AutoSave

Support for Kuka Robots

Enterprise tools for automation source management

KUKA ROBOT PROFILE

OVERVIEW

The AutoSave suite of products provides you with the software tools needed to manage all your automation programs. AutoSave controls and tracks the changes to your industrial programmable devices and programs including those of Kuka robots.

AutoSave's Microsoft Windows-based client application is integrated with Kuka to offer you both an interactive environment and background monitoring, resulting in a comprehensive change management solution. You have complete control over your device programs including:

- File Transfers to the Robot's FTP Server
- Upload, Download, Comparison
- Permanent Master Copies
- Historical Tracking and Audit Trails
- Automatic Change Notification
- Quick Disaster Recovery

CLIENT / SERVER / AGENT

The AutoSave Kuka module is comprised of the AutoSave client installed on a Windows workstation, an AutoSave server acting as the master control center that coordinates all change-related programming activities and stores program files, and an agent providing distributed processing efficiencies for the server.

ARCHIVED CONTENTS

The files for the Kuka robot are all stored in a uniquely named directory on the resident FTP server. The AutoSave backup and restore functions manage the file list set for the program, passing only those designated files back and forth to the robot's FTP server. All are saved as a unit. The complete unit is restored to the client/agent whenever needed for subsequent use. The file list is initially defaulted but can be customized by the site for the program.

SECURED PROGRAM ACCESS

The GUI-based client interface allows a user to access the AutoSave functions with a login and password. At login, the AutoSave server determines the level of access to the different areas and programs that are permitted to the user *and* the client PC.

VERSION CONTROL

When the user checks out a program via AutoSave, the file becomes locked and indicates the user with the files. Other users see this lock condition when attempting to access the program. The system denies access to locked programs. When the user finishes the session, AutoSave prompts for a revision note, creates a new current copy, relegates the previous current to a numbered ancestor, and unlocks the program. Undo unwanted programming changes by simply downloading an ancestor or master copy to the device and restoring that copy to current.

FTP SERVER ACCESS AND SECURITY

The Kuka's FTP server requires access by AutoSave using an assigned username and password, established when adding the AutoSave device information. For security and safety purposes, the robot's running files are neither directly accessed nor altered by any AutoSave function. Robot changes are handled in the normal fashion - outside of AutoSave - with changes either being uploaded to AutoSave by the user or automatically by the scheduled comparison.

UPLOAD

Upload from the robot's FTP server files first clears the client or agent's local program contents, copies only the designated file list from the FTP server to the PC and then compresses all the program's files and saves them to the server, creating a new current copy.

DOWNLOAD

Download to the robot's FTP server enables the user to select the current or available ancestor or version with which to update the FTP server's files and results in the creation of a new current copy. Accessing the download function only via a context menu provides additional security, as does AutoSave's prompting for confirmation before initiating the download. Downloads to the robot transfer the revision's files stored on the server to the robot's FTP server, making them available for the robot's use.

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Comparison Features

The Kuka module supports both demand and scheduled comparisons. The comparison routines use an in-order rule evaluation for the comparison flags in the default file list, which are editable by an authorized user.

- For example, if you have "*.*" set to compare, then the next rule states "*.dat" do not compare, and then the next rule states this file "*.dat" should compare, you end up with a rule stating "Compare all files, except files ending in ".dat" but include this file ".dat".
- Changing the order of these rules changes the semantics of the comparison routine, for instance if the "*.dat" rule was set to do not compare still, but was after the 'somefile.dat' rule, the new semantics would be "Compare all files, but not files ending in ".dat", eliminating the this file ".dat" comparison rule.
- Simple textual comparisons are displayed in HTML format via the default browser.

COMPARISON ON DEMAND

Any two copies of a program, such as current, local, ancestor, version, or processor, can be compared to each other. This comparison is done on an as-needed basis and may be performed from any client with access to the device program.

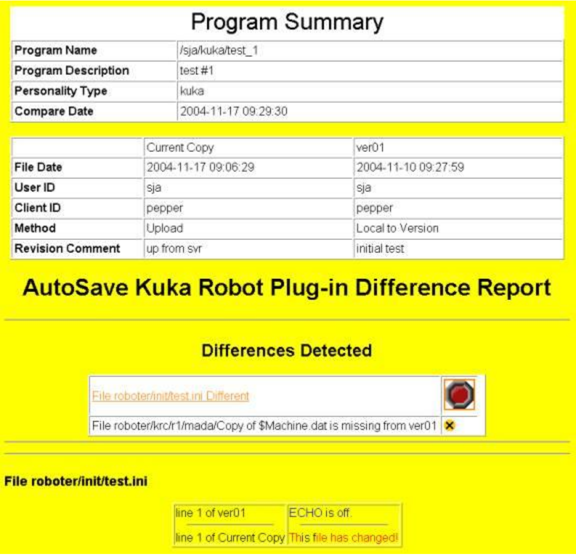
AUTOMATED COMPARISON

The Kuka module allows for scheduled, unattended comparisons of configured groups of programs. Using the agent to perform the actual upload and comparison, AutoSave software can compare the robot's FTP server copy to the current copy or compare the current copy to a selected version (permanent or master copy).

The AutoSave module for Kuka does support the **AutoUpdate** feature option to create a new current copy when differences between the FTP server and current copy are detected. Additionally, a group upload and create current without checking for differences can be scheduled.

NOTIFICATION

Notification e-mail is automatically sent to designated personnel when scheduled comparisons are completed and provides links to complete HTML detail reports.
The detailed comparison report looks like the following sample:



Program Summary

Program Name	/sja/kuka/test_1
Program Description	test #1
Personality Type	kuka
Compare Date	2004-11-17 09:29:30

	Current Copy	ver01
File Date	2004-11-17 09:06:29	2004-11-10 09:27:59
User ID	sja	sja
Client ID	pepper	pepper
Method	Upload	Local to Version
Revision Comment	up from svr	initial test

AutoSave Kuka Robot Plug-in Difference Report

Differences Detected

File roboter/init/test.ini Different	
File roboter/krc/r1/mada/Copy of $Machine.dat is missing from ver01	☒

File roboter/init/test.ini

line 1 of ver01	ECHO is off.
line 1 of Current Copy	This file has changed!

Capabilities

System Highlights	
Client: Real-time Ancestry	☑
Server: Auto Unattended Operation	☑
Agent: Parallel/Distributed Processing	☑
Secured Program Access	☑
Version Control w/file compression	☑
Client Highlights	
Compare	☑
Device Upload	☑
Device Download	☑
Edit File List	☑
Server / Agent Highlights	
Time-Base Scheduling	☑
AutoCompare	☑
AutoNotify	☑
AutoUpdate	☑
Server Platform Support	
Windows	☑

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