Remote Plant Monitoring and Operations

Kevin Smith        Pigler Automation, LLC

Unrestricted © Siemens 2017   usa.siemens.com/summit
2017 Automation Summit

Title: Remote Plant Monitoring and Operations
Track:
Presenter: Kevin Smith
Company: Pigler Automation
Session # (for your survey):
• Pigler Automation is a SIEMENS certified Solution Partner with the most PCS7 Certified engineers in North America
• Pigler Automation has 10 employees and 7 of which are PCS7 certified engineers
• Located in Longmont, Colorado, ~30 miles north of Denver
• Industries Serverd: Oil & Gas, Power, Chemical, Food & Beverage

For more information please visit:
www.piglerautomation.com
Or call : (866) 871-1456
Kevin Smith

- B.S. in Mechanical Engineering degree from Colorado School of Mines
- 4 years experience with emission control solutions for the power generation industry
- 2 years experience programming Allen Bradley control systems for mercury capture systems
- Lead Controls Engineer with Pigler Automation since April 2015
- PCS7 Certified Process Control Engineer
Challenge

Customer want to use tablets or smart phones in the field
Our First Step:

- Evaluate the following existing remote monitoring applications based on multiple criteria:
  - WinCC/WebNavigator
  - WinCC/WebUX
  - WinCC Sm@rtServer
  - RealVNC
  - Remote Desktop
  - ThinManager

- Criteria:
  - Engineering
  - Flexibility
  - Capabilities / Limitations
  - Security
WinCC/WebNavigator

- Engineering
  - Publish Picture Files for availability
  - Assign WinCC user administration rights
  - Configure WebServer using WinCC Web Configurator
  - Configure security features ie. SSL, VPN

- Flexibility
  - Requires ActiveX extensions
  - Runs on Internet Explorer or WinCC WebViewer application
WinCC/WebNavigator

• Capabilities / Limitations
  • Plant/Process overview
  • Full control & “almost” full functionality
  • No mobile support

• Security
  • WinCC user administration
  • SSL
  • VPN / Firewall
  • Network separation
WinCC/WebNavigator

Advantages:

• Multi-session (license dependent)
• Integrated user authorization for security
• Server based licensing
• Ideal for dedicated remote operations or WAN configurations

Disadvantages:

• Additional engineering
• Dedicated hardware (OS-Client)

Siemens Demo Access:
http://62.245.153.66:86
User name: wincce
Password: winccpass
WinCC/WinCC WebUX

- Engineering
  - Set Web-enabled property of selected pictures
  - Design of custom screens
  - Assign WinCC user administration rights
  - Configure WebServer using WinCC Web Configurator
  - Configure security features ie. SSL, VPN

- Flexibility
  - Browser and platform independent
  - HTML5 based
WinCC/WebUX

- Capabilities / Limitations
  - Screen resolution
  - Limited scripting functionality
  - Not APL conform

- Security
  - WinCC user administration
  - SSL
  - Firewall, VPN
  - Network Separation
Advantages:

- Multi-session (license dependent)
- Integrated user authorization for security
- Server based licensing
- Ideal for mobile status report formats

Disadvantages:

- Not APL conform
- Additional graphic design per screen resolution.
- Small Screen = small window into process

Siemens Demo:

https://62.245.153.66:433/
User name: winccce
Password: winccpass

Pigler Automation Demo:

http://www.piglerautomation.com/education/
WinCC Sm@rtServer

- Engineering
  - No additional engineering
- Flexibility
  - Supports iOS, Android, and Microsoft Internet Explorer
- Capabilities / Limitations
  - Shared Session
- Security
  - VPN, Firewall
  - Network Separation
WinCC Sm@rtServer

Advantages:
• Low Cost
• Deployable on SIMATIC Panels or WinCC Advanced
• Ideal for smaller / spread out configurations

Disadvantages:
• Shared Session
• Does not support multiple users
• Engineering
  • Installing server and client software
  • Creating User accounts and configuring access
• Flexibility
  • VNC apps for iOS and Android
  • Multiple monitor support
• Capabilities / Limitations
  • Shared session
• Security
  • VPN, Firewall
  • Network Separation
Advantages:
• Low priced annual subscription per server
• No licensing necessary for viewers
• Ideal for remote engineering and troubleshooting
• Shared session

Disadvantages:
• No audible feature therefore not applicable for remote operation
Remote Desktop

- Engineering
  - Enable RDP in Windows
  - Creating User accounts and configuring access

- Flexibility
  - Multiple monitor support

- Capabilities / Limitations
  - Single session

- Security
  - VPN, Firewall
  - Network Separation
Remote Desktop

Advantage:
- Free
- Simple to configure
- Secure based on network configuration
- Audio Support
- Ideal for remote operation

Disadvantage:
- Single session
- Not approved by Siemens to be used for OS-Servers, Engineering Stations, Batch Servers

Recommended procedure is to disable the RDP on these stations.
Security concern
Wifi
Intro into ThinManager
• Engineering
  • ThinManager Server and client configuration
  • Network integration
  • Security provisioning

• Flexibility
  • Platform independent
  • Supports PXE boot
  • Unlimited client licensing available
• Capabilities
  • Relevance and Location delivery

• Security
  • PXE
  • Relevance and location-based
  • VPN, Firewall
  • Network Separation
• Utilizes Terminal Server configuration
• Multi-user
• Multi-session
• Secure access based on relevance and location
• Wide range of features
Title of your presentation here

Name: Kevin Smith
Title: Lead Controls Engineer
Company: Pigler Automation, LLC
Email: Kevin.Smith@PiglerAutomation.com
Phone: (866) 871-1456
Session #: Please fill our your survey via the summit app.