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White Paper



**Disaster Recovery  
Remote off-Site Storage  
for single server  
environment**

*When it comes to protecting your data  
there is no second chance*

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# Off-Site Storage for Disaster Recovery

*The business goal in an IT disaster is to be functional with- in hours instead of days*

## Single Server Users

When you define disaster recovery many people think in terms of weather related disasters or terrorist acts. Many times this is not the case. We have seen many instances where a server fails due to internal components and cannot be recovered. I reiterate that a disaster could be as simple as a construction crew cutting power to the building, a fire on a floor below you that locks you out of your building, or simply your motherboard goes up in smoke. In these situations what were talking about is the time it takes to recover and what do we do while we wait.

Many companies today are working in a single server environment. There is nothing wrong with this; as a matter of fact it works very well. You have the same functionally as a larger company would have with file sharing, central repository of data, security, expandability, and automated file backup.

One of the difficulties you do have is you are subject to limited recovery options when it comes to a server down situation. We can build a lot of redundancy into a good server configuration with redundant disk drives and redundant power supplies but it does no good if we can't get to the server.

Industry experience tells us it can take several days to a week to replace a server and re-install software and copy all data back to its original state. The big question is can your business survive this kind of down time. If you have staff that bills by the hour and need access to the data on your server the cost can be enormous!

	Current Staff	Weeks Billing
Billable staff	3	\$10,000
Billable Attorneys	2	\$8,000
	5	\$18,000

With out another server available to restore to you can't restore. You can do your own version of a cost analysis of this but it is something a lot of companies are faced with.

## Options Available

There are several options to look at for solving this problem. What option works best for your company depends on what is most important and how much money you have to spend. Basically there are five options available identified as cold sites, warm sites, hot sites mobile sites, and mirrored sites. Progressing from basic to advanced the sites are listed below.

Site	Cost	Hardware Equipment	Telecommunications	Setup Time	Location
Cold Site	Low	None	None	Long	Fixed
Warm Site	Medium	Partial	Partial/Full	Medium	Fixed
Hot Site	Medium/High	Full	Full	Short	Fixed
Mobile Site	High	Dependent	Dependent	Dependent	Not Fixed
Mirrored Site	Low	Full	Full	None	Fixed

- **Cold Sites** typically consist of a facility with adequate space and infrastructure (electric power, telecommunications connections, and environmental controls) to support the IT system. The site does not contain IT equipment and usually does not contain office automation equipment, such as telephones, facsimile machines, or copiers. Your company is responsible for providing and installing necessary equipment and telecommunications capabilities.
- **Warm Sites** are partially equipped office spaces that contain some or all of the system hardware, software, telecommunications, and power sources. The warm site is in an operational status ready to receive the relocated system
- **Hot Sites** are office spaces appropriately fixed to support system requirements and configured with the necessary system hardware, supporting infrastructure, and support personnel. Hot sites are typically staffed 24 x 7.
- **Mobile Sites** are self-contained, transportable shells custom-fitted with specific telecommunications and IT equipment necessary to meet system requirements.
- **Mirrored Sites** are fully redundant facilities with full, real-time information mirroring. Mirrored sites are identical to the primary site in all technical respects. These sites provide the highest degree of availability because the data is processed and stored at the primary and alternate site typically on a daily basis.

There are obvious cost and ready-time differences among the all five options. We have found that the mirrored site is the most cost effective for the small single server shop. It also is the easiest to set-up and ensures virtually 100-percent availability.

## Small Business in a Mirrored environment

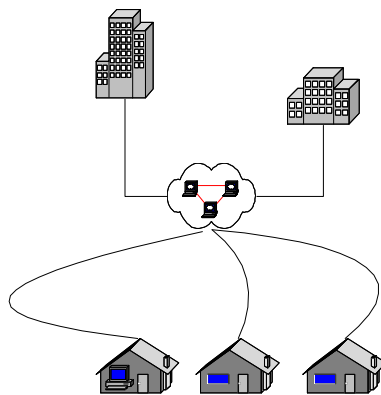
At a minimum the mirrored solution guarantees you access to your most important documents. Of course every business has a different set of conditions for software and hardware and we would recommend a quick easy analysis of your site prior to a final recommendation.

In many cases you can prioritize your data into categories that represent the biggest hit the firm. Our experience tells us that that a law office plan for disaster could be ranked something like this; 95% of the revenue would be lost if they could not get to any data, 75% if they could not get to their documents, 10% if you can't get to e-mail and less than 5% if you can't get to your accounting data. With this in mind you can see that a simple mirroring of your documents could be sufficient to keep things moving while you wait to get back to normal.

## How it works

What makes a data vault data mirroring solution attractive is the accessibility. This is the only option that lets you retrieve data from an internet connection. What this means for small business is instant access to calendars, critical documents and financial information. This also allows the staff to be productive from another location, be it their home or a temporary work area till the server is back on line.

Getting started with this process is quite simple. The initial setup requires a dump of your data. This is typically done by the firm administrator with some IT help. The data is then moved to its new secure location. This is much like taking your backup tapes off site and restoring them on a new server in another location.



The daily mirroring that takes place happens on a predetermined time slot that you schedule. The system wakes up and sends the daily changes to the data vault. Notice, I said changes, yes the software keeps track of what was changed during the period and sends only the items that have changed to the data vault. In many cases this only takes only a short time.

There is an added benefit with this solution that the Data Vault provider also backs up the data. That gives you more layers of protection for your data.

In the case of extended down time the mirroring will keep track of your data and your changes so that you can restore. Keep in mind that tape back-up is only as good as the last back up. The time to reconstruct days worth of activities could also get expensive.

## Data Retrieval and Security

Data confidentiality was designed with this approach from the inception. All data is encrypted for transport over the internet and remains in its encrypted form throughout its lifecycle. Only you can retrieve and decrypt the data with a secure password and access software.

Data Vault disaster recovery is provided in an ASP environment and the physical security in the data center is better than most high profile companies. ASP and Internet providers deal with security issues regarding E-commerce and peoples credit cards on a daily basis so they are totally equipped with locked doors and surveillance monitors. Redundancy with UPS, power grids and backup generators are also a plus.

## Testing your Data backup plan

I have to include a note on testing. The beauty of this solution is you can test it from any where that has Internet access. In the hot site cold site scenario you have huge amounts of time planning and testing to make sure everything works in the case of a disaster.

## Cost and Return on Investment

Pricing can range depending on size of the organization and what services are includes. We have listed a sample cost analysis.

	Quantity	Estimated Monthly Billing
Number devices to back up	1	\$9.95
Gigabytes of storage	25	\$150.00
Monthly Billing		\$159.95

As you can see the cost for this is very affordable considering the risk. If you do the math you will see that if your server goes down for one week your return on investment is huge.

Of course this is only one component of a complete disaster recovery plan. There are many addition items to look at and above all in the end it should be tested.

## Summary

When you get right down to it small business is limited in its options for data disaster. One of the reasons they work in a single server environment is they don't need or want to spend the money on additional servers, redundant servers. It is hard to justify the cost! We also know that with the constant change in technology the overhead on keeping an off side solution gets expensive.

Finally I would like to say that mirroring of your data is only a part of a complete disaster plan. If you would like additional information or an initial discussion please feel free to contact me.