

Pretium™ Intelligent Manager

What is Corning Cable System's Pretium™ Intelligent Manager?

Purpose

The purpose of this Applications note is to provide information regarding the Pretium™ Intelligent Manager. The following topics will be examined below:

- Intelligent Infrastructure Management Systems
- 9th wire technology
- Pretium™ Intelligent Manager components

Intelligent Infrastructure Management Systems

Intelligent Infrastructure Management Systems, or IIMS, is an industry term that describes an intelligent patching solution which allows IT managers to create a real-time infrastructure documentation platform for their network. This platform typically consists of a database residing on a server connected to the network. An initial snapshot is made of the network's physical layer, which includes the cabling infrastructure, and passive and active connectivity. This snapshot is often created by importing existing documentation spreadsheets into the platform, offering a simple migration path for infrastructure management to IT managers.

Once the active and passive infrastructure is documented, the platform becomes a central management tool for all organizations that affect the network. The software package interfaces with monitoring devices in the physical cabling system to monitor the logical structured cabling path. Moves, adds and changes can be managed with integrated workflow tools, and real-time monitoring for disconnects can be monitored and alert notifications generated. Some IIMS have access to software modules that can discover all of the active IP-based elements on a network; this is usually done over a TCP/IP network. Multiple technologies exist for implementation of IIMS. One of these solutions, 9th Wire technology, which allows for active monitoring of cross-connects, is described below.

9th Wire Technology

9th wire technology stems from the concept of Out of Band management. Network managers have routinely used a spare wire within their cabling infrastructure to remotely manage their networks. Use of the cabling in this way allows for a cost effective method of bundling data and management infrastructure in a single cable sheath while keeping the management overhead separate from the data traffic. In an Intelligent Infrastructure Management System using 9th wire technology, an open/close circuit is created via a cross-connect across enabled patch panels with a patch cord using a "9th wire". The 9th wire is a copper wire that runs the length of the patch cord cable assembly and terminates in the optical connectors. When a 9th wire patch cord is installed into enabled patch panels in a cross-connect function, a copper circuit is closed, enabling the monitoring device to actively detect the circuit. Once programmed, or mapped, each port on an enabled hardware patch panel has a unique address that is associated with the infrastructure documentation resident on the IIMS platform. This distinctive address allows the software to immediately detect changes at an enabled port and reference it to known infrastructure within the database.

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A 9th wire Intelligent Infrastructure Management System, using Corning Cable Systems' Pretium™ Intelligent Manager, consists of six basic components:

1. Analyzer
2. Pretium™ Intelligent Manager Housing
3. Pretium™ Intelligent Manager module or adapter panel
4. Pretium™ Intelligent Manager patch cord
5. Input/output cable between the iTRACS™-compatible analyzer and Pretium™ Intelligent Manager housing
6. iTRACS™ software

This solution is used to actively monitor cross-connects within the network infrastructure.

Pretium™ Intelligent Manager Hardware

Analyzer

The analyzer is an active component that acts as the physical nerve center of the Intelligent Infrastructure Management System. It receives information about the passive cross-connects in real-time through 9th wire enabled hardware and connectivity. When an event occurs, such as a new cross-connect, detailed information is relayed over the Ethernet network to a server containing iTRACS™ software which provides a graphical management interface for IT management and staff.

Pretium™ Intelligent Manager Housing

Pretium™ Intelligent Manager housings are available in 1U and 4U capacities and have been designed to accept Corning Cable System's Pretium™ Intelligent Manager modules and adapter panels in a 9th wire Intelligent Infrastructure Management System. Twelve copper ribbon cables, one for each module/panel slot, run front to back inside the housing along the top of the housing. At the rear of the housing, the copper ribbon cables are terminated with non-pinned DB25 jacks. Each port is connected to an Analyzer with a copper DB25 Input/Output cable. At the front of the housings, the copper ribbon cables are terminated at each module/adapter slot with a pinned DB12 jack. Pretium™ Intelligent Manager panels and modules are seated into this DB12 jack when installed.

Pretium™ Intelligent Manager module and adapter panel

Each Pretium™ Intelligent Manager module and adapter panel have a non-pinned DB12 connector on the rear side, as well as 9th wire connection points on the front of the module or panel, at each LC Duplex port. When an enabled patch cord is installed via a cross-connect, a circuit is closed, notifying the analyzer that a connection has been made. Likewise, when a patch cord is disconnected from a cross-connect, a circuit is broken, notifying the analyzer that connectivity has been lost.

Pretium™ Intelligent Manager patch cord

The Pretium™ Intelligent Manager patch cord contains a 24AWG copper wire running the length of the assembly. The copper terminates to a spring loaded pin in the LC Duplex connector which provides the 9th wire connection point when installed in enabled modules or adapter panels.

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Input/output cable

The Input/output cable is a standard DB25 cable running from a port on the rear of the Pretium™ Intelligent Manager housing to a port on the rear of the analyzer. It provides connectivity for the purpose of polling the enabled ports in the Pretium™ IM housings.

iTRACS™ Software

The iTRACS™ software in combination with the enabled hardware and analyzer creates an automated real-time physical plant management system that easily allows for monitoring of moves, adds and changes (MACs) while assigning costs to each of these activities. It is divided into 2 basic views, administrator and user.

Administrator View

The administrator view is used to manage the software as well as create the database of physical assets in the network, including the cabling infrastructure, cross-connects and active equipment. The Discover tab within this view is used to configure SNMP queries to find all of the active elements within an IP network.

User View

The User view is a work flow management tool that creates a central workspace for all involved in the process of implementing moves, adds, and changes. The following are key functions in the User View:

- Locate & Request – This function allows a requestor to identify a physical location that needs service.
- Plan & Review – The planning function allows the system designer to look at a proposed circuit and refine it or completely redesign it based on current availability and costing. Alternative routes are automatically generated for review and selection.
- Manage – This stage gives visibility into the entire workload to be managed.
- Technician – Work tickets may have complete circuit detail, floor drawings and rack face elevations to help the technician quickly identify the steps necessary to complete the service request. When the ticket is finalized, the database is automatically updated to reflect the completed work order.