



DiskSites Cuts Costs by Centralizing Branch Office Storage

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Management Summary

Enterprises are always looking for ways to cut costs because they go right to the bottom line. A penny saved is a penny earned, as the saying goes. For many enterprises, branch offices are a major budget item that has come into the crosshairs of economization. They are a necessary part of selling and manufacturing in remote geographies. At the same time, branch offices involve a lot of infrastructure and real estate that may lack some operational efficiencies, especially from a collective standpoint. They are a good place to look for savings.

The vendor DiskSites offers a way to make branch *file storage* more efficient – an important aspect of IT infrastructure. **Its VBranch solution consolidates file storage to a central data center while providing real-time access to branch users.** VBranch actually eliminates the need to have file servers and NAS (network-attached storage) platforms in branch offices, shifting the infrastructure and management burden to the center from the edge. Since the information resides in a data center, skilled IT administrators can manage and protect it according to enterprise policy. Remote access performance is near-LAN. VBranch also handles file locking and sharing to make sure data is consistent everywhere,

The VBranch solution involves two products. The DiskSites *BranchPort* appliance resides in the data center and connects to consolidated NAS and to the WAN (wide-area network). It acts as a WAN-accessible, proxy file server for the *BranchController* appliances that reside in each branch office. In turn, the BranchController provides file access to local users, plus Windows print, DNS, and DHCP services.

The business benefits of the VBranch solution include:

- Lower file storage acquisition costs,
- Lower file storage operating costs through simplified management, and
- Better data protection, management, and recoverability.

In short, DiskSites' VBranch offers a means to cut branch IT costs with a minimal performance impact on local users. Read on for details.

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Trim the Branches

Many enterprises today have branch offices distributed around a region, a country, or even the world. Just like at headquarters, workers in these branch offices use information technology to do their jobs. They send and receive e-mail, share files, print, and use enterprise applications, such as customer relationship management and accounting. It is all part of being productive in a modern enterprise.

The challenge is to deliver IT infrastructure to branch offices that is reliable and cost-effective and has acceptable performance. Branches traditionally deploy scaled-down versions of the corporate data center, which might include file servers, application servers, backup applications, and tape libraries. This approach may work for large facilities with dedicated IT staff, but many branch offices lack the scale, focus on IT, and skill set to properly manage such an environment. For instance, it is not uncommon to rely on office clerks or secretaries to swap out backup tapes and transport them offsite. A secondary IT focus like this can mean administrative procedures are inconsistent or chaotic, risking data loss and regulatory non-compliance. Moreover, branch infrastructure tends to be less consolidated than data centers – and thus more fragmented and underutilized. The result is higher costs than necessary and service levels that may not meet expectations.

To address these challenges, we recommend consolidating and centralizing branch IT operations (where it is technically and operationally feasible). Trim the branches, in other words. This allows enterprises to bring the efficiency of branch IT in line with the central data center and safeguard valuable information assets.¹

DiskSites VBranch Solution

DiskSites provides a means to consolidate and centralize branch file storage with its *VBranch* solution. It allows an enterprise to move branch files to a central data center, where it becomes part of a super-consolidated

file storage infrastructure. Branch users access the data through a distributed file system that uses several different techniques to deliver near-LAN performance remotely, meaning that performance approaches what a user would experience on a local file server. This solution falls under the relatively new but burgeoning category of *wide area file services* or *WAFS*.

The full VBranch solution involves two products: the *BranchPort* appliance in the data center and *BranchController* appliances in the branch offices. The BranchPort accesses heterogeneous file servers and NAS platforms and makes the files available over the WAN to the BranchController appliances, which in turn make them available to branch users by emulating a Windows file server. For high availability, both BranchPort and BranchController offer RAID, hot-swappable disks, dual power supplies, and a dual-unit cluster option with failover.

This solution has several other salient features, described below.

Data Coherency

VBranch ensures data coherency (i.e., no risk of accessing a previous file version) by performing file locking and sharing and synchronously authorizing every user action. Upon opening a file, it makes sure the file is not already in use, and if it is, grants read-only access. It also preserves directory listings, file properties, security settings, quota enforcement, and auditing for remote access.

Multi-level Performance Optimization

Network latency is the major bottleneck in remote data access. As absurd as it sounds, the limitation is the physical speed of light, which causes a perceptible delay when transmitting data over long distances. VBranch employs several techniques to accelerate data access over a WAN:

- *Network optimization* – Sends only changed data (deltas) based on fine-grained differentials and compresses it.
- *File system optimization* – Aggregates commands to minimize chattiness or back-and-forth traffic that causes delays.
- *Application optimization* – Minimizes chattiness for Microsoft *Office* and *Outlook*

¹ For more details, see **The Clipper Group Explorer** dated September 29, 2005, entitled *Trimming the Branches – Storage Consolidation at the Edge* and available at <http://www.clipper.com/research/TCG2005060.pdf>.

transactions. It also offers an open API so third-party applications can integrate with it.

Moreover, data is encrypted during transmission for security. It can travel over private leased links, VPN connections, and the public Internet.

Caching

BranchController caches frequently-used data in branch offices to improve access time. It uses intelligent caching algorithms that both push (pre-populate) files based on policy and pull them based on user requests.

Additional Services

BranchController provides Windows print, DHCP², and DNS³ services to eliminate the need for local file servers.

Disconnected Mode

Users can still access cached data in the event of a WAN outage.

Price

The U.S. list price of the BranchPort and BranchController software is \$10,000 and \$5,000, respectively. Customers run it on the hardware platforms of their choice. For instance, the solution is certified to run on HP's DL-360 and DL-380 servers.

Benefits to the Business

The business benefits of branch storage centralization and consolidation include the following.

- *Lower file storage acquisition costs* – A centralized and consolidated pool of storage allows capacity to be readily shared and reallocated among branch offices, minimizing the amount of overhead capacity and increasing utilization. It also allows servers and storage to scale separately, so upgrading storage does not require a server upgrade, and vice-versa. Less overhead also reduces power, cooling, and floor space expenditures, a component of operating costs.
- *Lower file storage operating costs through simplified management* – The cost of

managing storage, in general, over its useful life is several-to-many times its acquisition cost, and this cost is amplified when the storage is distributed among remote locations. Conversely, centralizing and consolidating it in the data center significantly increases the amount of capacity each administrator can handle, thus lowering management costs.

- *Better data protection, management, and recoverability* – Since the most skilled administrators and best data protection and management tools and procedures are in the data center, it stands to reason that centralizing data will improve its quality of service, especially recoverability.

Conclusion

DiskSites' VBranch can provide file storage to branch offices in a more cost-effective way, while maintaining a level of reliability and performance that is acceptable for many situations. Generally speaking, the VBranch solution should cost significantly less than keeping file storage distributed among branches, especially when operating costs are factored in. A quick back-of-the-envelope calculation based on your particular situation will shed light here. The WAN dependency is a factor for performance and reliability, but VBranch's optimization techniques mitigate the impact on both. Moreover, recoverability (time and completeness of restoring data after a disaster) should be better since it leverages more sophisticated data center practices. **In short, VBranch is a great tool for saving IT costs in branch offices. And a cost saved is a profit earned.**



² Dynamic Host Configuration Protocol

³ Dynamic Name Service

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