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memory portfolio

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DATARAM
Advantage

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Integrity BL blades
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Should you need technical assistance, help is just a phone call or email away, as our customer support personnel are available at no extra charge.

In addition, Dataram memory products installed in IBM servers and workstations with Intel or AMD processors are eligible for support by IBM in the USA.

Lifetime Warranty
Dataram Corporation warrants that its memory products will be free from defects in materials and workmanship and conform to the manufacturer's specifications for the computer in which it is originally installed. This warranty is extended to the original end user for the lifetime of the system.

Responsiveness
Whether it's first-to-market memory for the latest system, up-to-the-minute product information via an on-line memory selector, contact with a memory specialist or timely receipt of competitive quotations, Dataram responds fast. Flexible manufacturing enables quick delivery of products. Plus Dataram's worldwide network of distributors and resellers enable local presence and in-house service regardless of your geography or time zone.

Dependability
No other memory company in the world can match our experience as an independent memory supplier. More than 60 of Fortune 100 companies have used Dataram memory. As a financially strong public company (Nasdaq: DRAM), Dataram is ready and capable of being your valued partner. **DATARAM is the Best Choice in Memory.**

Savings
Top organizations throughout the world choose Dataram to save up to 50% off OEM memory prices. You can too! Compare us and save thousands on your next memory upgrade purchase. Or to save even more, buy new servers with the factory minimum memory configuration and fill all remaining slots with cost effective Dataram memory upon delivery of the new systems.

Guaranteed Compatibility
Dataram is THE memory specialist with over 40 years experience designing, manufacturing and testing memory products. In addition, our memory modules are tested, validated and certified by Intel, AMD and CMTL. Beta sites enable additional testing in a wide range of applications and environments. Dataram has a ten-year relationship with CMTL (Computer Memory Test Labs) where 2000+ system level tests have been performed on Intel and AMD based motherboards to ensure the highest level of memory compatibility available. For a greener earth, Dataram memory products are RoHS compliant and energy conserving low power modules are available. DATARAM memory modules are guaranteed to be 100% form, fit and function compatible for the system they are installed in.

Superior Quality – Exceptional Support
You expect memory products to last a lifetime and we go to great lengths to meet or exceed your expectations! DATARAM memory products are manufactured in our own state-of-the-art ISO 9001 manufacturing facility in the USA, adhering to the world's highest standards for quality excellence. Every module is 100% tested prior to shipment.

DATARAM
The Best Choice in Memory

800.DATARAM | usasales@dataram.com

Founded in 1967, Dataram is a worldwide leader in the design and manufacture of reliable, high capacity and innovative memory solutions. Dataram provides customized memory solutions for OEMs and memory upgrades for leading brands including HP, IBM, Sun Microsystems, Dell, Intel and AMD Opteron. For more information about Dataram's memory offerings, visit www.dataram.com

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SUN							
X64 SERVERS							
Sun Fire X2100 M2		8GB	4	4GB	X5279A-Z	DRSX2100M2/4GB	2
Sun Fire X2100		8GB	4	4GB	X4211A-Z	DRSU20E/4GB	2[1]

[1] Except for a single DIMM in the first slot (model 146), DIMMs must be installed in matched pairs. Three DIMMs is not a valid configuration.
Dataram's DRSU20E/4GB is PC2700 333MHz; Sun's X4211A-Z is PC2100 266MHz.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X2200 M2		64GB	16[1]	2GB	X5287A-Z	DRSX2200M2/2GB	2
				4GB	X5288A-Z	DRSX2200M2/4GB	2
				4GB	X5288A-C	DRSX2200M2S/4GB	2
				8GB	X4063A-Z	DRSX2200M2/8GB	2

[1] 8 DIMM slots per processor. When more than 4 DIMMs are configured per CPU, the memory is clocked down to 533MHz.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X2250		64GB	8	4GB	X5111A	DRSX2250/4GB	2
				8GB	Not Offered by Sun - 4R	DRSX2250Q/8GB	2
				8GB	X5110A	DRSX2250/8GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2
				16GB	Not Offered by Sun - 4R	DRSX4450Q/16GB	2
				16GB	Not Offered by Sun - 2R	DRSX4450/16GB	2

[1] Dataram's unique Quad-Rank (4R) kits may not be correctly identified by Sun's ILOM or Pc-Check utility, but all are fully functional.
Sun's X511xA and Dataram's DRSX2250 are DDR2-800. Sun's X638xA and Dataram's DRSX4450 are DDR2-667.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4100		32GB[1]	8	4GB	X8023A, X8023A-Z	DRSX4100/4GB	2
				8GB	X8024A-Z	DRSX4104/8GB	2

[1] 16GB maximum for single processor models. 4 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4100 M2		64GB[1]	8	4GB	X4226A-Z	DRSX4200M2/4GB	2
				4GB	X4226A-C	DRSX4200M2S/4GB	2
				8GB	X4227A-Z	DRSX4200M2/8GB	2
				16GB	Not Offered by Sun	DRSX4200M2/16GB	2

[1] 32GB maximum for single processor models. 4 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4140		128GB[1]	16	2GB	X6320A	DRSX4440/2GB	2
				4GB	X6321A-C	DRSX4440/4GB	2
				8GB	X6322A	DRSX4440/8GB	2
				16GB	X4287A	DRSX4440/16GB	2

[1] 64GB maximum for single processor models. 8 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4150		64GB	16	2GB	X6380A	DRSX4450/2GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4200		32GB[1]	8	4GB	X8023A, X8023A-Z	DRSX4100/4GB	2
				8GB	X8024A-Z	DRSX4104/8GB	2

[1] 16GB maximum for single processor models. 4 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4200 M2		64GB[1]	8	4GB	X4226A-Z	DRSX4200M2/4GB	2
				4GB	X4226A-C	DRSX4200M2S/4GB	2
				8GB	X4227A-Z	DRSX4200M2/8GB	2
				16GB	Not Offered by Sun	DRSX4200M2/16GB	2

[1] 32GB maximum for single processor models. 4 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4240		128GB[1]	16	2GB	X6320A	DRSX4440/2GB	2
				4GB	X6321A-C	DRSX4440/4GB	2
				8GB	X6322A	DRSX4440/8GB	2
				16GB	X4287A	DRSX4440/16GB	2

[1] 64GB maximum for single processor models. 8 DIMM slots per processor.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4250		64GB	16	2GB	X6380A	DRSX4450/2GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire X4440		256GB[1]	32	2GB	X6320A	DRSX4440/2GB	2
				4GB	X6321A-C	DRSX4440/4GB	2
				8GB	X6322A	DRSX4440/8GB	2
				16GB	X4287A	DRSX4440/16GB	2

[1] 64GB maximum for single processor models. 8 DIMM slots per processor.

Sun Fire X4450		128GB	32	2GB	X6380A	DRSX4450/2GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2

Sun Fire X4600		64GB	32[1]	4GB	X8121A-Z	DRSX4600/4GB	2

[1] The system supports 1 to 8 CPU/Memory Cards each having 4 DIMM slots.

Sun Fire X4600 M2	4-DIMM CPU Card	128GB	32[1]	4GB	X8123A-Z	DRSX4600M2/4GB	2
				4GB	*X8123A-C-Z*	*DRSX4600M2S/4GB*	*2*
				8GB	X8124A-Z, X8098A	DRSX4600M2/8GB	2
Sun Fire X4600 M2	8-DIMM CPU Card	512GB	64[2]	4GB	X8123A-Z	DRSX4600M2/4GB	2
				4GB	*X8123A-C-Z*	*DRSX4600M2S/4GB*	*2*
				8GB	X8124A-Z, X8098A	DRSX4600M2/8GB	2
				16GB	*X8356A*	DRSX4600M2/16GB	2

[1] The system supports 1 to 8 CPU/Memory Cards each having 4 DIMM slots.

[2] The system supports 1 to 8 CPU/Memory Cards each having 8 DIMM slots. DIMMs must be installed in matched sets of four.

Sun Fire V20z	Super FRU Chassis PN: 380-0979, 380-1168,	32GB	8[1]	4GB	X9253A	DRSV20Z/4GB	2
				8GB	Not Offered by Sun	DRSV20Z3/8GB	2
	Super FRU Chassis PN: 380-1194	32GB[2]	8[1]	4GB	X9297A	DRSV40Z4/4GB	2
				8GB	Not Offered by Sun	DRSV40Z4/8GB	2

[1] The Sun Fire V20z contains eight DIMM slots (four per processor). Memory must be installed in matched pairs.

[2] Requires NSV version 2.3.0.11 or higher.

   Be sure to check the Chassis PN to determine which type of memory is supported. The Sun X9253A & Dataram DRSV20Z/4GB
   are DDR333; X9297A & Dataram DRSV40Z4/xxx are DDR400. The DRSV20Z3/8GB is DDR333.

Sun Fire V40z	Super FRU Chassis PN: 380-1010	56GB	16[1]	4GB	X9266A	DRSV40Z/4GB	2
				8GB	Not Offered by Sun	DRSV20Z3/8GB	2
	Super FRU Chassis PN: 380-1206	64GB[2]	16[1]	4GB	X9297A	DRSV40Z4/4GB	2
				8GB	X7299A-Z	DRSV40Z4/8GB	2

[1] The Sun Fire V40z contains sixteen DIMM slots (four per processor). Memory must be installed in matched pairs.

[2] Requires NSV version 2.3.0.11 or higher.

   Be sure to check the Chassis PN to determine which type of memory is supported. The Sun X9266A & Dataram DRSV40Z/4GB
   are DDR333; X9297A, X7299A-Z & Dataram DRSV40Z4 are DDR400. The DRSV20Z3/8GB is DDR333.

ENTRY LEVEL SPARC SERVERS

Sun Fire V120		4GB	4	1GB	X7093A	DRS200/1024	1

Sun Fire V125		8GB	4	2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

Sun Fire V210		16GB[1]	8	2GB[2]	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB[2]	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1] 8GB with single processor models. 4 DIMM slots per processor.

[2] The use of the 2GB or 4GB upgrades requires Sun Fan Upgrade Kit (X7418A) in older systems.

   Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

Sun Fire V215		16GB	8[1]	1GB	X8703A	DRSU45/1GB	2
				2GB	X8704A	DRSU45/2GB	2
				4GB	X8711A	DRSU45/4GB	2

[1] 4 DIMM slots per processor

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V240		16GB[1]	8	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1]8GB with single processor models. 4 DIMM slots per processor.

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V245		16GB	8[1]	1GB	X8703A	DRSU45/1GB	2
				2GB	X8704A	DRSU45/2GB	2
				4GB	X8711A	DRSU45/4GB	2

[1] 4 DIMM slots per processor

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V250	1.06GHz, 1.28GHz	16GB	8[1]	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	Not Offered by Sun	DRS243/4GB	2

[1] Four dedicated DIMM sockets per processor, arranged as two banks of two. In a single processor configuration all four DIMMs should be identical to allow for interleaving between banks and best performance. In a dual processor configuration all eight DIMMs should be indentical.

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 280R		16GB	8	2GB	X7051A, X7062A	DRS280/2048	4
				4GB	X7063A	DRSB2000A/4096	4
				8GB	Not Offered by Sun	DRS280B/8192	4

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V440	1.06GHz, 1.28GHz	32GB	16[1]	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1] Memory is installed on one to four CPU/Memory Cards, each containing one processor and four DIMM slots.

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V445		32GB	16[1]	1GB	X8703A	DRSU45/1GB	2
				2GB	X8704A	DRSU45/2GB	2
				4GB	X8711A	DRSU45/4GB	2

[1] 4 DIMM slots per processor

COOLTHREADS SERVERS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire T1000		32GB	8	4GB	SEKX2C1Z, X7802A	DRST2000/4GB	2[1]
				8GB	SEKX2D1Z, X7803A	DRST2000/8GB	2[1]

[1] Memory must be installed in groups of 4 matched DIMMs. Valid configurations are 4 or 8 matched DIMMs.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire T2000		64GB	16	4GB	SEKX2C1Z, X7802A	DRST2000/4GB	2[1]
				8GB	SEKX2D1Z, X7803A	DRST2000/8GB	2[1]

[1] Memory must be installed in groups of 8 matched DIMMs. Valid configurations are 8 or 16 matched DIMMs.

MIDRANGE SERVERS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V480		64GB[1]	2[2]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[3]	Not Offered	DRS880/8192	4

[1] Requires OBP 4.13.2 and POST 4.13.0 versions or greater for configurations exceeding 24GB per CPU/Memory Card.

[2] One or two CPU/Memory Cards can be installed, each supporting two CPUs and 16 DIMM slots (4 banks of 4).

[3] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V490		64GB	2[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] One or two CPU/Memory Cards can be installed, each supporting two CPUs and 16 DIMM slots (4 banks of 4).

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

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FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V880z		96GB[1]	3[2]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[3]	Not Offered	DRS880/8192	4

[1] Requires OBP 4.13.2 and POST 4.13.0 versions or greater for configurations exceeding 24GB per CPU/Memory Card.

[2] One to three CPU/Memory Cards can be installed, each supporting two CPUs and 16 DIMM slots (4 banks of 4).

[3] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V880		128GB[1]	4[2]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[3]	Not Offered	DRS880/8192	4

[1] Requires OBP 4.13.2 and POST 4.13.0 versions or greater for configurations exceeding 24GB per CPU/Memory Card.

[2] One to four CPU/Memory Cards can be installed, each supporting two CPUs and 16 DIMM slots (4 banks of 4).

[3] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V890		128GB	4[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] One to four CPU/Memory Cards can be installed, each supporting two CPUs and 16 DIMM slots (4 banks of 4).

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire V1280	900MHz, 1.2GHz	96GB	3[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire E2900		192GB	3[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 3800	750MHz	64GB	2[1]	2GB	X7051A	DRS280/2048	4
	900MHz, 1.05GHz, 1.2GHz	128GB	2[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	Not Offered	DRS880/8192	4

[1] Up to two CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire E4900		192GB	3[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 4800, 4810	750MHz	96GB	3[1]	2GB	X7051A	DRS280/2048	4
	900MHz, 1.05GHz, 1.2GHz	192GB	3[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	Not Offered	DRS880/8192	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire E6900		384GB	6[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to six CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 6800	750MHz	192GB	6[1]	2GB	X7051A	DRS280/2048	4
	900MHz, 1.05GHz, 1.2GHz	384GB	6[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	Not Offered	DRS880/8192	4

[1] Up to six CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

SPARC ENTERPRISE SERVERS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T1000		32GB	8	4GB	SEKX2C1Z, X7802A	DRST2000/4GB	2[1]
				8GB	SEKX2D1Z, X7803A	DRST2000/8GB	2[1]

[1] Memory must be installed in groups of 4 matched DIMMs. Valid configurations are 4 or 8 matched DIMMs.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T2000		64GB	16	4GB	SEKX2C1Z, X7802A	DRST2000/4GB	2[1]
				8GB	SEKX2D1Z, X7803A	DRST2000/8GB	2[1]

[1] Memory must be installed in groups of 8 matched DIMMs. Valid configurations are 8 or 16 matched DIMMs.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T5120, T5220		128GB	16	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2

 Valid configurations are 4, 8 or 16 DIMMs of the same capacity only.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T5140		128GB	16	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2

 Valid configurations are 8 or 16 DIMMs of the same capacity only.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T5240		256GB[1]	32[1]	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2

[1] 256GB with optional Sun Mezzanine Kit. 16 slots on system board; 16 slots on Mezzanine.
 Valid configurations are 8, 16 or 32 DIMMs of the same capacity only. All 16 slots on Mezzanine must be populated.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise T5440		512GB	64[1]	2GB	SESX2A2Z, X4200AF	DRST5440/2GB	2
				4GB	SESX2B2Z, X4203AF	DRST5440/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2

 1, 2 or 4 CPU Modules (CMP's) can be installed, each having 4 FB-DIMM slots. 1, 2 or 4 Memory Modules may be installed, each having 12 FB-DIMM slots. Each CMP is paired with a Mem. Mod. All FB-DIMMs in the system must be the same capacity. Each CMP/Mem. Mod. pair supports 3 possible configurations: 4 FB-DIMMs (on the CMP), 8 FB-DIMMs (4 on the CMP, 4 on the Mem. Mod.), or 16 FB-DIMMs (4 on the CMP, 12 on the Mem. Mod.).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise M3000		64GB	8[1]	8GB	SEWX2B1Z	DRSM3000/8GB	4
				16GB	SEWX2C1Z	DRSM3000/16GB	4
				32GB	SEWX2D1Z	DRSM3000/32GB	4

[1] The 8 DIMM slots are arranged in two groups--"A" and "B". The DIMMs in group "A" must be equal or greater than those in group "B".

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
SPARC Enterprise M4000		**256GB**	*4[1]*	16GB	SELX2B1Z	DRSM5000/16GB	1[1]
				16GB	*SELX2B2Z*	*DRSM5000S/16GB*	*1[1]*
				32GB	SELX2C1Z	DRSM5000/32GB	1[1]
				64GB	Sun does not offer	DRSM5000/64GB	1[1]
				16GB	Sun does not offer	DRSM5000D/16GB	8[2]
				16GB	*Sun does not offer*	*DRSM5000DS/16GB*	*8[2]*
				32GB	Sun does not offer	DRSM5000D/32GB	8[2]
				64GB	Sun does not offer	DRSM5000D/64GB	8[2]

N E W

[1] The M4000 supports 2 to 4 Memory Cards, each containing 8 DIMM sockets.
   Sun's SELX2B1Z and Dataram's DRSM5000/xxGB are Memory Cards with 8 DIMMs installed.

[2] Dataram's DRSM5000D/xxGB contain 8 DIMMs only and are meant to replace DIMMs of smaller capacity on existing Memory Cards.

Configuration rules should be considered prior to changing system memory. Consult your system's service manual or Dataram's Sales/Customer Support.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
N E W *SPARC Enterprise M5000*		*512GB*	*8[1]*	16GB	SELX2B1Z	DRSM5000/16GB	1[1]
				16GB	*SELX2B2Z*	*DRSM5000S/16GB*	*1[1]*
				32GB	SELX2C1Z	DRSM5000/32GB	1[1]
				64GB	Sun does not offer	DRSM5000/64GB	1[1]
				16GB	Sun does not offer	DRSM5000D/16GB	8[2]
				16GB	*Sun does not offer*	*DRSM5000DS/16GB*	*8[2]*
				32GB	Sun does not offer	DRSM5000D/32GB	8[2]
				64GB	Sun does not offer	DRSM5000D/64GB	8[2]

[1] The M5000 supports 2 to 8 Memory Cards, each containing 8 DIMM sockets.
   Sun's SELX2B1Z and Dataram's DRSM5000/xxGB are Memory Cards with 8 DIMMs installed.

[2] Dataram's DRSM5000D/xxGB contain 8 DIMMs only and are meant to replace DIMMs of smaller capacity on existing Memory Cards.

Configuration rules should be considered prior to changing system memory. Consult your system's service manual or Dataram's Sales/Customer Support.

HIGH END SERVERS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire E20K		576GB	9[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to nine CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
   controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 12K	900MHz, 1.05GHz, 1.2GHz	288GB	9[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4

[1] Up to nine CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
   controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire E25K		1152GB	18[1]	2GB	X7051A, X7051A-Z	DRS280/2048	4
				4GB	X7056A, X7056A-Z	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to eighteen CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
   controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Fire 15K	900MHz, 1.05GHz, 1.2GHz	576GB	18[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4

[1] Up to eighteen CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
   controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

CARRIER-GRADE SERVERS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Netra 120	550MHz	4GB	4	1GB	X7093A	DRS200/1024	1

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Netra 210		16GB[1]	8	2GB[2]	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB[2]	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1] 8GB with single processor models. 4 DIMM slots per processor.

[2] The use of the 2GB or 4GB upgrades requires Sun Fan Upgrade Kit (X7418A) in older systems.
   Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Netra 240		16GB	8	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	Not Offered by Sun	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	Not Offered by Sun	DRS243/4GB	2

   Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Netra 20	1750, 2750, 1900, 2900	8GB	8	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
Netra 440		32GB	16[1]	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1] Memory is installed on one to four CPU/Memory Cards, each containing one processor and four DIMM slots.
 Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

Netra 1280		96GB	3[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
 controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

Netra 1290		192GB	3[1]	2GB	X7051A	DRS280/2048	4
				4GB	X7056A	DRS280/4096	4
				8GB[2]	X7058A-Z	DRS880/8192	4

[1] Up to three CPU/Memory cards can be installed. Each card supports two or four CPUs and 32 DIMM slots (8 banks of 4). Each CPU
 controls two banks. DIMMs can only be installed where there is a corresponding CPU. Fill both banks per CPU before moving to the next.

[2] The DRS880-R5/8GB is RoHS-5 Server Exception Compliant (contains lead for use in servers only)

Netra X4200 M2		32GB[1]	8	4GB	X4226A-Z	DRSX4200M2/4GB	2
				4GB	X4226A-C	DRSX4200M2S/4GB	2
				8GB	X4227A-Z	DRSX4200M2/8GB	2

[1] 16GB maximum for single processor models. 4 DIMM slots per processor.

Netra X4250		128GB[1]	16	2GB	X6380A	DRSX4450/2GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2

[1] 128GB maximum when 8GB FB-DIMMs are available.

Netra X4450		256GB[1]	32	2GB	X6380A	DRSX4450/2GB	2
				4GB	X6381A	DRSX4450/4GB	2
				8GB	X6382A	DRSX4450/8GB	2

[1] 256GB maximum when 8GB FB-DIMMs are available.

Netra T2000		64GB	16	4GB	SEKX2C1Z, X7802A	DRST2000/4GB	2[1]
				8GB	SEKX2D1Z, X7803A	DRST2000/8GB	2[1]

[1] Memory must be installed in groups of 8 matched DIMMs. Valid configurations are 8 or 16 matched DIMMs.

Netra T5220		128GB	16	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2

 Valid configurations are 4, 8 or 16 DIMMs of the same capacity only.

Netra T5440		256GB[1]	32[2]	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2

[1] 256GB maximum when 8GB FB-FDIMMs are available.

[2] 32 slots with optional Sun Mezzanine Kit. 16 slots on system board; 16 slots on Mezzanine.
 Valid configurations are 8, 16 or 32 DIMMs of the same capacity only. All 16 slots on Mezzanine must be populated.

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
BLADE SERVERS							
Sun Blade T6300 Server Module		32GB	8	4GB	X5723A	DRST6300/4GB	2
				8GB	X5724A	DRST6300/8GB	2
Sun Blade X6220 Server Module		64GB	16[1]	4GB	X4292A	DRSX6220/4GB	2
				8GB	X4293A	DRSX6220/8GB	2
[1] 8 DIMM slots per processor							
Sun Blade X6240 Server Module		64GB	16[1]	4GB	X4401A	DRSX6440/4GB	2
				8GB	X4402A	DRSX6440/8GB	2
[1] 8 DIMM slots per processor							
Sun Blade X6250 Server Module		64GB	16[1]	4GB	X4401A	DRSX6250/4GB	2
				8GB	X4402A	DRSX6250/8GB	2
[1] 8 DIMM slots per processor							
Sun Blade X6440 Server Module		256GB[1]	32[2]	4GB	X4401A	DRSX6440/4GB	2
				8GB	X4402A	DRSX6440/8GB	2
[1] When 8GB DIMMs are available							
[2] 8 DIMM slots per processor. Install DIMMs in the slots farthest from the CPU first.							
Sun Blade X6450 Server Module		192GB[1]	24	4GB	X4401A	DRSX6250/4GB	2
				8GB	X4402A	DRSX6250/8GB	2
[1] When 8GB DIMMs are available							
Sun Blade T6320 Server Module		128GB	16	2GB	SESX2A1Z, X4200A	DRST5220/2GB	2
				2GB	SESX2A2Z, X4200AF	DRST5440/2GB	2
				4GB	SESX2B1Z, X4203A	DRST5220/4GB	2
				4GB	SESX2B2Z, X4203AF	DRST5440/4GB	2
				8GB	SESX2C1Z, X4204A	DRST5220/8GB	2
				16GB	SESX2D1Z, X4290AF	DRST5440/16GB	2
Valid configurations are 4, 8 or 16 DIMMs of the same capacity only. All DIMMs in a branch must be identical.							
Sun Blade X8420 Server Module		64GB	16[1]	4GB	X5094A-Z	DRSX8440/4GB	2
				8GB	X5095A-Z	DRSX8440/8GB	2
[1] 4 DIMM slots per processor socket							
Sun Blade X8440 Server Module		128GB[1]	32	4GB	X5094A-Z	DRSX8440/4GB	2
				8GB	X5095A-Z	DRSX8440/8GB	2
[1] 64GB with two processors installed. 8 DIMM slots per processor socket.							
Sun Blade X8450 Server Module		128GB[1]	32	4GB	X4401A	DRSX6250/4GB	2
				8GB	X4402A	DRSX6250/8GB	2
[1] When 8GB DIMMs are available							
X64 BASED WORKSTATIONS							
Sun Ultra 20 M2		8GB	4	4GB	X5279A-Z	DRSX2100M2/4GB	2
Sun Ultra 20		8GB[1]	4	4GB	X4211A-Z	DRSU20E/4GB	2
[1] Sun's X4211A-Z and Dataram's DRSU20E/4GB are ECC type memory and should not be mixed with Sun's X8008A Non-ECC type memory. 8GB maximum with ECC memory; 1GB maximum with Non-ECC memory.							
Dataram's DRSU20E/4GB is PC2700 333MHz; Sun's X4211A-Z is PC2100 266MHz.							
Sun Ultra 24		8GB	4	4GB	X5279A-Z	DRSX2100M2/4GB	2
Sun Ultra 40		32GB	8[1]	4GB	X7260A	DRSU40/4GB	2
				8GB	X7267A	DRSU40/8GB	2
[1] 4 DIMM slots per processor							

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Ultra 40 M2		64GB[1]	8[2]	2GB	X5287A-Z	DRSX2200M2/2GB	2
				4GB	X5288A-Z	DRSX2200M2/4GB	2
				8GB	X5289A-Z	DRSU40M2/8GB	2
				16GB[1]	Not Offered by Sun	DRSU40M2/16GB	2

[1] Support for the 16GB upgrade and 64GB of system memory requires BIOS version 1.22 or later.

[2] 4 DIMM slots per processor

SPARC BASED WORKSTATIONS

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Blade 150		2GB	4	512MB	X6181A	DRSB150/512	1
Sun Blade 1000	600MHz, 750MHz, 900MHz	8GB	8	2GB	X7051A, X7062A	DRS280/2048	4
				4GB	X7063A	DRSB2000A/4096	4
Sun Blade 1500 (Silver)	1.503GHz	8GB	4	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Blade 1500 (Red)	1.0GHz	8GB	4	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	Not Offered by Sun	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	Not Offered by Sun	DRS243/4GB	2

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Blade 2000	900MHz, 1.015GHz, 1.05GHz, 1.2GHz	8GB	8	2GB	X7051A, X7062A	DRS280/2048	4
				4GB	X7063A	DRSB2000A/4096	4
Sun Ultra 25		8GB	4	1GB	X8703A	DRSU45/1GB	2
				2GB	X8704A	DRSU45/2GB	2
				4GB	X8711A	DRSU45/4GB	2
Sun Ultra 45		16GB	8[1]	1GB	X8703A	DRSU45/1GB	2
				2GB	X8704A	DRSU45/2GB	2
				4GB	X8711A	DRSU45/4GB	2

[1] 4 DIMM slots per processor

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Blade 2500 (Silver)	1.6GHz	16GB	8[1]	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	X7711A-4	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	X7711A-4	DRS243/4GB	2

[1] 8 slots and 16GB with two CPUs. 4 slots and 8GB with one CPU.

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

FAMILY	MODEL	MAX	SLOTS	CAPACITY	MFG #	DATARAM #	BOARDS
Sun Blade 2500 (Red)	1.28GHz	16GB	8	2GB	X7704A-4, X7704A, X7604A…	DRS240/2048	2
				4GB	Not Offered by Sun	DRS240/4096	2
				2GB	X7704A-4	DRS243/2GB	2
				4GB	Not Offered by Sun	DRS243/4GB	2

[1] 8 slots and 16GB with two CPUs. 4 slots and 8GB with one CPU.

Dataram recommends Open Boot Prom (OBP) 4.16v1 or later for the use of the DRS243/xxx (DDR333/PC2700).

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Customer Support

Customer Support representatives are available for Asia, Europe and the USA to help with detailed technical information, installation questions and troubleshooting.

For the latest information, please consult Dataram's Memory Configurator and Product Support FAQ at http://www.dataram.com. Dataram memory products are covered by a lifetime warranty. Complete warranty information is also available on Dataram's website.

Prior to returning products to Dataram, please contact Customer Support via email or telephone to obtain an RMA (Return Material Authorization) tracking number

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About Dataram

Founded in 1967, Dataram is a worldwide leader in the design and manufacture of reliable, high capacity and innovative memory solutions. Dataram provides customized memory solutions for OEMs and memory upgrades for leading brands including HP, IBM, SGI, Sun Microsystems, Dell, Intel and AMD Opteron. For more information about Dataram's memory offerings, visit www.dataram.com

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