



PowerShield



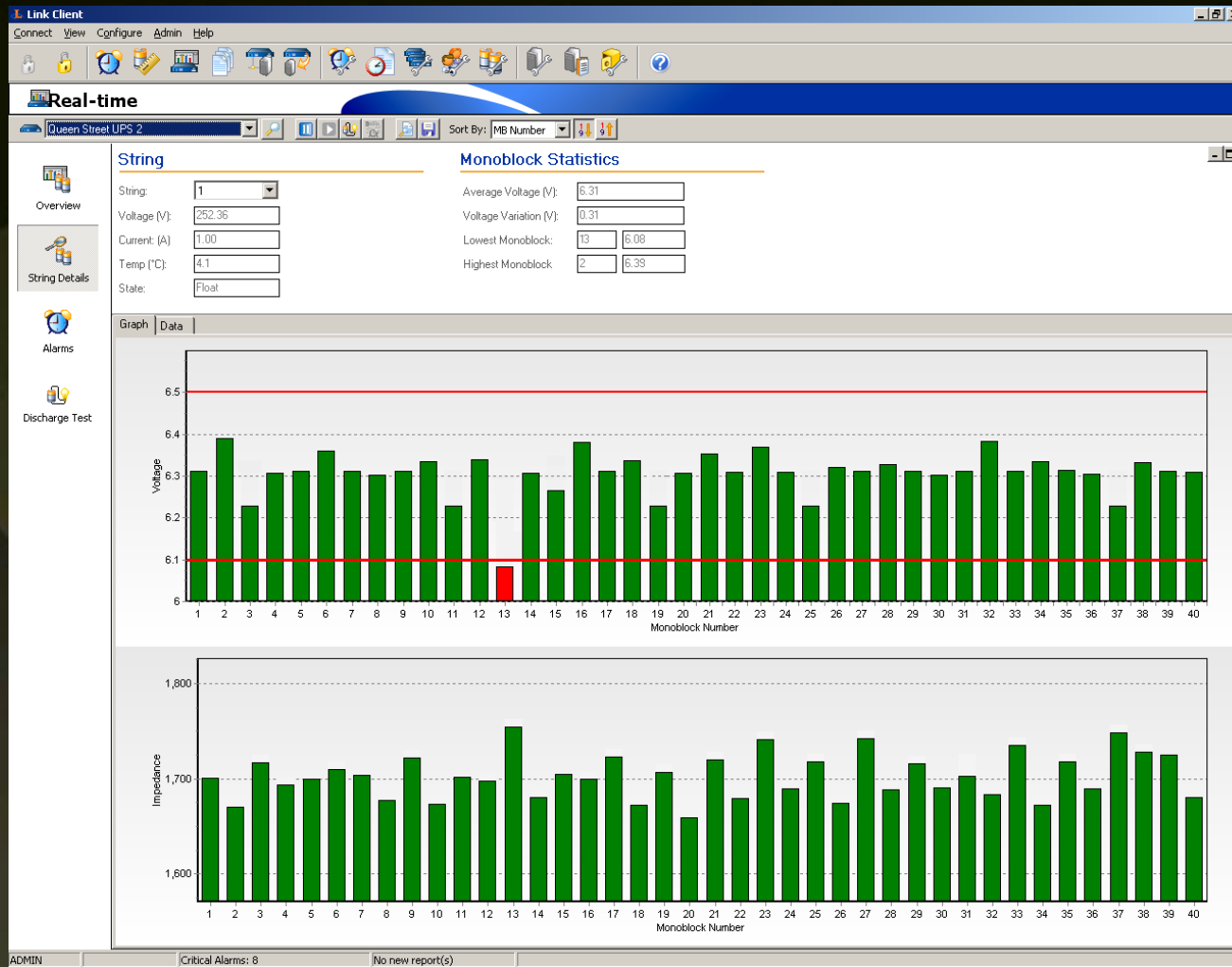
Protecting your power supply



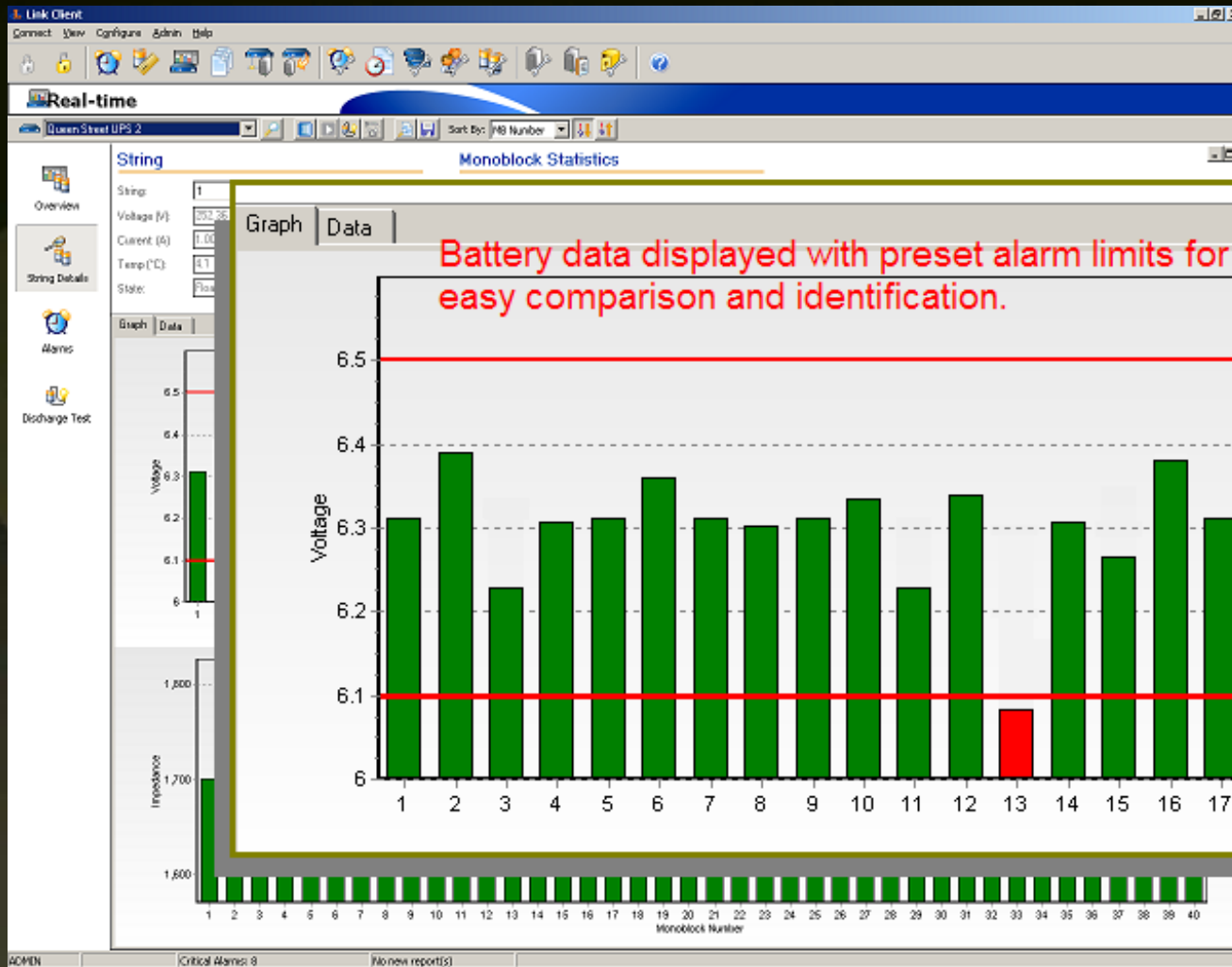
So how does Link software tell me if my batteries are good or bad?



View live battery information at the Real-Time screens.



View live battery information at the Real-Time screens.



View live battery information at the Real-Time screens. Click for PDF report.

The screenshot shows the 'Link Client' software interface. The 'Real-time' tab is active, displaying a 'String Detail Report' for 'String 1'. A red circle highlights the 'Print' icon in the toolbar. The report includes the following data:

String Detail Report

Site name: Barclays GI Tokyo UPS A
Time: 18:01 1-Apr-09
String Number: 2
Status: Charge

Current: 3.00 A
Temperature: 19.8 °C
Voltage: 426.36 V

MB Average:
MB Variation:

| MB# | Voltage | Status | Low | High | μOhms |
|-----|---------|--------|-------|-------|-------|
| 33 | 13.13 | OK | 10.50 | 14.50 | 2012 |
| 34 | 13.16 | OK | 10.50 | 14.50 | 1937 |
| 35 | 14.89 | OK | 10.50 | 14.50 | 1929 |
| 36 | 13.31 | OK | 10.50 | 14.50 | 2031 |
| 37 | 13.84 | OK | 10.50 | 14.50 | 2002 |
| 38 | 13.30 | OK | 10.50 | 14.50 | 1950 |
| 39 | 13.21 | OK | 10.50 | 14.50 | 1992 |
| 40 | 13.17 | OK | 10.50 | 14.50 | 1949 |
| 41 | 13.22 | OK | 10.50 | 14.50 | 1994 |
| 42 | 13.21 | OK | 10.50 | 14.50 | 1975 |
| 43 | 13.25 | OK | 10.50 | 14.50 | 2008 |
| 44 | 13.28 | OK | 10.50 | 14.50 | 1929 |
| 45 | 13.26 | OK | 10.50 | 14.50 | 1962 |
| 46 | 13.21 | OK | 10.50 | 14.50 | 1927 |
| 47 | 13.29 | OK | 10.50 | 14.50 | 1953 |

At the bottom of the interface, there is a status bar showing 'ACMEN', 'Critical Alarms: 0', and 'No new report(s)'.



View any alarms raised at the Alarms screen.

Link Client

Connect View Configure Admin Help

View

- Alarm Status
- History
- Real-time
- Reports
- Communications
- Memory Download

Alarm Status

New History

| Date | Sitename | Alarm Type | State |
|--------------------|-------------------|--|----------|
| 16-May-08 14:00:59 | UPS 4 - Nelson St | No Comms Response | Critical |
| 14-Jan-08 18:13:06 | UPS 2 - Nelson St | String Voltage (Float) String 1: Low | Critical |
| 14-Jan-08 15:02:22 | UPS 3 - Nelson St | Monoblock Voltage (Float) String 1 MB 1: | Critical |
| 14-Jan-08 18:40:39 | UPS 3 - Nelson St | Monoblock Variation String 2: High | Deferred |

Details

Defer Clear Note Notify

Date: 14-Jan-2008 18:40:39

Type: Monoblock Variation

Reading: High

String N°: 2

Min. Monoblock: 51

Max. Monoblock: 57

Limit (V): 0.6

Alarm State History

| Logged | User | State |
|--------------------|-------|----------|
| 14-Jan-08 18:40:42 | | Critical |
| 16-May-08 14:02:30 | ADMIN | Deferred |

ADMIN Critical Alarms: 4 No new report(s)



View any alarms raised at the Alarms screen.

The screenshot shows the 'Link Client' software interface. The main window is titled 'Alarm Status' and has a menu bar with 'Connect', 'View', 'Configure', 'Admin', and 'Help'. On the left is a sidebar with icons for 'Alarm Status', 'History', 'Realtime', 'Reports', 'Communications', and 'Memory Download'. The 'View' button is highlighted in the sidebar. The main area is divided into several sections:

- Alarm Status Table:** A table with columns 'Date', 'SiteName', 'Alarm Type', and 'State'. It lists three alarms:

| Date | SiteName | Alarm Type | State |
|--------------------|-------------------|--|----------|
| 16-May-08 14:00:59 | UPS 4 - Nelson St | No Comms Response | Critical |
| 14-Jan-08 18:13:06 | UPS 2 - Nelson St | String Voltage (Float) String 1: Low | Critical |
| 14-Jan-08 15:02:22 | UPS 3 - Nelson St | Monoblock Voltage (Float) String 1 MB 1: | Critical |
- Details Panel:** A panel on the right with buttons 'Defer', 'Clear', 'Note', and 'Notify'. Below the buttons, it shows 'String N° 2' with 'Min. Monoblock' at 51, 'Max. Monoblock' at 57, and 'Limit (V)' at 0.6.
- Alarm State History Table:** A table with columns 'Logged', 'User', and 'State'. It lists two events:

| Logged | User | State |
|--------------------|-------|----------|
| 14-Jan-08 18:40:42 | | Critical |
| 16-May-08 14:02:30 | ADMIN | Deferred |

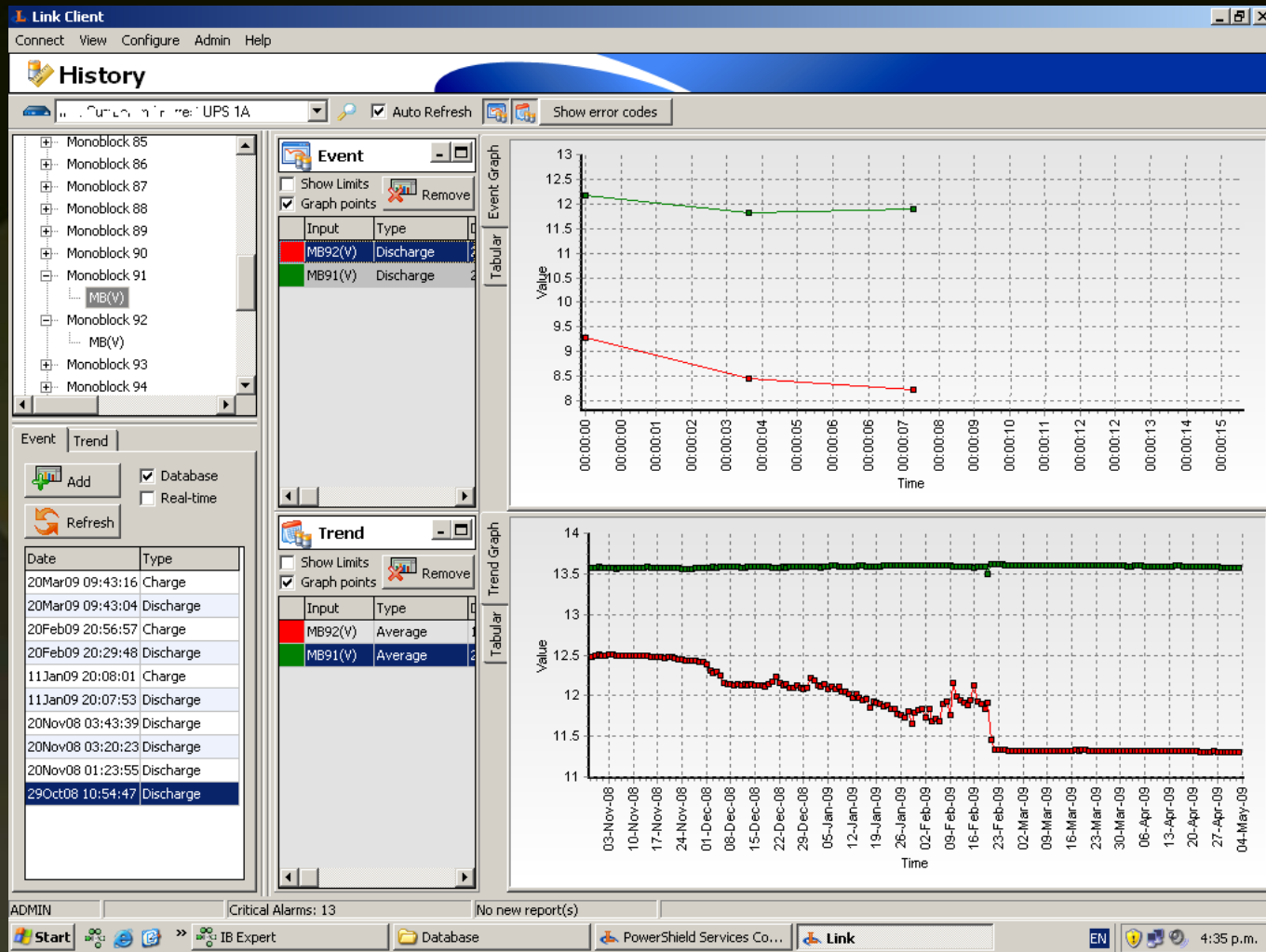
At the bottom of the window, a status bar shows 'ADMIN', 'Critical Alarms: 4', and 'No new report(s)'. A large red text overlay 'Fast detailed alarm notification' is positioned over the central area of the screen.



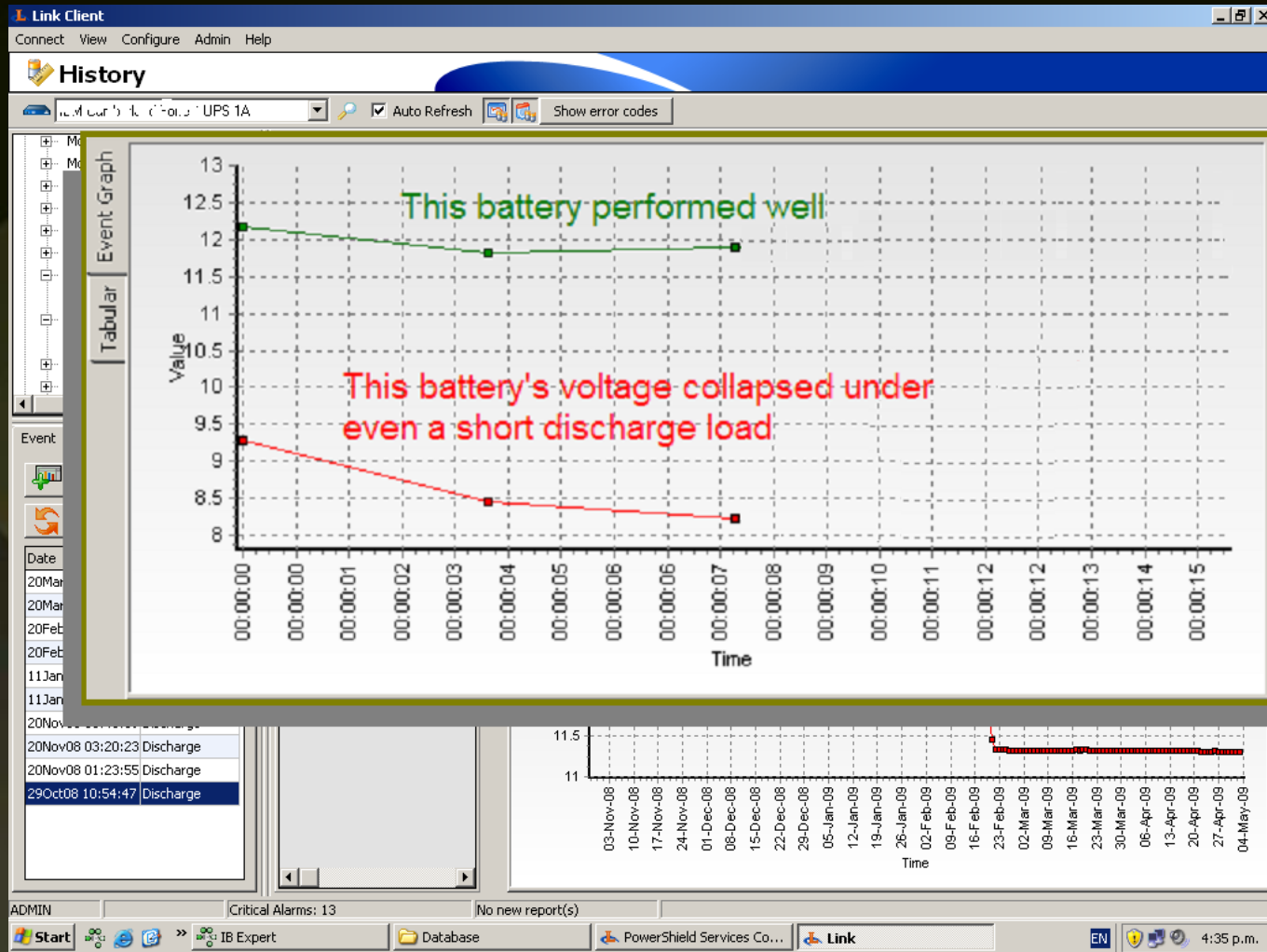
OK, alarms are great. But how do I find my bad batteries before they alarm?



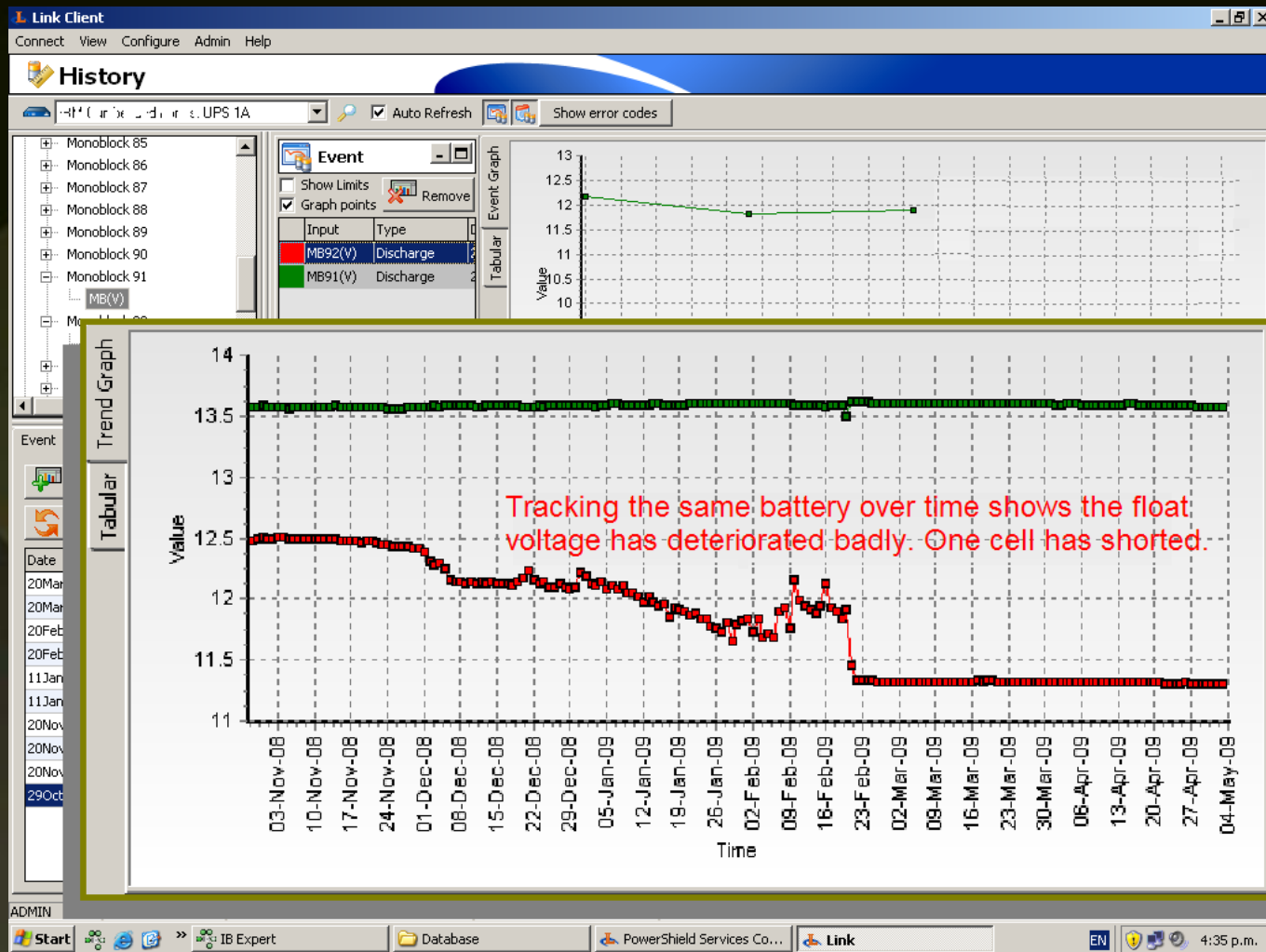
Review battery performance and changes during it's life at the History screen.



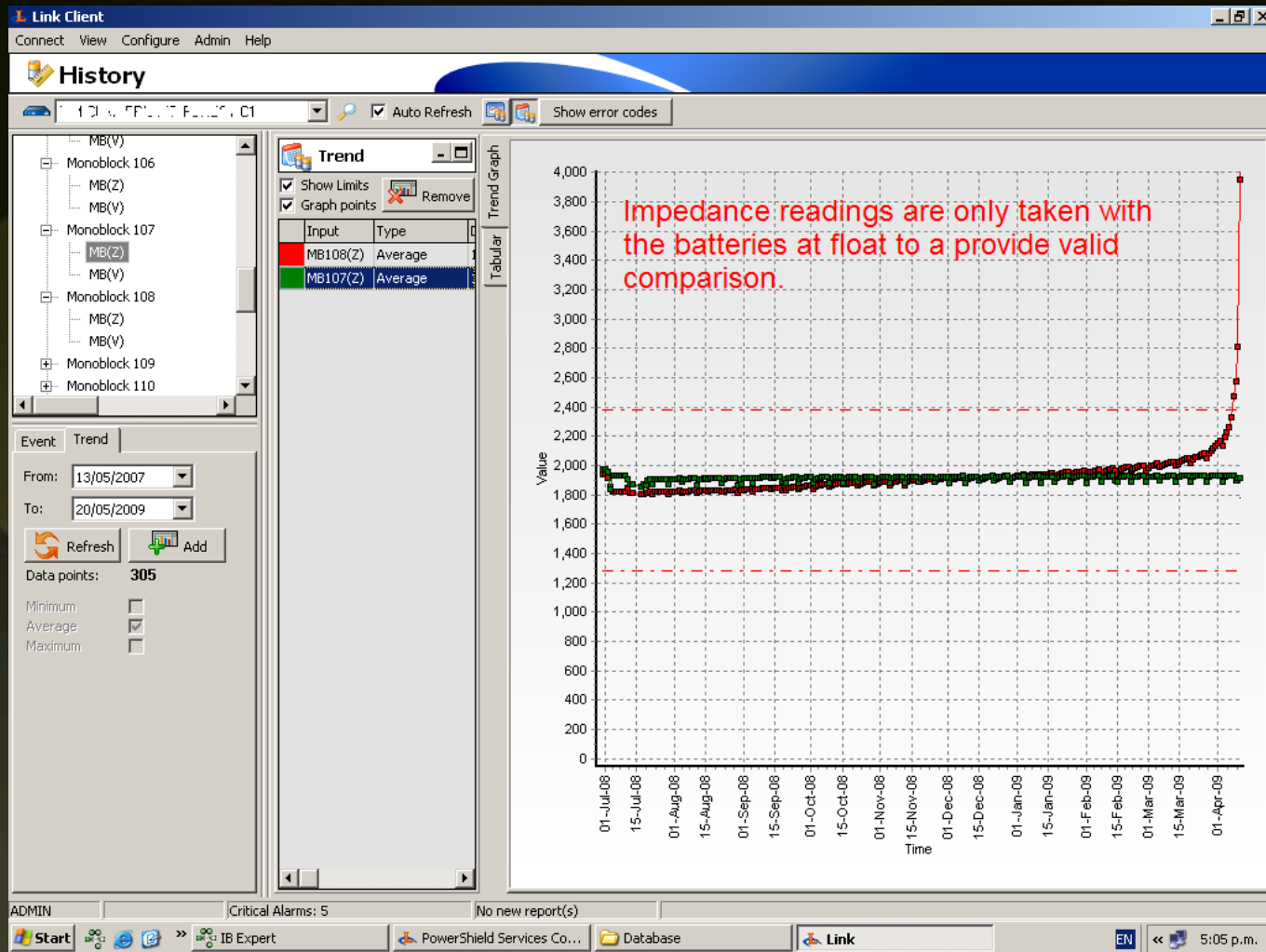
Review battery performance under discharge.



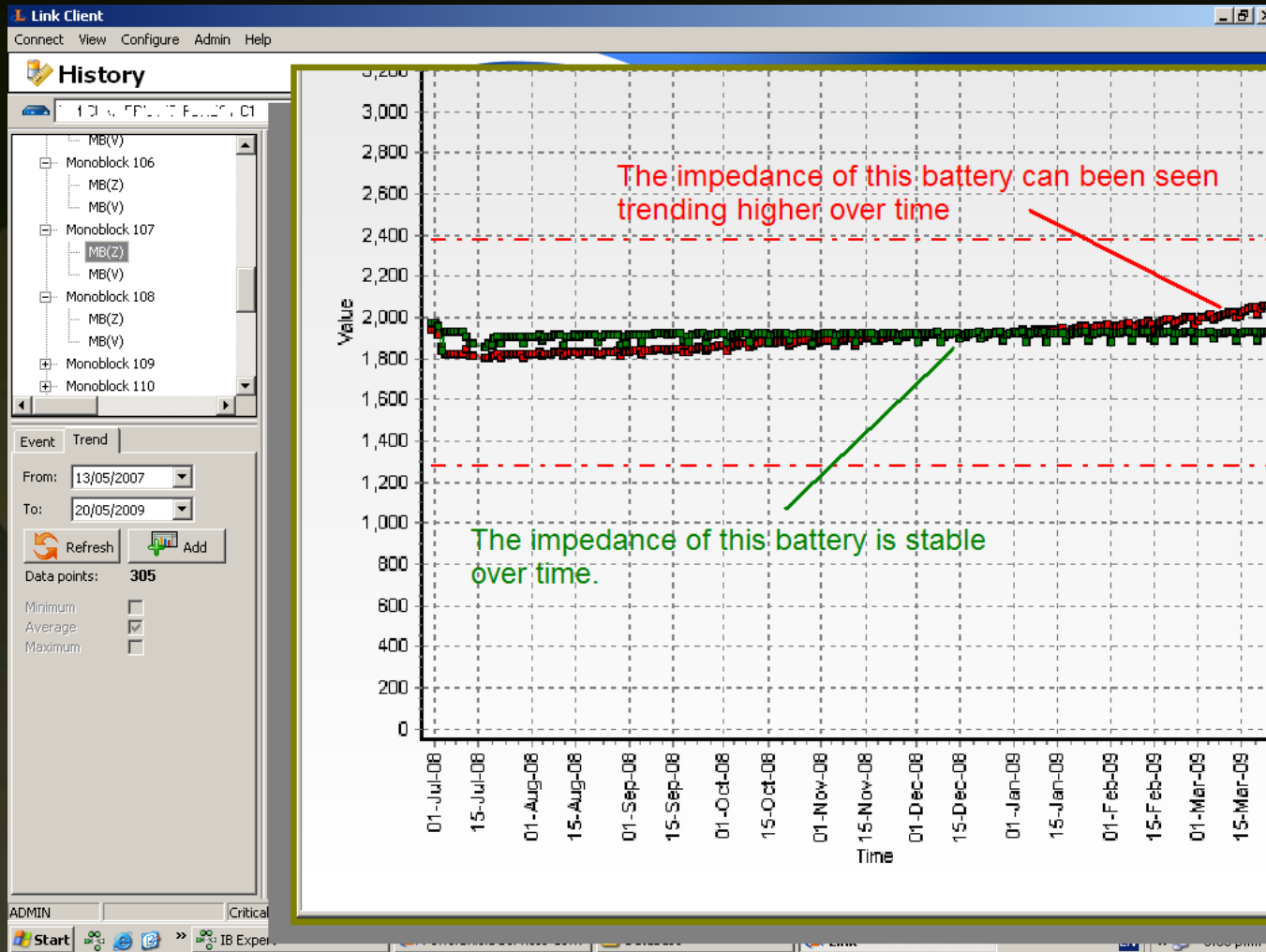
Review voltage changes over the battery life.



Review impedance changes over the battery life.



Review impedance changes over the battery life.



Link Client

Connect View Configure Admin Help

History

MB(V)

- Monoblock 106
 - MB(Z)
 - MB(V)
- Monoblock 107
 - MB(Z)
 - MB(V)
- Monoblock 108
 - MB(Z)
 - MB(V)
- Monoblock 109
- Monoblock 110

Event Trend

From: 13/05/2007

To: 20/05/2009

Refresh Add

Data points: 305

Minimum ☐

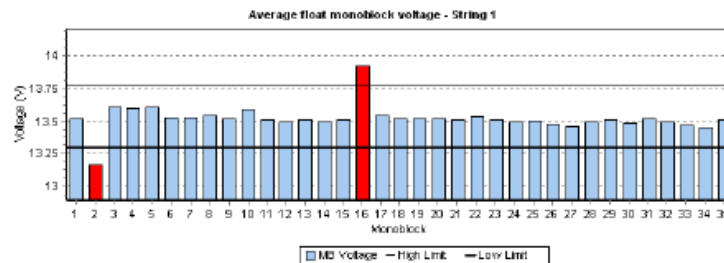
Average ☒

Maximum ☐

ADMIN IB Ex



String_2



Monoblock Float voltage details - String 2

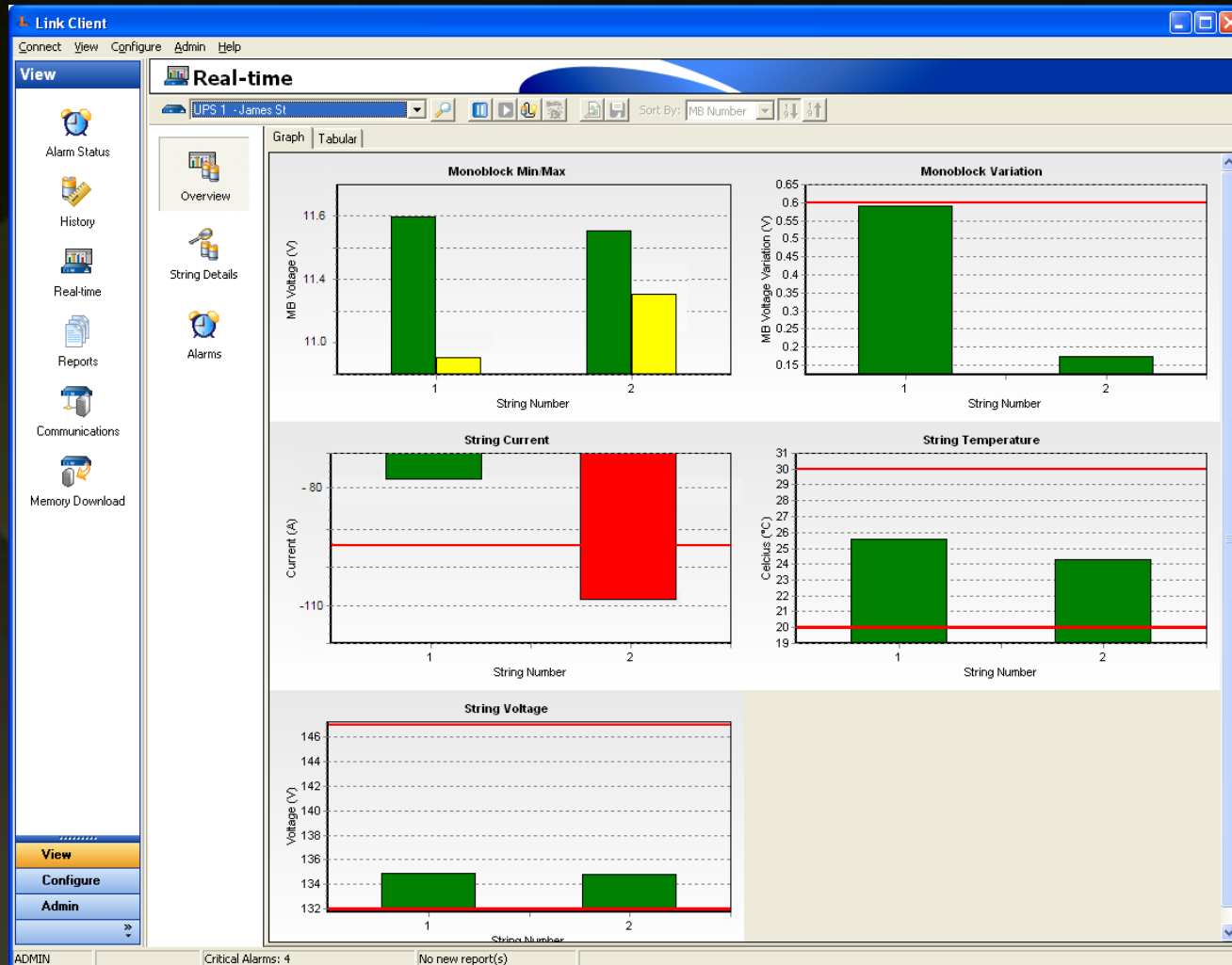
| Monoblock | Average | Min V | Max V |
|-----------|---------|--------|--------|
| 36 | 13.532 | 12.041 | 13.674 |
| 37 | 13.522 | 11.976 | 13.617 |
| 38 | 13.542 | 12.076 | 13.609 |
| 39 | 13.541 | 11.827 | 13.666 |
| 40 | 13.610 | 12.029 | 13.792 |
| 41 | 13.517 | 11.966 | 13.722 |
| 42 | 13.541 | 11.941 | 13.666 |
| 43 | 13.526 | 12.007 | 13.659 |
| 44 | 13.533 | 11.984 | 13.603 |



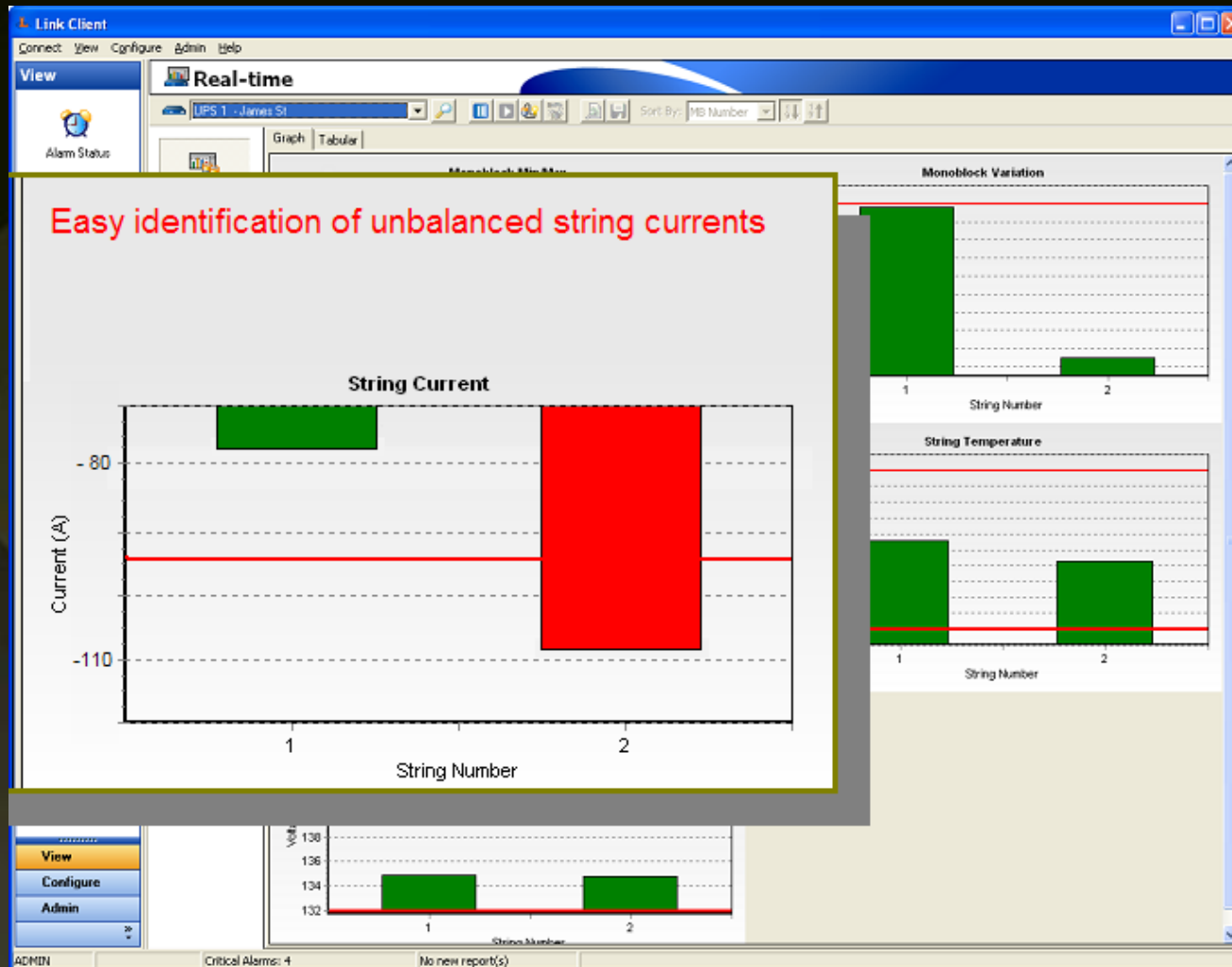
We do regular battery testing.
How does Link software help me there?



Maintain a global view of the complete battery system under discharge.



Maintain a global view of the complete battery system under discharge.

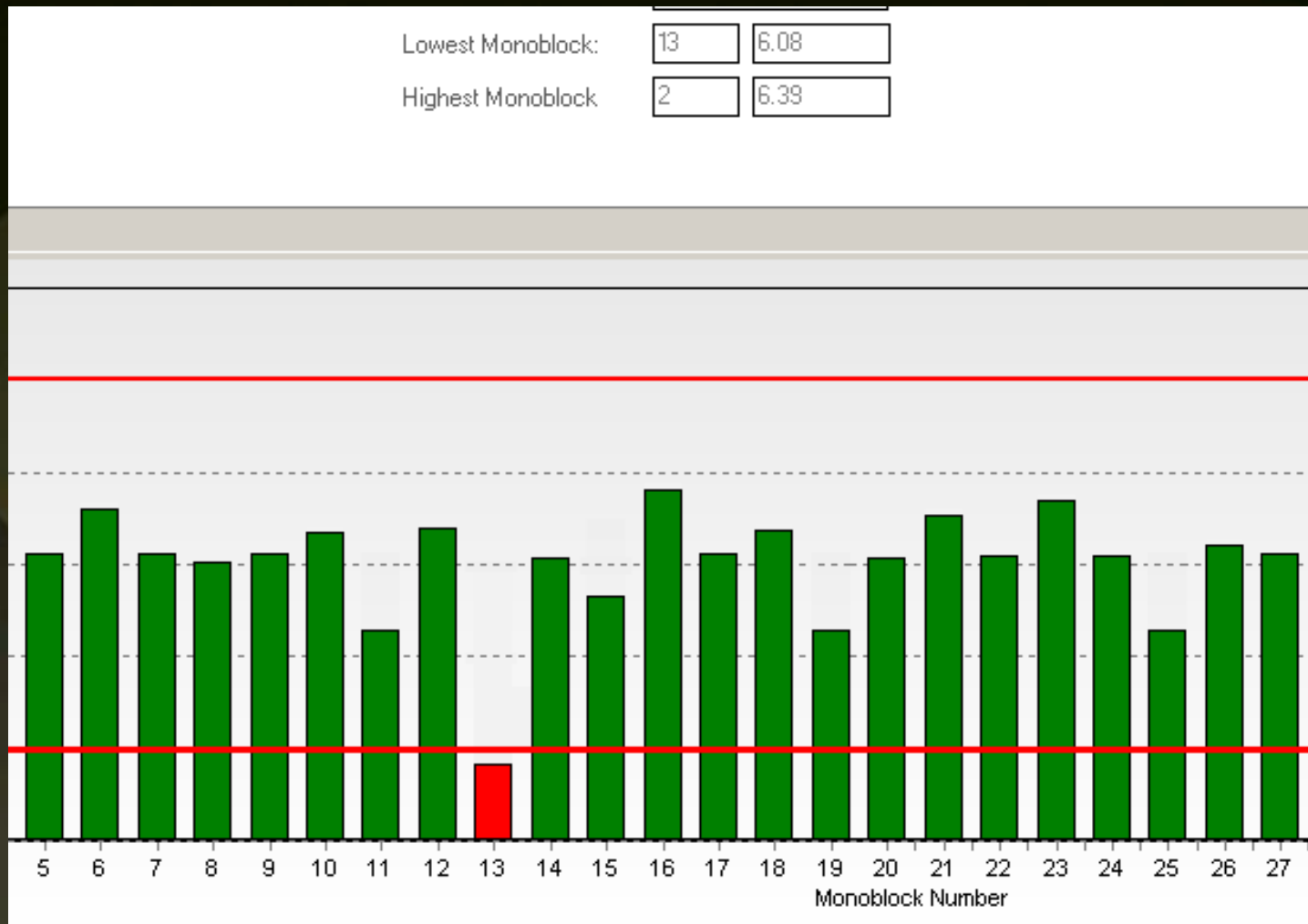


The screenshot displays the Link Client software interface, which is used for monitoring a battery management system. The interface includes a menu bar (Connect, View, Configure, Admin, Help) and a sidebar with buttons for View, Alarm Status, and a navigation menu (View, Configure, Admin). The main area shows three charts:

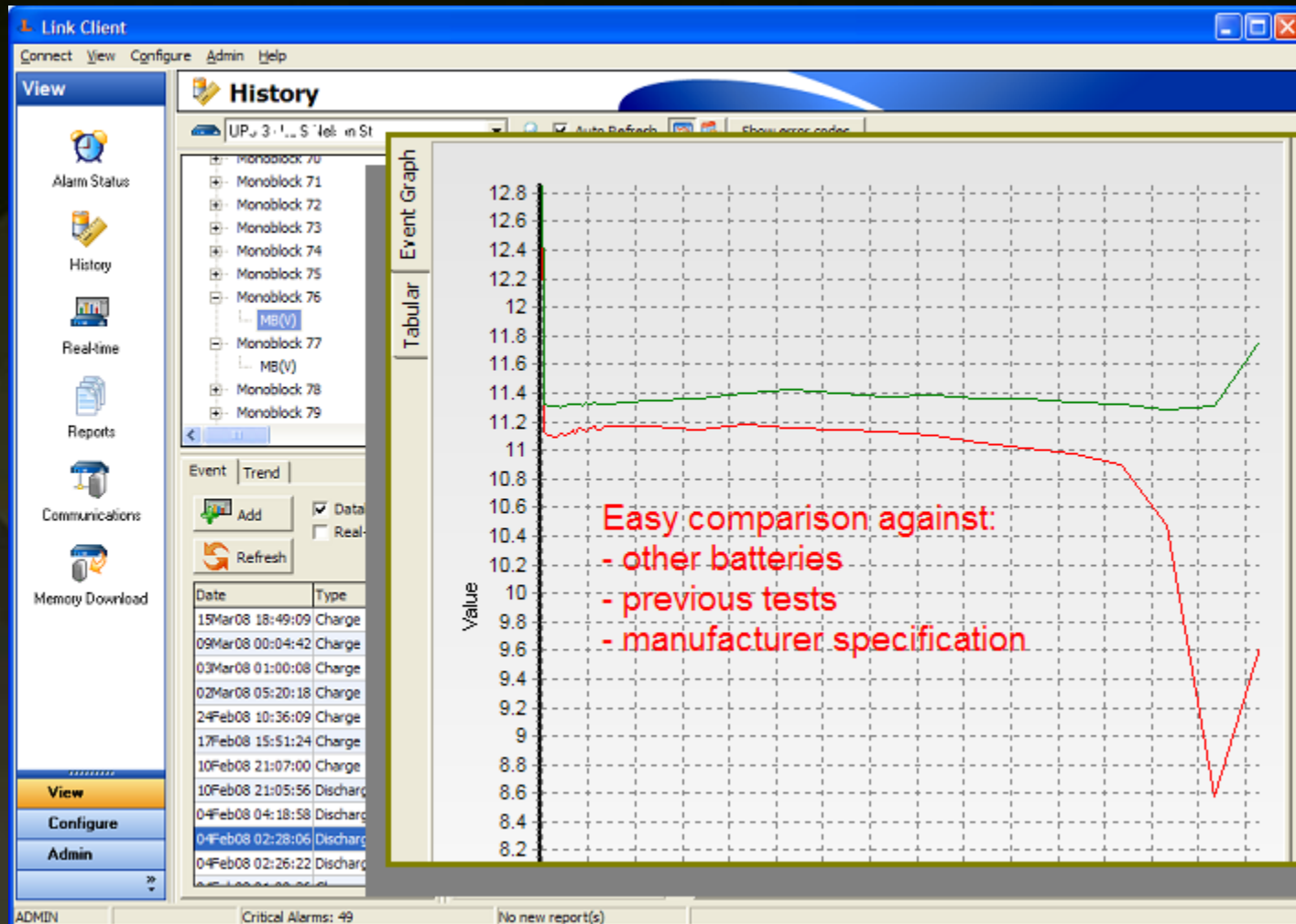
- Monoblock Min/Max:** A bar chart showing the minimum and maximum voltage for two strings. String 1 has a minimum voltage of approximately 11.0V (yellow bar) and a maximum voltage of approximately 11.6V (green bar). String 2 has a minimum voltage of approximately 11.3V (yellow bar) and a maximum voltage of approximately 11.5V (green bar).
- Monoblock Variation:** A bar chart showing the variation in voltage for two strings. String 1 has a variation of approximately 11.6V (green bar), and String 2 has a variation of approximately 11.3V (green bar).
- String Temperature:** A bar chart showing the temperature for two strings. String 1 has a temperature of approximately 11.6V (green bar), and String 2 has a temperature of approximately 11.3V (green bar).

A red text box is overlaid on the Monoblock Min/Max chart, stating: "Keep track of the best and worst performing batteries per string".

Drill down to individual battery detail under discharge.



Drill down to individual battery detail under discharge.

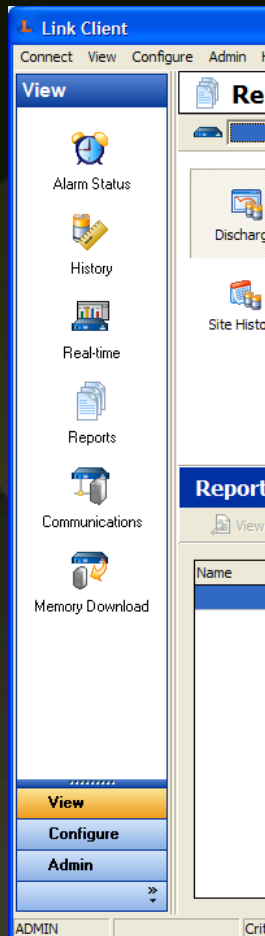


The screenshot shows the Link Client software interface. The top menu bar includes 'Connect', 'View', 'Configure', 'Admin', and 'Help'. The left sidebar contains navigation icons for 'Alarm Status', 'History', 'Real-time', 'Reports', 'Communications', and 'Memory Download'. The 'History' tab is selected, showing a list of Monoblock devices (70-79) on the left. The main window displays a table of historical data for Monoblock 76. The table has four columns: 'Date Time', 'MB77(V)', 'Date Time', and 'MB76(V)'. The data shows a series of measurements from February 8, 2008, at 02:28:06 to 02:29:16. A red text overlay reads 'Have confidence in accurate, logged data'.

| Date Time | MB77(V) | Date Time | MB76(V) |
|--------------------|---------|--------------------|---------|
| 04-Feb-08 02:28:06 | 13.264 | 04-Feb-08 02:28:06 | 13.518 |
| 04-Feb-08 02:28:08 | 11.129 | 04-Feb-08 02:28:08 | 11.328 |
| 04-Feb-08 02:28:10 | 11.101 | 04-Feb-08 02:28:10 | 11.311 |
| 04-Feb-08 02:28:12 | 11.106 | 04-Feb-08 02:28:12 | 11.316 |
| 04-Feb-08 02:28:14 | 11.092 | 04-Feb-08 02:28:14 | 11.309 |
| 04-Feb-08 02:28:16 | 11.097 | 04-Feb-08 02:28:16 | 11.306 |
| 04-Feb-08 02:28:18 | 11.115 | 04-Feb-08 02:28:18 | 11.299 |
| 04-Feb-08 02:28:20 | 11.111 | 04-Feb-08 02:28:20 | 11.312 |
| 04-Feb-08 02:28:22 | 11.108 | 04-Feb-08 02:28:22 | 11.309 |
| 04-Feb-08 02:28:24 | 11.124 | 04-Feb-08 02:28:24 | 11.322 |
| 04-Feb-08 02:28:26 | 11.143 | 04-Feb-08 02:28:26 | 11.322 |
| 04-Feb-08 02:28:28 | 11.124 | 04-Feb-08 02:28:28 | 11.324 |
| 04-Feb-08 02:28:30 | 11.150 | 04-Feb-08 02:28:30 | 11.319 |
| 04-Feb-08 02:28:44 | 11.148 | 04-Feb-08 02:28:44 | 11.324 |
| 04-Feb-08 02:28:46 | 11.165 | 04-Feb-08 02:28:46 | 11.321 |
| 04-Feb-08 02:29:16 | 11.172 | 04-Feb-08 02:29:16 | 11.346 |

Have confidence in accurate, logged data

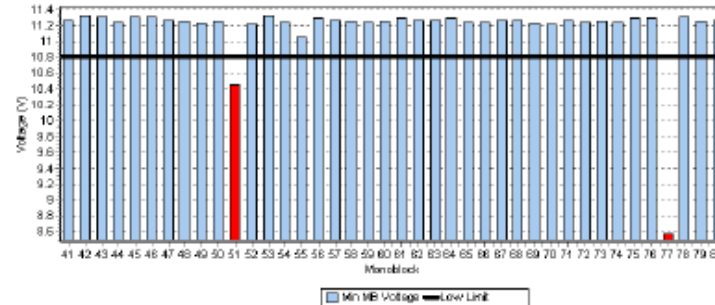
Save time with easy output to PDF report.



Monoblock Performance per String

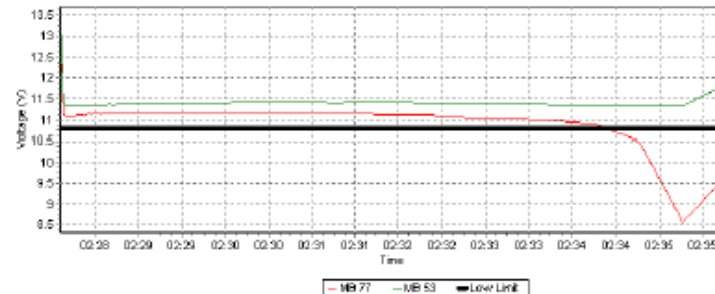
Monoblock Minimum Voltage

String 2



Monoblock voltage for highest and lowest monoblocks

String 2



| Alarm | MB | Min V | Time | Max V | Time | Energy (KJ) |
|-------|----|-------|----------|-------|----------|-------------|
| | 41 | 11.27 | 02:34:46 | 13.53 | 02:28:06 | 1304.3 |
| | 42 | 11.32 | 02:34:46 | 13.43 | 02:28:06 | 1309.2 |
| | 43 | 11.30 | 02:34:46 | 13.42 | 02:28:06 | 1307.2 |
| | 44 | 11.24 | 02:34:46 | 13.51 | 02:28:06 | 1301.9 |
| | 45 | 11.31 | 02:28:22 | 13.41 | 02:28:06 | 1308.2 |
| | 46 | 11.31 | 02:34:46 | 13.48 | 02:28:06 | 1308.8 |
| | 47 | 11.26 | 02:34:46 | 13.47 | 02:28:06 | 1303.2 |
| | 48 | 11.25 | 02:34:46 | 13.32 | 02:28:06 | 1303.6 |
| | 49 | 11.23 | 02:34:46 | 13.48 | 02:28:06 | 1299.2 |
| | 50 | 11.25 | 02:35:16 | 13.55 | 02:28:06 | 1305.9 |



Link Discharge Report v2.1.1.5
Printed on: 05-Jun-08 15:28
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