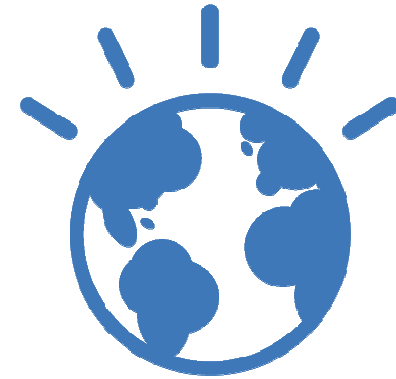**Novosti u storage ponudi –**

IBM Storwize V3700

Haris Kulenović, System x Client Technical Specialist, IBM SEE

Introducing: A New Member of the Storwize Family

New standard for
midrange storage
IBM Storwize V7000

Unified Storage
Active Cloud Engine
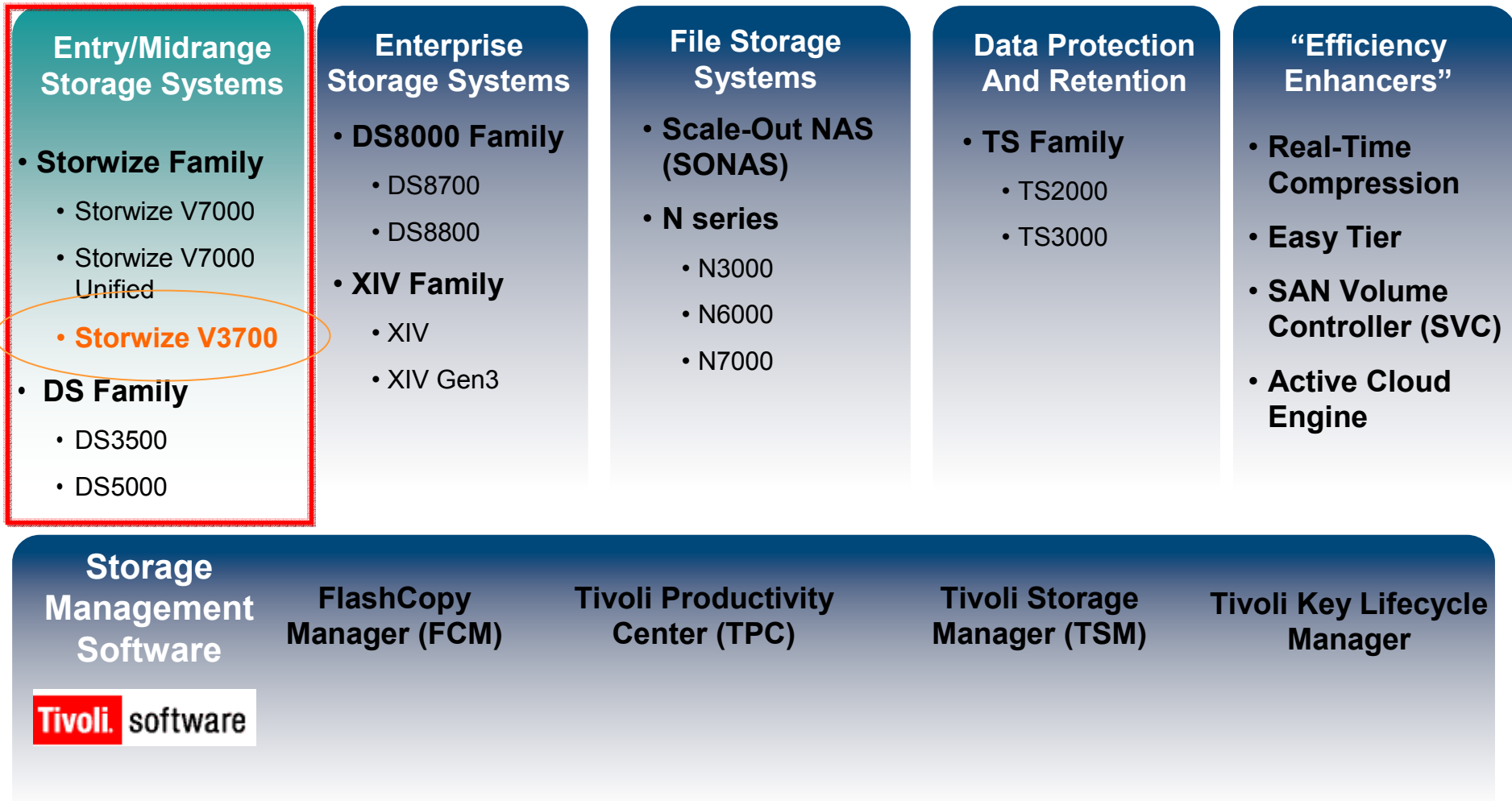**Storwize V7000 Unified**

Efficient entry-level storage
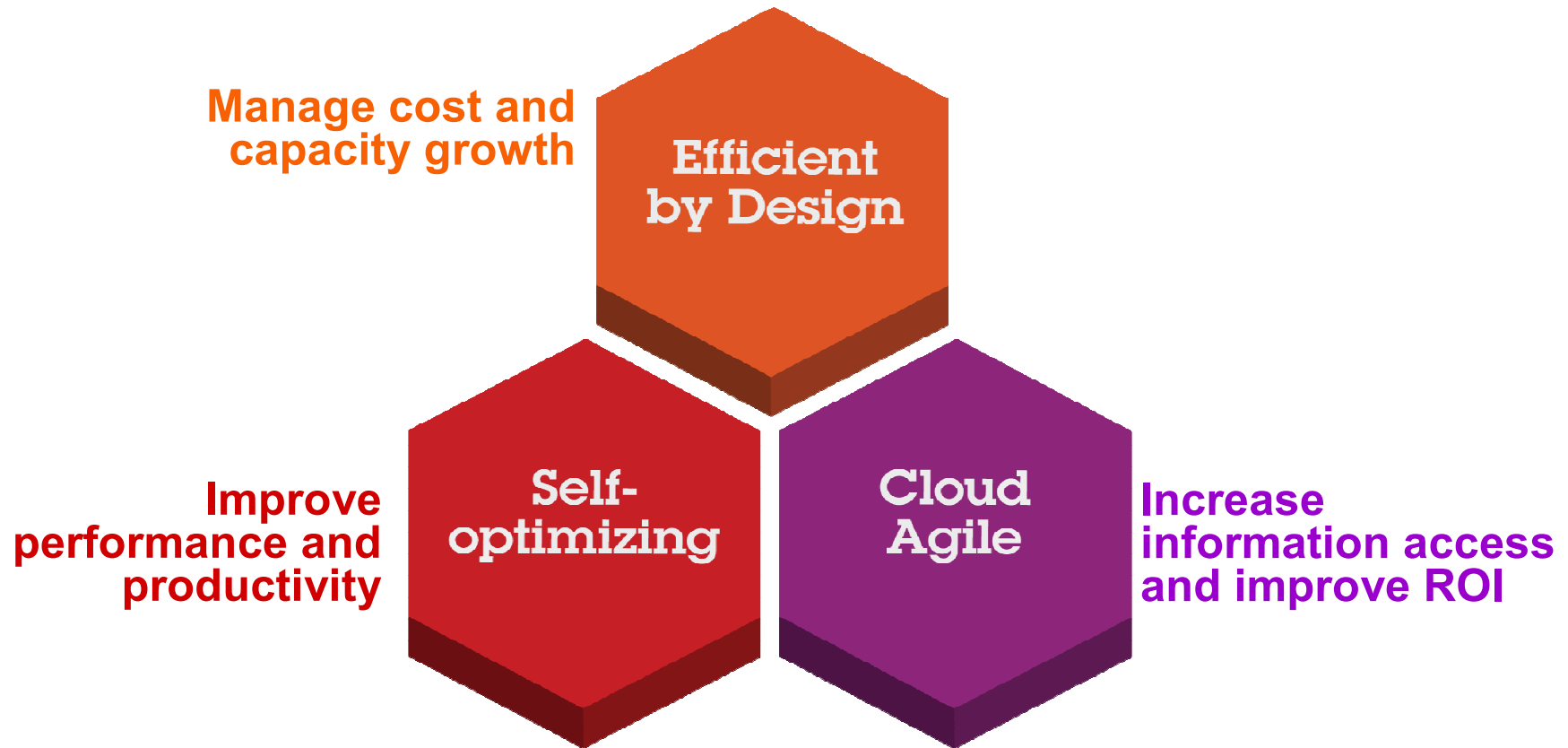**Storwize V3700**

October 2010

October 2011

4Q 2012

IBM's Comprehensive Family of Smarter Storage Solutions

Entry/Midrange Storage Systems	Enterprise Storage Systems	File Storage Systems	Data Protection And Retention	"Efficiency Enhancers"

• **Storwize Family**
   • Storwize V7000
   • Storwize V7000 Unified
   • **Storwize V3700**
• **DS Family**
   • DS3500
   • DS5000
	• **DS8000 Family**
	   • DS8700
	   • DS8800
	• **XIV Family**
	   • XIV
	   • XIV Gen3
		• **Scale-Out NAS (SONAS)**
		• **N series**
		   • N3000
		   • N6000
		   • N7000
			• **TS Family**
			   • TS2000
			   • TS3000
				• **Real-Time Compression**
				• **Easy Tier**
				• **SAN Volume Controller (SVC)**
				• **Active Cloud Engine**

Storage Management Software	FlashCopy Manager (FCM)	Tivoli Productivity Center (TPC)	Tivoli Storage Manager (TSM)	Tivoli Key Lifecycle Manager

Tivoli software

Storwize Systems: Smarter Storage for Smarter Computing
Smarter Storage to meet top Storage Requirements.

Manage cost and capacity growth

Efficient by Design

Improve performance and productivity

Self-optimizing

Cloud Agile

Increase information access and improve ROI

4

Introducing Storwize V3700 system

Easy to manage and efficient entry storage system designed to address growing data requirements and server consolidation needs

Extensive set of advanced software features to help manage, deploy and administer SMB IT environments**:**

–

– **Easy-to-use, embedded** graphical user interface

– **Thin provisioning** capabilities: allocate the exact amount of space needed at the time it is required

– **Non-disruptive migration** from existing FC storage helps speed implementation and minimize disruption

– **Sophisticated data protection** with FlashCopy technology

– **Multi-protocol support** (iSCSI, FC and FCoE and SAS*), provides consolidation flexibility

– **Full interoperability**: extensive suite of Microsoft and VMware solutions supported at no charge

*SAS access in plan to announce 1H2013 (IBM Plans are subject to change without notice)

Efficient Entry Storwize System

- Enclosures contain up to twelve LFF (3.5") or twenty-four SFF (2.5") drives in just 2U

- Control enclosure: dual active-active controllers and drives
    - 8GB Cache (4GB per controller) standard; optional upgrade to 16GB
    - 1Gb iSCSI host ports standard plus optional 8Gb FC or 10Gb iSCSI/FCoE or SAS* host interface upgrades

- Expansion enclosure:
    - Up to four expansion enclosures attach to one control enclosure
    - Up to 120 SFF or 60 LFF drives
    - Mix drive sizes and HDD/SSD in enclosure
    - Dual-active expansion canisters

- RAID levels 0, 1, 5, 6, and 10

- Redundant, hot-swappable components (i.e., power supplies and fans)

- AC power (110 to 240 V)

- Optional Software*: Easy Tier, Remote Mirroring, more than 64 FlashCopy targets, Turbo Performance

Storwize V3700 System: Efficient by Design
Manageability Features Overview

- **Graphical User Interface**
  - Adopted from the easy-to-use Storwize V7000 and XIV GUI
  - For clients where Storwize V3700 is the infrastructure

Easy-to-use management GUI

- **Enterprise Management**
  - Integrated management with a SAN-wide perspective
  - For clients where Storwize Entry is connected to a SAN with other, perhaps heterogeneous storage

**Tivoli Storage Productivity Center
Integrated SAN-wide management**

- **Server and Storage Management**
  - Integrated management with a systems and storage perspective
  - For clients with IBM servers and storage

**Systems Director Integrated IBM for
server and storage management**

IBM Storwize V3700: Graphical User Interface
Easy-to-Use Graphical User Interface Hides Complexity

Based on Storwize V7000 GUI

- Browser-based can be accessed from any platform

- Complexity hidden with presets but available for advanced users

- Launch in-context with IBM Systems Director integrates server/storage management

- Easy navigation between screens guides users to next step

- Provision a volume in as few as six clicks; setup system in a few clicks

- Initial set up in minutes
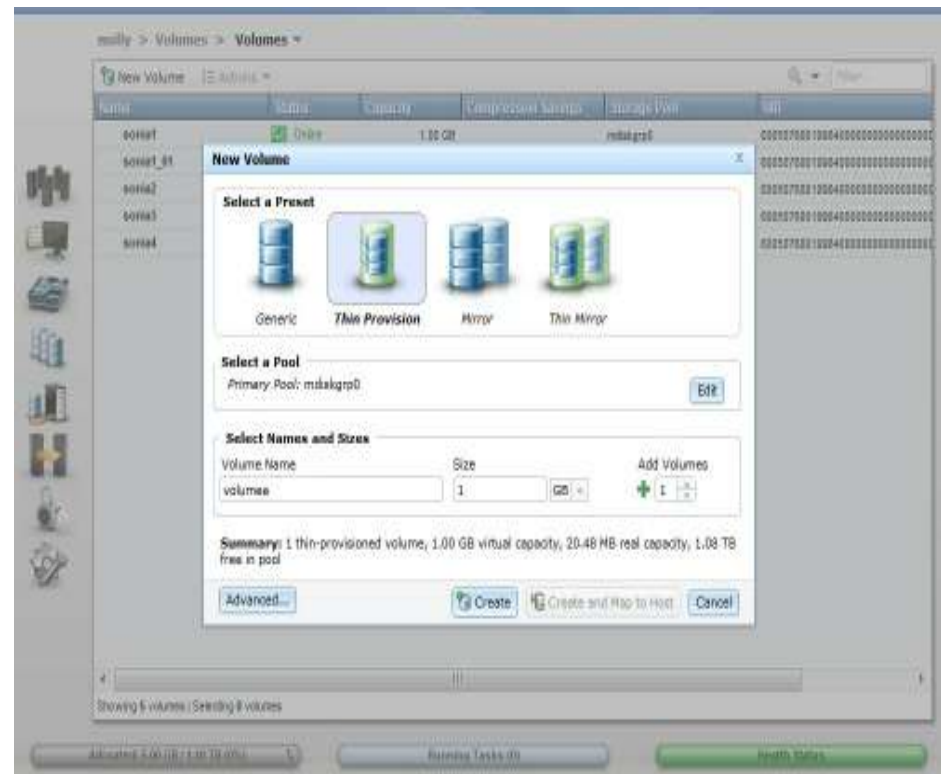
Storwize V3700: Graphical User Interface
Based on Common IBM Storage GUI

Storwize V3700: Efficient by Design

Internal Virtualization

- ✓ **Enables** rapid, flexible provisioning and simple configuration changes
- ✓ **Enables** non-disruptive movement of data among tiers of storage, including Easy Tier
- ✓ **Enables** data placement optimization to improve performance
- ✓ **Complements** virtualized servers and cloud strategy
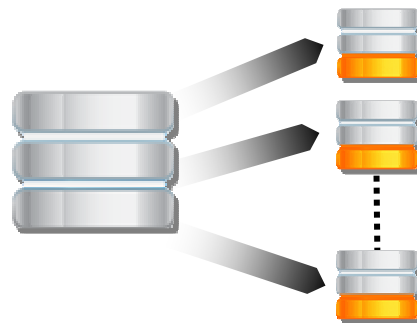
Thin provisioning

Dynamic growth

Without thin provisioning, pre-allocated space is reserved whether the application uses it or not.

With thin provisioning, applications can grow dynamically, but only consume space they are actually using.

- ✓ More productive use of available storage.
- ✓ Across all supported host platforms.
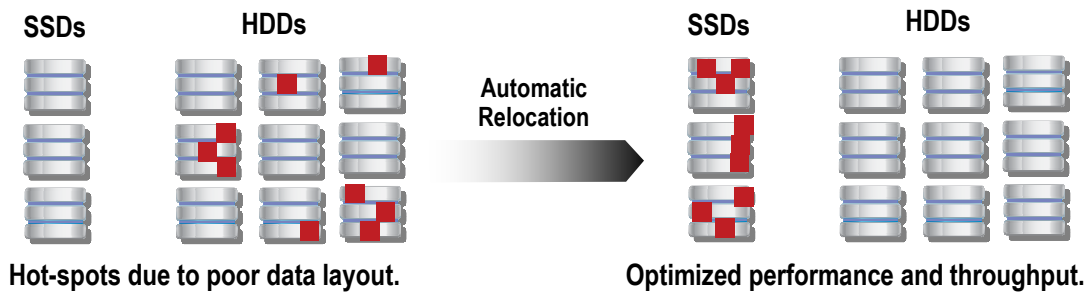- ✓ Improve storage utilization by up to 30%

FlashCopy

- ✓ Create instant application copies for backup or application testing
- ✓ Make better use of space with incremental (only changed blocks) or space-efficient (thin provisioned) snapshots
- ✓ Can help to reduce space required for copies by 75% or more

Storwize V3700 : Self Optimizing

IBM Easy Tier SSD Management*

SSDs   HDDs

Automatic Relocation

SSDs   HDDs

Hot-spots due to poor data layout.

Optimized performance and throughput.

✓ Busiest portions of data identified and automatically relocated to high performance solid-state drives

✓ Remaining data can take advantage of higher capacity disk drives

*Turbo Performance**

IOPs (Reads)
Throughput (Reads – MB/s)
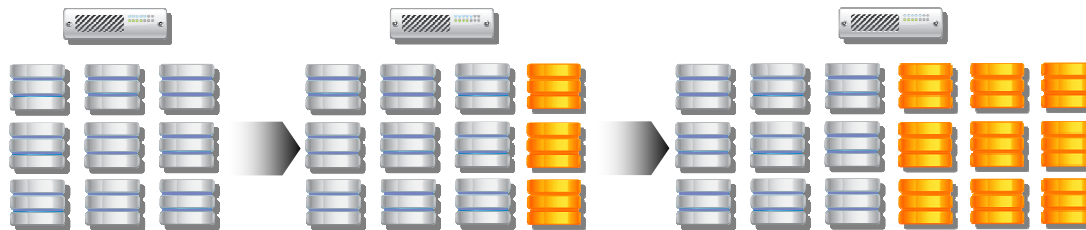
| *Standard Performance* |
| *Turbo Performance* |

✓ Flexibility and performance increase with turbo performance option

✓ Turbo performance is key for bandwidth-oriented and
consolidated workloads and can make a difference for larger-scaled transactional applications

Storwize V3700: Cloud Agile
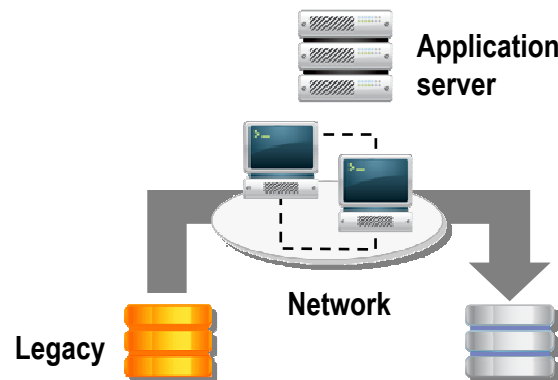
Start Small and Grow Easily

Start small

✓ One 24-bay control enclosure

Scale Up

✓ Easily add up to 5 expansion enclosures

✓ Expand capacity up to 120TB

✓ Start small, expand easily

One-way Data Migration

Application server

Network

Legacy

✓ Transparent data movement

✓ Efficiently manage technology upgrades and lease terminations by transparently moving application data from legacy disk arrays to the new system.

✓ Reduce migration elapsed time from weeks or months to days

IBM Storwize V3700 Future Functions / Features*

- FlashCopy **– Greater than 64 targets**

- Easy Tier **for automated tiering**

- Turbo performance **mode**

- SAS **Host Attach**

- Single Controller

- Remote Copy
  - To other same new storage devices and to other member of the Storwize family of Storage Systems
  - FC and IP Replication

* Planned for 1H2013 (IBM Plans are subject to change without notice)

Storwize V3700: 2U24

Storwize V3700: 2U12

Storwize V3700

Leveraging the best of IBM storage technologies in an entry disk system

Innovative GUI

Space-efficient copies

SAN

Thin provisioning

Easy Tier

RAID

Space Efficient Data Protection

Ease of Use Improves Productivity

Easy Tier Improves Response Time