A practical guide to successful data deduplication

HP Technology Services for Storage Solutions
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**Storage services make the difference**
Choose the right consulting and support services partner for every phase of your deduplication journey.

**Introduction**
For organizations of all sizes, the data explosion shows no signs of slowing down. It’s a primary contributor to IT sprawl—which is taking business performance to the breaking point.

To help contain the sprawl, data deduplication has emerged as one of the fastest growing data center technologies in recent years. With the ability to decrease redundancy and to retain significantly more data on disk, it continues to attract tremendous interest in response to data growth.

That said, determining your data deduplication solution choice and managing every phase of subsequent deployment is not without its challenges, especially as implementations become increasingly complex.

All are good reasons that make finding the right consulting and support services provider that much more critical to your success.

**Why choose data deduplication in the first place?**
The benefits from data deduplication start with increasing overall data integrity and end with reducing overall data protection costs.

Data deduplication is particularly effective when used with virtual servers, providing the ability to deduplicate the virtual system state files used when deploying virtual servers. It also can save a tremendous amount of storage capacity. In our experience, deduplication can reduce your need for backup storage space by 10 to 50 times. Your specific savings will depend on the number of backups, your data retention policy, and how much your data changes.

Irrespective of your industry or storage backup requirements, deduplication can help your organization:

- **Drive down cost**—with resource efficiency and cost savings that include a reduction in data center power, cooling, and floor tile demands as well as storage capacity, network bandwidth, and IT staff

- **Improve backup and recovery service levels**—to help meet limited backup windows and leverage random access disk storage for improved recovery; performance is compared with sequential access methods such as physical tape

- **Reduce carbon footprint**—to lower the power, cooling, and space requirements for storage in an environmentally responsible way
The path you take to deduplication implementation is crucial to overall solution success—and to accelerate the path to the business benefits derived from that solution.

You need to ensure that your solution is up and running quickly and is tightly integrated into your existing infrastructure. This means that who you choose to partner for data deduplication deployment and how you go about that deployment are just as important as choosing the data deduplication solution itself.

**Build a strategy for deduplication success—from product to partner choice**

Implementing first generation deduplication technology are often extremely complex, with numerous point solutions, rigid solution stacks, scalability limitations, and fragmented heterogeneous approaches. This complexity results in increased risk, extra cost, and management overhead.

Early backup and deduplication technologies were often incompatible, resulting in limited scale, sluggish performance, and inefficient data movement from remote sites to data centers. And now virtualization, cloud, and exponential data growth are creating unsustainable data protection demands.

Certainly, many storage vendors, including HP, offer products that can handle deduplication, however, technology must be expertly installed, supported, and managed for it to deliver the maximum benefits day after day, year after year—that can only be done with service expertise.

**What to look for in a deduplication service provider**

Whatever your deduplication solution approach, whether it incorporates flexible disk-based backup or a virtual library system in a more complex SAN environment, you want to keep these considerations in mind when you choose your services partner. You can use these characteristics to build a profile of the ideal partner—one that’s right for your business.

- **Experience**: Nothing beats experience. Look for a consulting and services partner who has proven success in consistent delivery of data deduplication and other storage solutions.
- **Lifecycle support capabilities**: When you think services, you want to think beyond maintenance. You want to partner with a professional services provider who offers integrated, single-source consulting and support services that span every phase of the deduplication solution lifecycle.
- **Depth and breadth of services**: Look beyond niche or storage-only vendors to a partner whose product portfolio and service expertise spans the entire infrastructure, bridging storage, server, and networking components—and backed by a holistic approach to services.
- **Global reach**: If yours is a company with global reach, you should also team up with a partner whose people are capable and comfortable working in a cross-cultural, multi-language environment.
- **Industry expertise**: A partner with experience in your industry is an added advantage. It just makes sense to collaborate with a service provider that has had success in managing deployments in your industry under similar circumstances.
- **Responsiveness**: Choose a partner who is responsive to your scoping parameters, questions, and budget requirements. You want to work with someone who listens to your concerns and makes every effort to understand your business and always gets back to you quickly on all issues big and small.
- **Methodology**: The ideal service provider should present a standardized process for approaching data deduplication.
- **Qualification and skill sets**: A highly skilled, proactive pool of service professionals, with the necessary certifications as applicable, can reliably improve your return on investment while reducing risk along the way.
- **Long-term commitments**: You want a consulting and professional services partner who demonstrates a commitment to developing a long-term relationship with your firm. The partner can also provide consulting and end-to-end services to continue to support your business growth.

**Questions to ask along the deduplication path**

As you gear up for your data deduplication implementation, here are some pragmatic questions to ask along the way, as recommended by the HP Technology Services team. The answers should help frame guidelines on what to expect and what actions to take when—as you work with your chosen service provider and within your own IT organization.

**Where are you now when it comes to backup and recovery?**

Anything worth doing is worth doing right. And choosing to engage a service provider with a formal backup and recovery analysis is a smart first step. You may find that increased data storage requirements coupled with new technology advances trigger the need to re-architect your approach to backup and recovery.

When you don’t have the expertise or bandwidth available, teaming up with the right service provider upfront can help accelerate your desired outcomes. What’s more, getting a fresh opinion from an outside expert enables you to see new ways to speed backup, achieve recovery windows, and use new technology to cut costs.
In most cases, these services are worth the investment and should be factored into the total cost of any necessary infrastructure upgrades to take advantage of deduplication technology.

For small-to-midsize environments, this kind of service can generally be delivered within a couple of weeks. For larger environments, it may require more time. And keep in mind that your analysis should consider your total environment—not just storage but servers, infrastructure, and network connectivity requirements.

What’s the best approach to scoping the project?

Now you are ready to choose your deduplication hardware selection based on the professional analysis results.

As you scope the project, consider engaging with knowledgeable service professionals who can help you best determine the deduplication solutions that best fit your business goals and current infrastructure.

You also want to make sure that the storage solution you select is in fact compatible with your environment. You want to size for future growth as best you can to help reduce the need for near-term upgrades. Take advantage of free online tools available to help in this process, including:

• HP Storage Backup Sizer Tool
• HP Storage Product Selector
• HP StoreOnce-D2D TCO Calculator

What will be the services cost and what’s included with the statement of work?

It’s also time to start solidifying costs for not just the solution but related services through quotations and statements of work.

Meet with your chosen service provider, who should provide you with a quote for recommended packaged services as well as a statement of work for any custom delivery services that may be beneficial for more complex, multi-unit deployments.

These services should include professional project management and storage consulting resources skilled at regularly delivering deduplication solutions. Knowing upfront what services you receive and their associated costs can help prevent unwanted surprises and unexpected costs down the line.

Who from your team is going to lead the deduplication project?

If you have not already done so, choose one or two people in your organization who are knowledgeable about most or all aspects of the backup and recovery environment to be your project leader for the deduplication implementation. Look for those who have practical knowledge and experience when it comes to physical locations for the equipment and the secondary storage management servers and cabling procedures.

Your project leader should also be comfortable working with storage engineers and networking LAN and WAN specialists. If, for example, you are working with HP Storage and Data Management Technology Consulting Services, your project leader should interface directly with the project manager from HP. This collaborative effort works to enable the smoothest possible deployment experience.

What advance work do you need to do to prepare your environment?

While you wait for deduplication products and solution components to arrive, do what is needed to prepare your storage and related infrastructure environment. A predelivery checklist is a good way to make sure you have done everything needed to prepare for deployment. Be sure to:

• Communicate and verify the hardware and environmental prerequisites required for your deduplication system deployment
• Confirm that the host to be used for the host setup demonstration meets the required specification
• Agree on the proposed configuration and review of the service completion criteria
• Create a written installation plan to serve as the project plan for this service
• Schedule a mutually agreeable service delivery time

Are you taking full advantage of the project management services available to you?

If you are working with HP, you can expect that a project manager will be assigned to lead your project within a few days after your order is received. The project manager should contact you to:

• Review the project scope
• Coordinate planning calls and deployment activities
• Send customer services engineer(s) onsite to unpack, rack, and power up your new equipment, testing it for out-of-the-box functionality
• Connect equipment to the network and configure it with the IP address assigned in advance by your network team
• Engage a storage consultant to provide implementation services either onsite or remotely as outlined in the custom statement of work

As you ramp up the deduplication solution, have you clearly outlined the best way to monitor and measure your objectives?

With your expectations set accordingly, you are ready to start monitoring the results of your recently deployed data deduplication solution.

At this point, consider asking your storage consultant for an ongoing storage administration checklist to help you navigate what you need to keep an eye on and when.

In all cases, be sure to ask about, learn about, and use the deduplication solution’s available reporting capabilities.
Have you taken the time to set up proactive updates and email alerts?

Don’t ignore this seemingly “small” step. Take the time to set up the automatic proactive updates and email alerts that support your deduplication product set.

Have you recorded important product and support numbers?

Be sure to log and keep handy the serial numbers of your deduplication products, which you may need for any future help-desk support calls questions. Also, make sure you have the contact information—including support phone numbers and online links—for any additional proactive services you have acquired from your service provider. You’ll need them quickly should you need to call for service and support.

These may sound like obvious actions to take but they are often-forgotten ones that can save you time and stress in the future.

What HP Technology Services brings to data deduplication

When it comes right down to it, you want to choose a partner who understands not just data deduplication but also your total storage infrastructure.

HP Technology Services transforms storage and data management systems for business results. Our service portfolio supports every phase of your storage solution lifecycle—from strategy, planning, and design to implementation, optimization, project management, and support. In addition, HP expertise spans the entire technology environment—from data center to servers to storage to the network to software—in the same way that your technology issues often do. What’s more, we have the worldwide capability to implement, support, and enhance that technology to meet those needs.

Armed with experience, our storage consulting and support service professionals deliver a portfolio designed to help you do more with your current environment. HP not only guides you as you deploy new technology rapidly but also enables you to enhance investment return and assesses your current environment for more rapid payback.

Selecting the right deduplication solution

Now comes the time to select the deduplication technology that’s right for your business. When you select deduplication solutions from HP, such as HP StoreOnce Backup Systems, your organization realizes enhanced business performance, lower operational costs, and improved business continuity.

HP StoreOnce Backup Systems featuring HP StoreOnce deduplication software deliver improved backup performance.

This solution delivers:

- **Performance**: Fast, efficient algorithms enable users to achieve a 40 percent price and performance advantage over competitive offerings through smart data and index layout capabilities that reduce disk utilization and increase I/O efficiency.¹
- **Scalability**: From small remote office to enterprise data center, the ability to support more storage for the same amount of CPU and memory. Simplify management and improve data protection by providing the ability to centrally run multiple backup sites and easily replicate data from remote offices to data centers.
- **Efficiency**: Count on better, more resilient deduplication to data types and formats, as well as the ability to deduplicate data from adjacent use cases. This allows users to create, share, and protect their data without having to deduplicate multiple times.

¹ Source: Based on comparison with competitive systems using standard interfaces for all backup applications FC, CIFS, and NFS interfaces, HP, January 2011.


Problem
• Complex, incompatible deduplication solutions
• Limited scalability and flexibility
• Extra time and cost for backups

Solution
• HP StoreOnce deduplication
• Single deduplication engine across the enterprise

Benefits
• 40% price performance improvement
• One deduplication approach for unified management

HP StoreOnce deduplication software deduplicates data only one time. It scales readily from client to backend data center with multiple applications and data types. Store once and you’re done.

Tools to guide your deduplication solution choice
As you consider the scope and level of consulting and support services needed for your deduplication solution, you also need to research the deduplication technologies and solutions available.

Here are some resources from HP to help support your research:

Video:
Choosing the right deduplication strategy for your environment

Brochure:
Top 10 Reasons Why You Should Choose HP StoreOnce

White paper:
The business value of HP StoreOnce deduplication software
Conclusion

As you make your choices around which deduplication solution to purchase and which service provider to partner with, know that each is equally important.

Look for expert storage professionals with proven experience when it comes to data deduplication—ones who understand the data center and can work with you to analyze your needs and recommend the most suitable implementation.

The right service provider partner is one who can help you navigate complex data deduplication terrain because they understand it and have done it before.

As you go through the partner selection process, ask the questions recommended here to help you realize better results that much faster from your chosen data deduplication solution.

Ultimately, you want to build a collaborative relationship with your service provider that is focused on a common goal: your success.

Technology with a human touch

You rely on technology to run your business efficiently. To stay competitive and capitalize on new revenue opportunities, you have to learn how to access technology in new ways. Team with the HP technology consulting and support experts to help you take full advantage of technology to drive your business. Combining technology expertise with business intelligence, our service professionals help organizations across the globe meet their evolving needs. They can do the same for you. Connect with our service experts to explore ways to do more with your technology investments and move your business forward. Visit hp.com/go/tsconnect/

Learn more

To discover how HP can provide efficient and cost-effective ways to make the most of your critical storage infrastructure, visit hp.com/services/storage

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