

East River Electric Power Cooperative



Industry

Wholesale electric power supplier

Challenges

- No failure recovery of critical energy automation application system
- 0% tolerance for downtime
- Maintain uninterrupted power supply to consumers

Solution

- NEC ExpressCluster X R3 LAN Edition high availability software
- NEC Express5800/R320a-E4 fault tolerant server
- NEC Express5800/R120a-2 general purpose server
- NEC Professional Services

Results

- No disruption due to hardware or software failures
- Nearly effortless deployment of major system upgrade
- Simple maintenance and operational usage

East River Electric Power Cooperative is a wholesale electric power supplier distributing power to 24 member electric systems throughout eastern South Dakota and western Minnesota. Combined, East River members serve approximately 92,000 homes and businesses, providing electricity to 250,000 consumers over a 41,000 square mile service area. Headquartered in Madison, South Dakota, 127 people are employed by East River throughout its service area. As a Touchstone Energy® Cooperative, East River pledges to act according to the core values of integrity, accountability, innovation, and commitment to the community.

Challenges

For over 60 years, East River Electric Power Cooperative has been supplying reliable, low-cost power to its member systems. In the mid-1980's, East River developed and implemented its Demand Response System (DRS) to control bulk power loads and costs during peak usage conditions.

For consumers participating in the DRS program, East River switches off certain electrical loads to lower electricity demand during peak consumption times. Once overall electrical loads have stabilized, power is returned to all systems. The DRS program lowers East River's purchase power costs, which in turn lowers their rates, and ultimately saves consumers money.

DRS is a vital part of East River's operations and requires 100% availability, especially during peak usage conditions. Controlling peak power loads is essential for maintaining affordable rates and avoiding additional costs. The negative financial impact of downtime to East River is approximately \$20,000/hour in additional wholesale power costs, as well as the cost of lost productivity and repairing the system.

The existing energy automation application system did not provide failover recovery in the event of a hardware or software failure. To ensure the best possible rates for its consumers, East River required a high availability (HA) software solution with continuous protection and fast recovery of business critical applications and data.

Solution – Trouble-free Management & Availability

East River upgraded its IT infrastructure and required maximum availability. Since 2006, NEC ExpressCluster has been an integrated high availability (HA) solution that has never let East River down.

According to Tim Dockendorf, communications and control systems administrator, East River Electric Power Cooperative, “We evaluated other cluster solutions as part of our SQL Server Standard R2 upgrade, but ExpressCluster had been trouble-free for years and we couldn’t justify using a different HA solution.”

With additional servers supporting more complex applications, ExpressCluster minimizes planned and unplanned system outages. The ExpressCluster portfolio is available in three editions designed for single data centers (small or large), or across multiple sites.

Designed to protect and recover business critical applications and data at one site without external storage infrastructure, ExpressCluster X LAN edition is an affordable and simple HA solution well-suited for East River’s needs. It is an easy to deploy and cost-effective continuity solution for critical systems running industry standard applications, OS, and virtualization platforms. ExpressCluster’s support of standard editions of Microsoft® SQL Server® and Windows Server® OS delivers HA solutions that can reduce the total cost of ownership by 50% or more.

“Although ExpressCluster is compatible with any server on the market, we found NEC’s server prices to be very competitive for the quality and functionality that they offer,” added Tim. “With NEC’s cost-effective professional services and ExpressCluster, East River now enjoys a complete HA platform solution from NEC.”

With comprehensive HA capabilities and unique synchronous data mirroring technology, ExpressCluster X LAN delivers reliable data protection at all times by ensuring there is no delay in mirroring data from the primary server to the standby server.

Prior to assuming his current position at East River in 2008, Tim had not been trained on ExpressCluster. He said, “The best thing about ExpressCluster is that it works without any problems. It is easy to manage, and it is the best solution on the market for keeping business critical systems up and running.”

To reduce planned downtime for routine application or OS patches, ExpressCluster enables administrators to conduct maintenance that normally require a system reboot with some system outage. By easily moving application and data workloads to a standby server, ExpressCluster ensures that critical business operations and processes continue without a noticeable disruption.

Results – Complete Business Continuity

“Since the original ExpressCluster installation, East River has not experienced any overall system downtime,” said Tim. “We have been pleased with ExpressCluster’s performance and are confident that our business critical applications will operate without interruption.”

If a failure is detected, the target applications and dependent resources are recovered within minutes, instead of hours or days. Once a failed application instance or server is repaired or replaced, the system can be quickly restored to its normal operating condition. ExpressCluster offers flexible configuration options for administrators to customize resource monitoring and recovery policies.

“Although the system upgrade included installation of new software versions and hardware, the deployment of was nearly effortless and completed within a few days. The NEC engineer onsite for the installation made certain my questions were answered. He provided the system documentation and thoroughly trained me in the operation of the new system.”

Since the upgrade to the R3 major release, Tim has found it simple to maintain and use his ExpressCluster HA solution from NEC. With the new version, he noticed that it’s much faster to rebuild data mirrors utilizing the new intelligent data synchronization feature.

“To date I have not needed support, but I’m certain the NEC technicians will be as responsive and professional as the deployment team.” Tim concludes, “East River is completely satisfied with the quality and performance of NEC’s ExpressCluster HA solution and service.”



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