The New Paradigm of Unified Data Center Management

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Agenda

• Avocent Company Overview
• Challenges in Managing Unified Data Center
• Manageability Solutions
  – Access and Control
    • DSView3 Centralized Management
      – Blade Server Management
      – Virtualized Server Management
    • Serial over IP
    • KVM over IP
    • Power over IP
    • Service Processor Gateways
• Summary
“Always On” IT Infrastructure Management solutions for businesses worldwide
- Hardware, Software and Services
- Data Center to Desktop

$1.4B Market Capitalization
- NASDAQ: AVCT

2006 Revenue = $521M
- 2001: $256M Revenue; $0.75 EPS

1,800+ Employees

OEM Supplier of Firmware and Appliances
- HPQ, Dell, IBM, Intel, APC, FSC, Lenovo

2 Primary Divisions
- MSD: “Back End” i.e., Data Center IT Infrastructure Management
- LANDesk: “Front End” i.e., Desktop, Servers and Mobile Systems and Security Mgmt.

94 of the Fortune 100 - and 85% of Fortune 1000 - use Avocent solutions
The Problem We’re Solving

2006 Management Equation
$1 Capital = $7 Management

- Secure/Compliant
- Available 24x7
- Service-Oriented
- Do More with Less

Source: IDC, May 2006
Enterprise IT Challenges – Business Driven

• Security
  – Internal threats
  – External threats
  – Audit requirements

• Manageability
  – Multiple locations: distance & time zones
  – Different skill sets and capabilities in administrators
  – Managing ever increasing servers and network devices
  – Managing multi-vendor, multi-platform environment
  – Standardized process
Enterprise IT Challenges – Business Driven

- **Scalability**
  - Planning for the next 6, 12, 18, 24, 36 months
  - Can current infrastructure grow with the business?
  - Investment and technology protection

- **Compliance**
  - Local government regulations
  - World-wide industry regulations

- **Cost Effectiveness**
  - Doing more with less
Evolution of Enterprise IT

- Business Continuity Planning (BCP)
- Disaster Recovery Sites / Backup Sites
- Decentralized of IT personnel
- Prevent Physical Access to IT assets
- Co-locate at ISP
- Relocation of Data Centre to other cities/countries
- Outsourcing Model
- Highly redundant network infrastructure
- Centralized Storage Infrastructure
- High-speed WAN Connectivity

IT Management Nightmare!!!!!
Avocent can help. We have the solutions.
Avocent Data Center Solutions

- DSView 3 Management Software
- DSR KVM over IP appliance
- Cyclades ACS Serial over IP appliance
- PM Remote Power Management
- MergePoint Service processor managers
Centralized Management

- DSView 3 Management Software
- DSR KVM over IP appliance
- Cyclades ACS Serial over IP appliance
- PM Remote Power Management
- MergePoint Service processor managers
DS View 3 Management Software

The secure solution for managing every device in your data center from a single interface.

• Secure, remote and consolidated out-of-band management of the entire IT infrastructure
  – Access IPMI-enabled servers
  – Manages power strips and third party power devices
• Authenticates user permission against your internal or external authentication service, such as LDAP, Active Directory, NT Domain, TACACS+, RADIUS and RSA SecurID.
• Allows selectable encryption modes
• SNMP traps and email notification
## DSView 3 Blade Support

![DSView 3 Blade Support Image](image_url)

### Blade Chassis - All

<table>
<thead>
<tr>
<th>Name</th>
<th>Port A</th>
<th>Type</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELL Chassis 1</td>
<td></td>
<td>Dell PowerEdge 1855</td>
<td></td>
</tr>
<tr>
<td>IBM Chassis 1</td>
<td></td>
<td>IBM BladeCenter H</td>
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<tr>
<td>IBM Chassis 1 - Blade 1</td>
<td>1</td>
<td>KVM Session</td>
<td></td>
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<tr>
<td>IBM Chassis 1 - Blade 2</td>
<td>2</td>
<td>KVM Session</td>
<td></td>
</tr>
<tr>
<td>IBM Chassis 1 - Blade 3</td>
<td>3</td>
<td>KVM Session</td>
<td></td>
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<tr>
<td>IBM Chassis 1 - Blade 4</td>
<td>4</td>
<td>KVM Session</td>
<td></td>
</tr>
<tr>
<td>DELL Chassis 2</td>
<td></td>
<td>Dell PowerEdge 1855</td>
<td></td>
</tr>
<tr>
<td>DELL Chassis 3</td>
<td></td>
<td>Dell PowerEdge 1855</td>
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<tr>
<td>Generic Chassis 1</td>
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<td>Generic 1x8</td>
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<tr>
<td>DELL Chassis 4</td>
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<td>Dell PowerEdge 1855</td>
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<tr>
<td>HP Chassis 1</td>
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<td>HP BladeSystem e-Class</td>
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<tr>
<td>HP Chassis 2</td>
<td></td>
<td>HP BladeSystem 6-Class</td>
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<td>HP Chassis 2 - Blade 7</td>
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<td>HP Chassis 2 - Blade 11</td>
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<td>KVM Session</td>
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</tr>
</tbody>
</table>

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Serial over IP

- DSView 3 Management Software
- Cyclades ACS Serial over IP appliance
- DSR KVM over IP appliance
- PM Remote Power Management
- MergePoint Service processor managers
Cyclades ACS Features & Benefits

- User interface flexibility
  - Powerful CLI & wiz commands
  - Customizable menuing system
  - Easy-to-use web GUI (wizard & expert modes)
- Data logging
- Enhanced security (AAA)
- Integrated remote power management
- Centralized management & access
- Low-level access to system information
  - BIOS (redirect to console)
  - POST (Power On Self Test),
  - boot messages
- NEBS Level 3 Certified models
KVM over IP

- DSView 3 Management Software
- Dell and DSR KVM over IP appliance
- Cyclades ACS Serial over IP appliance
- PM Remote Power Management
- MergePoint 5200 and Cyclades OnBoard® service processor managers
How does KVM over IP Work?
DSR KVM Switch Advantage

• **Unique integration of power management:**
  – Remotely reboot unresponsive target devices
  – Dedicated serial power control port for managing smart power strips
  – Supports Server Technology Switched CDU 3rd party power devices

• **Integrates into a wide variety of customer environments:**
  – Port densities from 1 to 32 target devices
  – 1, 2, 4 or 8 digital paths for simultaneous access to target devices
  – Up to 12 remote users for sharing KVM sessions
Power over IP

- DSView 3 Management Software
- Dell and DSR KVM over IP appliance
- Cyclades ACS Serial over IP appliance
- PM Remote Power Management
- MergePoint 5200 and Cyclades OnBoard® service processor managers
Cyclades PM Advantage

• **Complies with existing security infrastructure:**
  – Fully integrated into Avocent DSView/ACS/DSR security concept
  – User access list per port

• **Saves your time and resources:**
  – Remote and independent control of power outlets
  – Automatic sequential power-up
  – Global current monitoring with threshold alarm
  – Event notification (email, SMS, SNMP trap)

• **Easy to use:**
  – Quick identification of correct power unit and power outlet
  – Support for name assignment to power outlets
  – Coverage of large power port densities (daisy-chaining)

• **Reduced risk:**
  – No operator error when powering server on/off
  – Power port state locking support (lock port on or off)
Service Processor Gateways

- DSView 3 Management Software
- DSR KVM over IP appliance
- Cyclades ACS Serial over IP appliance
- PM Remote Power Management
- MergePoint Service processor managers
MergePoint 5224/5240 Application

- IPMI 1.5 & 2.0
- HP integrated Lights Out (iLO)
- Dell Remote Access Cards (DRAC III XT)
- IBM RSA (RSA II)
- Sun ALOM
# Common Service Processors

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Vendor</th>
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<tbody>
<tr>
<td>IPMI</td>
<td>Multi-vendor</td>
</tr>
<tr>
<td><em>Intelligent Platform Management Interface</em></td>
<td></td>
</tr>
<tr>
<td>iLO</td>
<td>HP, Compaq</td>
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<tr>
<td><em>Integrated Lights Out</em></td>
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<tr>
<td>RILO</td>
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<tr>
<td><em>Remote Insight Lights Out</em></td>
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</tr>
<tr>
<td>SMASH-CLP</td>
<td>Multi-vendor</td>
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<tr>
<td><em>Systems Mgmt Architecture for Server Hardware</em></td>
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<tr>
<td>DRAC</td>
<td>Dell</td>
</tr>
<tr>
<td><em>Dell Remote Access Controller</em></td>
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<tr>
<td>RSA</td>
<td>IBM</td>
</tr>
<tr>
<td><em>Remote Server Admin</em></td>
<td></td>
</tr>
<tr>
<td>ALOM/ILOM</td>
<td>Sun</td>
</tr>
<tr>
<td><em>Advanced Lights-Out Management</em></td>
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<tr>
<td><em>Integrated Lights-Out Management</em></td>
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</table>
Why Avocent

• Leader with Clear Focus on Customer Need
  – IT Operations and Infrastructure Management Solutions

• Recognized Innovator
  – Growing in the rapidly converging System and Security Management markets

• Compelling Vision for a Full Suite of Integrated Management Solutions to Support “Always On” IT
  – From firmware to appliances to management software, delivered either in-band or out-of-band

• Ability To Deliver
  – Size, customers and track record of growth
Questions?