



# Big data: veliki podaci, velika prilika

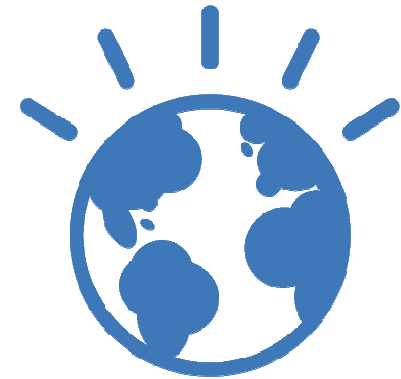
**Novosti u storage ponudi –  
IBM Storwize V3700**



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## 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

<b>Entry/Midrange Storage Systems</b> <ul style="list-style-type: none"><li>• <b>Storwize Family</b><ul style="list-style-type: none"><li>• Storwize V7000</li><li>• Storwize V7000 Unified</li><li>• <b>Storwize V3700</b></li></ul></li><li>• <b>DS Family</b><ul style="list-style-type: none"><li>• DS3500</li><li>• DS5000</li></ul></li></ul>	<b>Enterprise Storage Systems</b> <ul style="list-style-type: none"><li>• <b>DS8000 Family</b><ul style="list-style-type: none"><li>• DS8700</li><li>• DS8800</li></ul></li><li>• <b>XIV Family</b><ul style="list-style-type: none"><li>• XIV</li><li>• XIV Gen3</li></ul></li></ul>	<b>File Storage Systems</b> <ul style="list-style-type: none"><li>• <b>Scale-Out NAS (SONAS)</b></li><li>• <b>N series</b><ul style="list-style-type: none"><li>• N3000</li><li>• N6000</li><li>• N7000</li></ul></li></ul>	<b>Data Protection And Retention</b> <ul style="list-style-type: none"><li>• <b>TS Family</b><ul style="list-style-type: none"><li>• TS2000</li><li>• TS3000</li></ul></li></ul>	<b>"Efficiency Enhancers"</b> <ul style="list-style-type: none"><li>• <b>Real-Time Compression</b></li><li>• <b>Easy Tier</b></li><li>• <b>SAN Volume Controller (SVC)</b></li><li>• <b>Active Cloud Engine</b></li></ul>
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<b>Storage Management Software</b>	<b>FlashCopy Manager (FCM)</b>	<b>Tivoli Productivity Center (TPC)</b>	<b>Tivoli Storage Manager (TSM)</b>	<b>Tivoli Key Lifecycle Manager</b>

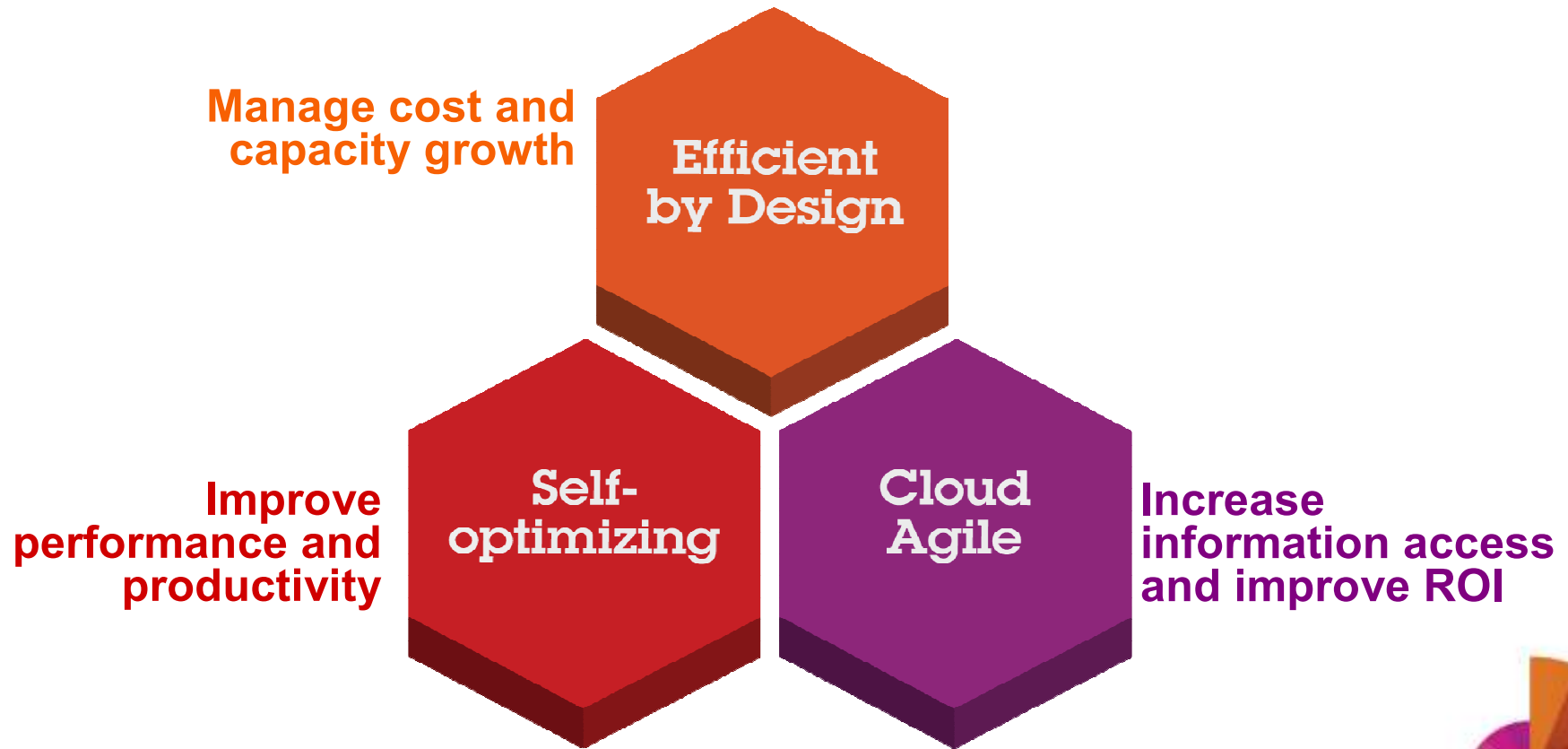


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# Storwize Systems: Smarter Storage for Smarter Computing

Smarter Storage to meet top Storage Requirements.



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## 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

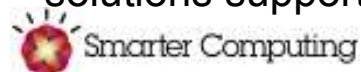
**Thin provisioning** capabilities: allocate the exact amount of space needed at the time it is required

**Non-disruptive migration** from existing FC storage helps simplify 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



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## 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



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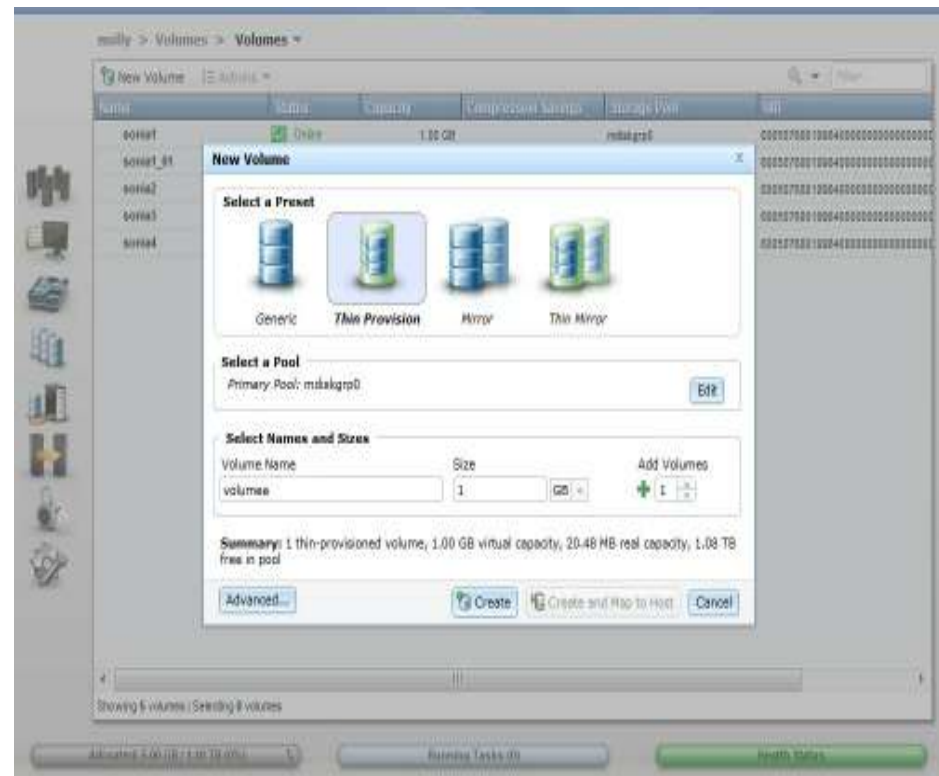
## IBM Storwize V3700: Graphical User Interface



*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





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## Storwize V3700: Graphical User Interface

Based on Common IBM Storage GUI

The screenshot shows the Storwize V3700 GUI interface. At the top, the breadcrumb navigation reads "molly > Home > Overview". A yellow callout bubble labeled "System recommendations" points to a "Suggested Tasks" dropdown menu. The main content area features a visual task flow diagram with green arrows connecting components: "6 Internal Drives" → "1 MDisk" → "1 Pool" → "5 Volumes". A bracket on the right side of the flow points to "0 Fibre Channel Hosts" and "0 iSCSI Hosts", with a callout bubble labeled "Visual task flow guidance". Below the diagram, there is an "Overview" section with a video icon and a link "Watch e-Learning: Overview", which is pointed to by a callout bubble labeled "Integrated video instruction". Another callout bubble labeled "Link to more information if needed" points to a "Visit the Information Center" link. At the bottom of the interface, there are three status bars: "Allocated: 5.00 GB / 1.10 TB (0%)", "Running Tasks (0)", and "Health Status". A callout bubble labeled "System status always available" points to the "Health Status" bar.

## 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



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

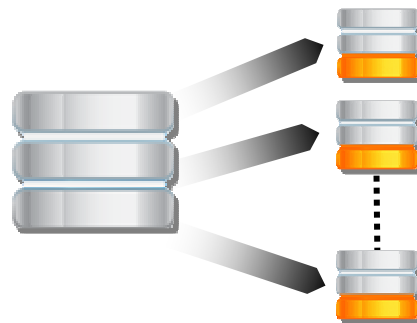


Dynamic growth

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

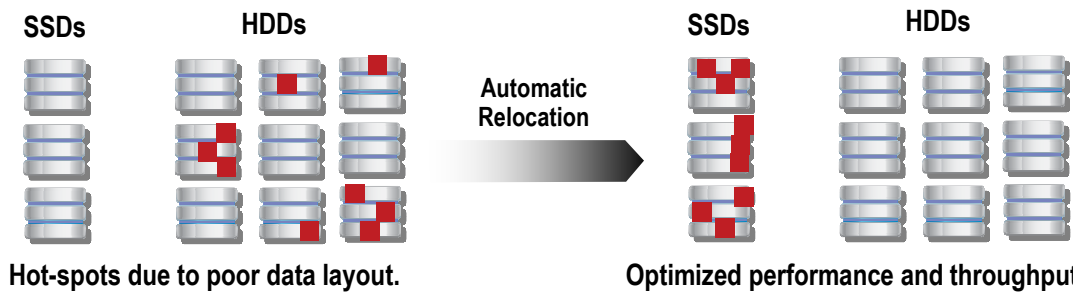


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## Storwize V3700 : Self Optimizing

### IBM Easy Tier\* SSD Management



- ✓ 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



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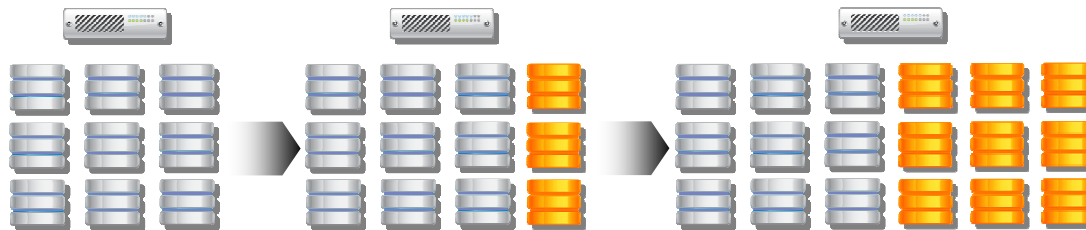


## Storwize V3700: Cloud Agile

### Start Small and Grow Easily

#### Start small

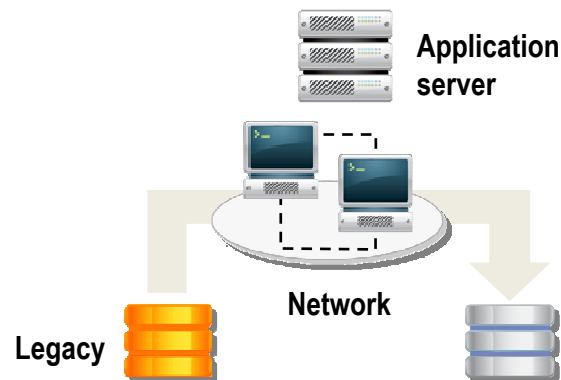
- ✓ One 24-bay control enclosure



#### Scale Up

- ✓ Easily add up to 5 expansion enclosures
- ✓ Expand capacity up to 120TB
- ✓ Start small, expand easily

### One-way Data Migration



- ✓ 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



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## 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



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## Storwize V3700: 2U24



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**Storwize V3700: 2U12**

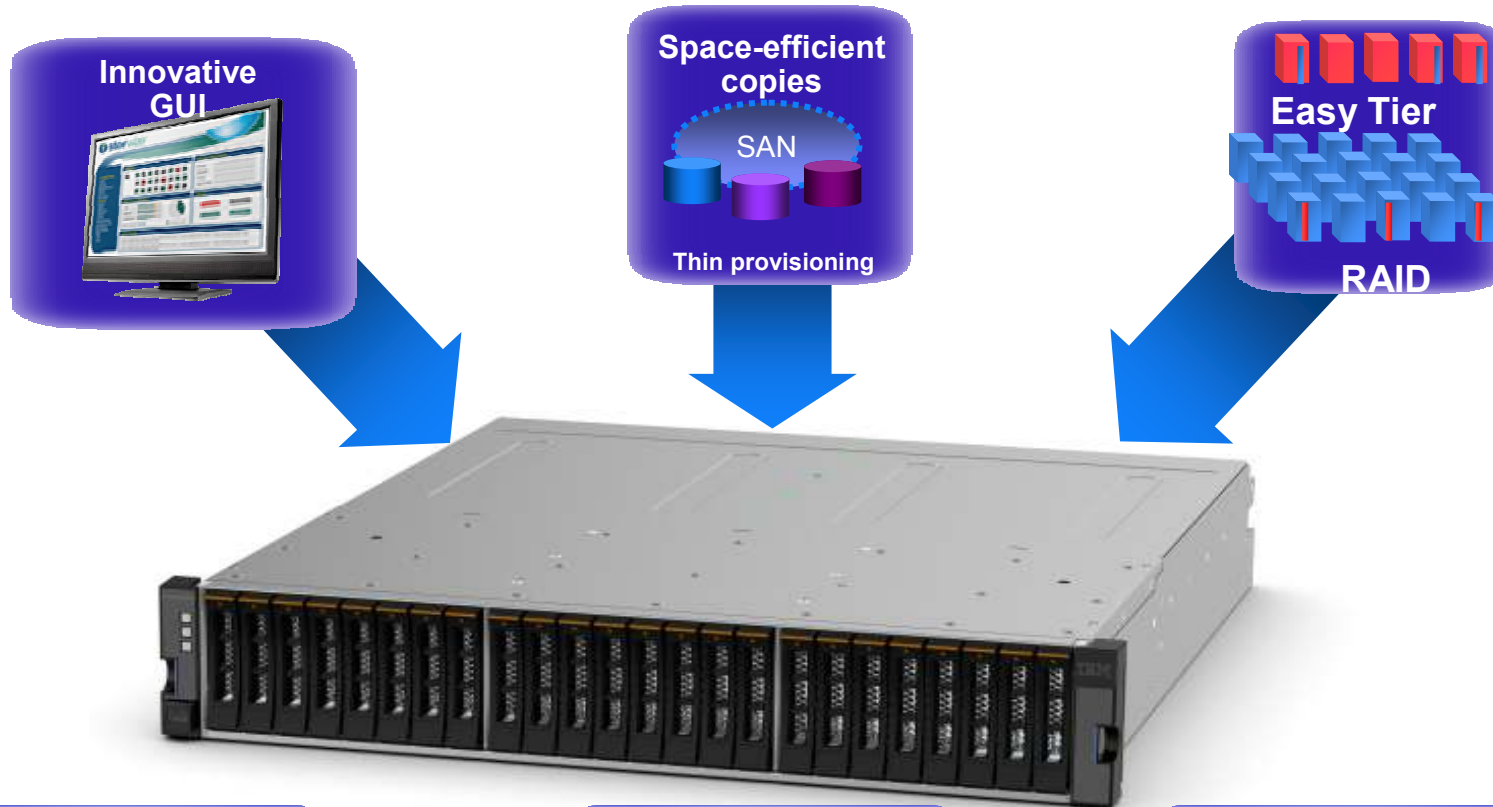


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## Storwize V3700

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



**Space Efficient  
Data  
Protection**

**Ease of Use  
Improves  
Productivity**

**Easy Tier  
Improves  
Response Time**

