Cloud & Storage

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IBM Software

PCTY2010

Pulse Comes to You

Optimising the World's Infrastructure

[**November, UK**]

Agenda - Cloud Options with IBM Storage

1. **Backup Data Protection Service**
   - *IBM Tivoli Storage Manager with a Portal*
2. **Archive Service**
   - *IBM Information Archive Appliance with TSM / SSAM technology*
3. **File Virtualisation**
   - *GPFS / single name space / ILM*
4. **Virtualised Block Storage**
   - *IBM SAN Volume Controller / Thin Provisioning / Heterogeneous*
5. **Scalable NAS Primary File Storage**
   - *IBM SoNAS Appliance with GPFS technology*
6. **Service Based Provisioning**
   - *TSAM / TPM / TUAM with Service Catalogue for user selection*

1 Data Protection

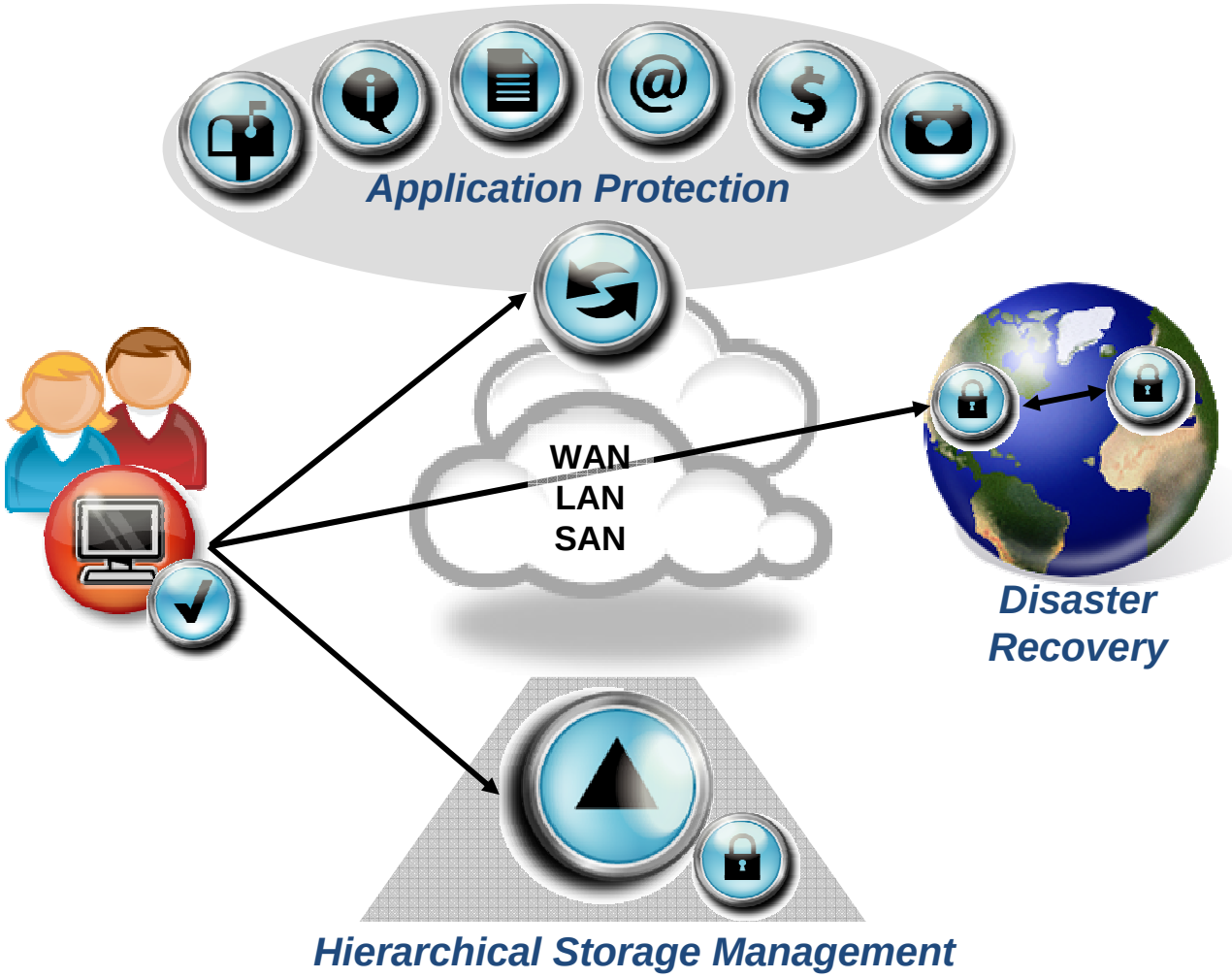
Ensure data availability and business continuity in a cost effective manner.

Goals

- Backup and protect critical applications and files to enable quick and automatic data recovery
- Set data protection policies that align with data availability service levels of the applications
- Include data recovery analysis in a comprehensive disaster recovery plan
- Store backup copies in a hierarchy of lower-cost storage
- Easily manage backup and recovery across disk and tape from a single point of control

IBM solutions

- Tivoli Storage Manager 6 family
- Tivoli Storage Manager FastBack
- Tivoli Continuous Data Protection for Files



2 IBM Information Archive Appliance (IIA)

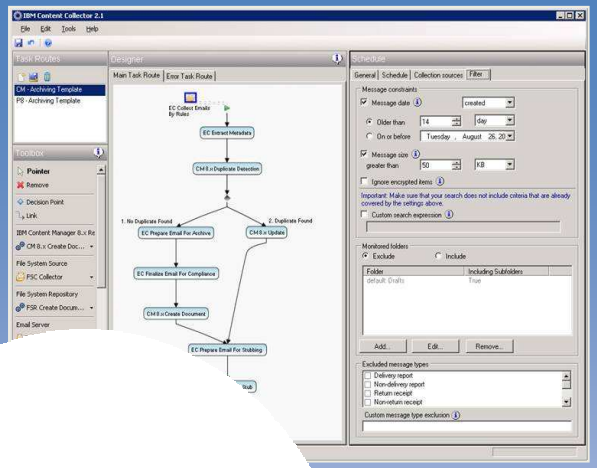
A purpose built, universal, scalable, and secure storage repository for all content with up to **608TB of disk** capacity

- **Purpose built, policy driven** archive storage repository, supports SATA drives (tier-2 storage)
- **Universal storage repository** for retaining all types of content.
- **Optimized storage infrastructure** Built-in de-duplication and compression at the disk level
- **Modular and highly scalable** Supports up to 608 TB of disk
- **Retain with confidence** Patent-pending Enhanced Tamper Protection Technology
- **Built around leadership technology** General Parallel File System (GPFS) and Tivoli Storage Manager (TSM)
- **Leverages Tape** in backend for lower TCO (* For applications for other than e-mail and eDiscovery)
- A flexible repository that supports **compliance and non compliance** archiving

2 IIA Appliance with Superior Archiving Software

IBM Information Archive for Email, Files and eDiscovery includes archiving software for e-mail and file systems content. The archiving software is based on a modular, extensible architecture, and enables organizations to:

- **Reduce storage costs**
- **Improve production system performance**
- **Reduce litigation costs and risks**



More than email

Assess, monitor, identify, and **collect** virtually all content types from all locations including "content in the wild" and existing silo systems

More than archiving

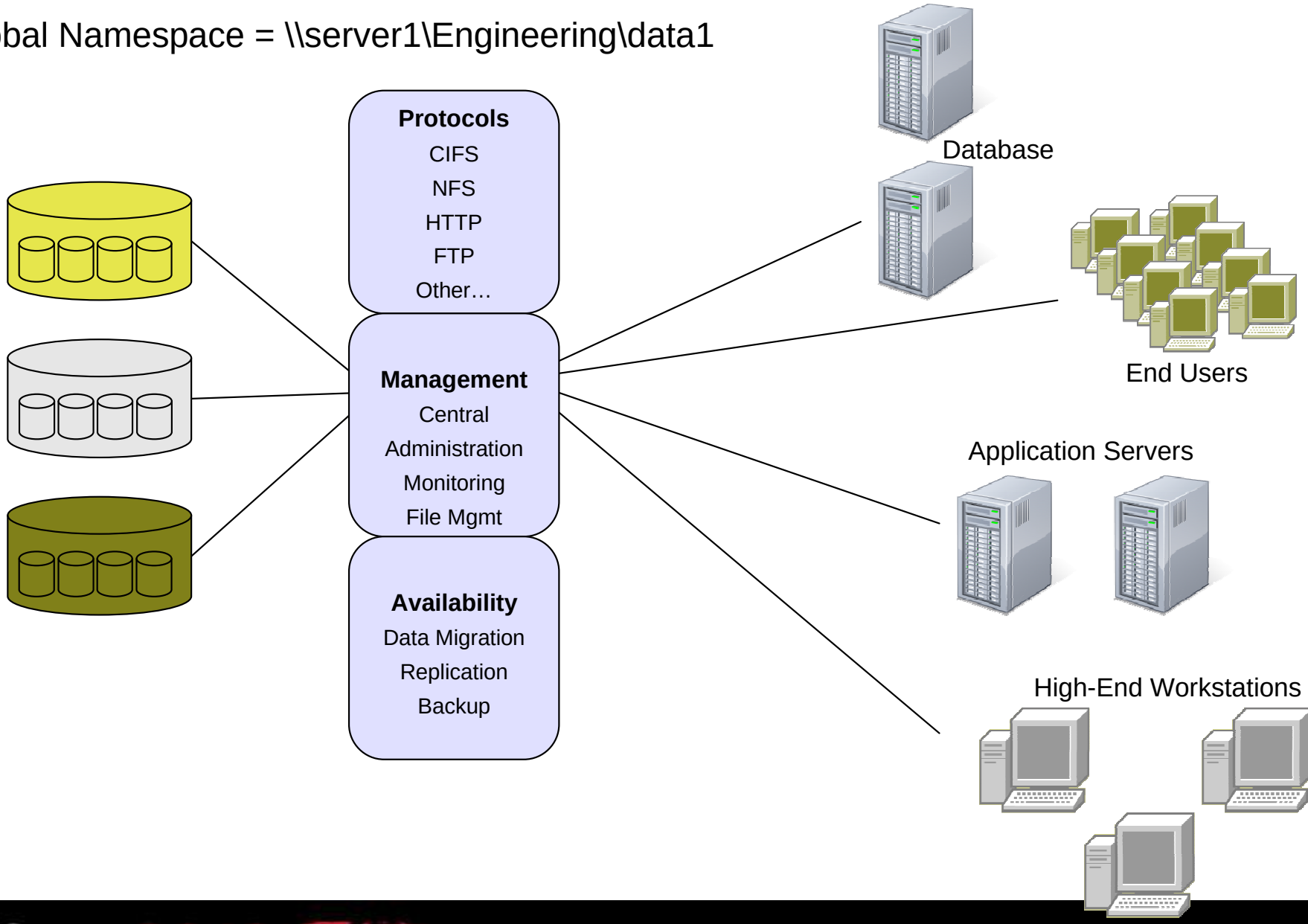
Enhance by tasking, filtering, transforming, extracting meta data, customizing and more, including multiple classification options

More than an isolated solution

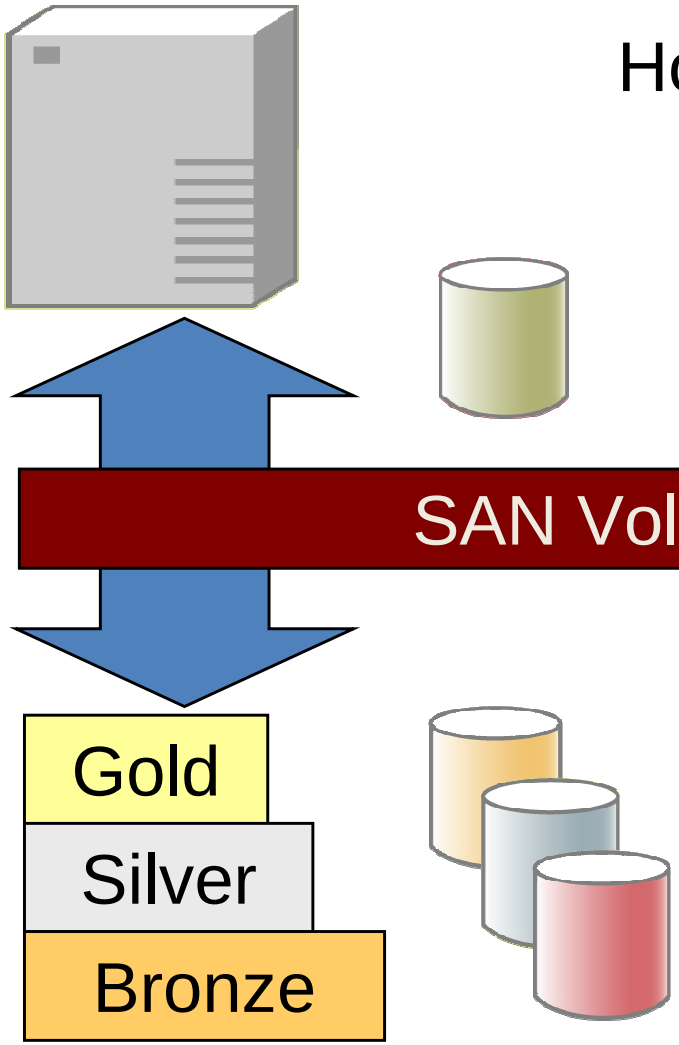
Manage content as part of ECM platform (not a silo) to activate content, establish trust and unlock value

3 Virtualised File System with GPFS

Global Namespace = \\server1\Engineering\data1



4 Virtualised Block Storage with IBM SAN Volume Controller



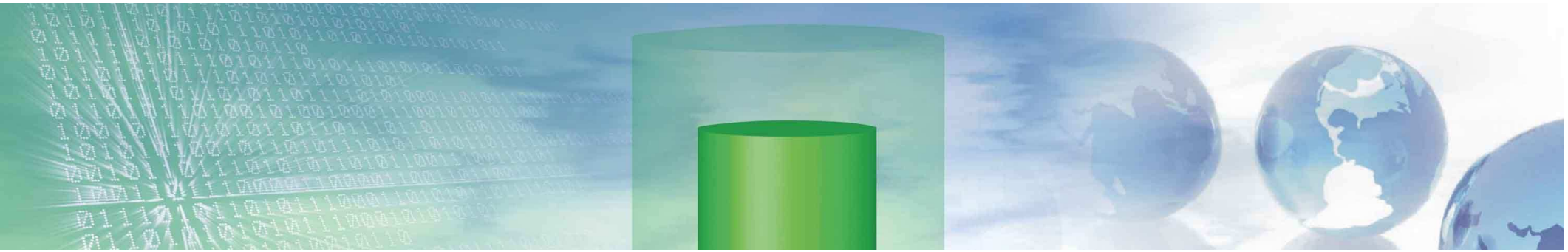
Hosts see thousands of disks

- One device type
- One multipathing driver
- One management interface

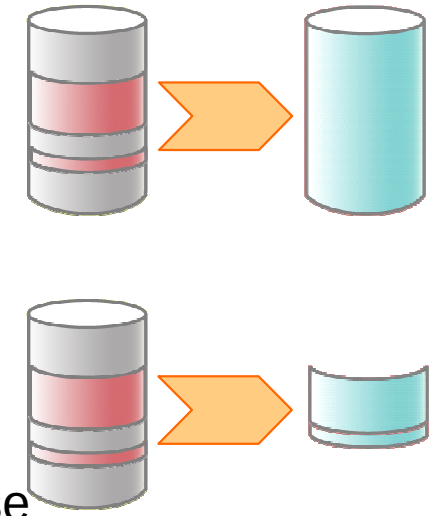
Disks from different vendors

- Different device types
- Different multipathing drivers
- Different management interfaces

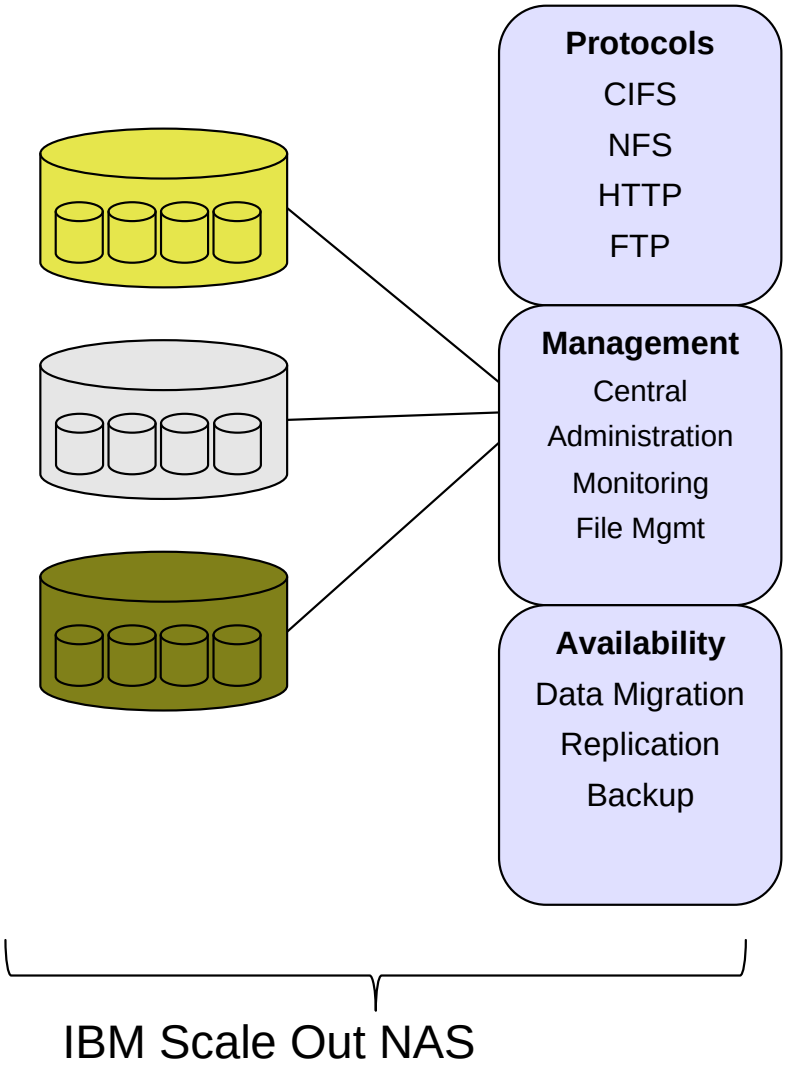
4 SVC Thin Provisioning with Space-Efficient Virtual Disks



- Space-Efficient Virtual Disks function is the SVC implementation of “thin provisioning”
- Traditional (“fully allocated”) virtual disks use physical disk capacity for the entire capacity of a virtual disk even if it is not used
  - Just like traditional disk systems
- With SEV, SVC allocates and uses physical disk capacity *when data is written*
  - Can significantly reduce amount of physical disk capacity needed
- Available at *no additional charge* with SVC base virtualization license



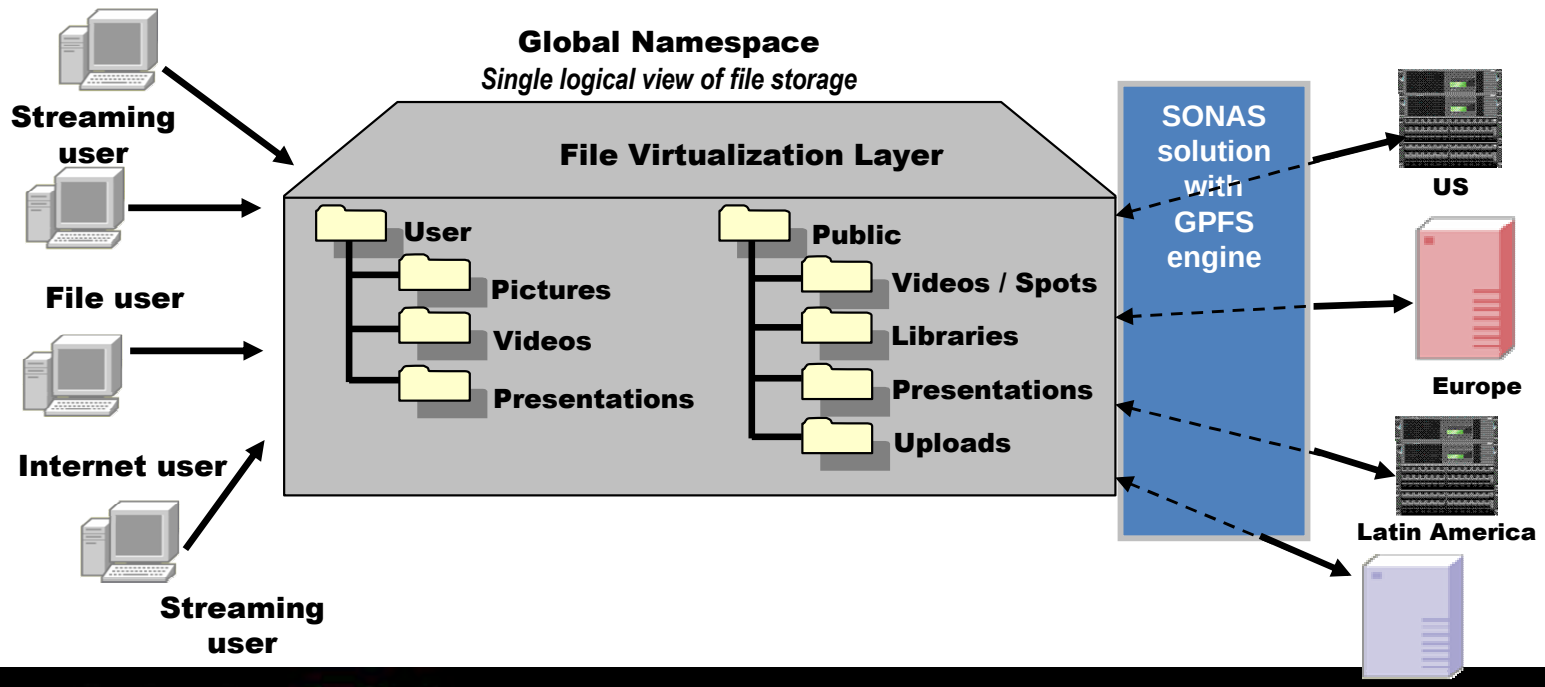
5 Scalable NAS Primary File Storage - SoNAS



- ✓Capacity
  - •3 to 90 nodes
  - •21TB to 7PB
  - •512 Billion files
- ✓Performance
  - • Approximately 1GB/sec/node
  - •All disks serve data
- ✓Management
  - •Centralized management
  - •Storage pooling
- ✓Automation
  - •Policy Based Tiering
- ✓Availability
  - •All nodes see all data
- ✓Return on Investment
  - •Improved hardware utilisation
  - •Fewer administrators per TB

5 Scalable NAS Primary File Storage

- **File Virtualization**
  - SONAS utilizes file level virtualisation which presents the clients files and file directories as one larger file system, allowing clients to access files through the larger file system
- **SONAS Storage Virtualization**
  - The virtualisation features are included in the SONAS offering and does **not** require any additional virtualisation tools to be installed.
  - Enables the storage and servers in the SONAS environment to be under one management platform to reduce outages and storage management labor demands.

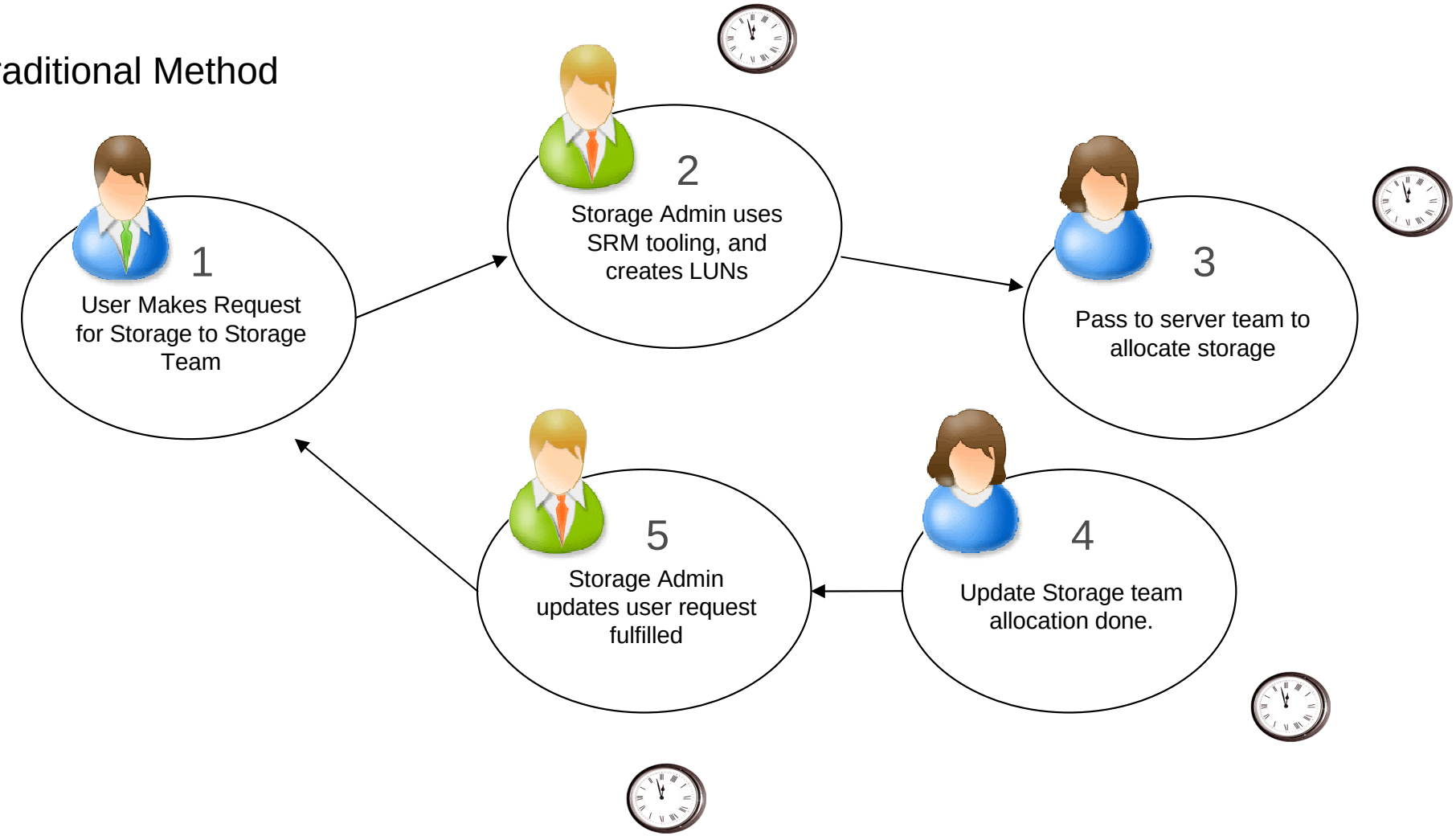


6 Service Based Provisioning

Integrated Service Management & Storage:

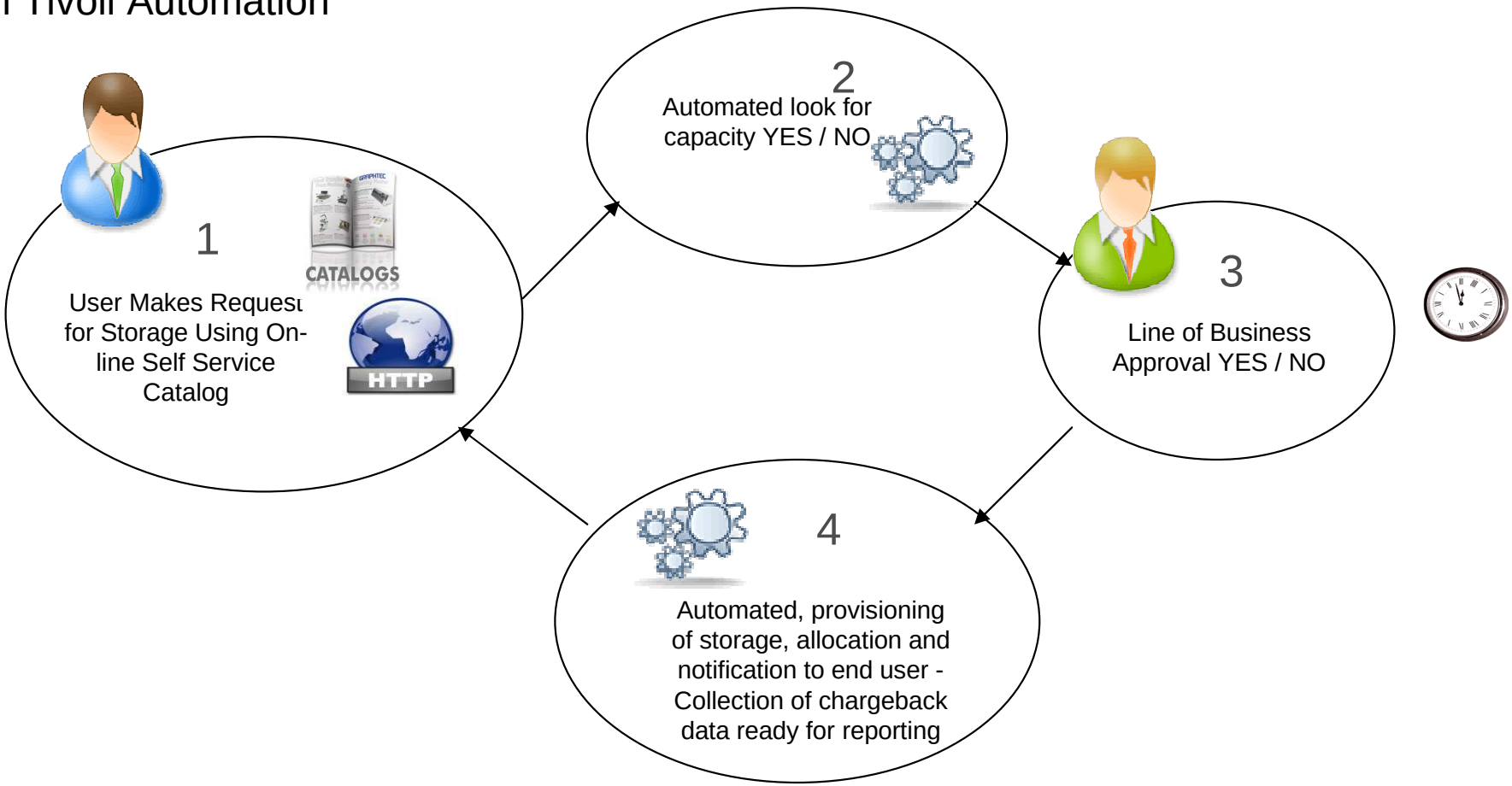
- Show the end user's perspective
- Deliver automated provisioning
- Eliminate IT personnel workload
- Comply with ITIL and Business Processes
- Work with Virtual or Physical environments
- Bring Storage out of the silo into Systems Management

Storage On The Periphery

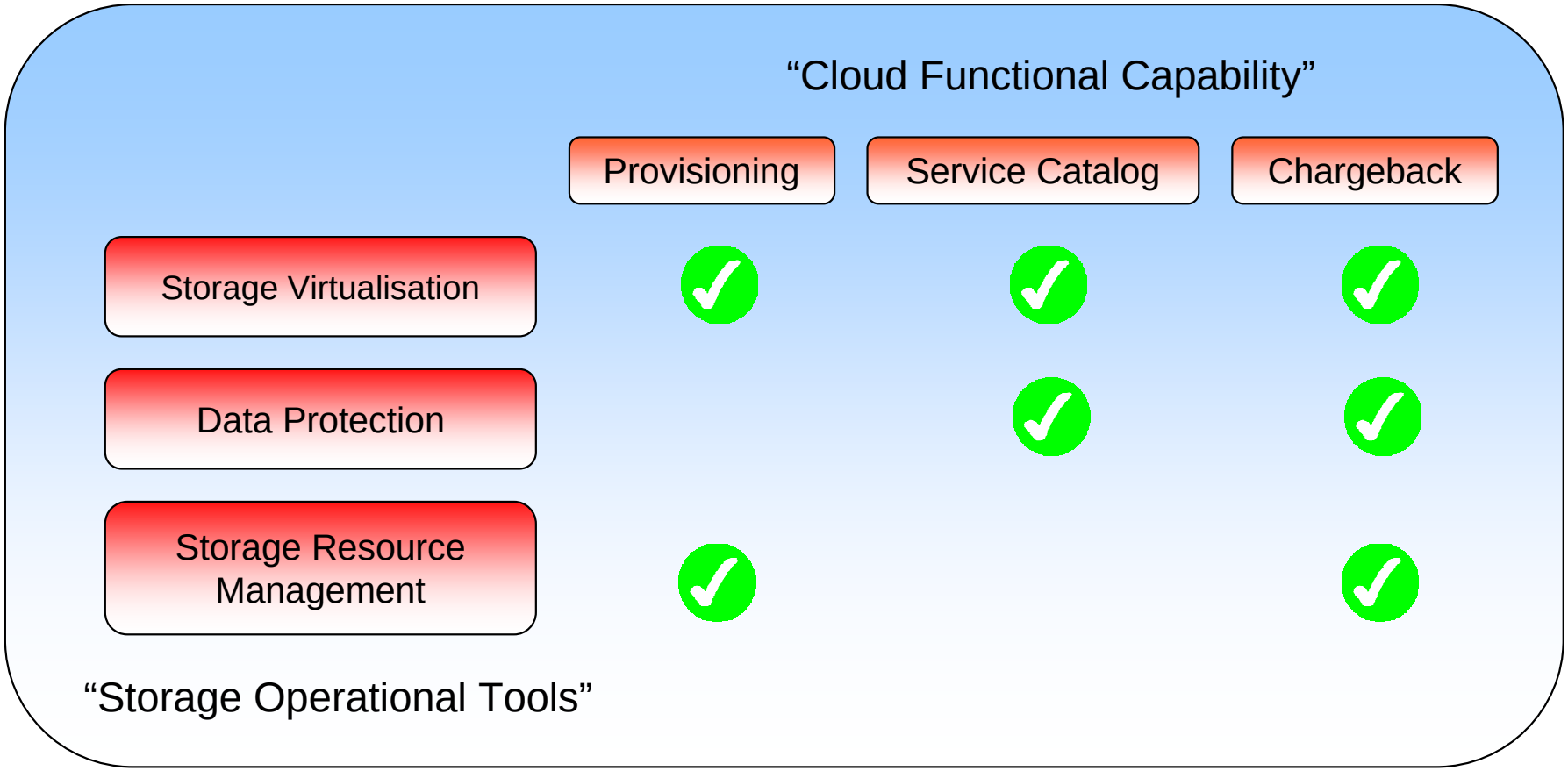


Storage Enabling The Cloud

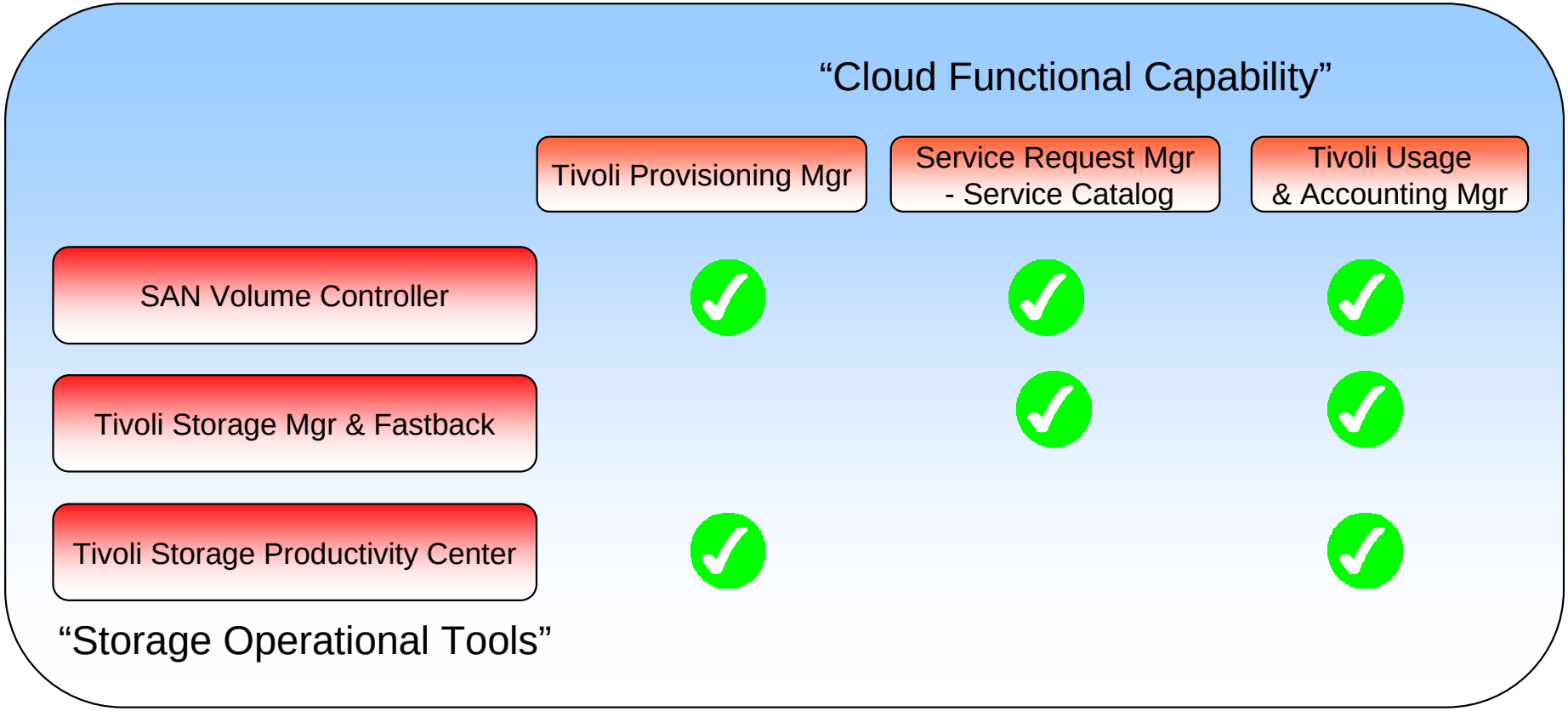
With Tivoli Automation



General Architecture for Service Based Delivery of Storage



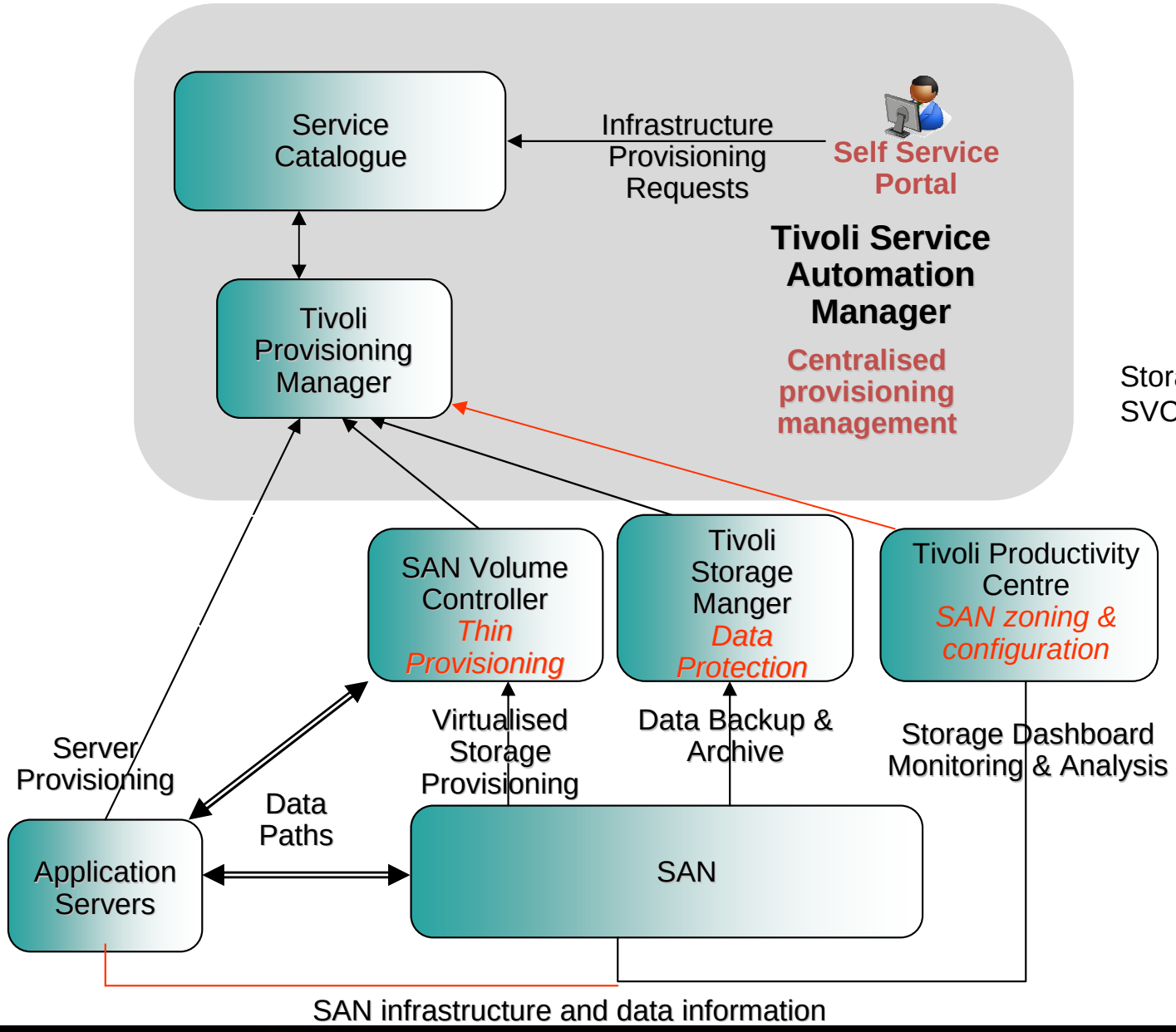
IBM Tivoli Reference Architecture for Service Based Delivery of Storage



Benefits:

- The IBM solutions are ITIL v3 aligned
- Full process integration – based on Tivoli Process Automation Engine
- Can incorporate Change Control Process with automated device discovery (TADDM)
- Server and Storage provisioning in virtual or physical environments

Service Based Provisioning Architecture



Storage is provisioned via SVC or TPC

Thank You!

For more information visit our Ped today, or

Come to the Q & A Session