Data Center Virtualization Q&A

Q What's driving the need for data center virtualization? A We know that if business continuity is a key objective of an organization, it means that operations are up and running 24x7. Best practices suggest using geographic redundancy to...

White Paper

by Erik Giesa

Data Center Virtualization Q&A with Erik Giesa, F5 Networks VP, Product Management & Marketing

Q: What's driving the need for data center virtualization?

Q: How do you implement geographic redundancy?

Q: What do you have to consider to virtualize your data center?

Q: What are the benefits of data center virtualization?

Q: What stage do you think most businesses are at in their quest to reach data center virtualization?

Q: How does F5 products help organizations virtualize their data center to leverage the benefits of virtualization?

Availability

You can implement a secondary data site and use the BIG-IP Global Traffic Manager to monitor application health to automatically failover to another data center, maintain service interdependencies in a SOA application, and automatically route users to the best site. Even if a user's closest, highest-performing site is unavailable, the user is transparently routed to another site for the best possible experience.

Say you have a need for multi-homing, but you have to provide reliable connectivity to your applications for both public (customers) and private (employees) use. The BIGIP Link Controller monitors your ISP links to automatically route inbound and outbound traffic to the best-performing link based on link health, performance, and cost, business policy, user location, or topology. To ensure the quality of service for any user regardless of their endpoint, integrated Rate Shaping reserves bandwidth for priority applications and compression accelerates the performance of the session over those links.

Although the BIG-IP Local Traffic Manager uses load balancing to keep your applications available across your networked devices, the most common scenario is distributing application traffic across an array of web servers that host standard web traffi c, including e-commerce traffic. The BIG-IP load balances HTTP connections to the Internet or the company's intranet web applications as well as to HTTPS. Using F5's TMOS full proxy architecture, you can apply a virtualization model across any type of application whether it's a SIP, RTSP, TCP, XML or UDP-based application. If it's IP traffic, we can see into the application stream and apply security, availability, and acceleration services.

Security

Instead of spending so many cycles, resources, and effort on securing each and every potential vulnerability, why not virtualize your IT resources and centralize their management by defining security policies based on who is requesting access (client type, endpoint security, integrity of client, SSL credentials), the type of device requesting access (operating system, firewall, AV), the type of encryption (3DES, AES), and what transactions are allowed (what is authorized by that user's role), and what is allowed for the application (inputs, characters, links, cookies, etc.) This saves a tremendous amount of time, gives you a better security posture, and improves your auditing capabilities because it centralizes these functions. You can do this using the BIG-IP Local Traffic Manager with the Application Security Manager module and FirePass to not only protect your applications and network resources, but also provide secure remote access to your resources no matter where your employees are located.

Virtualization also places an additional layer in front of hackers. F5's TMOS full application proxy sits between hackers and any BIG-IP device to cloak the IP addresses of your resources. That's a huge benefit because hackers are not talking directly to your resources.

Performance

Although you have no control over public users' endpoints, there are things that the BIG-IP can do asymmetrically to benefit client sessions using technologies like TCP/IP optimization, compression, caching, and offl oading your servers to do SSL processing and client authentication.

You can optimize cross-WAN intra-application communication occurring on the backend and accelerate and optimize those connections by deploying F5's WANJet end to end. In this way, you can use WANJet to optimize data replication across data sites, bringing data consistency much closer to real-time in almost all situations. To significantly reduce the time and bandwidth required to synchronize multiple sites, WANJet works with underlying technologies such as SAN replication, database log shipping, transactional replication, file copies, etc.

To be productive, mobile workers depend on accessing their critical business applications via the Web. F5's WebAccelerator uses an asymmetric deployment to optimize Web applications for users where you can't or don't want to deploy an endpoint device. WebAccelerator's employs unique technologies such as Express Loader and Express Connect to make inefficient protocols like HTTP more efficient, which dramatically improves performance without making changes on the client side or in the application itself. Again, it's a better model for achieving your performance objectives.

Conclusion

When you consider virtualizing your IT resources, you have to consider all the critical junctures of your network topology. What is your current environment? Do you have multiple data centers, do you currently multi-home or provision multiple ISP links from different providers? Do you have applications that you want or could virtualize? Where are your users coming from, the branch office, overseas, or remotely from the road? And are those users private employees, public users, contractors, suppliers, and customers? What devices are they coming from to access your applications? Do you want to accelerate and secure application sessions across this wide variety of usage scenarios? And, of course, what are your business goals, objectives, and SLAs?

Enabling you to virtualize your resources is the greatest value of F5's product strategy. Regardless of where you're starting out or your constraints, F5 has the solutions that function as architectural building blocks to virtualize your resources. With F5, you can leverage the benefits of virtualization and keep your applications secure, fast, and available in the most operationally effi cient manner.

About Erik Geisa

Erik is the Vice President of Product Management and Marketing for F5 Networks, where he is responsible for driving product management and marketing strategy for all products families, including BIG-IP, FirePass, Traffi cShield, WANJet, WebAccelerator, and iControl. While at F5, Erik has successfully driven the product interoperability and integration strategy with key vendors like Oracle, Microsoft, Siebel Systems, and BEA, leveraging F5's unique iControl API as an open standard to integrate F5's products with their enterprise applications. In addition, Erik and his team have driven and launched some of the most innovative and profitable products for F5 including the award-winning BIG-IP platform with the unique TMOS architecture. Prior to F5, Erik led product management and marketing teams at Holistix, Inc., a web systems management company, and WRQ, Inc., where he launched and ran the fastest growing product line in WRQ's 15 year history.

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