

# Tyrone<sup>®</sup>

A solution flexible enough to adapt to  
your requirements

opslag<sup>™</sup>  
Storage array



- Delivering Customer Delight
- Outstanding IOPS and throughput
- Highly available network storage
- Superb scalability and compatibility

[www.tyronesystems.com](http://www.tyronesystems.com)

Tyrone Opslag Storage Arrays are specially designed for high availability applications with fully redundant components including redundant RAID controllers\*, power supplies, fan modules, battery backup modules and SAS JBOD expansion ports. All of these components are hot-swappable to create a high availability platform and provide non-stop services. Both firmware image and volume handling are well protected by redundant RAID controllers. When one RAID controller is down or disconnected, the other RAID controller will take over all tasks immediately and seamlessly.

Opslag storage arrays provide much higher IOPS and throughput than other storage systems within the same segment in current market. All our systems are built with highly reliable data protection features such as writeable snapshot and volume cloning. We care for the environment and all our systems have power saving features such as auto disk spin down and 80PLUS power supplies and thereby use energy more efficiently and reduce unnecessary carbon footprint.

\* Only models with 'D' suffix have all redundant components.

The different variations are

Models with 'C' suffix : Single controller models, with redundant power supplies

Models with 'S' suffix : Single controller models, with redundant power supplies

Optionally upgradable to dual-controller

Model with 'D' suffix : Dual controller models with all redundant components

#### General Specifications:

Warranty	System: Two years, Battery backup module: One year
AC Input	100-240V
Operating Environment	0 to 40° C / 5% to 95% non-condensing






#### About Tyrone Systems

A leading provider of servers, storage, and HPC solutions, Tyrone has been serving the varied needs of customers across industry domains for more than decade. Headquartered in USA, and with offices in Singapore, Tyrone mainly caters to the Indian industry through a network of offices in several major cities such as New Delhi, Bangalore, Mumbai, Chennai, Hyderabad, and Kolkata.




Tyrone aims to change the way you work by providing you with the right technology blocks to achieve your business goals. And in so doing, we redefine multiple paradigms.






## Opslag D2-QJT series 10Gb/s iSCSI to 6G SAS/SATA Storage Arrays

			
Model	D2-QJT-424D/S	D2-QJT-316D/S	D2-QJT-224D/S
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W
HDDs	24 x 6Gb/s SAS/SATA 3.5"	16 x 6Gb/s SAS/SATA 3.5"	24 x 6Gb/s SAS/SATA 2.5"
Host Interfaces	2 x 10Gb/s iSCSI (SFP+) & 2 x 1Gb/s iSCSI (RJ45) per controller Hardware iSCSI offload engine Support for Jumbo frame, Header/Data digest, CHAP Authentication, VLAN Up to 128 multiple nodes support/Up to 128 hosts support Up to 1024 sessions per controller		
RAID & Volume	Dual-active controllers (D suffix) or Single controller (S suffix) 2GB battery backed Cache (Max 8GB) RAID level 0,1,0+1,3,5,6,10,30,50, 60, JBOD, N-way mirror Global and dedicated hot-spare Onlitne volume expansion and volume migration Auto volume rebuilding Up to 4096 logical volumes, one logical volume can be shared by up to 16 hosts		
Advanced Data Protection	Configurable N-way mirror, Volume cloning, T5nap writable snapshot, Microsoft Windows VSS, Online disk roaming, Instant volume restoration TReplica remote replication (Optional)		
Expansion	Up to 192 HDDs using D1-QJ6 series JBOD (6Gb/s SAS interface)		
Management	LCD Control Module; Console; SSH; Web UI; iSNS;		
Notification	Email; SNMP trap; Browser pop up windows; Syslog; Windows Messenger		
OS Support	Windows, Linux, Solaris, Mac		
Virtualization	VMware Ready; Hyper-V; Citrix Ready		




## Opslag D1-QJG series 1GB/s iSCSI to SAS/SATA Storage Arrays

			
Model	D1-QJG-424D/C	D1-QJG-316D/C	D1-QJG-212D/C
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W
HDDs	24 x SAS/SATA 3.5"	16 x SAS/SATA 3.5"	12 x SAS/SATA 3.5"
Host Interfaces	4 x 1Gb/s iSCSI per controller Hardware iSCSI offload engine Supports Microsoft MPIO, MC/S, Trunking, LACP Support for Jumbo frame, Header/Data digest, CHAP Authentication, VLAN Up to 32 multiple nodes support/Up to 32 hosts support Up to 128 sessions per controller		
RAID & Volume	Dual-active controllers (D suffix) or Single controller (C suffix) 2GB battery backed Cache (Max 4GB) RAID level 0,1,0+1,3,5,6,10,30,50, 60, JBOD, N-way mirror Global and dedicated hot-spare Online volume expansion and volume migration Auto volume rebuilding Up to 1024 logical volumes, one logical volume can be shared by up to 16 hosts		
Advanced Data Protection	Configurable N-way mirror, Volume cloning, T5nap writable snapshot, Microsoft Windows VSS, Online disk roaming, Instant volume restoration		
Expansion	Up to 72/64/60 HDDs using D1-QJ6 series JBOD (3Gb/s SAS interface). Max 2 JBODs supported		
Management	LCD Control Module; Console; SSH; Web UI; iSNS;		
Notification	Email; SNMP trap; Browser pop up windows; Syslog; Windows Messenger		
OS Support	Windows, Linux, Solaris, Mac		
Virtualization	VMware Ready; Hyper-V; Citrix Ready		

## Opslag D2-QF8 series 8GB/s FC to 6G SAS/SATA Storage Arrays

			
Model	D2-QF8-424D/S	D2-QF8-316D/S	D2-QF8-224D/S
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W
HDDs	24 x 6Gb/s SAS/SATA 3.5"	16 x 6Gb/s SAS/SATA 3.5"	24 x 6Gb/s SAS/SATA 2.5"
Host Interfaces	4 x 8Gb/s Fibre Channel & 2 x 1Gb/s iSCSI (RJ45) per controller Fibre Channel FCP-2 & FCP-3 support Up to 128 multiple nodes support Up to 128 hosts support Up to 1024 sessions per controller iSCSI Support for Jumbo frame, Header/Data digest, CHAP Authentication, VLAN Up to 32 multiple nodes support Up to 32 hosts support Up to 128 sessions per controller		
RAID & Volume	Dual-active controllers (D suffix) or Single controller (S suffix) 2GB battery backed Cache (Max 8GB) RAID level 0,1,0+1,3,5,6,10,30,50, 60, JBOD, N-way mirror Global and dedicated hot-spare Online volume expansion and volume migration Auto volume rebuilding Up to 4096 logical volumes, one logical volume can be shared by up to 16 hosts		
Advanced Data Protection	Configurable N-way mirror, Volume cloning, TSnapshot writable snapshot, Microsoft Windows VSS, Online disk roaming, Instant volume restoration TReplica remote replication (Optional)		
Expansion	Up to 192 HDDs using D1-QJ6 series JBOD (6Gb/s SAS interface)		
Management	LCD Control Module; Console; SSH; Web UI; iSNS;		
Notification	Email; SNMP trap; Browser pop up windows; Syslog; Windows Messenger		
OS Support	Windows, Linux, Solaris, Mac		
Virtualization	VMware Ready; Hyper-V; Citrix Ready		

## Opslag D1-QF4 series 4GB/s FC to SAS/SATA Storage Arrays

			
Model	D1-QF4-424D/C	D1-QF4-316D/C	D1-QF4-212D/C
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W
HDDs	24 x SAS/SATA 3.5"	16 x SAS/SATA 3.5"	12 x SAS/SATA 3.5"
Host Interfaces	2 x 4Gb/s Fibre Channel per controller Up to 32 multiple nodes support/Up to 32 hosts support Up to 128 sessions per controller		
RAID & Volume	Dual-active controllers (D suffix) or Single controller (C suffix) 2GB battery backed Cache (Max 4GB) RAID level 0,1,0+1,3,5,6,10,30,50, 60, JBOD, N-way mirror Global and dedicated hot-spare Online volume expansion and volume migration Auto volume rebuilding Up to 1024 logical volumes, one logical volume can be shared by up to 16 hosts		
Advanced Data Protection	Configurable N-way mirror, Volume cloning, TSnapshot writable snapshot, Microsoft Windows VSS, Online disk roaming, Instant volume restoration		
Expansion	Up to 72/64/60 HDDs using D1-QJ6 series JBOD (3Gb/s SAS interface). Max 2 JBODs supported		
Management	LCD Control Module; Console; SSH; Web UI; iSNS;		
Notification	Email; SNMP trap; Browser pop up windows; Syslog; Windows Messenger		
OS Support	Windows, Linux, Solaris, Mac		
Virtualization	VMware Ready; Hyper-V; Citrix Ready		

## Opslag D1-Q36 series SAS 6GB/s to SAS/SATA Storage Arrays

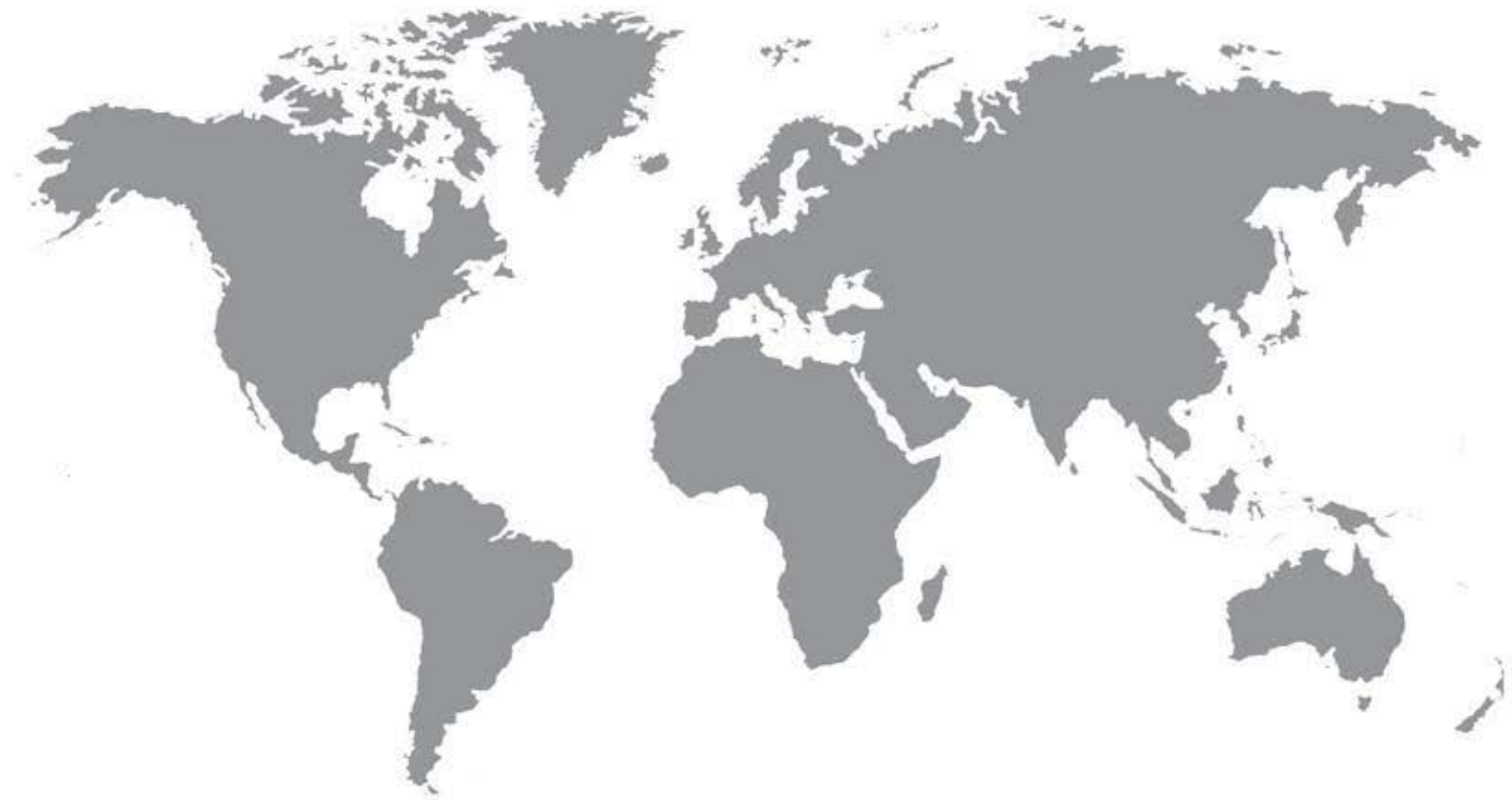
			
Model	D1-Q36-424D/C	D1-Q36-316D/C	D1-Q36-212D/C
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W
HDDs	24 x SAS/SATA 3.5"	16 x SAS/SATA 3.5"	12 x SAS/SATA 3.5"
Host Interfaces	2 x SAS 6Gbps per controller (x4 wide ports, 24Gbps per port) Up to 32 multiple nodes support/Up to 32 hosts support Up to 128 sessions per controller		
RAID & Volume	Dual-active controllers (D suffix) or Single controller (C suffix) 2GB battery backed Cache (Max 4GB) RAID level 0,1,0+1,3,5,6,10,30,50, 60, JBOD, N-way mirror Global and dedicated hot-spare Online volume expansion and volume migration Auto volume rebuilding Up to 1024 logical volumes, one logical volume can be shared by up to 16 hosts		
Advanced Data Protection	Configurable N-way mirror, Volume cloning, TSnapshot writable snapshot, Microsoft Windows VSS, Online disk roaming, Instant volume restoration		
Expansion	Up to 72/64/60 HDDs using D1-QJ6 series JBOD (3Gb/s SAS interface). Max 2 JBODs supported		
Management	LCD Control Module; Console; SSH; Web UI; iSNS;		
Notification	Email; SNMP trap; Browser pop up windows; Syslog; Windows Messenger		
OS Support	Windows, Linux, Solaris, Mac		
Virtualization	VMware Ready; Hyper-V; Citrix Ready		

## Opslag D1-QJ6 series SAS to SAS/SATA JBOD Systems (for using with Opslag D1/D2 series Storage Arrays)

				
Model	D1-QJ6-424D/C	D1-QJ6-316D/C	D1-QJ6-224D/C	D1-QJ6-212D/C
Form Factor	4U rack-mount	3U rack-mount	2U rack-mount	2U rack-mount
Power Supply	3 x 500W	2 x 500W	2 x 500W	2 x 500W
HDDs	24 x 6Gb/s SAS/SATA 3.5"	16 x 6Gb/s SAS/SATA 3.5"	24 x 6Gb/s SAS/SATA 2.5"	12 x 6Gb/s SAS/SATA 3.5"
Host Interfaces	1 x 6Gb/s SAS per controller			
RAID Controller	Dual-active controllers, or Single controller			
Expansion/Cascade	1 x 6Gb/s SAS port per controller			
Management	LCD Control Module			







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