

# 7.2 File Level Recovery

Creating an easy to use capability

Playback 0

09.19.2014

**IBM Design**



# Hello.



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Product Manager



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Critical to our success :

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Executive Sponsor

Bharti Patel  
Director of C&SI Storage  
Management Development

Chris Rich  
UX Manager

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# Playback 0

Playback 0 is for the File Level Recovery team to present what has been agreed to and what will be created to support 7.2 objective and hills.

This two-hour session will cover:

Project Context, Hills & Sub-Hills and Competitors

Angelique Budaya & Jim Smith

Field Work, Personas, Journey Maps, FLR Interaction/Visual Design

Adam Kallish & Clare Byrne

Technical Foundation & Engineering Assessment

Martin Wedlake, Mike Collins & Avi Hochberg

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# Meeting Suggestions

This meeting is to share what has been accomplished to prepare for sprints to build 7.2 File Level Recovery. There are a few ways to provide feedback:

- Ask questions at any point in the presentation
- Use the chat function in Same Time. It is being monitored by Angelique Budaya. She may answer a question in the chat, or ask it aloud
- If a question cannot be answered fully, due to the answer or time, the team will follow-up with the person after Playback 0

# 7.2 File Level Recovery

Creating an easy to use capability

Playback 0

09.19.2014

Adam Kallish, UX Lead  
Clare Byrne, ID Lead

**IBM Design**





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# Goal of File Level Recovery

Creating a web-based File Level Recovery capability with a user experience that matches the competition, industry and expectations of help desk, client server admins and line-of-business roles that lays the groundwork for moving to a line-of-business user self-service model.

The team had also been defining an integrated client common-services stack that would accelerate installation, backup, recovery, gathering of logs, and reporting through two other aspects around clients:

- Client Management Services focusing on BA Client Install & Configuration
- TSM for VE within vSphere

# The role of IBM Design Thinking



The TSM Client team is working to change the TSM development culture to IBM Design Thinking.

Attributes:

- simplification
- visibility, availability, reliability
- effectiveness with less effort
- improved insights
- reduced tool sprawl

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# The role of IBM Design Thinking

From the start of the client initiative, we were committed to a **holistic collaboration** with IBM roles and external customers to learn about the “as is” state of client environments and to explore a more desirable “to be” state.

Product Management, Engineering, and Design have completed many working sessions to understand conceptual models of how personas approach the backup and protection of their data assets.

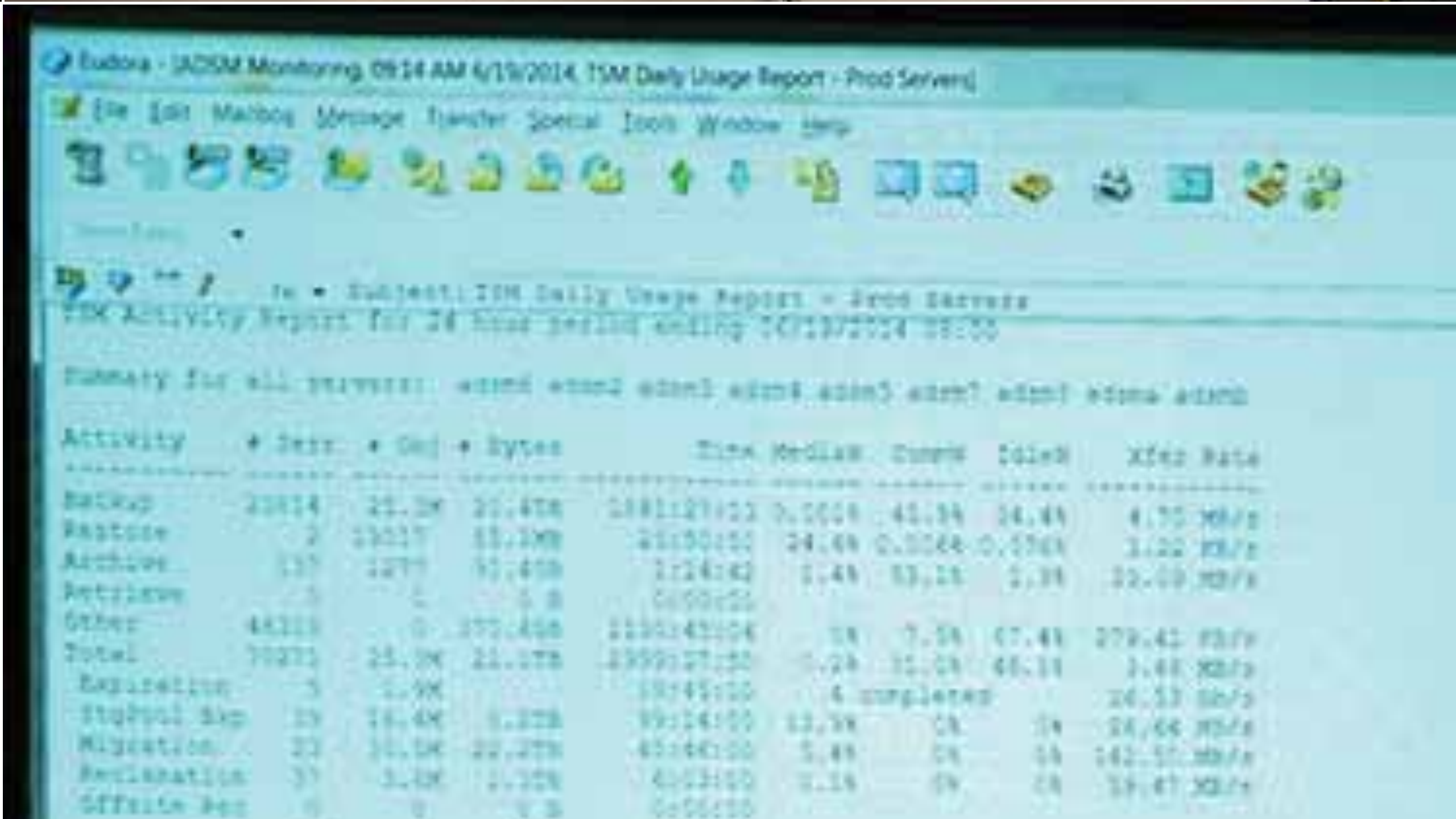
From these conversations came an **increased understanding** of the many problems, and what to focus on to **create value back to markets**.

The TSM Client team is working to change the TSM development culture to IBM Design Thinking.

Attributes:

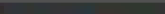
- simplification
- visibility, availability, reliability
- effectiveness with less effort
- improved insights
- reduced tool sprawl







# What we learned about the diversity of client environments


[My Spaces](#) › 
 [Tivoli Storage Manager Operations Center](#) › 
 [TSM Clients](#) › 
 [Release Blueprint - TSM Clients](#) › 
 [Activities and Deliverables](#) › 
 [User Study](#) › 
 [Customer Visit Roll Up](#)

## TSM Clients

▼ Release Blueprint - TSM Clients

### ▼ Activities and Deliverables

### ► Client Deployment Criteria

## Competitive Landscape

## Design Summit

## ▼ User Study

► Customer Council

## Customer Visit Roll Up

### Participating Organizations

## Questions

### Quotable Quotes from User Study

## UHG/Optum Calls about VE

### Client Experience Predictor Links

## Client Hills

## Playbacks

## Project Variables

► Design - TSM Clients

► Personas - TSM Clients

► Research - TSM Clients

## Customer Visit Roll Up

 Show Talk

 Stop Watching

 **Edit**

 Add

Tools ▼

 1 Added by **KALLISH, ADAM R.**, last edited by **KALLISH, ADAM R.** on Jul 24, 2014 ([view change](#))



Edit

Fortune cookie tidbits Martine and Adam received at a client lunch in Philadelphia 😊

As we visit customers in the field, we are quickly posting raw interview content on our [customer interview matrix](#) (by invitation only) and continually are looking for patterns around organizational structure, collaboration & environment, and tasks to compare our original assumptions to what we directly experience in the field. [Edit](#)

### What we were seeking to have answered

Clients are a varied landscape of storage environments, skill levels, and collaborations. For this reason, we were interested how :

- *organizational structure* affects types of roles, skill levels and zones of control. When we first started, we had five personas identified. This grew to the current eleven personas. Depending on the organization, TSM administrators have different skills & tasks.
- *collaboration & environment* variations affect how different roles interact with each other and the digital systems they use to interact & document, install, configure, first backup and every day use of data protection. There are many roles on the client side that act as a proxy for a line-of-business user, or in many cases are the user of backup and recovery services. The storage environments and if it on premise, hybrid and off premise and the structure of their data centers also affect collaboration.

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# What we learned about the diversity of client environments

Alot of diversity in terms of tools, collaboration and techniques

“Installing client nodes suck . . . It is time consuming and we do it node by node.”

Einstein Healthcare

“I have no understanding how many nodes are in my area.”

Cornell University

“Why do I need to read through 500 pages of documentation while our competitors are one click and the data mover is deployed?”

IBM

“Nobody cares about backup, people want files restored.”

Intact Financial

“When we say ‘storage’ we mean everything.”

University of Montreal

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# Some variables that affect strategy and scope

Our operating hypothesis and field visits informed one another

Through experience with TSM markets and direct ethnographic and observational research, we have identified **three key areas** that affect how data protection software is used:

1. **Organizational structure** affects types of roles, skill levels and zones of control. When we first started, we had five personas identified. This grew to the current ten personas. Depending on the organization, TSM administrators have different skills & tasks.
2. **Collaboration & infrastructure environment** variations affect how different roles interact and what systems they use to interact, document, install, configure, complete first backups, and protect data daily. The storage environments (if they are on premise, hybrid, off premise) and the structure of their data centers also affect collaboration.
3. **Tasks** are impacted by 1. and 2. in how clients are installed, configured, first backed up, used every day, updated and supported.



# Competitor File Level Recovery Solutions

File Level Restore Competition Screenshots – Tivoli Storage Manager Operations Center – Release Blueprints

https://releaseblueprints.ibm.com/display/TSMOC/File+Level+Restore+Competition+Screenshots

Reader

My Spaces > Tivoli Storage Manager Operations Center > TSM VE 7.1.1 & 7.2 Clients > Design - TSM VE Clients > Discover and Envision > File Level Restore Competition Screenshots

KALLISH, ADAM R.

Search

TSM VE 7.1.1 & 7.2 Clients

▶ Release Blueprint - TSM VE Clients

▼ Design - TSM VE Clients

▼ Discover and Envision

▶ As Is and To Be Journey Maps

File Level Restore Competition Screenshots

How Kevin manages his VE on a daily basis to support data protection.

Setting up a backup environment for a virtual machine

▶ VE Products and Tools

Personas - TSM VE Clients

▶ Research - TSM VE Clients

Resources - TSM VE Clients

File Level Restore Competition Screenshots

Show Talk Stop Watching Edit Add Tools

19 Added by Wedlake, Martine B., last edited by Wedlake, Martine B. on Aug 28, 2014 (view change)

This is a set of screenshots I took from YouTube videos of VM-based file level restore products we can use for comparison purposes.

vsphere Data Protection Restore Client (Also EMC Data Protection Restore Client for Avamar) Edit

The vsphere restore client flow is very much like our FLR. It is aimed at "regular users" to enable non-technical people to access their files from the VM.

YouTube Video:

VMware vSphere Data Protection - File Level Re...



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# Competitor File Level Recovery Solutions

The team reviewed File Level Recovery tools from [VMware](#), [Veeam](#), [vRanger](#), and [Unitrends](#).

Some are moving along the same trajectory of self-serve, except for Veeam, which is still geared to an experienced VE administrator.

Most competitors are [using very established GUI metaphors](#) such as tree structures, split panes, and over-reliance on modals – which are feeling complicated and dated for 2014.

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# Competitor File Level Recovery Solutions

There are also several heuristic principles that are challenged in their solutions. A few examples :

- **recognition rather than recall** : things appear and then disappear
- **anticipation** : relying on old and established metaphors rather than simplifying screen real estate and user flows
- **readability** : many screens are swirls of color and it is hard to know where to cognitively enter and exit a screen
- **learnability** : most solutions require knowledge of related product tools and terminologies that may not be accessible

# Self Service and Line of Business Users



**Susan**

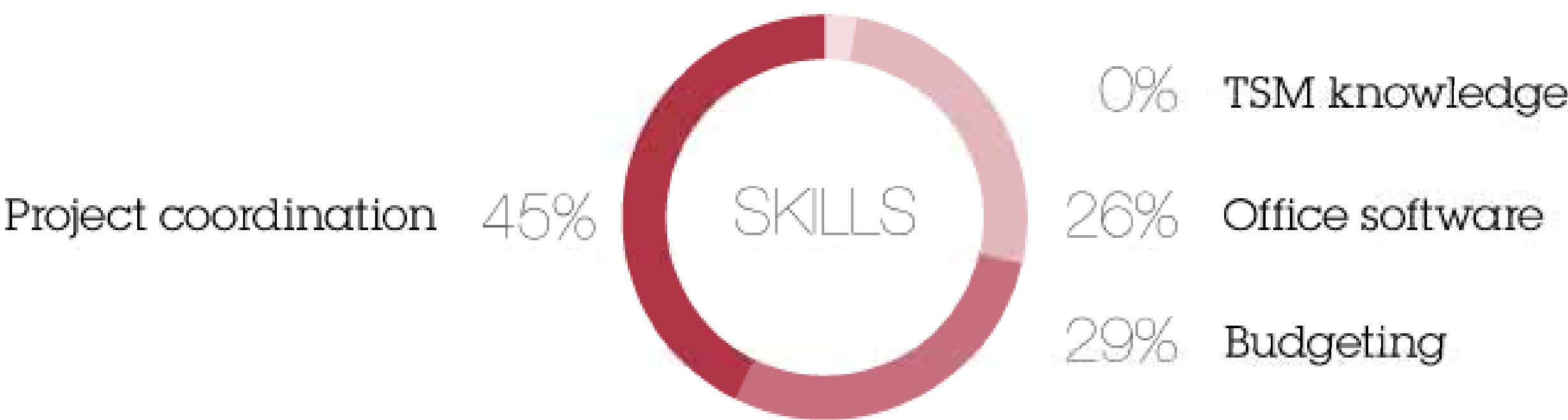
Executive Assistant

none

Backup  
administration  
experience



My file was corrupted. I need that restored now!



## TASKS

- Creates important documents for upper management
- Responsible for office budgeting
- Follows organizational procedure, usually in a help system, to make requests for data restoration

## GOALS

- Wishes she could restore her own files
- Wants to get a promotion
- Wants to be a better mother

## A DAY IN THE LIFE

- 8 am** ◦ Susan is awoken by the hungry cries of her toddler. She grabs a bottle from the kitchen and prepares breakfast for her 5-year-old daughter. Susan's toddler is being extra fussy today, which causes the morning routine to run over time. She hurries everyone into the car and makes stops at daycare and elementary school along the way to the office.
- 9 am** ◦ Susan rushes into her first meeting fifteen minutes late. Everyone looks up as she takes the last seat by the chairman. Susan then takes down meeting minutes for whatever topics are left.
- 11 am** ◦ When the meeting concludes, and her embarrassment subsides, Susan turns off the projector and grabs the presentation laptop. She heads to her desk to check email and voice mail, answering urgent messages. She stops by her boss' office to remind him of his appointment with the executive director this afternoon. Next she checks her to-do list from yesterday. She has a few memos to prepare for that meeting.
- 12 pm** ◦ Susan forwards copies of the memos to her boss for approval. While waiting, she follows up on more emails.
- 1 pm** ◦ During lunch, Susan preps for tonight's PTA meeting at her daughter's school. The school is planning a carnival for the kids next weekend.

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# Self Service and Line of Business Users

IBM and the markets it serves has experienced a shift the **increased consumerization of business systems**.

When we started on our journey in exploring client environments, we thought that “Susan” the file/data owner would be the main user of file level recovery.

Through field work and further research, we discovered that **there are many proxies that act on behalf of Susan**, either due to organizational culture – or that systems and their data models are not geared to line-of-business users.

## Attributes:

- Every user is a buyer
- Infrastructure is invisible
- All actions are data
- Systems talk

---

# Roles & Personas

The more we explore, the more they grow . . .

When we started with clients, we had identified four key personas.



**Susan**  
File/Data Owner



**Janice**  
Help Desk



**Kev**  
VE Admin.



**Lin**  
TSM Operator



# Roles & Personas

The more we explore, the more they grow . . .

Over time, we have identified nine personas.



**Susan**  
File/Data Owner



**Bob**  
Server Admin.



**Janice**  
Help Desk



**Marsha**  
File Server Admin.



**Frank**  
Email Admin.



**James**  
Database Admin.



**Kev**  
VE Admin.



**Andrew**  
Auditor



**Lin**  
TSM Operator

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## Roles & Personas Our current thinking through clusters

From our field work we realized that any type of recovery takes the **collaboration of a few personas working together to complete a task**. This began to define a context for improving existing IBM products by making software more consumable.

As we developed specific personas, we saw that they started clustering together into natural groupings.

# Roles & Personas Our current thinking through clusters

## File Owner



**Susan**  
File/Data Owner

## Software



**Janice**  
Help Desk



**James**  
Database Admin.



**Frank**  
Email Admin.

## Platform



**Bob**  
Server Admin.

## Infrastructure



**Brad**  
TSM Rec. Admin.



**Lin**  
TSM Operator



**Kev**  
VE Admin.

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# Creating a simple file level capability

A web-based File Level Recovery is a must have for IBM to go to market as a response to competitive capabilities.

The team approached the definition of File Level Recovery as a common tool for several personas to use to restore files.

The team believed that File Level Recovery meets the needs of help-desk and server administrators, but can begin to also address the needs of Susan, a line-of-business user.

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## For 7.2 File Level Recovery, our hills are :


Who    What    Wow



1. File, Software and Platform owners can restore individual files from a VMware VM from anywhere without VM & TSM knowledge
2. Infrastructure administrators can set up, configure, & manage to monitor infrastructure resources without doing individual point management
3. Infrastructure owners can easily enable a restore that honors current access with minimal administration



# Information Development

 My Spaces > Tivoli Storage Manager Operations Center > TSM Clients > Design - TSM Clients > Language for client designs

 KALLISH, ADAM R. ▾






 

TSM Clients

- ▶ Release Blueprint - TSM Clients
- ▼ Design - TSM Clients
  - ▶ Client Products & Tools
    - Current and Future State of Client Side Workflows
    - Design Principles for Clients
  - ▶ Discover & Envision
  - ▶ **Language for client designs**
- ▶ Personas - TSM Clients
- ▶ Research - TSM Clients
- Resources - TSM Clients

## Language for client designs

Added by [Byrne, Clare M.](#), last edited by [Byrne, Clare M.](#) on Sep 09, 2014 ([view change](#))

 Show Talk  Watch  Edit  Add ▾  Tools ▾

- *Audience*
- *Basics*
  - *Resources and links*
    - *IBM Design Language*
    - *Tone*
    - *Other resources*
- *Where do we need more than in-line text?*
- *Heuristics*
- *Words to use and not use*
  - *Term issue: the person that Susan goes to for help with backup issues*
  - *Term issue: recovery point vs. recovery vs. ....*
  - *Term issue: platform or operating system*
  - *Term issue: partially protected with errors*
  - *Naming of product*
- *Issues to watch*

This article will evolve as Clare, Fun, Julius, and others collaborate on it, determine what's useful, what's not.

The initial focus is on personas that we expect to use the file level recovery feature, and client management services. Initially the focus was Susan, the business user of backup software. The primary persona might change to Bob as customer interactions and feedback evolve the thinking of the design team.

We will be borrowing from conventions established for the Operations Center, but striving for even more simplicity and absence of technical jargon.

**Audience** [Edit](#)

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# Information Development

From the start of the client initiative, information developers have been active collaborators with the team in thinking through cognitive and linguistic issues that impact user experience, with a focus on personas' goals and message tone, terminology, and placement.

- A conversational tone, applying progressive disclosure principles to deliver the right amount of information, in the right place, at the right time.
- Simple, accessible interface text through application of our experience with minimalist writing, IBM style and terminology, and writing for a global audience.
- Help imbedded in the screens, in the form of clear labels, instructions, and messages, reducing the chance for error. Identify where more help is needed.

# Journey Map for File Level Recovery

## Current “As Is” State

### Primary Users



**Bob**  
Server Admin.



**Janice**  
Help Desk



**Susan**  
File/Data Owner



**Lin**  
TSM Operator



**Kev**  
VE Admin.

### Coordinators



### Discover

Primary users do not have knowledge of how to do file-level recovery.

They need to communicate with coordinators in order to recover files.



### Install

Integrated into the TSM VE client install procedure.

Setting up for file-level recovery often requires creation of Windows & Linux recovery machines

Recovering files on Linux is especially complex with lots of system-level knowledge required (e.g., iSCSI mounts, etc.).



### First Use

First use carried out by coordinators running the recovery agent to mount VMs and verify that files can be accessed.



### Every Day Use

Primary users will contact coordinators to request a file level recovery.

Coordinators use VM knowledge (Linux vs Windows) to determine appropriate recovery agent to mount the recovery point as a drive and use OS tools to copy the file and provide it back to the primary user.



### Maintain

Integrated with TSM VE Client.

E.g., logs, vmcli, etc.



### Upgrade

Integrated with TSM VE Client install and upgrade procedure.

Need to worry about additional recovery agents (e.g., both Windows and Linux).

# Journey Map for File Level Recovery

## Proposed “To Be” State

Primary Users



**Bob**  
Server Admin.



**Janice**  
Help Desk



**Susan**  
File/Data Owner

Coordinators



**Lin**  
TSM Operator



**Kev**  
VE Admin.



### Discover

Primary users learn about a file-level recovery service through an IT support web site that has a link to the FLR tool.



### Install

Integrated into the TSM VE client install procedure.

Setting up for file-level recovery often requires creation of Windows & Linux recovery machines

Recovering files on Linux is especially complex with lots of system-level knowledge required (e.g., iSCSI mounts, etc.).



### First Use

Done by a coordinator who installed the TSM VE Client in order to test the end-to-end service.



### Every Day Use

Primary users will log into the file-level recovery tool using a browser (typically running on the VM itself, but not strictly necessary).

No interaction with coordinators is needed to successfully restore files from a recovery point.



### Maintain

Integrated with TSM VE Client. E.g., logs, vmcli, etc.



### Upgrade

Integrated with TSM VE Client install and upgrade procedure.

Need to worry about additional recovery agents (e.g., both Windows and Linux).



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# Aligned with Users

Create “Familiar” tools based on role

We’re building and incorporating personas into the design of the new tools, so that tools align with what users actually want to do and accelerate installation, configuration, backup, recovery, & reporting.

This avoids frustrations coming from lack of knowledge/skills, broken communication loops, etc.

“In its commitment to customer service, IBM learned that the best way to serve and prosper was to provide equipment adapted to his requirements, rather than ask him to alter his business to fit our machines.”

*A Business and Its Beliefs*  
Thomas Watson Jr., 1961



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# Aligned with Users

Create “Familiar” tools based on role

Key **attributes** for this approach:

**Integrated** = create familiar work flows and environments that allow for self-service

**Common** = allows for common interfaces

**Accelerated** = connecting workflows and data models for faster input & feedback

**Empowered** = allows users to connect requests, tasks and outcomes in self-service and closed feedback loops

“In its commitment to customer service, IBM learned that the best way to serve and prosper was to provide equipment adapted to his requirements, rather than ask him to alter his business to fit our machines.”

*A Business and Its Beliefs*  
Thomas Watson Jr., 1961

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# Early Concepting

The team began to sketch possible ways to approach a File Level Recovery capability and went through many iterations to discuss :

- specific tasks
- data models & data representations
- system feedback to support tasks

# Early Concepting

## Welcome Susan to the Organization X Recovery Page

1. Choose a point in time you want your file recovered from

## 2. Find & Choose Specific File(s)

Depending on number of files selected, recovery could take hours.

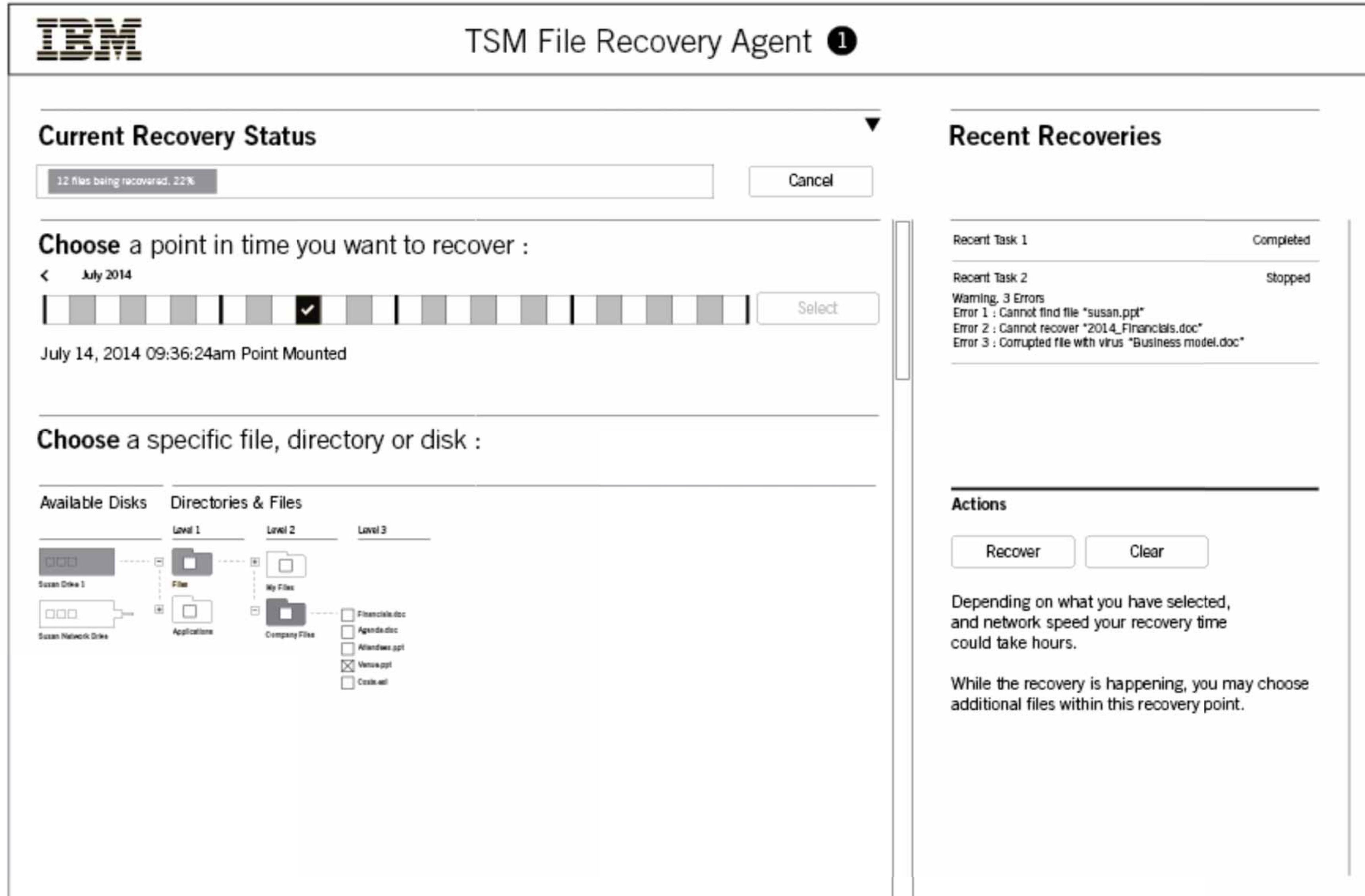
Your Computer Directory	File Name(s)	Size
+ Susan Drive	<input type="checkbox"/> Susan file one	12K
+ Susan Drive 2	<input type="checkbox"/> Susan file two	136K
- Susan Drive 3	<input type="checkbox"/> Susan file three	1.2mb
+ Applications	<input type="checkbox"/> Susan file four	512K
- Documents		

Recover

### 3. Recovery & Tasks

### The last 24 hours of recoveries

# Early Concepting



# Early Concepting

Recent Recoveries

> July 24, 2014 9:20 AM

> July 12, 2014 12:00 PM

Recovery: July 16, 2014 10:00:00 AM

Change

Select disks, folders, or files to recover from

Arrange ByFolder

Search

Computer	Name	Type	Last Modified	Size
> C:/	Reports	Folder	7/10/2014 8:00:00 AM	
> D:/	TSM-7-1-1	Folder	7/10/2014 8:00:00 AM	11 kb
W:/Data Drive	TSM-7-2	Folder	7/10/2014 8:00:00 AM	11 kb
My Documents	alertsL2.png	Image	7/10/2014 8:00:00 AM	5 MB
Reports	clientsL2.png	Image	7/10/2014 8:00:00 AM	5 MB
TSM-7-1-1	commitments-8-11-2014.doc	Document	7/10/2014 8:00:00 AM	11 kb
TSM-7-2	financials.ppt	Document	7/10/2014 8:00:00 AM	5 MB
Design	financials 2014.ppt	Document	7/10/2014 8:00:00 AM	11 kb
Illustrator Files	nextsteps.ppt	Document	7/10/2014 8:00:00 AM	11 kb
Andres	portfolio.ppt	Document	7/10/2014 8:00:00 AM	5 MB
Kristen	projections.xls	Document	7/10/2014 8:00:00 AM	11 kb
Lauren	questions for mgt.ppt	Document	7/10/2014 8:00:00 AM	11 kb
	replies.doc	Document	7/10/2014 8:00:00 AM	5 MB
	retreat.doc	Document	7/10/2014 8:00:00 AM	
	review.xls	Document	7/10/2014 8:00:00 AM	

Add

W:/Data Drive/My Documents/TSM-7-1-1

10 GB

W:/Data Drive/My Documents/financials.ppt

5 MB

Total Recovery Size of Selection(s): 10.05 GB

Next



# Early Concepting Feedback

surveygizmo

1. Are you using DP for VMware today? \*

- ☐ Production
- ☐ Test
- ☐ No

2. For DP for VMware client, how many VM restore points would you typically retain for a given VM? \*

- ☐ Less than 5
- ☐ Between 6 and 10
- ☐ Between 11 and 20
- ☐ Between 31 and 60
- ☐ Between 61 and 90
- ☐ Tell us how many

---

# Early Concepting Feedback

Based on our field visits, we established relationships with specific customers and invited them to be part of a **Client Customer Council**, a small group to keep conversations informal and manageable.

Their feedback to data environments, wireframes, and visual design was helpful in refining our ideas.

**Benoit Dolbec**  
Intact Financial

**Kumar Kancharana**  
Piedmont Healthcare

**Chris Koster**  
MKIII

**Darryl Shorts**  
Franciscan Missionaries of Our  
Lady Health System

**Jason M. Stuart**  
Cornell University

**Benjamin L Strohm**  
Louisiana State University

**Bob Talda**  
Cornell University

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# Interaction and Visual Design

The team moved to high resolution visual design to refine our ideas within representational software.

Integrating the new [IBM Design Language](#) with existing patterns from [TSM Operations Center](#), the team focused on creating a simple workspace aimed at providing a contemporary workspace to mount, select and restore files.



# Initiating a Restore : Login



User logs in the first time using same credentials that they have for their VM.

the grace period between logins is 7 days, it is considered a new session (no context).

If it is shorter than 7 days, user is in the same context as the previous login

If an administrator shares support information, this would show in the login as well as in an “about” modal.

# Initiating a Restore : What's New in File Restore

On login for the first time, a user will be presented with a few key time to value messages with short videos on how to best use file restore.

File Restore

Susan Smith

What's in IBM Tivoli Storage Manager File Restore

Find and restore files

Easily find files from point-in-time backups by navigating or searching directories. You can restore individual files or entire directories to their original location or to a new location.

12

Monitoring and troubleshooting

View current and recent activity to verify that a restore operation completed successfully. Obtain more information and assistance to troubleshoot errors.

Get started

☐ Don't show again

IBM Tivoli Storage Manager File Recovery

Viewing backup from July 31 at 08:00:00 PM

Available backups

08:00:00 PM

02:00:00 PM

11:00:00 AM

08:00:00 AM

My Documents

2014

September

Name	Last Modified	Size
Reports	—	—
YSA-3-1-1	—	—
TSM-2-2	—	—
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	200 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	11 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	200 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	11 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	11 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	200 KB
08/13/2014 08:00:00 PM	08/13/2014 08:00:00 PM	11 KB

Selected 0 | Total size 5 MB

Restore

Restore to...

If the original file exists

Restore, but keep both files

Restore to

Original location

If a file name exists

Restore, but keep both files

Restore



# Initiating a Restore : Choosing backup

File Restore

Download icon

Susan Smith

Help icon

Choose a backup

Select a date and time

Calendar

Available backups

☒ 06:00:00 PM

☐ 02:00:00 PM

☐ 11:00:00 AM

☐ 08:00:00 AM

Choose backup

My host name.com

Search icon

Search My Host Name.com

Name	Size
------	------

Selected 0

Restore to

Original location

Restore

On login, the system will:

1. System finding available backups
2. User choosing a backup
3. System loading backup  
A user can either choose that combination, or another date and time and choose it to load that combination.
4. Viewing specific backup

The backup date/time area goes away and is activated on hover.

# Initiating a Restore : Loading backup

File Restore

Download

Susan Smith

?

Loading backup from 07/31/2015 08:00:00 PM

My host name.com

Search My Host Name.com

Name	Last Modified	Size
<div><div>Loading backup from 07/31/2014 08:00:00 PM.</div><div>Finding (x) disks. Loading them might take up to a minute.</div><div><div></div>25%</div></div>		

Selected 0

Restore to

Original location

Restore

Once a date and time has been selected, the system will mount and provide a user with system feedback.

Depending on size of backup and network, it may take a few minutes to make the call to the system to fetch the selected backup.

# Initiating a Restore : Mounted point

File Restore

Susan Smith

Viewing backup from 07/31/2015 08:00:00 PM

My host name.com

Search My Host Name.com

Name	Last Modified	Size	
<div></div> My host name.com	—	—	
<div></div> Volume Name (C:)	—	—	
<div></div> Volume Name (D:)	—	—	
<div></div> Volume Name (W:)			

Selected 0

Restore to

Original location

Restore

Once a date has been successfully loaded, the system will show that a specific date is available for exploration with the option for a user to change the date.

The user will see the available disks or directories at the top level. If the user had logged in before, it will remember the context at the last logout.

A user can then press on one of the objects in the table to start to drill down within the VM.

# Initiating a Restore : System Messages

File Restore

Susan Smith

You are about to lose your file selections. Do you want to continue?

No

Yes

Viewing backup from 07/31/2015 08:00:00 PM

> My Documents > 2014 > September

Search September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 1

Restore to

Original location

Restore

Most system messages will appear below the main product banner as either dismissible informational message (blue), a non-dismissible warning message (yellow), or non-dismissible a critical message (red)

# Initiating a Restore : Selecting & Restoring

File Restore

Download icon

Susan Smith

Help icon

Viewing backup from 07/24/2015 06:00:00 PM

My Documents > 2014 > September

Search September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 1

Restore to

Original location

Restore

A file trail trail is active at all times for a user to understand where they are. If the trail is longer than three levels, a dropdown in the front will show all levels before it.

A user can select particular files by selecting on a row or a series of rows. The “restore” button would be activated.

At the bottom of the table, it would show the total number of files in the view and the number of files selected and the total size for the restore.

Restore choices would be “restore to original location” or “restore to alternate location”

If a user changes to a different directory with selected files, the user would lose the choices for the previous directory.



# Initiating a Restore : Restoring to alternate location

File Restore

Viewing backup from 07/31/2015 08:00:00 PM

> My Documents > 2014 > September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 0

Restore to

Original location

Restore

Choose an Alternate Location Folder

+ New folder

Folders

> VOL C:/

> VOL D:/

> VOL W:/Data Drive

My Documents

New folder

Test Folder

New folder

Test folder

New folder

Rename

This folder is already in use.

> Reports

> TSM-7-1-1

TSM-7-2

Design

Illustrator Files

Andres

Kristen

Lauren

Path: w:/Data Drive/My Documents/New folder/

Cancel

Restore

If a user changes the restore to a custom location, a drawer would open on the right and a workspace would allow a user to navigate the top level directories and sub-directories.

A user can add a new directory as the target for a restore.

Directories will not be created until a restore is active. Any new directories created that have no files would not be created.

# Initiating a Restore : Restore Drawer

File Restore

4

Susan Smith

Viewing backup from 07/31/2015 08:00:00 PM

>

My Documents

>

2014

>

September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 1

Restore to

Original location

Restore

Active and Recent Restores

Restoring 151 of 1028 files

To original location "Finance 2014"

Backup from 07/31/2014 08:00:00 AM

80% Complete

Cancel

C:\My Documents

C:\...reports.ppt

C:\...financials\_1.ppt

C:\...financials\_2014.ppt

C:\...financials\_2013.ppt

Restored 0 files

To alternate location "Financials"

Backup from 07/24/2014 08:00:00 AM

Completed with errors

Details

Restored 1 file

Search result to original location

Backup from 07/24/2014 08:00:00 AM

Completed successfully

Restored 995 of 1024 files

To original location "C:\...y Documents"

Backup from 07/10/2014 05:15:00 PM

Completed with errors

Details

C:\My Documents

When a restore is in progress, the restore icon at the top will flash a few times. The restore drawer would appear.

Restores are listed in submission order. If there are more restores, than vertical space, a scroll bar would appear,

A user can continue to do additional restores with the restore drawer open, or they can manually close it.

After 7 days this area will reset.



# Initiating a Restore : If there is an restore file error

File Restore

4

Susan Smith

Restore of the backup from 07/31/2015 08:00 PM completed with errors. Details

Viewing backup from 07/31/2015 08:00:00 PM

> My Documents > 2014 > September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 1

Restore to Original location Restore

Restoring 151 of 1028 files7.5 GB

To original location "Finance 2014"

Backup from 07/31/2014 08:00:00 AM

80% CompleteCancel

C:\My Documents

C:\...reports.ppt

C:\...financials\_1.ppt

C:\...financials\_2014.ppt

C:\...financials\_2013.ppt

Restored 0 files3.5 GB

To alternate location "Financials"

Backup from 07/24/2014 08:00:00 AM

Completed with errorsDetails

Restored 1 file2.3 MB

Search result to original location

Backup from 07/24/2014 08:00:00 AM

Completed successfully

Restored 995 of 1024 files5.6 GB

To original location "C:\...y Documents"

Backup from 07/10/2014 05:15:00 PM

Completed with errorsDetails

C:\My Documents

Most restores should be successful. In case a file has been skipped or failed, File Restore will offer a “Details” link to warnings and errors:

- As a error message with a link to details
- As a link next to the errors message in the active/recent restores drawer



# Restore Errors : View failed and skipped files

File Restore

Download

Susan Smith

Help

Files not restored from the 07/31/2015 08:00:00 PM backup

For assistance, contact your administrator

ExportNew window

Filter

Status	File Name	Message
Failed	alertsL2.png	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	clientsL2.png	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	commitments-8-11-2014.doc	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	resources-2014.ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	financials 2014.ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	financials.ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	nextsteps.ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	financials 2014-(2).ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	financials-(2).ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.
Failed	nextsteps-(2).ppt	Permission denied. This file is not available on your disk as it someone else's. Please contact your local administrator for more information.

Close

The error report drawer will list all failed files.

This report can be exported to send to help desk or a user can open it up in a new window.

If a user clicks on “contact your administrator” it will open the “About File Restore” modal and any administrative information listed will be shared with the user.

If a user closes the report workspace, it will take the user back to the active/ recent restores drawer.

# Initiating a Restore : Log Out

File Restore

Download icon

Susan Smith

?

Documentation  
About File Level Recovery

Viewing backup from 07/31/2015 08:00:00 PM

> My Documents > 2014 > September

Search September

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 0

Restore to Original location Restore

Since File Restore is a web-based application, a user may “close” a session by:

- closing the window, but the session will remain active for 7 days
- “Log Out” to close the session and system will clean up

# Search : Search query

File Restore

Susan Smith

Viewing backup from 07/31/2015 08:00:00 PM

> My Documents > 2014 > September

Financials

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 6:01:04 PM	11 KB
financials 2014.ppt	02/30/2014 2:14:16 PM	11 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Selected 0

Restore to

Original location

Restore

When a user selects on a particular directory or sub directory, the search box will show the breadcrumb trail to provide context that they are searching in the context of a chosen directory.

A search can start at a directory, or a higher level directory, or choose a volume, or choose a search on main node (cross volume search). It will not search across recovery points.

A user can put in a search term over that trail – in this case, they typed in “financials.”



# Search : Search processing

File Restore

Download

Susan Smith

?

Viewing backup from 07.31.2015 at 08:00:00 PM

My Documents > 2014 > September

Search

Financials

Name	Last Modified	Size
Reports	—	—
TSM-7-1-1	—	—
TSM-7-2	—	—
alertsL2.png	06/10/2014 3:32:11 PM	265 KB
clientsL2.png	12/18/2013 9:12:00 AM	11 KB
commitments-8-11-2014.doc	09/11/2014 8:14:49 AM	5000 KB
resources-2014.ppt	04/20/2014 11:42:00 AM	11 KB
financials 2014.ppt	07/19/2014 5:00:00 PM	5000 KB
financials.ppt	07/19/2014 5:00:00 PM	5000 KB
nextsteps.ppt	04/10/2014 11:42:00 AM	11 KB

Loading search results . . .


Selected 0

Restore to


Original location



Restore


# Transitioning to Build



My Spaces > Tivoli Storage Manager Operations Center > TSM VE 7.1.1 & 7.2 Clients > Design - TSM VE Clients > VE Products and Tools > 7.2 File Level Recovery > FLR Epics > Epic 1 : Susan signs into FLR

 KALLISH, ADAM R. ▾

 Search

TSM VE 7.1.1 & 7.2 Clients

- ▶ Release Blueprint - TSM VE Clients
- ▼ Design - TSM VE Clients
  - ▶ Discover and Envision
  - ▼ VE Products and Tools
    - ▼ 7.2 File Level Recovery
      - ▶ FLR Build
      - ▶ FLR Context
      - ▼ FLR Epics
        - Epic 0 : Brad (TSM Admin) installs and configures the machine that is hosting the liberty profile
        - Epic 1 : Susan signs into FLR**
        - Epic 2 : Recovery Point Selection
        - Epic 3 : Volume/Directory/F Selection
      - ▶ FLR Journey Maps
      - ▶ FLR UX
    - ▶ Playbacks to TSM

## Epic 1 : Susan signs into FLR

Added by **KALLISH, ADAM R.**, last edited by **KALLISH, ADAM R.** on Sep 09, 2014 (view change)

Show Talk

Stop Watching

Edit

Add ▾

Tools ▾

“Susan, Janice, and Bob should be able to login and get confirmation that they are who they are and can successfully connect to a VM host”

- put Susan, Janice, and Bob in the same context
- no model for multiple VMs

• The system analyzes Susan when she loads login page

- if it is shorter than 8 hours, Susan is in the same context as the previous login (back end session)
- if it is longer than 8 hours, it is considered a new session (no context)

• Fields

- host name
- when I log into a remote system, a user would put in domain name/user (windows), user name (Linux)
- password

• Susan is sitting on her own VM and is doing restore

- the host and the VM name has nothing in common
- Susan does not know her VM name. After the host name, the system interrogates the host name and connects it to Susan

• On the backend we need to map host to VM on vCenter

Succeeded

- Step 1 : Go to vCenter and ask if it the host name matches something on the VM on the vCenter (yes/no)
- Step 2 : If yes, verify the credentials by signing onto the VM

---

# Transitioning to Build

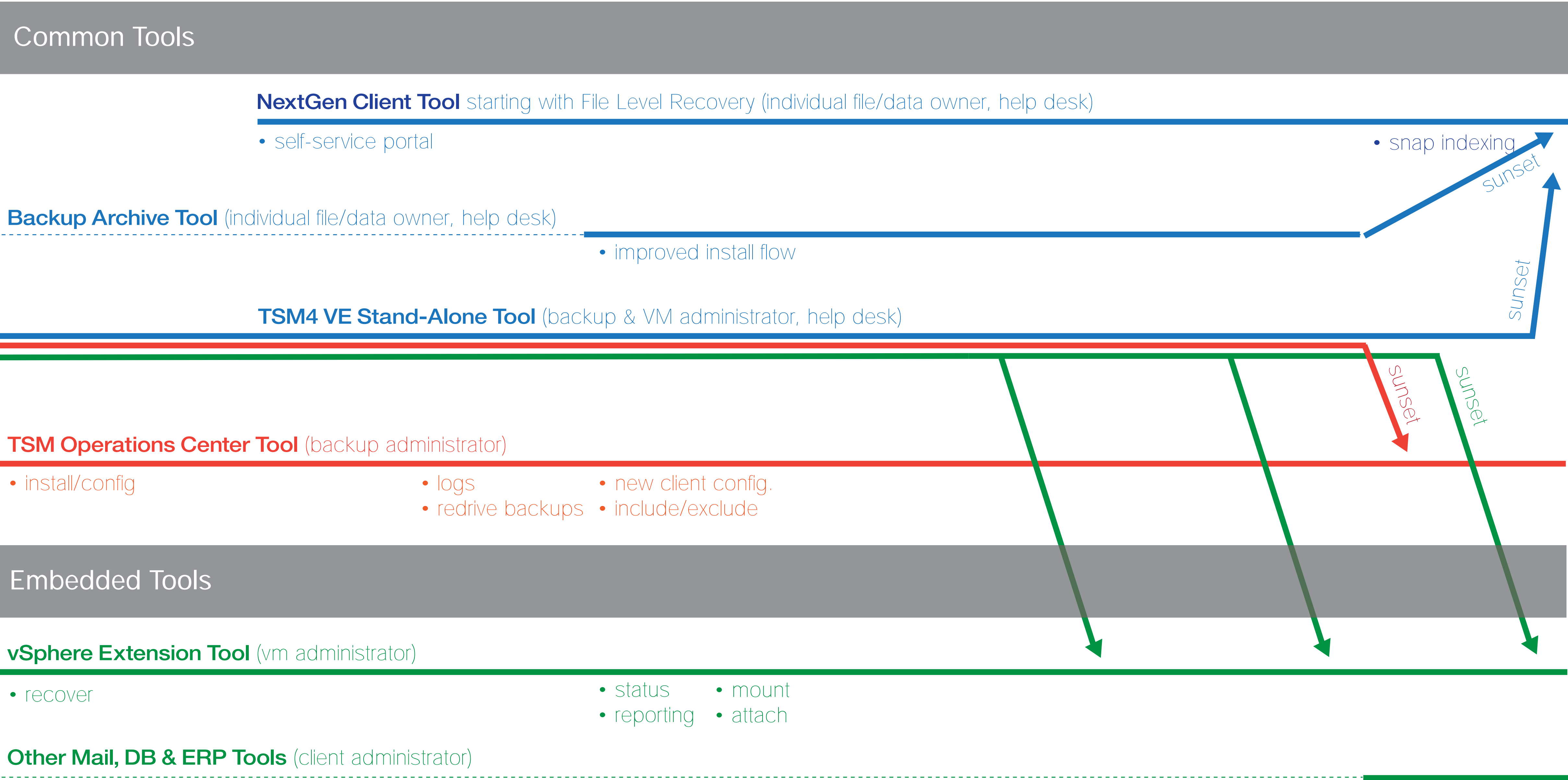
The team has been preparing for build by activating RTC, writing epics and will be creating UX specifications in the blueprint. Sprints start in late September.

We will continue to engage with the client customer council, and an EAP focused on File Level Recovery in providing feedback on File Level Recovery build progress.



# We identified coordinating legacy tools – over time

Blue = individual file/data owner + help desk  
Green = Client Administrators  
Red = TSM Administrator



# Thank You

**IBM Design**

