

# AutoSave

## Support for FANUC R-J2 and R-J3 Robots

**Enterprise tools for automation source management**

### 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 FANUC R-J2 and R-J3 programs.

AutoSave's Microsoft Windows-based client application is integrated with FANUC R-J2 and R-J3 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 FANUC Robot modules are 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 robot are all stored in a single, top-level directory on the resident FTP server. The AutoSave backup and restore functions contain all the files gathered from the robot's FTP server. By default, these are the \FMD:\ and the \MDB: or \MD: areas. All are saved as a unit. The complete unit is restored to the client/agent whenever needed for subsequent use.

### 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 opens or checks out a program via AutoSave, the file becomes locked and indicates the user who has the file checked out. Other users see this lock condition when attempting to access the program. The system denies access to locked programs. When the user completes the actions, 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 robot's FTP server requires access by AutoSave using an assigned username and password. This information is established when adding the 'device' information for the robot. 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 by the scheduled comparison detecting the changes and updating the server as a result.

### UPLOAD

These modules upload files from the robot to the AutoSave server using FTP over Ethernet with an AutoSave agent acting as the FTP 'client' and the robot controller as the FTP 'server', logging into the robot and responding to the same FTP prompts with the same FTP commands a human would use to manually transfer files from the robot. Once the FTP transfer from the robot to the agent ends for all files in the AutoSave program's file list, the agent disconnects from the robot's FTP server, zips and transfers the uploaded files to the AutoSave server for the comparison and/or new revision creation. To allow this upload capability, the robot must have Ethernet access and be running a valid FTP server stack.

## DOWNLOAD

Downloads are initiated from the robot's teach pendant and pull the files via FTP from a pre-configured Field Transfer Area (FTA) directory on the AutoSave server to the robot.

At some sites, this FTA directory is populated manually when a download is required, using the AutoSave client's Restore to... function on the AutoSave server computer (or on another computer hosting or accessing the FTA directory). This function copies and unzips the program's Current revision files into the FTA directory to then be downloaded via the robot's teach pendant.

## Comparison Features

The FANUC modules support demand comparisons and scheduled comparisons as well. Simple textual differences are displayed in HTML format via the default browser.

- Comparison groups may be configured to create a new revision if differences between the current copy and the processor (robot's FTP server files) are detected (known as the **AutoUpdate** feature).

## 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.

### MDT AutoSave Compare Result

Program Name	/Body_E1R1	
Program Description	Body Shop Robot E1R1	
Personality Type	p3	
Compare Date	2011-04-27 11:49:04	

	Anc_00001	Anc_00000
File Date	2011-04-27 11:43:37	2011-04-27 11:40:50
User	mass	mass
Client	EWS-WIN2008R2X6	EWS-WIN2008R2X6
Method	Local to Current	Local to Current
Revision Comment	Minor update	Initial backup

### AutoSave FANUC R-J3 Robot FTP Module Difference Report

[File fmd:b4740.is Different](#)  
[File fmd:chknoprt.is Different](#)  
[File fmd:gemdata.va Different](#)

File fmd:b4740.is

```
line 333 of Anc_00000: W = -179.476 deg, P = -.061 deg, R = -87.335 deg
line 333 of Anc_00001: W = -177.398 deg, P = -.063 deg, R = -87.335 deg
```

## AUTOMATED COMPARISON

The FANUC modules allow 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 copy to the

current copy or compare the current copy to a selected version (permanent or master copy).

The AutoSave modules for FANUC robots do support the **AutoUpdate** feature option to create a new current copy when differences between the robot and current copy are detected.

## NOTIFICATION

Notification e-mail is automatically sent to designated personnel when scheduled comparisons are completed and provides links to complete HTML detail reports. The FANUC series of robots house their programs internally. The external interface for uploading and downloading programs to the robot's FTP server is accomplished via the Internet standard FTP protocol via its Ethernet address.

## 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	✓
Server / Agent Highlights	
Time-Base Scheduling	✓
AutoCompare	✓
AutoNotify	✓
AutoUpdate	✓
Server Platform Support	
Windows	✓
UNIX	✓

## MODULE REQUIREMENTS

These modules require a minimum of AutoSave v5.04, Windows Operating System in English, and FTP capable controllers.