Ahsay Offsite Backup Manager Evaluation

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How Does Ahsay Online / Remote / Offsite Backup Manager Compare to R1Soft CDP

Ahsay Systems Corporation is a Hong Kong based software developer that makes Ahsay Backup Software originally called Leb Shama Company Ltd. Ahsay was first developed in September of 2000. Ahsay is designed around efficient backups of small offices over slow wide area network links like DSL lines.

To Achieve this Ahsay uses a check sum method to compute deltas and do incremental file based backups. The goal of Ahsay's software is to make it possible to backup very large files on a daily basis as described in Ahsay's Ahsay Online Backup Whitepaper - In-File Delta available at http://www.ahsay.com/download/customer/document/whitepaper_obm_infile-delta.pdf.

How Ahsay Works

Ahsay's software is file based meaning it must examine and index every file on the disk during a backup operation. The biggest challenge for Ahsay is that every file must be read from disk to compute deltas no matter how little or how much data has actually changed. This process can easily take hours just to compute the deltas on a typical file server. Ahsay described two modes of backups it's software can perform.

- Ahsay Differential Delta Mode
- Ahsay Incremental Delta Mode

Ahsay Differential Delta Mode - works by creating an initial backup of all files. Then for every incremental it computes deltas representing the differences between the original first full backup and the current file set. There are several major draw backs to this approach. Another challenge with the differential delta mode in particular is that each incremental backup consumes more and more disk space and network bandwidth. As time passes there are more and more differences between the current files and the original first full backup. Furthermore changes in one backup set are copies again and again to the next incremental duplicating data.

The advantage of Ahsay's Differential Delta Mode is that restore is faster as restore requires that the original full backup file is combined with the latest set of deltas.

This is very similar to the basic behavior of differential tape backup.

To read more about Differential Backups visit: Backup Method - Differential

Ahsay Incremental Delta Mode - works by comparing the latest version of a file to the last incremental backup. The advantage is that backups take up less space as deltas are not duplicated like they are in Ahsay's differential delta mode. The disadvantage is that in addition o the first full backup all previous backups are required to return a file to a particular point in time.

This is very similar to the attributes of a basic incremental tape backup.

To read more about Incremental Backups visit: Backup Method - Incremental Backup

Computing Deltas with Ahsay

Ahsay uses a fixed block size based on initial file size when computing deltas. A major improvement over Ahsay is the rsync protocol which uses variable length blocks and check sums to increase delta matches and reduce delta computation times.

Technology Comparison

	Ahsay Offsite Backup Manager	R1Soft Continuous Data Protection
Backup Software Technology Category	Legacy	Continuous Data Protection
Backup Method Used	Incremental& Differential	Virtual Full
Data Lost In Disaster	Days (improved on Windows Desktops with Ahsay 5.5 and CDP for files)	Minutes
File or Block Level	File Level	Block Level
Method for Computing Deltas	Check Sums	CDP
Backup Window Length	Hours or Days	Minutes when CDP is in Sync
Online Backup (Snapshots)	Windows Only	Yes Integral Part of the Product
Bare-Metal Restore	No	Yes
Backup Window Critical Path	= Time to Read All Data from Disks (needed to compute checksums)	= Only Time to Read Deltas

Core Technological Concept	Remote Branch Office Backup Windows Desktop Backup Backup over DSL and Cable Modem Small Office Backups MS Outlook / Outlook Express Reselling Branch Office Backups	Minimal Backup Window Little or No Load on Production Server Virtual Full Backups Continuous Data Protection Proprietary Device Drivers Web Interface Easy of Deployment Manageability Data Centers Multi-User

Ahsay Continuous Data Protection for Files Feature (Windows only)

Ahsay has added a method of detecting changes to files they call "Continuous Data Protection". Ahsay's continuous data protection works by having a daemon run on Windows servers that monitors when files are saved. When files are saved and detected the daemon schedules a backup of the file. This triggers delta computation on the full file. The changed files contents are read from disk to compute deltas and the deltas are sent to the Ahsay backup server creating another backup point-in-time for that file.

Advantages

- Saved files are instantly backed up.
- There is no waiting for a scheduled backup operation or even a scheduled CDP synchronization like R1Soft CDP performs.
- Designed for Desktops

Disadvantages

- Ahsay CDP for Files is Only Available on Windows. There is No Linux support for this feature.
- A resource intensive program must run constantly tracking changes to the file system to detect the saved file. The program consumes both memory and CPU resources and Ahsay warns it can potentially slow down a computer considerably. It is not recommended for servers. See page 30 section 5.4 (Continuous Data Protection) of the AhsayOBS v5.5 User's Guide: http://pedia.ahsay.com/display/2n/kb/article.aspx?aid=1752&n=6&s=1
- Ahsay must read the changed files full contents from disk to compute deltas. This is very resource intensive.

Linux Server Data Protection

	Ahsay Offsite Backup Manager	R1Soft Continuous Data Protection
Easy To Use Web Interface	No	Yes
Point-in-Time Snapshots	No	Yes
Bare-Metal Restore	No	Yes
Real-Time Backup (backup without interrupting your work)	No	Yes
Hourly or Minutely Backups	No	Yes
Backup Archiving	Yes	Yes
Virtual Full Backups	No	Yes
Significantly Reduce Disk I/O Load with Linux Kernel Level CDP	No	Yes

Windows Server Data Protection

	Ahsay Offsite Backup Manager	R1Soft Continuous Data Protection
Easy To Use Web Interface	No	Yes
Point-in-Time Snapshots	Yes	Yes
Bare-Metal Restore	No	Yes
Real-Time Backup (backup without interrupting your work)	No	Yes
Hourly or Minutely Backups	No	Yes
Backup Archiving	Yes	Yes
Virtual Full Backups	No	Yes
Significantly Reduce Disk I/O Load with R1Soft Windows CDP Volume Filter Driver	No	Yes
Windows Volume Shadow Copy Service Integration	Yes	Yes

Special Features for Hosting Service Providers and Resellers

	Acronis True Image Enterprise Server	R1Soft Continuous Data Protection
Easy To Use Web Interface	No	Yes
Multi-User System for Backup and Restore with Granular Permissions	Yes	Yes
Customer self-managed backup and restore	Yes	Yes
Quotas for Backup Storage	Yes	Yes
Hosting Control Panel Integration	No	Yes
Billing API for Service Providers	Yes	Yes
Brandable and Skinnable User Interface	Yes	Coming in CDP 3.0 Enterprise