



Strengthening Network Infrastructure at Paraburdoo

Project Background

Client: Industrial Operator (Mining)
Date: Ongoing
Location: Paraburdoo, Western Australia

Background

A critical upgrade to the process control network (PCN) was necessary at Paraburdoo to minimise the risk of potential downtime. The project aimed to replace aging and failing Hirschmann network switches with a new Cisco core backbone network, ensuring seamless endpoint migration while maintaining operational stability.

The client faced several pressing issues, including:

- **System Failures & Production Risk:** The Hirschmann network switches were end-of-life (EoL), increasing the likelihood of operational failures.
- **Limited Vendor Support:** Scarcity of spare parts and vendor support led to increased downtime risks.
- **Complex Upgrade Path:** Mixed hardware configurations complicated the transition process.
- **Operational Disruptions:** A failed upgrade would have resulted in production loss.

GTE Group's Approach

To mitigate these risks, GTE Group deployed a structured upgrade strategy tailored to the site's needs which included:

- **Technical Impact Assessment:** Conducted site audits and configuration reviews.
- **Lab Testing & Validation:** Performed extensive pre-execution lab testing to ensure a seamless migration.
- **Parallel Core Network Establishment:** Built a parallel Cisco-based network to transition operations smoothly.
- **Planned Execution Timing:** Work was strategically performed during site shutdown periods to minimise disruptions.
- **Vendor Co-ordination:** Managed hardware procurement timelines to address lead-time constraints.

Implementation & Key Strategies

- **Pre-Execution Testing:** A simulated test environment validated the migration strategy before deployment.
- **Real-Time Collaboration:** Weekly update meetings ensured alignment with the client's operational needs.
- **On-Site Support:** Worked closely with site teams to address technical hurdles, including undocumented fibre links.

Results and Impact

The project delivered significant operational enhancements:

- **Increased Network Stability:** A more robust Cisco backbone enhanced infrastructure reliability.
- **Enhanced Monitoring & Visibility:** Improved endpoint tracking reduced downtime risk.
- **Minimized Production Disruptions:** The upgrade was executed with no unplanned downtime.
- **Positive Client Feedback:** The client reported higher efficiency and reliability post-upgrade.

Lessons & Industry Takeaways

Thorough Pre-Deployment Testing is Critical: Lab testing prevents unexpected failures.

Future-proofing is Essential: Implementing scalable solutions ensures long-term sustainability.

Knowledge Transfer Enhances Future Projects: Insights gained will streamline future upgrades at other sites.

Future Outlook

The expertise and experience gained from this project will guide the implementation of future PCN improvements, reinforcing GTE's position as a leader in industrial network transformations.



The GTE test lab environment created to mitigate project risks and reduce operational downtime