



Remote Device Manager Technical White Paper Supporting the Remote Equipment Monitoring (REM) Services

Overview

The Remote Device Manager (RDM) is a device placed within a customer's network that consolidates control and monitoring of multiple devices that support videoconferencing, into a single line of communication with Wire One. Its design accommodates both a customer's strict network security policies and possible bandwidth limitations between the customer and Wire One.

Security

Companies that handle sensitive information, such as medical or financial data, on a daily basis have a fiduciary responsibility to rigorously secure their networks. The RDM is designed to minimize impact to network configuration and risk of exposure or intrusion.

- The RDM can be placed behind a customer's firewall.
- There is no socket opened on any port from any server at Wire One to the RDM.
- All communication takes the form of bidirectional data transmitted via sockets opened from the RDM to central servers at Wire One. This allows the customer's firewall to freely block all incoming ports to the RDM.
- In the case of a protected VPN connection between the RDM and Wire One, all traffic between the RDM and Wire One is in the form of proprietary protocol messages sent to/from Wire One's central server on tcp ports 9000, 9001, 9002.



- If a public internet connection is used between the RDM and Wire One then the traffic will be in the form of secure HTTPS requests/responses initiated by the RDM on port 443
- The RDM only needs connectivity to the customer's devices that are participating in Remote Equipment Monitoring and/or Endpoint Connect services. Currently, TCP ports 23, 24 and 80 are used by the RDM to control codecs. All other network communication between the RDM and the customer's network may be blocked. Other Video network device such as routers may require different ports.
- Wire One does not require any direct access to the RDM.

Hardware

The RDM is a network appliance provided by Wire One. The RDM runs the Sun Solaris operating system on the Sun V-100 hardware platform. It is pre-configured by Wire One specifically for the customer's network and is delivered ready to install and operate immediately. The RDM has been secured using industry best practices.

Maintenance

Wire One does not require any direct access to the RDM. While a VPN or other secure access method may assist in detailed troubleshooting, the RDM is a stand-alone appliance that operates day-to-day without any Wire One intervention. The software within the RDM is designed to automatically and securely self-update from Wire One as needed. This update will occur according to Wire One's scheduled release cycle for the Remote Equipment Monitoring and Endpoint Connect products. Hardware and operating system updates, while not regularly scheduled, will be coordinated between the customer and Wire One to ensure service interruption is minimized.

Connectivity

The RDM proactively initiates and maintains all communication with Wire One. When the RDM is powered on, it will initiate and maintain a continuous outbound connection to Wire One. If there is any interruption in communications with Wire One, the RDM will automatically attempt to re-establish the connection. The RDM may optionally initiate error email notifications to support personnel located at the customer's site and/or Wire One. If this feature is used, the RDM must have access to a SMTP server.

Once connected, the RDM then proceeds to bi-directionally communicate with Wire One using a customer-specific Java Messaging Service (JMS) queue. The messages between the RDM and Wire One fall into two categories:

- Instructions sent from Wire One to the RDM for controlling codecs (such as launching conferences and rebooting codecs when needed).
- Status sent from the RDM to Wire One (such as current call state and line status, etc.).

The RDM receives status and achieves control of a customer's device by accessing brand-specific (Application Programming Interface) APIs. These API's are accessed via telnet and HTTP commands initiated from the RDM to the codec. For example,



Polycom ViewStations require both telnet (default port 23) and HTTP (port 80), whereas the Tandberg x00s and x000s require only telnet.

The constant communication with devices and codecs for determining current call and line state is contained within the customer's network. Only a minimal set of messages is sent back to Wire One reducing the message traffic between the customer and Wire One's network and conserving bandwidth.

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