What are PAC files?

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Precise Automation Configuration (PAC) files contain your cobot/controller data such as GSB/GIO node addresses, link lengths, joint limit stops, nominal speeds, servo tuning, joint zero position, calibration, etc. They exist on the flash memory of the controller and are needed for the cobot to work. Different sets of PAC files exist for different configurations of Precise cobots; a cobot on a linear rail with a servo gripper will have different PAC files than a cobot without a rail and with a pneumatic gripper.

Note: Without approval from Precise Automation, PAC files should not be altered or changed. Changing parameters in PAC files may alter the collaborative performance of your cobot.

Where can I get different PAC files?

PAC files can become corrupted and then need to be reacquired, or if you are changing the configuration of your cobot, you will need new PAC files. There are five PAC files for each cobot. Using a standard FTP client, follow the steps below.

1. With your FTP client use the following IP address for access to public PAC files:
    a. 50.87.174.90
2. Use the following credentials to log in:
    a. Username: publicpacfiles@preciseautomation.com
    b. Password: ForPrecise-PacFiles1
3. Select the respective folder depending on the cobot you have purchased (Cartesian, PF400 or PF3400)
4. Select the release version folder pertinent to your cobot (10F, 10J, 10K, etc.)

Note: Make sure to select the release version that matches the version that is currently installed on your cobot. This can be found on your cobot's homepage.

5. Depending on your cobot's current configuration or future configuration, select and download the correct .zip folder that contains the five PAC files

Note: S = Precise servo gripper, D = Precise dual servo gripper, X = Extended reach and L = Precise linear rail. These are combined to form the configuration of the cobot (SXL = Precise servo gripper with extended reach on a linear rail).

How do I change the PAC files on my cobot?

If you have corrupted your current PAC files and need them replaced, are looking to revert back to an earlier state with backup files or want to change the configuration of your cobot, follow the steps below. In general, you should load a complete matched set of these five files into your controller.

1. Using your preferred FTP client, establish a connection to your cobot using it's IP address you have assigned to it
2. Navigate to *flash/config*
3. There should be five PAC files with the **.pac** file extension. Copy these five files and save them to a backup folder somewhere on your PC
4. Delete these five files from the *config* folder of your cobot
5. If you have other backup PAC files that work, new PAC files for a different cobot configuration or replacement PAC files, paste them into the *config* folder

Note: Wait at least 15 seconds for the controller to finish writing to flash memory. If this is interrupted too early, you risk corrupting the flash memory.

6. Power cycle your cobot
7. The new PAC files are installed. Verify installation by accessing your cobot's homepage. If no fatal errors are reported, installation was successful
8. Run the *Cal_pp_revXX* program that came with your cobot to initialize the cobot/controller options and to set the home zero positions

Changing PAC files without recalibration

The following procedure should only be followed if your original PAC files became corrupted and are in need of replacement, not if you changed the configuration of your cobot (added or subtracted a linear rail or servo gripper).

1. Connect to your cobot
2. Click **Admin** on your cobot's homepage and navigate to *Setup > Parameter Database > Robot > Calibration Parameters > Servo Settings*
3. Locate *DataID 16120 Calibration home offset, mcnt* and copy the values saved into its text field
4. Paste these values into a word document
5. Follow steps two through eight from 'How do I change the PAC files on my cobot?'

6. Click **Admin** on your cobot's homepage and navigate to *Setup > Parameter Database > Robot > Calibration Parameters > Servo Settings*
7. Replace the values in *DataID 16120 Calibration home offset, mcnt* with the values saved from step three
8. Navigate to the **Operator Control Panel** and click **Enable**. Wait for an audible click
9. Click **Home** to implement the old calibration

If after following these steps you are still unable to retrieve or change PAC files, please contact support with details on the issue you are experiencing.