

# PURE STORAGE AND TURBONOMIC

Assure full-stack quality of service

## Getting the Most from Virtualization?

The full value of virtualization can be lost due to unsolved and unanticipated problems relating to storage performance and availability. These issues can make the virtualization of business-critical applications a significant challenge.

Flash-based storage helps to address many of the performance issues associated with virtualized data centers. However, problems in the compute, network or application layers can remain. Further, removing the storage performance bottleneck exposes performance problems in other data center layers.

With Turbonomic and Pure Storage, enterprises solve their pressing virtualization challenges, improve infrastructure performance and fully leverage their investment in high performance, high efficiency, high value flash arrays.

### KEY BENEFITS

- Assure application performance, including I/O-intensive and mission-critical applications
- Maximize the value of flash storage
- Automate the placement of I/O-intensive workloads on Pure Storage
- Prevent bottlenecks at every layer of the stack: compute, storage and network
- Simplify and accelerate storage deployment and management
- Dramatically improve storage performance and space efficiency

## Realize the Full Potential of Virtualization with Turbonomic and Pure Storage

Turbonomic and Pure Storage integration enables enterprises to assure applications get the storage performance they require to operate virtual infrastructure reliably, while maximizing efficient use of storage infrastructure and preventing unnecessary over-provisioning.

- **Assure Workload Performance by Proactively Realigning Compute, Storage and Network**
  - Automate placement of workloads amongst disparate Pure Storage arrays using Turbonomic to account for flash IOPS performance and provide I/O-intensive workloads the right capacity
  - Optimize workload performance and efficiency of the hypervisor and underlying storage infrastructure through a broad set of resource allocation decisions including workload placement, movement and creation and sizing of storage volumes
  - Minimize storage latency and I/O bottlenecks via resource allocation decisions across both virtualization and storage domains
- **Consolidate More**
  - Drive 20-60% improvements in infrastructure utilization by increasing VM density with Turbonomic
  - Drive 5-10X data reduction with Pure Storage Purity FlashReduce
  - Reach 100% virtualization, including business-critical applications
- **Quickly Deploy And See Value**
  - Out-of-the-box integration between Turbonomic and Pure Storage leverages Pure Storage REST APIs, no professional services required
  - Ultra simple deployment: no LUN pinning, no tiering, no caching, no RAID level provisioning
  - Turbonomic's agentless virtual instance deploys in 30 minutes
  - Virtualization admins are equipped and empowered with actionable recommendations within 1 hour, freeing up Storage Architects to focus on high value business and technical projects

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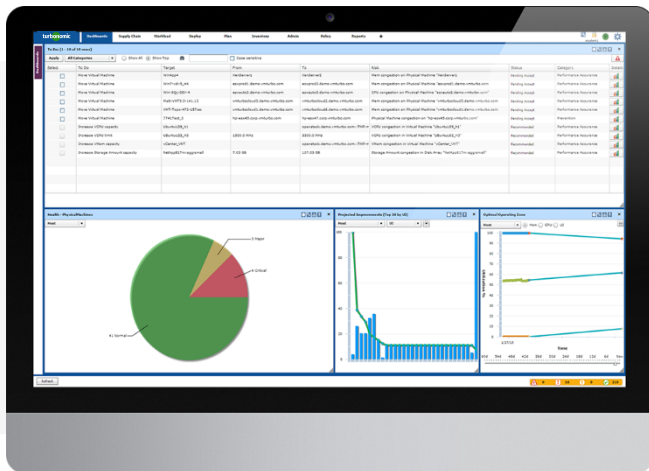
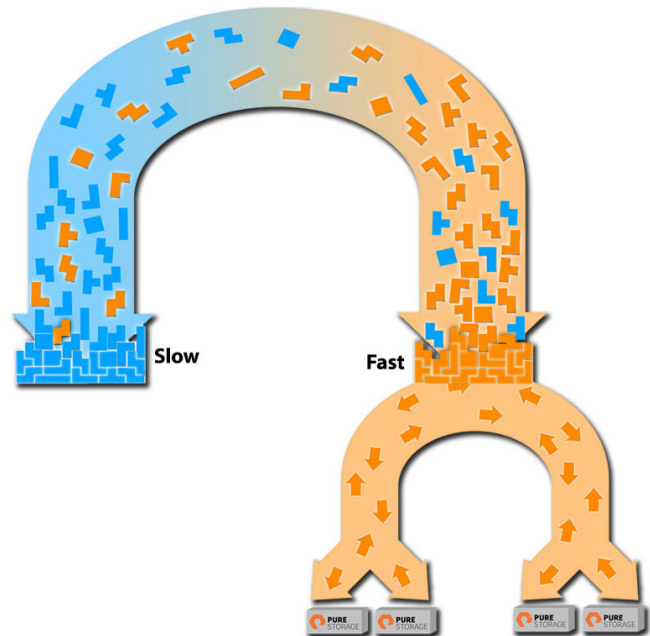
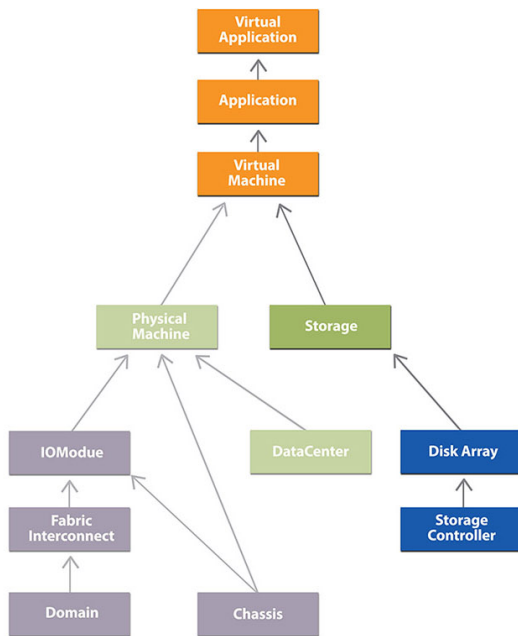
## Bring Control Further Into the Stack

Turbonomic's Common Data Model relates every entity in the data center as a provider or consumer of resources enabling real-time placement, sizing and provisioning decisions.

### Turbonomic and Pure Storage

- Drives real-time placement across heterogeneous and all Pure Storage environments to assure QoS adherence across every layer of the stack
- Enhances placement decisions for demanding workloads resulting optimal utilization of your Pure Storage FlashArray

ENTITIES	PROVIDES	CONSUMES
Storage	Host resources for VMs to use: <ul style="list-style-type: none"> <li>• Storage amount</li> <li>• IOPS</li> <li>• Latency</li> </ul>	Disk arrays
Disk Array	Storage resources for datastores to use: <ul style="list-style-type: none"> <li>• Storage amount</li> <li>• Storage provisioned</li> <li>• IOPS</li> <li>• Latency</li> </ul>	Storage controllers
Storage Controller	CPU resources to manage disk arrays	NA



## Try Turbonomic and Pure Storage

- Download a free trial of Turbonomic for 30 days, at [turbonomic.com/download](http://turbonomic.com/download)
- For more information on Turbonomic, visit [turbonomic.com](http://turbonomic.com)
- For more information on Pure Storage, visit [www.purestorage.com](http://www.purestorage.com)