Mountains Of Opportunity To Serve Dynamic, Voice, Video, and Image Data To and From The Heartland of The Internet
CHECK OUT THESE KEY TOPICS

**Server Market Driving Forces**
- Server Market Shares
- Server Virtualization

**SOA Foundation Architecture**
- Advantage Mainframe
- Open Application Programming Interfaces

**Laboratory Information Systems Market**

**IT Infrastructure**

**Service Level Objectives**

**Blade Servers**

**Thin Film Batteries**

**OPPORTUNITY ABOUNDS**

WinterGreen Research, Inc.
Lexington, Massachusetts

www.wintergreenresearch.com
Server vendors adapt business strategy to focus on real time exchange of information on enterprise networks and the Internet. Network computer systems hardware leverages integration and messaging software. Network storage systems are adapting to the Internet.

Server vendors have positioned to help implement business strategy relative to real time exchange of information. Enterprise networks are built on data centers that leverage the Internet. A focus on network computer systems hardware has hidden the need to leverage shared workload and integration of applications. Messaging software renamed as ESBs supports exchange of information over the network. Network storage systems are adapting to the Internet.

Standalone servers enable network solutions that attack cost and complexity, accelerate service delivery, and provide mobility with security. Blade and mainframe servers combine these capabilities with the ability to support shared workload. Core elements of server business strategy include provision for end-to-end architecture that extends technology across scalable processor architectures.

Open systems technology implementation and is being combined with x86-based products. Server products are positioned to provide price-performance, flexibility, and portable systems. Devices including RFID readers, smart cards, and cell phones are interconnecting to server systems. Clustered systems are a significant aspect of market evolution.

Blade servers continue to be the fastest growing segment of the worldwide server market. Customers are increasing blade deployments and vendors are broadening the blades product portfolio. Blades and mainframes are in the next wave of product evolution and customer adoption because of their ability to implement shared workload.

As IT organizations become more familiar with the shared workload platforms, they are able to deploy blades in IT environments that are suited to take advantage the management capabilities, as well as the cost and serviceability benefits.

Unit shipments go down as virtualization and mainframes catch hold.

Servers enable network solutions that attack cost and complexity, accelerate service delivery, and provide mobility with security. Core elements of server business strategy include provision for end-to-end architecture that extends technology across scalable processor architectures.

Open systems technology implementation and is being combined with x86-based products. Server products are positioned to provide price-performance, flexibility, and portable systems. Devices including RFID readers, smart cards, and cell phones are interconnecting to server systems. Clustered systems are a significant aspect of market evolution.

On-going innovation in microprocessor architecture, systems design, networking integration and software to help ensure continuing evolution of server technology. Market participants seek to achieve price-performance advantage.
Deploying services over the network requires a server infrastructure platform that is enterprise-ready, developer-rich, and economically compelling. Servers work as a combination of software, hardware and services that will give the customer value. Server platforms are positioned as systems that lower administrative costs, lower developer training costs, and provides high availability, high reliability.

Server markets at $46.9 billion in 2007 are anticipated to reach $79.3 billion by 2013. SOA, services oriented architecture software is the primary market growth driver because it provides companies a way to achieve flexible response to changing market conditions using automated process.
Companies Profiled

Market Leaders
IBM
Hewlett Packard

Market Participants
Sun
Dell
Fujitsu/Fujitsu Siemens
Others

Server Market Opportunities, Market Strategies, and Market Forecasts
2008-201

REPORT METHODOLOGY

This is the 327th report in a series of market research reports that provide forecasts in communications, telecommunications, the internet, computer, software, telephone equipment, health equipment, and energy. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases. Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participation in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share. Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards. Interviewing key industry participants, experts and end-users. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.
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<th>Description</th>
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<td>Processor Speed</td>
<td>2.4 GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>8 GB DDR2</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2</td>
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Sun Blade Intel Xeon Key Applications

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<th>Description</th>
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<tr>
<td>Web Hosting</td>
<td>Multiple users</td>
</tr>
<tr>
<td>Database</td>
<td>High performance</td>
</tr>
<tr>
<td>Media Streaming</td>
<td>Real-time delivery</td>
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**Table 3-48 3-65**

Sun Blade Intel Xeon Processors Key Benefits

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<th>Description</th>
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<td>Scalability</td>
<td>Up to 8 processors</td>
</tr>
<tr>
<td>Reliability</td>
<td>99.995% uptime</td>
</tr>
<tr>
<td>Performance</td>
<td>High clock speed</td>
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Sun Blade 6000 Chassis Product Line Server Modules

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<td>Dual-socket server</td>
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<tr>
<td>Blade B</td>
<td>Single-socket server</td>
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<td>Chassis</td>
<td>Holds up to 4 blades</td>
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<tr>
<td>Power Supply</td>
<td>1 kW</td>
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<td>Cooling</td>
<td>Hot swap</td>
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Sun Blade 6000 Modular System Features:

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<td>RAID</td>
<td>0, 1, 5, 10</td>
</tr>
<tr>
<td>Hot Swap</td>
<td>Drives and fans</td>
</tr>
<tr>
<td>Management</td>
<td>Web-based interface</td>
</tr>
</tbody>
</table>

**Table 3-52 3-72**

Fujitsu Siemens CELSIUS W Series

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel Xeon</td>
</tr>
<tr>
<td>Memory</td>
<td>4 GB DDR2</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table 3-53 3-73**

Fujitsu Siemens CELSIUS W Series Server Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Speed</td>
<td>2.0 GHz</td>
</tr>
<tr>
<td>Memory</td>
<td>2 GB DDR2</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 3-54 3-77**

Fujitsu Siemens Network Security

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewall</td>
<td>1000 sessions</td>
</tr>
<tr>
<td>Intrusion Detection</td>
<td>1000 packets</td>
</tr>
</tbody>
</table>

**Table 3-55 3-78**

Fujitsu Siemens Celsius W Series Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAID</td>
<td>0, 1, 5, 10</td>
</tr>
<tr>
<td>Hot Swap</td>
<td>Drives and fans</td>
</tr>
<tr>
<td>Management</td>
<td>Web-based interface</td>
</tr>
</tbody>
</table>

**Table 3-56 3-79**

Dell Power Edge Blades and Chassis

<table>
<thead>
<tr>
<th>Blade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerEdge M600</td>
<td>Dual-socket server</td>
</tr>
<tr>
<td>PowerEdge M610</td>
<td>Dual-socket server</td>
</tr>
</tbody>
</table>

**Table 3-57 3-80**

Component Errors IBM Light-Path Diagnostics Can Detect

<table>
<thead>
<tr>
<th>Error Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Microcode corruption</td>
</tr>
<tr>
<td>Memory</td>
<td>Memory failures</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>Media errors</td>
</tr>
</tbody>
</table>

**Table 3-58 3-82**

IBM Blade Environment

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
<td>Up to 8 processors</td>
</tr>
<tr>
<td>Reliability</td>
<td>99.995% uptime</td>
</tr>
<tr>
<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 3-59 3-84**

IBM Blade.org partners

<table>
<thead>
<tr>
<th>Partner</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP</td>
<td>Enterprise server solutions</td>
</tr>
<tr>
<td>Dell</td>
<td>PowerEdge server solutions</td>
</tr>
<tr>
<td>Oracle</td>
<td>Database solutions</td>
</tr>
</tbody>
</table>

**Table 3-60 3-85**

Nor-Tech Servers And High-Performance Clusters

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
<td>Up to 16 processors</td>
</tr>
<tr>
<td>Reliability</td>
<td>99.995% uptime</td>
</tr>
<tr>
<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 3-61 3-86**

Egenera Systems PAN Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
<td>Up to 16 processors</td>
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<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 3-62 3-87**

Egenera Systems Blade

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 3-63 3-89**

Egenera Systems BladeFrame® Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
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</tr>
<tr>
<td>Reliability</td>
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</tr>
<tr>
<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 3-64 3-90**

Verari Systems Industries Served

<table>
<thead>
<tr>
<th>Industry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>Patient care</td>
</tr>
<tr>
<td>Finance</td>
<td>Investment management</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>Network services</td>
</tr>
</tbody>
</table>

**Table 4-1 4-1**

Intel Server HTTP Dynamic Server Aspects

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
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<td>Reliability</td>
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<tr>
<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>

**Table 4-2 4-10**

InfiniBand (IB) Fabric Topology

<table>
<thead>
<tr>
<th>Topology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesh</td>
<td>Multiple interconnects</td>
</tr>
<tr>
<td>Ring</td>
<td>Single loop</td>
</tr>
<tr>
<td>Tree</td>
<td>Hierarchical</td>
</tr>
</tbody>
</table>

**Table 4-3 4-21**

Web Services Technology Positioning

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability</td>
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<td>Performance</td>
<td>High clock speed</td>
</tr>
</tbody>
</table>
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Table 4-31  
EnerDel’s Business Strategy  
Table 4-32  
EnerDel Business Positioning

SERVER COMPANY PROFILES

Figure 5-1  
Fujitsu Server Innovation  
Table 5-2  
Fujitsu Server Positioning  
Table 5-3  
Fujitsu Servers
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SUSAN EUSTIS, President, co-founder of WinterGreen Research, has done research in communications and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines. She has new patent applications in format varying, multiprocessing, and electronic voting. She is the author of recent studies of the Regional Bell Operating Companies’ marketing strategies, Internet equipment, biometrics, a study of Internet Equipment, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets. Ms. Eustis is a graduate of Barnard College.
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