



# **Innovative software solutions for data archiving & metadata management**

# CURRENT PRODUCT PORTFOLIO

## Data Archiving

### XtreemStore

- Scalable object storage software with S3 interface
- Lowest TCO through tape integration
- 0,5 PB–1000 PB+ as target market
- iRods certification

## WORM\* Archiving

### FileLock (Win)

- Audit-proof archiving on standard disk systems (KPMG certificate)
- 0,1 – 100 TB+ as target market
- Dell Technologies WORM-Appliance available

## Metadata Management

### Metadata-Hub

- Find and unlock the true value of unstructured data
- Search, analyse, classify and aggregate data via metadata = first step towards KI

## Protection against Ransomware

### Blocky4Backup (Win)

- Highest protection against ransomware thru WORM & fingerprinting technology
- Blocky for Veeam® and other applications
- Whitelisting, Centralised Mangemt. & Instant Copy

\*Write Once, Read Many



# XtremStore

**Scalable Object Store Software for  
Archive Medium Tape**



# EFFICIENT ARCHIVING OF INACTIVE DATA TO TAPE

- Significant growth of unstructured data
- Approx. 80% of data is not active („cold data“)
- Inactive data consume expensive storage with negative impacts on performance, backup/recovery and power consumption.
- Tape offers lowest total cost of ownership (TCO)

**20%**  
active data

**80%**  
inactive data

**XtreemStore**

**SOLUTION: XTREEMSTORE SOFTWARE WITH S3 INTERFACE TO TAPE**

# KEY FEATURES – 1

---

## ■ Easy to deploy

Standard AWS API (S3) implemented

## ■ Hardware independent

Server, Disk, LTO drives and tape libraries from any vendor

## ■ Open Standard – no proprietary format

TAR-Format on LTFS (tape)

## ■ Container technology

- Significant reduction of objects to be managed

## ■ High availability

- Multiple copies
- Multiple servers incl. automatic failover
- Object, container or tape based replication to other XtreamStore systems.

## ■ User defined cache size for individual workflows

## ■ Large file spanning

# KEY FEATURES – 2

---

## ■ Scalability

- NoSQL databases are designed to process billion of objects at high speed
- Software architecture allows adding multiple servers for HA and increased throughput.

## ■ Control & Monitoring

- REST-API as interface for 3rd party applications
- Monitoring tool built in (ZABBIX)
- WebUI & CLI

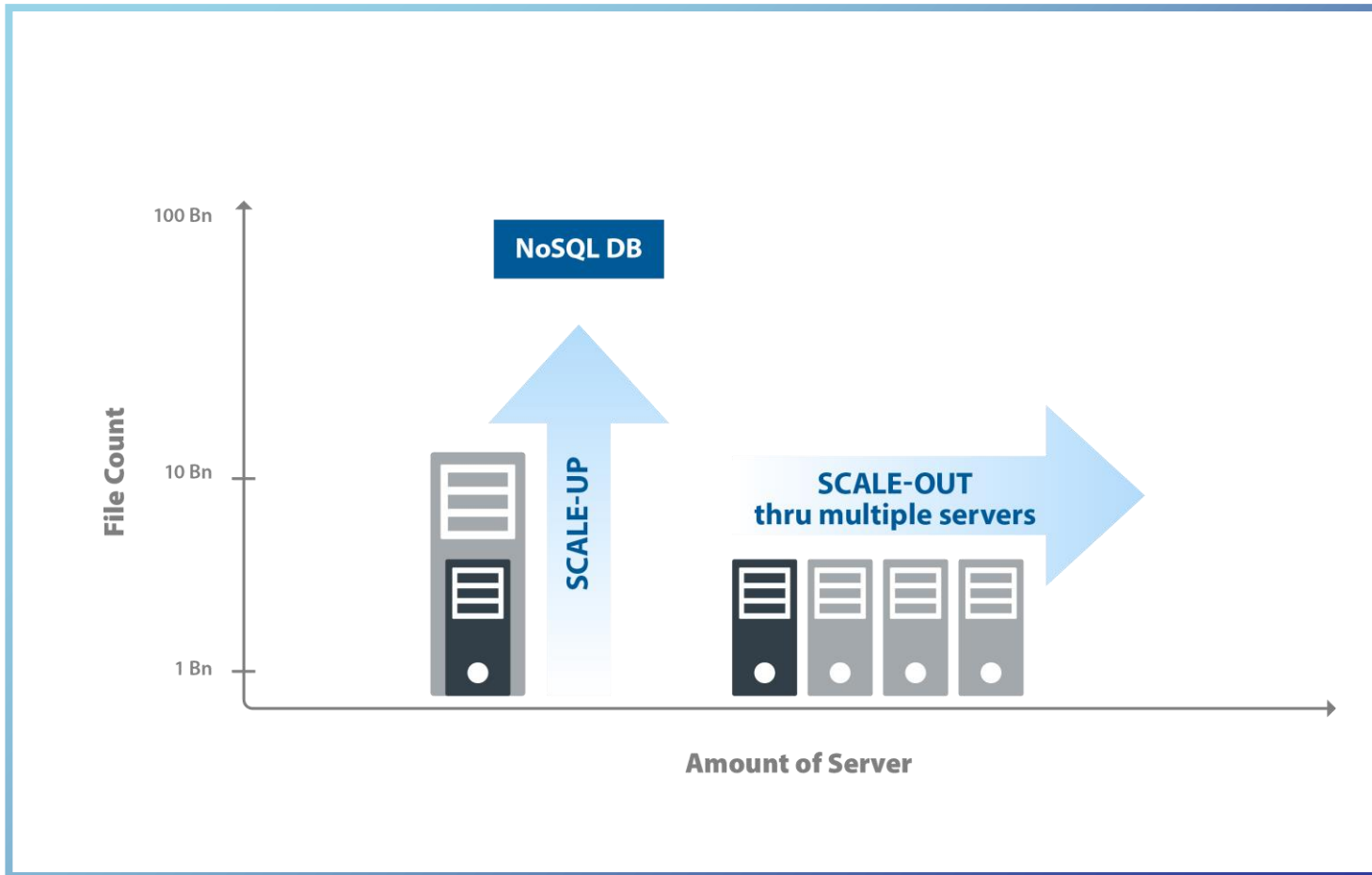
## ■ User / Application – Metadata Management

- Metadata defined grouping (collocation)
- Metadata driven housekeeping
- Queries on Metadata

## ■ Unbeatable cost

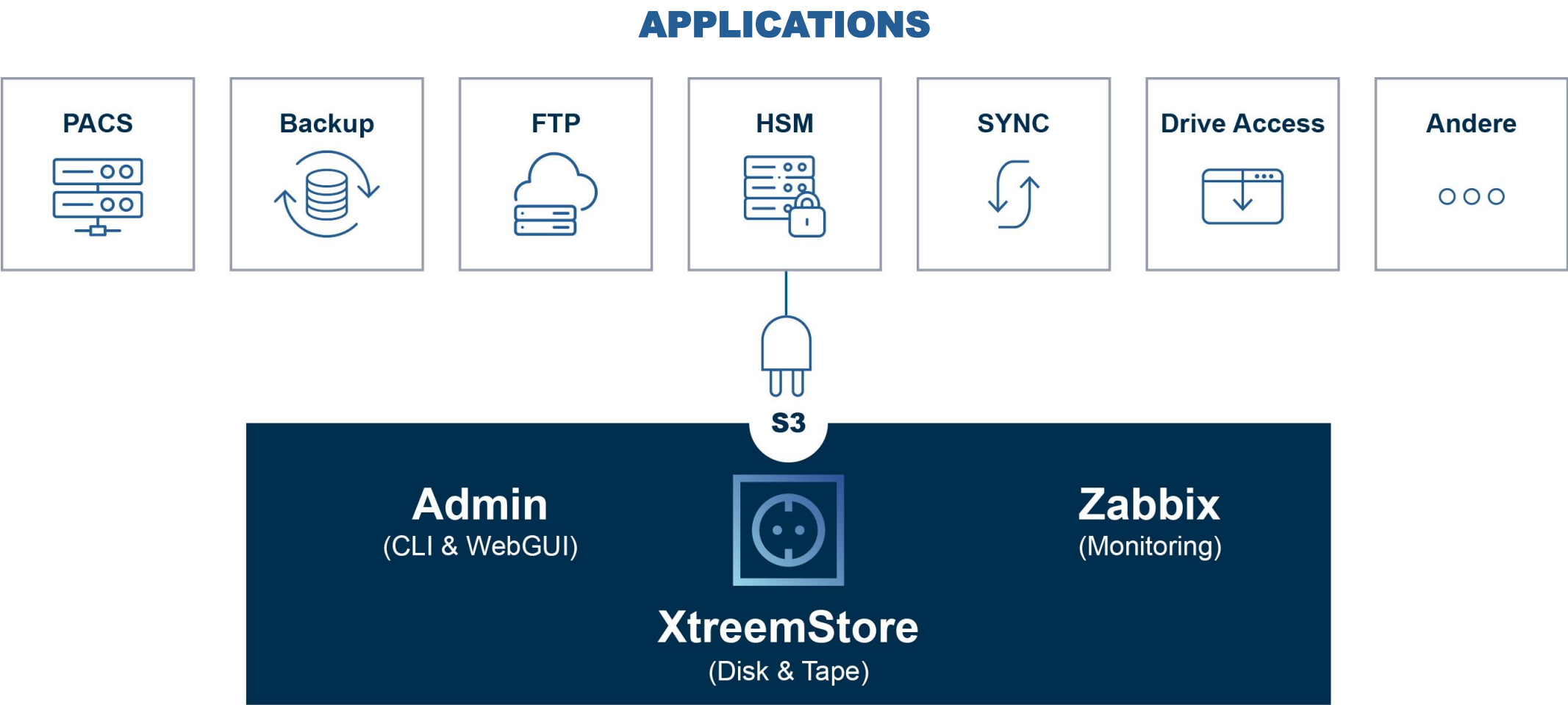
Due to lowest TCO of tape, best cost/capacity ratio on the market.

# XTREEMSTORE ARCHITECTURE



- The software architecture combines vertical & horizontal scalability
- Efficient handling of billions of objects
- Petabyte / Exabyte of data on tape media

# S3 AS STANDARD INTERFACE

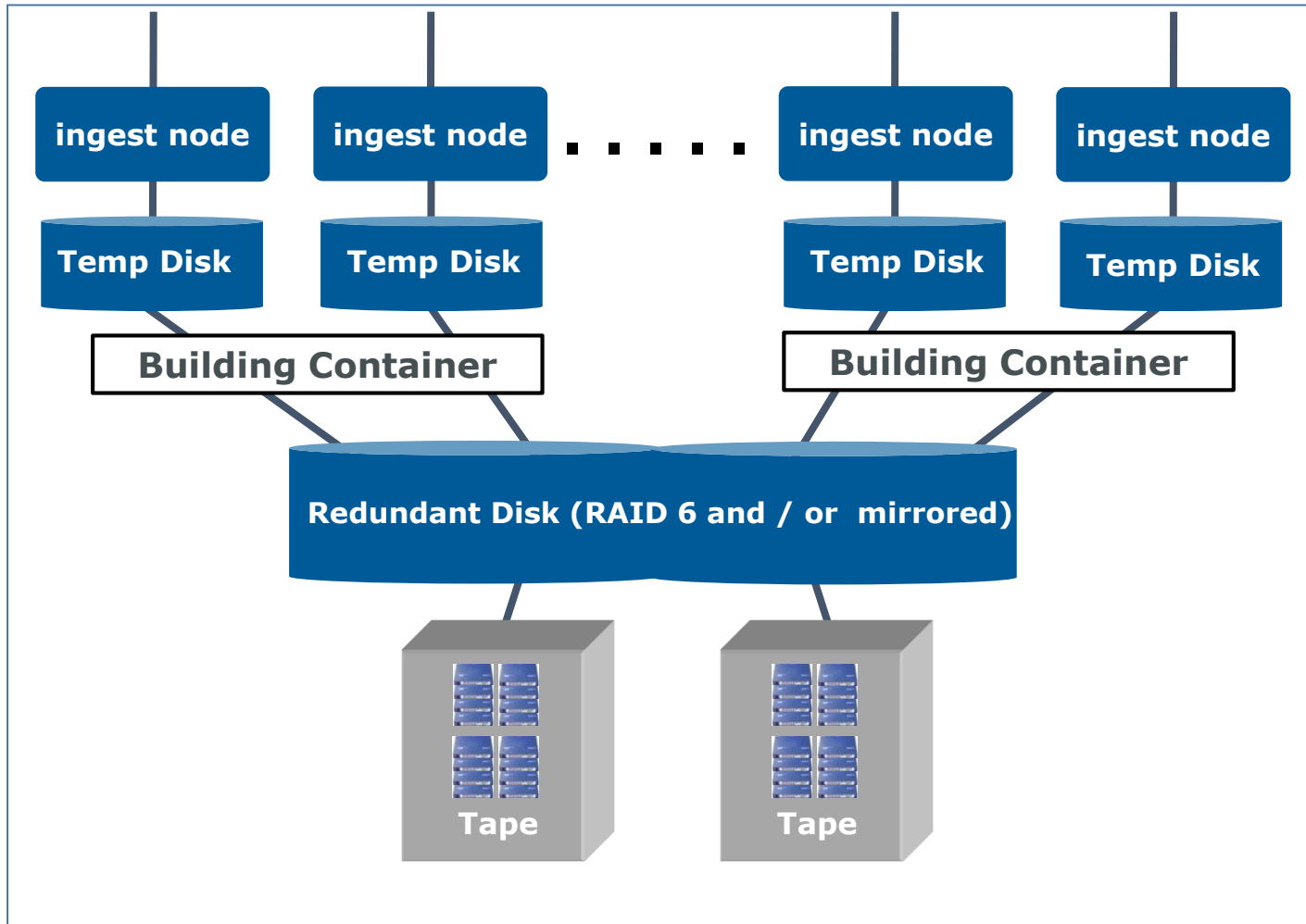




# CURRENT STATUS: S3 IMPLEMENTATION

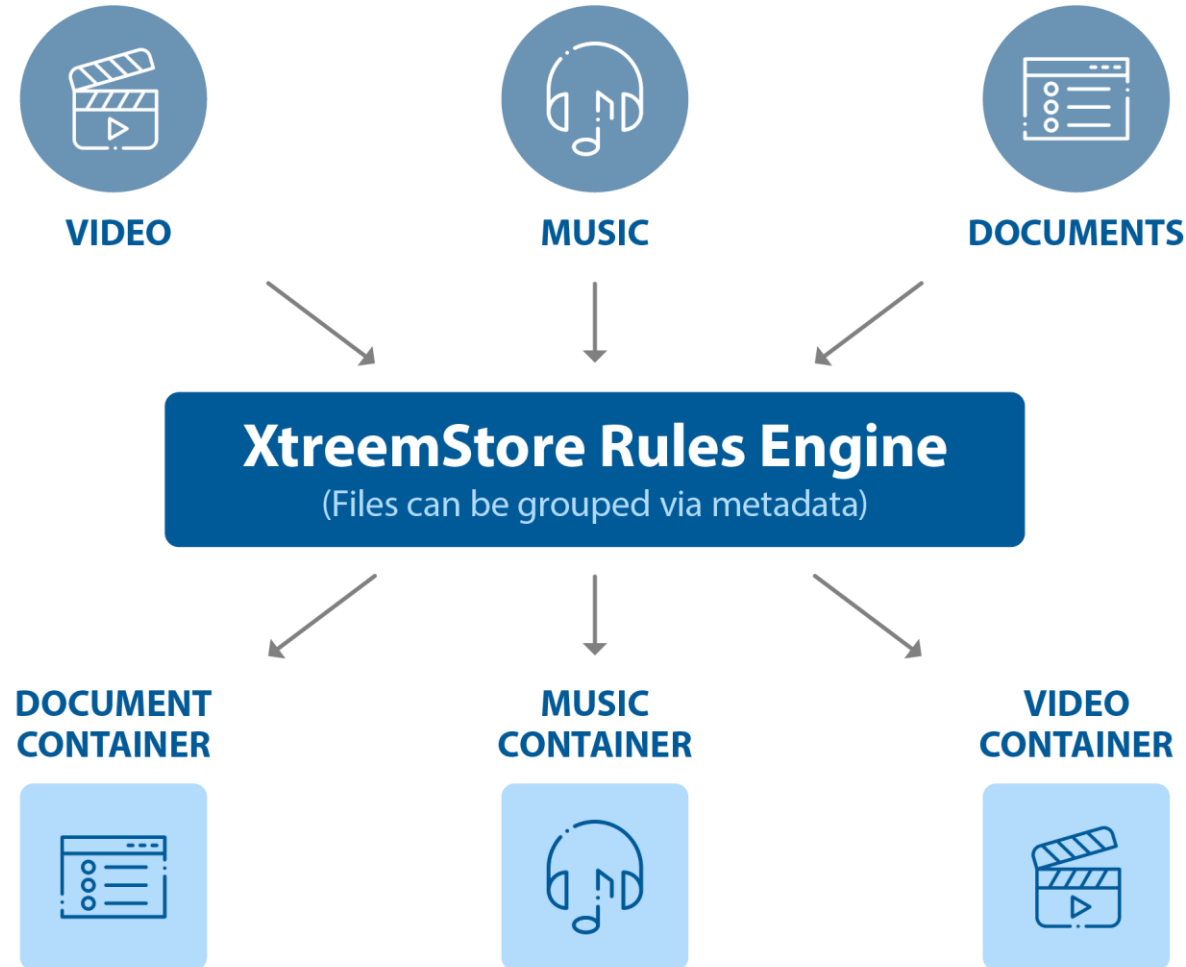
	S3 FUNCTIONS IMPLEMENTED IN XTREEMSTORE
Create users	YES
Authentication (v2, v4)	YES
Create buckets	YES
List buckets	YES
Bucket info	YES
Upload objects	YES
Copy objects	YES
Object info, download (including range)	YES
List, browse objects	YES
Delete, multi delete objects	YES
Bucket and object ACL	Static response
Multipart upload	YES

# CONTAINERIZATION

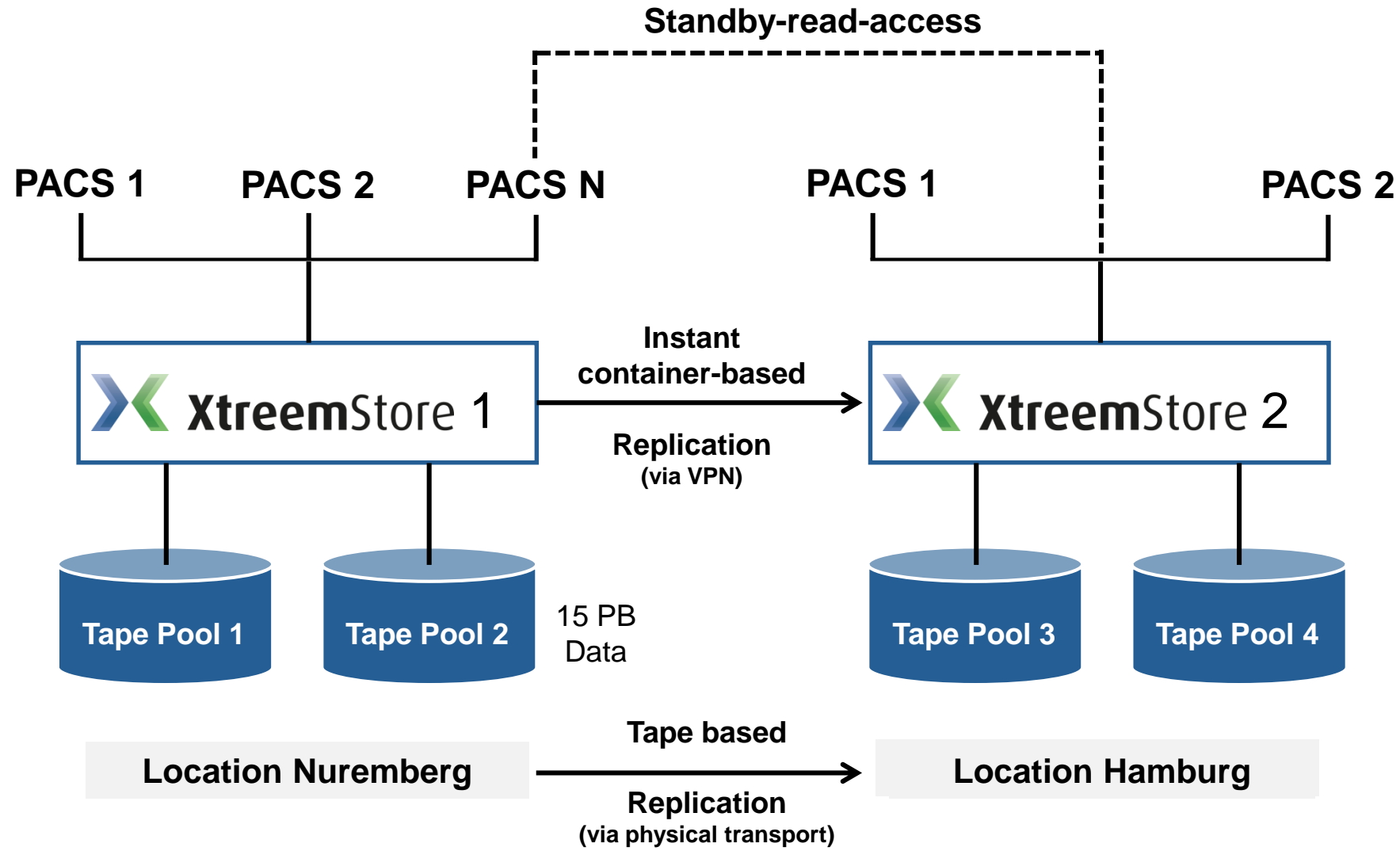


- Containerization to speed up object handling of small objects & keep tape media in streaming mode
- Optimized handling of corresponding data (collocation)

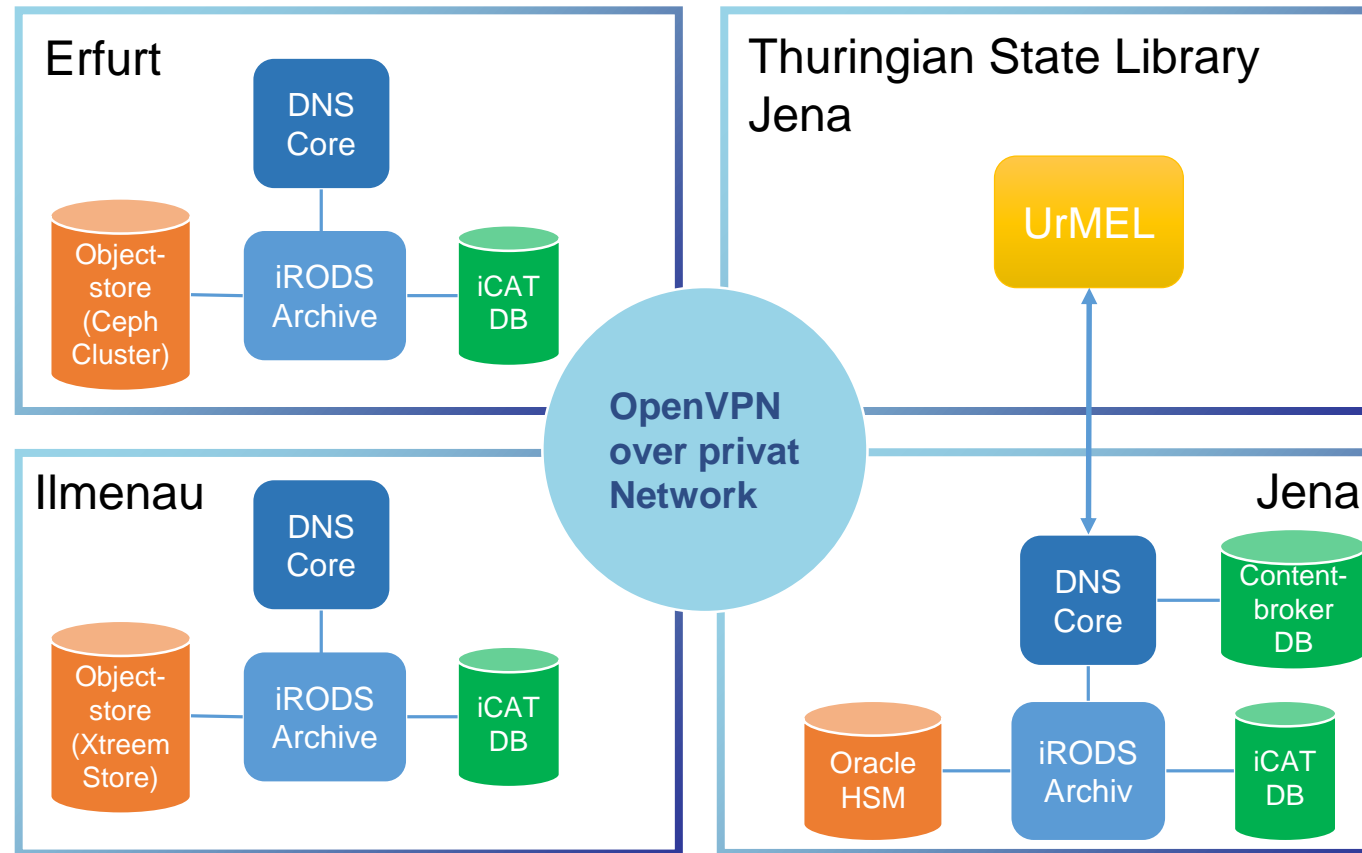
# DATA MANAGEMENT VIA METADATA (COLLOCATION)



# USE CASE: ARCHIVING OF MEDICAL DATA



# ARCHIVE LAYER - EXAMPLE



**UrMEL:** Universal Multimedia Electronic Library, based on MyCoRe  
**DNS Core:** DA-NRW Software Suite  
**iRODS:** integrated Rule-Oriented Data System



# iRODS® CERTIFICATION WITH XTREEMSTORE



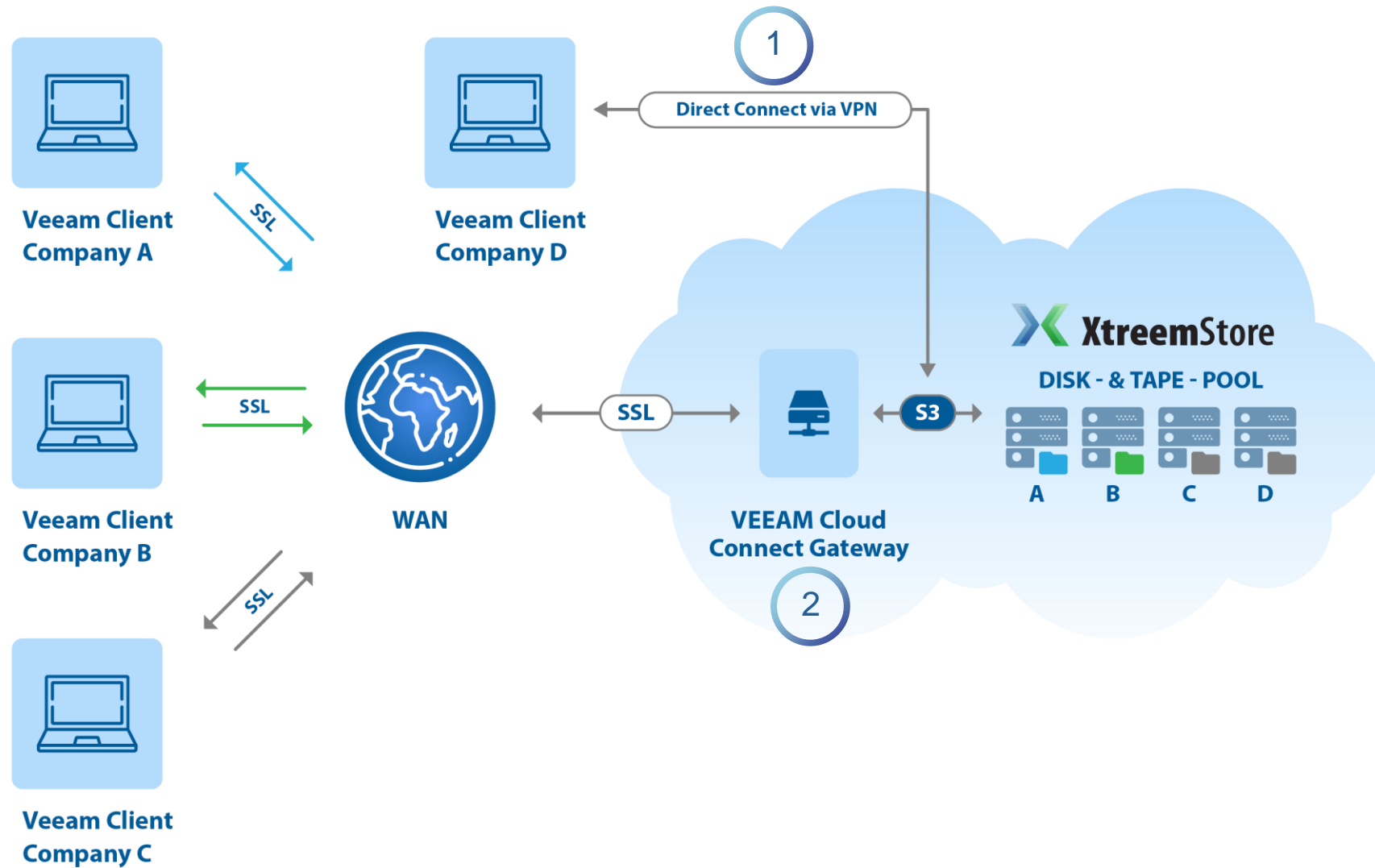
## CERTIFICATION REPORT

### ABSTRACT

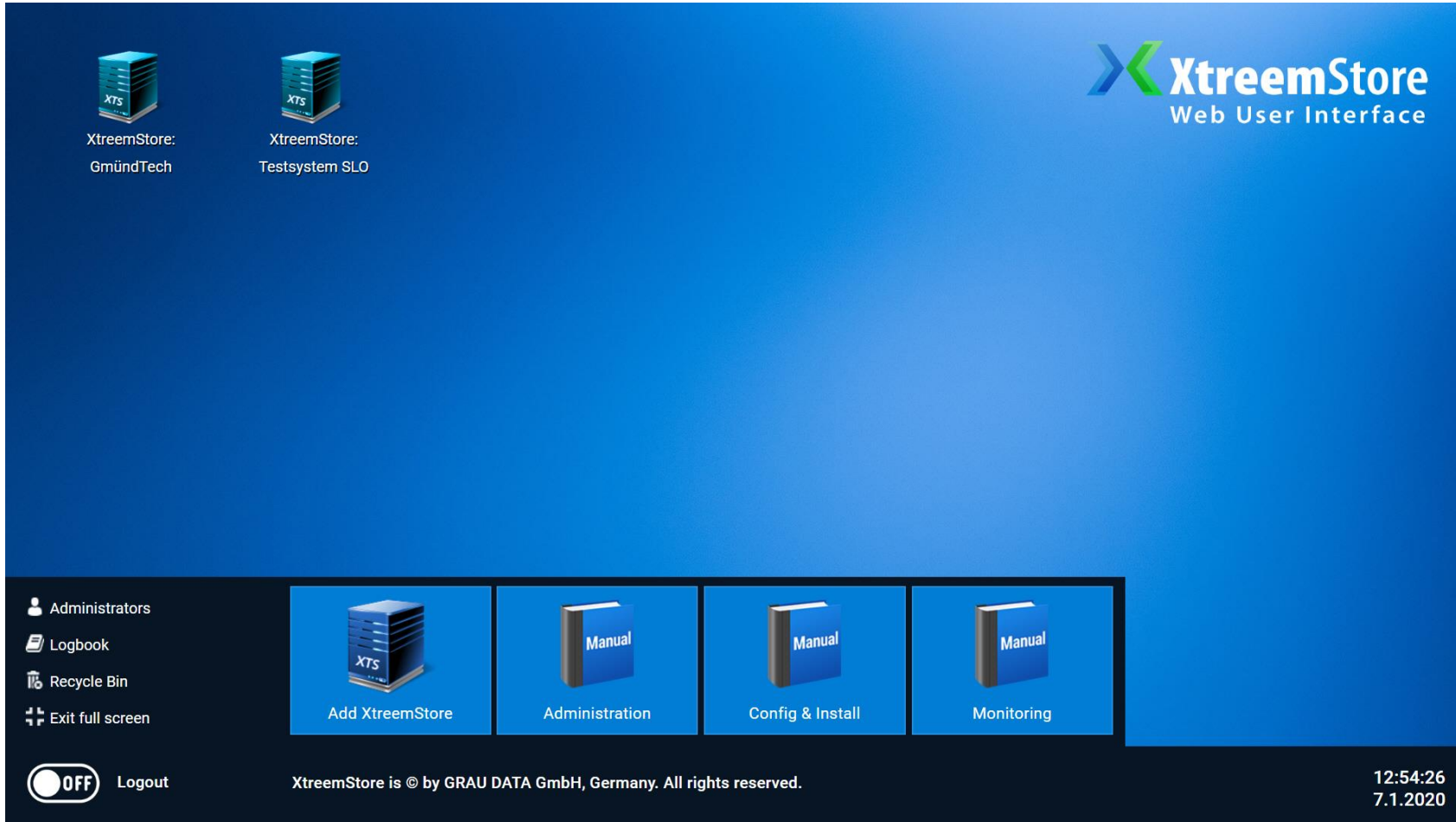
- What was tested: iRODS (integrated Rule-Oriented Data System) was tested together with the XtremStore (S3 to tape object store).
- Who made the tests: The company contac Datentechnik made the tests, with the support from GRAU DATA GmbH.  
Thanks to contac Datentechnik for their expertise and cooperation.



# VEEAM BACKUP FOR MSP'S



# XTREEMSTORE WEBUI – 1



The screenshot displays the XtreamStore Web User Interface. The main area features two server icons labeled "XtreamStore: GmündTech" and "XtreamStore: Testsystem SLO". The top right corner shows the "XtreamStore Web User Interface" logo. The bottom section contains a sidebar menu with options: Administrators, Logbook, Recycle Bin, and Exit full screen. The main navigation bar includes icons for "Add XtreamStore", "Administration", "Config & Install", and "Monitoring". The bottom status bar shows a toggle switch for "Logout", the copyright notice "XtreamStore is © by GRAU DATA GmbH, Germany. All rights reserved.", and the timestamp "12:54:26 7.1.2020".

XtreamStore: GmündTech

XtreamStore: Testsystem SLO

XtreamStore  
Web User Interface

Administrators

Logbook

Recycle Bin

Exit full screen

Logout

Add XtreamStore

Administration


Config & Install

Monitoring


XtreamStore is © by GRAU DATA GmbH, Germany. All rights reserved.

12:54:26  
7.1.2020


# XTREEMSTORE WEBUI – 2



XtreamStore:  
GmündTech



XtreamStore:  
Testsystem SLO



XtreamStore: GmündTech


JobsSettingsNodesModulesStoragesTenantsTapeMediaUsers

REFRESHSHOW11 items are in the listCLEARSEARCH

	Objectname	Module	Node	Port	Description	Status
<input type="checkbox"/>	---	keystone	keystone	5000/v3/	OpenStack Keystone server	running
<input type="checkbox"/>	---	---	mongo	27017	MongoDB server	running
<input type="checkbox"/>	adminfe	adminfe	standalone	8090	Admin REST Frontend	started
<input type="checkbox"/>	restfe	restfe	standalone	8080	Data REST Frontend	started
<input type="checkbox"/>	rules	rules	standalone	5565	Rules engine module	started

(C) by GRAU DATA GmbH

MENU



14:21:24  
17.12.2019

# Coming product: Metadata-Hub

- Planned integration with iRods





## CONTACT PERSONS AT GRAU DATA:

### **CHRISTIAN WOLF**

Product Management

Christian.Wolf@graudata.com

Phone: +49 7171 187-208

### **HARRY WEIK**

Head of Sales & Marketing

Harry.Weik@graudata.com

Phone: +49 7171 187-240

**www.graudata.com**

 **GRAU DATA**  
YOUR DATA. YOUR CONTROL