

# SGI® UV™ 300RL

Enabling Oracle® Database 12c In-Memory  
for Large and Growing Enterprises

## Key Features

Scales up to 32 sockets and 24TB  
of coherent shared memory

Intel® Xeon® v4 or v3 processors

Oracle Linux Certified

Mission-critical RAS

Future-ready design



## Achieve Real-time Business with Oracle Database In-Memory

The ability to accelerate Oracle 12c to the speed of memory with the Oracle Database In-Memory option is game changing. Imagine if your financial, manufacturing, and marketing teams could access vital information with up-to-the-moment accuracy, get answers instantaneously, and operate in real time. Now imagine leveraging Oracle Database In-Memory across your enterprise with near limitless scale and mission-critical reliability. SGI helps make this possible.

A new model in the SGI UV server line for high performance in-memory computing, SGI UV 300RL enables enterprises to run Oracle Database In-Memory on a single, Intel-based system with un-paralleled scale-up capacity to accelerate data analytics and achieve real-time operations.

## Perform Analytics at 100x - Run OLTP and Analytics Concurrently

SGI UV 300RL allows enterprises to implement the innovative 'dual-format' architecture of Oracle Database In-Memory at greater scale to identify business trends in seconds, make faster, smarter decisions, and gain competitive advantage. You can speed analytics by orders of magnitude. You can accelerate mixed workload OLTP. And you can run transactional and analytic workloads concurrently, eliminating the expense and time-delay of ETL processes, to get real-time answers on demand.



## Leverage Future-ready, Single-System Design with Near Limitless Scale

Utilizing a unique scale-up, modular architecture and 7th generation SGI technology, UV 300RL is an advanced symmetric multiprocessing (SMP) system built for large and growing Oracle Database In-Memory environments. Featuring Intel® Xeon® E7-8800 v4 or v3 processors (up to 24 cores), the system is certified and factory-installed with Oracle Linux 7 with Unbreakable Enterprise Kernel. A 5U modular chassis contains 4 sockets with up to 192 threads and integrated SGI NUMalink® ASICs. By adding additional chassis (up to 8; see figure 2) and leveraging high bandwidth, low latency SGI NUMalink technology, UV 300RL can scale from 4 to 32 sockets and 1 to 24TBs of cache-coherent shared memory as a single system.

## Enjoy Seamless, Scale-up Simplicity

The modular single-system architecture of SGI UV 300RL enables you to grow your Oracle Database In-Memory environment without adding overhead. There are no cluster nodes or cluster network to configure and administer. No additional software or licensing is required. And there's no need for data segmentation or re-balancing I/O when increasing the system's size, as performance scales near linearly and automatically.

## Depend on Mission-Critical Reliability

SGI UV 300RL is equipped with high fault-tolerance and robust reliability, availability and serviceability (RAS) features. SGI's memlog utility helps overcome errors on memory DIMMs that can lead to application performance issues and unplanned downtime. Corrected memory errors are logged and analyzed. If a DIMM page is deemed defective, an attempt is made to transparently relocate data to a new page and retire the old page, without interrupting applications. Administrators are also alerted to DIMMs in need of replacement during planned maintenance.

To help ensure continuous operations, you can fully leverage Oracle's Maximum Availability Architecture for Oracle 12c to protect against data loss and keep critical applications highly available in the event of system or site outage.

## Gain In-memory Performance with Deployment Flexibility

Industry-standard PCIe Gen3 expansion slots provide optimum flexibility for persistent storage with fast I/O. Connect directly or by network to your existing enterprise-class 3rd party storage or select from the entire SGI InfiniteStorage line. The UV 300RL is deployed by an expert SGI services engineer, either pre-racked and featuring air or water cooling, or in your existing 19" rack.

### SGI UV 300RL Scales Seamlessly as a Single System

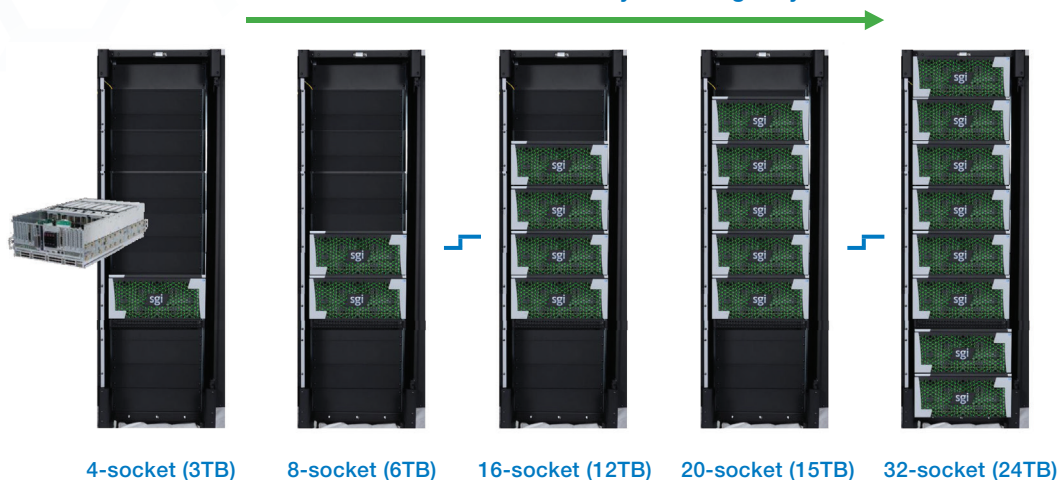


Figure 2. SGI UV 300RL scales up in 4-socket increments  
(12-socket, 24-socket, and 28-socket configurations not pictured)

## UV 300RL Specifications

System Components	
Processors	<ul style="list-style-type: none"> <li>Intel® Xeon® processor E7-8890 v4 product family 4, 10, 16, 18 and 24 core CPUs, 2.2 - 3.2 GHz</li> <li>Intel® Xeon® processor E7-8890 v3 product family 4, 10, 16 and 18 core CPUs, 2.3 - 3.2GHz</li> </ul>
Memory	<ul style="list-style-type: none"> <li>8, 16, 32, 64GB up to 1600MT/s ECC DDR4 DIMMs</li> </ul>
Disk Drives	<ul style="list-style-type: none"> <li>1.8" SSD Boot drives (1 or 2)</li> <li>2.5" SATA, SAS HDD or SSD</li> <li>DVD or DVD-RW</li> </ul>
Interconnect	<ul style="list-style-type: none"> <li>NUMalink® 7 (NL7; 14.94GB/s bidirectional peak)</li> </ul>
Environmental (Operating)	<ul style="list-style-type: none"> <li>41-95F (5-35C) up to 1525m (5000 ft. )</li> <li>Max 10,000 ft. (3050 m)</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>Ambient air-cooled</li> </ul>
Rack	
SGI Rack Dimensions (H x W x D)	<ul style="list-style-type: none"> <li>78.75" (42U) x 28" x 45.5"</li> <li>200cm x 71cm x 115.6cm</li> </ul>
Power	<ul style="list-style-type: none"> <li>Single-phase 200/230VAC, 30/32 Amps, OR</li> <li>Three phase 208VAC, 60 Amps or 400VAC, 32 Amps</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>Open-looped airflow OR</li> <li>Optional water-cooled: water temp. 45-60F (7.2-15.6C)</li> </ul>
3rd party rack	<ul style="list-style-type: none"> <li>Supported for configurations up to 32 sockets in standard 19" rack</li> </ul>
Enclosure Specifications	
Dimensions (H x W x D)	<ul style="list-style-type: none"> <li>8.64" (5U) x 17.5" x 31.8"</li> <li>22cm x 44.5cm x 80.8cm</li> </ul>
Weight (maximum)	<ul style="list-style-type: none"> <li>136 lbs (62kg)</li> </ul>
Acoustical Noise (typical)	<ul style="list-style-type: none"> <li>77dBA</li> </ul>
Heat Dissipation to Air	<ul style="list-style-type: none"> <li>7.64 kBTU/hr (0.64 Tons) , 5.22KW maximum</li> </ul>
Power	<ul style="list-style-type: none"> <li>Four 12VDC 1600W, 180-264VAC input voltage (N+1), or (N+N)</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>Eight hot-pluggable, 80mm, 12VDC axial cooling fans</li> </ul>
Air flow (Front to Rear)	<ul style="list-style-type: none"> <li>Max 650 CFM (1104 m3/hr)</li> <li>Typical 475 CFM (807 m3/hr)</li> </ul>
Administrative Network	<ul style="list-style-type: none"> <li>One Rack Management Controller</li> </ul>
CPU	<ul style="list-style-type: none"> <li>4 Intel® Xeon® processor E7-8800 product family</li> </ul>
Memory	<ul style="list-style-type: none"> <li>24 DIMM slots per Intel® Xeon® CPU</li> </ul>
IO expansion options	12 Slot option <ul style="list-style-type: none"> <li>Up to (8) x8, (4) x16 full height slots</li> </ul> 8 Slot option plus disk riser <ul style="list-style-type: none"> <li>Four SATA or SAS 2.5" HDD or SSD slots</li> <li>up to (4) x8, (4) x16 full height slots</li> </ul>
Base I/O Features	<ul style="list-style-type: none"> <li>Two 1.8" SATA SSD slots, 6GB/s</li> <li>Four USB 2.0 ports</li> <li>One Gb Ethernet port</li> </ul>
System Expansion	<ul style="list-style-type: none"> <li>4 to 32 sockets</li> <li>Up to 24TB of coherent shared memory</li> <li>Hard partitions options maintain resilience while offering management flexibility</li> </ul>
Visualization	<ul style="list-style-type: none"> <li>NVIDIA® Quadro® Graphics</li> </ul>

System Management	
Board Management Controller	<ul style="list-style-type: none"> <li>One per compute chassis</li> <li>IPMI v1.5/v2.0 interface, inc SNMP trap support via PEF</li> <li>Controls chassis power and reset sequencing</li> <li>Monitors chassis power, temperature and fans</li> <li>Fan speed controlled dynamically based on temperature variations</li> <li>Serial Port and VGA via KVM redirection</li> </ul>
Rack Management Controller	<ul style="list-style-type: none"> <li>One per system</li> <li>IPMI v1.5/v2.0 interface, inc SNMP trap support via PEF</li> <li>Aggregates management network connections to chassis</li> <li>Controls system power and reset sequencing</li> <li>Self-monitors environment, reports health status</li> <li>Provides failure analysis tools</li> </ul>
SGI Foundation Software	<ul style="list-style-type: none"> <li>24x7 Remote System Management Service</li> <li>Memory Error Logging</li> <li>Predictive Failure Analysis for in-memory data</li> <li>Controls system power and reset sequencing</li> <li>Page Retirement for failed memory</li> <li>Hardware Event Notification</li> </ul>
Storage	
SGI InfiniteStorage™ Solutions	<ul style="list-style-type: none"> <li>SGI DAS, NAS, SAN, Storage Servers, MAID and tape libraries</li> </ul>
SGI InfiniteStorage Software	<ul style="list-style-type: none"> <li>CXFS™, XFS®, DMF™, XVM®, and backup and restore solutions</li> </ul>
3rd Party Storage	<ul style="list-style-type: none"> <li>DAS, NAS, SAN, tape</li> </ul>
System Software	
Operating Systems	<ul style="list-style-type: none"> <li>Oracle Linux (OL) 7</li> </ul>
SGI Software	<ul style="list-style-type: none"> <li>SGI Management Suite</li> </ul>



## About SGI

SGI is a global leader in high performance solutions for compute, data analytics and data management that enable customers to accelerate time to discovery, innovation, and profitability. Visit [sgi.com](http://sgi.com) for more information.

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