



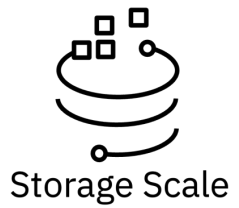
Consistent safeguarded copies with IBM Storage Protect on IBM Storage Scale

IBM Storage Scale Days 2024

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Nils Haustein | IBM Client Engineering Storage EMEA

Disclaimer



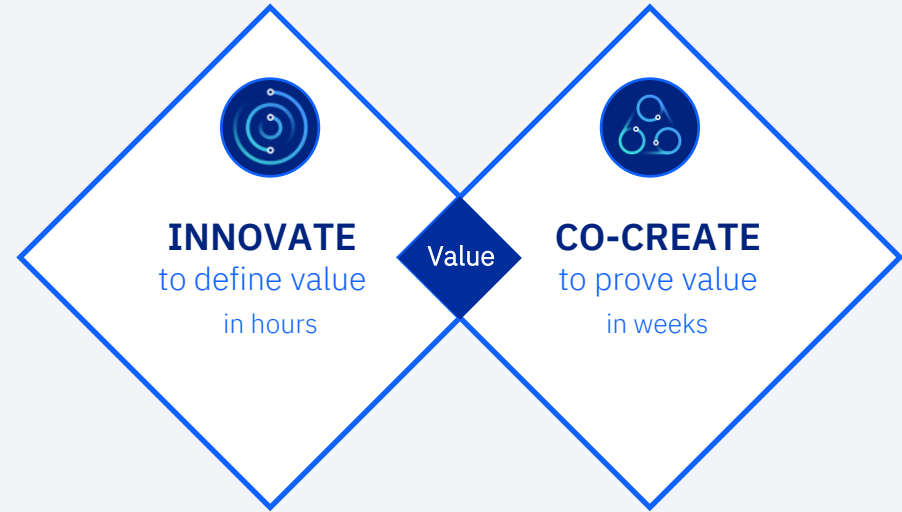
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Background: IBM Storage Protect on IBM Storage Scale

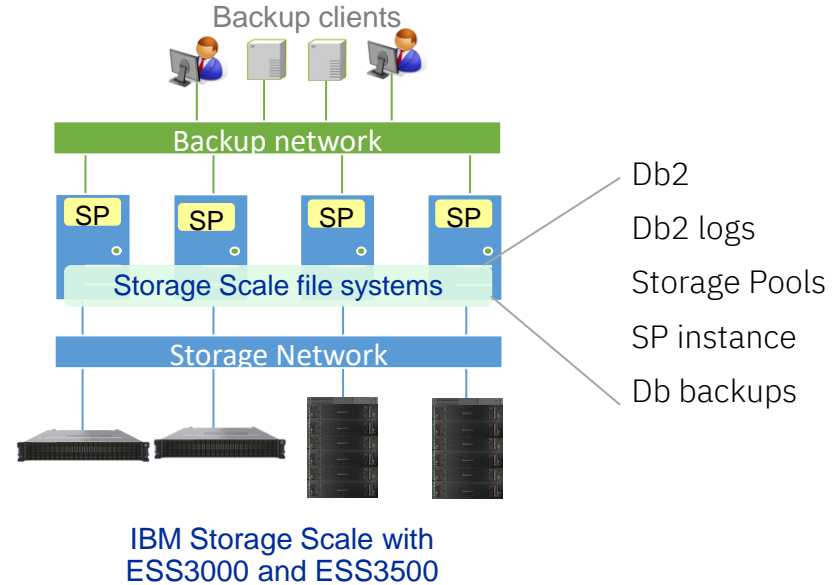
Backup infrastructure with IBM Storage Protect on IBM Storage Scale

- Storage Protect is the backup server managing the backup data and metadata
- Backup data and metadata is stored in Storage Scale file systems

There are typically multiple file systems used by Storage Protect for data and metadata

There are typically multiple Storage Protect server instances that store data and metadata in a common set of file systems

- Each SP server instance uses a different directory (fileset)



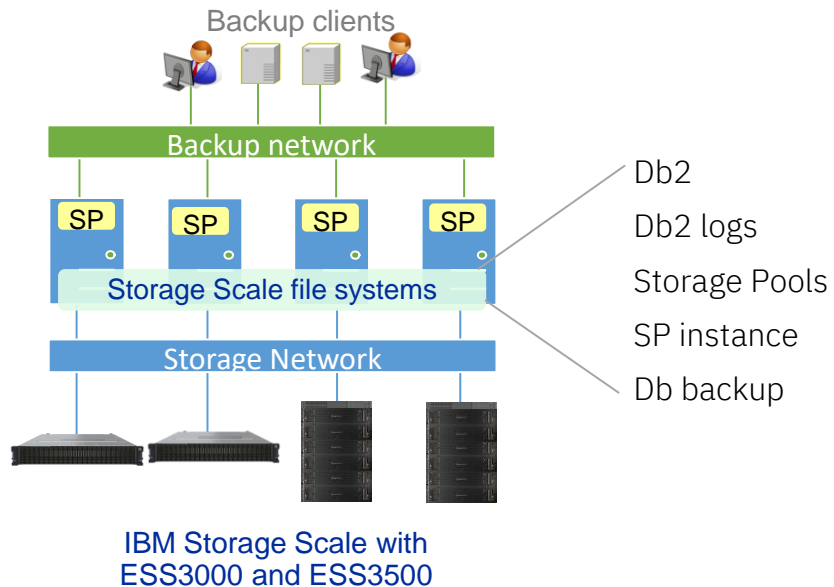
Customer requirements for cyber resilient backup infrastructure

Customer requires Cyber Resilience solution for backup infrastructure:

- Check for anomalies in Storage Protect data
- Instant restore of Storage Protect instance if anomaly was detected from SP application consistent snapshots

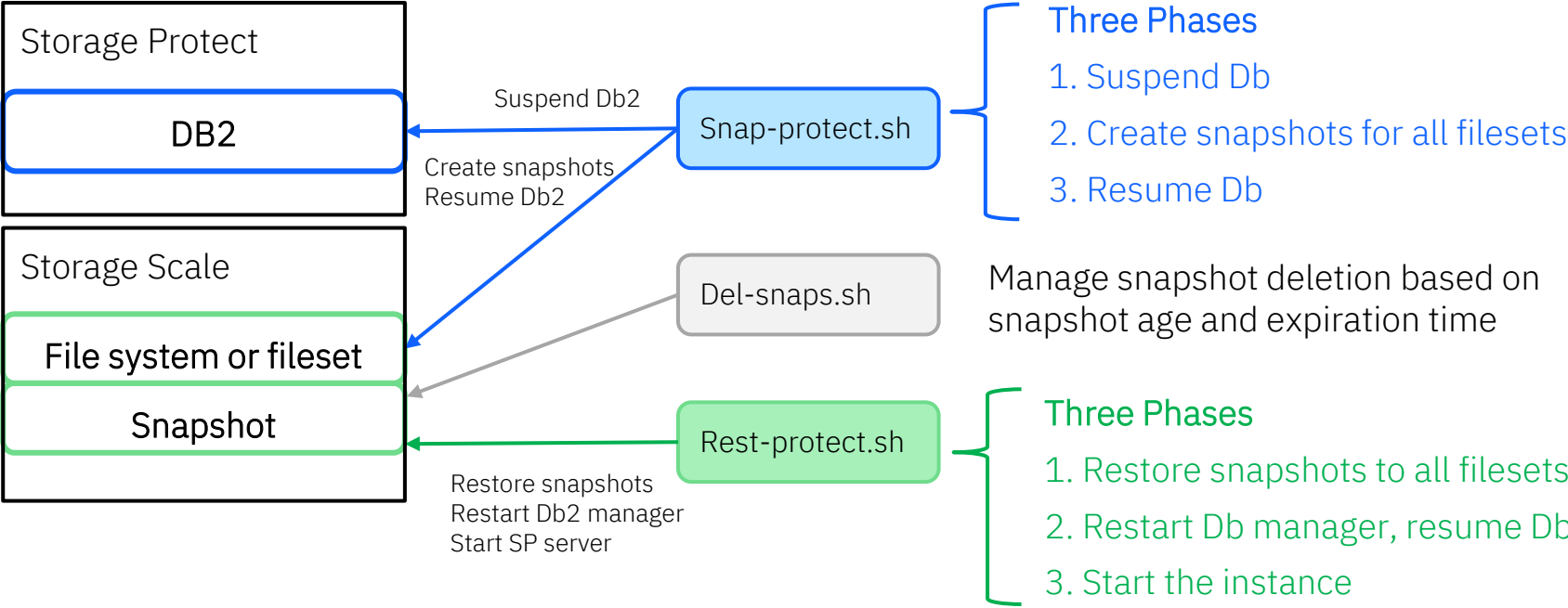
Technically this involves:

- Periodically create Storage Protect application consistent immutable snapshots
- Monitoring to detect anomalies
- Recover Storage Protect instance from snapshot



IBM Client Engineering created an MVP to address the creation and restoration of consistent immutable snapshots with Storage Protect on Storage Scale.

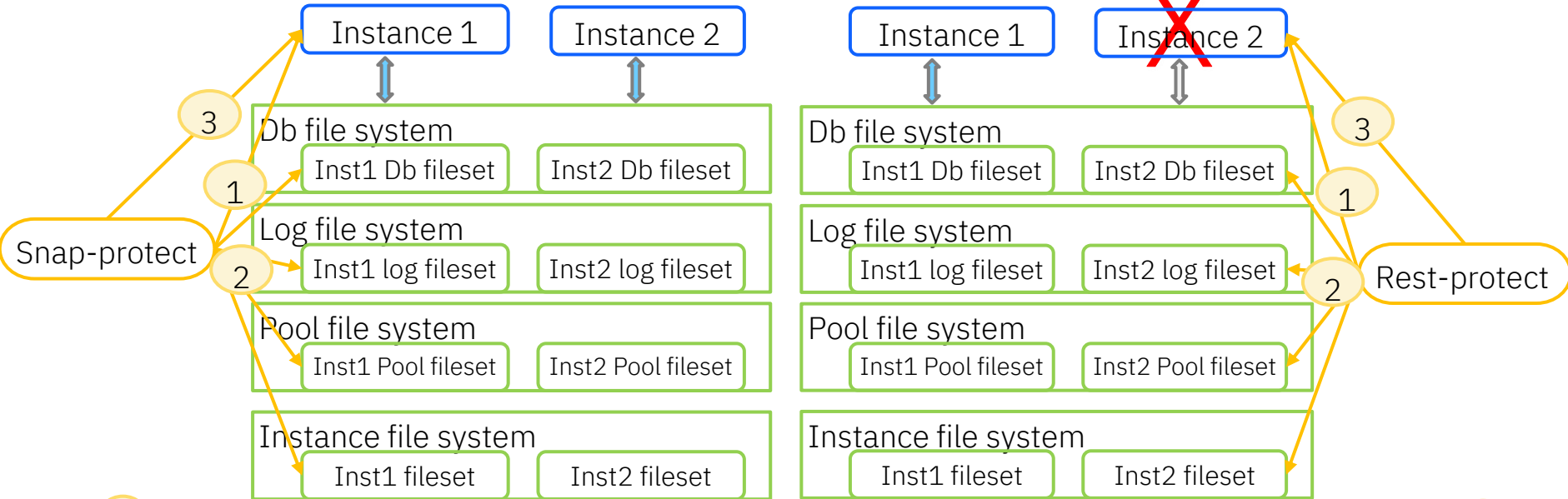
MVP components and workflows



MVP workflows on Storage Protect instance level

Protection

Recovery



- 1 Check instance is up and suspend Db
- 2 Create snaps for filesets
- 3 Resume Db

- 1 Verify instance is down
- 2 Restore all snaps for fileset
- 3 Restart Db and instance

MVP test results - summary

Internal tests over 8 month with 2 instances and customer PoC for 4 month with 7 instances

All tests with different workloads during consistent snapshot creation were successful

- No failures of backup client workloads during the tests
- No failures after instant restore of the database

Restores are **more than 8 times** faster than traditional Storage Protect methods

Backups are **more than 8 times** faster than traditional Storage Protect methods

Feedback from customer: ***“We need this, yesterday!”***

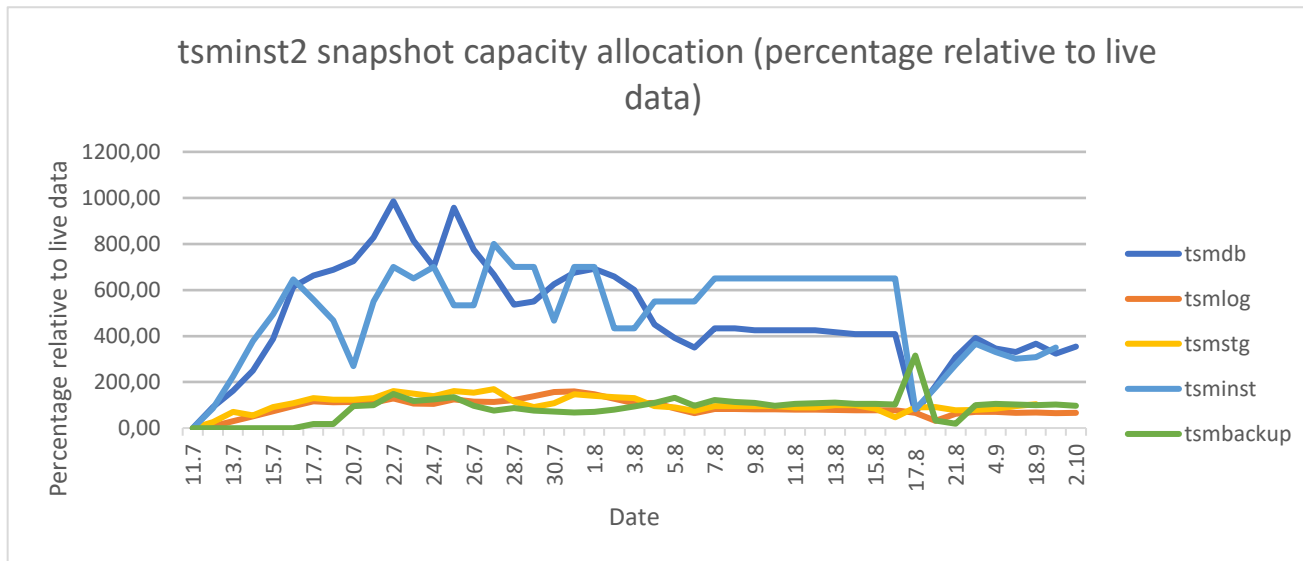
Note: Snapshots increase the storage capacity requirements by more than 100% on top of the live data!

Observation: Snapshot space allocation

Snapshots are space efficient initially, and allocate storage capacity for changed and deleted blocks

- Storage Protect uses a database which frequently updates and deleted data

→ Capacity allocation of snapshots can become over 100% of the live data



Disclaimer

The solution presented in this session was developed as minimum viable product (MVP) for a customer.

As of today, this solution is not officially supported. It is planned to be integrated in IBM Storage Protect.

We are working with product management, development and customers to get more proof points for this solution. Our goal is to get this solution supported and integrated into IBM Storage portfolio.

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Name of Speaker

Mail: nils_haustein@de.ibm.com

Mobil: +49-170-4569139

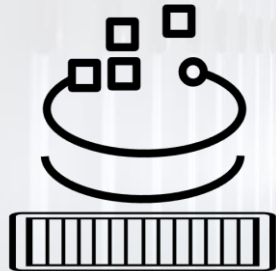
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