Getting Started with the ProxiVIEW Dashboard Centralized Management System

Tech Note LCTN0021

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This Tech Note applies to LAN-Cell models:

LAN-Cell 2:
LC2-411

Minimum LAN-Cell Firmware Revision: 4.02(AQP.6) dated 01/12/2010

Document Revision History:

Date	Comments
Mar. 15, 2010	First release

Introduction

Proxicast's ProxiVIEW Dashboard is a hosed web-based application that enables multiple LAN-Cell routers to be centrally monitored and managed. ProxiVIEW periodically polls remote devices using SNMP to collect configuration settings and performance statistics. ProxiVIEW can also remotely update certain LAN-Cell parameters, save and restore entire LAN-Cell configuration files, and upload new device firmware images.

The LAN-Cell 2's default configuration enables ProxiVIEW to collect data and manage the device. However, Proxicast recommends making the changes outlined in this TechNote to LAN-Cell's being managed by ProxiVIEW for increased performance and security.

This TechNote also describes the process of adding new LAN-Cell devices to ProxiVIEW for centralized remote management.

Minimum LAN-Cell Firmware Version

To be fully managed by ProxiVIEW, LAN-Cell 2 routers must be running firmware version 4.02(AQP.6) dated 01/12/2010 or later. LAN-Cell's with earlier firmware revisions can be added to the ProxiVIEW database to have their firmware remotely updated, however, they will not respond to polling request for configuration settings or statistics until the firmware is updated.

Addressing Remote LAN-Cell's

Each LAN-Cell to be managed by ProxiVIEW must have either a statically assigned WAN/Cellular IP address or a Dynamic DNS hostname assigned by one of the supported DDNS service providers. Contact your service provider regarding the availability of a static IP address for your LAN-Cell. See TechNote LCTN0016 Configuring Dynamic DNS on the LAN-Cell 2 for more information on the LAN-Cell's DDNS feature.

Usage Notes

- It is easiest to configure the LAN-Cell devices before adding them to ProxiVIEW so they can be polled immediately by ProxiVIEW to confirm that the configuration is correct.
- Access to ProxiVIEW is licensed on a per user and per device basis. Contact Proxicast Sales to establish a ProxiVIEW account.
- See the *LAN-Cell Users Guide* for more detailed information on configuring the LAN-Cell 2.
- ProxiVIEW contains an online interactive Help System. Click the Help icon ( ) on the top right of the page banner to access the online help pages and the Info icon ( ) for field-specific help.

Configuring SNMP on the LAN-Cell 2

1. In the LAN-Cell 2's web configurator, navigate to the **ADVANCED->REMOTE MGMT** menu and select the **SNMP** tab (Figure 1).

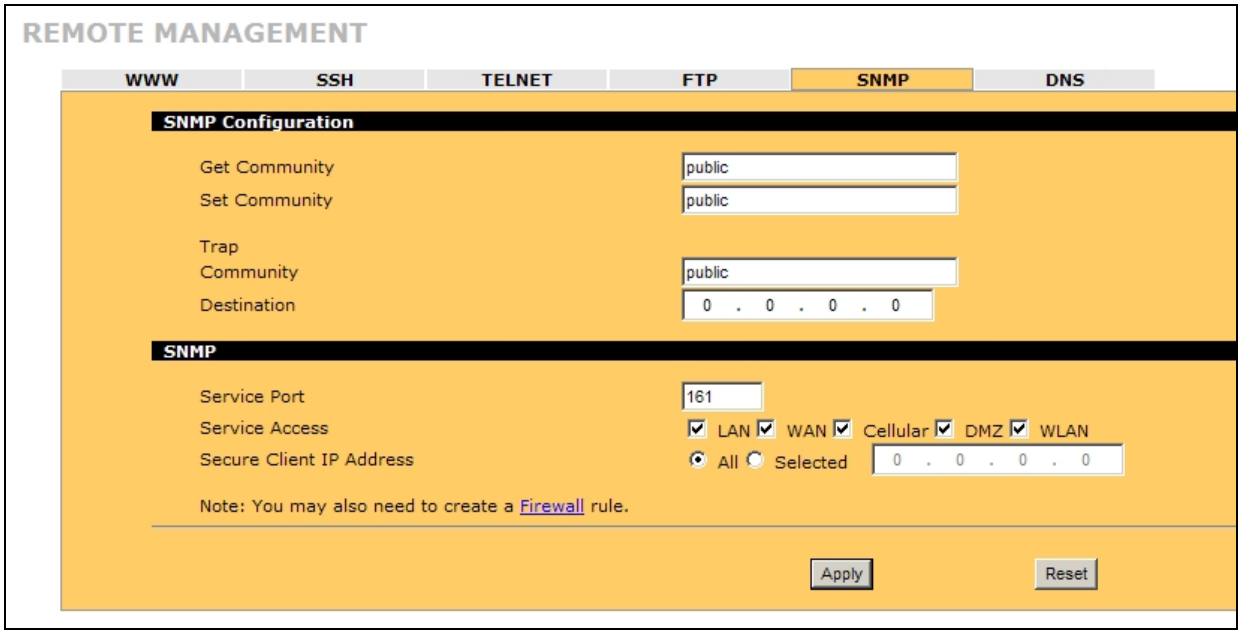

Figure 1: LAN-Cell's SNMP Remote Management Parameter Screen

2. To increase security, Proxicast recommends changing the default **Get (Read)** and **Set (Write) Community** strings from "public" to a different value since "public" is widely known and used as an SNMP default community string. The values entered here must also be entered when creating the LAN-Cell device in ProxiVIEW.

3. Confirm that the **SNMP Service Port** is 161. If a different port number must be used for SNMP traffic, be sure to create the necessary firewall rules on the LAN-Cell and change the SNMP port when defining the device to ProxiVIEW. The LAN-Cell 2's default firewall rules permit SNMP (port 161) traffic from the CELLULAR and WAN interfaces. If the CELL-to-CELL or WAN-to-WAN firewall rules have been modified, ensure that SNMP traffic is permitted in these directions.

4. For ProxiVIEW to communicate with the LAN-Cell, all active public interfaces to the LAN-Cell must be enabled for **SNMP Service Access**. Typically this includes the **CELLULAR** and **WAN** interfaces.

5. The **Secure Client IP Address** should be set to **ALL** since the IP address of the ProxiVIEW server is subject to change over time.

6. Click **Apply** to save changes to this screen.

Configuring SYSLOG on the LAN-Cell 2

1. In the LAN-Cell 2's web configurator, click on the **LOGS** menu and select the **LOG SETTINGS** tab (Figure 2).

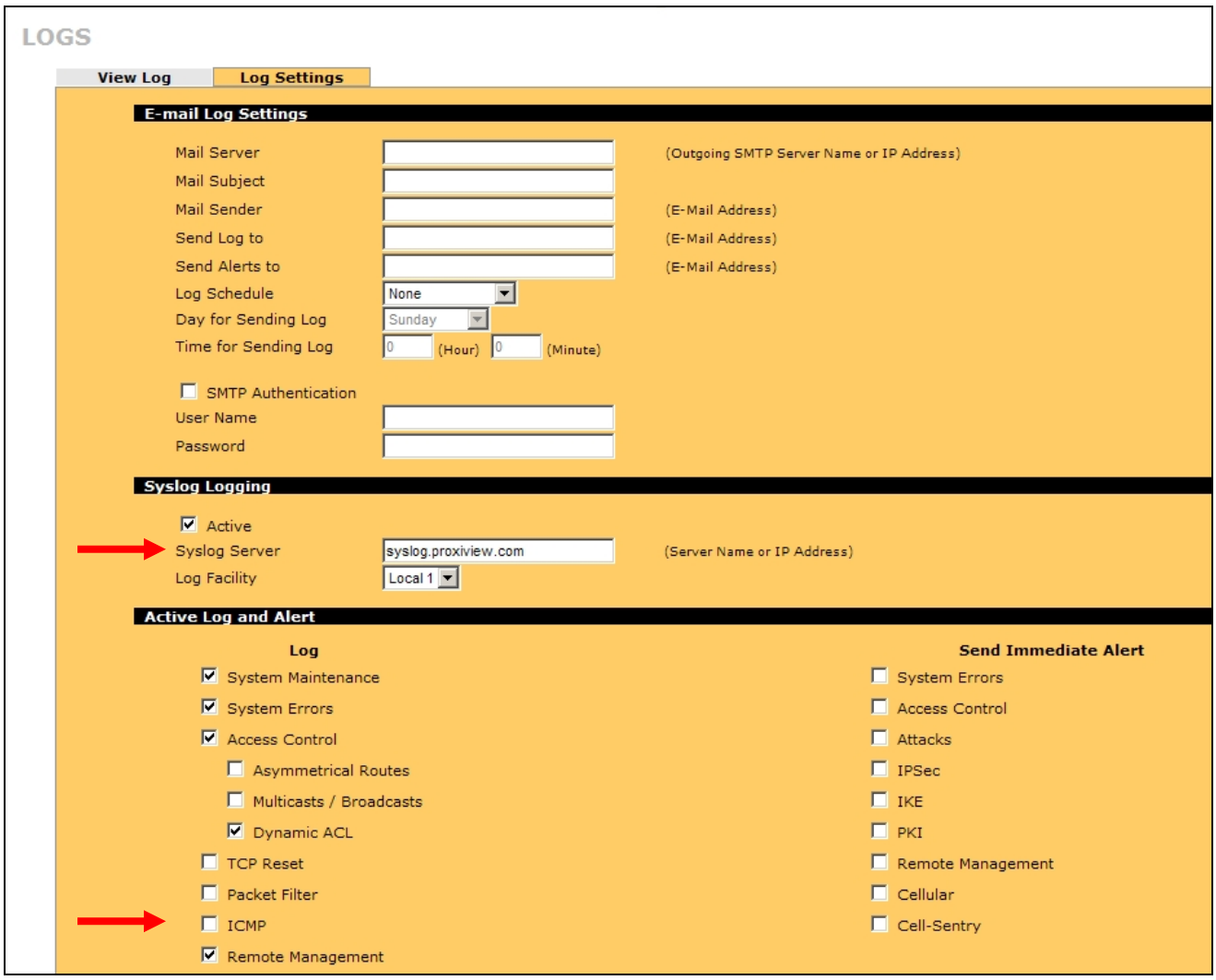

Figure 2: LAN-Cell's SYSLOG Parameter Screen

2. To have the LAN-Cell send its local system event log entries to the ProxiVIEW Syslog server as they occur, mark **Syslog Logging** as **Active**.

3. Enter the name of the **Syslog Server** assigned to your ProxiVIEW domain. Unless otherwise directed by Proxicast Technical Support, enter: *syslog.proxiview.com*

4. Select any **Log Facility** desired. Commonly "Local 1" is used for all devices; however, different LAN-Cell's can use different Log Facilities to distinguish different devices when compiling multiple exported log histories.

5. Optionally disable logging of **ICMP** messages to the LAN-Cell log facility. Due to the high latency and intermittent nature of some cellular connections, SNMP polling can generated numerous ICMP-related warning messages as SNMP responses are transmitted back to the ProxiVIEW server.

Logging on to ProxiVIEW

ProxiVIEW is a hosted web application, available through any web browser by entering the URL: http://www.proxiview.com (Figure 3).

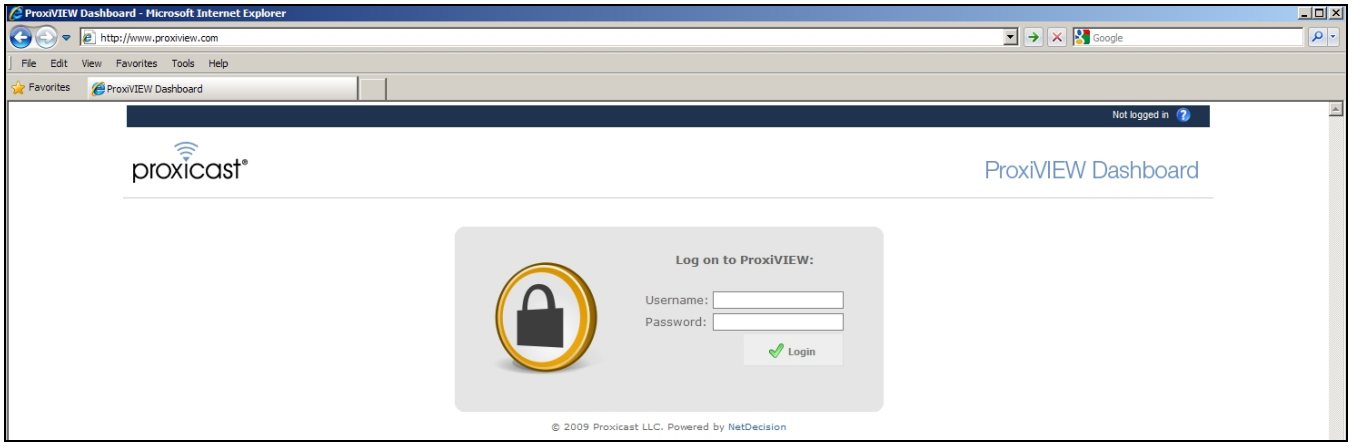

Figure 3: ProxiVIEW Login page

For each customer, a ProxiVIEW "domain" is created that encompasses all of the user login ID's and Device ID's managed by that domain. There is one "Domain Administrator" login created for each domain. Additional user login ID's can be created within a domain.

Each domain is licensed to manage a specific number of devices (LAN-Cell's). Both the maximum number of users and devices can be changed. Contact Proxicast Sales to create a ProxiVIEW domain, login ID's and device licenses or to modify an existing domain's license counts.

ProxiVIEW includes an online help system. Click the **Help** icon ( ) on the top right of the page banner to access the online help pages. There is also field-specific help available by clicking the **Info** icon ( ) next to each field.

Adding Device Groups to ProxiVIEW

In ProxiVIEW, devices are placed into “groups” which share some common attribute, for example, geographic location, user department, or cellular carrier. Group names can be used to represent any meaningful collection of devices.

At least one group must be created before adding devices. An unlimited number of unique groups can be created for each ProxiVIEW domain. Each LAN-Cell device can be a member of only one group at a time.

1. Select the **Group** menu and then the **New Device Group** submenu option (Figure 4).

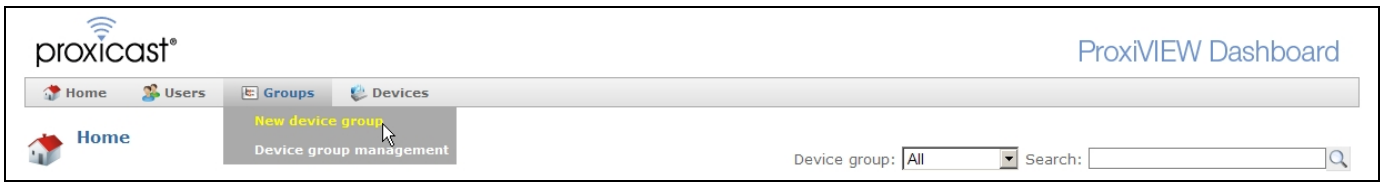

Figure 4: Adding a Device Group to ProxiVIEW

2. The **New Device Group** page appears (Figure 5).

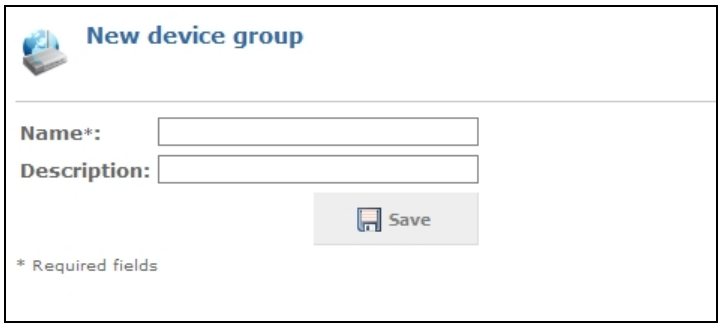

Figure 5: New Device Group Page

3. Enter a unique **Group Name** and optional **Description** for the group.
4. Click **Save**.
5. Repeat this process to add any additional groups.

Adding Devices to ProxiVIEW

1. To add a LAN-Cell to ProxiVIEW for monitoring, select the **Devices** menu and then the **New Device** submenu option (Figure 6).

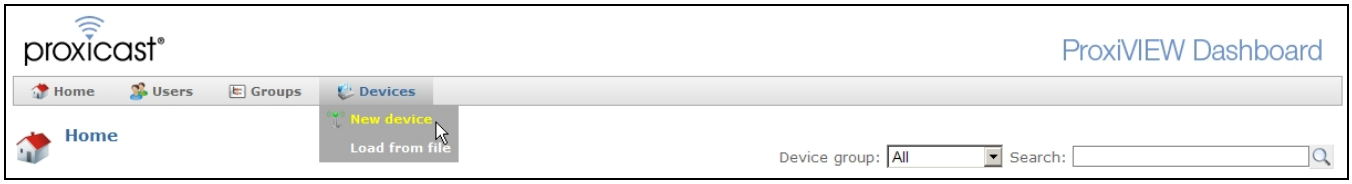

Figure 6: Adding a LAN-Cell device to ProxiVIEW

2. The **Add Device** page will be displayed (Figure 7).

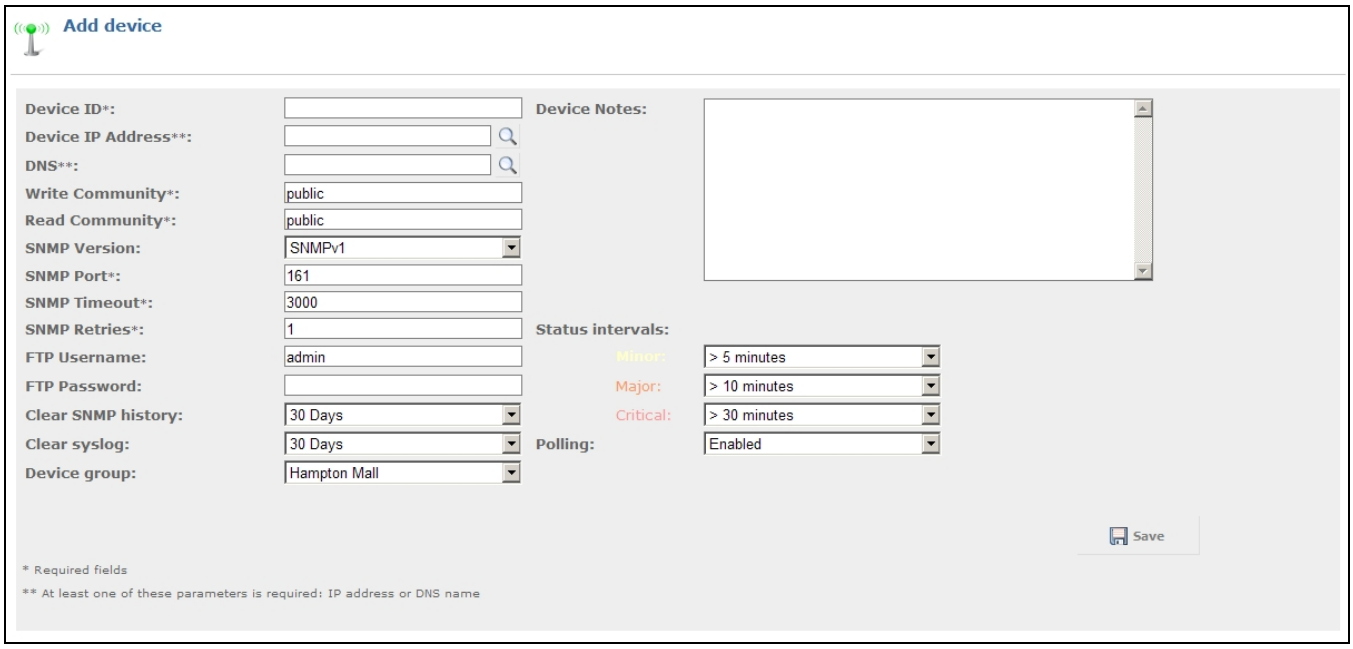

Figure 7: ProxiVIEW Add Device page

3. Enter a unique descriptive **Device ID** for the LAN-Cell.

   The Device ID can be any unique string of characters. Choose Device ID's that are meaningful and helpful in identifying distinct LAN-Cell devices. The current IP address (or DNS hostname) will be displayed in the title area of the Device Detail pages, so select Device ID values that further describe the uniqueness of each LAN-Cell.

   You can also use the Device Group Names and Device Location field to assist with grouping and identifying related devices.

4. Enter either the LAN-Cell's static **IP Address** or its **Dynamic DNS** host name. One of these two values must be entered.

5. Enter the **SNMP Write (Set)** and **Read (Get) Community** strings (must match the values stored on the LAN-Cell device).

6. Enter the **SNMP Port** number that the LAN-Cell is listening on (must match the SNMP Remote Management port value stored on the LAN-Cell device).

7. Enter the **SNMP Timeout** (in milliseconds) and number of **SNMP Retries** that determine how long ProxiVIEW waits before considering a poll request to be unanswered.

8. To enable loading firmware or configuration files to the LAN-Cell, enter the **FTP Username** ("admin") and **FTP Password** (same password as the LAN-Cell's web configuration screen).

9. Select the **Device Group** to which this device should be assigned. Device Groups must be created before devices can be assigned to them.

10. In the **Device Notes** field, enter any free-form descriptive text to be associated with this device.

11. Optionally change the default **Warning Status Intervals** for the device. Devices that have not responded to polls since the warning threshold timer will appear with the indicated color coding on the Summary page.

12. Click **Save.**

To add multiple LAN-Cell devices to ProxiVIEW at one time, use the **Load From File** option on the Devices menu. Please download the ProxiVIEW Device Import XML Template and instructions from the Proxicast Technical Support web site for information on formatting ProxiVIEW import files.

ProxiVIEW Dashboard Summary (Home) Page

The Dashboard Summary page provides a quick overview of the status of devices. Devices can be filtered by **Device Group** and specific devices can be located by Device ID using the **Search** option (Figure 8).

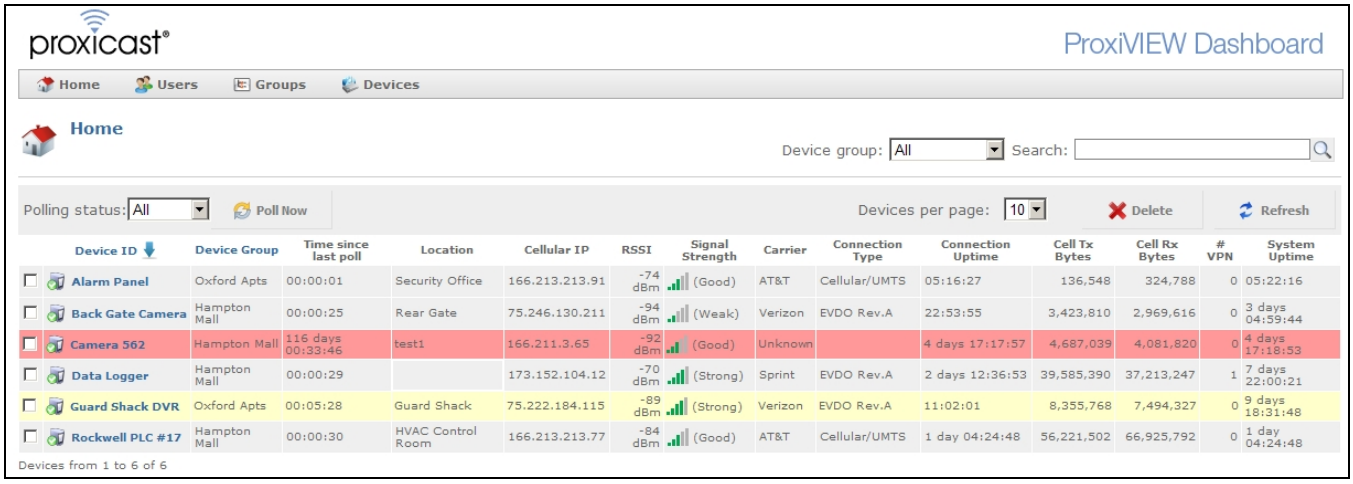

Figure 8: ProxiVIEW Dashboard Summary Page

Each row in the summary table represents a specific LAN-Cell device. Rows are color coded to indicate which devices have not responded to poll requests as defined by the device's Warning Status Thresholds. Individual devices can be selected and polled on demand.

The summary table columns present key LAN-Cell parameters and performance statistics for a "quick glance" at the overall operational status of each device.

Device ID	Unique ID string assigned to the device. Clicking on the Device ID text will open the Device Detail page.
Device Group	Domain-wide group to which the device belongs.
Time Since Last Poll	Elapsed time since the last successful retrieval of data from the device. Each device can set a threshold for color-coding its Summary page row based on the Time Since Last Poll. See the Device Settings tab.
Location	String variable from the device used to identify its location or other descriptive text.
Cell IP	Current IP Address of the device's cellular (3G) interface.
RSSI	Raw Received Signal Strength Indicator value from the device's 3G modem in dBm. Less negative values indicate a stronger signal.
Signal Strength	Qualitative assessment of the RSSI value as reported by the devices's 3G modem. Different modem models have different RSSI and quality scales.

Carrier	Name of the cellular carrier as reported by the device's 3G modem.
Connection Type	Type of cellular service currently in use for the connection.
Connection Uptime	Elapsed time since the current cellular connection was initiated.
Cell Tx Bytes	Number of bytes of data sent by the device's 3G modem.
Cell Rx Bytes	Number of bytes of data received by the device's 3G modem.
# VPN	Number of active VPN tunnels on the device.
System Uptime	Elapsed time since the device was last restarted.

ProxiVIEW Device Detail Pages

The Device Detail pages provide access to many LAN-Cell configuration parameters, event logs, and performance history data. The native LAN-Cell user interfaces can also be directly launched from the Device Detail page using the action buttons on the top right-side of the page (Figure 9).

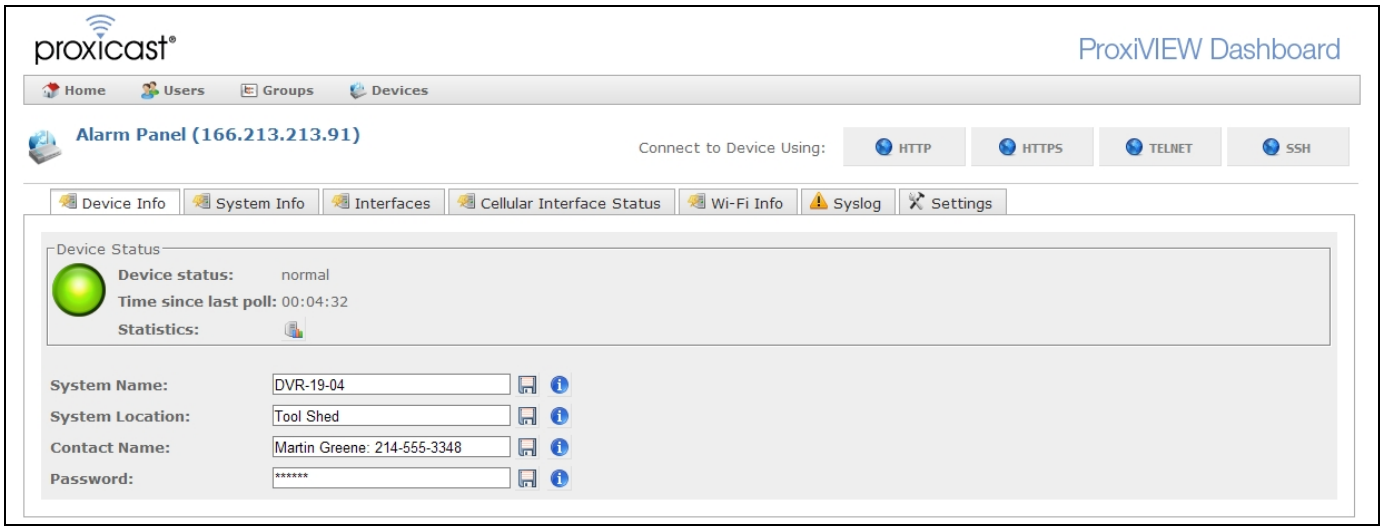

Figure 9: ProxiVIEW Device Detail Page

The tabs on the Device Detail page represent groups of related LAN-Cell configuration or performance variables.

Device Info	Displays a summary of the device's current polling status. Includes icon to display polling success history graph. Contains device-level variables including the ability to set the LAN-Cell's administrative login password.
System Info	Displays high-level device information including model number, firmware version, MAC address, and remote management port numbers.
Interfaces	For each network interface on the device, displays the interface status, IP address, and number of bytes transmitted and received on that interface since the last system restart. Interface traffic history can be graphed.
Cellular Interface Status	Displays 3G-specific information about the LAN-Cell's cellular interface including current carrier, connection type, IP address, signal strength, 3G connection uptime, and modem-specific parameters. Cell-Sentry data budget values are displayed. Signal strength history can be graphed.
Wi-Fi Info	Displays Wi-Fi specific information about the LAN-Cell's 802.11 interface. Settings for the currently active Wi-Fi profile can be changed.
Syslog	Collects LAN-Cell system event log records forwarded by the device to the ProxiVIEW server (Syslog must be configured on the LAN-Cell). Data is pre-pended to existing Syslog records in reverse chronological order to create a permanent log across device restarts. Syslog data can be exported to CSV format using the Export button.
Settings	Device-specific settings defining how ProxiVIEW manages the device.

Variables that display the **Save** icon ( ) can be modified in ProxiVIEW with the change sent to the LAN-Cell device. Enter the new value in the field and click the Save icon. Only one variable can be updated at a time.

Variables that display the **Graph** icon ( ) have historical performance data available that can be graphed. Click on the Graph icon to open the History Graph window (Figure 10).

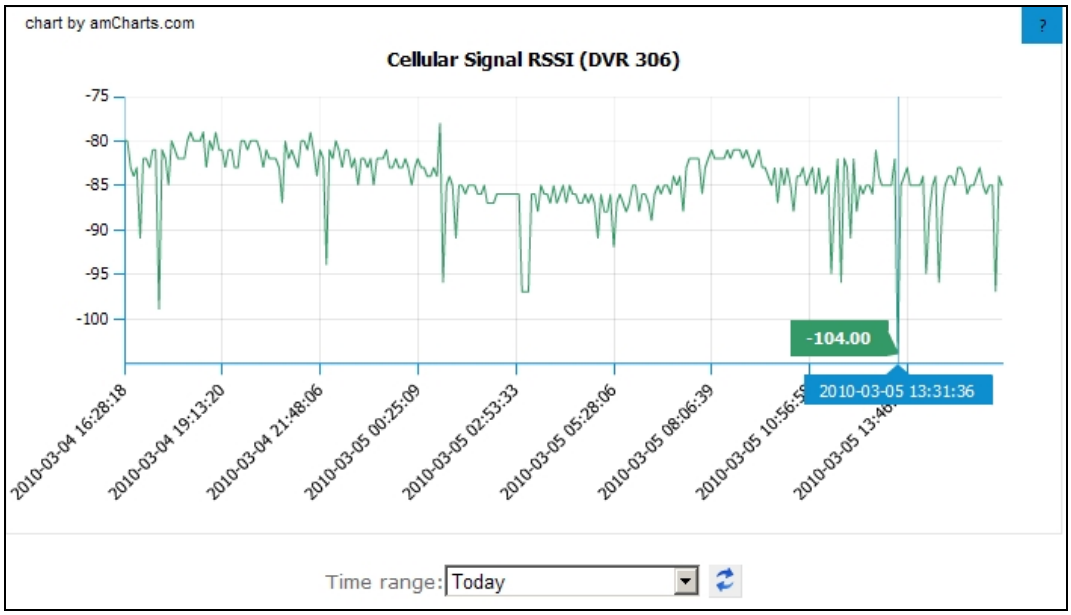

Figure 10: History Graph Window

Hovering over the graph will display the timestamp and variable data value under the mouse cursor. Selecting a portion of the graph will "zoom in" to the selected time-range. The graph time-range can also be specified in the drop-down box.

The **Settings** tab contains variables used by ProxiVIEW to manage its communications with remote devices and resembles the **New Device** page. The Settings tab also provides a large "free-form" text field that can be used to store information about a specific device.

Polling for individual devices can also be disabled on the Settings tab. LAN-Cell's that are temporarily out of service or monitored only at specific times should have polling disabled to converse server resources.

At the bottom of the Settings tab page are buttons that can save a LAN-Cell's configuration file to a local drive, upload a saved configuration file, and upload new firmware images to the LAN-Cell.

FAQ's

Q: What should I use for Device IDs?

A: The Device ID can be any unique string of characters. Choose Device ID's that are meaningful and helpful in identifying distinct LAN-Cell devices. The current IP address (or DNS hostname) will be displayed in the title area of the Device Detail pages, so select Device ID values that further describe the uniqueness of each device.

The Device Group Names and Device Location field can also assist with grouping and identifying related devices.

Q: How much data does ProxiVIEW send and receive when communicating with devices?

A: The exact amount of data transmitted in each direction depends on a number of factors such as whether or not Syslog logging is enabled on the device, the amount of activity in the LAN-Cell's system event log, as well as the length of certain device variable values. A good rule of thumb is to budget approximately 1 MB/day of data in each direction for ProxiVIEWs' periodic polling.

Q: Why does the same RSSI value on different devices show different Signal Strength descriptions?

A: Each cellular modem model has its own sensitivity and operating signal strength range. An RSSI value that is considered Good on one type of modem may be considered Weak on another model. The Signal Strength description (and number of bars shown) is comparable across modems; raw RSSI values are not.

Q: Why does the RSSI value never change on some devices (i.e. RSSI graph is flat)?

A: Some cellular modems are not capable of reporting the RSSI value (or Signal Strength description) in "real-time" while they have an active connection to a cellular network. In ProxiVIEW (and the LAN-Cell 2), these modems display the last known RSSI and Signal Strength before the current connection was made. This results in a flat history graph. Proxicast recommends selecting cellular modems that have the ability to report performance statistics during data operations.

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