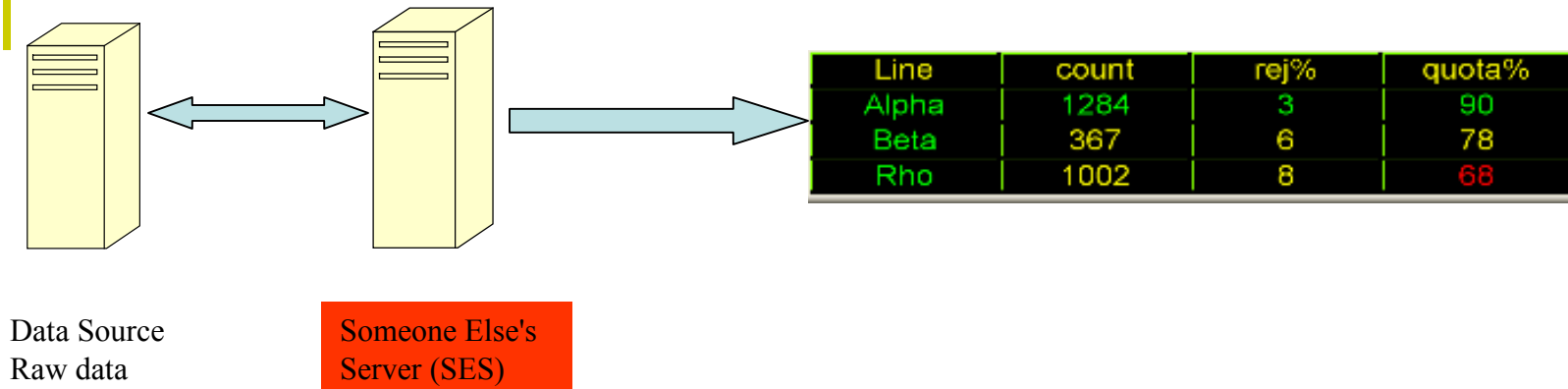


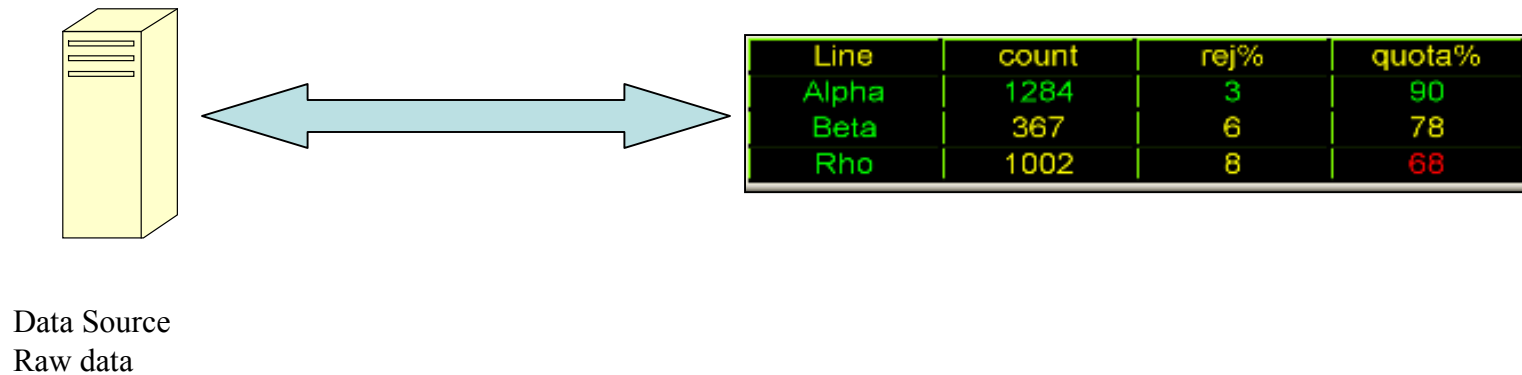
IPdisplays – Why US?

- Why us versus our competitors?
- 1) Ease of use
- 2) Ease of integration
- 3) Lowest cost of implementation
- 4) Easiest to re-task
- 5) No middle-ware required

Current Technology



IPdisplays' Technology



Standard Formats

- Messages are built in XHTML/XML any text editor can be used to build messages
- Layouts, Play lists, data element definitions and updates are all easy to understand XML content
- Web based graphical interface is included on the sign for building everything

Multiple Methods

- **Push or Pull data**
- SOAP Interface from programs like
 - Excel, .Net, office, C#, VB, Perl, etc
- Shared network directories can be loaded into signs
- Data can be loaded from a USB memory stick
- Signs can gather their payload via FTP or HTTP
- Some combination of ALL of the above

IPdisplaysTM - Display Interface Overview

- Getting Started:
 - How do I access the display?
 - What are its features?
 - How do I use them?

How do I find my display on my network?

- Use its name -> IPD-xxxx
 - Where xxxx = last 4 digits of Mac address.
 - Mac address is on back of unit.
- Use a scanning program like IPscan.exe
- Boot without the USB stick inserted.
 - IP address will display on the screen.

DHCP or Static Address

- Unit ships with DHCP enabled as default.
- If your network does not support DHCP and you need a static address, use the 'NetworkJumpstart' file to change to static mode.

Network Jumpstart

- The NetworkJumpstart.old file is in the root of the USB stick that comes with your display.
- Remove the stick and insert the stick onto a local computer to edit this file.
- Open the file in a text editor.
- Change the line appropriate for static or DHCP.
 - Change `<!-- (text) ?-->` to `< (text) >` to uncomment a line
 - Change `< (text) >` to `<!-- (text) ?-->` to comment a line
- Insert/change the IP information to reflect your local information -> 192.168.0.32 to 164.100.43.64
- Rename the file from .old to .xml
- The display will change it back after it uses the file.

Display Name

- You can also reference the display by name
- Default name is IPD-xxxx
 - *Where xxxx = last 4 digits of MAC address.*
 - *MAC address is listed on back of unit.*
- Default name can be changed from the Setup menu
 - *This will be discussed in a future slide.*

Attach to the Display

- By Name:
 - <http://IPD-xxxx/Site> where xxxx = your display's last 4 Mac address digits.
- By IP address:
 - E.g.: <http://192.168.0.32/Site> - use your displays discovered IP address
- This will take you to the display's default or home page.

Display's Default or Home Page

- Here you will find:
 - System Information
 - Name
 - IP address
 - Time and date
 - Firmware version
 - Size and color information
 - Menu
 - To navigate to other system pages
 - Help “?” button
 - Popup page of helpful information for reference
 - Refresh button – refresh data on page
 - Refresh Snapshot button
 - Refresh data currently shown on your display

Left-hand Menu Descriptions

- Home – System Info & Remote Snapshot
- Messages – Message List & Text Editor for Creation
- Data – Data Elements/Variables & Format Control
- Thresholds – Rules for Data Element Display
- Layouts – View Formatting & Zone Setup
- Conditions – Control or Soft-logic Rules
- Images – Bitmap Data Store
- Sources – Setup External Data & Configuration Info.
- Setup – Low level Display Setup Screens
- Advanced – Direct API command execution

Display Hierarchy

- Layout – Level 1 – the full display area
 - Think of this like a TV screen or a PowerPoint Slide
- Zone – Level 2 – a portion of the display to the complete area. May have one or more zones.
 - Think of this like a TV channel or a spreadsheet cell.
- Message – Level 3 – the information that will be displayed inside a zone.
- Data Element – Level 4 – a piece of dynamic information that can be operated on or included inside a message.

Display Hierarchy – continued

- Thresholds – Level 5 – Rules that get applied to Data Elements to control how they are displayed.
- Conditions – Level Overall – When defined, conditions can control every layout, message, threshold, data element, or even issue API commands.
- Images – No Level – available to be added to messages for impact and iconic representation.

Tying the Hierarchy Together

- To display a piece of data
 - Define a data element.
 - Attach a threshold if desired.
 - Create a message and insert the data element's tag.
 - This is referenced to a Zone by the Zone's Target ID number.
 - A Zone is included in a Layout.
 - A zone can be included in multiple layouts by using the Zone's Target ID number.

'Home' Menu Page

- System Information
 - *Display's Name*
 - *IP address*
 - *Firmware Version*
 - *Date & Time on the display*
 - *Display's Height, Width, & Color Depth*
- Remote Snapshot
 - *See what is being shown on the display where you are via the browser.*
 - *Use the 'Refresh Snapshot' button to dynamically refresh*

‘Messages’ Menu Page

- This is where messages are created and managed.
- Formatting, Target, Priorities, and effects can be applied to the message here.
- See all the messages defined or sort them by a specific target.

'Data' Menu Page

- Data Elements are created on this page
- Assign a name, alignment, a width, a threshold, and even values if the data is to be manual or static
- Dynamic updates of data elements will be covered later.

‘Thresholds’ Menu Page

- Create Threshold Rules to be applied to data here.
 - *Can apply 1-to-1 or 1-to-Many*
- Define ranges
- Apply colors
- Apply blinking
- Apply/play a sound

‘Layouts’ Menu Page

- Handles Layout and Zone Setup
- Layout is the size of Display.
 - Order is sequence – like PowerPoint slides.
 - Duration – time in seconds to display that layout.
 - Enabled – show it or not to show it.
- Zones
 - Wizard to help define how many and where
 - Target – like a TV channel - determines what messages are played in the zone.
 - Color – defines a default color for messages that don't have color defined when they are created.
 - Style – normal = for messages, border = creates a border of that size.

‘Conditions’ Menu Page

- Define control operations based on soft-logic
- Allows to enable or disable messages, layouts, and thresholds.
- Data elements/variables can be assigned unique values.
- API commands can be executed.

- All this can be done conditionally based on what is happening on the display.

'Images' Menu Page

- Shows bitmap images that are currently stored on the display's USB stick.
- These can then be inserted into messages.
- New images can be uploaded to the stick via browse option.
- Images are easy to create using MS Paint.
 - Use primary colors Red and Green for pallet.
 - Include Blue with the most significant bit set to enable a pixel to blink.

'Sources' Menu Page

- Allows for using a remote source for Configuration or Data Element updates.
- For Data Elements, this requires the presence of a XML file with a structure like:
 - <dataItems>
 - <DataItem name = "DEName">50</DataItem>
 - </dataItems>
- Multiple Data Elements can be updated simultaneously using this method.

‘Setup’ Menu Page

- Low-level Display Configuration
 - Change password
 - Define SNMP Settings
 - Change Network Settings DHCP/Static IP selection
 - Setup time server information
 - Setup DNS/WINS and change the Display’s Name
- All these settings are saved in non-volatile storage on the Display’s CPU card.

‘Advanced’ Menu Page

- Advanced User Page
 - System Level API command direct execution.
- *****User beware***** be very sure you understand the commands and what they do before executing them.
- ***** It is possible to make the display unusable by misuse of the commands on this page*****

‘Advanced’ Menu Page – continued

- Ability to quickly remove messages from a specific Target.
- Commands to persist or make permanent any or all the changes you have made to Layouts, Messages, Data Elements, Thresholds, Conditions. These items are saved on the local USB stick.
- Commands to reload items to recover from mistakes made while editing.
- The ability to upload and program a Firmware update to the CPU card – using FLASH from USB.
- And many more useful commands to aid in your management of the display.

Your First Layout

- Click on the ‘Layouts’ menu item.
- Type in a “Name” for your Layout.
- Change the Order or Duration if desired or just leave as default. These can be changed later.
- Click the Add button. It will be added as disabled since no Zone information exists.

Adding Zones to Your Layout

- Click on you new Layout to make sure it is selected.
- Now click the Zone Wizard.
- Follow the prompt to define a generic x by y array of zones.
- Enter a new starting range or accept the default value for the Target numbers. These can always be changed later.

Zones – continued...

- Now you should see a graphical representation of your zone layout. Depending on the number of zones, you may have to scroll down to see it.
- Now, if desired, edit the target, size, shape, style, and default color associated with each zone.
- You can Remove or delete zones to make additional room for other zones as needed.

Add Data Elements

- Click on the 'Data' menu item.
- Now Name your new Element.
- Set its type
 - Normal = numbers
 - Date = system date
 - Time = system time
- You can set a Width to reserve space for a number as it grows and/or shrinks.
- Category allow you to assign a name for readability.

Data Elements – continued...

- Format allows you to assign a programming style format string to the data element. This is in the style of a Printf statement.
- A threshold may be applied to the data element by selecting the threshold from a drop-down list. If it is not defined at this point, you may come back and assign a threshold later after it has been built.

Data Elements – continued...

- Initial Value – define a value here if it is desired to have a known value populated before any updates are made to the element.
- Value – shows the current value of the element or allows you to define a value for static or manually edited elements.

Add a Threshold

- Click on the 'Threshold' menu link.
- Name your Threshold.
- Define the Min/Max Range by entering values into the appropriate fields. This defines the range of values that the Threshold will be applied against. Any values outside this range will not have the Threshold applied and any default settings will apply.
- Select a default color for the Threshold.

Thresholds – continued...

- Blink – select if default is to blink.
- Enabled – deselect if this Threshold is only to be applied conditionally.
- Now add/create any additional set point ranges that are desired along with color, blinking, and any sounds.
- When done, click the ‘Add/Update’ button.
- Now if desired, go back to the ‘Data’ page and add the Threshold to any Data Elements you want it applied to.

Create a Message

- Click on the 'Messages' menu link.
- Enter a Target number to assign this message to a specific zone
- Leave all the other items on that row at their default values for now.
- The box in the middle of the page is a text entry box – it functions like a typical text editor.
- You can enter text, move your cursor, insert a Data Element or an Image.
- You may highlight text and change its color, font or alignment.

Create a Message – continued...

- You can even insert Blink ‘On’ and ‘Off’ commands to make sections of the text blink.
- You may also define priorities, durations, and effects for the message by modifying the properties on the 1st row.
- When done editing your message, click the ‘Add/Update’ button to insert the message into the list of available messages.

Persist - Save - Make Permanent

- This is a very important concept to the overall scheme of your display management.
- **ALL** the work you have done to this point is only **temporary**. This means it will only last until the unit is powered off or reset.
- To make these changes permanent or save them, we must execute a 'Persist' command.

Persist – continued...

- Click on the ‘Advanced’ menu link.
- You have several choices for the ‘Persist’
 - All – all areas are saved.
 - Messages – save only the messages
 - Layouts – save only the layouts
 - Data Items – save only the data elements
 - Thresholds – save only the thresholds
 - Conditions – save only the conditions
- Select the ‘Persist’ you desire to do. Then click the ‘Send Command’ button.

Persist – continued...

- The status bar at the bottom will show ‘Sending Command’ and then ‘Command was successfully sent’ or an error message.
- Do this for each area edited or All when you are ready to save your work.
- If you wish to discard your work instead of save, issue a ‘Reload’ command and it will restore that area to the last ‘Persist’ or save point.

Conditions

- Conditions are for ‘conditional’ operation on the display. Meaning ‘IF’ this happens or is true, ‘THEN’ do something.
- This is a very powerful feature that can add much flexibility and versatility to the display with very minimal effort.
- What can you do?
 - Enable or disable layouts, messages, or thresholds.
 - Change data element values.
 - Issue commands

Conditions – continued...

- Why is this important?
 - Display critical information
 - Operator intervention
 - Safety information
 - Show needed data now
 - Make messages obvious
 - Make them bigger
 - Make them blink
 - Make them change color
 - Change Display – grab attention and focus