix NetScaler offers the ability to switch or rewrite requests and rewrite responses on both header and payload data to allow highly granular traffic management.

Session Persistence. Citrix NetScaler load balancing includes the most flexible session persistence mechanisms available. Session persistence features in Citrix NetScaler ensure that a SharePoint user remains bound to the correct server based on administrative policies. Other industry solutions require administrators to write complex scripts to be fed to the traffic management system. In contrast, the Citrix AppExpert™ visual policy builder allows for granular session persistence policies on a content, server, service, or service group basis.

Server Health Checking. Availability increases with Citrix NetScaler server health checking. Proactive assessment of a SharePoint server's health is provided with the industry's widest range of health-check mechanisms, including customized (for example, with Extended Content Verification (ECV) facilities) and script-based checks. All health-check mechanisms are easy to use with the Citrix AppExpert visual policy builder. Microsoft SharePoint availability is enhanced as failing servers are removed from the load balancing pool if a health check fails, before users experience failed service.

ENHANCING WEB INFRASTRUCTURE SCALABILITY

The best designed web applications can present a heavy load on mainstream operating systems due to the potential, based on the HTTP protocol, for rapid-fire TCP processing. Deployment of enterprise-critical applications like Microsoft SharePoint demands a solution to problems posed by HTTP. Citrix NetScaler includes the following features that dramatically reduce load on SharePoint servers:

Full Proxy Architecture with TCP Offload. The full proxy architecture provided in Citrix NetScaler products delivers high-

performance processing for all traffic streams, particularly as compared with alternative architectures that only provide full proxy processing with a significant performance penalty. Full proxy architecture benefits include:

- Independent client- and server-side TCP session processing with
- Full TCP connection offload. Citrix NetScaler maintains a small number of long-lived server-side TCP connections, that remove from the server the arduous task of establishing, tracking, timing, closing, and sometimes abandoning, thousand of TCP connections. On the client side, Citrix NetScaler handles all of the TCP connection management for up to five million concurrent connections.
- TCP buffering mechanisms. LAN and WAN clients communicate at lower speeds than servers. Servers can hand off large amounts of data to Citrix NetScaler, which buffers and feeds the data at lower speeds and packet sizes to clients. This reduces hundreds or thousands of transactions by one or more orders of magnitude.

Content Caching. Citrix NetScaler systems offload from web servers the potentially time-consuming task of content generation for frequently-requested objects with Citrix AppCache.™ When a SharePoint server doesn't have to regenerate content, it can serve more data to more users as the enterprise grows, reducing the potential for server sprawl.

Hardware-based SSL Offload. All Citrix NetScaler hardware platforms include dedicated SSL hardware enabling full offload for encrypted HTTP sessions for all sensitive data carried by web-based applications. Enterprise Content Management systems such as Microsoft SharePoint can contain data that should be seen only by authorized users and remain encrypted while on the wire. Citrix NetScaler prevents costly encryption and decryption cycles from overwhelming servers, saving both capital and expense costs.

CİTRIX®

About Citrix NetScaler: Citrix Systems Inc. is the global leader and the most trusted name in Application Delivery Infrastructure. Citrix NetScaler optimizes the delivery of web applications—improving performance up to 5x, increasing security, and potentially doubling web server capacity at half the cost—ensuring the best total cost of ownership (TCO), security, availability, and performance for web applications. Citrix NetScaler combines high-speed load balancing and content switching with state-of-the-art application acceleration, layer 4-7 traffic management, data compression, static and dynamic content caching, SSL acceleration, network optimizations, and robust application security into a single, tightly integrated solution. Citrix NetScaler significantly reduces processing overhead on application and database servers, reducing hardware and bandwidth costs.

About Microsoft SharePoint: *(Courtesy Microsoft)* Microsoft Office SharePoint Server 2007 is an integrated suite of server capabilities that can help improve organizational effectiveness by providing comprehensive content management and enterprise search, accelerating shared business processes, and facilitating information-sharing across boundaries for better business insight. Office SharePoint Server 2007 supports all intranet, extranet, and Web applications across an enterprise within one integrated platform, instead of relying on separate fragmented systems. Additionally, this collaboration and content management server provides IT professionals and developers with the platform and tools they need for server administration, application extensibility, and interoperability.

Citrix Worldwide