



#### PRODUCT HIGHLIGHTS

- Process data faster—up to twice as fast as introductory DDR3 data rates
- Increase data throughput—up to twice the bandwidth of introductory DDR3 memory
- Double server memory capacity—enable up to twice the installed memory capacity as module densities mature
- Increase data throughput—up to twice the bandwidth of introductory DDR3 memory
- Easier system cooling—less heat generated per module
- Optimized for future Intel® Xeon® processor E5-2600 v3 product family
- Compatible with OEM servers and warranties
- Limited lifetime warranty\*

## Crucial® DDR4 Server Memory

### More speed. More bandwidth. More efficient. Next generation DDR4 memory is here.

Overcome one of your greatest server limitations: memory. From networking, cloud computing, and virtualization to HPC, Big Data and more, memory-dependent server applications require increasingly higher densities of memory and higher levels of performance than are attainable on current DDR3 technology. Enter Crucial® DDR4 server memory.

#### 2x the Speed



Process data faster and double memory bandwidth to up to 17 GB/s. With Crucial DDR4 memory, introductory data rates start at 2133 MT/s and get even faster as the technology matures, compared to introductory DDR3 rates of 1066 MT/s. Crucial DDR4 memory also delivers faster burst access speeds

for improved sequential data throughput by utilizing four channel memory architecture that's unique to DDR4 technology.

#### 2x the Capacity



Maximize system performance by doubling memory capacity. As DDR4 memory technology matures, it will allow you to double your server's memory capacity and get more out of every module—and your entire network. Built using advanced technology that allows more gigabits per component, Crucial

DDR4 memory is designed to utilize higher density components, allowing us to deliver DDR4 modules that are up to twice as dense.

#### 40% More Energy Efficient



Reduce power and cooling expenses. Crucial DDR4 memory uses 20% less voltage than DDR3 technology, and operates at just 1.2V compared to 1.5V for standard DDR3 server memory. Combined with the additional power-saving features inherent in DDR4 memory architecture, Crucial DDR4 memory is

able to deliver up to 40% power savings compared to standard DDR3 technology. Also, since less heat is generated per module, it's easier to keep systems cool.

#### Enhance Cloud Computing, Big Data, HPC, and More



For memory-dependent server applications such as virtualization, cloud computing, Big Data, and HPC, Crucial DDR4 server memory is an ideal way to increase memory bandwidth and capacity, while also reducing power expenses. Since memory often functions as a fixed (non-shared) component,

it's one of the biggest performance constraints for data centers. Maximize DDR4 memory capacity and achieve next generation performance and efficiency. Crucial DDR4 memory is optimized for future Intel® Xeon® processor E5-2600 v3 product family, allowing you to handle diverse enterprise workloads with ease.

## Micron® Quality—A Higher Level of Reliability

As a brand of Micron, one of the largest memory manufacturers in the world, Crucial DDR4 memory represents the future of server capability. From the original DDR technology to DDR4, we've engineered the memory technologies that have powered the world's servers for 35 years and counting. Designed for leading platforms, compatible with OEM systems and warranties, and backed by a limited lifetime warranty, Crucial DDR4 memory pushes the limits on server performance.\*

PART NUMBER	MODULE TYPE	DENSITY	SPEED	RANK	VOLTAGE	COMP CONFIG	CAS LATENCY	UPC
CT8G4TFD8213	ECC SODIMM 260-pin	8GB	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767387
CT4G4WFS8213	ECC UDIMM 288-pin	4GB	2133MT/s	Single	1.2V	512M x 8	CL15	649528767417
CT8G4WFD8213	ECC UDIMM 288-pin	8GB	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767448
CT4G4RFS8213	RDIMM 288-pin	4GB	2133MT/s	Single	1.2V	512M x 8	CL15	649528767868
CT8G4RFS4213	RDIMM 288-pin	8GB	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767479
CT16G4RFD4213	RDIMM 288-pin	16GB	2133MT/s	Dual	1.2V	1024M x 4	CL15	649528767509
CT32G4LFQ4213	LRDIMM 288-pin	32GB	2133MT/s	Quad	1.2V	2048M x 4	CL15	649528767530
CT8G4VFS4213	VLP RDIMM 288-pin	8GB	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767578
CT16G4VFD4213	VLP RDIMM 288-pin	16GB	2133MT/s	Dual	1.2V	2048M x 4	CL15	649528767608

## 2 Piece DDR4 Server Memory Kits

PART NUMBER	MODULE TYPE	DENSITY	SPEED	RANK	VOLTAGE	COMP CONFIG	CAS LATENCY	UPC
CT2K8G4TFD8213	ECC SODIMM 260-pin	16GB (8GBx2)	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767394
CT2K4G4WFS8213	ECC UDIMM 288-pin	8GB (4GBx2)	2133MT/s	Single	1.2V	512M x 8	CL15	649528767424
CT2K8G4WFD8213	ECC UDIMM 288-pin	16GB (8GBx2)	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767455
CT2K4G4RFS8213	RDIMM 288-pin	8GB (4GBx2)	2133MT/s	Single	1.2V	512M x 8	CL15	649528767875
CT2K8G4RFS4213	RDIMM 288-pin	16GB (8GBx2)	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767486
CT2K16G4RFD4213	RDIMM 288-pin	32GB (16GBx2)	2133MT/s	Dual	1.2V	1024M x 4	CL15	649528767516
CT2K32G4LFQ4213	LRDIMM 288-pin	64GB (32GBx2)	2133MT/s	Quad	1.2V	2048M x 4	CL15	649528767547
CT2K8G4VFS4213	VLP RDIMM 288-pin	16GB (8GBx2)	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767585
CT2K16G4VFD4213	VLP RDIMM 288-pin	32GB (16GBx2)	2133MT/s	Dual	1.2V	2048M x 4	CL15	649528767615

## 4 Piece DDR4 Server Memory Kits

PART NUMBER	MODULE TYPE	DENSITY	SPEED	RANK	VOLTAGE	COMP CONFIG	CAS LATENCY	UPC
CT4K8G4TFD8213	ECC SODIMM 260-pin	32GB (8GBx4)	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767400
CT4K4G4WFS8213	ECC UDIMM 288-pin	16GB (4GBx4)	2133MT/s	Single	1.2V	512M x 8	CL15	649528767431
CT4K8G4WFD8213	ECC UDIMM 288-pin	32GB (8GBx4)	2133MT/s	Dual	1.2V	512M x 8	CL15	649528767462
CT4K4G4RFS8213	RDIMM 288-pin	16GB (4GBx4)	2133MT/s	Single	1.2V	512M x 8	CL15	649528767882
CT4K8G4RFS4213	RDIMM 288-pin	32GB (8GBx4)	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767493
CT4K16G4RFD4213	RDIMM 288-pin	64GB (16GBx4)	2133MT/s	Dual	1.2V	1024M x 4	CL15	649528767523
CT4K32G4LFQ4213	LRDIMM 288-pin	128GB (16GBx4)	2133MT/s	Quad	1.2V	2048M x 4	CL15	649528767554
CT4K8G4VFS4213	VLP RDIMM 288-pin	32GB (8GBx4)	2133MT/s	Single	1.2V	1024M x 4	CL15	649528767592
CT4K16G4VFD4213	VLP RDIMM 288-pin	64GB (16GBx4)	2133MT/s	Dual	1.2V	2048M x 4	CL15	649528767622

\* Limited lifetime warranty valid everywhere except Germany and France, where warranty is valid for ten years from date of purchase.

**NOTE:** Product performance and efficiency improvements are noted as comparisons between DDR3 and DDR4 memory technologies at their introduction. When it was introduced, DDR3-1066 operated at 1.5V and had an estimated component density of 8Gb, compared to DDR4-2133, which will operate at 1.2V and have an estimated component density of 16Gb. When voltage reductions and all other energy-saving DDR4 features are factored in, DDR4 modules are projected to consume up to 40% less power.