T3main is an innovative and comprehensive telephony solution harnessing the best technologies in the telecommunications industry. A unique single-platform approach provides flexible voice and data capabilities to support a variety of location sizes, regional requirements and technology infrastructures.

Critical Applications Require High Availability

When your voice messaging solution powers the way your organization communicates, services such as your automated attendant, IVR, broadcast notification and unified messaging need to remain available at all times. Unplanned system downtime can cause loss of productivity, or even more severe losses of property and life.

The T3main's Direct Cluster Networking (DCN) solution minimizes unplanned and planned system downtime resulting from hardware failure, network outage or system maintenance. DCN employs a unique cluster configuration of redundant and fully synchronized nodes. Each node maintains a complete T3main voicemail application, database and file system that resides on a single machine, rather than leveraging shared storage which can be affected during a node or network outage. Proprietary software synchronizes the databases asynchronously, whenever a change occurs in one node. Because replication occurs only when necessary, network traffic and CPU activity is minimized. And network latency or outage never affects real-time operation of the originating node, since data changes can occur locally and be transmitted to the other nodes after the network has stabilized.

Implementing a Cost Effective, Highly Available Voice Messaging Application

By configuring its clustering mechanism to reside within the T3main, redundancy and scalability are provided at a fraction of the cost of typical clustering solutions.

- The T3main utilizes off-the-shelf components including standard servers, disk drives and network equipment.
- Solution does not require a 3rd-party cluster engine and additional servers, SAN (storage area network device) or replicated file system.
- Additional capacity and redundancy can be achieved by incrementally scaling-out. Rather than having to replace servers with more expensive machines, new servers are added to handle higher call volumes. Additional servers can also be added to communicate with new PBXs as the enterprise expands.

Transparent Voice Messaging

The clustering mechanism behind T3main's DCN is completely transparent to end users allowing them to use the system as they would any single-site application.

- Centralized administration allows administrators to make system-wide changes or view node status through any node
- A phased node-by-node upgrade approach can minimize scheduled downtime
- Name/greeting playback is available regardless of the node from which a message is sent
- Shared directory assistance
- Users can access their mailbox from any node
- Users can send a message to any internal user or group list regardless of node

DCN offers two configurations for organizations that require a highly available system at a specific site, or for organizations that have multiple sites and require redundancy across the enterprise. Each node can support independent PBX integrations and separate protocols such as QSIG and SIP, allowing you to maintain a truly multi-vendor environment.

"Active/Passive" Mode
• Maintain a fully redundant active and passive T3main node to recover quickly from an outage
• Passive node takes over when active node fails ("Hot Standby")

"All Active" Mode
• Each site maintains a separate, redundant T3main node to provide for a common messaging system across the organization, regardless of number or types of PBXs or integrations
• Another active node takes over should a node or network connection fail
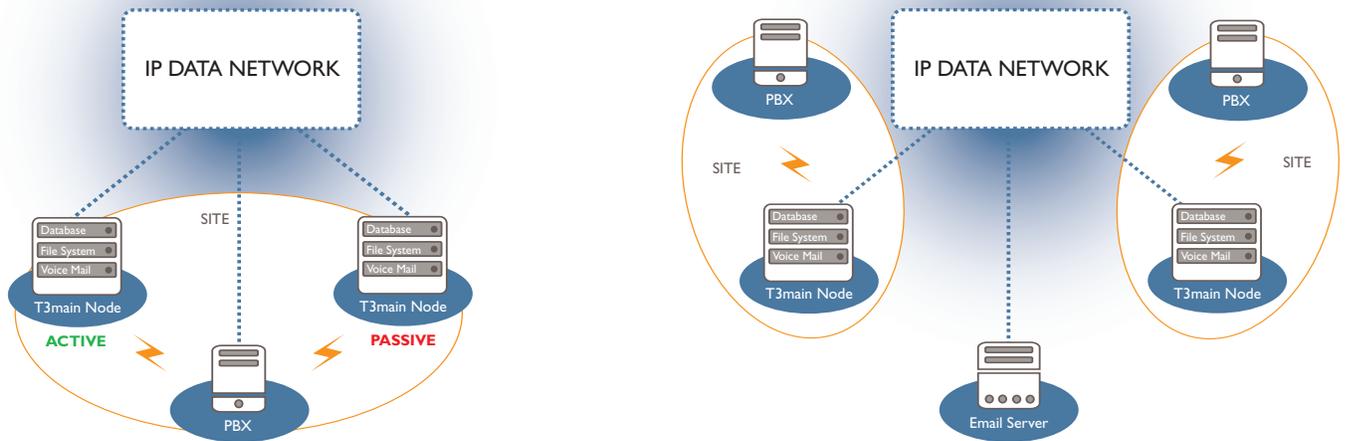
The Right Architecture

Fault Tolerance/Automatic Recovery
Since each node can work independently, voicemail continues to operate across the organization should a node or nodes lose connectivity to the network. Data is synchronized automatically upon reconnection. To ensure further fault tolerance, each T3main server can be configured with a dual hard drive, dual power, and a dual network card.

Network Availability
The T3main continuously checks to determine if there is network availability. If a node loses its network connection, attempts to connect to the node for database synchronization are suspended, thereby preventing timeouts or network slowdowns that can occur when an application attempts to reach an unavailable machine.

No Single Point of Failure
There are no individual components within the T3main that can result in a voicemail application failure. Should a voicemail server within the cluster fail, or if the network becomes unavailable, another node will take over.

High Performance
The T3main uses MySQL® database as the basis for its clustering solution. MySQL provides high performance with a unique storage-engine architecture, high availability, and web and data warehouse strength.

Security
Data communication between nodes is encrypted using MySQL encryption algorithms. Access to the individual databases is limited to the nodes.

Geographically Redundant
Multiple nodes ensure your voicemail solution is mirrored to a different location, allowing for a higher degree of availability.