MCCS
(Mantech Continuous Cluster Server)
High Availability for Linux
MCCS High Availability for Linux
Support service availability management

**Highlights**

- Support Novell SUSE Linux Enterprise Server, Red Hat Enterprise Linux and Oracle Unbreakable Linux
- Support full x32, x64, AMD64 server and storage
- Support Active / Active and Active / Standby configuration
- Data can reside on shared on shared SCSI, single-path or multipath Fibre Channel SAN, NAS device or replicated volumes across either a LAN or a WAN
- Block-Level mirroring of volumes below the file system level for high performance
- Synchronous and asynchronous replication of only changed block
- Support CDP (Continuous Data Protection) for rewind data any check pointed time
- Graphical interface enables user to configure / monitor mirrored volumes
- Allows access to source data during mirror creation and re-sync
- Automated availability monitoring, failover and failback of all application and IT infrastructure components
- SMS alarm for critical event via cell phone
- Web access for failure tracking and global cluster management

**The importance of high availability**

As more and more organizations adopt the Linux Operating system for all of the right reasons; openness, flexibility, manageability, power, economics, it becomes vital that Linux data protection and high availability solutions be researched and deployed.

Critical system fail bring about downtime that can cost businesses directly through lost transaction and productivity, and in directly through the harm it may pose to stock value

"MCCS for Linux" will give Continuous Data Protection and High Availability for your critical system, and minimized system downtime from failure such as network, disk I/O, application.

**[Main Causes of Downtime]**

<table>
<thead>
<tr>
<th>Logical Fault</th>
<th>Test and Maintenance</th>
<th>Virus attack</th>
<th>Data loss</th>
<th>Human error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logical Fault</td>
<td>Physical Fault</td>
<td>CPU crash/ Disk crash</td>
<td>System and power fault</td>
<td>HBA &amp; NIC fault</td>
</tr>
<tr>
<td>Disaster Hit</td>
<td>Tornado,</td>
<td>Hurricane</td>
<td>Earthquake,</td>
<td>Sabotage</td>
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**MCCS for Linux Architecture**

Core delivers the basic software infrastructure required to build a cluster. This includes a cluster database, cluster communication management and interfaces required by other MCCS components. The core product also comes bundled with recovery software for core system components, such as memory, CPUs, the operating system, the SCSI disk subsystem, and file systems and IP addresses.
Mantech’s MCCS for Linux is a software application that ensures the continuous availability of applications by maintaining system uptime. MCCS maintains the high availability of Linux cluster systems by monitoring system and maintaining client connectivity, application health, and providing uninterrupted data access regardless of where clients reside - on LAN or WAN.

To enable automatic system and application recovery if the system goes down, MCCS allows applications to failover to other servers in the Linux cluster. This helps MCCS minimize the risk of a single point of failure and allows Linux systems to meet the stringent availability requirements of mission-critical operations by creating a fault resilient environment.

MCCS for Linux works on both physical servers and virtual machines.

### High Availability on Linux

Mantech’s MCCS for Linux is ideal in environments that run mission critical database and ERP operations and is today protecting Oracle, DB2, MySQL, mySAP, Apache and Sendmail in major corporations worldwide.

### Fault Resilience

Mantech’s MCCS for Linux provides fault resilience for Linux cluster environments by enabling other servers in a cluster to take over for failed servers or failed applications. Total cost of ownership is reduced, because MCCS supports an active-active and N+1 server configurations. These models eliminate the need for extra servers dedicated for hot backup and allow clients and applications to failover to other production servers in the cluster.

### Real-time Continuous data protection for Linux

Mantech’s MCCS for Linux provides volume-level host-based replication and continuous data protection (CDP) across both local-area and wide-area networks. For companies looking to protect their critical data against corruption and loss, real-time back-up and recovery and for corporations that need the fastest possible recovery plans while also ensuring off-site disaster recovery protection, MCCS Data Replication for Linux delivers the solution.

### Proactive Protection

Mantech’s MCCS for Linux provides data protection by monitoring Linux clusters using intelligent processes and multiple LAN heartbeats. By sending redundant signals between server nodes to determine system and application health, MCCS confirms a system’s status before taking action. This reduces the risk of a single point of failure and minimizes false failovers.

### Support any application

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### Typical model

MCCS supports shared-storage and local disks environments. For local clustering, mirroring line is needed for real-time data replication.
## EMS (Emergency Messaging Service)

### Requirements
- **Supported OS**
  - Red Hat Enterprise Linux 3.0, 4.0 (AS and ES) *
  - SUSE LINUX Enterprise Server (SLES) 8, SLES 9, and SLES 10 *
  - SUSE LINUX Standard Server 8 (with SP3 or later) *
  - White Box Enterprise Linux 3.0 Asianux 1.0 Asianux 2.0
  - VMware ESX Server v3.0, Console OS, Xenserver Enterprise

- **System Requirement**
  - 200MB Free Disk Space
  - 512MB Free Memory (Minimum)
  - 3 Network Adapter (Minimum)
  - 2 Ports Heartbeat Network (Recommend)

### Benefits to you

<table>
<thead>
<tr>
<th>Threats of system</th>
<th>Solution with MCCS</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical application fails due to application, server, network, or other problem</td>
<td>MCCS support local restart by user defined counts and time, or auto failover from fault system to standby system for continuous business.</td>
<td>• Eliminates the costly impact of server failures.</td>
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<td></td>
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<td>• Automates return to normal operations, once recovery is completed.</td>
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<td></td>
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<td>• Increment efficiency.</td>
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<tr>
<td>Downtime by system maintenance or upgrade, software upgrade</td>
<td>Selected service can be failover to standby system by mouse click, that support continuous service when planned downtime</td>
<td>• Allows you to perform maintenance during normal work hours, rather than overnight or during weekends.</td>
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<td>• Allows you to take the time you need to perform the upgrade and test it thoroughly before going into production.</td>
</tr>
<tr>
<td>Centralized fault management among other systems</td>
<td>MCCS support centralized fault management clustering among other systems and makes understanding easily and instinctively about system status, fault, recovery</td>
<td>• Easily understand the cause of system failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Support heterogeneous system clustering with one software MCCS</td>
</tr>
<tr>
<td>User defined flow of fault management when occur system halt</td>
<td>Support auto failover processing using user defined recovery scenario about system fail by MCCS rule engine</td>
<td>• Reduce manually operation processing</td>
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<tr>
<td></td>
<td></td>
<td>• Rapidly auto recovery reduce loss</td>
</tr>
<tr>
<td>Solution for continuous data protection and system recovery via disaster</td>
<td>MCCS can interoperate with real-time data replication solution and support auto failover (Recovery) in long distance environment</td>
<td>• Minimize downtime of business</td>
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<tr>
<td></td>
<td></td>
<td>• Automated fail detection and auto failover</td>
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<td></td>
<td></td>
<td>• Lighten load of administrator</td>
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<td></td>
<td></td>
<td>• Minimize loss by disaster</td>
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<tr>
<td></td>
<td></td>
<td>• Support auto failback</td>
</tr>
<tr>
<td>Data deletion by user mistake</td>
<td>Easily and fast data rollback any check pointed time through CDP</td>
<td>• Complete data protection from data loss or corruption by rewind correct point</td>
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<tr>
<td>Data corruption by logical error</td>
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</table>

### EMS Center Workflow

1. Forwarding SMS to Customer and engineering when fail occurred
2. Engineer support analysis of fault & tracking system history by web
3. Support restoration by analysis of fault
4. EMS center server receipt logs from clustered server with MCCS

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**MCCS High Availability for Linux**

Support Local Restart & Failover for High Availability

**Benefits to you**

- **Eliminates the costly impact of server failures.**
- **Automates return to normal operations, once recovery is completed.**
- **Increment efficiency.**
- **Allows you to perform maintenance during normal work hours, rather than overnight or during weekends.**
- **Allows you to take the time you need to perform the upgrade and test it thoroughly before going into production.**
- **Easily understand the cause of system failure.**
- **Support heterogeneous system clustering with one software MCCS.**
- **Reduce manually operation processing.**
- **Rapidly auto recovery reduce loss.**
- **Minimize downtime of business.**
- **Automated fail detection and auto failover.**
- **Lighten load of administrator.**
- **Minimize loss by disaster.**
- **Support auto failback.**
- **Complete data protection from data loss or corruption by rewind correct point.**