

How Tourism Australia Achieved Near Instant Recovery While Reducing Costs And Risks with TSM and TSM Fastback

Geordie Guy, Tourism Australia

Service Management for Information Technology
Storage & Information Infrastructure. Pulse 2010.



Who is Tourism Australia?

As a Business

- A statutory authority of the Australian government
- Promotes Australia as a tourism destination both to consumers overseas, and domestically
- Delivers research and forecasts
- Reports to the minister



Who is Tourism Australia?

As enterprise infrastructure

- Diverse and heterogeneous, four server and 4 desktop OSs in production
- Consumes storage disproportionate to enterprise size – only 200 FTEs had 17TB of backups on disk
- Creative teams output a lot of large image files, constantly. This leads to storage growth.
- The result of unique department priorities and budgets
- Built “best of breed” in several areas, manages Australia.com which receives millions of hits per week



Key Problems

Email was a massive source of storage headaches. Regulatory requirements as well as raw volume of email data meant that recovery capability was concerning.

Tourism Australia receives 60,000 emails per day.

The organisation also manages it's own direct marketing campaigns through Outlook.



Key Problems

Business units had been backing up to an technology support organisation product optionally, or making their own decisions based on what they perceived their own priorities to be.

This produces what economists and game theorists call a “tragedy of the commons” where the benefits of independence is destroyed by support requirements and cost from complexity.

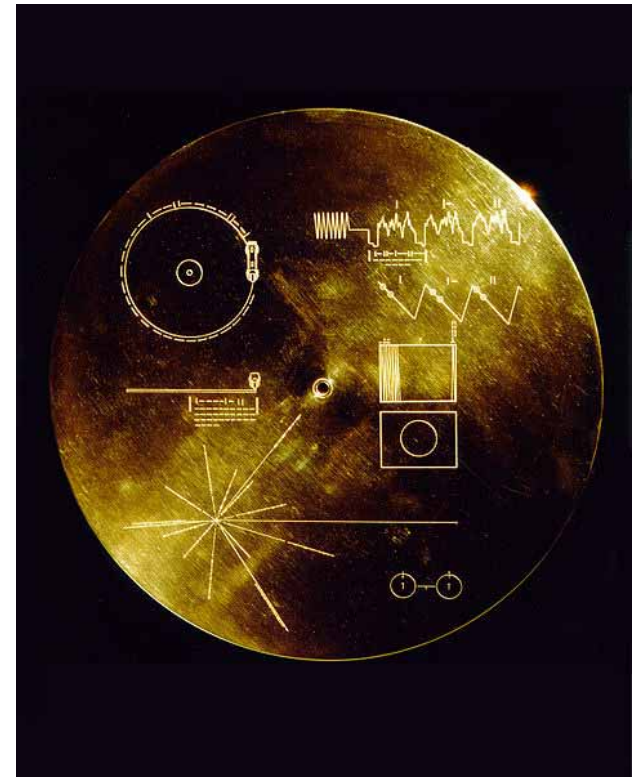


Key Problems

Management and manageability are never priorities when non-technology business units make technology decisions, largely due to inexperience.

It was largely unknown whether backups were successful or restores possible, and in a historical incident where recovery was necessary the

business opted to rebuild systems from scratch rather than open the can of worms that restores posed.



Key Problems

With multiple systems essentially colocated for the various departments, and no storage management, 200 FTEs were using 14TB simply for file data backups in Sydney as well



as the hundreds of gigabytes of storage in other countries for system image snapshots. When deduplication was switched on, hundreds upon hundreds of gigabytes were wiped off the storage infrastructure. Duplicate GFS backups of duplicate file data was centralised.

Key Problems

Monday



Key Problems

Monday

John



Bob



Sally



Anna



Key Problems

Monday Tuesday Wednesday End of Month

John



Bob



Sally



Anna



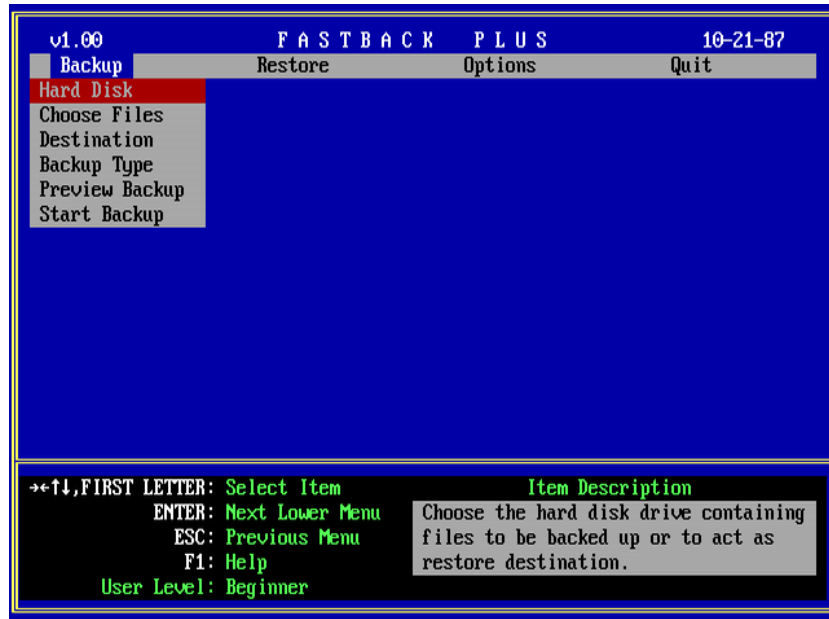
Solution

Monday, Tuesday, Wednesday and
End of Month for John, Bob, Sally and
Anna.



Solution Design

Tivoli Storage Manager was understood to meet the needs of file data backups across the board, the only thing that remained was how to approach storage management of Microsoft Exchange and Microsoft Sharepoint. A more granular RPO and a better RTO was desirable as well.



Solution Design

State	Start time	Volume	Type	Job ScheduleName	Duration (Est. Remaini...	Total Size	Backup Integrity level
Completed	Feb 2, 2010 4:00:01 AM	C:\non_auyde0704	incremental	AUSYDE0704	00:08:56	751.56 MB	Consistent
Completed	Feb 2, 2010 4:00:01 AM	L:\non_auyde0704	incremental	AUSYDE0704	00:03:20	131.27 MB	Consistent
Completed	Feb 2, 2010 4:00:01 AM	E:\non_auyde0704	incremental	AUSYDE0704	00:13:29	2.59 GB	Consistent
Completed	Feb 2, 2010 3:30:01 AM	C:\non_auyde0704	incremental	AUSYDE0704	00:03:19	148.09 MB	Consistent
Completed	Feb 2, 2010 3:30:01 AM	L:\non_auyde0704	incremental	AUSYDE0704	00:02:59	113.41 MB	Consistent
Completed	Feb 2, 2010 3:30:01 AM	E:\non_auyde0704	incremental	AUSYDE0704	00:08:01	1,000.47 MB	Consistent
Completed	Feb 1, 2010 10:00:02 PM	L:\non_auyde0703	incremental	AUSYDE0703	00:06:30	213 MB	Consistent
Completed	Feb 1, 2010 10:00:02 PM	E:\non_auyde0703	incremental	AUSYDE0703	00:12:18	1.28 GB	Consistent
Completed	Feb 1, 2010 10:00:01 PM	C:\non_auyde0703	incremental	AUSYDE0703	00:06:46	218.45 MB	Consistent
Completed	Feb 1, 2010 9:30:02 PM	E:\non_auyde0703	incremental	AUSYDE0703	00:08:23	621.86 MB	Consistent
Completed	Feb 1, 2010 9:30:01 PM	C:\non_auyde0703	incremental	AUSYDE0703	00:13:29	868.47 MB	Consistent
Completed	Feb 1, 2010 9:30:01 PM	L:\non_auyde0703	incremental	AUSYDE0703	00:01:56	89.36 MB	Consistent
Completed	Feb 1, 2010 4:00:02 PM	E:\non_auyde0703	incremental	AUSYDE0703	00:11:33	1.3 GB	Consistent
Completed	Feb 1, 2010 4:00:01 PM	C:\non_auyde0703	incremental	AUSYDE0703	00:06:12	265.31 MB	Consistent
Completed	Feb 1, 2010 4:00:01 PM	L:\non_auyde0703	incremental	AUSYDE0703	00:05:29	233.44 MB	Consistent
Completed	Feb 1, 2010 3:30:01 PM	C:\non_auyde0703	incremental	AUSYDE0703	00:12:00	1.46 GB	Consistent
Completed	Feb 1, 2010 3:30:01 PM	L:\non_auyde0703	incremental	AUSYDE0703	00:02:17	95.31 MB	Consistent
Completed	Feb 1, 2010 3:30:01 PM	E:\non_auyde0703	incremental	AUSYDE0703	00:10:38	674.86 MB	Consistent
Completed	Feb 1, 2010 10:08:48 AM	E:\non_auyde0703	incremental	AUSYDE0703	00:07:25	696.53 MB	Consistent
Completed	Feb 1, 2010 10:08:47 AM	C:\non_auyde0703	incremental	AUSYDE0703	00:02:59	86.17 MB	Consistent
Completed	Feb 1, 2010 10:08:47 AM	L:\non_auyde0703	incremental	AUSYDE0703	00:01:17	39.38 MB	Consistent
Completed	Feb 1, 2010 10:00:01 AM	C:\non_auyde0703	incremental	AUSYDE0703	00:06:30	1.55 GB	Consistent
Completed	Feb 1, 2010 10:00:01 AM	L:\non_auyde0703	incremental	AUSYDE0703	00:07:07	132.81 MB	Consistent
Completed	Feb 1, 2010 9:30:01 AM	C:\non_auyde0703	incremental	AUSYDE0703	00:12:18	283.98 MB	Consistent
Completed	Feb 1, 2010 9:30:01 AM	L:\non_auyde0703	incremental	AUSYDE0703	00:12:42	88.78 MB	Consistent
Completed	Feb 1, 2010 9:30:01 AM	E:\non_auyde0703	incremental	AUSYDE0703	00:07:33	395.92 MB	Consistent
Completed	Feb 1, 2010 4:00:01 AM	C:\non_auyde0703	incremental	AUSYDE0703	00:08:04	659.38 MB (24.54 GB)	Consistent
Completed	Feb 1, 2010 4:00:01 AM	L:\non_auyde0703	incremental	AUSYDE0703	00:03:58	97.7 MB (2.63 GB)	Consistent
Completed	Feb 1, 2010 4:00:01 AM	E:\non_auyde0703	incremental	AUSYDE0703	00:07:09	217.13 MB	Consistent
Completed	Feb 1, 2010 3:30:01 AM	C:\non_auyde0703	incremental	AUSYDE0703	00:04:45	141.02 MB	Consistent
Completed	Feb 1, 2010 3:30:01 AM	L:\non_auyde0703	incremental	AUSYDE0703	00:02:35	54.19 MB	Consistent
Completed	Feb 1, 2010 3:30:01 AM	E:\non_auyde0703	Incremental	AUSYDE0703	00:04:49	146.31 MB	Consistent
Completed	Jan 31, 2010 10:00:01 ...	E:\non_auyde0704	Incremental	AUSYDE0704	00:04:22	104.97 MB (280.11 GB)	Consistent
Completed	Jan 31, 2010 9:30:02 PM	L:\non_auyde0703	Incremental	AUSYDE0703	00:02:58	56.69 MB (1.57 GB)	Consistent
Completed	Jan 31, 2010 9:30:02 PM	E:\non_auyde0703	Incremental	AUSYDE0703	00:02:48	40.84 MB (204.29 GB)	Consistent
Completed	Jan 31, 2010 9:30:01 PM	C:\non_auyde0703	Incremental	AUSYDE0703	00:04:57	938.53 MB (30.5 GB)	Consistent

Solution Design

Farm(AUSYDDB1:MOSSCONFIGURATION_INET_PROD)

Server Name:
AUSYDPRDMOSS01
Central Administration Server
Search/Index Server
Web Front-End Server



Server Name:
AUSYDPRDMOSS02
Central Administration Server
Search/Index Server
Excel Calculation Server
Web Front-End Server



Server Name:
AUSYDPRDMOSS03
Search/Index Server
Web Front-End Server



Server Name:
AUSYDPRDMOSS04
Search/Index Server
Web Front-End Server



Server Name:
ausyddb1
Database Server



A statutory body responsible for promoting tourism and performing research that generates lots of mail

How Tourism Australia



Achieved Near Instant Recovery

In that restores are immediate as far as the business units can tell, and that's what counts.



While Reducing Costs

Because we aren't paying for a dozen maintenance contracts anymore or using 14TB to maintain seven instances of the same 2TB of data on disk



We'd actually do a restore now if we had a disaster,
rather than considering if it'd be even worth trying

And [reducing] risks

with TSM and TSM Fastback

And TSM for databases, and the DR component and some pretty decent planning out.



Questions?



Tivoli FastBack for Workstations (CDP)

Mark Blunden

Tivoli Storage Technical – A/NZ

mark@au.ibm.com

Agenda

- **What Is Tivoli CDP for Files?**
- **Types of Protection**
- **Features and Benefits**
- **Deployment options**

- **Gartner:**

“90% of Business Critical data resides on desktops and/or laptops”

- **Mark Blunden:**
“90% of desktops and/or laptops contain some Business Critical data

- 85.4% of all statistics are made up

What is FastBack for Workstations?

A *new* backup paradigm using a unique hybrid approach

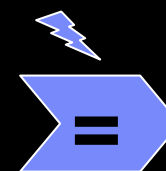
Replication

- To-Disk duplication
- Lightning fast
- Real-time for high-importance files
- Tolerant of transient networks
- Multiple targets



Traditional Backup

- Versioning of files
- Point-in-time restore
- Central administration
- Archiving (vaulting)
- Retention
- Highly scalable

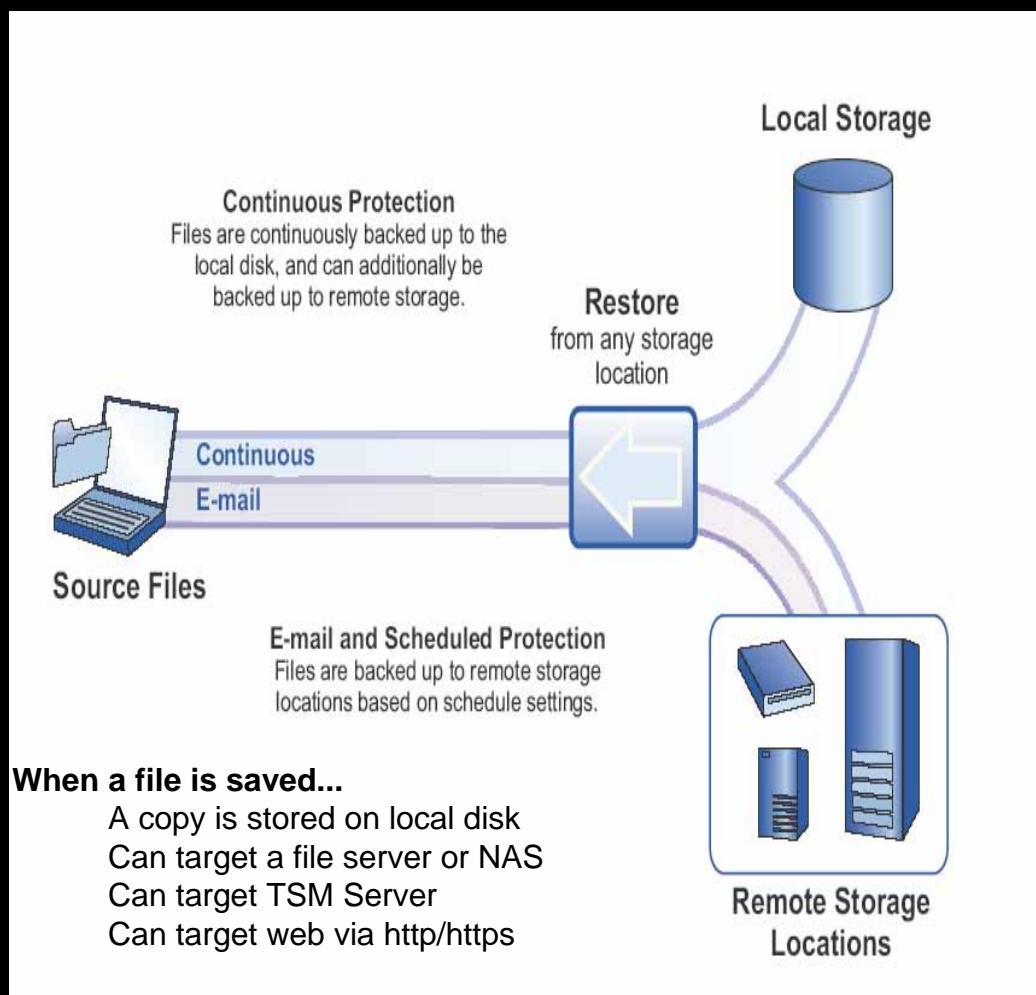


Recovery
security

The new direction in data protection is: Real-Time, To-Disk, Native Format, Simplified Management.

¹ 10 patents filed

IBM Tivoli Continuous Data Protection for Files



Value Proposition is that it provides overall costs savings for a business by...

Improve backup resource utilization

- ▶ Reducing or eliminating backup times.

Improves Recovery Point Objective (RPO)

- ▶ Provides real time backups, so when a failure occurs, recovery can truly restore the latest version.
- ▶ Reducing loss of productivity due to data loss.

Improves Recovery Time Objective (RTO)

- ▶ Fast recovery from disk (local or remote)
- ▶ Improves IT staff productivity, end users can easily recover data without IT involvement.

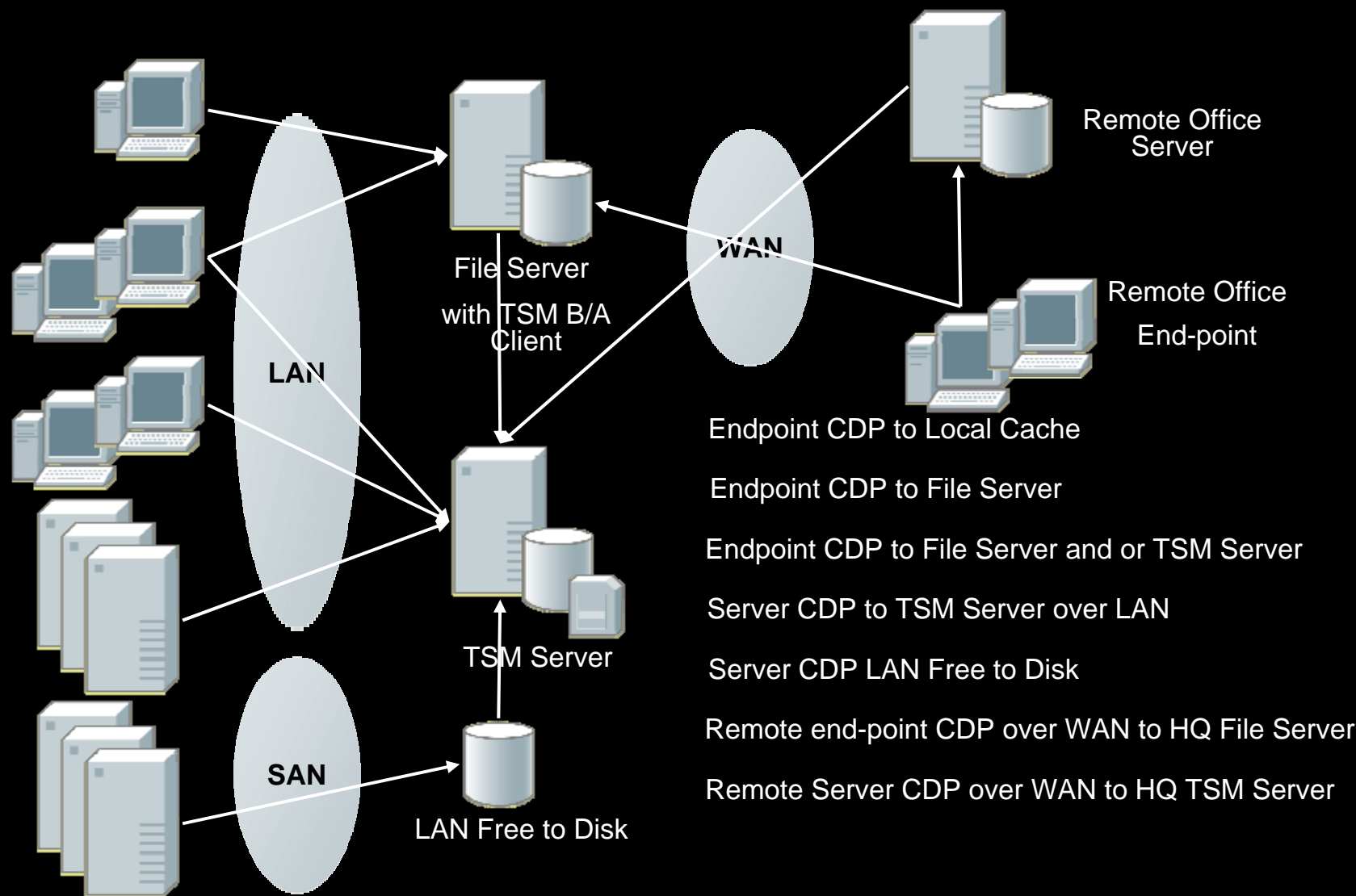
Types of Protection

Attribute	Continuous Protection	Scheduled Protection	Vaulting
Recommended for what files	Your most important files. Not for large dynamic files like e-mail files.	Large, dynamic files like e-mail.	Files that you don't want to be changed or deleted.
How protected	Backup copies are created on storage areas.	Backup copies are created on a storage area.	Vaulted files and folders cannot be modified nor deleted.
Frequency of backups	File is backed up whenever it is saved.	File is backed up only at the scheduled time, and only if it has been changed since the previous schedule. Journal based backup.	no backups
Backup copy storage area	Local or remote	Remote only	no backups

Features – Advantages - Benefits

<u>Features</u>	<u>Advantages</u>	<u>Benefits</u>
Continuous Data Protection	real-time data protection	Backs up your files the moment they change, Continuously protects versions of files to allow customers choice of recovery points
Restore to point-in-time	Multiple versions of the files retained	Continuous data protection provides data integrity when viruses and corruptions attack systems
Integration to TSM via TSM API	Faster backup	Reduces or eliminates backup windows and Optimizes integration to network and enterprise data protection solutions. Provides Disaster Recovery capability.
Backs up only changed files	Less data is transferred	Optimizes bandwidth and network transfer of data
Backs up files to local cache	Stand-alone protection	Ability to write protect data locally even when not connected in case of virus, corruption, logical error or user error
Remote and local disk support	Choice of backup devices	Ability to send data to heterogeneous backup devices – Disk, NAS, USB, Local partition, Web

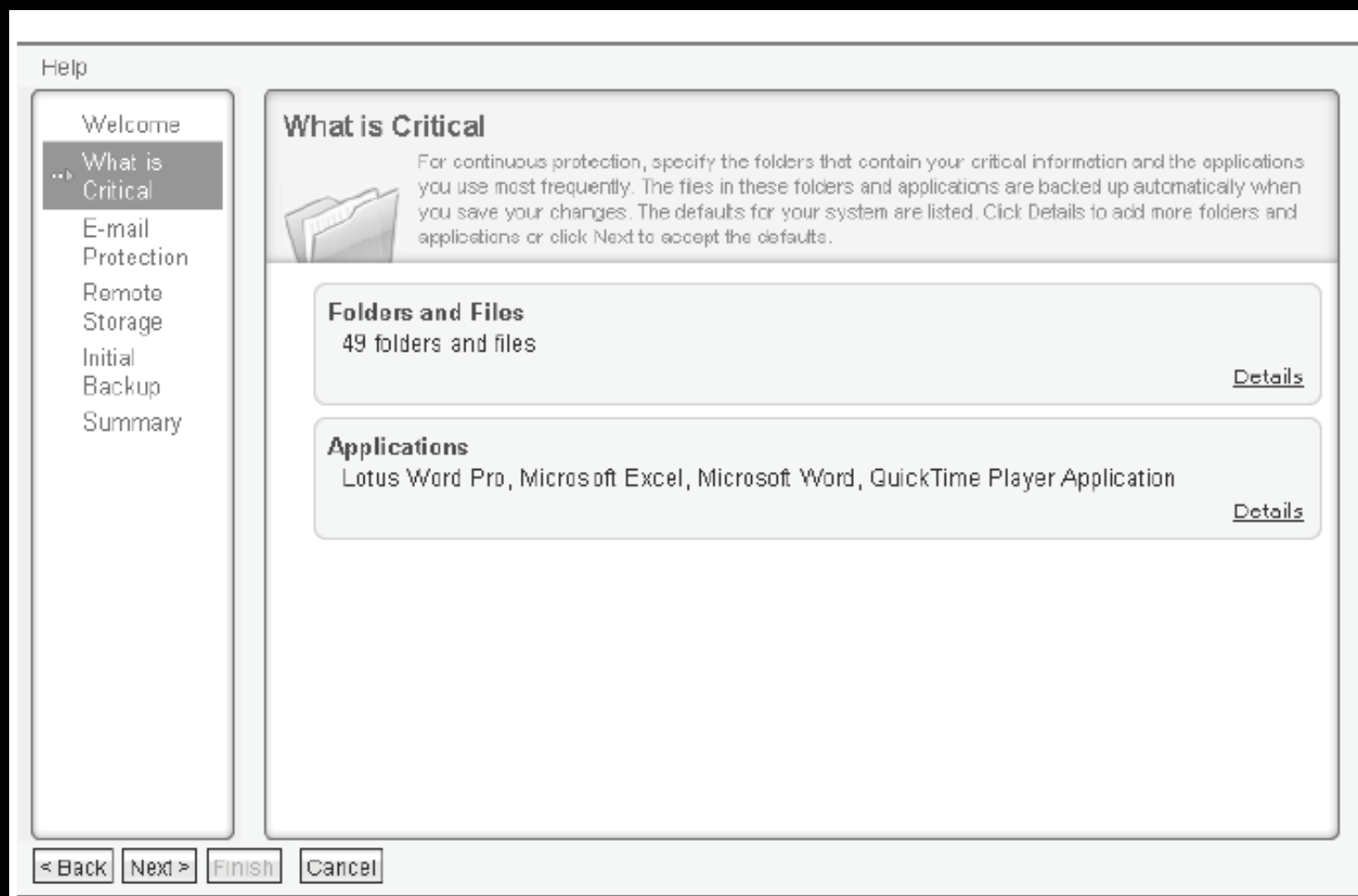
Endpoint and Server Deployment Options



What's new in FastBack for Workstations

- Configuration Wizard
- Restore Wizard
- Enhanced User Interface
- Enhanced integration with Lotus Notes e-mail client
- Versioning of data level changes for e-mail files
- MSI installation package
- Microsoft Vista operating system support

Configuration Wizard



When Continuous Data Protection for Files is installed, it is pre-configured with a list of files and folders to continuously protect. Use this page to confirm that the initial protection settings are correct for your needs, or change the settings as appropriate.

Enhanced User Interface

Tivoli Continuous Data Protection

[Settings](#) | [Restore](#) | [Central Administration](#) | [About](#) | [Help](#)

Click Here to :

- Change file protection settings and settings on scheduled protection
- view backup reports and

Local Storage

Remote Storage

Continuous
E-mail

My Files

Files under protection:
13386

[Settings](#) | [View Report](#)

E-mail Protection
Last successful backup on 04/24/2007 15:17:18

[Settings](#)

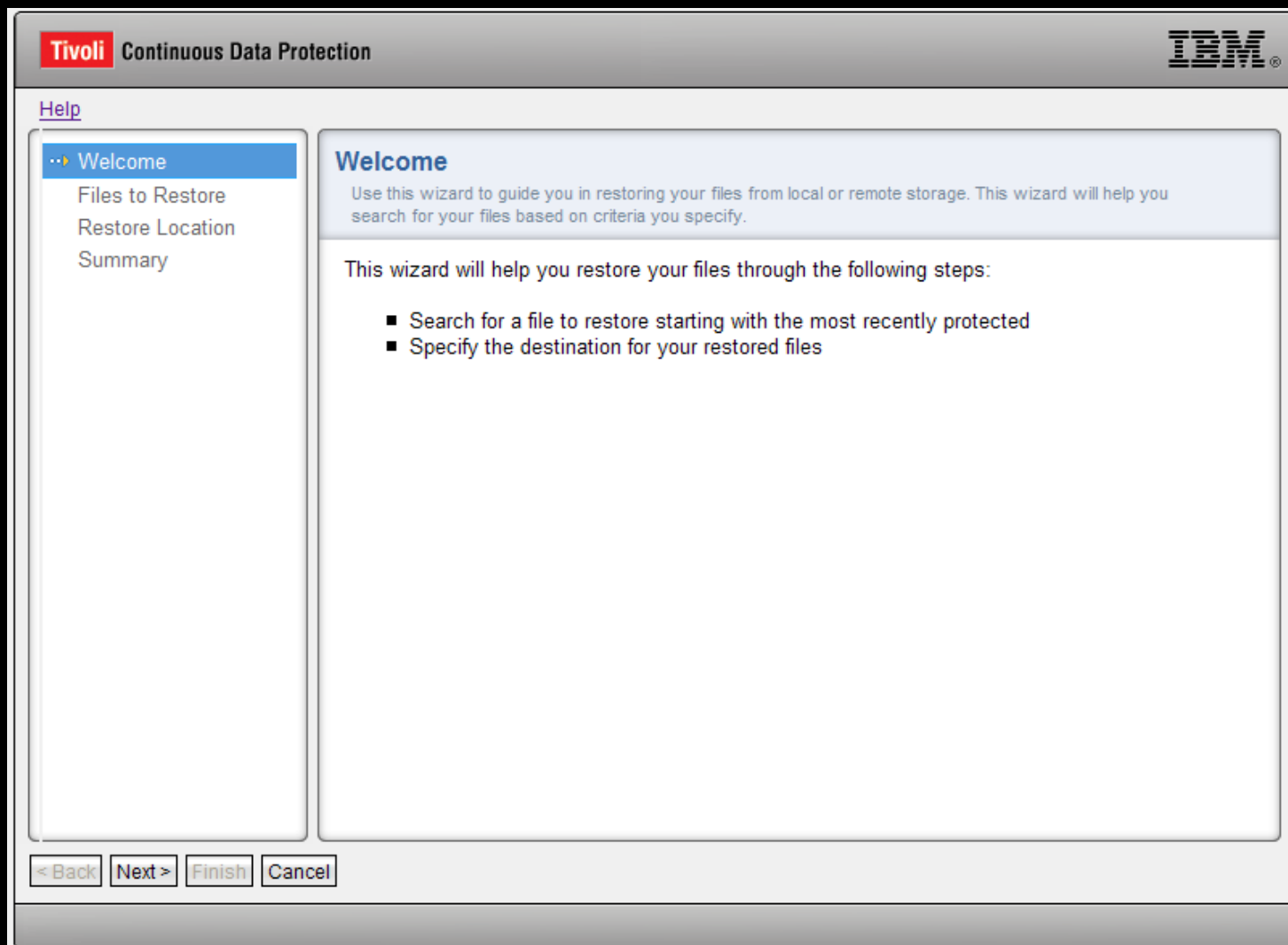
Restore

Click on Local or Remote to configure Local or Remote storage targets

Click here to start the restore wizard

Idle

Restore Wizard



Restore
Wizard

What's new in FastBack for Workstations

- Enhanced integration with Lotus Notes e-mail client
 - ▶ Application aware backup of Lotus Notes client via Notes API
 - ▶ Flush of buffers and quiesce data to ensure consistency of backup data.
 - ▶ Will back up a consistent copy of the Lotus Notes client database even if changes, such as incoming mail, are occurring in that database during the backup

- Versioning of data level changes for e-mail files
 - ▶ CDP for Files tracks data level changes on e-mail files allowing point-in-time restore Lotus Notes and Microsoft Outlook client data.

- MSI installation package
 - ▶ CDP has an MSI installation package and uses Windows Installer. You can use Microsoft Systems Management Server to deploy CDP for Files MSI package to systems that you administer

- Microsoft Vista operating system support

Additional Features

- Open Files
 - ▶ Files protected by schedule will be backed up even if they are open

- Sub-file
 - ▶ When the file changes, only the changed information is copied to the storage area.
 - ▶ Sub-file copy can significantly reduce the amount of network traffic. Can configure file size to trigger sub file

- Monitoring your Protection
 - ▶ Continuous Protection Activity Report
 - Shows success and failures, contains links to the problem determination guide
 - ▶ Scheduled Backup Report
 - Shows success and failures and files that were backed up
 - ▶ Centralized reporting on multiple clients using the same remote storage area

- Email Support
 - ▶ Backs-up email .pst and .nsf files
 - ▶ At the “block level”, so only the changed messages.
 - ▶ Efficient and fast
 - ▶ Even if email application is open and active

Additional Features

▪ Vaulting

- ▶ You can prevent any changes (including deletions) to files in folders that you designate as vaults.
- ▶ Simple syntax – Name folders
 - \KeepSafe\RetainForever\
 - \KeepSafe\Retain Duration\
 - \KeepSafe\RetainUntil Date\

▪ Multiple Machines

- ▶ Multiple clients can store data on the same file server, enabling Centralized reporting, global software update and configuration
- ▶ Push using SMS, Tivoli Provisioning Manager Express, CDP FpPushInst.exe executable.
- ▶ Configurations Pushed to clients can be locked.

▪ Scaling

- ▶ It's a client architecture only, No central server component
- ▶ If you have multiple clients configured to store data on a file server and want to add another file server , its easy to point a set of existing clients to the new file server.

▪ Encryption (128 bit AES)

- ▶ Provides extra security on your remote location.

▪ Compression

- ▶ Save space on your remote storage location.

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