



SoftLogix 5 Controller Release Note

version 2.0

(Cat. No. 1789-SL5, 1789-SL51, 1789-SL52)

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Last-minute change for HTML Help

If you click the Contents button in the Help file and the Rockwell Software Contents does not appear, then you need to update the executable for HTML Help, which is hh.exe. Look on your drive for hh.exe with a date of 12/3/99 or higher. Replace any versions that have an older date with the version that is dated 12/3/99 or higher. If you do not have a version of hh.exe dated 12/3/99 or higher, insert the SoftLogix 5 controller CD into your computer and double-click hhupd.exe. This will install the correct version.

Minimum required versions of software

The following section lists the minimum required versions of all supporting software that can be used with the SoftLogix 5 controller:

- Windows NT 4.0 Workstation or Server with Service Pack 5
- RSLogix 5 - version 3.21
- RSLogix SL5 - version 3.21
- RSLinx - version 2.00.97.30
- RSSidewinderX - version 1.1.1.17
- RSNetWorx for ControlNet - version 1.07.24
- IOLinx for ControlNet - version 1.1.26
- RSNetWorx for DeviceNet - version 2.01

Resolved anomalies in SoftLogix 5 version 2.0

SoftLogix 5 Engine

- Resolve issues with the execution of STIs and EUIs.
- Improve SoftLogix 5 operation on multi-processor machines
- Improve I/O and communication interfaces

Known Issues in SoftLogix 5 Version 2.0.0.11

SoftLogix 5 Configuration Manager and Status Monitor

- In the registration section there is a location that shows the product number based on the activation that was used.
Activation SFTLGX5.exe will display 1789-SL52 in the registration location. Correct display is 1789-SL5.
Activation SFTLGX5L.exe will display 1789-SL52 in the registration location. Correct display is 1789-SL5.
Activation SFTLGX5M.exe will display 1789-SL51 in the registration location. Correct display is 1789-SL52.
Activation SFTLGX5S.exe will display 1789-SL5 in the registration location. Correct display is 1789-SL51.

Engine configuration issues

- Status file bits S:17/2, S:17/3, and S:17/4 are used to represent when more than 128 Block Transfers are queued for each unique Remote I/O network. Currently these status bits do not represent the Block Transfer Queue full state.
- SoftLogix 5 DH+ driver does not require an interrupt, but the RIO driver does require an interrupt
The SoftLogix 5 DH+ driver does not require an interrupt, although you have to select an interrupt from the DH+ driver configuration dialog. Therefore, if you select an interrupt for a KTx or PCMK card that is used by another device in the computer, the SoftLogix 5 engine will still be able to start the DH+ driver. If you select an interrupt for a KTx or PCMK card that is not used by another device in the computer, the SoftLogix 5 engine will start the driver, and it will allocate the interrupt for its use.

The SoftLogix 5 RIO driver requires an interrupt. If you select an interrupt for a KTx or PCMx card that is used by another device in the computer, the SoftLogix 5 engine will not be able to start the RIO driver and will fail to start.

- The EEPROM file does not restore forces. If a program is saved to the EEPROM file with forces, when the EEPROM file is restored the forces will not be present in the SoftLogix 5 program.
- Extended forces do not work on file 3.

If an extended force is applied to file 3 the actual force will be applied on file 1 (input file). This anomaly will be resolved in the next product release.

- EEPROM file does not contain remote I/O or 1746 Local I/O scan lists.

Remote I/O and 1746 Local I/O scan lists are not stored in the SoftLogix 5 EEPROM file. When an EEPROM file loads, the scan list files that are stored in the ...\\SoftLogix\\Data directory are used:

Installed I/O driver:	Scan list file:
A-B 1784-KTX/PKTX/OCKTX/[PCMK-Demo] RIO driver	WPLCKTXI.DAT
1747-OC/1747-PCIS I/O Scanner	WPLCOC.DAT

This could become an issue if the scan list files either become corrupted or do not exist, but you have a valid EEPROM file that is configured to Load on Memory Error or Always Load. Under this condition, when the EEPROM file loads, there will be no communication with I/O.

- If you configured your remote I/O and/or SLC I/O scan lists offline using RSLogix 5 and saved the project, the scan lists are saved in the RSLogix 5 .RSP or .X5 file.
- If you configured your remote I/O and/or SLC I/O scan lists online using RSLogix 5 and uploaded/saved the project, the scan lists are saved in the RSLogix 5 .RSP or .X5 file.
- If you configured your remote I/O and/or SLC I/O scan lists using the SoftLogix 5 Configuration Manager and then uploaded/saved the project using RSLogix 5, the scan lists are saved in the RSLogix 5 .RSP or .X5 file.

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Therefore, to resolve the issue where the EEPROM loads, but I/O no longer functions, do one of the following:

- Re-download your ladder program to SoftLogix 5 using RSLogix 5 if you have a saved copy that contains the remote I/O and/or SLC I/O scan lists.
- Once the EEPROM file loads, reconfigure the scan lists using the SoftLogix 5 Configuration Manager or while online with RSLogix 5, then upload/save the ladder program using RSLogix 5.
- MCP scans to completion after fault occurs in STI, but should not.

When a fault occurs in an STI file, the MCP that was interrupted should not scan to completion. In SL5, the MCP does get scanned to completion. Be aware of this condition and make any necessary allowances for this behavior.

RSLogix 5/SL5 version 3.02 or 2.00.47 issue with program files containing more than 32767 elements

- This issue occurs:
 - When uploading or downloading a SoftLogix 5 project in which the size in elements of any program file exceeds 32767, the operation will corrupt the program file. This is due to a deficiency in the RSLinx functionality that builds packets for RSLogix. The result is that the upload or download wraps on top of itself in memory for program files that exceed 32767 elements.
 - If you perform an online edit of any program file in which:
 - **The number of elements exceeds 32767 and the rung location is in the portion of the program file exceeding 32767 elements.**
 - **The online edit results in a program file that exceeds 32767 elements.**

The result of an online editing meeting either condition is to write the edit in to a section of the program file below the 32767 boundary. This can result in an operational program, although this is unlikely.

Take these actions to prevent problems:

- In the project tree in RSLogix 5/SL5, right-click Program Files and click on Properties. Check the size in elements of the program files. If any Program file exceeds 32767 elements and you have uploaded, downloaded, or performed an online edit with RSLogix 5 r2.00.47 or r3.2 verify that the program file is functioning as intended.
- Update RSLogix 5/SL5 to version 3.21. If this is not possible, break any program files that exceed 32767 elements into smaller program files.
- If you update to version 3.21 and any program file exceeds 65535 elements, your only recourse is to break the program file into smaller sections.

SoftLogix 5 engine start up and shut down

- Use the correct startup sequence for a system running 1746 Local I/O.

When using 1746 Local I/O with the SoftLogix 5 engine, use this startup sequence to ensure proper initialization between the SoftLogix 5 engine, the 1747-PCIS scanner, and the 1747-PCIL adapter:

1. Power off the PC where the SoftLogix 5 controller is installed and power off the 1747 I/O chassis where the PCIL adapter is installed.
2. Connect the 1747-PCIC cable between the PCIS card and the PCIL adapter.
3. Power up the 1747 I/O chassis.
4. Power on the PC.

Failure to do the steps in this order may cause an issue where SoftLogix 5 will not start with the SLC I/O driver installed, and log a message to the event log stating that "...the Open Controller's dual port memory could not be initialized."

- Attempting to initialize the third and/or fourth 1747-OCKTx card on an Open Controller does not work.

You can only initialize up to two 1747-OCKTx cards in an Open Controller system. The online Help states that up to four cards can be used in a single system. Attempting to start the SoftLogix 5 engine when addressing card ID 2 or 3 (i.e. the 3rd or 4th -OCKTx card starting from the left-most PCI slot and moving to the right) will cause either a lock up condition or an NT blue screen.

Open Controller

- Putting the SoftLogix 5 engine in Run mode with an Open Controller driver configured but without performing an I/O configuration will cause the SoftLogix 5 engine to shut down.

ControlNet I/O

- You **must** use the logic in this ladder program when you are using ControlNet I/O:

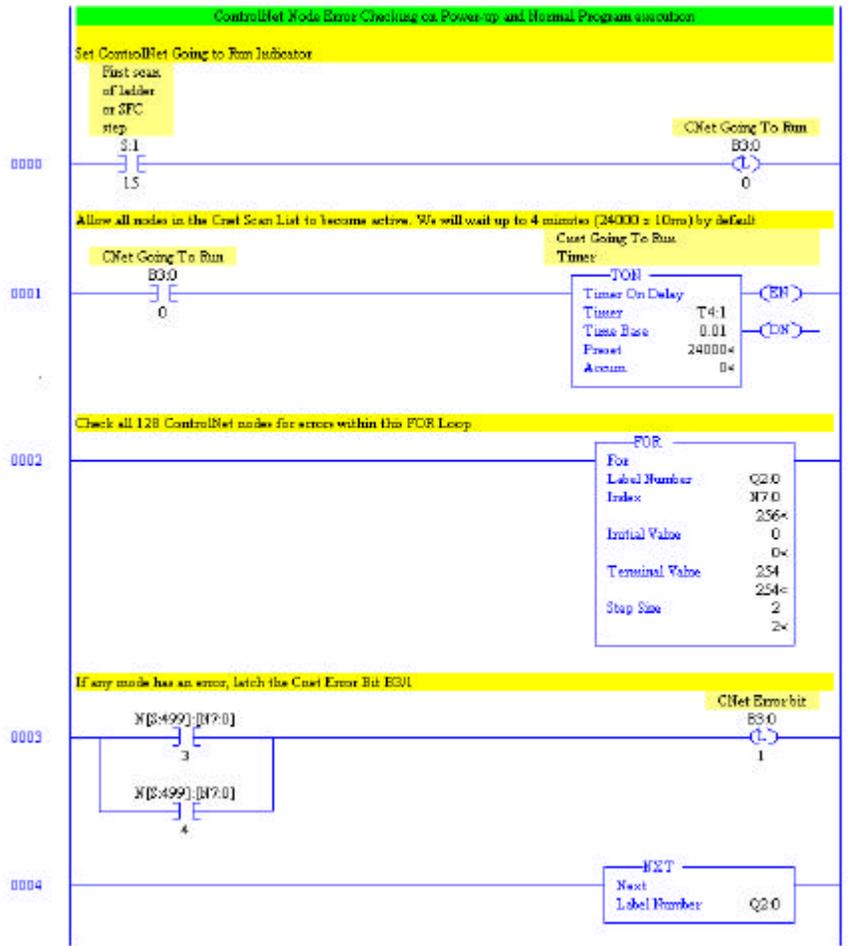


WARNING: Use the logic in the ladder program when using ControlNet I/O. Failure to use this logic could cause unpredictable machine operation with possible damage to equipment and/or injury to personnel.

This sample project is named CNETSTRT.RSP and is in the UTILS folder on the installation CD.

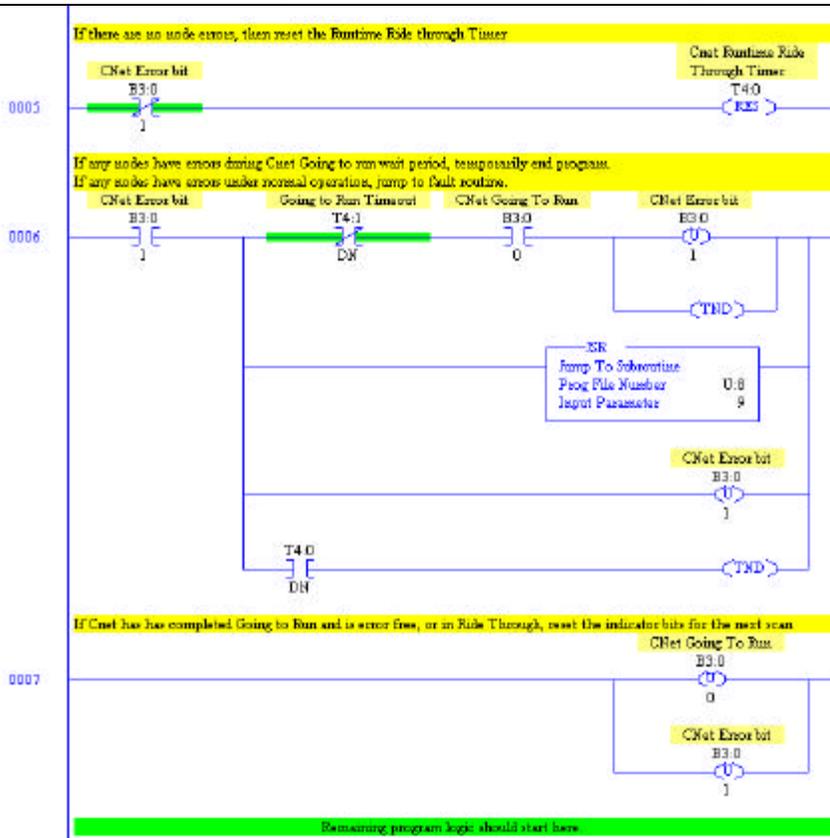
This rung: Performs this function:

0000	Latch the CNet Going to Run bit as flag that indicates this is the first program scan.
0001	If this is the first program scan, set a timer that waits up to 4 minutes for all scheduled ControlNet nodes to come online without any errors. The Preset of 4 minutes can be changed for your system.
0002	Start a FOR/NXT loop to step through the ControlNet Status file and look for any connection errors for the 128 possible connections. This check occurs each scan.
0003	S:499 identifies the Integer file that is configured as the ControlNet Status file. The two values that are being checked indicate whether the connection is faulted or the connection is extinct. If one of these errors occurs, set the CNet Error bit.
0004	End the FOR/NXT loop.



This rung: Performs this function

- 0005 If there are no errors, reset the Cnet Runtime Ride Through Timer.
- 0006 If ControlNet errors have occurred:
 1. If the ControlNet Timer is not done and the ControlNet Going To Run bit is set, temporarily end the program.
 2. If an error has occurred during the program scan, set a user-defined major fault and jump to the fault routine.
 3. If the Ride Through Timer is Done, temporarily end the program.
- 0007 Reset the flags that invoke the ControlNet error checking.



This is the fault routine that processes the ControlNet errors.

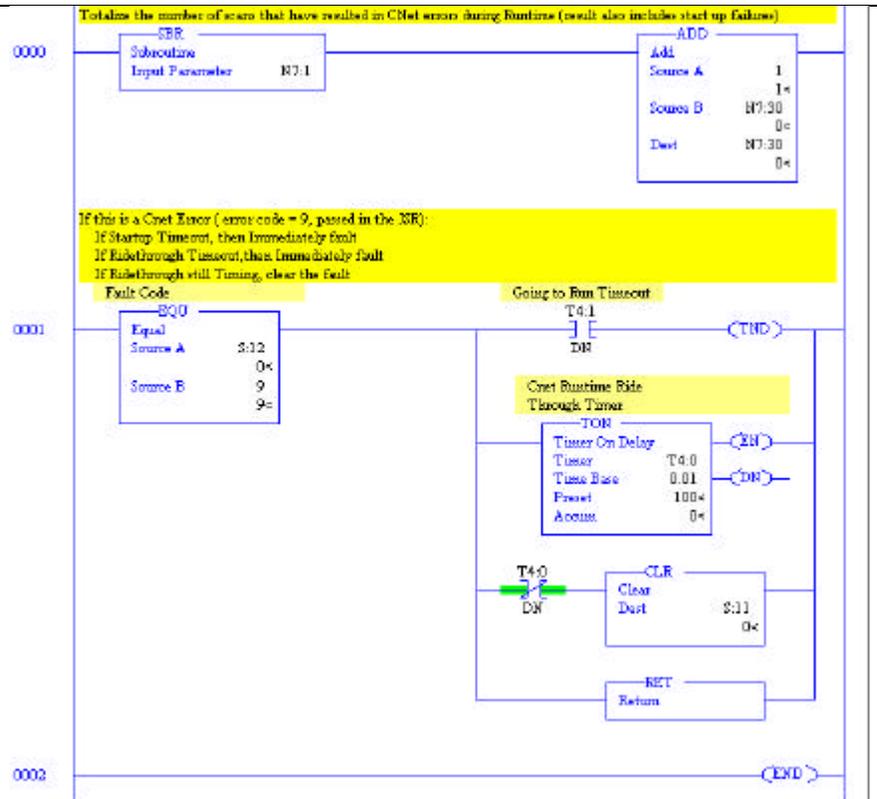
This rung: Performs this function

0000 Total number of times the fault routine was executed. This rung is for diagnostic purposes only.

0001 If this is a user defined ControlNet error:

1. If the Going to Run Timer has expired, go to Faulted mode.
2. Start or update the RideThrough Timer.
3. If the Ride Through Timer is timing, clear the fault.
4. Otherwise the Ride Through Timer has expired, go to Faulted mode.

0002 End the fault routine.



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Remote I/O

- 1771 -AM1 chassis not recommended for controlling remote I/O with the SoftLogix 5 engine.

The SoftLogix 5 engine cannot auto configure or manually configure a 1771-AM1 chassis. The 1771-AM1 chassis consists of an integrated power supply with a built-in adapter, and an open slot for a 1771-I/O module. The device only supports two baud rates, 57.6k or 115.2k.

- When attempting to auto configure this device, the Active LED blinks on/off only twice and then remains off, and the rack number does not show up in the scan list.
 - Manual configuration of the device works successfully at 115.2k baud. I/O can be controlled, although the Active LED blinks on/off at a high rate while in Run mode.
 - Manual configuration also seems to work successfully at 57.6k baud. The Active LED blinks on/off. However, I/O cannot be controlled when in Run mode. The Active LED remains blinking on/off while in Run mode.
- SoftLogix 5 cannot auto configure a 2705-P21C1
- Attempting to auto configure or manually configure an Allen-Bradley Ready Panel, 2705-P21C1, will fail. This device is not yet supported on a remote I/O link controlled by the SoftLogix 5 controller.
- The SoftLogix 5 engine resets the global fault status flag when the global inhibit flag is set.

If a remote I/O rack is faulted and you then inhibit the rack by setting the rack inhibit bit, the fault bit for that rack will get reset. For example, say you have rack 1:0, 1/2 rack. When you remove power from the rack, the global fault bit is set for rack 1 (S:7/1). If you now set the global inhibit bit for rack 1 (S:27/1), the global fault bit is reset for rack 1. If you reset the rack inhibit bit, the fault bit will set again if the rack is still disconnected.

- Block Transfers stop executing on Run to Program to Run mode transition.

If your ladder program contains block transfer instructions that contain indirect addresses for the Block Transfer control block, there is a possibility that some of the indirect block transfers will no longer execute when switching from Run mode to Program mode and back to Run mode. It is recommended that you program block transfer control blocks using direct addresses because of this issue.

- Block Transfer Writes do not return the number of words written to a block transfer module.

When a BTW instruction is executed with Length = 0, the SoftLogix 5 engine will always return a value of 64 for the .RLEN sub-element if the BT completes successfully.

- 1784-PCMK and 1784-PCMKS cards should not be used for controlling RIO in a production environment.

Do not configure an RIO channel in a production environment to use a 1784-PCMK or 1784-PCMKS card. We have observed that block transfers error out at a much higher rate on RIO links controlled by PCMK/PCMKS cards than on RIO links controlled by KTx or PKTx cards. Only use the 1784-PCMK and 1784-PCMKS drivers for demonstrating RIO functionality or accessing DH+ networks with SoftLogix 5 (PCMK only).

- Issue using 1784-KTx card in 16-bit mode on Compaq Computers

There is an ISA Bus standardization issue that becomes apparent on some Compaq computers. The 1784-KTx cards can be used in either 16-bit or 8-bit modes depending on the position of the E3 jumper on the KTx card. If you defined a KTx DH+ or RIO driver in the SoftLogix 5 controller and attempt to start the SoftLogix 5 engine, it may not successfully start. Check the event log and look for a reference to a problem with the M16 tests on the KTx card. If you see this entry in the event log, then you will need to configure the KTX E3 jumper for 8-bit mode. Note that using the 8-bit mode will result in a slight performance decrease.

- Input bits remain set after changing the RIO rack address and performing an auto configuration.

If input bits are set in a remote I/O rack when the rack is powered down and then ASB dipswitches are changed to use a different starting rack and group number, when the rack is powered up again and a manual or auto configuration of the remote I/O link is performed the input bits for the old rack and group number will remain set, and the inputs in the new starting rack and group number will update to reflect the input states of the module. Be aware of this condition and do not use the old input addresses from the old rack and group number in your control logic. To correct this condition, you must stop and restart the SoftLogix 5 engine. The input bits in the old rack and group number will then reset.

- Queue Full bits not set correctly. Status bits S:7/2, S17/3, and S17/4 are set when 128 block transfers are queued for each remote I/O channel. These status bits are not being set for this condition.

1746 Local I/O

- I/O Watchdog Timeout can take between 7-15 seconds for 1746 Local I/O.

The I/O watchdog timeout is the maximum amount of time that it takes the SoftLogix 5 engine to determine that an I/O driver is no longer functioning properly. Under normal operating conditions, a timeout does not occur. For most SoftLogix 5 I/O drivers, the I/O watchdog is less than 4 seconds.

The most common timeout conditions for 1746 Local I/O are:

- When the SoftLogix 5 engine is in Run mode and the 1746 Local chassis loses power
- An I/O module failure occurs in the SLC I/O chassis.

Under these conditions, the I/O watchdog timeout can take between 7 and 15 seconds depending on the computer running the SoftLogix 5 engine. For instance, we have observed a maximum timeout of up to 15 seconds on a Pentium 120 MHz computer and a maximum 8 second timeout on a Pentium 200 MHz computer.

Be aware of this condition when programming your 1746 Local I/O application.

- SI/SO data/force tables are initialized when adding/modifying/deleting I/O modules.

When you use the 1747-OC I/O Card Configuration dialog in Configuration Manager:

If you insert:	Then:
Output-only module	SO data file and SO force table will be reset.
Input-only module	SI data file and SI force table will be reset.
Combination input/output module	SI/SO data files and SI/SO force tables will be reset.

- Input bit values for 1746 Local I/O cannot be changed while in Program mode.

The SoftLogix 5 engine keeps the values of bits in the 1746 Local I/O input data table (SI) in their last state when in Program mode. You cannot change the value in the SI data table when in Program mode as you can with the input (I) data table in a SLC processor.

- Auto configuration for a 30+ slot rack configuration does not work. Performing an auto configuration using SoftLogix 5 when more than 30 slots are in the system does not function properly. Under this condition, the Configuration Manager will display an error message reporting that the auto configuration failed. The scan list will not refresh until you close the window and click the Configure Software button again. Modules on the first and second rack will be auto configured, but any modules on the third rack will not.

The workaround is to either manually configure modules on the third rack, or manually configure all racks instead of using the auto configure feature.

Finally, modules after slot 30 must be removed before going to run mode or SoftLogix 5 will fault (just like a SLC-5/04).

- 1747-BAS module does not keep configuration. There is an issue with manually configuring the number of M0 and/or M1 words for the 1747-BAS module using the SoftLogix 5 Configuration Manger. By default, this module is configured for 64 M0 and 64 M1 words. If you manually reconfigure the module to use fewer than 64 M0 and/or M1 words, accept the configuration, and then review the settings, the numbers will have defaulted back to 64 words for M0 and M1.

- SLC auto configuration removes G file data configuration for the 1747-SN module.

If you have a 1747-SN module in your I/O chassis and use the SoftLogix 5 Configuration Manager to perform an auto configuration of the SLC I/O, any G file data that was configured in the SN module will be removed. You will need to manually reconfigure the G file data. The workaround is to manually configure your SLC I/O configuration whenever you have a 1747-SN module installed in your SLC I/O system.

- Configuring a 1747-SN module may cause the Configuration Manager to freeze.

While configuring the 1747-SN module's G file via the SoftLogix 5 Configuration Manager, if you click the Insert Rack button and then click the OK button without configuring any racks, the Configuration Manager will lock up. Use Task Manager and end the Config.exe process to close the Configuration Manager. When configuring the 1747-SN module G file data, always configure at least 1 rack before clicking the OK button, or click the Cancel button instead of the OK button if no racks are configured.

- Removing SLC I/O driver may cause memory fault condition if SLC I/O addresses still exist in ladder program

If you have a ladder instruction in the online user program that references a SLC I/O address (e.g. SI:4/0, SO:6/0, MI:2/0, MO:3/0, etc), stop the SoftLogix 5 engine, removed the 1747-OC/1747-PCIS I/O Scanner driver, and then restarted the SoftLogix 5 engine, a memory fault condition will occur. This happens because the I/O driver that references these I/O addresses is no longer available. If you want to use the same user program, w/o the SLC I/O addresses, do the following:

1. Open the ladder program in offline mode.
2. Delete all references to 1746 Local I/O addresses.
3. Save the ladder program.
4. Remove the SLC I/O driver from the SoftLogix 5 configuration.
5. Restart SoftLogix 5.
6. Download the modified ladder program to SoftLogix 5.

- We have seen that some machines that are Pentium 200 MHz or slower experience I/O watchdog timeouts with the 1747-OC/1747-PCIS I/O Scanner driver. We recommend the use of a P2 300 MHz or faster machine to eliminate the chance of experiencing this issue.
- SLC I/O stops responding after you configure an invalid amount of M1/M0 data.

The SoftLogix 5 Configuration Manager lets you configure an invalid number of M0/M1 words for I/O modules. For example, you are allowed to specify:

- M0 and M1 words for modules that do not support M0 and M1 data
- More M0 and M1 words than a M0/M1 capable module can support

If you manually configure a discrete I/O module for an invalid number of M0 or M1 words, you will not be able to read inputs or write outputs using that module until you perform an auto configuration of 1746 Local I/O.

- Clearing a 1746 Local I/O fault when the 1746 Local I/O chassis is powered down may cause loss of the user program.

If you have the 1747-OC/1747-PCIS I/O Scanner driver configured in your SoftLogix 5 controller, ensure that the 1746 Local I/O chassis is connected to the 1747-PCIS card via the 1747-PCIC cable when manually clearing any major faults that occur in the SoftLogix 5 engine. Attempting to manually clear a fault while the 1746 Local I/O chassis is disconnected from the PCIS card will cause the SoftLogix 5 engine to shut down and produce a memory fault condition.

- Clearing major fault code 100 while the 1747-PCISx scanner is disconnected will cause the SoftLogix 5 engine to shut down unexpectedly.

While controlling 1746 Local I/O via the 1747-PCISx scanner, if the SLC I/O chassis loses power, becomes disconnected, or a module is removed/inserted into the rack, the SoftLogix 5 engine will fault with code 100. This is normal operation. However, if the fault is cleared before the condition that caused the fault is corrected (i.e. leave chassis disconnected and attempt to clear the fault), SoftLogix 5 will shut down. Ensure that the 1746 Local I/O chassis is powered and connected before clearing a fault 100 condition to prevent this behavior.



WARNING: 1746 Local I/O modules should NEVER be inserted or removed from a 1746 Local I/O chassis while the chassis is under power. Insertion/removal under power can damage the 1746 Local I/O modules and/or chassis.

Instruction execution

- A PLC-5 Typed Write message from a device on a remote network using Integer type data and 112 or more elements fail at words 112, 113, repeating at 224, 225, and so on. The values in every received 112th word is 2 and every 113th word 0.
- Claiming a Mutex and not releasing the Mutex will cause SoftLogix 5 to fault with a watchdog fault. This fault will not cause the release of the Mutex. The user application needs to release the Mutex.
- Opening handle to an event and not releasing the handle will cause SoftLogix 5 to fault with a watchdog fault. This fault will not cause the release of the handle. The user application needs to release the handle.
- Attempting to use a nonexistent ladder file number in an SFR instruction will cause a user fault of 1009 instead of 43.

- ONS, DTR, and INV instructions are not supported on input branches

The ONS, DTR, and INV instructions are not allowed in input branches because of a functional difference between the SoftLogix 5 engine and an Enhanced PLC-5. This functional difference exists because the SoftLogix 5 engine uses compiled ladder logic, whereas a PLC-5 uses interpreted ladder logic. All rungs in your ladder logic program that have ONS, DTR, or INV instructions placed on input branches will have to be modified before the program can be successfully downloaded to the SoftLogix 5 engine. One example that shows how a rung with an ONS on an input branch could be converted is shown below:

Original rung:

```
SOR XIC B3/0 BST ONS B3/2 NXB XIO B3/3 BND ADD 1 N7:0 N7:0 EOR
```

Converted Rung:

```
SOR XIC B3/0 ONS B3/4 OTE B3/2 EOR
```

```
SOR XIC B3/0 BST XIC B3/2 NXB XIO B3/3 BND ADD 1 N7:0 N7:0 EOR
```

These two rungs will work identically to the original rung. Note that an extra bit (B3/4 in this example) will have to be allocated in the data table for each converted ONS.

- Do not pass Double Float data to subroutines

Note: RSLogix 5 and RSLogix SL5 do not yet support the Double Float data file type at the time of this Release Note.

If double float data is passed to an SBR instruction in a subroutine, the input parameters in all other SBR instructions in the ladder program may experience data corruption. For this reason, do not pass Double Float data to subroutines when using the SoftLogix 5 version 1.2 and 2.0.0 engine.

- ADD and SUB instruction do not properly set math flags when operands are type float or double.
- DIV instruction does not properly set math flags

When the DIV instruction executes, it only latches the math flags that change rather than writing the sign, zero, overflow, and carry flag results to the math flag register (S:0). For example:

Description	Sign	Zero	Overflow	Carry
State of flags before DIV executes	0	1	0	0
Result of DIV instruction should set the flags to this state	1	0	0	0
Actual state of flags after DIV executes	1	1	0	0

The sign and zero flags are set after the DIV executes, but only the sign flag should have been set.

If you are monitoring math flags after a DIV instruction executes, place the following instruction before the DIV instruction to set the sign, zero, overflow, and carry flags to 0, for example:

```
MOV 1 N7:0
```

When dividing -32768 by -1, the result is -32768, but only the sign flag is set. In this case, the overflow flag should have also been set..

- FAL instruction does not execute like a PLC-5 FAL when POS = -1.

In an Enhanced PLC-5, when a FAL instruction executes and the value in the .POS sub-element of the FAL control word is a negative number, the processor faults with major fault code 21.

In the SoftLogix 5 engine, when .POS = -1 and the FAL instruction executes, .POS increments to 0 and the destination value at position 0 in the FAL array is modified according to the FAL expression.

When the FAL executes again at .POS = 0, operation resumes normally. This execution only affects FAL instructions configured for Incremental or Numerical modes, since under these conditions the instruction may take multiple program scans to complete. When using ALL mode, the instruction completes during the program scan so this behavior would not be observed.

NOTE: The SoftLogix 5 engine faults with a fault code of 21 if POS <= -2 and the FAL executes in the SoftLogix 5 engine

Make sure that the value that is placed into .POS is not a negative number and the FAL instruction will execute properly.

MSG instruction

- The SoftLogix 5 engine faults with code 1009 when executing a MSG instruction if the local address does not exist.

If the local data file address specified in a MSG instruction does not exist, the SoftLogix 5 engine will fault with code 1009 when executing the MSG instruction. After clearing the fault and going back to Run mode, you may find that other MSG instructions no longer complete successfully when executed. You will have to stop and restart SoftLogix 5 to correct this condition.

Under normal circumstances, this situation will not occur because RSLogix 5/SL5 always creates enough data file space when entering the parameters for the MSG instruction or verifying the ladder program.

- MSGs complete in SoftLogix 5 although the local data table is not large enough.

For a PLC-5 Typed Write or PLC-5 Typed Read command on Ethernet or DH+, if the source data table address exists, but is not large enough to support the length of the message, the message will still complete successfully. It should error with code 0x00D5 under this condition. For example, if the source address = N7:0, length 100, but only 50 elements exist in the N7 data file, the message instruction will still complete successfully in the SoftLogix 5 engine. Under normal conditions, this will not occur because RSLogix 5 will expand the data table accordingly depending on the length specified for the message instruction.

SFC execution

- User program faults with code 47, but should not.

Under the following conditions, fault code 47 will occur when running a ladder program in the SoftLogix 5 engine:

- An SFC file consists of only a single simultaneous branch and the transition for that branch is true on the first scan of the branch.
- An SFC file contains a simultaneous branch between a LBL/GOTO pair, and the transition for that branch is true on the first scan of the branch.

- The SoftLogix 5 engine faults with code 71, but should not.

If an SFC file contains a step file, which executes a ladder file that is also a standalone MCP, fault 71 will occur when SoftLogix 5 scans the SFC step. For instance, if ladder file 2 is an MCP, SFC file 1 is an MCP, and the SFC file contains a step that executes ladder file 2, SoftLogix 5 will fault with code 71 when it executes the SFC step.

- I/O update occurs after each step on first scan on sim SFC branch

When using the "Standard" Program Scan Mode for an SFC that has a simultaneous branch, on the first scan through the simultaneous branch the transition file only gets scanned after the right-most step in the branch is scanned. On all other passes through the simultaneous branch (as long as the branch's transition file is still false), the transition file gets scanned after each branch step is scanned. This works properly in the SoftLogix 5 controller.

However, an I/O update should only occur after the right-most step gets scanned on the first pass through the simultaneous branch. In the SoftLogix 5 controller, version 1.2, an I/O update occurs after each branch step is scanned on the first pass. Under most circumstances, this is not an issue. However, this is an operational difference between the way an Enhanced PLC-5 and SoftLogix 5 scan simultaneous branches.

- Forcing an SFC transition should disable scan of the transition file.

SFC transitions that are forced ON get scanned one time in the SoftLogix 5 engine before the next SFC step gets scanned. In an Enhanced PLC-5, SFC transition files that are forced ON are not scanned at all.

- SFR instruction does a postscan on inactive SFC steps.

In the SoftLogix 5 engine, the SFR instruction performs a Postscan operation on inactive SFC steps. In an Enhanced PLC-5, the SFR instruction does not perform a Postscan operation on SFC steps that are inactive.

- SFC subchart steps that are stored are not reset when the subchart is postscanned.

- If an SFR instruction tries to reset a non-SFC file, Softlogix5 will fault with a major fault of 1009 instead of 43.

- When Softlogix5 scans an SFC subchart, the SFC subchart steps do not highlight to indicate which step of the SFC subchart is active.
- SFC subcharts are postscanned before checking the state of the transition of the calling SFC.

Other functions in the SoftLogix 5 engine

- A memory fault occurs when attempting to share a data file and not enough disk space is available.

If you attempt to share a data file and the free space on the disk is smaller than the amount of disk space the share file needs to be created, a memory fault will occur. When a data file is shared, the SoftLogix 5 engine creates a file in the ...\\SoftLogix\\Data directory for the shared memory. This size of this file will always be $(4097 \times \# \text{ bytes per element in data file})$. For instance, if you share a Timer file that has only 1 element allocated, the share file will be $(4097 \times 6) = 24582$ bytes. If you share a timer file that has 4096 elements, the size of the share file will still be $(4097 \times 6) = 24582$ bytes. The maximum amount of disk space required by non-UDS shared data files is $(4097 \times 164) = 671908$ bytes. UDS data files can have a maximum of 131070 bytes per element. Therefore, the maximum amount of disk space required by a UDS data file is $(4097 \times 131070) = 536993790$ bytes, or 512 MB! Be aware of this condition when sharing data files while online with the SoftLogix 5 engine.

- Issue with the Event Viewer logs

When you attempt to open a log entry in the System or Application logs, you may see the following message:

The system cannot find the file specified.

This will occur if the I/O or communication driver that logged the error is no longer installed in the Configuration Manager. To determine what the event log information states, you must have the driver installed that logged the event.

The following is a list of drivers and the name of the source(s) that logged the event:

Driver Name:	Source Name(s) in Event Log:
1747-OC/1747-PCIS I/O Scanner	OcDriver, WPLCOC
A-B 1784-KTX/PKTX/OCKTX/[PCMK-Demo] RIO Driver	KtxScanner , WPLCKTXI
A-B DeviceNet Scanner	WPLCDNET
A-B ControlNet Scanner	WPLCCNET
Phoenix INTERBUS I/O Scanner - IBS PC ISA/CMD Kit	WPLCIBUS
SST Profibus I/O Scanner - PC ISA Kit	WPLCPBUS
A-B 1784-KTX/PKTX/PCMK/OCKTX DH+ Driver	KTxDHP , WPLCKTXD
SoftLogix 5 WinSock32 TCP/IP Driver	WPLCSOCK

Technical support

The purpose of this section is to clarify the support you receive with the SoftLogix 5 controller. The SoftLogix 5 controller ships with an initial one-year support term. This support is included with your product purchase price. The services available to you during this initial support term include:

- Technical support via phone, email, and fax
- Product updates when new versions are released
- Media replacement
- *The Software Connection* magazine

Following your initial one-year support term you may choose to purchase a support contract extension for your SoftLogix 5 controller. Annual support extensions are typical but support terms of any duration are available.

Use this information to contact technical support:

- Phone: 440-646-7800
- Fax: 440-646-7801
- Faxback: 440-646-7777
- Email info@software.rockwell.com

Technical support is available from 8:00 AM to 8:00 PM Eastern Standard Time on business days.

Allen-Bradley Parts

Notes:



Allen-Bradley, a Rockwell Automation Business, has been helping its customers improve productivity and quality for more than 90 years. We design, manufacture and support a broad range of automation products worldwide. They include logic processors, power and motion control devices, operator interfaces, sensors and a variety of software. Rockwell is one of the world's leading technology companies.