



Catalyst iVault Backup System Details and Pricing Model

Catalyst iVault Backup System

Revision History

Rev	Date	Author	Comment
1.0	July 9 th 2008	Michael J. Gregg	Original document created, edited over the course, till its release.
1.1	April 24 th 2009	Michael J. Gregg	Stopped work on this document while testing was completed. This document has been completely re-done since version 1.0, new features added, the entire scope of the iVault has changed since planning in early Feb 2008.
1.2	May 22 nd 2009	Michael J. Gregg	Priced out Catalyst data centre costs and finalized pricing for iVault.

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1 EXECUTIVE SUMMARY

Catalyst Network Solutions is pleased to have an opportunity to offer our new backup service!

Catalyst iVault - Secure Backup System

When it comes to keeping information safe, Catalyst Network Solutions is proud to offer a truly **affordable** fully **automated** backup system, where all files are kept **on-site and off-site** for high speed restores.

We know that while on-site maintained backup systems are high speed they **are not** cost effective enough to stay with the curve of I.T. spending. A knowledgeable staff member will still need to make sure that all of the backup data is being **tested**, and are being sent **off-site** to ensure that it is **protected** in the event of a **disaster** (fire or theft, etc).

If you already are using a form of **off-site data protection**, the cost per gigabyte usually restricts our clients to only being able to send their **critical data off-site**. Of course, that means that in the event of a failure they will still need to download all of these files back to their repaired, or new servers or devices, wasting time in the event of a disaster or emergency restore scenario.

In the event of a server failure, or complete loss, you will still need to **DOWNLOAD** or **DELIVER** the data to a new server, then you will need to take the time to **re-install the operating system, re-install applications, download the backups, and upload them!** This can take 6+ hours PER server or workstation, and will be taking away the time resources from your I.T. staff when they should be focusing on fixing or restoring the original server (if possible!)

2 CATALYST IVAULT BACKUP SYSTEM FEATURES – BASIC

The Catalyst iVault takes the benefits of **both** of the above services, and adds many more powerful features as well! The iVault is an **ON-SITE** data restore appliance with automated **OFF-SITE** file replication. As such, it has the ability to quickly restore small files in seconds to servers and desktops alike, **AND** the ability to send **its entire** data repository off-site to **two** redundant data centers thousands of miles apart, *seamlessly*.

The Catalyst iVault works off a 'Full Partition' incremental snapshot based backup model. IE. There will be a single **FULL** backup that is done by the system on each selected server and desktop, and from that point on it will focus on only the **CHANGES** that are made to the volume. This is done to decrease the amount of space that is used by your iVault backup system, and the amount of data (bandwidth) that is needed to send over our client's WAN connection. . You no longer need to worry about selecting which files are key to the future of your company, everything is covered!

If the amount of data being backed up is large, the initial synchronization can be accomplished by Catalyst with our '**ROUND TRIP**' backup exchange. This process allows Catalyst technician's to bring a larger iVault System with us to perform the first backup. Once completed, we bring that system with us to synchronize to our data center, and your purchased iVault backup system will only need to focus on uploading the file level changes from that first backup.

This system allows you to backup entire systems for a fraction of the cost that other backup systems can offer. Since the entire volume must be imaged and then incrementally stored, it gives Catalyst the ability to perform many different forms of restores. Here are some examples:

If the server or workstation is still operational:

- Single File Restore(s)
- Batch File(s) and Folder Restore(s)
- Point in time Full Volume Restore(s) across multiple volumes / partitions
- Snapshot with Comparison Restore(s) to entire Volume or File/Folder Structure
- Fully Mountable backup images to local server/workstation (IE. Mount the restore as new local drive X:\ for example, and use the files and folders within live if needed, all NTFS share permissions are stored.)
- Full support for ONLINE SQL and Exchange environments. – Open file snapshots

If the server or workstation is NOT operational:

- Image recovery to SAME Server/Workstation in minutes – Image recovery to same hardware
- Restore or migrate backup images to and from physical system and virtual environments: Physical to Virtual, Virtual to Physical and Virtual to Virtual – The Catalyst iVault has built in Virtual capabilities. **No extra hardware / software are needed!**
- **Hardware Independent restore of backup images to different systems!** – In the event your server is no longer a viable option **saves Operating System Re-install, patching, and application re-configuration time!**
- **CLOUD Based Restore – iV restore** - Recover your server to our data centre temporarily in the event of a client site disaster or emergency situation. -- In the event of a total loss from a complete disaster, Catalyst Network Solutions is able to bring your server(s) back to life with our iV system. You can access your data from any internet location.

All backups that are on-site are fully encrypted, as they are stored on the Catalyst iVault system. The device itself uses LUKS encryption, a 256-BIT File system encryption model. You can find out more about it on the Google Code page (<http://code.google.com/p/encryptsetup/>) or at (<http://en.wikipedia.org/wiki/LUKS>) All of the off-site backups are encrypted again upon re-entry to our data centre. This prevents from any "man in the middle attacks". – The system can also be setup in a way so that **ONLY** the client holds the encryption keys. That way it is impossible for Catalyst to view your data at ANY time. However this is a double edged sword, if the client is to lose these encryption keys, there will be **NOTHING** Catalyst can do to help with the restore. **The data will be rendered useless.** It is very important to either let Catalyst handle your key management, or store them in a safe place.

In short the iVault backup system is fully able to virtualize your environment in the event of a disaster, and to mitigate downtime caused by unforeseeable events. It will also give Catalyst Network Solutions or your current in house I.T. staff the ability to focus on the **SOLUTION** rather than the **PROBLEM**. It will allow them to repair or re-install of the failed hardware/software, instead of worrying about getting the data online for clients and staff.

2.1 What is an **iV?** – or **IN CLOUD** restore?

The Catalyst Network Solutions iVault systems, and logo, cooperate with the medical term 'intravenous' – Meaning:

"Intravenous therapy or IV therapy is the giving of liquid substances directly into a vein. The word intravenous simply means "within a vein", but is most commonly used to refer to IV therapy. "

<http://en.wikipedia.org/wiki/Intravenous>

The iVault system is like an intravenous system for critical servers / workstations. It has the ability to restore them in a **virtual** fashion with the On-Site iVault, or in the cloud (over the internet) in our data centre in the event that the on-site iVault system is lost to **any** array of disaster. (Fire, Theft, other acts of God, etc...)

The benefit to this solution?

Your I.T. staff can focus on getting repairing the failed hardware, or obtaining new hardware for the server / or workstation that has failed. While your client(s) will only notice a minimal period of downtime.

If your I.T. staff is able to repair the old system, then we can simply run the **iV back to the original hardware**.
If new hardware is needed, then we **simply iV the server back to new hardware**.

Seamless, and stress free... The Catalyst iVault Backup System.

Below are some examples of how much time you will save in the event of a failure.

3 IN HOUSE / OFF-SITE BACKUPS VS. CATALYST iVAULT SYSTEM

The following charts will illustrate the amount of estimated time **different types of server/workstation backups** will typically cause a business, and then compare them to the restore time of the Catalyst iVault system.

Type of failure: **EXAMPLE 1**

Single File missing, or small directory, possible accidental overwrite, or misplacement of key files or database. Under 500 MB – Core server or workstation is **OPERATIONAL**.

ON-SITE Tape Recovery Restore Steps	Catalyst iVault System
1. Locate missing files, find data missing, and ask tape backup administrator for this data with date or file information date – Consider, Tape may be off-site!	1. Catalyst will be informed of missing data, Catalyst to access our iVault Network Operations Centre .
2. Deliver Media	2. File the File/Directory in the specified time period. Click 'Restore' and choose location. (Any location is possible)
3. Mount and Load Media	3. Data Accessed – Complete .
4. Locate Data on sequential basis and access correct media date.	
5. Access data, perform restore to server or workstation	
6. Rewind tape, and unload	
7. Repeat process if more tapes are needed to perform restore – Complete .	
Total Downtime Estimate: 2 Hours – 8 Hours (Depending on data availability, and file size)	Total Downtime: 2 Minutes - 30 Minutes

Type of failure: **Example 2**

Single File missing, or small directory, possible accidental overwrite, or misplacement of key files or database. Under 500 MB – Core server or workstation is **OPERATIONAL**.

OFF-SITE Data Recovery Restore Steps	Catalyst iVault System
1. Locate missing files, find data missing and time frame. Login to Off-Site access website portal.	1. Catalyst will be informed of missing data, Catalyst to access our iVault Network Operations Centre .
2. Find / Download Media to local/remote Server or workstation. – Assume 512 Kbps for 500MB File(s) – Eta 3 Hours 15 minutes	2. File the File/Directory in the specified time period. Click 'Restore' and choose location. (Any location is possible) Restore location is LOCAL. Restored at local LAN Backbone speeds . (IE. Local Network, rather than internet speeds. iVault is 49,344-79,3456 kb/s vs. 512kb/s)
3. Data Accessed – Complete .	3. Data Accessed – Complete .
Total Downtime Estimate: 3-4 Hours (Depending on file size and download speeds)	Total Downtime: 2 Minutes - 30 Minutes

Type of failure: Example 3

Core server is OFFLINE! Physical failure, server will not boot. - Core server or workstation is **NON-OPERATIONAL**.

Require Server Repair / New OS Re-Install on a new machine. – Assume server repair is not possible, and server will not pass P.O.S.T or boot into operating system.

Tape/OFF-Site Data Recovery Restore Steps	Catalyst iVault System
1. Acquire new hardware to build server to. (1 – 5 Days!)	1. Catalyst will be informed of missing data, Catalyst to access our iVault Network Operations Centre.
2. Install operating system (2 – 6 Hours approx.)	2. Initiate Emergency ON-SITE Virtual Restore Procedure , Catalyst will use Catalyst iVault system to create virtual machine based off last successful backup. – (15 Minutes – 2 Hours depending on server size/capabilities) With some iVault models up to 8 hosts at a time can be virtualized.
3. Patch operating system – Windows Updates, etc. (1 Hour)	3. Data Accessed – Complete .
4. Install applications on server, IE SQL Exchange, ETC. (Depending on application 2 – 18 Hours, example. Microsoft BizTalk or Exchange, Sage Timberline, or Magro Software)	4. Catalyst/Client can focus on the cause of the failure and work towards a repair, or if repair is not possible, new hardware can be ordered at this time.
5. Configure applications and prepare for backup implementation (1 – 8 Hours – Some server applications listed above)	5. Catalyst can perform Hardware Independent Restore from image backups to new hardware. No need to re-install operating system and applications! Data Accessed – New Server or repaired server install Complete! – (Virtual Image to Physical Image Restore, 45 Minutes – 3 Hours, depending on file size)
6. Locate missing files, find data missing and time frame. Login to Off-Site access website portal.	
7. Find / Download Media to local/remote Server or workstation. – Assume 512 Kbps for 30GB File(s) – Eta 156 Hours (might be best to have off-site center MAIL the data)	
8. Restore File shares for local and remote users and access permissions (1 – 3 Hours depending on amount of files and shares)	
9. Data Accessed – New Server On-Line. Complete .	
Total Downtime Estimate: 30 Hours – 14 Days (Depending on hardware availability re-install times, and failure)	Total Downtime: 30 Minutes – 2 Hours

Type of failure: Example 4

Complete disaster, fire/theft/vandalism, etc, ALL servers are OFFLINE! Insurance claim is pending; need access to data for local staff and external clients ASAP!

All Servers/Services Status: NON-OPERATIONAL

Require NEW servers / New OS Re-Install across one or more machines, – Assume server repair is not possible, Assume Medium sized network, 4 servers.

Tape/OFF-Site Data Recovery Restore Steps	Catalyst iVault System – Cloud Restore Method
1. Acquire new hardware to build server to. (3 – 30 Days! Approx. Insurance claim is involved!)	1. Catalyst will be informed of missing data, Catalyst to access our iVault Network Operations Centre.
2. Rebuild server in Co-location facility, or remote site location. Find Co-Location facility, or move hardware to remote site. (8 Hours, to 2 Days! Approx.)	2. Initiate Emergency OFF-SITE Virtual Restore Procedure , Catalyst will use Catalyst iVault system to create virtual machine based off last successful backup to OUR remote facility. NEW IP addresses for ALL servers will be added at our Co-Location facility. You will have access to all servers on this new IP addressing. Catalyst will help you change external DNS records , or do them for you if we are your chosen Proactive Maintenance Partner . – (45 Minutes – 3 Hours PER Server depending on server size/capabilities)
3. Re-Install operating systems across all servers. (3 Hours per Server – 12 Hours)	3. Data Accessed – Complete .
4. Patch operating system – Windows Updates, etc. (1 Hour per server – 4 Hours)	4. Catalyst/Client can focus on the cause of the failure and work towards a repair, or if repair is not possible, new hardware can be ordered at this time.
5. Install applications on server, IE SQL Exchange, rebuild domain, ETC. (Depending on application 2 – 18 Hours , example. Microsoft BizTalk or Exchange, Sage Timberline, or Magro Software, etc.) Assume 24 Hours	5. Catalyst can perform Hardware Independent Restore from image backups to new hardware. No need to re-install operating system and applications! Data Accessed – New Server or repaired server install Complete! – (Virtual Image to Physical Image Restore, 45 Minutes – 3 Hours, depending on file size)
6. Configure applications and prepare for backup implementation (1 – 8 Hours – Some server applications listed above, pull AD from AD restore mode, and recover all items from restore) Assume 16 Hours	
7. Locate missing files, find data missing and time frame. Login to Off-Site access website portal.	
8. Find / Download Media to local/remote Server or workstation NOT possible, to large. Need to have this data mailed by OFF-SITE centre. 300+GB Approx. – 2 Days Approx.	
9. Restore File shares for local and remote users and access permissions (2 – 6 Hours depending on amount of files and shares)	
10. Data Accessed – New Servers On-Line. Complete .	
<p>Total Downtime Estimate: 7 – 45 Days! (Depending on if you cold spares are ready, and if off-site location is viable + re-install times, and restore file sizes.)</p>	<p><u>Total Downtime: 4 – 12 Hours!</u></p>

3.1 Can you afford not to use the Catalyst iVault?

As you can see in every case above, a fair assessment was given to the average restore process. In the event of a complete loss of data or your network centre a true disaster recovery plan can truly be daunting.

You can rest at ease knowing that the Catalyst iVault system is on your side, our Network Operations Centre constantly monitors your backups, in increments of 15 minutes in some cases!

In the event of a total failure, our **IN CLOUD** restores are bar none the **fastest** way to ensure that you have SOMETHING online quickly for your internal/external clients. It also gives Catalyst or your I.T. staff some breathing room to focus on the rebuild of your new environment.

Consider the following...

1. Can your business afford even 2 **hours of downtime?**
2. If you already have a backup spending budget, **why not spend it on a superior product?**
3. Do you have a **Disaster Recovery Plan** in the event of a disaster or total loss?
4. **Can your business survive a total loss?**

Consider downtime and the loss of money and reputation it can bring. International Data Corp (<http://idc.ca>) estimates that companies lose an average of \$84,000.00 for every hour of downtime.

Your business doesn't have to be inside of the Fortune 500 profit lines to feel profit failure from data loss. It doesn't need to be in the Fortune 500 profit lines to have a reliable and affordable backup system either.

Choose the Catalyst iVault Backup System. – We have I.T. Covered!



Catalyst iVault Secure Backup

4 CATALYST IVAULT PRODUCTS, SPECIFICATIONS AND PRICING

<i>Catalyst iVault</i>	iVault 250GB	iVault 500GB	iVault 1TB	iVault 3TB	iVault 6TB
Storage Capacity & Hardware Size, and Specifications	250GB (Single disk, high reliability SATA Drive) 4GB System Memory DDR2 – DDR3 Two 10/100/1000 Network Cards 2.6GHZ CPU AMD/Intel Tower or 1U Rackmount	500GB (RAID 1 – Storage high reliability SATA Drives) 4GB System Memory DDR2 – DDR3 Three 10/100/1000 Network Cards 2.6GHZ Dual Core Intel Tower or 1U Rackmount	1000GB (RAID 1 – Storage high reliability SATA Drives) 8GB System Memory DDR2 – DDR3 Three 10/100/1000 Network Cards 2.6GHZ Dual Core Intel Tower or 1U Rackmount	3000GB (RAID 10 – Storage high reliability SAS Drives) 12GB System Memory - DDR3 Four 10/100/1000 Network Cards 2.8GHZ Quad Core Intel 2U Rackmount	6000GB Across two 3TB iVaults (RAID 10 – Storage high reliability SAS Drives)x2 12GBx2 System Memory - DDR3 Four 10/100/1000 Network Cardsx2 2.8GHZ Quad Core x2 Intel
iVault Hardware Cost*	\$2,000.00	\$ 2,965.00	\$3,370.00	\$5,750.00	\$9,700.00
Off-Site Data Protection Costs	Add 250GB Off-Site \$600.00/Month (\$2.40/GB) Pre-Pay: \$6,000.00 /Year (2 months free) (Save \$1,200.00!) \$12,000.00 / 2 Years (4 Months Free!) (Save \$2,400.00!)	Add 500GB Off-Site \$1,100.00/Month (\$2.20/GB) Pre-Pay: \$11,000.00 /Year (2 months free!) (Save \$2,200.00!) \$22,000.00 / 2 Years (4 Months Free!) (Save \$4,400.00!)	Add 1000GB Off-Site \$2,000.00/Month (\$2.00/GB) Pre-Pay: \$20,000.00 /Year (2 months free) (Save \$4,000.00!) \$40,000.00 / 2 Years (4 Months Free!) (Save \$8,000.00!)	Add 3000GB Off-Site \$5,100.00/Month (\$1.70/GB) Pre-Pay: \$51,000.00 /Year (2 months free) (Save \$9,600.00!) \$102,000.00/ 2 Years (4 Months Free!) (Save \$19,200.00!)	Add 6000GB Off-Site \$8,400.00/Month (\$1.40/GB) Pre-Pay: \$84,000.00 /Year (2 months free) (Save \$16,800.00!) \$168,000.00/ 2 Years (4 Months Free!) (Save \$33,600.00!)
Client/Server Software Licensing (Needed for each server/workstation that is being backed up)	\$100.00 per host – Billed yearly	\$100.00 per host – Billed yearly	\$100.00 per host – Billed yearly	\$100.00 per host – Billed yearly	\$100.00 per host – Billed yearly
On-Site Setup (needed if not in a Catalyst HQ city ***)	\$1,080.00/Day	\$1,080.00/Day	\$1,080.00/Day	\$1,080.00/Day	\$1,080.00/Day
Monitoring and Maintenance Fee****	\$1000.00 / Year	\$2000.00 / Year	\$4,000.00 / Year	\$8,000.00 / Year	\$14,000.00 / Year

*All hardware will remain the property of the end user. However Catalyst Network Solutions will maintain the right to patch and maintain and monitor this hardware and backups. Also, every iVault holds a 3 year **Hardware GUARENTEE**. In the event the iVault hardware has a system failure, it will be replaced FREE of charge for the life of the solution.

** Hardware maintenance fee's are ONLY needed if off-site data protection is not selected.

*** Catalyst HQ City is **Edmonton Alberta Canada**. This ONE TIME setup fee is needed to setup the system in your Data Centre. All additional costs for round trip flight and accommodation for Catalyst staff (1) are the responsibility of the buyer as well. – Only 1 Day is estimated, however the size of your network, and backup will change this.

**** Clients with a Proactive Maintenance Plan from Catalyst Network Solutions do not need to pay any of these fee's. They are already included in their plan.

Still have questions about the **Catalyst iVault** system? – Let us know! You can call anytime **780-669-2592** or e-mail your question! You can reach us at info@catalyst-solutions.ca