

Control Masters Application Case Study

Program Management

Technologies

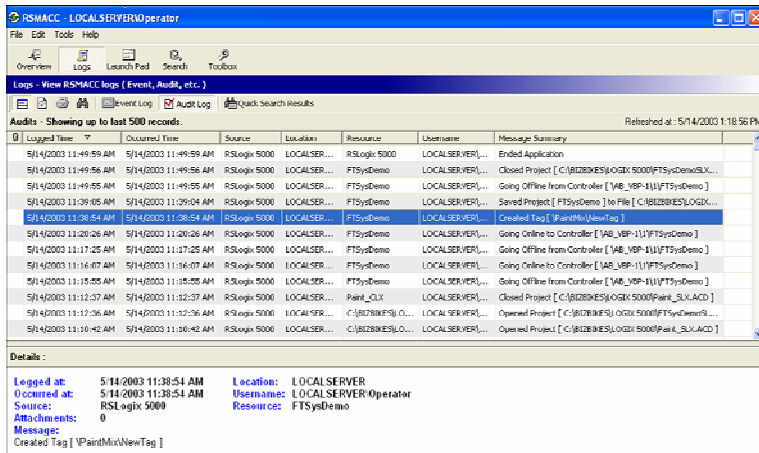
Networking
Data Management & Archiving

Services Provided

Microsoft Windows 2000 Networking
Rockwell RSMACC Implementation
Consulting

Software Utilized

Rockwell RSMACC Server
Rockwell RSMACC Change Management
Microsoft Windows 2000 Server (x2)
Microsoft Active Directory



Logged Time	Occurred Time	Source	Location	Resource	Username	Message Summary
5/14/2003 11:49:59 AM	5/14/2003 11:49:59 AM	RSLogix 5000	LOCALSER...	RSLogix 5000	LOCALSERVER...	Ended Application
5/14/2003 11:49:56 AM	5/14/2003 11:49:56 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Closed Project [C:\BIZBKS\OCD\5000\FTSsystem\SLK...
5/14/2003 11:49:55 AM	5/14/2003 11:49:55 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Going Offline from Controller [VAR_VBP-11\FTSsystem]
5/14/2003 11:39:05 AM	5/14/2003 11:39:04 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Saved Project [FTSsystem] to File [C:\BIZBKS\LOGIC...
5/14/2003 11:38:54 AM	5/14/2003 11:38:54 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Created Tag [PaintMixNewTag]
5/14/2003 11:20:26 AM	5/14/2003 11:20:26 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Going Online to Controller [VAR_VBP-11\FTSsystem]
5/14/2003 11:17:25 AM	5/14/2003 11:17:25 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Going Offline from Controller [VAR_VBP-11\FTSsystem]
5/14/2003 11:16:07 AM	5/14/2003 11:16:07 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Going Online to Controller [VAR_VBP-11\FTSsystem]
5/14/2003 11:15:55 AM	5/14/2003 11:15:55 AM	RSLogix 5000	LOCALSER...	FTSsystem	LOCALSERVER...	Going Offline from Controller [VAR_VBP-11\FTSsystem]
5/14/2003 11:12:37 AM	5/14/2003 11:12:37 AM	RSLogix 5000	LOCALSER...	Paint_CLX	LOCALSERVER...	Closed Project [C:\BIZBKS\OCD\5000\Paint_SLK\ACD]
5/14/2003 11:10:36 AM	5/14/2003 11:10:36 AM	RSLogix 5000	LOCALSER...	C:\BIZBKS\OCD\5000\FTSsystem\...	LOCALSERVER...	Opened Project [C:\BIZBKS\OCD\5000\FTSsystem\...
5/14/2003 11:10:42 AM	5/14/2003 11:10:42 AM	RSLogix 5000	LOCALSER...	C:\BIZBKS\OCD\5000\Paint_SLK\ACD]	LOCALSERVER...	Opened Project [C:\BIZBKS\OCD\5000\Paint_SLK\ACD]

Details:

Logged at: 5/14/2003 11:38:54 AM Location: LOCALSERVER
 Occurred at: 5/14/2003 11:38:54 AM Username: LOCALSERVER Operator
 Source: RSLogix 5000 Resource: FTSsystem
 Attachments: 0
 Message:
 Created Tag [PaintMixNewTag]

Project Description

Rockwell Software RSMACC was implemented at this plant to provide security, audit control, change management, archiving and validation of PLC and HMI programs for 16+ manufacturing lines and support systems. Each of the lines and systems consists of multiple PLC's and HMI's from various vendors.

Prior to the RSMACC installation, tracking master program versions and associated changes over time was problematic. Issues with multiple personnel, decentralized program storage, un-audited changes and security issues could lead to unnecessary downtime or extended troubleshooting. Program modifications to handle specialized production runs were difficult to manage. Changes made to product formulation, packaging and palletizing could be inadvertently lost if older versions of programs were re-loaded. Temporary changes made for maintenance issues could be overlooked and forgotten.

The first step in implementation was the installation of a plant wide Ethernet network. Cisco Catalyst Gigabyte Switches and fiber were installed throughout the plant. TI 505 PLC's were provided with Ethernet network modules and A-B PLC's were upgraded to SLC 5/05s or ControlLogix processors. Production lines were supplied with computers running Windows 2000 Professional and function as both the Line HMI, running Rockwell RViewME, and as a programming station. For troubleshooting, electricians and engineers utilize one of two programming carts that connect to the Plant network.

For the RSMACC software, two Windows 2000 Servers were configured and installed in the Plant Computer Room. One Server functions as a Domain Controller in order to provide security for computer logons and users. The second Windows 2000 Server provides a base for the RSMACC Server software, the RSMACC Change Management Module, a Rockwell Plantmetrics Server and the Microsoft SQL Server database.

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The line and programming cart computers are required to logon to the network in order to obtain the proper security rights. Specific functions relating to Rockwell software (RSLinx, RSLogix 500, RSLogix 5000 and RSView Studio) can be restricted based on the user rights supplied by the RSMACC Security Server. At this plant, the Security Server was turned off as all personnel were allowed to perform all functions.

RSMACC Client software is installed on each computer to provide access to the Service Monitor, Audit and Event Logs as well as the master program archive and validation scheduler. All Audit and Event Logs can be filtered and searched for specific items based on date, time, resource, type of event, etc.

Users check out copies of the master PLC and HMI programs through the Archive Module of the RSMACC Client. This insures that the user is working from the most recent version of the program. When the user has completed their changes, they are required to provide notes on what was done and then check the program back into the Archive Module. Five historical versions of each program are retained in the database and all Archive Module functions are logged to the Audit and Event Database.

All PLC programming functions (ladder logic changes, register value changes, uploads and downloads, etc.) are logged to the Audit and Event Database to provide an audit trail. For example, if a change is made to correct for a faulty piece of equipment, this is logged with a brief description of the change. Personnel can follow up later to repair the equipment and return the program to its previous state.

If the network goes down, all audit and event functions are cached on the local computer. When the network is again available, cached items are automatically sent to the RSMACC Server database.

Validation of archived master programs against the current contents of the corresponding PLC (AB Only) is scheduled on a bi-weekly basis. Programs are automatically uploaded from the PLC and compared to the master copy in the database. Discrepancies are logged to the Audit and Event Database and copies of the rungs of logic are attached to visually show the differences that were found.

For this project, RSMACC provides an easy and comprehensive security, audit, archive and validation tool to help the customer maintain their production facility and minimize downtime. In the future, this installation will be used to archive all documentation (formulation sheets, Equipment documents, CAD drawings, etc) associated with the Plant equipment.