

# Internet Vaulting Frequently Asked Questions



## Index of Questions

<b>Index of Questions .....</b>	<b>2</b>
<b>1. Installation.....</b>	<b>4</b>
1.1. How do we control and monitor Internet Vaulting? .....	4
1.2. Is software installed on any other machines? .....	4
1.3. If Internet Vaulting is agentless, how does it access our data? .....	4
1.4. Do we need to create a user for Internet Vaulting on all our servers? .....	4
1.5. What access permissions does this user require? .....	4
1.6. How is the DS Client Administrator connected to our network? .....	4
1.7. How is the first backup done, given that there will be a lot of data? .....	4
<b>2. Setup of Initial Backup Sets and Schedules.....</b>	<b>5</b>
2.1. Who does this? .....	5
2.2. Who is authorized to use the administration software console?.....	5
2.3. Can users administer backups for their own machines? .....	5
2.4. What frequency of backup can be set? .....	5
2.5. What level of granularity is possible in setting up the backup, i.e. file level/individual database? .....	5
2.6. Can one machine be prioritised over another? .....	5
2.7. Can multiple machines be backed up simultaneously? .....	5
2.8. Can the software be set to stop backing up after a certain time has elapsed? .....	5
<b>3. Data Processing &amp; DS Client Administrator .....</b>	<b>6</b>
3.1. Is data held on the DS Client Administrator or does it pass straight through? .....	6
3.2. Is the Database on the DS Client Administrator backed up? .....	6
3.3. What happens if too much data is passed to the DS Client Administrator? .....	6
3.4. What is common file elimination? .....	6
3.5. What happens if a server stops or crashes during backup or if the backup is interrupted for some other reason? .....	6
3.6. Does the DS Client Administrator hold a connection open to a server all the time? ..	6
3.7. How many versions of my backed up files are held off site? .....	6
3.8. What platforms are supported? .....	6
3.9. Can the software backup Permissions on files? .....	7
3.10. If the software is agentless, how is MS SQL and Exchange backed up? .....	7
3.11. Can Internet Vaulting run pre and post commands on servers? .....	7
3.12. How does Internet Vaulting handle open files? .....	7
<b>4. Compression, Encryption and Security .....</b>	<b>8</b>
4.1. How and to what standard is the data encrypted? .....	8
4.2. What do you mean by compression? What happens? .....	8
4.3. Is there added compression on already compressed files (e.g. zip files)? .....	8
4.4. What is delta blocking? How does it work? .....	8
<b>5. Transmission Off-Site .....</b>	<b>8</b>
5.1. How quickly will the data be transmitted over the leased line? .....	8
5.2. Is our company's' Internet connection secure? .....	8
5.3. Do we need to install a firewall? .....	8
5.4. Does all of our data get transferred every day? .....	9
5.5. At what point is the data deemed to be backed up and offsite? .....	9
<b>6. Offsite Storage .....</b>	<b>9</b>
6.1. What format is the data held in, i.e. on disk or tape? .....	9
6.2. Is it secure and separate from other customers' data? .....	9
<b>7. Restoring Data .....</b>	<b>9</b>
7.1. At what point is the data available for restore? .....	9
7.2. Can an individual file or registry be restored? .....	9
7.3. Can Internet Vaulting perform bare-metal restores? .....	9

7.4.	Can you restore a whole backup set to a point in time, e.g. last Monday? .....	9
7.5.	How quickly will data restore over the leased line? .....	10
7.6.	What happens if the file or group of files to be restored is too large, i.e. it will take too long to transfer back to the DS Client Administrator? .....	10
7.7.	Can data be restored to a different machine on our network? .....	10
<b>8.</b>	<b>Disaster Recovery</b> .....	<b>10</b>
8.1.	Can we prioritise which data is restored in the event of a disaster? .....	10
8.2.	What happens if the DS Client Administrator and/or the whole site are lost? .....	10
8.3.	Can we perform a test re-build of the DS Client Administrator and data restore? ..	10

---

### 1. Installation

**1.1. How do we control and monitor Internet Vaulting?**

At installation the Internet Vaulting administrator console software is installed on as many or as few workstations as required and will require a valid logon, ensuring no unauthorized access. The Customer Administrator Console acts as your interface with Internet Vaulting and enables the configuration of all backups and restores.

**1.2. Is software installed on any other machines?**

The Internet Vaulting backup software is totally agentless, requiring no additional software to be installed on any machines to enable backup, be it Novell NetWare, Windows Microsoft® NT, SQL or Exchange.

**1.3. If Internet Vaulting is agentless, how does it access our data?**

From the administration console when a new backup set is created you must provide a username and password to connect to a server or workstation. Internet Vaulting fully integrates with NT domains, Trusts and Novell® NDS trees.

**1.4. Do we need to create a user for Internet Vaulting on all our servers?**

No, but a dedicated user is recommended and it should be set for no password expiry for obvious reasons. In a domain, or NDS environment, a user on each machine isn't necessary as one central user can be created with access to all the resources that require backing up.

**1.5. What access permissions does this user require?**

This user is responsible for backing up and restoring all the data on your network, it is essential that access permissions are of administrative equivalence. Internet Vaulting can only backup data that this user can access. A less privileged user may be restricted, causing data to be missed.

**1.6. How is the DS Client Administrator connected to our network?**

The DS Client Administrator is 'multihomed', i.e. it has one network connection to your network and one connection to our network. This flexible approach allows us to integrate fully with your current IP/IPX configurations.

**1.7. How is the first backup done, given that there will be a lot of data?**

For large data volumes, the initial backup may be done to a portable unit, backing up at LAN speeds to a large array of disks. When the full backup of your data is complete, the disks are transported back to the Data Center. Future backups, which are purely incremental, will be transmitted via the leased line connection and synchronised with your initial backup data at the Data Center.

---

### 2. Setup of Initial Backup Sets and Schedules

**2.1. Who does this?**

As part of the installation training, we will ensure that all your main servers are sensibly configured to ensure their optimum backup.

**2.2. Who is authorized to use the administration software console?**

Your backup service provider will set up users with access to create and maintain backup sets and schedules. Only people with a user ID on the DS Client Administrator will be able to administer its functions.

**2.3. Can users administer backups for their own machines?**

Multiple user accounts can be created for use on the DS Client Administrator and access permissions can be set per backup set. These permissions can be any combination of Backup, Restore, Delete or Modify, so a particular user could be given access to backup and restore only their own machine.

**2.4. What frequency of backup can be set?**

The backups can be configured as often as every hour or as infrequently as once a year. More advanced schedule options include the last working day of the month or even one off backups on a particular date.

**2.5. What level of granularity is possible in setting up the backup, i.e. file level/individual database?**

A backup set can include a whole server, share/volume, directory or even a single file. The backup set could even include just a registry, should you desire.

**2.6. Can one machine be prioritized over another?**

There are literally hundreds of different priority levels that can be assigned, ensuring maximum flexibility when organizing your backup schedules.

**2.7. Can multiple machines be backed up simultaneously?**

Any number of machines can be backed up simultaneously. However, as network bandwidth is a major factor, we would recommend 4 at once in a LAN environment. This could be increased in a WAN environment to take advantage of many slow external connections.

**2.8. Can the software be set to stop backing up after a certain time has elapsed?**

Yes, the software is designed to fit specific backup windows. Internet Vaulting can be told what time to stop at, for example at 8:00am when employees are starting to arrive, or maybe by 5:00am if there is an important batch process to run.

---

### 3. Data Processing & DS Client Administrator

- 3.1. Is data held on the DS Client Administrator or does it pass straight through?**  
The DS Client Administrator acts as a gateway only, passing data through after it has been compressed and encrypted, using delta blocking, common file elimination and a digital signature. A database showing information on what has been backed up is held on the DS Client Administrator, but no actual data files are retained.
- 3.2. Is the Database on the DS Client Administrator backed up?**  
Yes, by default the DS Client Administrator backs its own database up at 6:00am every morning, although this time can be changed if desired.
- 3.3. What happens if too much data is passed to the DS Client Administrator?**  
The DS Client Administrator only requests data as it can process it and will not pull more data across the network than can be processed.
- 3.4. What is common file elimination?**  
Common file elimination is one of the sophisticated ways that the DS Client Administrator reduces the raw data from your network servers to a size that can be transmitted over the leased line. It ensures that the same data is never transmitted offsite more than twice, thereby saving the bandwidth to transmit only new, unique data. It achieves this simple elimination by generating a Checksum of each file as it is backed up and comparing it against the known details of all previous files. If the Checksum matches a previously backed up file, it must be a duplicate and only a shortcut need be transmitted up the line.  
  
Due to the way this technique is applied, it does not matter if the files are on different servers, or even have different filenames - the DS Client Administrator will still only transmit two copies.
- 3.5. What happens if a server stops or crashes during backup or if the backup is interrupted for some other reason?**  
If the backup is stopped, for whatever reason, it will simply continue onto the next backup in its schedule. It will not revisit the failed backup set until the next time it is set to run, e.g. the following night, at which point it will pick up where it left off. If however the problem has been rectified, and backup window allows, the backup can be restarted manually, immediately.
- 3.6. Does the DS Client Administrator hold a connection open to a server all the time?**  
No, the DS Client Administrator will only connect to your servers during the specified backup schedule, therefore will not use valuable connection licence at other times.
- 3.7. How many versions of my backed up files are held off site?**  
By default, 5 versions of each backup are held. Unlike a tape backup, where the routine is to rotate tapes in a cycle, Internet Vaulting will only backup a new version of a file when it has changed, guaranteeing that the customer is not wasting space backing up exactly the same version more than once. For example, if a file only changes once a month, we will have 5 months worth of that file. The number of versions stored can be configured on an individual backup set basis. Each backup set can be configured down to include just one file if desired, giving you the ability to maximise the efficiency of the storage.
- 3.8. What platforms are supported?**  
Internet Vaulting has full agentless support for a range of network platforms.

- NetWare 3 facilities include the ability to backup the bindery, where NetWare 4 and 5 include support for NDS.
- Windows NT is fully supported. Basic workstations and servers can have the registry backed up, where more advanced environments will take advantage of being able to backup MS SQL and Exchange, without the need to stop the service or install an agent. Internet Vaulting provides full support to backup workstations operating Windows 95/98 and its registry.

**3.9. Can the software backup Permissions on files?**

Yes, for Windows NT on NTFS volumes Internet Vaulting can backup both Permissions and Streams. The Permissions and Extended NetWare Attributes can be backed up for NetWare. This is a configurable option in both NetWare and NT environments.

**3.10. If the software is agentless, how is MS SQL and Exchange backed up?**

Microsoft® developed SQL and Exchange with the backup requirement in mind. Both products can respond to API calls requesting the services to dump their data, whilst online, to an external destination. In Internet Vaulting's case the product simply asks the specified MS SQL or Exchange server to stream the data to the DS Client Administrator where it is delta blocked and transmitted offsite. This process is a totally supported Microsoft function and guarantees compatibility with your existing MS systems.

**3.11. Can Internet Vaulting run pre and post commands on servers?**

Yes, even though Internet Vaulting is an agentless solution, it is still capable of running commands on remote servers, be it NetWare or NT. For example, shutting down a database or application running on a server to back it up correctly and restart afterwards, or perhaps interact with some overnight batch processing.

**3.12. How does Internet Vaulting handle open files?**

Open files are an issue in most backup environments. If a file is open exclusively on a workstation, it is the server's responsibility to stop anyone else, including a backup package, accessing that file.

To help counteract these issues Internet Vaulting has a range of options that attempt to handle open files. These options, combined with use of the Pre and Post commands, should enable the backup of almost any file. More complex environments such as Oracle or Sybase can usually be configured to dump their data into a normal file which will be delta blocked and backed up as normal.

---

### 4. Compression, Encryption and Security

#### 4.1. How and to what standard is the data encrypted?

The small files and delta blocks of data are first compressed and then encrypted using a key, which is set by the customer during the installation of the DS Client Administrator. The data remains encrypted at all times, even when stored offsite. The backup data is only unencrypted by the DS Client Administrator at your site when it has retrieved the encrypted data from the Data Center for a restore.

#### 4.2. What do you mean by compression? What happens?

Compression can be likened to letting the air out of a balloon. Although the air has gone, the structure still exists and it can be re-inflated easily. The advantage is that it takes less room. Files, especially databases, are often full of empty space, which can be removed to make the file smaller for transit, whilst making it very easy to recreate.

#### 4.3. Is there added compression on already compressed files (e.g. zip files)?

Zip files and other compressed files are already efficiently compressed. Internet Vaulting cannot improve on the compression, but the file will only be transmitted once. If the file should change, then delta blocking will be used to ensure only the changed portions of the file are retransmitted.

#### 4.4. What is delta blocking? How does it work?

Delta blocking is an advanced logic that divides all files into 4K blocks. When the file is detected to have changed, the Checksum of each 4K block is compared against the last known Checksum for the same block of the same file (stored in the database on the DS Client Administrator). Any blocks that are different are pulled out to be re-transmitted. These delta blocks will also be compressed and encrypted before transmission.

---

### 5. Transmission Off-Site

#### 5.1. How quickly will the data be transmitted over the leased line?

A 2Mb leased line will backup at approximately 200K/sec, however, this data is compressed bringing the effective backup speed to nearer 400K/sec. In real terms, this equates to a transfer rate of approximately 20Gb per day of compressed data (40Gb per day uncompressed). At this stage the data has also been delta blocked and 'common file eliminated' to ensure that only new data is backed up.

#### 5.2. Is our company's Internet connection secure?

Our Internet Vaulting service utilizes your company's current Internet connection and all backup data is compressed and encrypted as described above, prior to transmission offsite. Additionally, all network traffic across the Internet connection is encrypted. This is infinitely more secure than many current backup policies, e.g. 3rd party couriers taking the tapes offsite, onsite storage where tapes are left in cupboards.

#### 5.3. Do we need to install a firewall?

No, there is a firewall installed in the DS Client Administrator unit. There is also a corresponding firewall at the Data Center to protect the vault.

- 5.4. Does all of our data get transferred every day?**  
Only new and unique data will get backed up. Duplicate or unchanged files will not be transmitted.
- 5.5. At what point is the data deemed to be backed up and offsite?**  
The data is backed up in real time, so when the administration console indicates that the backup is complete - it is also an indication that the backup data offsite.

---

## 6. Offsite Storage

- 6.1. What format is the data held in, i.e. on disk or tape?**  
The data is held on disk for rapid access times and is additionally backed up to automated tape libraries.
- 6.2. Is it secure and separate from other customers' data?**  
All customers have separate system units at the Data Center. Authentication is performed between the relevant DS Client Administrator and system unit each time they connect to re-verify the authenticity of the DS Client Administrator. Additionally, the backup data is held encrypted, using the customers' unique keys, so anyone else would be unable to read it.

---

## 7. Restoring Data

- 7.1. At what point is the data available for restore?**  
The data is available for restore immediately after it has been backed up and is held offsite.
- 7.2. Can an individual file or registry be restored?**  
Yes, you can restore an individual file or registry and also specify which version you want to restore.
- 7.3. Can Internet Vaulting perform bare-metal restores?**  
Assuming that the machine in question has had a full backup of all files and registry and the data is being restored to a machine of similar hardware, then a full disaster recovery of that machine is very simple.  
  
After installing the operating system, there is no need to apply service packs, configure domain security or install additional software to the new machine, as all this information will be included in the restore.
- 7.4. Can you restore a whole backup set to a point in time, e.g. last Monday?**  
Yes, Internet Vaulting will display all the files that were backed up on any given day. Providing the backed up files have not been deleted by an administrator or overwritten by more recent versions, then it is possible to restore from any given date.

- 7.5. How quickly will data restore over the leased line?**  
A 2Mb leased line will restore at approximately 200K / sec, however, this data is compressed, bringing the effective restore speed to nearer 400K / sec. Additionally, as all the data is held offsite on disk, the access time for the data is virtually nil. A traditional tape restore scenario may take at least half an hour to locate, insert and catalog the tape.
- 7.6. What happens if the file or group of files to be restored is too large, i.e. it will take too long to transfer back to the DS Client Administrator?**  
A threshold point will have been agreed, whereby the time taken for a specified amount of data to be restored down the wire, will take longer than it would for us to remove it from the Data Center and transport the disks manually to your site.  
  
If this threshold is reached, your backup service provider will ship the data direct to your site and restore at LAN speeds. This threshold depends on the amount of data to transmit and the bandwidth of line installed.
- 7.7. Can data be restored to a different machine on our network?**  
Yes, the restore data can be redirected as desired. You are able to browse the network and provide connection credentials for the redirected restore, just as you do for creating the initial backup set.

---

## 8. Disaster Recovery

- 8.1. Can we prioritise which data is restored in the event of a disaster?**  
Yes, you can select easily which files/directories/servers you wish to restore. There is no need to restore non-essential data until a later time if desired.
- 8.2. What happens if the DS Client Administrator and/or the whole site are lost?**  
Your Internet Vaulting service provider can interact closely with your disaster recovery plan, providing a portable unit of disks, holding your data and a new DS Client Administrator to any required site. This site may even be the site of your disaster recovery company. This combination of portable unit and new DS Client Administrator can enable LAN speed restores to reconstruct servers and workstations
- 8.3. Can we perform a test re-build of the DS Client Administrator and data restore?**  
Yes, this is possible.