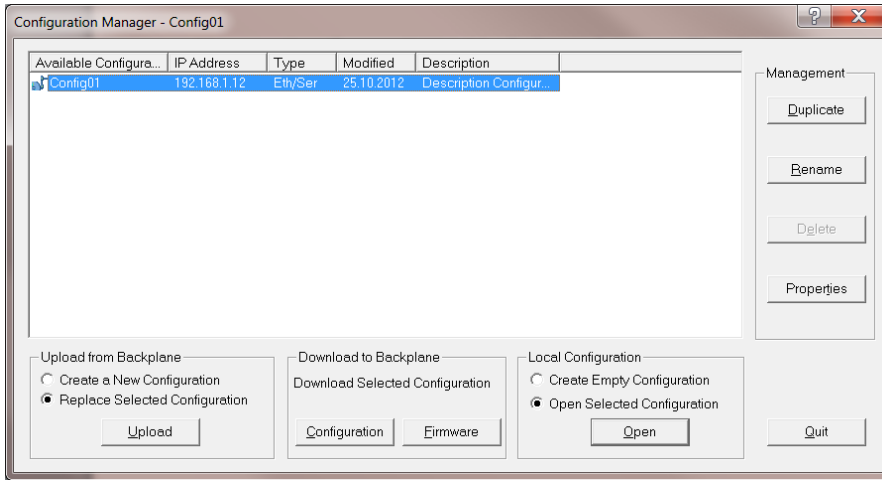


How to Configure ESR2 Module and ControlLogix PLC

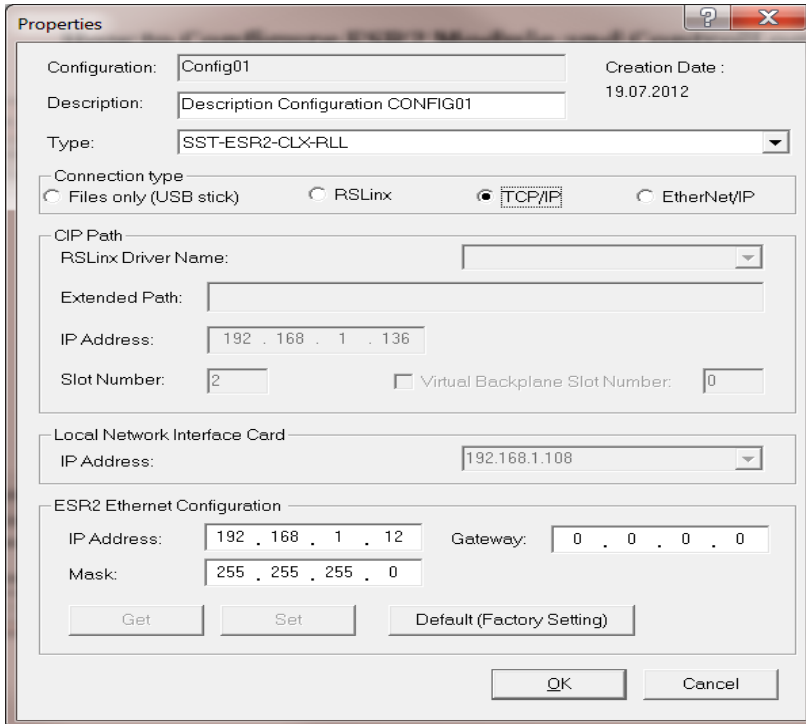
1. Configuring ESR2 module

To configure the ESR2 module using the SST configuration tool: Console.

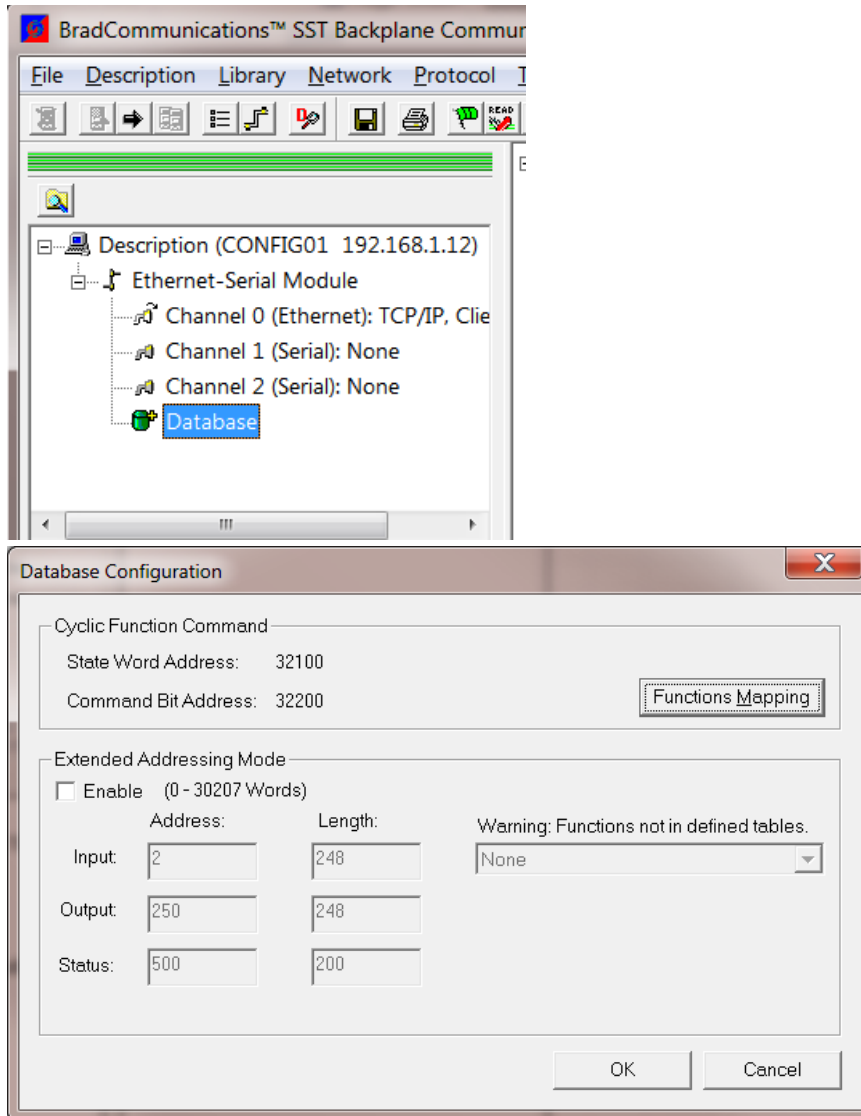
- a. Start the Console application by selecting Console from Start\All Programs\BradCommunications\SST Backplane Communication Module\



- b. Modify the default configuration properties or Open 'Create Empty Configuration' to configure the Ethernet properties



- c. Double click on Database to open the Database Configuration dialog



1.1 Default Address Mode

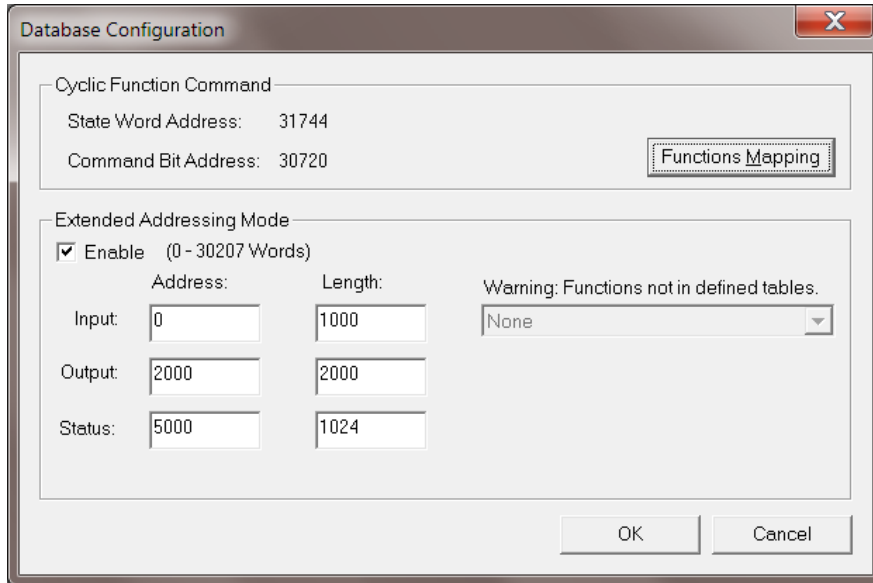
If the Enable is unchecked, the default address mode is used. The Input, Output and Status starting addresses and lengths are shown in these edit boxes. The Input, Output and Status fields cannot be configured by user.

Database Configuration Sample:

Server Equipment variable mapping in Default addressing mode

<p>INPUT TABLE (2-249) S7/S5 PLC Variable mapping AW0-AW246 / AB0-AB246 (PUT/GET)</p>
<p>OUTPUT TABLE (250-497) S7/S5 PLC Variable mapping EW0-EW246 / EB0-EB246 (GET)</p>
<p>STATUS TABLE (500-699)</p>
<p>Database Address (768-1023) S7/S5 PLC Variable mapping MW0-AW246 / MB0-MB246 (GET/PUT)</p>
<p>Database Address (1024-30207) S7/S5 PLC Variable mapping DB4.DBW0-DB116.DBW255 (PUT/GET)</p>

1.2 Extended Address Mode



When the Enable is checked, the Extended Database Address Mode is used. The Input, Output and Status fields can be configured by user.

The minimum lengths for Input and Output are 512. The Status length can be 0 if status is not used. The total configurable database area is from 0 to 30207 words. Any overlaps amount the Input table, Output table and status table are prohibited.

The table below shows the allowed combination of INPUT, OUTPUT and STATUS addresses and size and assumed that INPUT table start address is at offset 0.

INPUT Table Size	OUTPUT Table Size	STATUS Table Size
512	28664	1024
28664	512	1024
512	29668	0
29668	512	0

Note: The Input, Output and Status offset configuration in extended address mode must match the input, output and status table configuration in ControlLogix ladder AOI sample.

Database Configuration Sample:

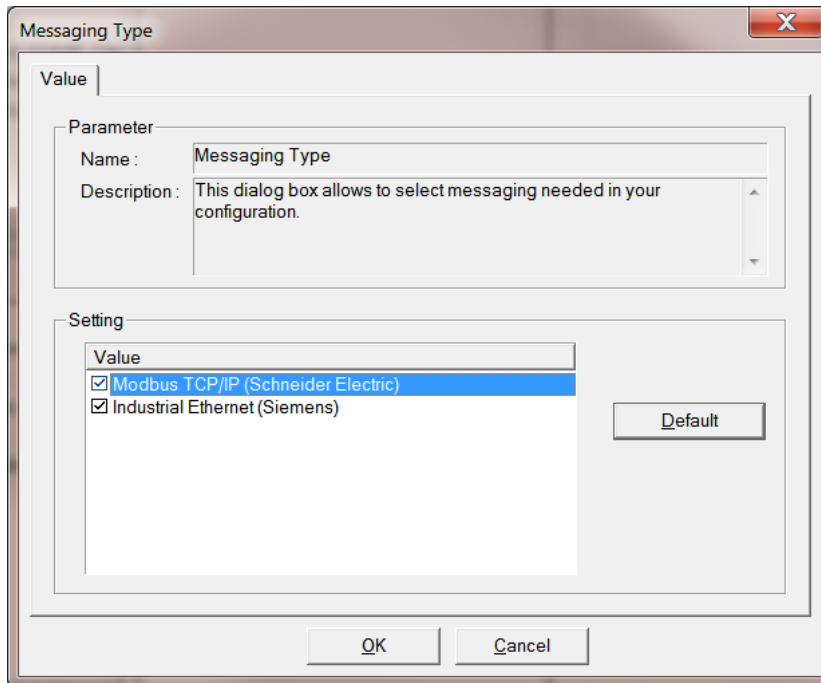
Server Equipment mapping in Extended addressing mode

<p>Unmapped Database Address (0000-4864) DB1.DWx – DB19.DWx</p>
<p>INPUT Table (5120-9999) AW0-AW255 / AB0-AB255 (GET/PUT) MW128-MW255 / MB128-MB255 (GET/PUT) DB20.DWx – DB38.DWx (GET/PUT)</p>
<p>OUPUT Table (10000-19999) S7/S5 PLC Variable mapping EW0-EW255 / EB0-EB255 (GET) MW0-AW127 / MB0-MB127 (GET) DB39.DWx / DB78.DWx (GET)</p>
<p>Unmapped Database Address (20000- 30207) S7/S5 PLC Variable mapping DB79.DBW0-DB116.DBW255</p>

1.3 Configure Equipment (Server/Client Equipment)

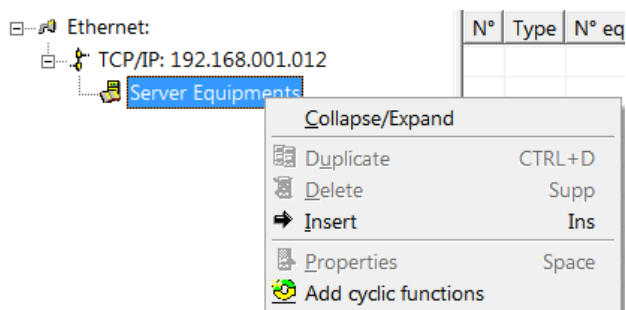
Before configuring the server/client equipment, the supported message protocols must be added to the Equipment Library.

- Select Protocols... command under Protocol from the menu bar to open the Message Type dialog



After the protocol selection, supported server /client Equipment are displayed in the Equipment Library.

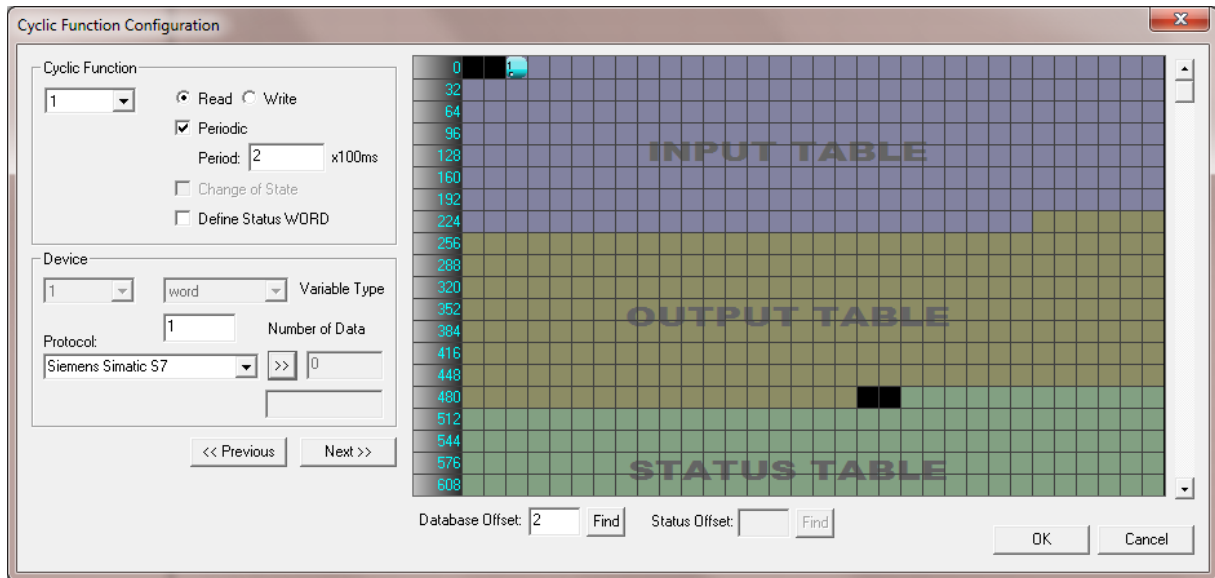
- Insert server equipment from the drop down menu, or drag and drop from the Equipment Library.



- Configure the selected equipment properties

1.4 Create Cyclic Functions

Select Add command from menu bar or dropdown menu to open the Cyclic Function Configuration dialog box:



When there is backplane connection, all read cyclic functions can be configured in the input table only. Write cyclic can be configured from both input/output table, all status must be configured in status table.

The input, output and status table sizes are based on the database configuration.

Below are examples of database configuration when ESR2 is in **client** configuration.

Example 1:

Database configuration: Default mode

	Address	Length	Accessible Data
Input	2	249	Read/Write cyclic function
Output	250	497	Write Cyclic functions only
Status	500	255	

Example 2:

Database configuration: Extended

	Address	Length	Accessible Data
Input	25000	4592	Read/Write cyclic function
Output	0	3000	Write Cyclic functions only
Status	5000	255	

Example 3:

Database configuration: Extended

	Address	Length	Accessible Data
Input	0	3000	Read/Write cyclic function
Output	3000	3000	Write Cyclic functions only
Status	10000	1024	

2. Configure ControlLogix PLC

If the database address is configured in default mode, there are some ladder sample codes provided with the installation in the following install directory:

C:\Program Files (x86)\BradCommunications\SST Backplane Communication Module\Ladder Sample Code For ControlLogix\AOP

Or

C:\Program Files (x86)\BradCommunications\SST Backplane Communication Module\Ladder Sample Code For ControlLogix\Generic

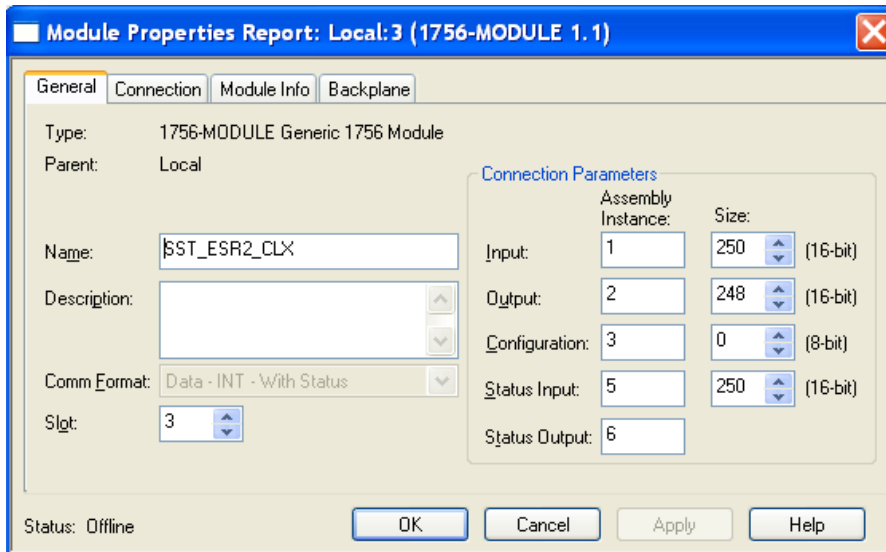
If the database address is configured in extended mode, the following paging AOI sample can be used:

C:\Program Files (x86)\BradCommunications\SST Backplane Communication Module\Ladder Sample Code For ControlLogix\AOI

2.1. Paging AOI

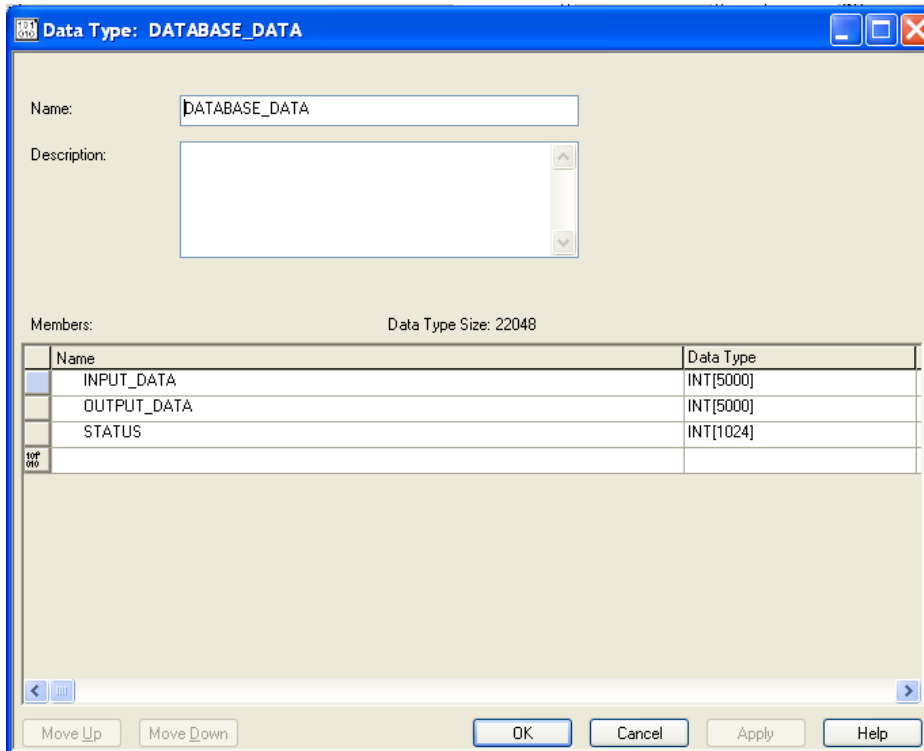
There are two provided paging AOI samples.

Note: The L5k file is added through the Import Rungs command in the ladder logic program. The ESR2 module added in the I/O configuration under 1756 Backplane must include the assembly instance same as the following:



In the Paging AOI sample, the defined input table size is 5000, the output table size is 5000, and the status table size is 1024.

If bigger size is required, these settings can be modified in Data Types\User-Defined\DATABASE_DATA (can be modified offline only)



Note: These data type sizes should be greater or equal than/to the settings in the database configuration in the Console.

2.11. Configure the database setting in the Ladder sample

- Open the Controller Tags and expand CLX2000
- Expand CLX2000.CONFIGURATION

[-] CLX2000.CONFIGURATION	{...}
+ CLX2000.CONFIGURATION.Input_Table_Start_Address	0
+ CLX2000.CONFIGURATION.Input_Table_Size	1000
+ CLX2000.CONFIGURATION.Output_Table_Start_Address	10000
+ CLX2000.CONFIGURATION.Output_Table_Size	1000
+ CLX2000.CONFIGURATION.Status_Table_Start_Address	3200
+ CLX2000.CONFIGURATION.Status_Table_Size	1024

- Set the Input, Output and Status table start address and sizes. These settings must match the database configuration settings in the Console