



GE Fanuc Automation

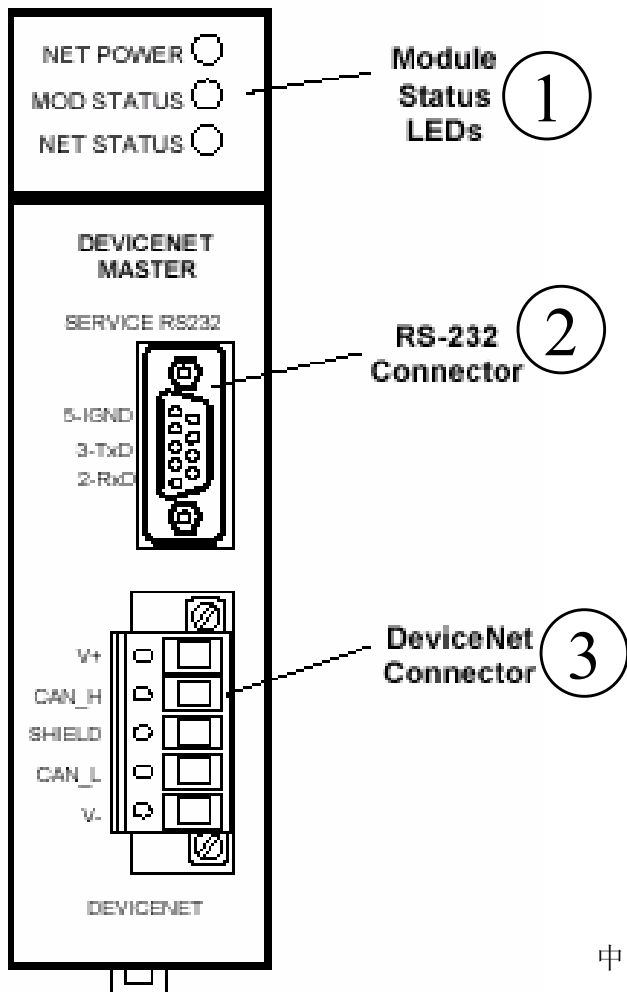
90-30 DeviceNet configuration Training Course

Presented by GE Fanuc

中国工控网收集整理
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DeviceNet Master --- DNM200

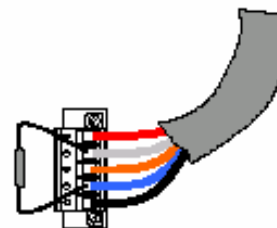
DeviceNet Master
Module
IC693DNM200



① Bus power, Module status and Network status indicators

② RS232, Firmware download port

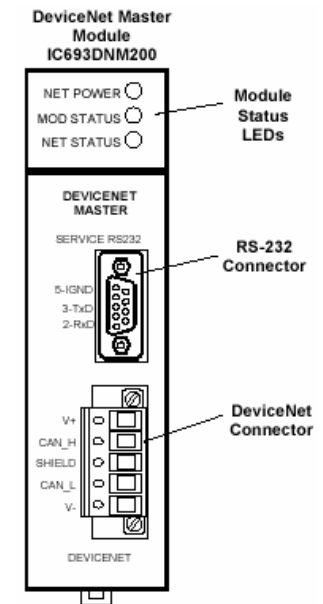
③ DeviceNet bus connector



Resistors shall be on both ends of bus

DNM200 Specification

- Support all standard DeviceNet data rates (125K, 250K, 500K)
- Up to 255 bytes input data and 255 bytes output data per slave
- Up to 3972 bytes of input data and 3972 bytes of output per master
- Support UCMM
- Support explicit message and I/O connections: polling, strobe, Change of state, Cyclic I/O



Add DNM200 Module

- 1 Right click slot and Choose "Add Module"
- 2 Under "Bus Controller" Choose "IC693DNM200"

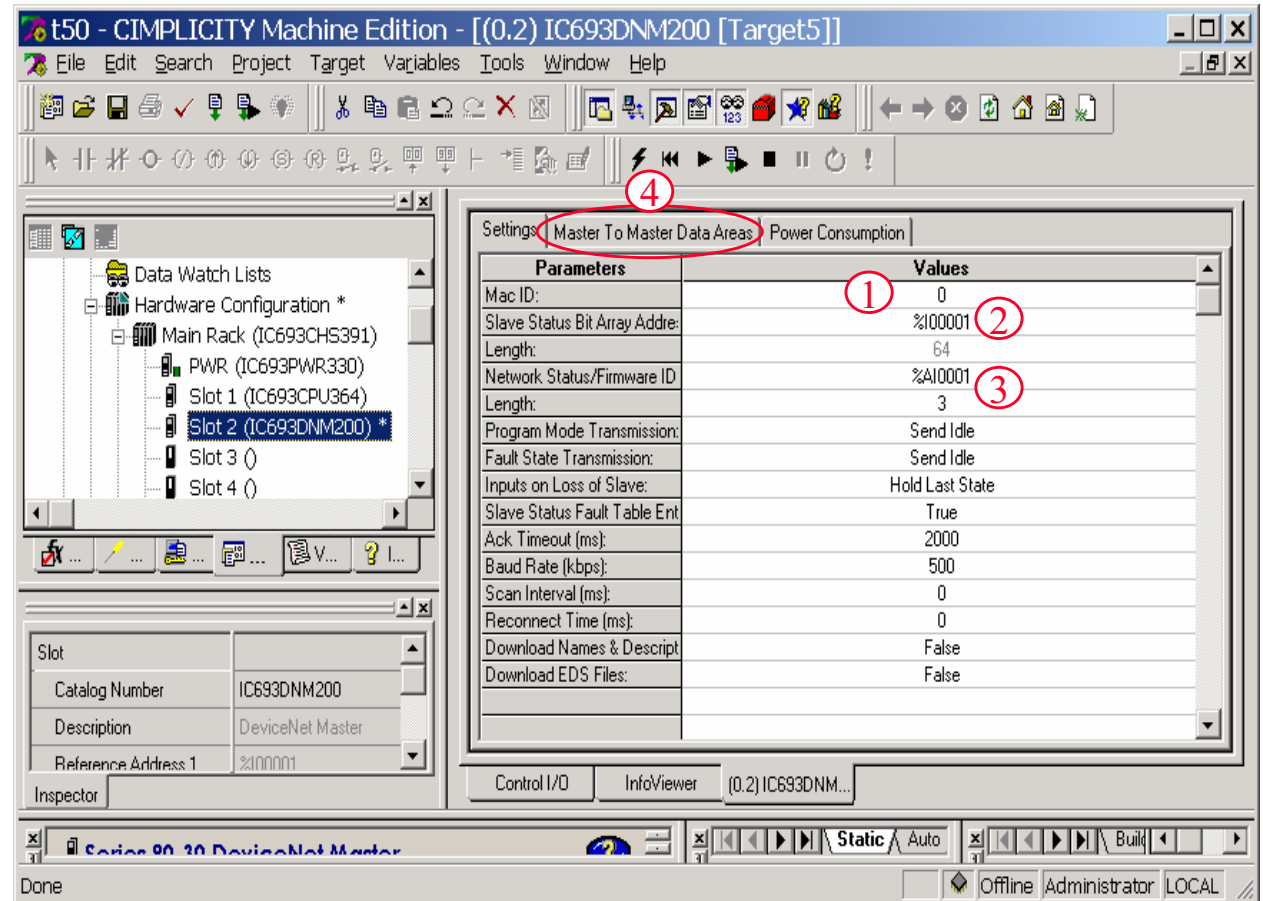
The screenshot displays the CIMPLICITY Machine Edition interface. The main window shows a rack configuration with slots 1 through 8. Slot 2 is selected, and a context menu is open with "Add Module..." highlighted. A "Module Catalog" dialog box is open, showing the "Bus Controller" category selected. The "IC693DNM200" module is highlighted in the catalog list. The background shows the main software interface with a navigation pane on the right and a status bar at the bottom.

Module Catalog


Catalog Number	Description
IC693PBM200	Profibus Master
HE693PBM100	Homer Electric Profibus Master
HE693PBM101	Homer Electric Profibus Master - PTO Certified
HE693PBM101F	Homer Electric Profibus Master - w/125 Xtra Param Data
IC693BEM321	90-30 I/O Link Master
IC693BEM331	90-30 Genius?Bus Controller
IC693DNM200	DeviceNet Master

Configure DNM200

- ① *Mac ID*: station address, valid value 0-63
- ② *Slave status bits Array Addr*: bit 1 for online status of station address 0, bit 2 for station address 1. Length is fixed to be 64
- ③ *Network Status/Firmware ID*: 3 words representing Server status, Can status and Firmware version, See next page for detail
- ④ *Master to Master Data Area*: configure DNM to operate as a slave



Network Status/Firmware ID

Server (slave) status: 
 How DNM200 works as a slave

Can network status 

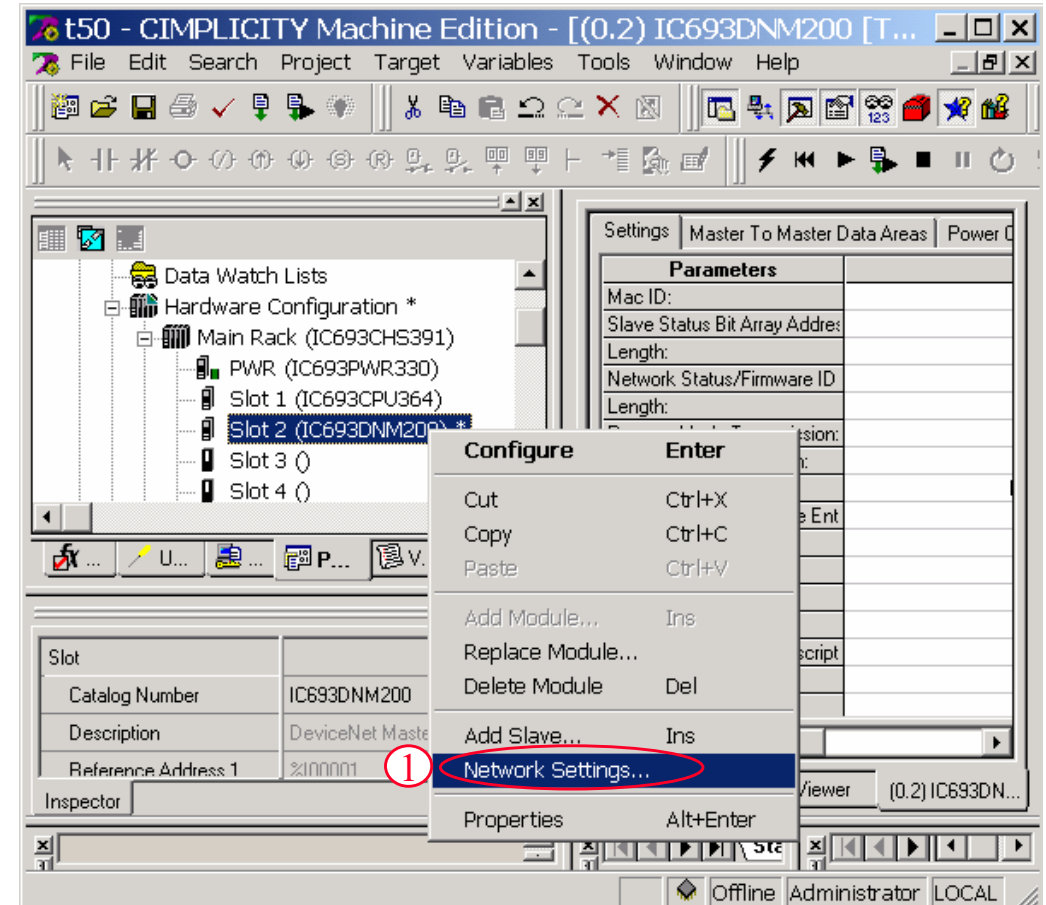
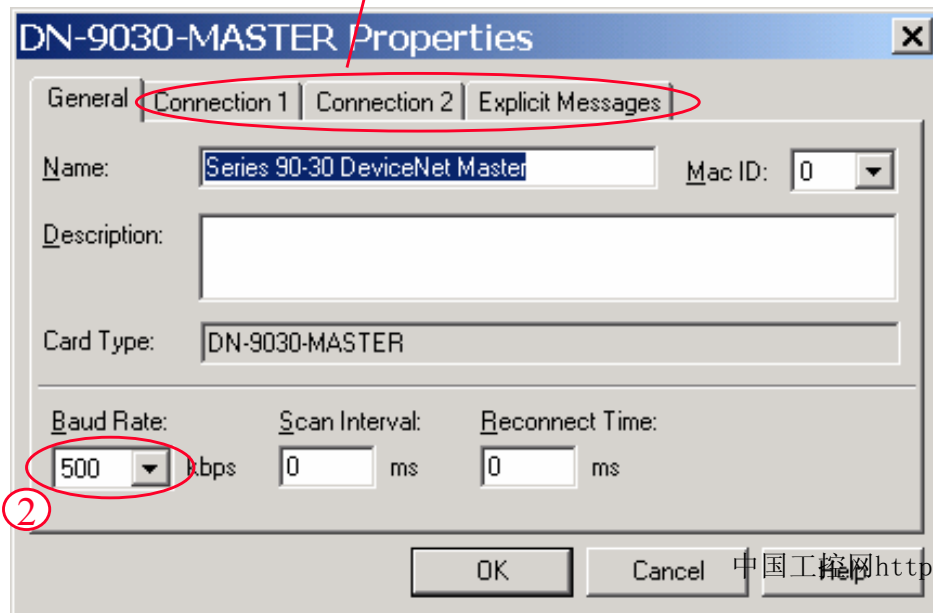
Firmware ID of DNM200 

Word 1	Server Status							
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
byte 0	res.	AKS	CYC	COS	res.	ST	P	EX
byte 1	reserved				SERA	IDLE2	IDLE1	G3
	Group 2 only I/O connections		AKS	Acknowledge suppress enabled				
			CYC	Cyclic I/O connection allocated				
			COS	Change-of-state I/O connection allocated				
			ST	Bit Strobed I/O connection allocated				
			P	Polled I/O connection allocated				
	Group 2 Explicit Connections		EX	Explicit connection allocated				
	Group 3 Connection		G3	At least one Group 3 (UCMM) connection allocated				
	Status Bits		IDLE1	Output area 1 receive idle status bit				
			IDLE2	Output area 2 receive idle status bit				
			SERA	Server Explicit Request Available. Use Receive server explicit command to retrieve the request				
Word 2	CAN Network Status							
	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
byte 0	ML	RO	TO	TA	A	BO	BW	OL
byte 1	SA	O5	O2	O1	RE	reserved	BP	ER
	<i>Application Specific Flags</i>							
	SA	Scanner Active (at least one connection established)						
	O5	Online at 500 Kbaud						
	O2	Online at 250 Kbaud						
	O1	Online at 125 Kbaud						
	RE	Firmware is resetting so DeviceNet I/O data is not valid						
	<i>Common Flags</i>							
	BP	Bus power present (zero if power sense not supported)						
	ER	CAN communication error						
	ML	Message lost (CAN controller / receive ISR)						
	RO	Receive buffer overrun (host app. too slow emptying receive queue)						
	TO	Transmit failed due to timeout (flooded network)						
	TA	Transmit failed due to ack error (no other nodes connected)						
	A	Network activity detected (messages received or transmitted)						
	BO	Bus off (this node has been disconnected due to excessive errors)						
	DN	DeviceNet interface has been disconnected (experiencing a large number of errors)						
	OL	Online, CAN interface has been initialized						
Word 3	Firmware ID, Minor revision:		In BCD four hex digits. For example, revision 1.10 = 01 10 hex.					
	Firmware ID, Major revision:		See above.					

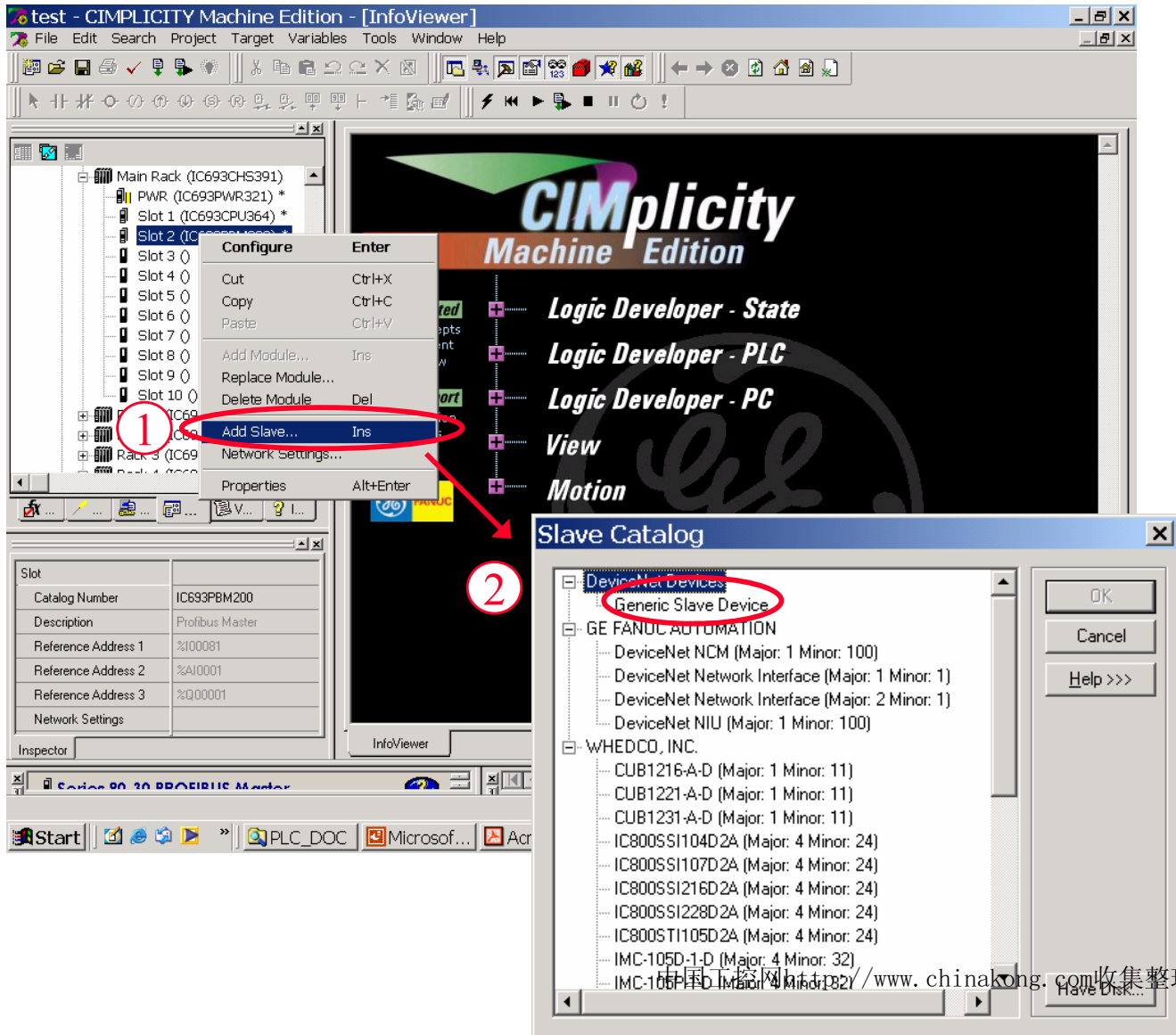
Configure Network Parameters

- ① Right click DNM200 module and choose “Network Settings”
- ② Set up the Baud rate for fieldbus

Configure DNM200 as a slave

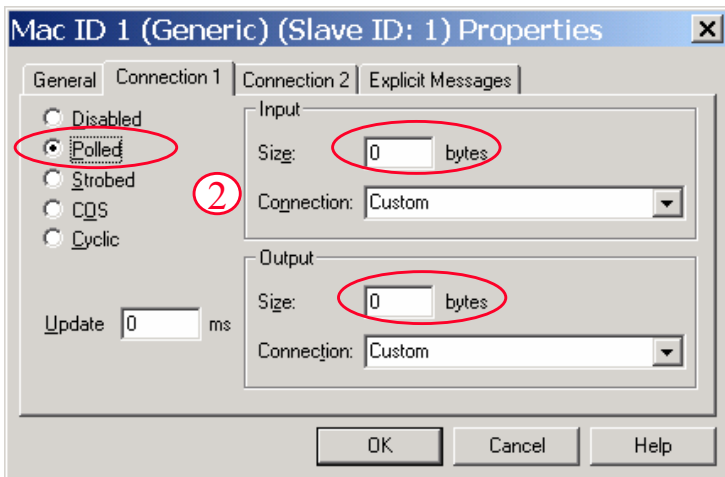
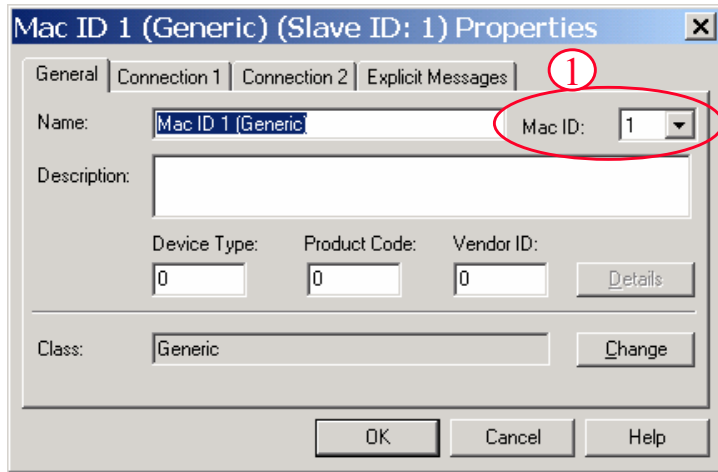


Add Slave

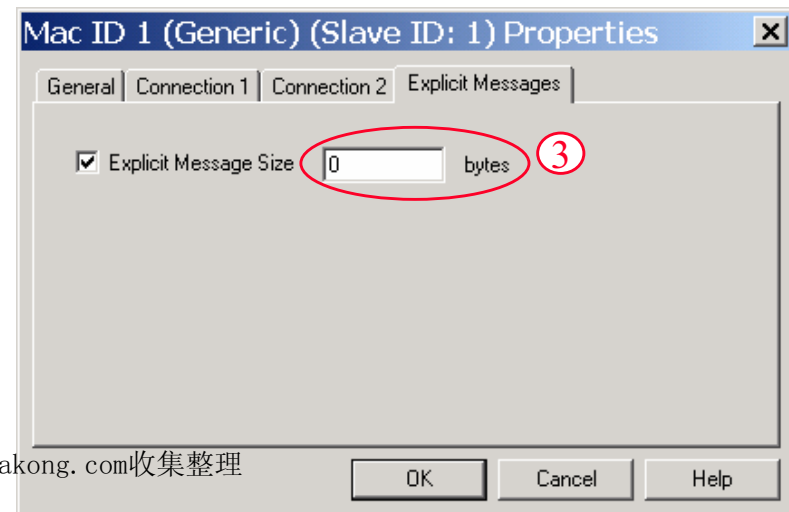


- ① Right click DNM200 module and choose “Add slave”
- ② Choose slave device from the list, for most of the cases, choose “Generic Slave Device”

Add Slave ...

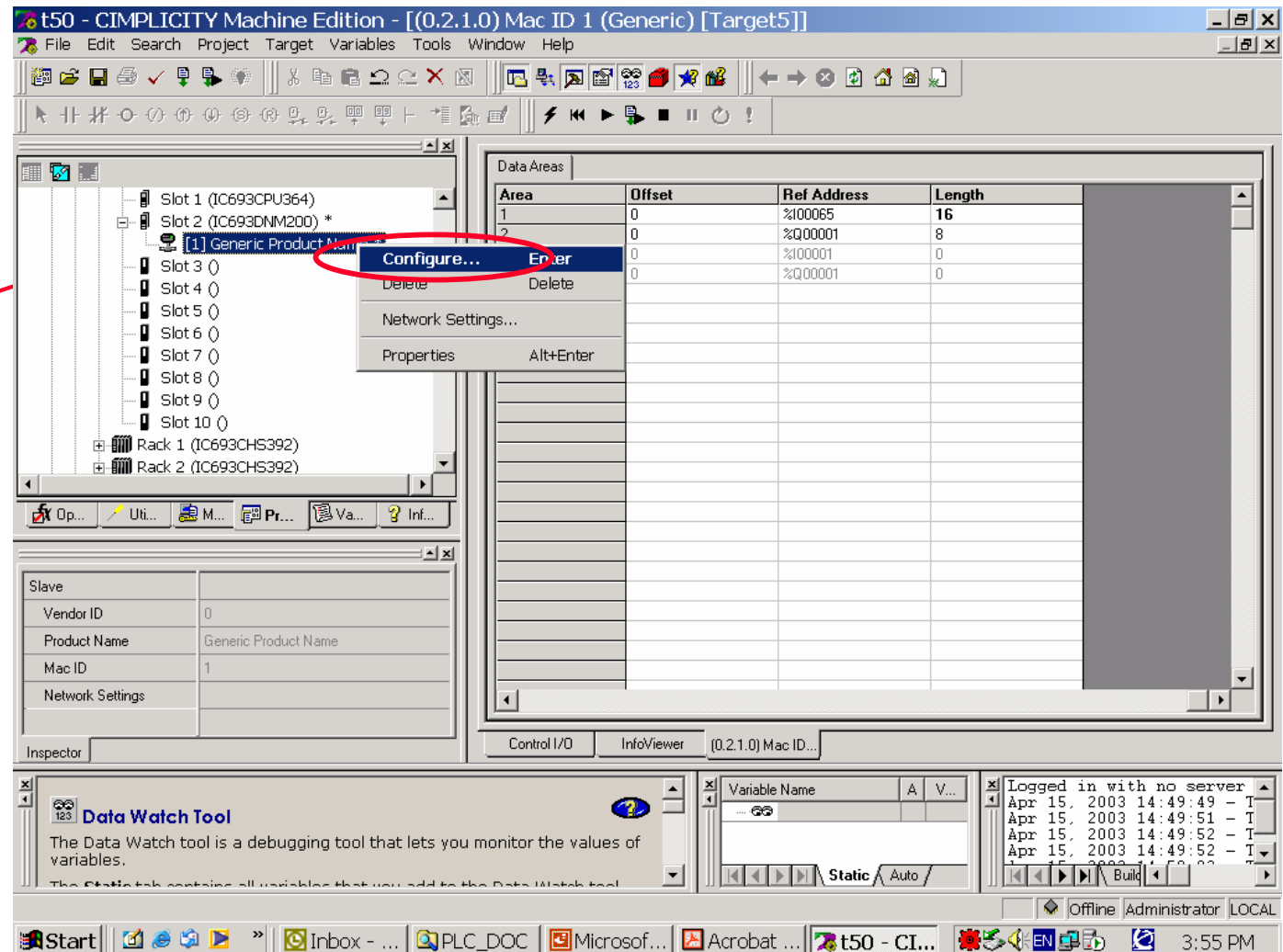


- ① Slave station address (0-63)
- ② For most slaves, choose “Polled” and specify the size of input/output data
- ③ Enable “Explicit Message” if the slave supports “Explicit Message”. Specify the buffer size for DNM200 to receive reply explicit message



Assign I/O Address for Slave Modules

Right click slave device
Choose "Configure"



Assign I/O Address for Slave Modules

The screenshot shows the SIMPLICITY Machine Edition interface. The 'Data Areas' table is the central focus, with three red circles highlighting specific cells: circle 1 points to the 'Ref Address' column, circle 2 points to the 'Offset' column, and circle 3 points to the 'Length' column. The table contains the following data:

Area	Type	Offset	Ref Address	Length
1	Connection	0	%I00065	16
2	Connection	0	%Q00001	8
3	Connection 2	0	%I00001	0
4	Connection 2	0	%Q00001	0

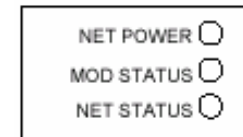
Below the table, the 'Inspector' panel shows the 'Slave' configuration with 'Vendor ID' set to 0. The 'Length' property is expanded, showing its definition: 'Length of the reference. Includes the entire data area by default. If set to 0, the data area is not mapped. Allowable Ranges:'. The status bar at the bottom indicates 'Offline Administrator LOCAL'.

- ① Define I/O reference address for this slave
- ② Offset of input/output data of slave, which the I/O reference is assigned to
- ③ Don't change the length which is automatically adjusted by ME

LEDs on DNM200

Module Status LED

LED	Indicates
Off	There is no backplane power to the module.
Green	The module is operating normally.
Flashing Green	The module is in standby mode. Its configuration is missing, incomplete, or incorrect. The module may be in Standby state.
Flashing Red	Recoverable Fault
Red	The module has an unrecoverable fault; it may need resetting or replacing.
Flashing Red / Green	The module is in Self Test mode.



Network Status LED

LED	Indicates
Off	<ul style="list-style-type: none"> The module is not online, or The module has not completed the Duplicate MACID test, or The module may not be powered. See Module Status LED.
Flashing Green	<ul style="list-style-type: none"> The module is online but has no connections in the established state, or The module has passed the Duplicate MACID check, is online, but has no established connections with other nodes.
Green	The module is online and has one or more connections in the established state.
Flashing Red	One or more I/O Connections are in the Timed Out state.
Red	The module is not capable of communicating on the network.
Flashing Red / Green	The module has detected a Network Access error and is in the Communication Faulted State.

Network Power LED

LED	Indicates
Red	There is no power detected on the network.
Green	Power detected on the network.