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F5 secures, optimizes and ensures delivery of Microsoft Windows Server 2008

Microsoft® Windows® Server 2008 is much more than just another release from Microsoft. From a next generation TCP/IP stack to new versions of Windows Terminal Services and Internet Information services, as well as new technologies like Windows PowerShell and Secure Socket Tunneling Protocol, Windows Server 2008 helps information technology professionals maximize control over their infrastructure while providing unprecedented availability and management capabilities.

F5 has worked closely with Microsoft to ensure a high level of interoperability and optimization with the entire Windows Server 2008 platform. F5's Application Ready Solution for Windows Server 2008 not only helps optimize end-to-end performance, security, availability, and scalability for Windows Server 2008 deployments, but reduces the costs associated with deployment, management, and operation. F5 enables IT agility, your way.

Key benefits

Increase Windows Server 2008 performance over the WAN

F5 WAN optimization technologies can dramatically increase Windows Server 2008 performance by more than 75% across the WAN.

Enhance Security

F5 gives peace of mind with comprehensive application-level, Microsoft-specific security.

Gain Windows 2008 server capacity

Extend server capacity by offloading tasks like compression and SSL processing onto F5's unified, simple to manage platform.

Reduce bandwidth usage

Achieve 20 to 30 times bandwidth reduction for remote office users.

Increase administrator efficiency

F5's application templates, Microsoft policies, and step-by-step configuration guidance help reduce deployment cycles by 1/3rd.

"Windows Server is one of the most popular application platforms that we see within our enterprise customer base. As such, F5 has put substantial resources into testing its application delivery portfolio with the Windows Server platform technologies through every step of the beta to maintain a high level of interoperability."

Jim Ritchings, VP of Business Development, F5

Benefits and F5 value

F5's application ready solution for Microsoft Windows 2008 ensures a secure, fast and available deployment, providing the following benefits to organizations, and their end users.

Improving application performance and user experience

Microsoft Windows Server 2008 gives organizations a powerful platform that is designed to power the next-generation of networks, applications, and Web services. Windows Server 2008 includes some exciting new components such as Microsoft's new TCP/IP stack, Secure Socket Tunneling Protocol (SSTP), and new versions of industry-standard applications like Windows Terminal Services and Internet Information Services (IIS). F5 has worked closely with Microsoft to ensure that F5's application ready solution for Microsoft Windows Server 2008 provides the highest level of application availability, performance, and end user satisfaction.

One of the highlights of Microsoft Windows Server 2008 is a next generation TCP/IP stack that has been completely redesigned from the ground up. F5 solutions include a host of TCP/IP optimization technologies that are compatible with Microsoft's new stack. These optimizations, which combine session-level application awareness, persistent tunnels, selective acknowledgements, error correction, and optimized TCP windows, enable F5 devices and Microsoft Server 2008 installations to fully utilize available bandwidth. This enables F5 devices to adapt, in real time, to the latency, packet loss, and congestion characteristics of WAN links, and accelerate virtually all application traffic. And F5 isolates, controls, and independently optimizes user and server connections, enabling both the server and end user to maximize productivity.

Windows Server 2008 is extremely effective at what it was designed to do: provide a solid foundation for server workload and application requirements. One of F5's core strengths is the ability to enhance end-user experience while increasing application and server performance. We do this by taking on many of the duties that servers traditionally have to perform. If each server has to carry out processor-intensive tasks such as compression, caching, and SSL processing and certificate management, the amount of processing power these devices have left to perform core tasks is reduced.

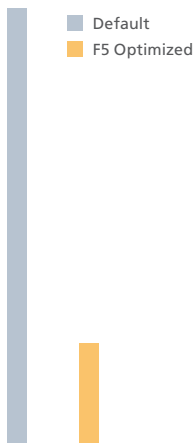
By offloading these types of tasks onto F5's centralized and high powered network devices, F5 greatly improves Windows Server 2008 server efficiency and enables organizations to reduce the amount of hardware. This applies to all the major components of Windows Server 2008, including Windows Terminal Services, IIS, and SSTP.

And F5's optimization technology can now be deployed symmetrically. This enables traditional acceleration technologies like SSL offload, compression, caching, and traffic prioritizing to combine with optimization technologies like symmetric adaptive compression and application quality of service; significantly improving performance while reducing complexity in your data centers.

Even high-powered and efficient applications and servers, like Windows Server 2008, as well as other devices on the local area network (LAN), slow considerably over the wide area network (WAN). Network latency across the WAN is one of the biggest challenges facing IT departments around the world, and is a major concern for organizations deploying applications like Windows Terminal Services, where users can access applications from anywhere. Simply increasing bandwidth does nothing to solve the problem.

F5 helps drastically reduce the impact of latency in a number of ways. In addition to the benefits from F5's TMOS unified architecture, F5 solves latency problems with a group of

Microsoft IIS running
Office SharePoint 2007
(in seconds)



F5 WAN optimizations provide a nearly 5x increase in application performance over high latency links.

capabilities that eliminates the need for the browser to download repetitive or duplicate data, as well as ensuring the best use of bandwidth by controlling browser behavior. By reducing the extra conditional requests and excess data (re)transmitted between the browser and the web application, F5 mitigates the effects of WAN latency, networking errors, and packet loss, while helping to prevent costly bandwidth upgrades. This technology does not require Java applets or make changes to the browser that are common in delta compression methods.

One of the strengths of the F5's Application Ready Solution is the wide variety of functionality and documentation that ease the burden of configuring and optimizing our devices, freeing valuable IT resources to work on other projects. F5 provides optimization and security profiles and policies to make configuration incredibly simple yet powerful and flexible, with some policies including prebuilt drop-downs for components like Microsoft IIS and Windows Terminal Services. As part of the Application Ready Solution for Microsoft Windows Server 2008, F5 has configured, tested, and tuned our devices with the major components of Windows Server 2008 and carefully documented the procedures in our Deployment Guides. And for the Microsoft IIS component of Windows Server 2008, F5 has taken the tested and optimized deployment guide configuration and turned it into an application ready template. This template requires a minimum amount of information from an administrator to quickly, easily and accurately configure F5 devices for IIS deployments, enabling an optimized F5 configuration in minutes.

F5 also provides other advanced tools that make it easy to manage our devices while maintaining flexibility and control of your infrastructure. F5 devices include a graphical reporting engine to display real-time historical statistics by the hour, day, week, or month. The dashboard reports statistics on CPU and memory usage, connections, and throughput with an easy-to-read graphical view. We make security compliance easy and save valuable IT time by enabling the exporting of policies for use by offsite auditors. Auditors working remotely can view, select, review, and test policies, without requiring critical time and support from the web application security administrator. And with the power of Microsoft PowerShell, the command line shell and scripting language included with Windows Server 2008, and F5's iControl PowerShell Cmdlets and scripts, developers have a unique way to control and manage F5 devices in one location.

Applications that are performing optimally make end users much more satisfied and effective. F5's application ready solution ensures both your end users, and your Microsoft Windows Servers experience unsurpassed performance, leading to increased productivity.

Enhancing application security

While performance and end-user experience are vital to a successful deployment of Windows Server 2008, ensuring application security can be even more crucial. Because of the sensitive nature of data stored in applications and databases, coupled with new compliance initiatives and government regulations on data protection, securing your applications is more important than ever before. F5 security solutions provide comprehensive protection for Windows Server 2008, ensuring your devices, data and applications are secure.

Years ago, merely having network firewalls was considered an adequate level of security. Next came intrusion protection/detection systems, which added another level of security, albeit one that used a negative security model. However, IPS/IDS systems could only protect against a known list of attacks and signatures, and soon attacks became more sophisticated, with zero-day attacks that would bypass these systems as their signatures were previously unknown. Hackers are now shifting their focus to applications themselves with attacks that look harmless to both network firewalls and intrusion protection/detection systems. Devices relying

Security Compliance

F5 enables advanced, built-in security protection and remote auditing to help your organization comply with industry security standards, including PCI DSS, HIPAA, Basel II, and SOX, in a cost effective way—without requiring multiple appliances, application changes, or rewrites.

solely on a known list of signature attacks cannot defend against targeted attacks involving a malicious user seeking vulnerabilities unique to a particular application.

F5 adds accurate, complementary protection to existing firewalls and IDS devices, which do not efficiently address HTTP and HTTPS-borne threats. F5 security devices report previously unknown threats (such as brute force and zero-day attacks) and mitigate web application threats, shielding the organization from data breaches. Our full inspection and event-based policies deliver a greatly enhanced ability to search for, detect, and apply numerous rules to block known L7 attacks. F5 helps you protect your brand by shielding your websites from web scraping attacks that copy and reuse valuable intellectual property and information.

F5 also applies secure application ready solution templates for applications running on Windows Server 2008 to block unknown attacks and attacks targeted at the business logic of applications. F5 can secure any parameter from client-side manipulation and validate log-on parameters and application flow to prevent forceful browsing and logical flaws.

F5 enables advanced, built-in security protection and remote auditing to help your organization comply with industry security standards, including PCI DSS, HIPAA, Basel II, and SOX, in a cost effective way—without requiring multiple appliances, application changes, or rewrites. F5 provides advanced reporting on new attacks such as layer 7 denial-of-service (DoS), brute force, SQL injection and more. With PCI reporting, F5 lists security measures required by PCI DSS 1.2, determines if compliance is being met, and details steps required to become compliant if not. In addition, F5 integrates with leading security vendors for vulnerability assessment, auditing, and real-time and database reporting to provide security breach reviews, attack prevention, and compliance.

And attacks do not always come from the outside of the network; internal users can gain sensitive information or sabotage applications with greater ease than external users. Because F5 devices can offload SSL encryption duties, organizations can encrypt traffic for entire transactions, without affecting performance for the end user. This allows organizations to use SSL 'everywhere' and prevents information from being sent in clear text over the internal network, mitigating risks associated with internal users as well as complying with state and federal regulations related to privacy.

And now, all data can be symmetrically encrypted between local and remote F5 devices, providing a new way to ensure site-to-site data security. This secure connection, or tunnel, also improves transfer rates, reduces bandwidth, and offloads applications for more efficient WAN communication. F5 also supports DNSSEC, which adds an additional layer of security and prevents DNS hijacking and cache poisoning.

F5 includes extremely granular endpoint security for remote users connecting to the network and to Windows Server 2008 servers and applications. Before a remote user can even log on to the F5 devices to gain access to the network, F5 can determine if an antivirus or personal firewall is running on their PC and if it is up-to-date, or enforce a specific operating system patch level, among a host of other pre-logon checks. F5 can direct the user to a remediation page for further instructions or even turn on antivirus or firewalls for the user. And F5's solution can be easily integrated with Active Directory, providing centralized authentication.

Not only does F5 provide comprehensive application security, but we produce extremely secure devices. We ensure your Windows Server 2008 deployment, and the information it contains, remains completely secure.

Green Infrastructure

F5 can accelerate and secure applications while enhancing performance and availability, all on the same device. This reduces energy consumption with no additional hardware or rack space needed.

Providing unified security enforcement and access control

Another integral piece of a complete security platform is security enforcement and access control. The number of employees requiring access to corporate resources from outside the network is growing every year. And it's not only employees who need access to the network. With more business-to-business transactions, and partners, contractors, and suppliers all clamoring for access to different internal applications, organizations are struggling with access control and enforcement issues. F5 provides a complete approach to security enforcement and providing access control for Windows Server 2008, regardless of end user, client type, application, access network, or network resources.

In the past, remote access was provided by IPsec VPN solutions — a complicated deployment which required software installation and maintenance on every client, and was difficult to enforce and control. IPsec has shown it is unable to keep up with the growing demands of remote access required by today's enterprise organizations. F5 enables you to easily grant remote access to anyone from any device, while ensuring this access is carefully controlled and restricted on a granular basis.

F5 provides centralized access and application availability services to users based on the context of the user and the application they are accessing. By driving application and user identity into the network, organizations have a more centralized, repeatable and cost effective way to scale access control services. This new simplified access management system allows users to easily access approved web applications and networks without multiple authentications for greater worker productivity.

F5 allows network administrators to simplify enforcement and reduce costs by removing a specialized proxy with one integrated high performance solution dramatically reducing CAPEX and OPEX. As users roam from office to remote locations, an F5 client accesses corporate networks and applications dynamically enabling mobile users to stay connected without business productivity declining. Application acceleration and security are designed together with access to scale supporting application growth and performance.

F5 provides organizational efficiency and an easy way to scale management by partitioning our devices into administrative domains, allowing a single F5 device to be managed by multiple application teams without interference. For example, the application owner for the Windows Terminal Services can be given permission to only view or modify objects which reside in that particular domain. This increases productivity by reducing the time spent in meetings, tracking down appropriate administrative personnel, and improves the ability of application administrations to manage applications when it's necessary. F5 helps streamline the business process and improve the productivity and efficiency of operational personnel.

F5 devices can be integrated with existing external authentication systems. This integration removes the need to manage our devices as a separate system, and can improve productivity by streamlining the business processes required to provision and de-provision access rights to F5 devices. Remote authentication system integration also reduces the effort involved in deploying new F5 systems, as identity and access management is provided by an existing identity management system. This leads to reduced errors, decreased administration time, and improved accounting and auditing processes as access to the F5 devices are managed from a centralized source.

Enabling seamless business continuity and disaster recovery

Disaster recovery and business continuity are vital to the success of an organization. Merely having a solid security platform cannot protect against unexpected events and disasters

that create a wide range of obstacles, ranging from knocking out the power to wiping out entire data centers. These disruptive events not only cost organizations thousands or even millions of dollars, but can bring about legal ramifications with industry and government rules concerning data protection and disaster recovery. With the amount of irreplaceable, business critical information stored on the network and in applications like those found in Windows Server 2008, having an effective disaster recovery plan is essential.

F5 provides the industry's most comprehensive solution for site failover and business continuity. From performing site application availability checks, to defining the conditions for dynamically and transparently shifting all traffic to a backup data center, failing over an entire site, or controlling only the affected applications, F5 has the complete solution. F5 helps you create a strong disaster recovery and business continuity plan by ensuring that users are always connected to a site where the Microsoft applications are available. In addition to performing comprehensive health checking of the entire infrastructure, F5 minimizes downtime and improves the user experience by determining health at the application layer for every user.

When one of these disruptive events does happen, even something as minor as a snow storm that prevents most employees from making it to the office, F5 provides extremely secure remote access to the network and Windows Server 2008 deployment, ensuring that even though the physical office is unavailable, as long as a single data center is still up, business continues. F5 devices support Microsoft Windows 7 and access to Windows Server 2008 devices, and even provide secure application access from Windows Mobile® 5/6 PocketPC and Smartphones.

One scenario often neglected in a disaster recovery plan is when the event doesn't happen to your organization, but to your ISP. While many organizations do have multiple links, they have to contend with complicated BGP configurations. F5 simplifies multi-homed deployments so you no longer need ISP cooperation, designated IP address blocks, ASNs, or reliance on complex BGP configurations to protect your network from ISP failures. With F5 technology, an organization also has the choice of aggregating multiple small connections together rather than having to invest in a single high bandwidth connection. This frees businesses to expand their service as they grow. F5 seamlessly monitors availability and performance of multiple WAN ISP connections to intelligently manage bi-directional traffic flows to a site, providing fault tolerant and optimized Internet access. F5 monitors the health and availability of each connection, detecting outages to a link or ISP. In the event of a failure, traffic is dynamically directed across other available links so users stay connected.

And business continuity doesn't always have to do with a disruptive event. With the rapid expansion of the Internet and the quickly diminishing number of IPv4 addresses available, organizations are looking to ensure their network infrastructure is adequately prepared for the future. Internet Protocol version 6 (IPv6) support is no longer a luxury, it is a necessity. IPv6, a new suite of standard protocols for the network layer of the Internet, is built into both Windows Server 2008, as well as F5 devices, ensuring that your network and Microsoft applications are ready for this inevitable change. With F5's IPv6 support, organizations have a clear strategy for staging network migration as IPv6 traffic grows, without wholesale network and application upgrades. Additionally, F5 devices can perform IPv6/IPv4 translation, translating traffic for consumption by either IPv4 or IPv6 end points. This allows organizations to stage their migration gradually as demand for IPv6 increases. F5 enables you to freely intermingle IPv4 and IPv6 services on Windows Server 2008. With F5, organizations have a strong solution for today and well into the future.

F5's Application Ready Solution for Windows Server 2008: Explore it. Deploy it. And run your business with it.

More Information

To learn more about F5 and Microsoft Windows Server 2008, use the search function on F5.com to find these and other resources.

Application Page

[Microsoft Windows Server](#)

Deployment Guides

[Microsoft Windows Server 2008](#)

[Microsoft Internet Information Services 7.0 \(BIG-IP 10.x\)](#)

Microsoft Solutions Page on DevCentral

<http://devcentral.f5.com/microsoft>

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