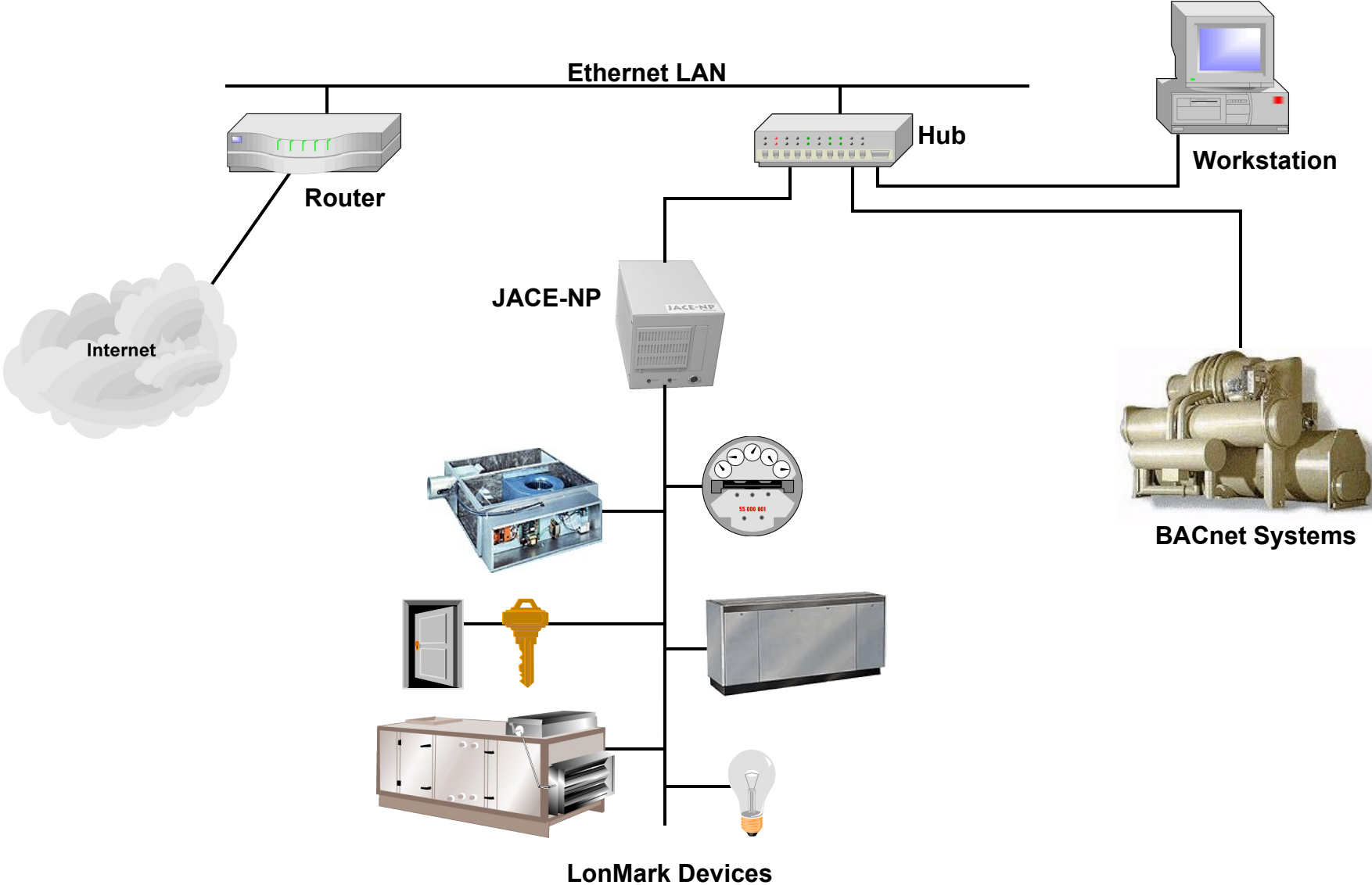


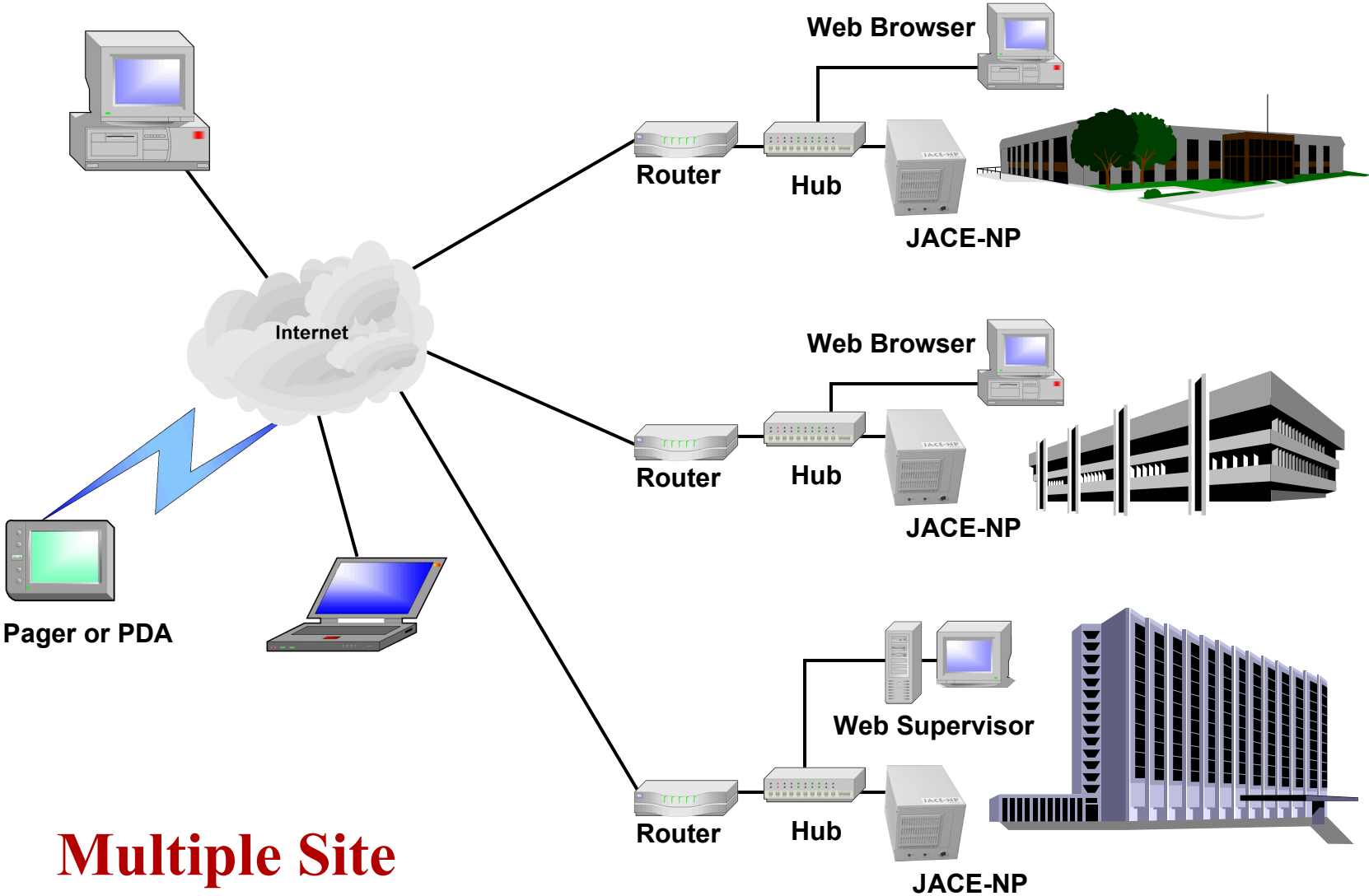
# Tridium Niagara AX Training

# Introduction to Niagara AX Framework

# Niagara Architecture



# Niagara Architecture

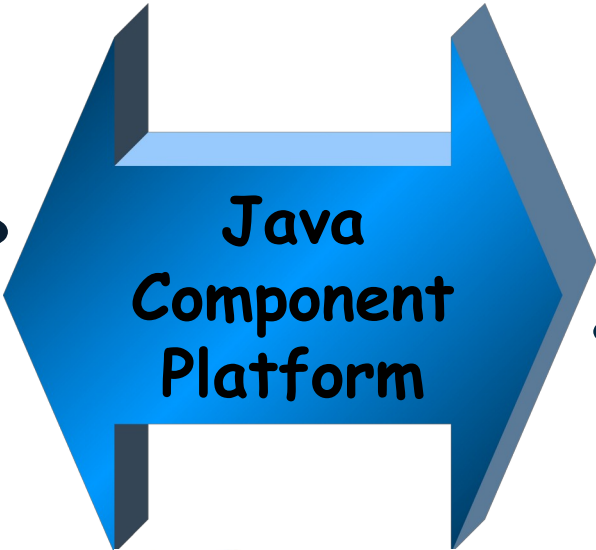


# Niagara Framework

Fieldbus Protocols

Legacy Automation Systems

Emerging Standards



*niagara* FRAMEWORK™

Enterprise Application Connectivity

Browser User Interface



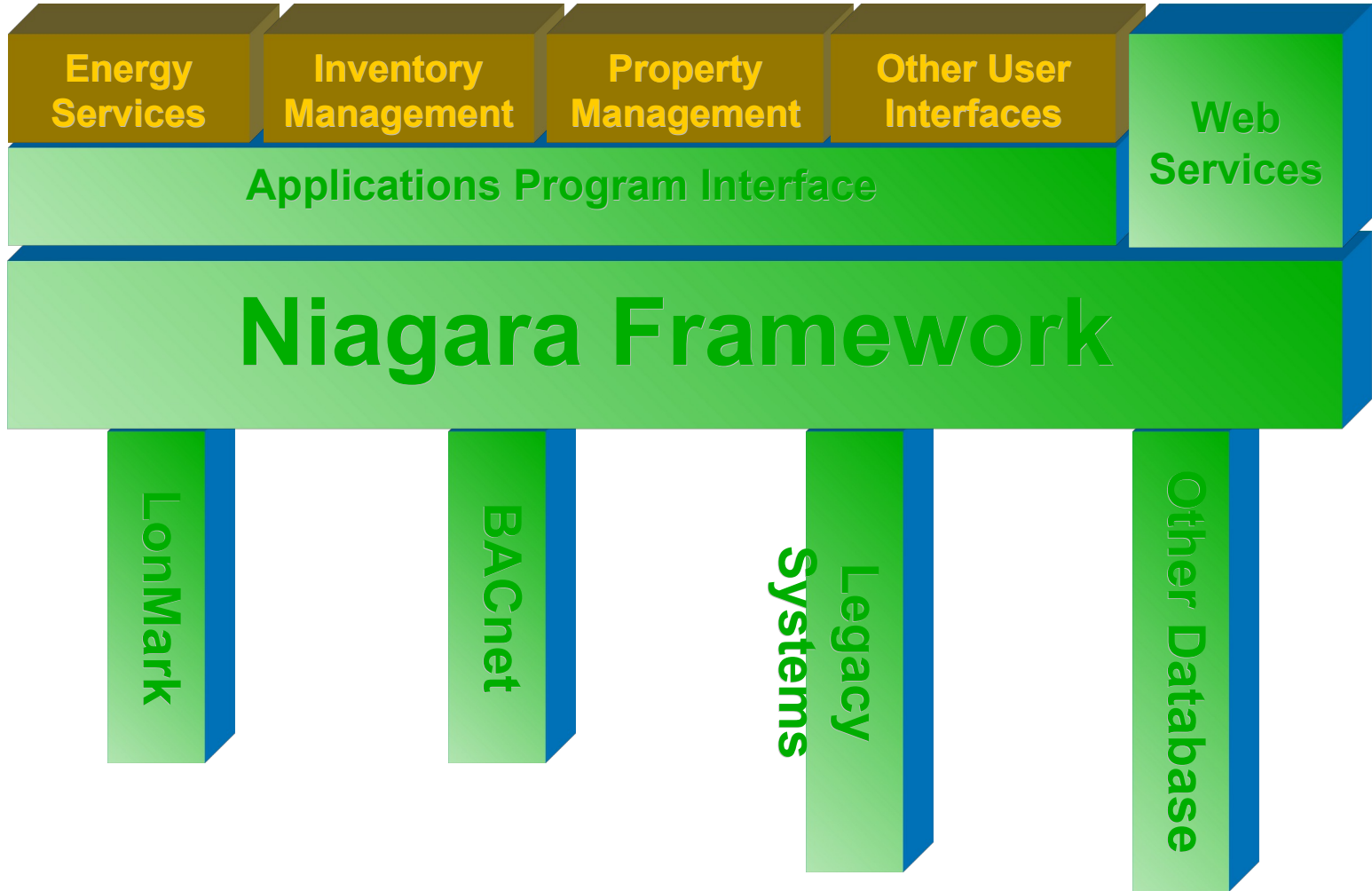
Intranet / Internet

# JACE

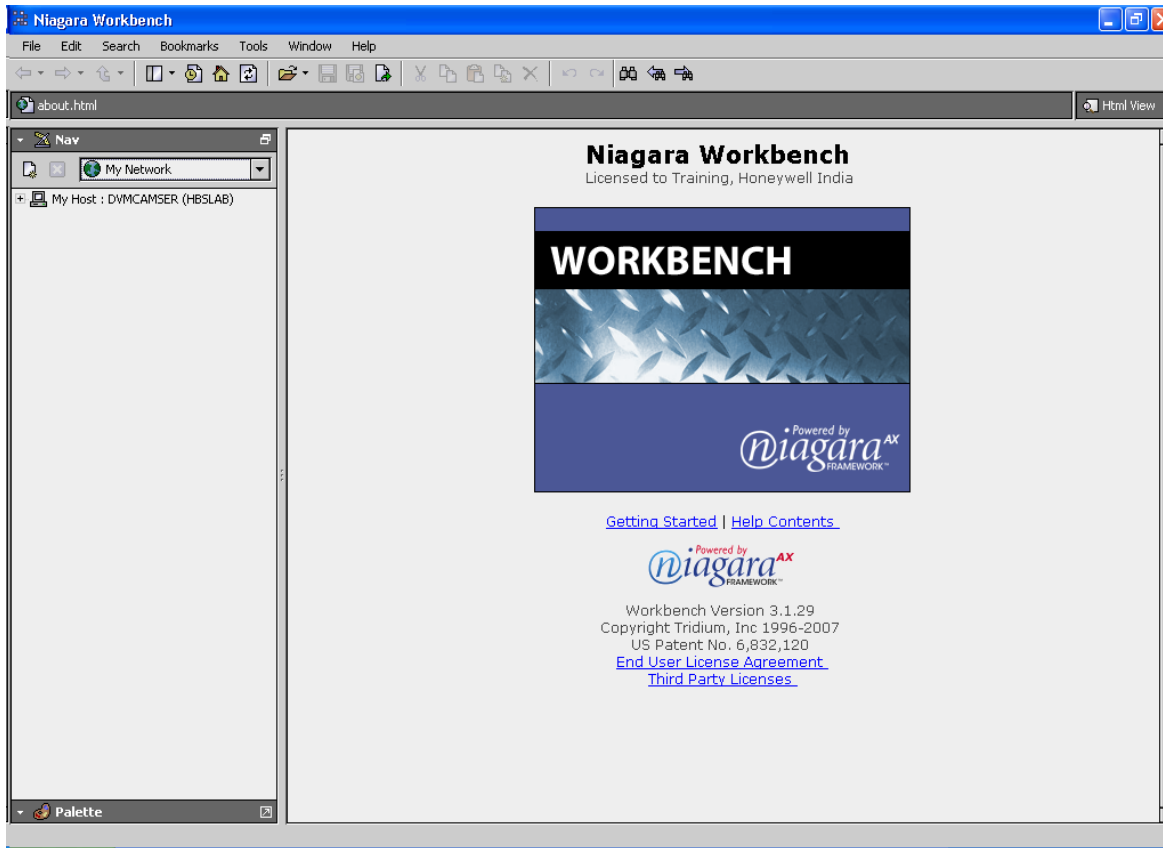
- **Java Application Control Engine**
  - Network computer platform
  - Supports BACnet and LonWorks devices
  - Accessed directly over Ethernet LAN or remotely over the Internet
  - Can provide multi-station supervision
  - Can be configured with Web Services

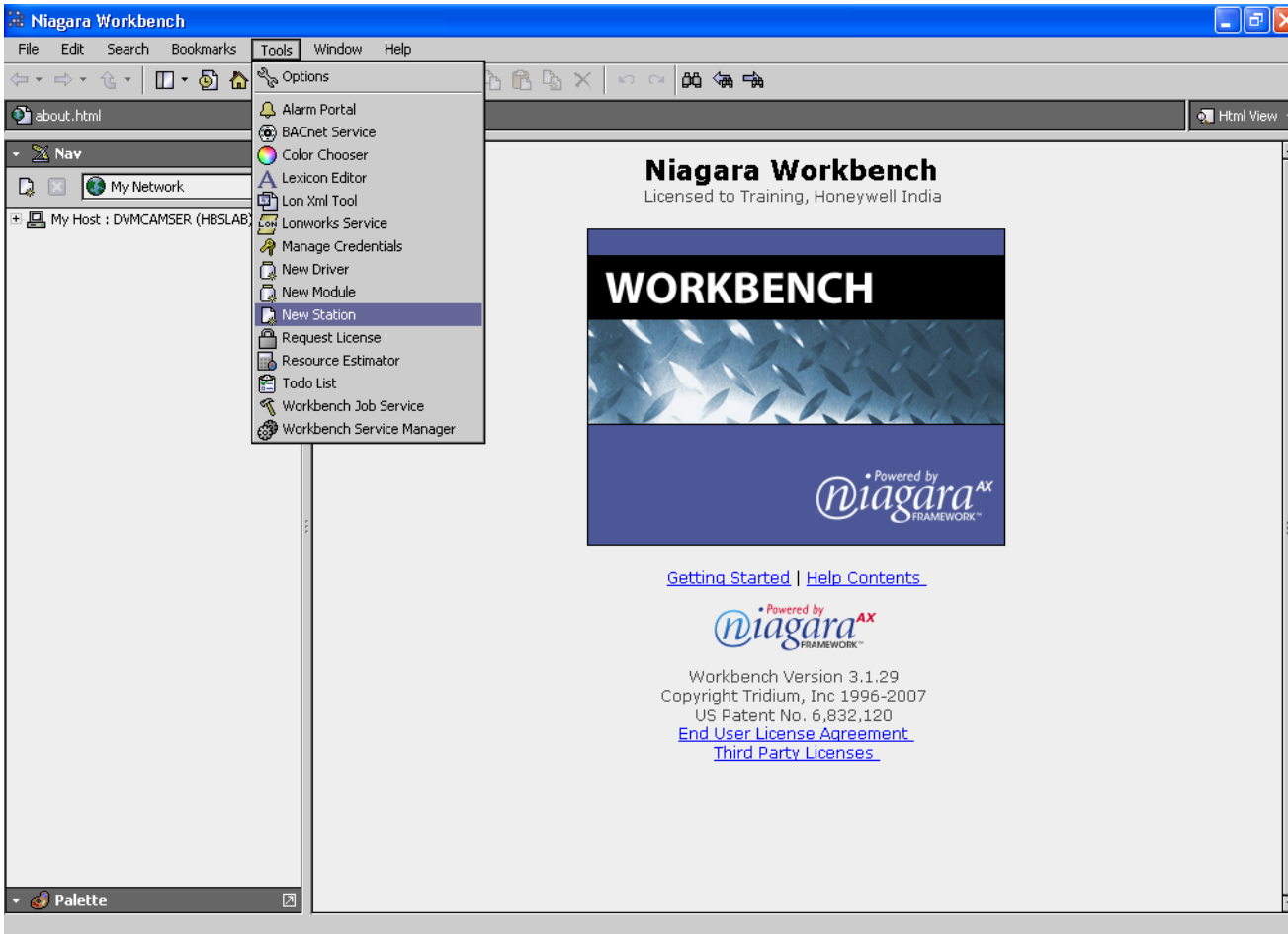
# Web Supervisor

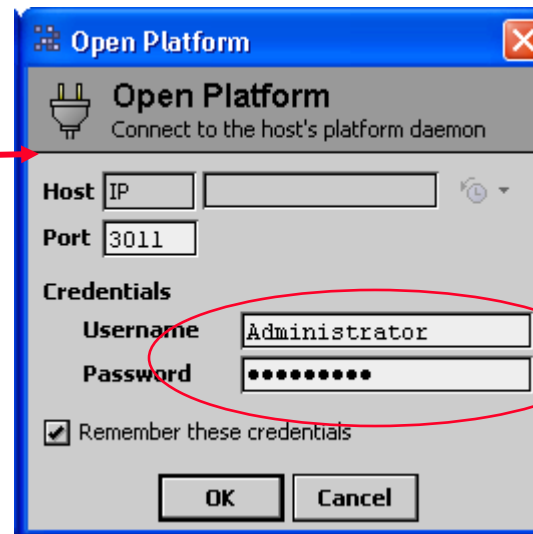
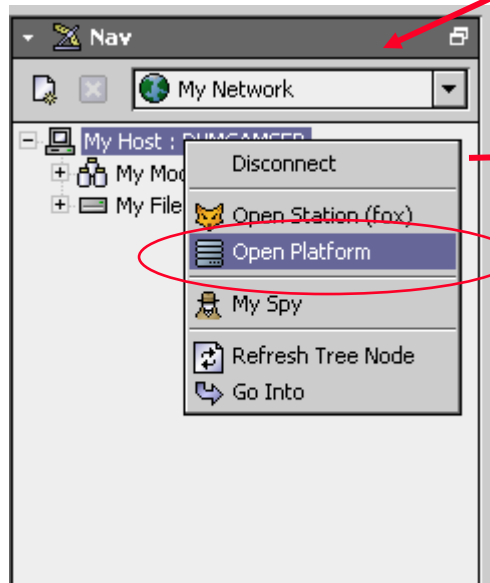
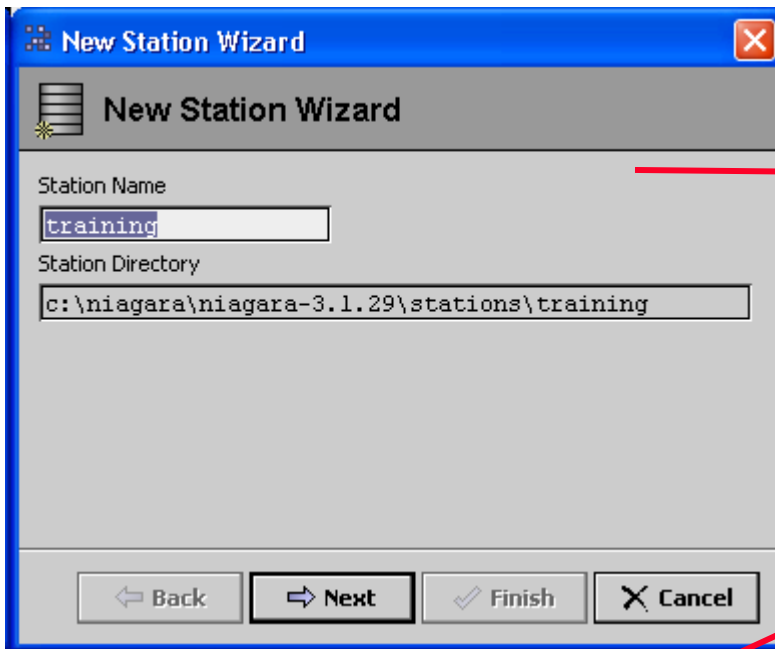
- **Web Supervisor:**
  - **A flexible network server for all connected JACE stations**
  - **Provides database administration for the object database and relational database**
  - **Manages global control functions**
    - ◆ Time, scheduling, energy management, alarms, data collection and trending
  - **Includes WorkPlace Pro**
    - ◆ User interface
    - ◆ Application development environment

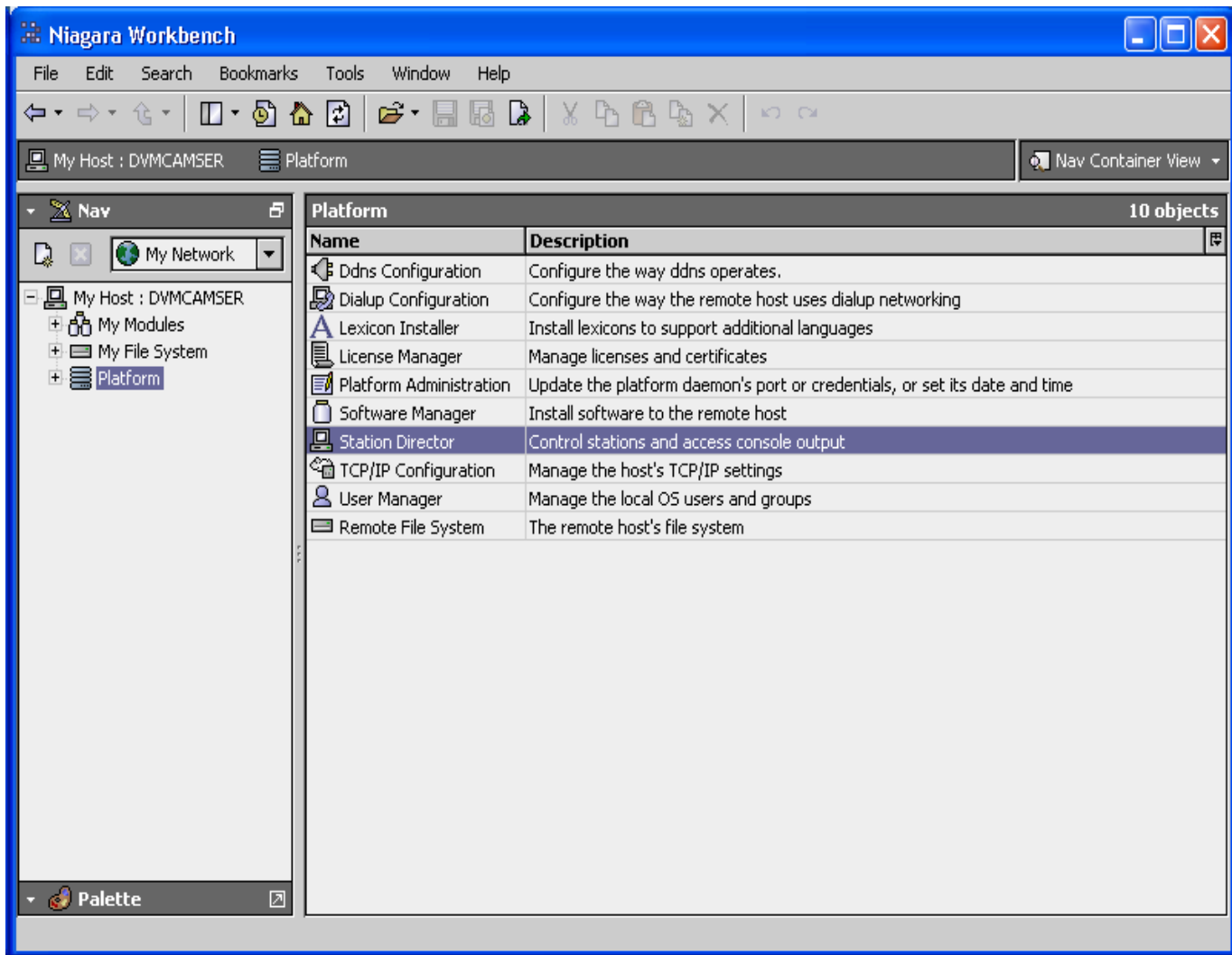


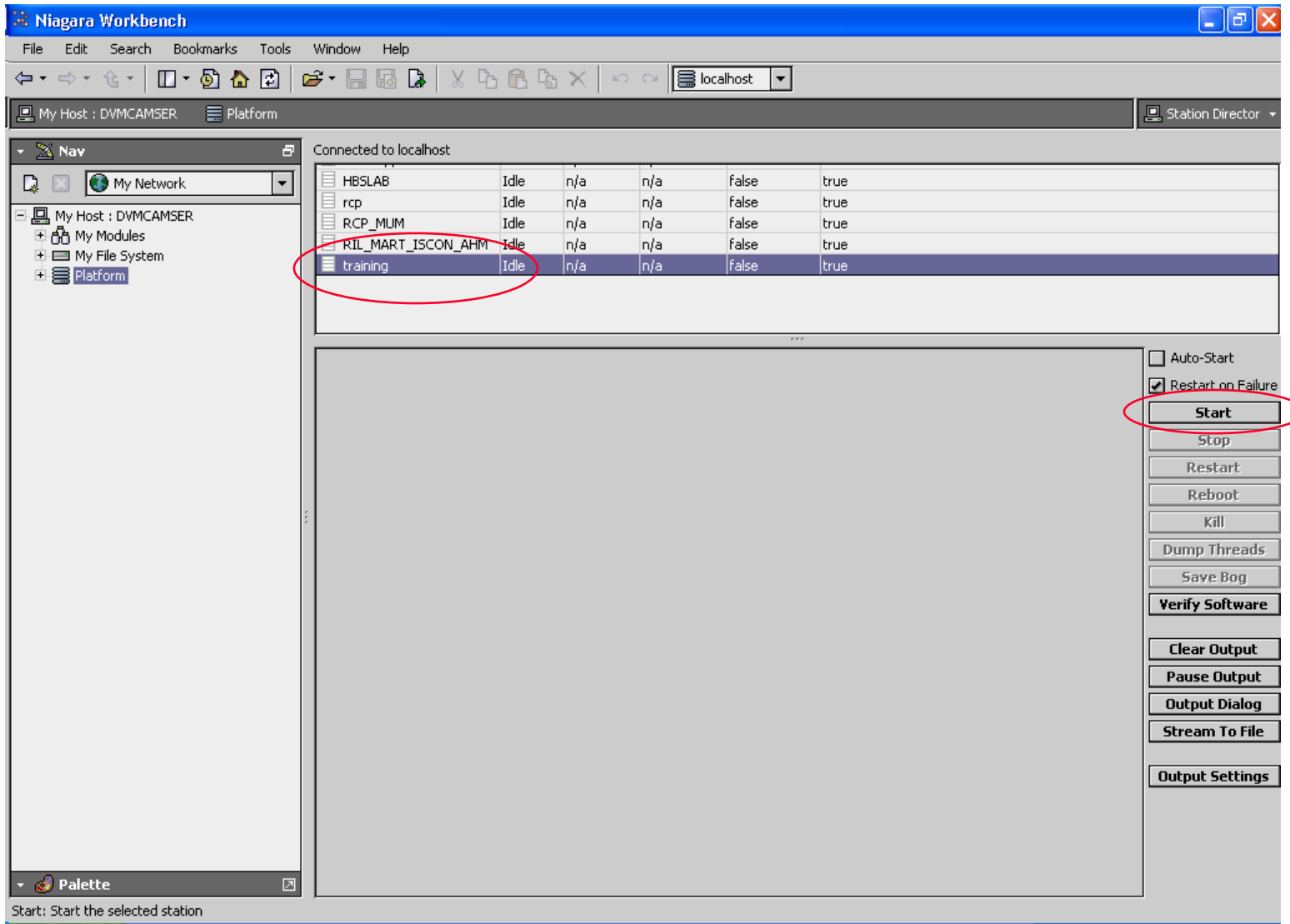
# All about Networks, Controllers & points











Connected to localhost

HBSLAB	Idle	n/a	n/a	false	true
rcp	Idle	n/a	n/a	false	true
RCP_MUM	Idle	n/a	n/a	false	true
RIL_MART_ISCON_AHM	Idle	n/a	n/a	false	true
training	Running	1911	80	false	true

```

MESSAGE [13:35:04 30-Nov-07 IST][sys.registry] Up-to-date [47ms]
MESSAGE [13:35:04 30-Nov-07 IST][sys] Baja runtime booted ("c:\niagara\niagara-3.1.29")
MESSAGE [13:35:04 30-Nov-07 IST][sys.registry] Loaded [109ms]
MESSAGE [13:35:04 30-Nov-07 IST][sys] Loading "c:\niagara\niagara-3.1.29\stations\training\config
MESSAGE [13:35:05 30-Nov-07 IST][sys] Loaded (938ms)
MESSAGE [13:35:06 30-Nov-07 IST][fox] Service started on port 1911
MESSAGE [13:35:06 30-Nov-07 IST][alarm.database] Created
MESSAGE [13:35:06 30-Nov-07 IST][sys] Services Initialized (204ms)
MESSAGE [13:35:06 30-Nov-07 IST][sys.mixin] Updated [0ms]
MESSAGE [13:35:06 30-Nov-07 IST][web.server] HTTP Server started on port 80
MESSAGE [13:35:06 30-Nov-07 IST][sys] nre.version: 3.1.29.2
MESSAGE [13:35:06 30-Nov-07 IST][sys] *** Station Started (171ms) [2562ms total] ***
niagara>

```

Auto-Start  
 Restart on Failure  
Start  
Stop  
Restart  
Reboot  
Kill  
Dump Threads  
Save Bog  
Verify Software  
Clear Output  
Pause Output  
Output Dialog  
Stream To File  
Output Settings



My Host : DVMCAMSER (training) Station (training) Station Summary

Nav My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
    - Station (training)
      - Config
      - Services
      - Drivers
      - NiagaraNetwork
    - Files
    - History

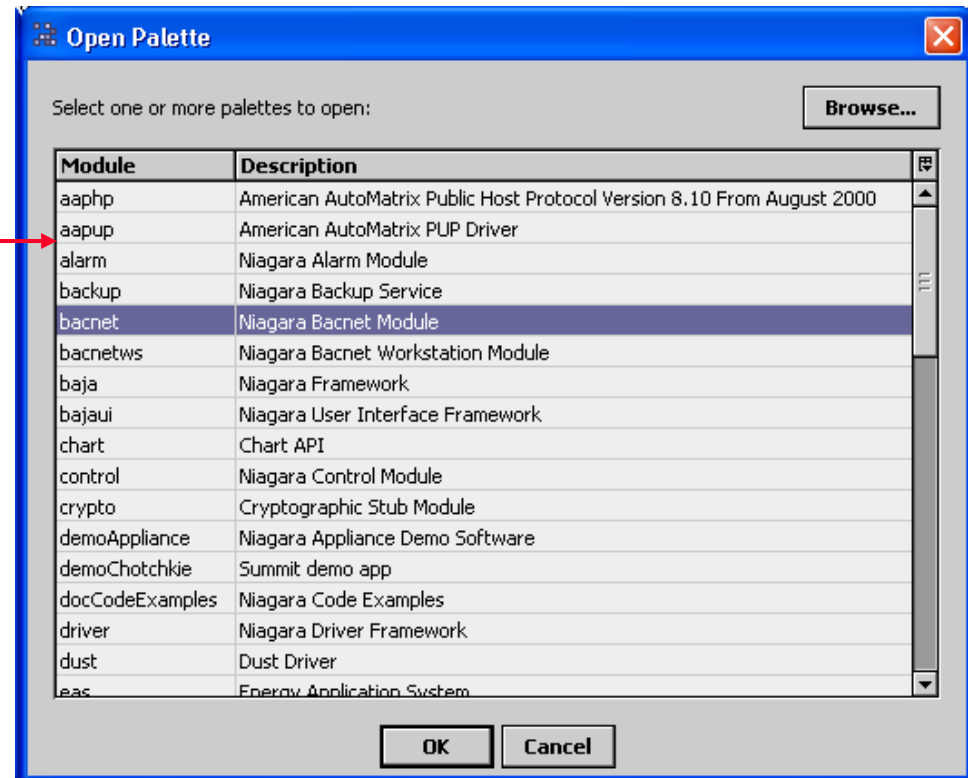
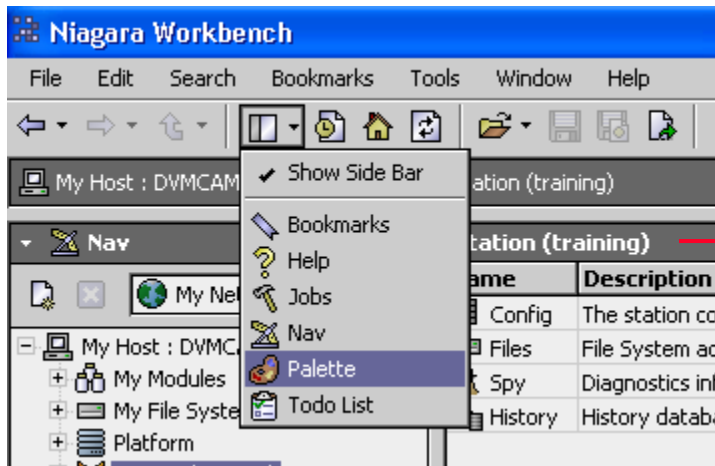
Station (training) 4 objects

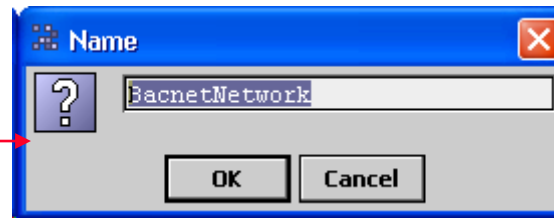
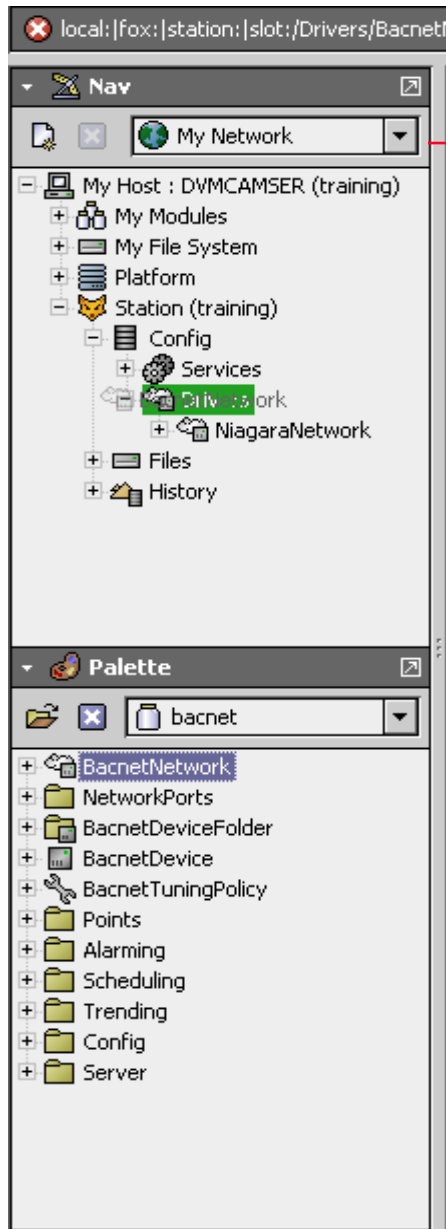
Name	Description
Config	The station configuration database
Files	File System accessed over Fox session
Spy	Diagnostics information for remote VM
History	History database

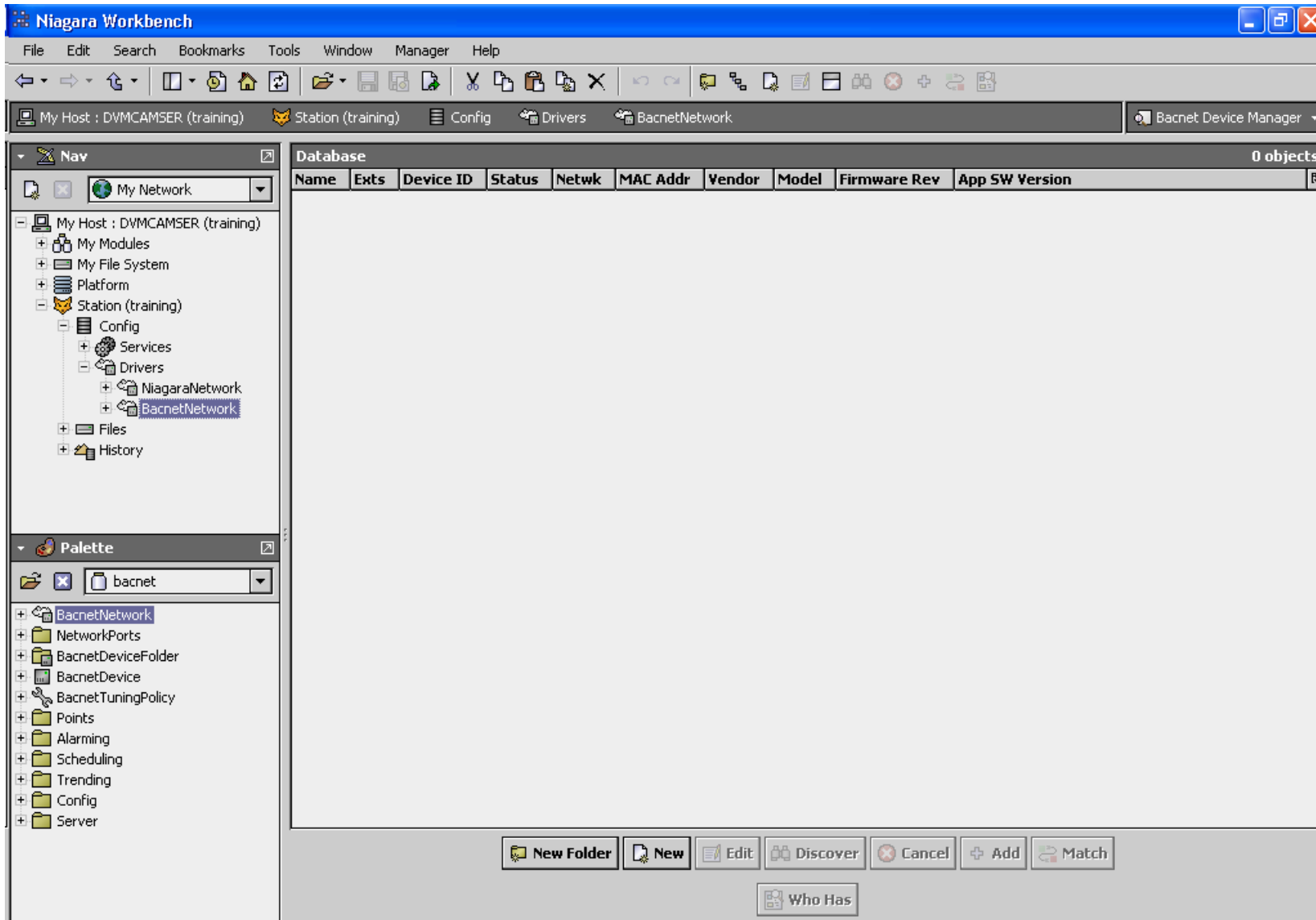
Summary Properties 9 objects

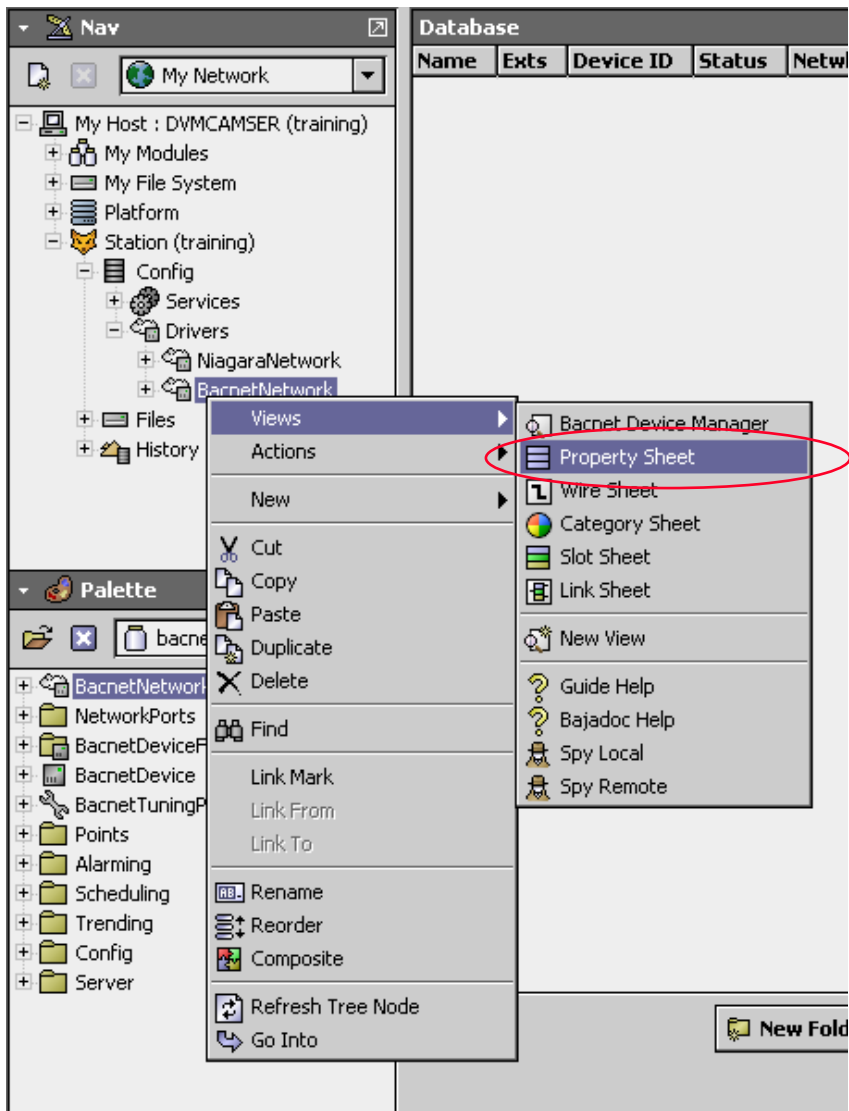
Property	Value
Station Name	training
Host	DVMCAMSER/200.0.0.3
Host Model	Workstation
Host Id	Win-622A-A9D1-C983-6579
Niagara Version	3.1.29.2
Java Version	Java HotSpot(TM) Client VM 1.5.0_06-b05
OS Version	x86 Windows XP 5.1
Locale	en_US
Current Time	30-Nov-07 1:37 PM Asia/Calcutta

Palette



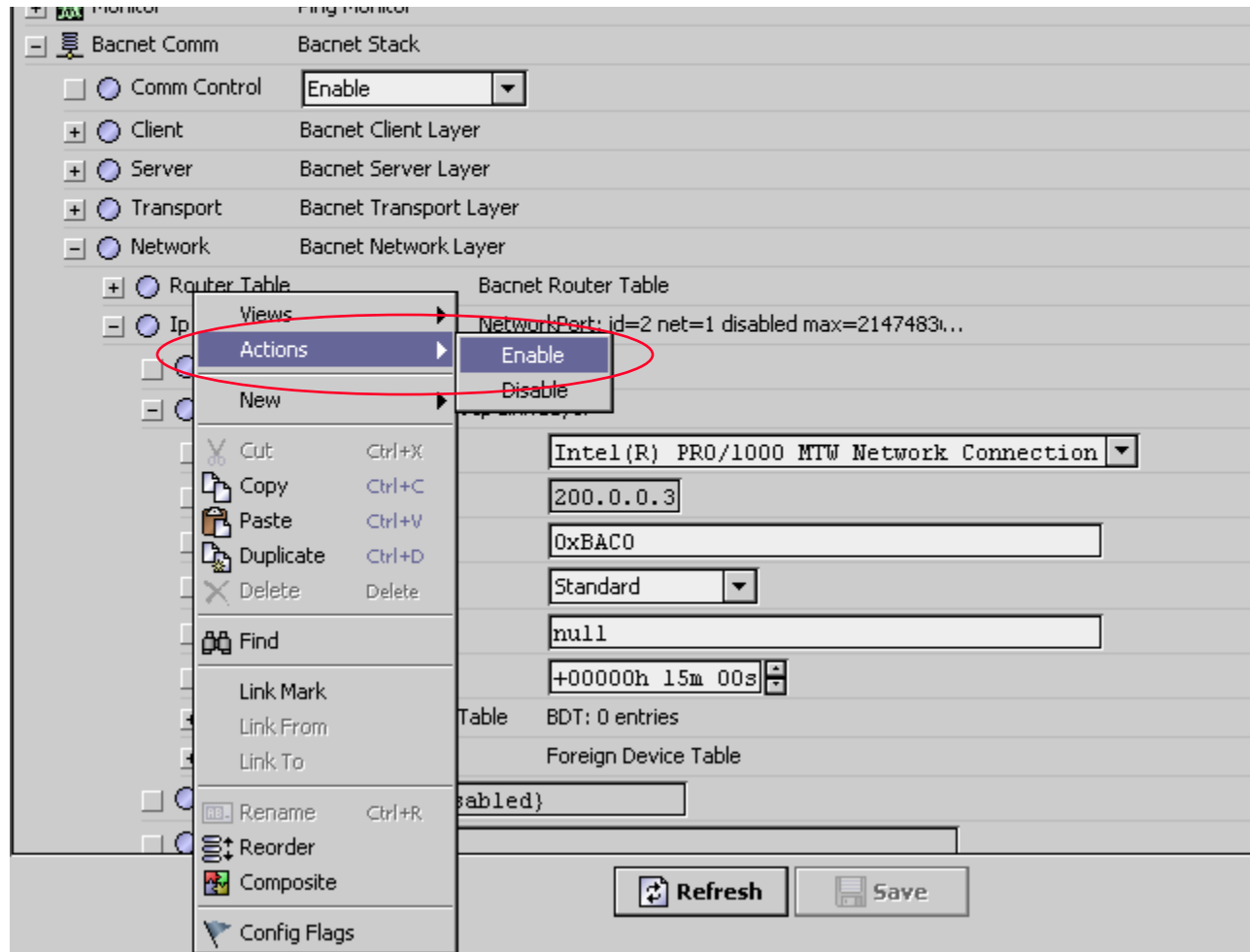
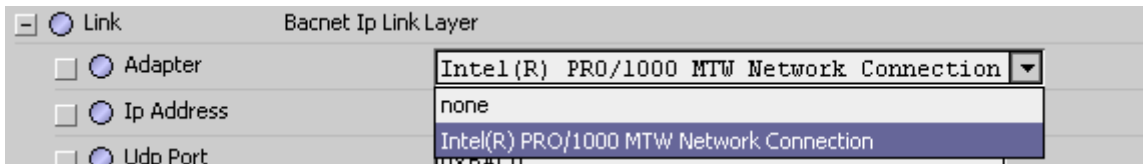






BacnetNetwork (Bacnet Network)

<input type="checkbox"/>	Status	{ok}
<input type="checkbox"/>	Enabled	<input checked="" type="radio"/> true
<input type="checkbox"/>	Fault Cause	
<input checked="" type="checkbox"/>	Health	Ok [30-Nov-07 1:48 PM Asia/Calcutta]
<input checked="" type="checkbox"/>	Alarm Source Info	Alarm Source Info
<input checked="" type="checkbox"/>	Monitor	Ping Monitor
<input checked="" type="checkbox"/>	Bacnet Comm	Bacnet Stack
<input type="checkbox"/>	Comm Control	Enable
<input checked="" type="checkbox"/>	Client	Bacnet Client Layer
<input checked="" type="checkbox"/>	Server	Bacnet Server Layer
<input checked="" type="checkbox"/>	Transport	Bacnet Transport Layer
<input checked="" type="checkbox"/>	Network	Bacnet Network Layer
<input checked="" type="checkbox"/>	Router Table	Bacnet Router Table
<input checked="" type="checkbox"/>	Ip Port	NetworkPort: id=2 net=1 disabled max=2147483...
<input type="checkbox"/>	Network Number	1
<input checked="" type="checkbox"/>	Link	Bacnet Ip Link Layer
<input type="checkbox"/>	Adapter	Intel(R) PRO/1000 MTW Network Connection
<input type="checkbox"/>	Ip Address	200.0.0.3
<input type="checkbox"/>	Udp Port	0xBAC0
<input type="checkbox"/>	Ip Device Type	Standard
<input type="checkbox"/>	Bbmd Address	null
<input type="checkbox"/>	Registration Lifetime	+000000h 15m 00s
<input checked="" type="checkbox"/>	Broadcast Distribution Table	BDT: 0 entries
<input checked="" type="checkbox"/>	Foreign Device Table	Foreign Device Table
<input type="checkbox"/>	Status	{disabled}
<input type="checkbox"/>	Fault Cause	



<input checked="" type="checkbox"/> <b>Router Table</b>	Bacnet Router Table
<input checked="" type="checkbox"/> <b>Ip Port</b>	NetworkPort: id=2 net=1 <b>enabled</b> max=2147483t...
<input type="checkbox"/> <b>Network Number</b>	1
<input checked="" type="checkbox"/> <b>Link</b>	Bacnet Ip Link Layer
<input type="checkbox"/> <b>Adapter</b>	Intel(R) PRO/1000 MTW Network Connection
<input type="checkbox"/> <b>Ip Address</b>	200.0.0.3
<input type="checkbox"/> <b>Udp Port</b>	0xBAC0
<input type="checkbox"/> <b>Ip Device Type</b>	Standard
<input type="checkbox"/> <b>Bbmd Address</b>	null
<input type="checkbox"/> <b>Registration Lifetime</b>	+00000h 15m 00s
<input checked="" type="checkbox"/> <b>Broadcast Distribution Table</b>	BDT: 0 entries
<input checked="" type="checkbox"/> <b>Foreign Device Table</b>	Foreign Device Table
<input type="checkbox"/> <b>Status</b>	{ok}
<input type="checkbox"/> <b>Fault Cause</b>	

BacnetNetwork (Bacnet Network)

Status {ok}

Enabled  true

Fault Cause

+  Health Ok [30-Nov-07 1:48 PM Asia/Calcutta]

+  Alarm Source Info Alarm Source Info

+  Monitor Ping Monitor

+  Bacnet Comm Bacnet Stack

-  Local Device Local Bacnet Device [device:-1]

Status {fault}

Fault Cause Invalid Object ID

Object Id device

System Status Operational

Vendor Name Tridium

Vendor Id

Model Name

Firmware Revision

Application Software Version

Location

Description

Protocol Version 1

Protocol Revision 4

Protocol Services Supported 111111111001011110010000011110011111001

Protocol Object Types Supported 111111010101111010110000

Max A P D U Length Accepted 1476

Segmentation Supported Segmented Both

Status {ok}

Fault Cause

Object Id device

System Status Operational

Protocol Version

Protocol Revision

Protocol Services Supported

Protocol Object Types Supported

Max A P D U Length Accepted

Segmentation Supported

**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork Bacnet Device Manager

**Nav**

- My Network
- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
    - Services
    - Drivers
      - NiagaraNetwork
      - BacnetNetwork
    - Files
    - History

**Database** 0 objects

Name	Exts	Device ID	Status	Netwk	MAC Addr	Vendor	Model	Firmware Rev	App SW Version
0 objects									

**Palette**

- bacnet
  - BacnetNetwork
  - NetworkPorts
  - BacnetDeviceFolder
  - BacnetDevice
  - BacnetTuningPolicy
  - Points
  - Alarming
  - Scheduling
  - Trending
  - Config
  - Server

New Folder New Edit Discover Cancel Add Match

Who Has

Bacnet Discover Devices Success >> [X]

**Discovered** 5 objects

Device Name	Device ID	Netwk	MAC Addr	Vendor	Model	Objects
IE03DVM200CS1	device:52255	1	200.0.0.101:0xBAC0	Honeywell	EBI Server	9
IO-30P-ME	device:60000	1	200.0.0.55:0xBAC0	Honeywell Automation	IO-30P-BN	37
IPC5_FF	device:132	1	200.0.0.30:0xBAC0	Honeywell Inc.	XL8000-IPC	123
SPC2	device:129	15	2	Honeywell Inc.	XL8000-SPC	19
SPC9	device:136	14	9	Honeywell Inc.	XL8000-SPC	23

**0 objects**

Device ID	Status	Netwk	MAC Addr	Vendor	Model	Firmware Rev	App SW Version
-----------	--------	-------	----------	--------	-------	--------------	----------------

[Green Checkmark]

**Configure Device Discovery** [X]

Device Discovery Config

Device Low Limit

Device High Limit

Networks  All Networks

1  14  15  16

Wait Response Time  s

**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork Bacnet Device Manager

Nav My Network

- My Host : DVMCAMSER (training)
  - My Modules
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  - Platform
  - Station (training)
    - Config
    - Services
    - Drivers
    - NiagaraNetwork
    - BacnetNetwork
  - Files
  - History

Palette bacnet

- BacnetNetwork
- NetworkPorts
- BacnetDeviceFolder
- BacnetDevice
- BacnetTuningPolicy
- Points
- Alarming
- Scheduling
- Trending
- Config
- Server

Bacnet Discover Devices Success >>

**Discovered** 5 objects

Device Name	Device ID	Netwk	MAC Addr	Vendor	Model	Objects
IE03DVM200CS1	device:52255	1	200.0.0.101:0xBAC0	Honeywell	EBI Server	9
IO-30P-ME	device:60000	1	200.0.0.55:0xBAC0	Honeywell Automation	IO-30P-BN	37
IPC5_FF	device:132	1	200.0.0.30:0xBAC0	Honeywell Inc.	XL8000-IPC	123
SPC2	device:129	15	2	Honeywell Inc.	XL8000-SPC	19
SPC9	device:136	14	9	Honeywell Inc.	XL8000-SPC	23

**Database** 0 objects

Name	Exts	Device ID	Status	Netwk	MAC Addr	Vendor	Model	Firmware Rev	App SW Version
IPC5_FF									

Drag & Drop to the Database Window

New Folder New Edit Discover Cancel Add Match

Who Has

**Add**

Name	Type	Device ID	Netwk	MAC Addr	Enabled	Use Cov	Max Cov Subscriptions	Poll Frequency	
IPC5_FF	Bacnet Device	device:132	1	200.0.0.30:0xBAC0	true	true	max	Normal	

Name: IPC5\_FF

Type: Bacnet Device

Device ID: Device 132

Netwk: 1 [0 - 65535]

MAC Addr: 200.0.0.30:0xBAC0

Enabled: true

Use Cov: true

Max Cov Subscriptions: max

Poll Frequency: Normal

Bacnet Discover Devices Success >> [X]

---

**Discovered** 5 objects

Device Name	Device ID	Netwk	MAC Addr	Vendor	Model	Objects
IE03DVM200C51	device:52255	1	200.0.0.101:0xBAC0	Honeywell	EBI Server	9
IO-30P-ME	device:60000	1	200.0.0.55:0xBAC0	Honeywell Automation	IO-30P-BN	37
IPC5_FF	device:132	1	200.0.0.30:0xBAC0	Honeywell Inc.	XL8000-IPC	123
SPC2	device:129	15	2	Honeywell Inc.	XL8000-SPC	19
SPC9	device:136	14	9	Honeywell Inc.	XL8000-SPC	23

---

**Database** 3 objects

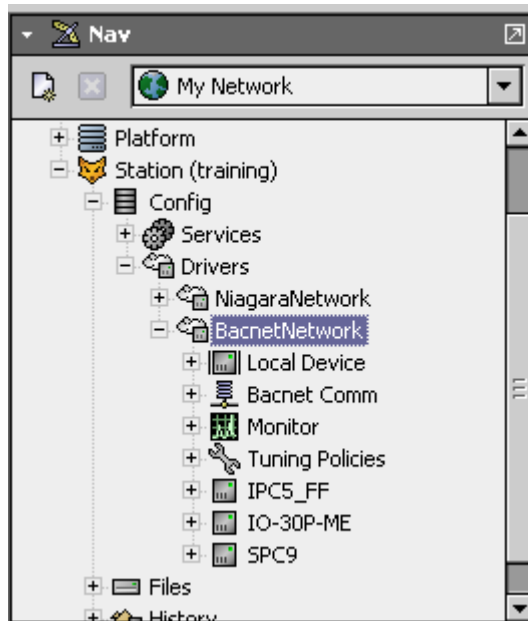
Name	Exts	Device ID	Status	Netwk	MAC Addr	Vendor	Model	Firmware Rev
IPC5_FF		device:132	{ok}	1	200.0.0.30:0xBAC0	Honeywell Inc.	XL8000-IPC	ComfortPoint_IPC1.0.0.j
IO-30P-ME		device:60000	{ok}	1	200.0.0.55:0xBAC0	Honeywell Automation	IO-30P-BN	1.1.00
SPC9		device:136	{ok}	14	9	Honeywell Inc.	XL8000-SPC	ComfortPoint_WAV_v1.0.0.e

---

[Navigation arrows]

New Folder New Edit Discover Cancel Add Match

Who Has





**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork IO-30P-ME Points Bacnet Point Manager

Nav My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
          - Local Device
          - Bacnet Comm
          - Monitor
          - Tuning Policies
          - IPCS\_FF
          - IO-30P-ME
            - Alarm Source Info
            - Points
            - Alarms
            - Schedules
            - Trend Logs
            - Config
            - SPC9
        - Files
        - History

Bacnet Discover Points Success >>

**Discovered 37 objects**

Object Name	Object ID	Property ID	Index	Value
+ IO-30P-ME	device:60000	objectIdentifier		device:60000
+ AI 1	analogInput:1	presentValue		103.6
+ AI 2	analogInput:2	presentValue		104.8
+ AI 3	analogInput:3	presentValue		-5.0
+ AI 4	analogInput:4	presentValue		-5.0
+ AI 5	analogInput:5	presentValue		-5.0
+ AI 6	analogInput:6	presentValue		-5.0
+ AI 7	analogInput:7	presentValue		-5.0
+ AI 8	analogInput:8	presentValue		-5.0
+ DI 1	binaryInput:1	presentValue		Inactive
+ DI 2	binaryInput:2	presentValue		Inactive
+ DI 3	binaryInput:3	presentValue		Inactive
+ DI 4	binaryInput:4	presentValue		Inactive

Database 0 objects

Name	Out	Object ID	Property ID	Index	Read	Write
------	-----	-----------	-------------	-------	------	-------

Palette New Folder New Edit Discover Cancel Add Match

**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork IO-30P-ME Points Bacnet Point Manager

Nav My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
          - Local Device
          - Bacnet Comm
          - Monitor
          - Tuning Policies
          - IPCS\_FF
          - IO-30P-ME
            - Alarm Source Info
            - Points
            - Alarms
            - Schedules
            - Trend Logs
            - Config
            - SPC9
      - Files
      - History

Bacnet Discover Points Success

**Discovered 37 objects**

Object Name	Object ID	Property ID	Index	Value
DO 1	binaryOutput:1	presentValue		Inactive
DO 2	binaryOutput:2	presentValue		Inactive
DO 3	binaryOutput:3	presentValue		Inactive
DO 4	binaryOutput:4	presentValue		Inactive
DO 5	binaryOutput:5	presentValue		Inactive
DO 6	binaryOutput:6	presentValue		Inactive
DO 7	binaryOutput:7	presentValue		Inactive
DO 8	binaryOutput:8	presentValue		Inactive
AO 1	analogOutput:1	presentValue	0.0	
AO 2	analogOutput:2	presentValue	0.0	
AO 3	analogOutput:3	presentValue	0.0	
AO 4	analogOutput:4	presentValue	0.0	

**Database 0 objects**

Name	Out	Object ID	Property ID	Index	Read	Write
Drag & Drop only the points needed.						
		AI 1				
		AI 2				
		AI 3				
		AI 4				
		AI 5				
		AI 6				
		AI 7				
		AI 8				
		DI 1				
		DI 2				
		DI 3				
		DI 4				

Add
✕

Name	Type	Enabled	Object ID	Property ID	Index	Tuning Policy Name	Data Type	Read	Write	Device Facets	Facets
AI 1	Numeric Point	true	analogInput:1	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 2	Numeric Point	true	analogInput:2	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 3	Numeric Point	true	analogInput:3	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 4	Numeric Point	true	analogInput:4	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 5	Numeric Point	true	analogInput:5	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 6	Numeric Point	true	analogInput:6	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 7	Numeric Point	true	analogInput:7	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
AI 8	Numeric Point	true	analogInput:8	Present Value	-1	defaultPolicy	REAL	unsubscribed	readonly	units=°C	units=
DI 1	Boolean Point	true	binaryInput:1	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 2	Boolean Point	true	binaryInput:2	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 3	Boolean Point	true	binaryInput:3	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 4	Boolean Point	true	binaryInput:4	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 5	Boolean Point	true	binaryInput:5	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 6	Boolean Point	true	binaryInput:6	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 7	Boolean Point	true	binaryInput:7	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false
DI 8	Boolean Point	true	binaryInput:8	Present Value	-1	defaultPolicy	ENUMERATED	unsubscribed	readonly	falseText=OFF,trueText=ON	false

Name: AI 1

Type: Numeric Point

Enabled:  true

Object ID: Analog Input 1

Property ID: Present Value

Index: -1

Tuning Policy Name: Default Policy

Data Type: REAL

Read: unsubscribed

Write: readonly

Device Facets: units=°C

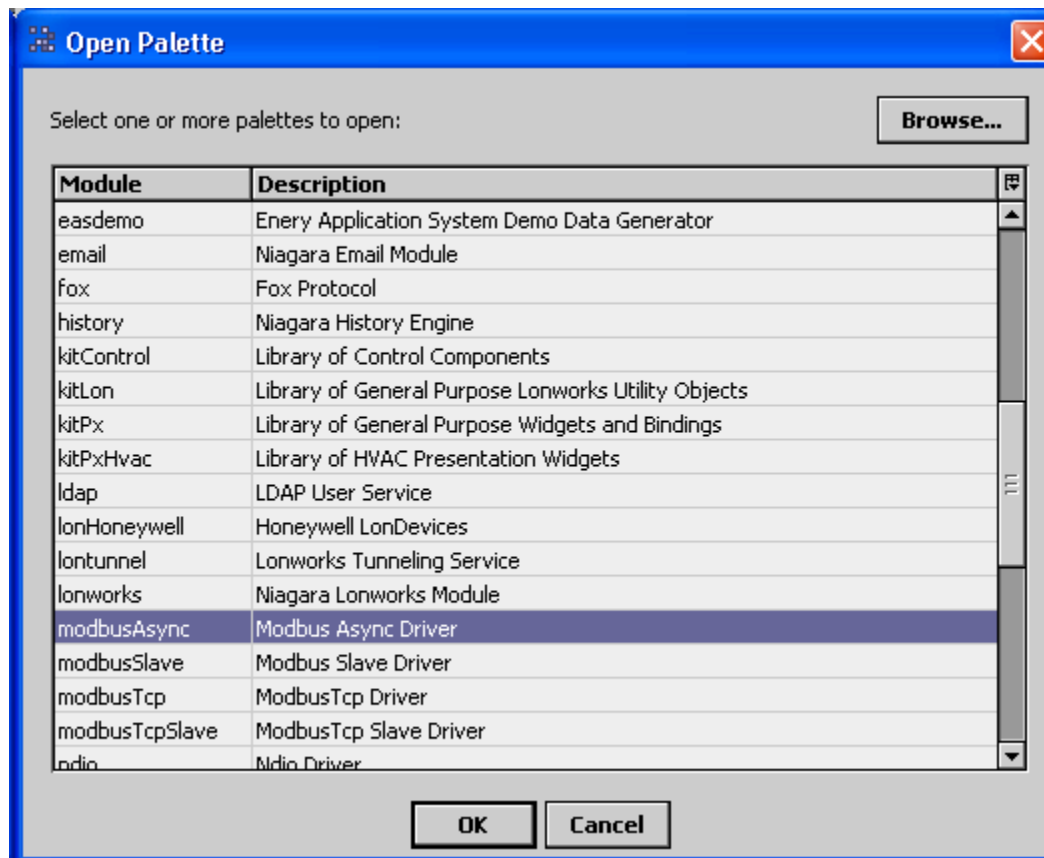
Facets: units=°C

Conversion: Default

Select the Type of point for Pseudo/virtual points as writable only if you need to write into the point. E.g. Set points, Enable/disable points, etc.

Also, The Output points are by default disabled, i.e. you cannot change them from the JACE. So, only if needed enable these points.





**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVCMASER (training) Station (training) Config Drivers BacnetNetwork IO-30P-ME Points Bacnet Point Manager

Nav My Network

My Host : DVCMASER (training)

- My Modules
- My File System
- Platform
- Station (training)
  - Config
  - Services
  - Modbus
    - Drivers
      - NiagaraNetwork
      - BacnetNetwork
    - Home
    - Files
    - History

Palette modbusAsync

- ModbusAsyncNetwork
- ModbusAsyncDevice
- ModbusAsyncDeviceFolder
- ModbusClientPointFolder
- Presets
- Modbus File Records
- Client Points
- Device Level Polling

Bacnet Discover Points Success

**Discovered 37 objects**

Object Name	Object ID	Property ID	Index	Value
DO 1	binaryOutput:1	presentValue		Inactive
DO 2	binaryOutput:2	presentValue		Inactive
DO 3	binaryOutput:3	presentValue		Inactive
DO 4	binaryOutput:4	presentValue		Inactive
DO 5	binaryOutput:5	presentValue		Inactive
DO 6	binaryOutput:6	presentValue		Inactive
DO 7	binaryOutput:7	presentValue		Inactive
DO 8	binaryOutput:8	presentValue		Inactive
AO 1	analogOutput:1	presentValue		0.0
AO 2	analogOutput:2	presentValue		0.0
AO 3	analogOutput:3	presentValue		0.0
AO 4	analogOutput:4	presentValue		0.0

Database 36 objects

Name	Out	Object ID	Property ID	Index	Read	Write	Fault Cause
AI 1	103.6 °C {fault}	analogInput:1	Present Value	-1	Polled	readonly	
AI 2	104.8 °C {fault}	analogInput:2	Present Value	-1	Polled	readonly	
AI 3	-5.0 °C {fault}	analogInput:3	Present Value	-1	Polled	readonly	
AI 4	-5.0 °C {fault}	analogInput:4	Present Value	-1	Polled	readonly	
AI 5	-5.0 °C {fault}	analogInput:5	Present Value	-1	Polled	readonly	
AI 6	-5.0 °C {fault}	analogInput:6	Present Value	-1	Polled	readonly	
AI 7	-5.0 °C {fault}	analogInput:7	Present Value	-1	Polled	readonly	
AI 8	-5.0 °C {fault}	analogInput:8	Present Value	-1	Polled	readonly	
DI 1	OFF {ok}	binaryInput:1	Present Value	-1	Polled	readonly	
DI 2	OFF {ok}	binaryInput:2	Present Value	-1	Polled	readonly	
DI 3	OFF {ok}	binaryInput:3	Present Value	-1	Polled	readonly	
DI 4	OFF {ok}	binaryInput:4	Present Value	-1	Polled	readonly	
DI 5	OFF {ok}	binaryInput:5	Present Value	-1	Polled	readonly	
DI 6	OFF {ok}	binaryInput:6	Present Value	-1	Polled	readonly	
DI 7	OFF {ok}	binaryInput:7	Present Value	-1	Polled	readonly	

New Folder New Edit Discover Cancel Add Match

**Drag and drop Modbus Async N/W over drivers to add a modbus n/w**

Nav

My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
        - ModbusAsyncNetwork
    - Hor
    - Files
    - History

Palette

- modt
- ModbusAsync
- ModbusAsync
- ModbusAsync
- ModbusClient
- Presets
- Modbus File R
- Client Points
- Device Level P

Database

Name	Exts	Status	Device Addr

Views

- Modbus Async Device Manager
- Property Sheet
- Wire Sheet
- Category Sheet
- Slot Sheet
- Link Sheet

Actions

- Cut
- Copy
- Paste
- Duplicate
- Delete
- Find
- Link Mark
- Link From
- Link To
- Rename
- Reorder
- Composite
- Refresh Tree Node
- Go Into

New View

- Guide Help
- Bajadoc Help
- Spy Local
- Spy Remote

**Niagara Workbench**

File Edit Search Bookmarks Tools Window Help

My Host : DVMCAMSER (training) Station (training) Config Drivers ModbusAsyncNetwork Property Sheet

**Nav**

- My Network
- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
        - ModbusAsyncNetwork**
      - Home
      - Files
      - History

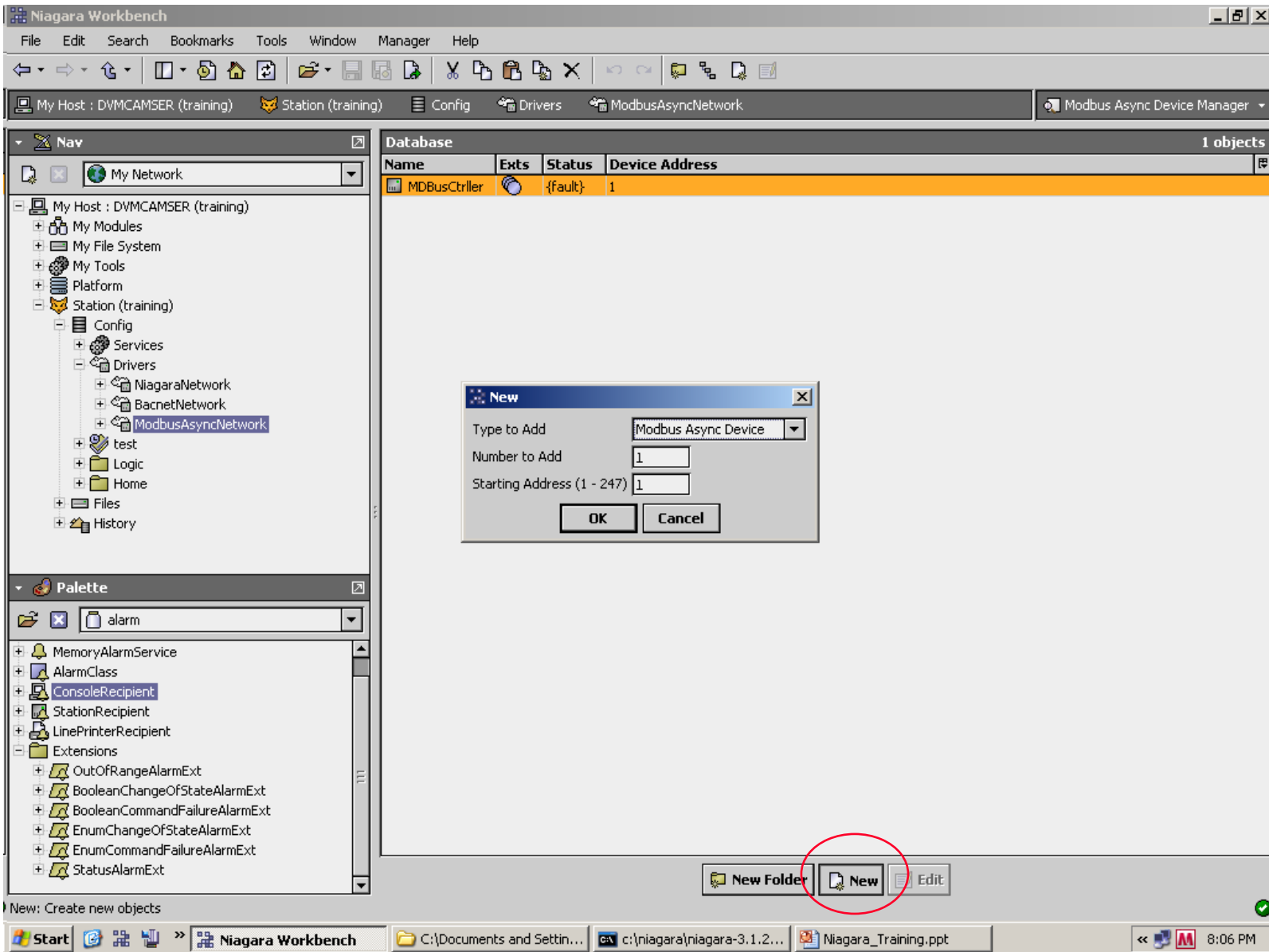
**Palette**

- modbusAsync
- ModbusAsyncNetwork**
- ModbusAsyncDevice
- ModbusAsyncDeviceFolder
- ModbusClientPointFolder
- Presets
- Modbus File Records
- Client Points
- Device Level Polling

**ModbusAsyncNetwork (Modbus Async Network)**

- Status {ok}
- Enabled true
- Fault Cause
- Health Ok [30-Nov-07 2:31 PM Asia/Calcutta]
- Alarm Source Info Alarm Source Info
- Monitor Ping Monitor
- Tuning Policies Tuning Policy Map
- Poll Scheduler Basic Poll Scheduler
- Retry Count 1
- Response Timeout +00000h 00m 01.000s
- Float Byte Order Order3210
- Long Byte Order Order3210
- Use Preset Multiple Register false
- Use Force Multiple Coil false
- Max Fails Until Device Down 2 [0 - max]
- Inter Message Delay 00000h 00m 00.000s [0ms - 1sec]
- Serial Port Config Serial Helper
  - Status {ok}
  - Port Name COM3
  - Baud Rate Baud9600
  - Data Bits Data Bits8
  - Stop Bits Stop Bit1
  - Parity None
  - Flow Control Mode  RtsCtsOnInput  RtsCtsOnOutput  XonXoffOnInput  XonXoffOnOutput
  - Modbus Data Mode

Refresh Save



New

Name	Type	Enabled	Device Address	Modbus Config	Poll Frequency	Ping A
MDBusCtrller	Modbus Async Device	true	1	false:order3210	Normal	hex:0

Name: MDBusCtrller

Type: Modbus Async Device

Enabled: true

Device Address: 1 [1 - 247]

Modbus Config

Modbus Client Config

- Override Network: false
- Float Byte Order: Order3210
- Long Byte Order: Order3210
- Use Force Multiple Coil: false
- Use Preset Multiple Register: false

Poll Frequency: Normal

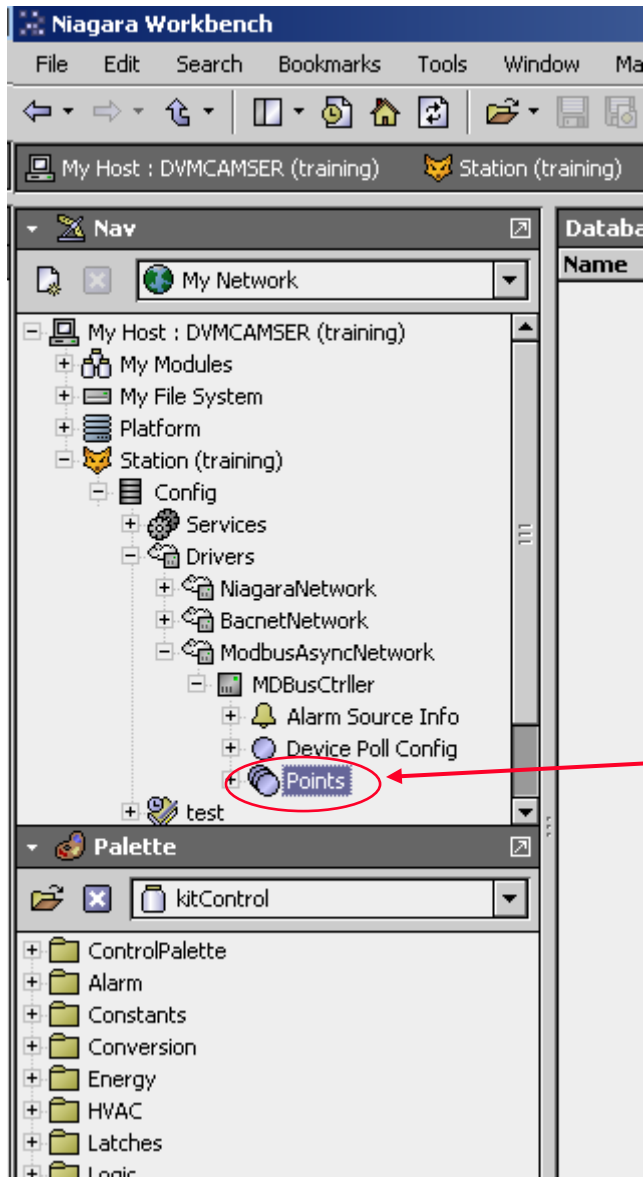
Ping Address

Flex Address

- Address Format: Hex
- Address: 0

Ping Address Data Type: Integer Type

OK Cancel



Double Click on Points to go to the modbus controller's point database

**New**

Type to Add: Boolean Writable

Number to Add: Boolean Writable

Starting Address: Modbus

Data Type (if applicable): 0

OK Cancel

**New**

Type to Add: Numeric Writable

Number to Add: 1

Starting Address: Modbus

Data Type (if applicable): integerType

OK Cancel

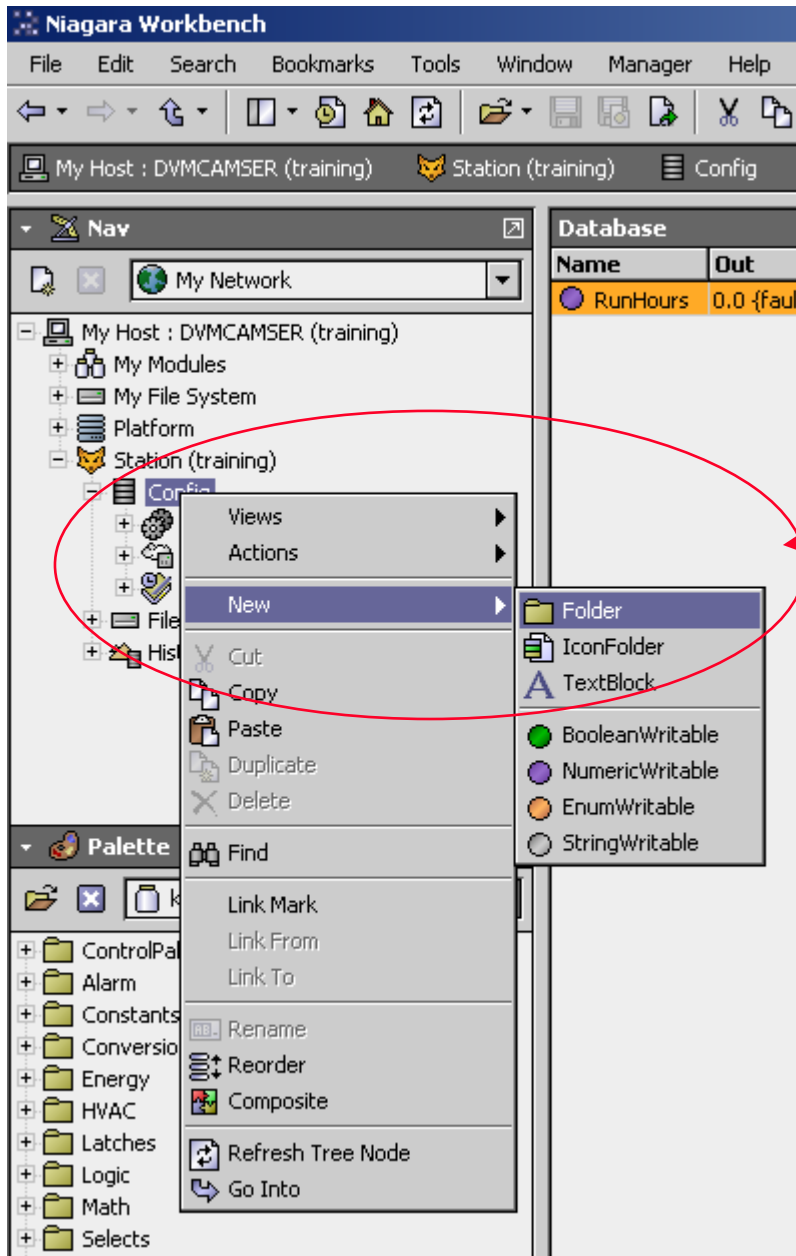
**New**

Name	Type	Enabled	Tuning Policy Name	Poll Frequency	Data Address	Reg Type	Data Type	Status Type	Bit Number	Num
RunHours	Numeric Point	true	defaultPolicy	Normal	modbus:3501	Holding	Integer Type			

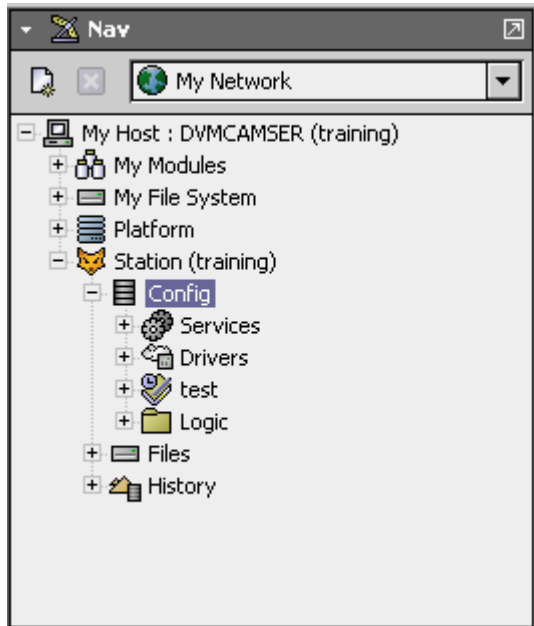
Name: RunHours  
 Type: Numeric Point  
 Enabled: true  
 Tuning Policy Name: Default Policy  
 Poll Frequency: Normal  
 Data Address: Flex Address, Address Format: Modbus, Address: 3501  
 Reg Type: Holding  
 Data Type: Integer Type  
 Status Type  
 Bit Number  
 Number Registers  
 Device Facets: units=null,precision=1,min=-inf,max=+inf  
 Facets: units=null,precision=1,min=-inf,max=+inf  
 Conversion: Default

OK Cancel

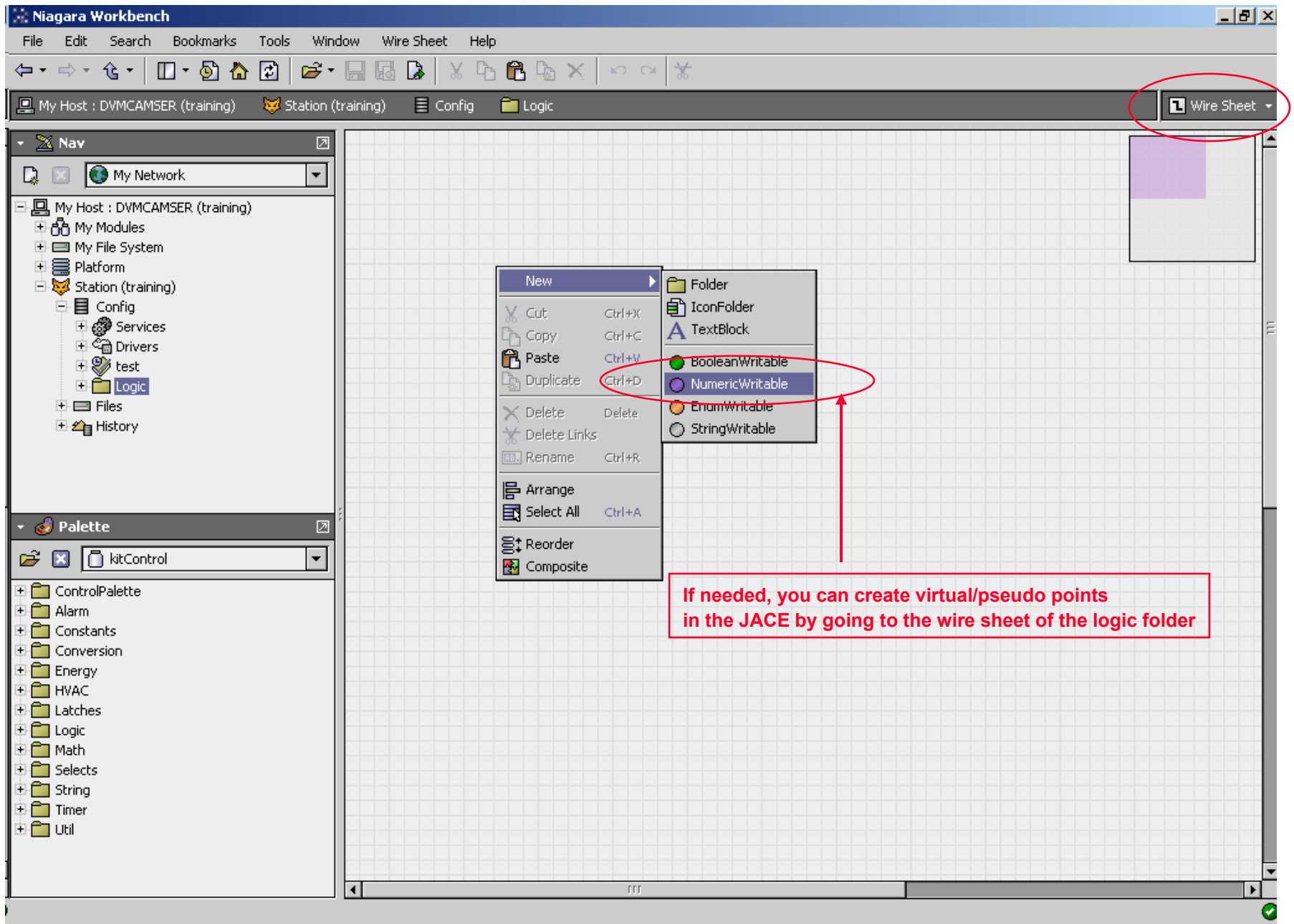
# Creating logic in the JACE & linking it to physical points

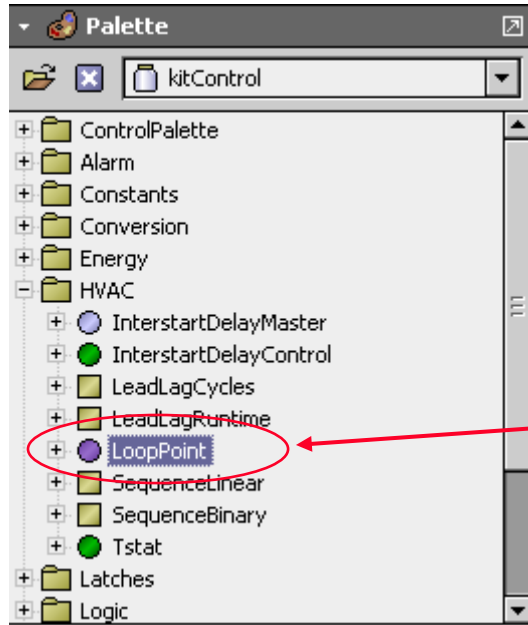


You can create a folder in the "config" folder named as 'logic'

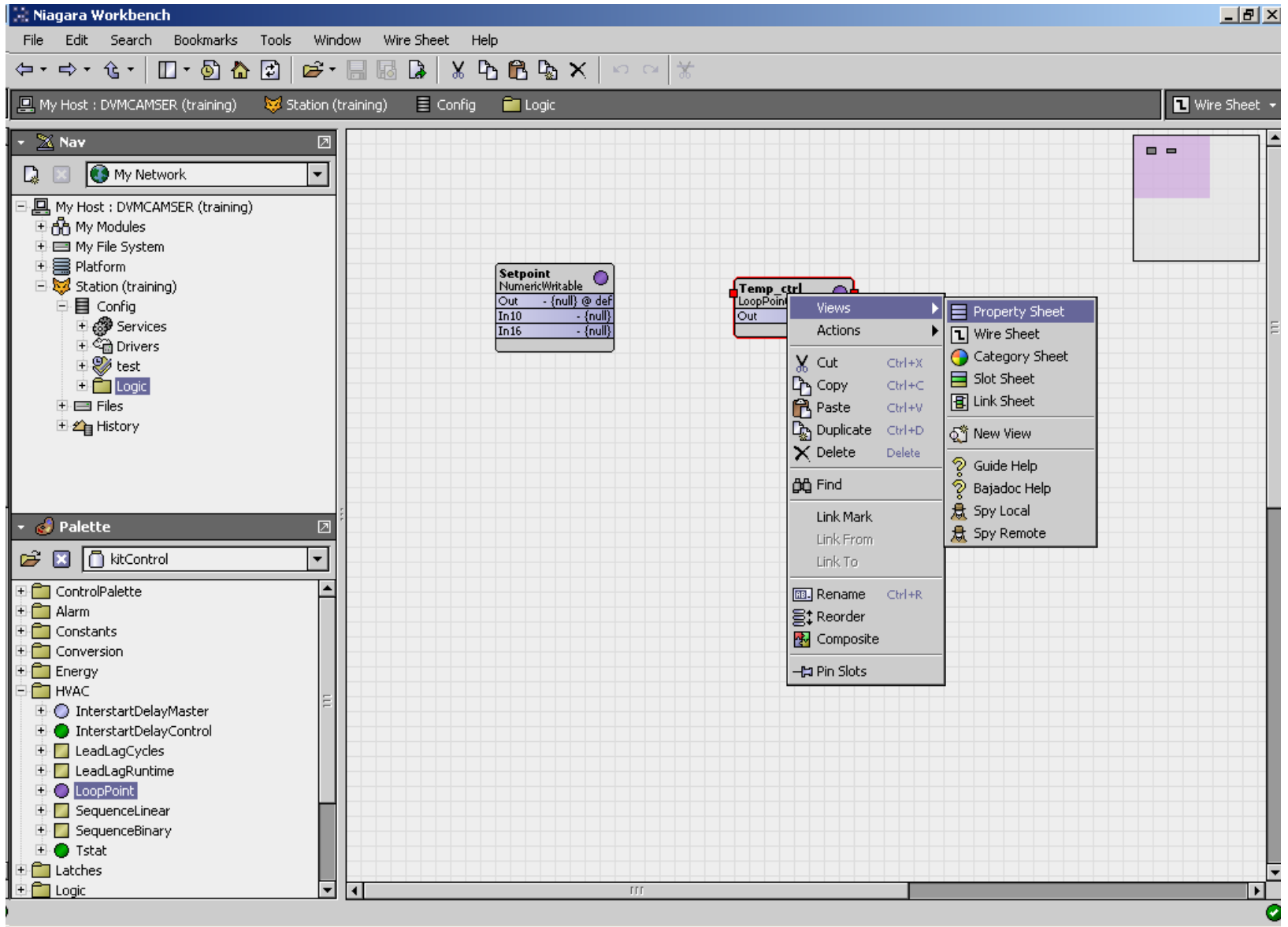


Your 'Nav' menu shall look somewhat like above





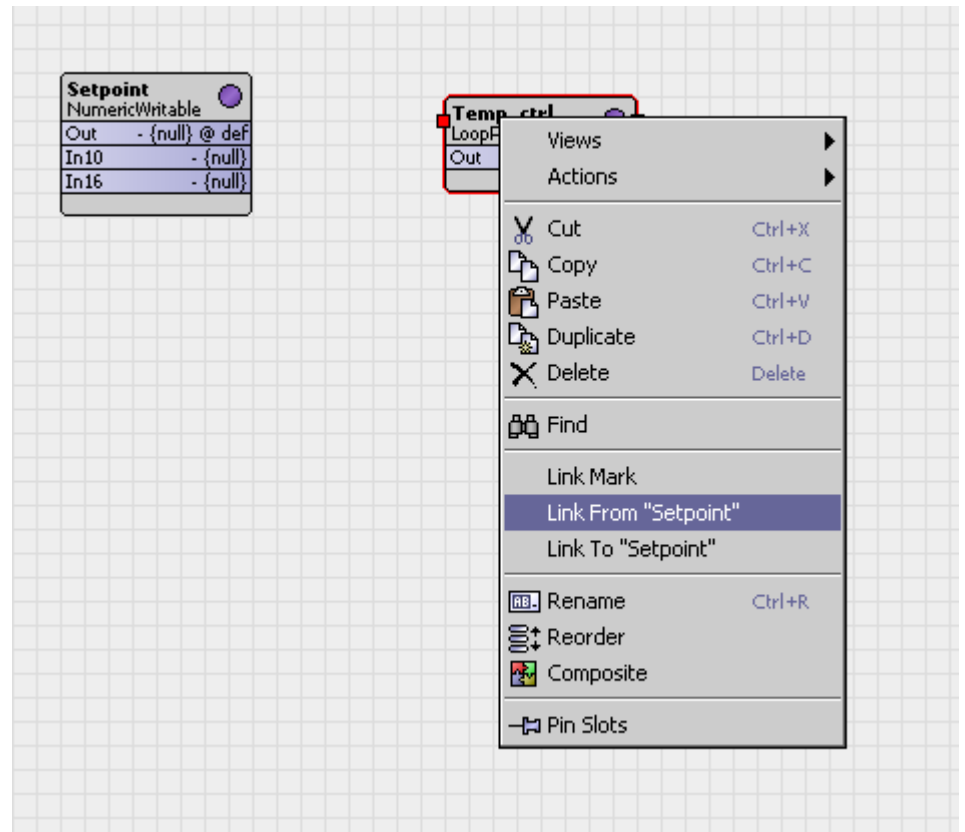
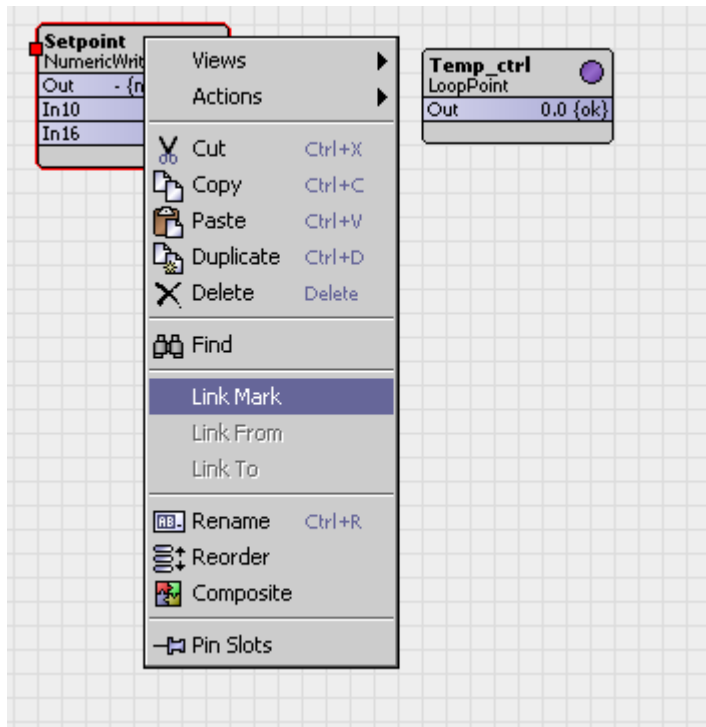
**A loop point is basically a PID block  
Similarly, all other logics can be found in the "kitControl" palette**

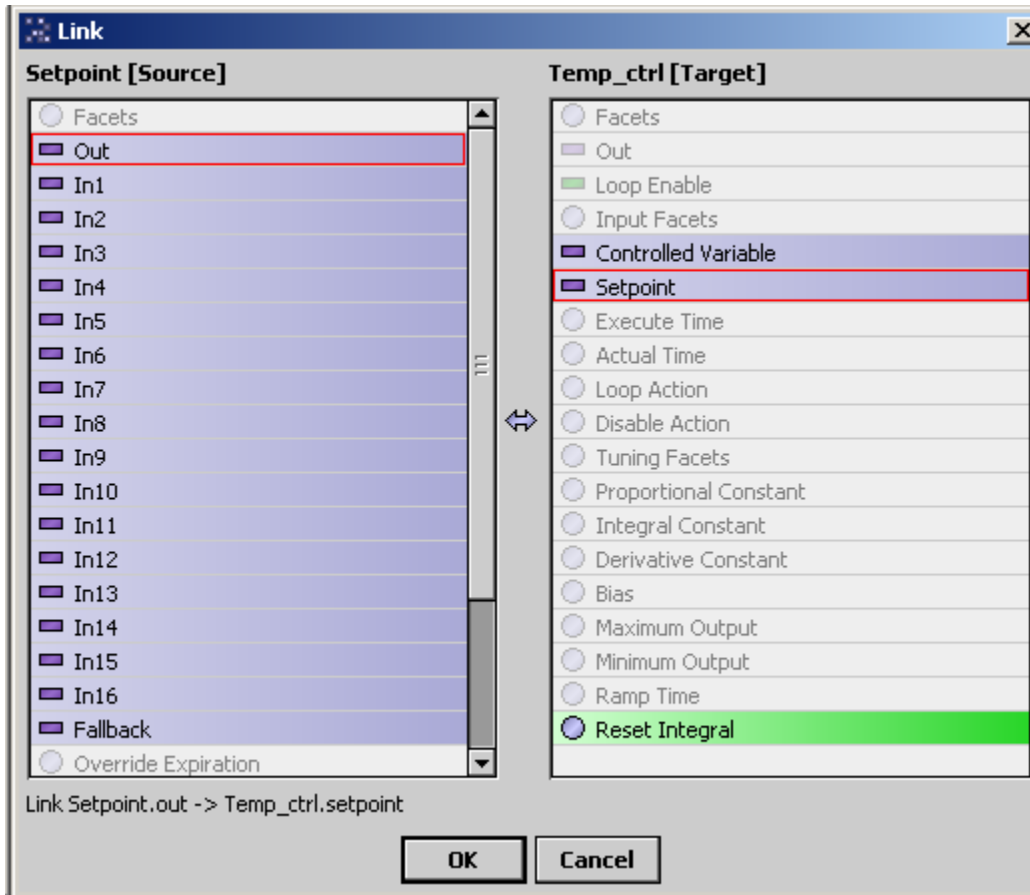


Temp\_ctrl (Loop Point)

<input type="checkbox"/> Facets	units=null,precision=1,min=-inf,max=+inf >>
+  Proxy Ext	null
<input type="checkbox"/> Out	0.0 {ok}
<input type="checkbox"/> Loop Enable	true {ok} ▾
<input type="checkbox"/> Input Facets	units=null,precision=1,min=-inf,max=+inf >>
<input type="checkbox"/> Controlled Variable	0.0 {ok} ▾
<input type="checkbox"/> Setpoint	0.0 {ok} ▾
<input type="checkbox"/> Execute Time	+000000h 00m 00.500s ▾
<input type="checkbox"/> Actual Time	515
<input type="checkbox"/> Loop Action	Direct ▾
<input type="checkbox"/> Disable Action	Zero ▾
<input type="checkbox"/> Tuning Facets	units=null,precision=3,min=-inf,max=+inf >>
<input type="checkbox"/> Proportional Constant	3.000
<input type="checkbox"/> Integral Constant	1000.000
<input type="checkbox"/> Derivative Constant	0.000
<input type="checkbox"/> Bias	0.00
<input type="checkbox"/> Maximum Output	100.00
<input type="checkbox"/> Minimum Output	0.00
<input type="checkbox"/> Ramp Time	+000000h 00m 00s ▾

Refresh Save





Nav

My Network

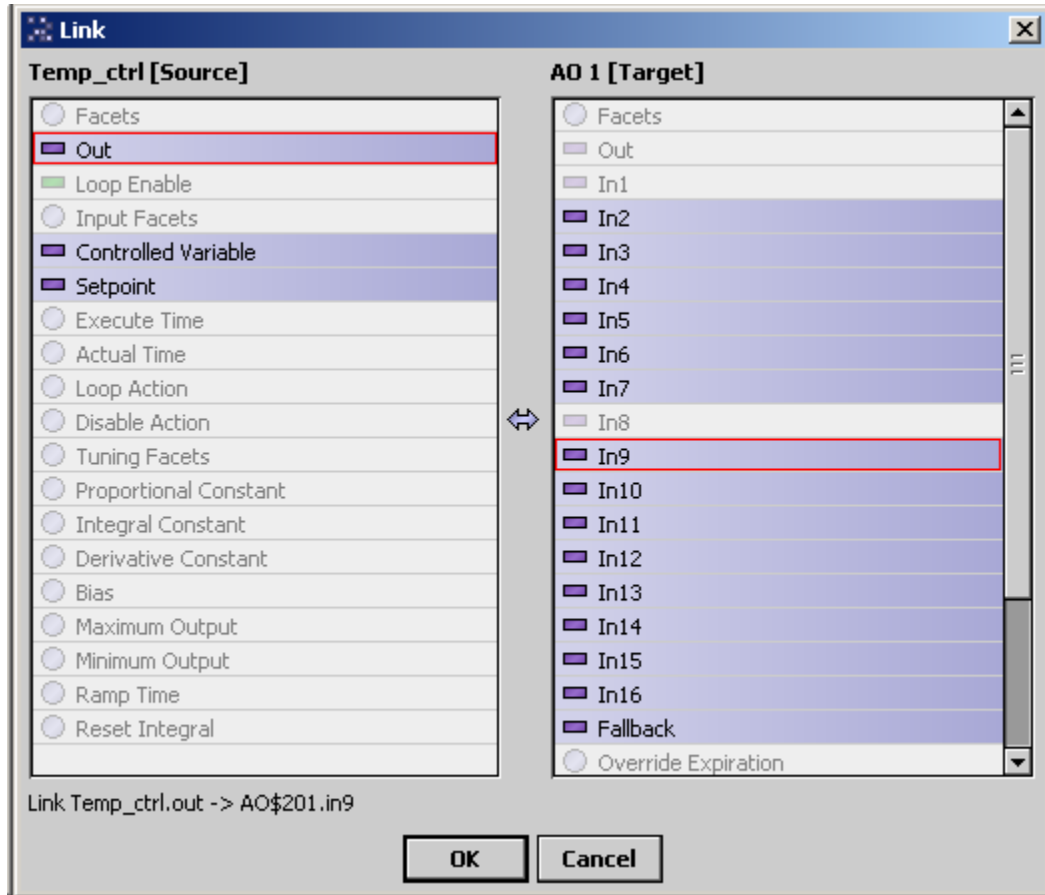
- + AI 2
- + AI 3
- + AI 4
- + AI 5
- + AI 6
- + AI 7
- + AI 8
- + AI 9
- + Views
- + Actions
- + New
- + Cut
- + Copy
- + Paste
- + Duplicate
- + Delete
- + Find
- + Link Mark
- + Link From "Temp\_ctrl"
- + Link To "Temp\_ctrl"
- + Rename
- + Reorder
- + Composite
- + Refresh Tree Node
- + Go Into

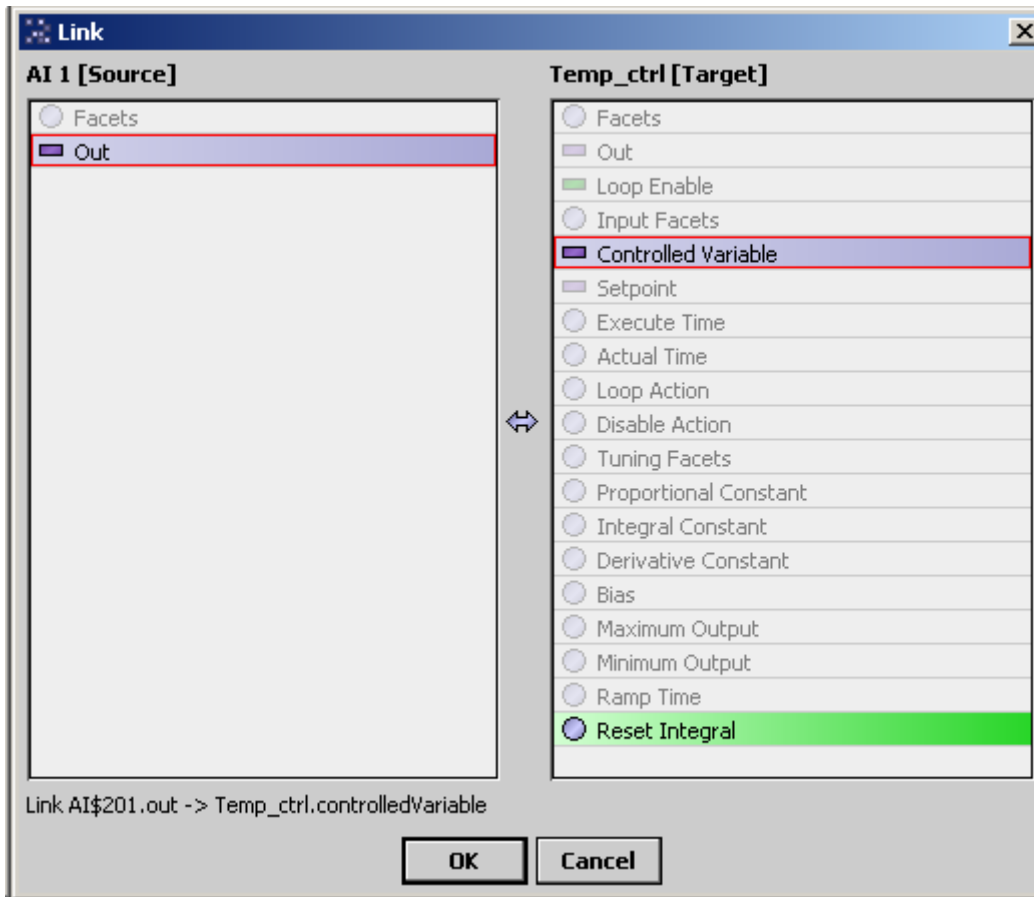
Palette

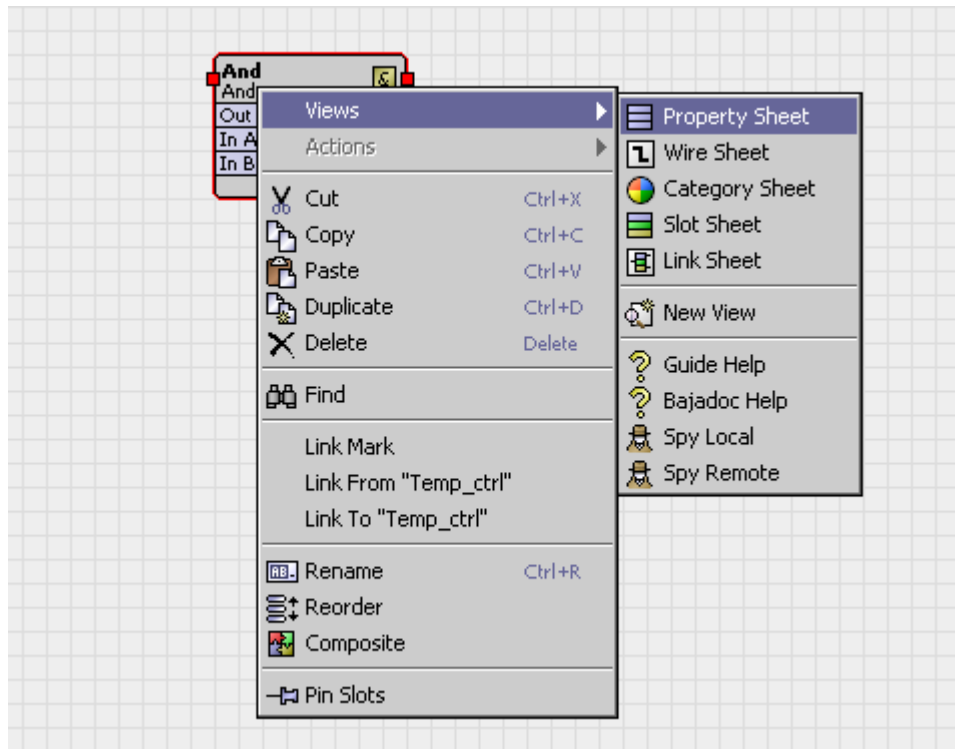
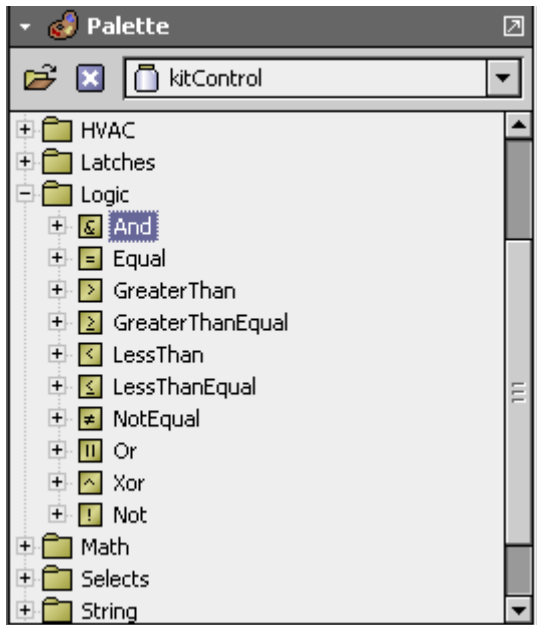
kitControl

- + ControlPalette
- + Alarm
- + Constants
- + Conversion
- + Energy
- + HVAC
  - + InterstartDelayMas
  - + InterstartDelayCon
  - + LeadLagCycles
  - + LeadLagRuntime
  - + LoopPoint
  - + SequenceLinear
  - + SequenceBinary
  - + Tstat










And (And)

Facets trueText=true,falseText=false >> 

Proxy Ext null

Out - {null}

Null On Inactive  false

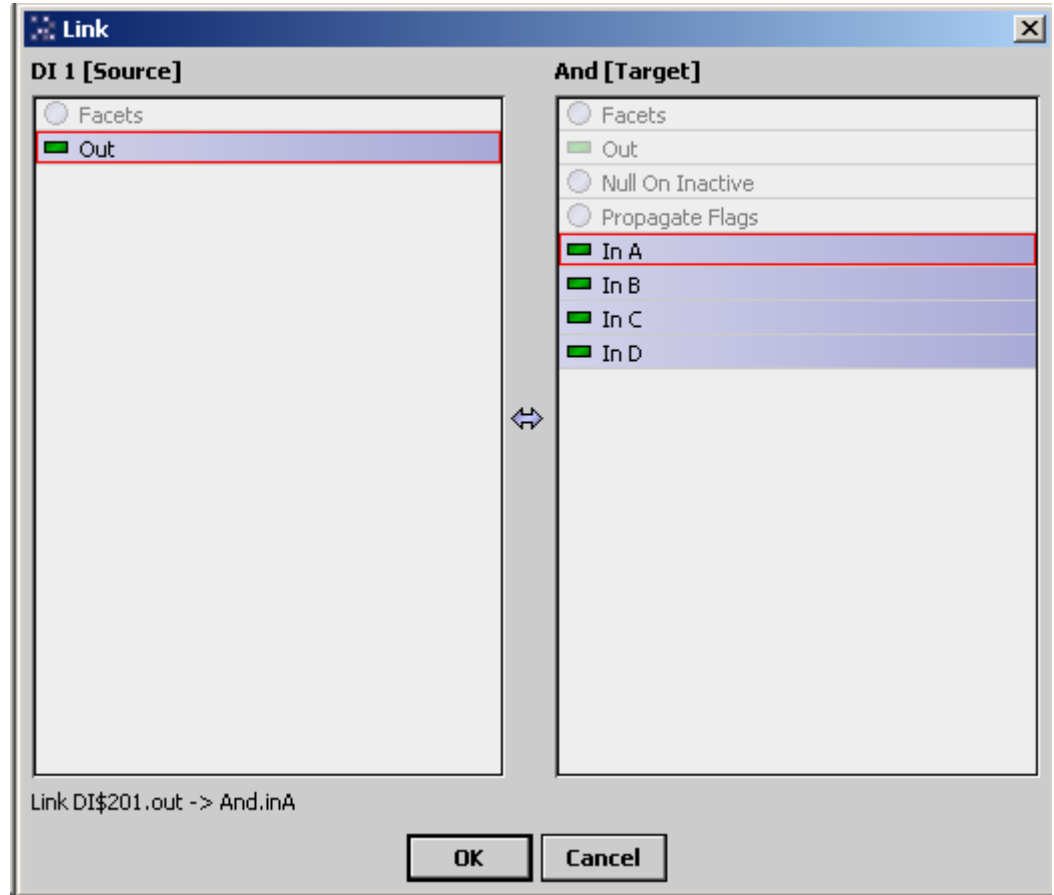
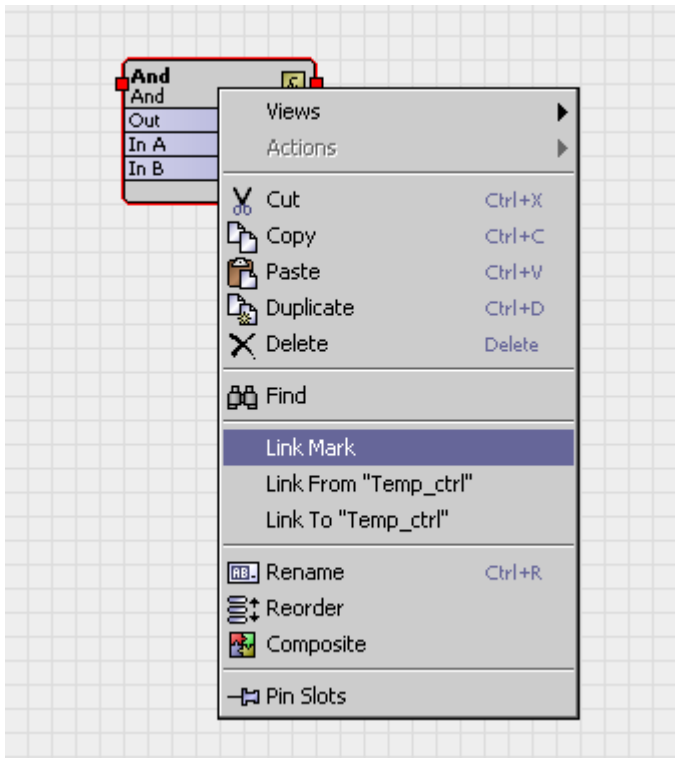
Propagate Flags  disabled  fault  down  alarm  stale  overridden  null  unackedAlarm

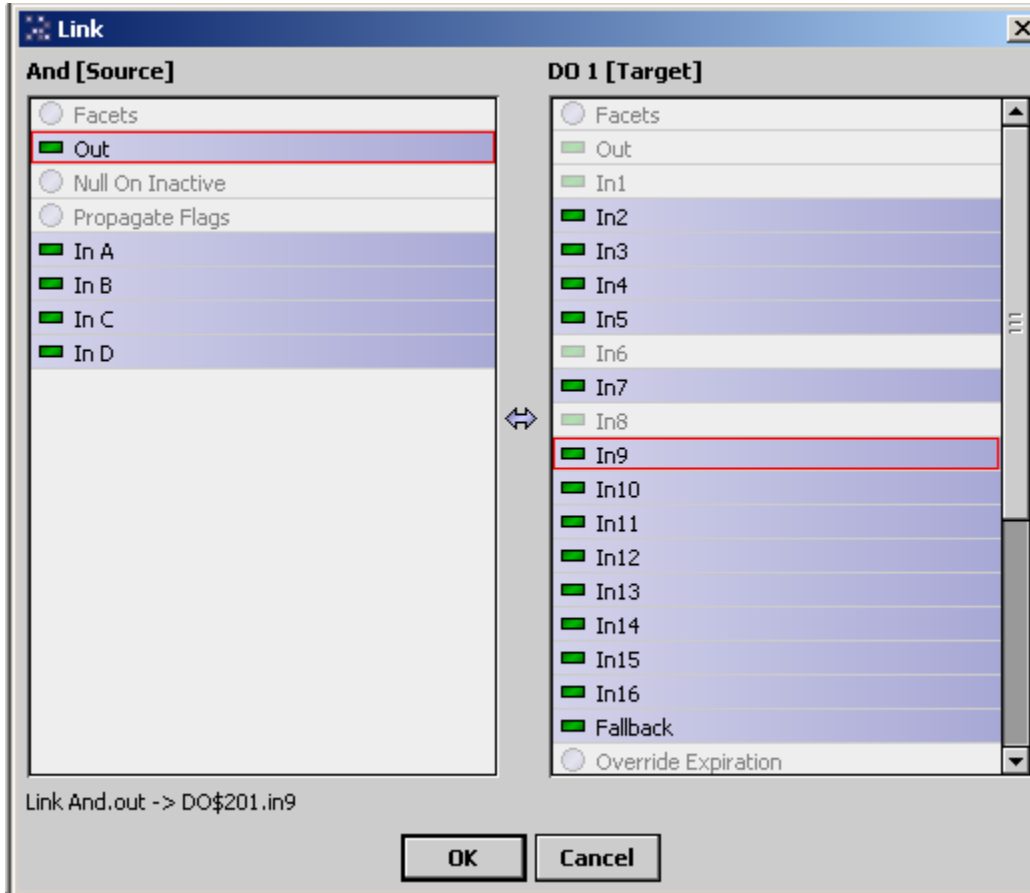
In A - {null} ▾

In B - {null} ▾

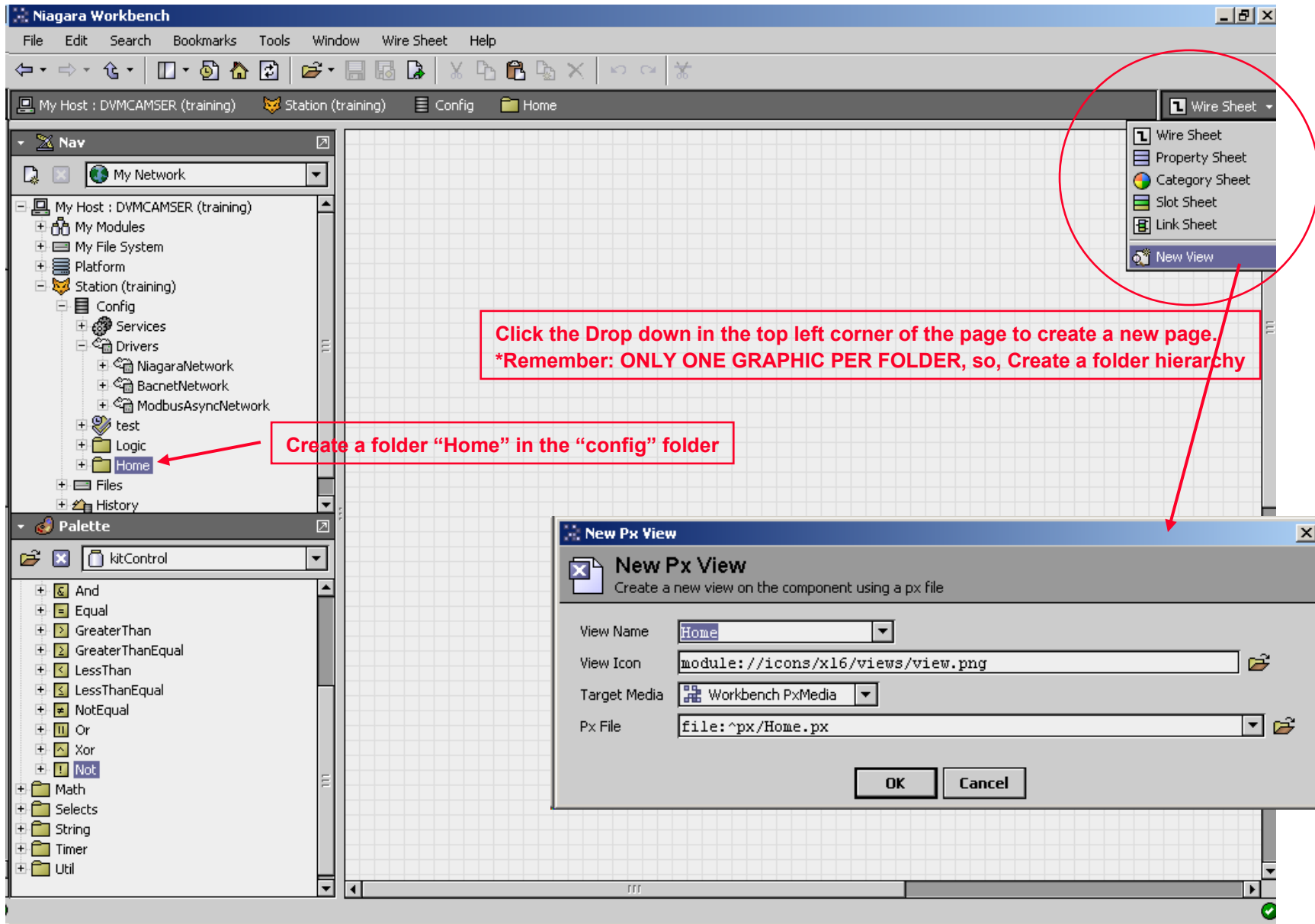
In C - {null} ▾

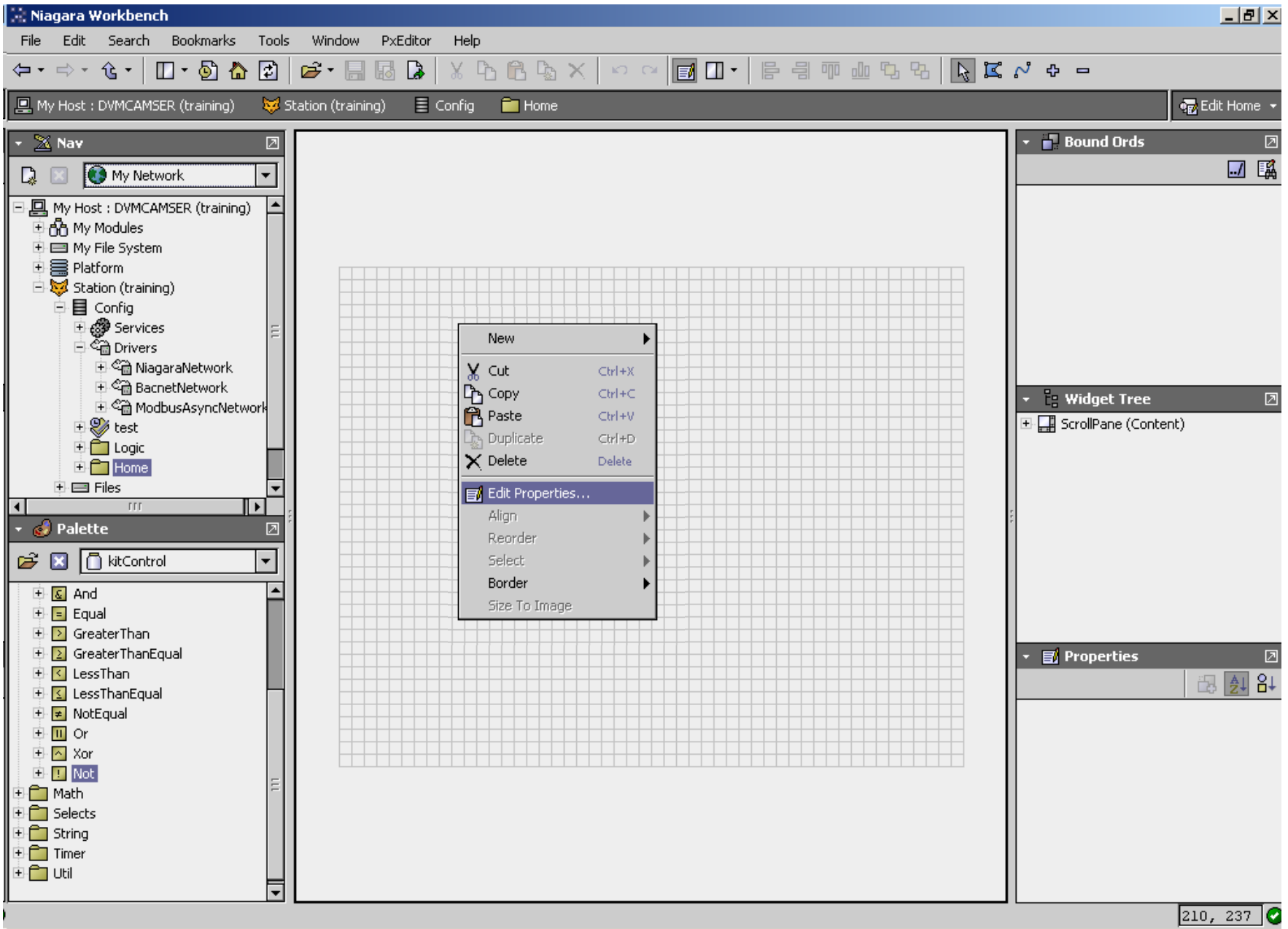
In D - {null} ▾

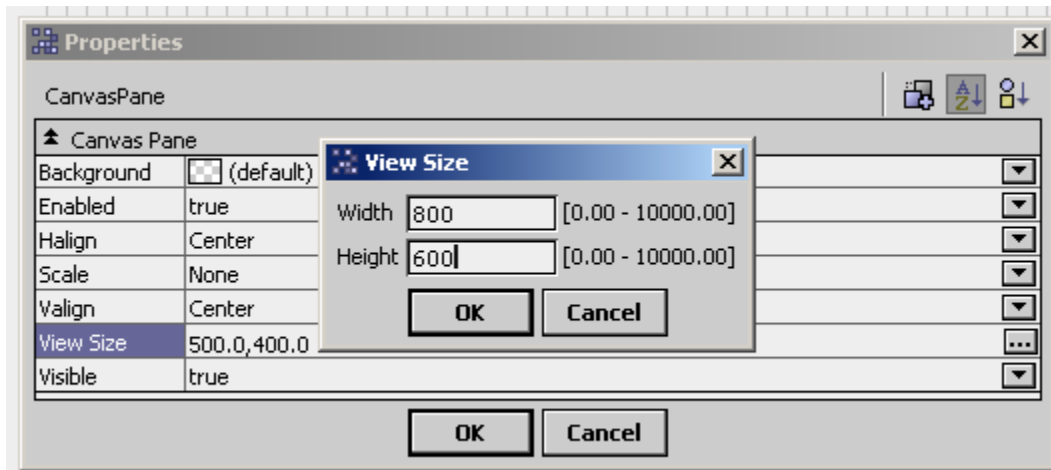




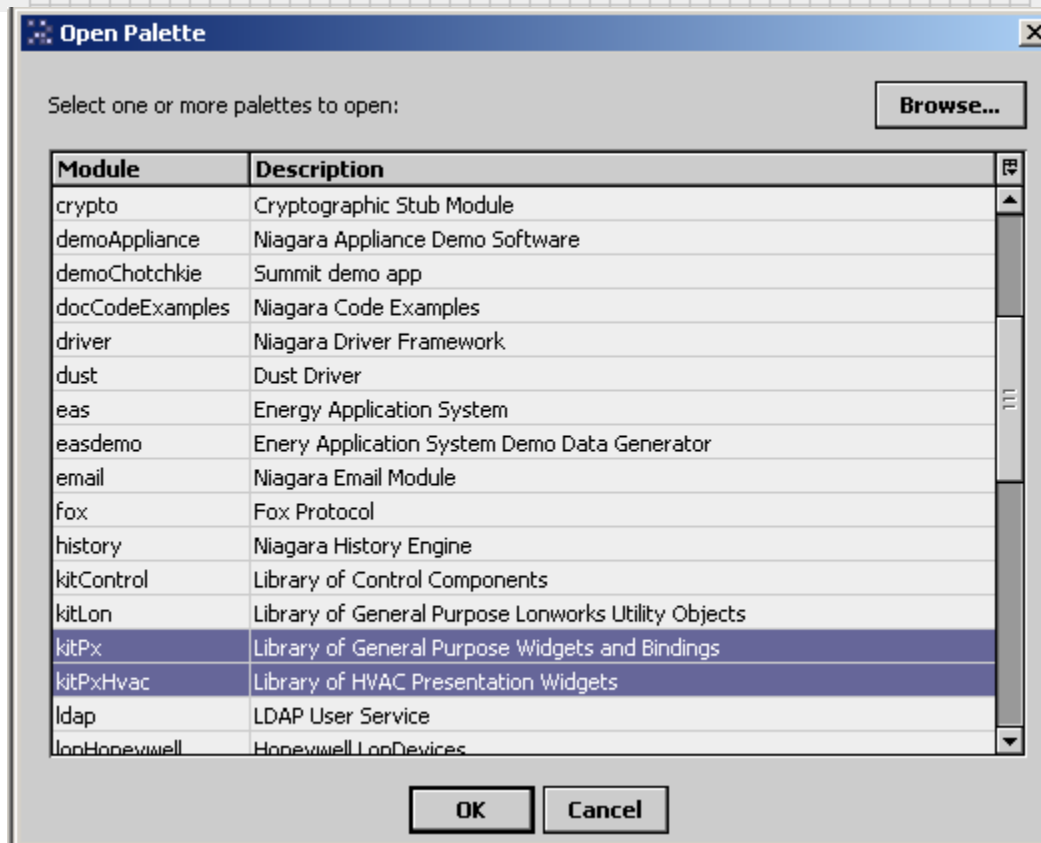
# Creating Graphics







Adjust the view size of your page



Graphic animations required for HVAC purposes are available in "kitPxHvac", whereas widgets for general tasks are available in "kitPx"

Niagara Workbench

File Edit Search Bookmarks Tools Window PxEditor Help

My Host : DVMCAMSER (training) Station (training) Config Home Edit Home

Nav

My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
        - ModbusAsyncNetwork
      - test
      - Logic
      - Home
      - Files

Palette

kitPxHvac

- equipment
  - chillerBasic
  - coolingTower
  - exhaustFan
  - fanLeft
  - fanRight
  - generator
  - heatExchanger
  - heatExchangerPF
  - meterDial
  - meterDialLeft
  - meterDialRight
  - meterDigital
  - pumpColdLeft
  - pumpColdRight
  - pumpCoolLeft

Bound Ords

Widget Tree

- ScrollPane (Content)
  - CanvasPane (Content)
    - BoundLabel [null]
    - BoundLabel (module://

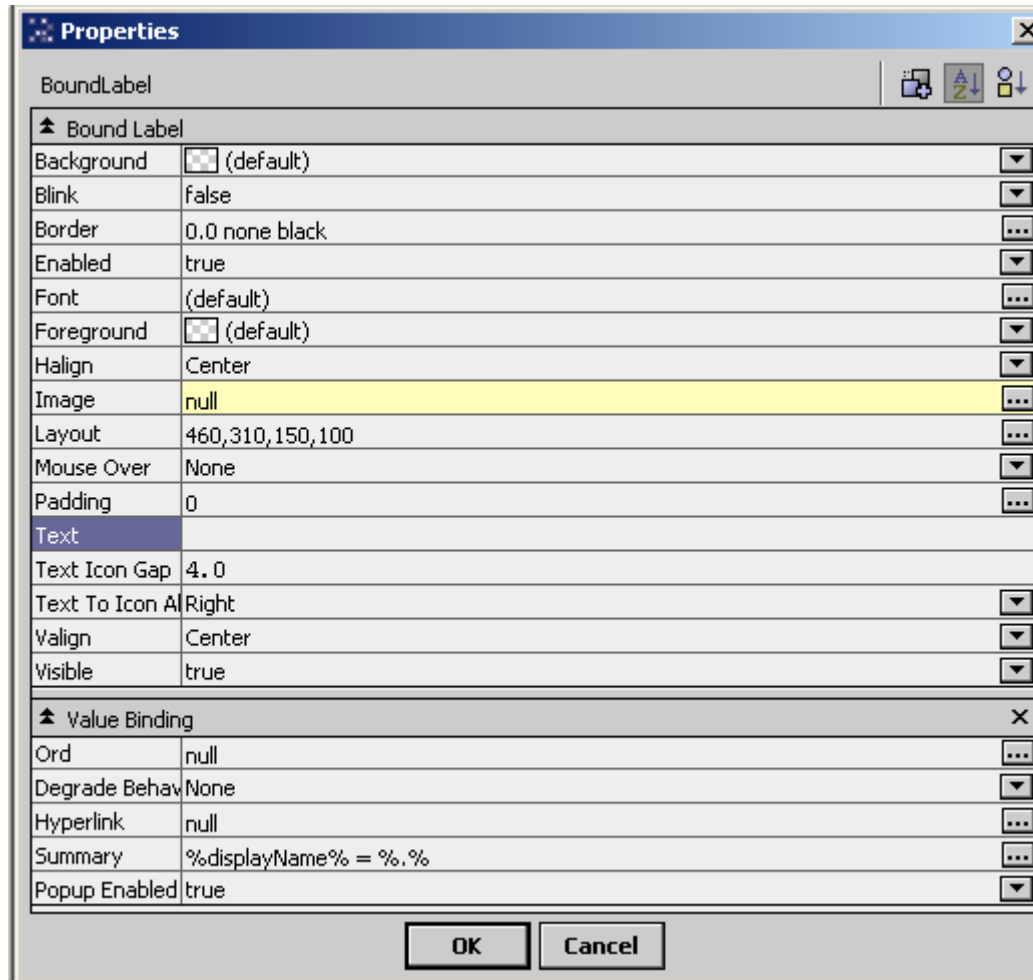
Properties

BoundLabel

Background	(default)
Blink	false
Border	0.0 none b
Enabled	true
Font	(default)
Foreground	(default)
Halign	Center
Image	null

485, 350

Note that even after you have inserted a graphic in your page, it remains invisible as long as you do not link it to a point.



**Niagara Workbench**

File Edit Search Bookmarks Tools Window PxEditor Help

My Host : DVMCAMSER (training) Station (training) Config Home Edit Home

**Nav**

My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
      - Drivers
        - NiagaraNetwork
        - BacnetNetwork
        - ModbusAsyncNetwork
      - test
      - Logic
      - Home
      - Files

**Palette**

kitPxHvac

- equipment
  - chillerBasic
  - coolingTower
  - exhaustFan
  - fanLeft
  - fanRight**
  - generator
  - heatExchanger
  - heatExchangerPF
  - meterDial
  - meterDialLeft
  - meterDialRight
  - meterDigital
  - pumpColdLeft
  - pumpColdRight
  - pumpCoolLeft

**Properties**

BoundLabel

Background	(default)
Blink	false
Border	0.0 none black
Enabled	true
Font	(default)
Foreground	(default)
Halign	Center
Image	null

**Ord**

null

OK Cancel

- Bql Query Builder
- Component Chooser**
- Directory Ord Chooser
- File Ord Chooser
- History Ord Chooser

Text To Icon Al	Right
Valign	Center
Visible	true

**Value Binding**

Ord	null
Degrade Behav	None
Hyperlink	null
Summary	%displayName% = %.%
Popup Enabled	true

OK Cancel

**Bound Ords**

**Widget Tree**

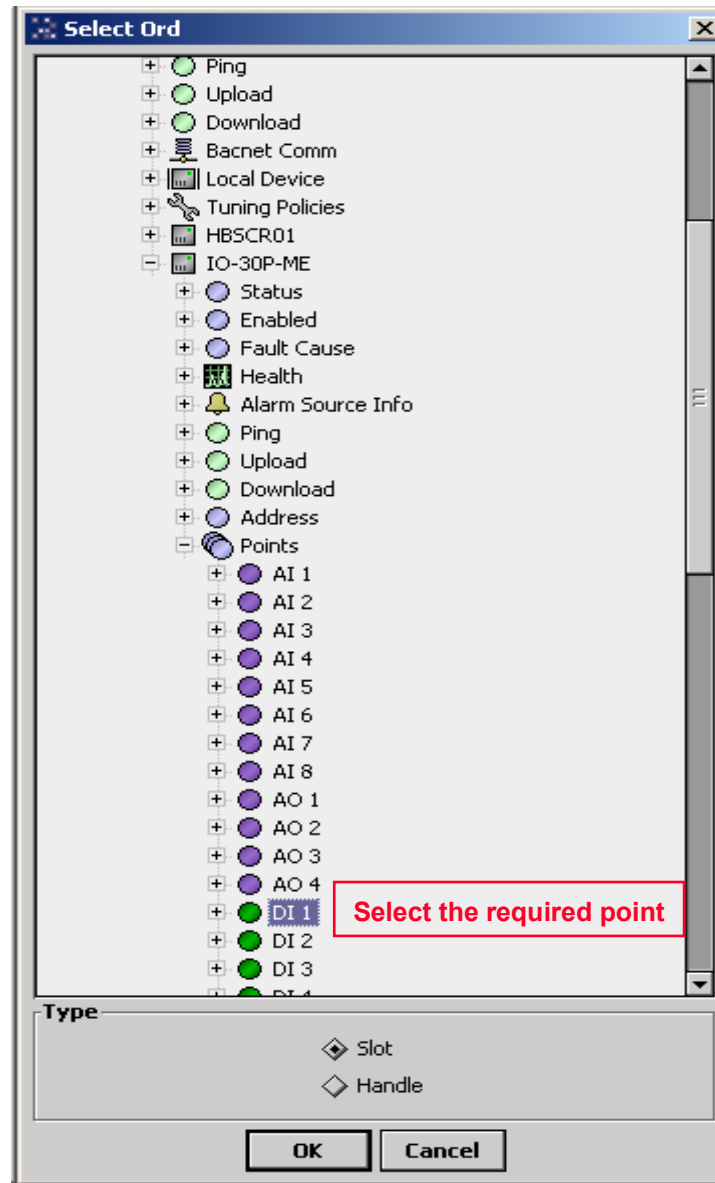
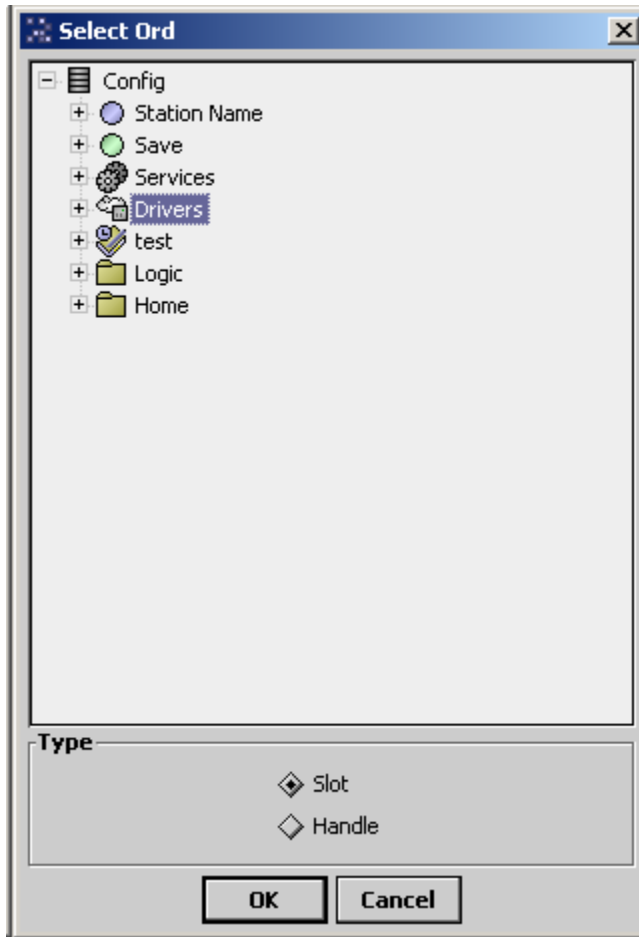
- ScrollPane (Content)
  - CanvasPane (Content)
    - BoundLabel [null]
    - BoundLabel (module://

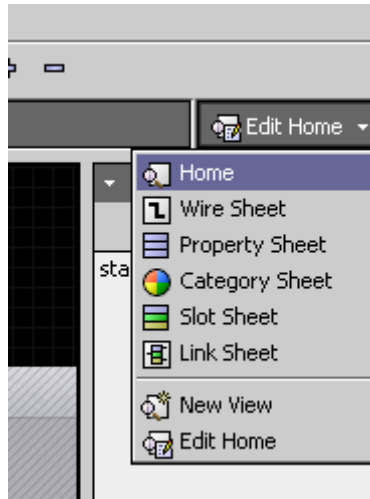
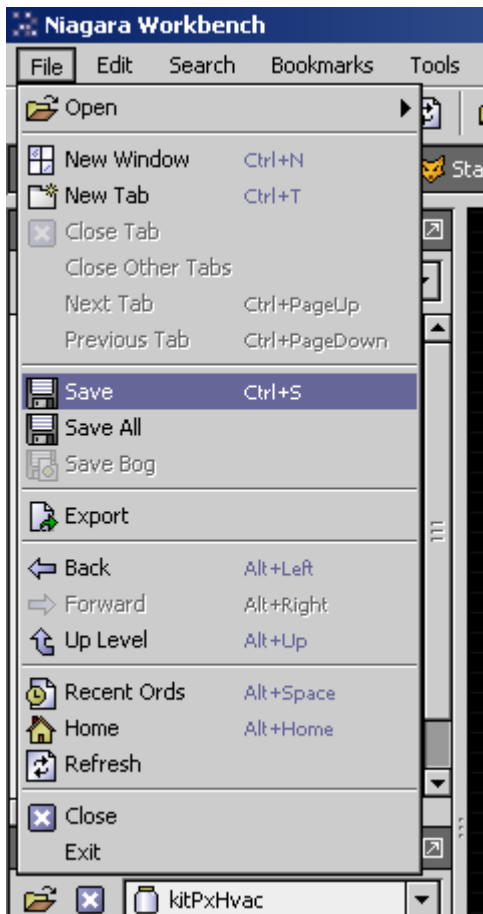
**Properties**

BoundLabel

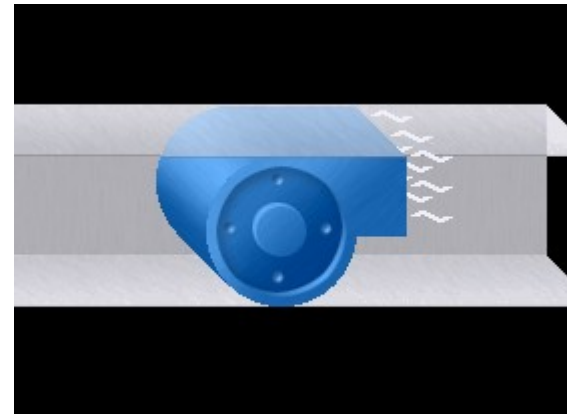
Background	(default)
Blink	false
Border	0.0 none b
Enabled	true
Font	(default)
Foreground	(defau
Halign	Center
Image	null

514, 391

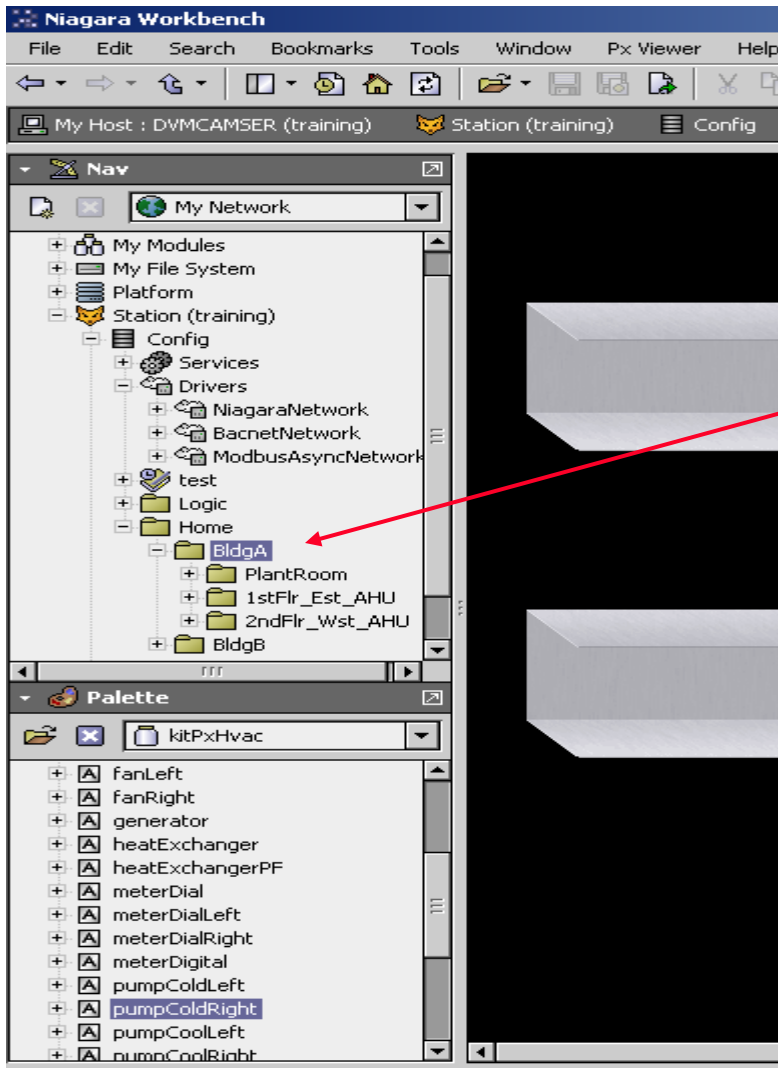




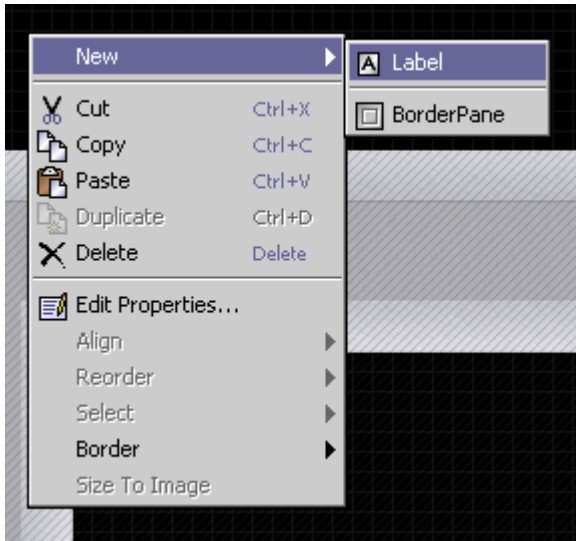
To view the page, click Home as shown above in the sheet selection menu



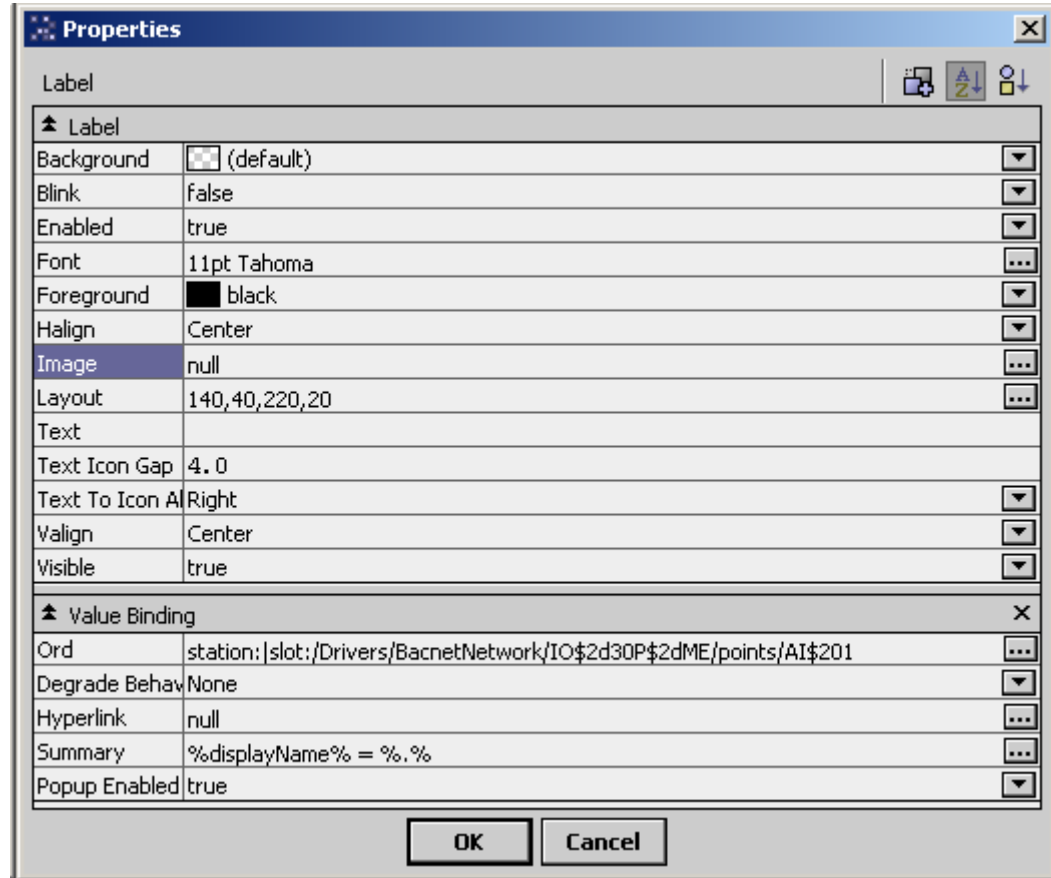
Now you can view your symbol/graphic online

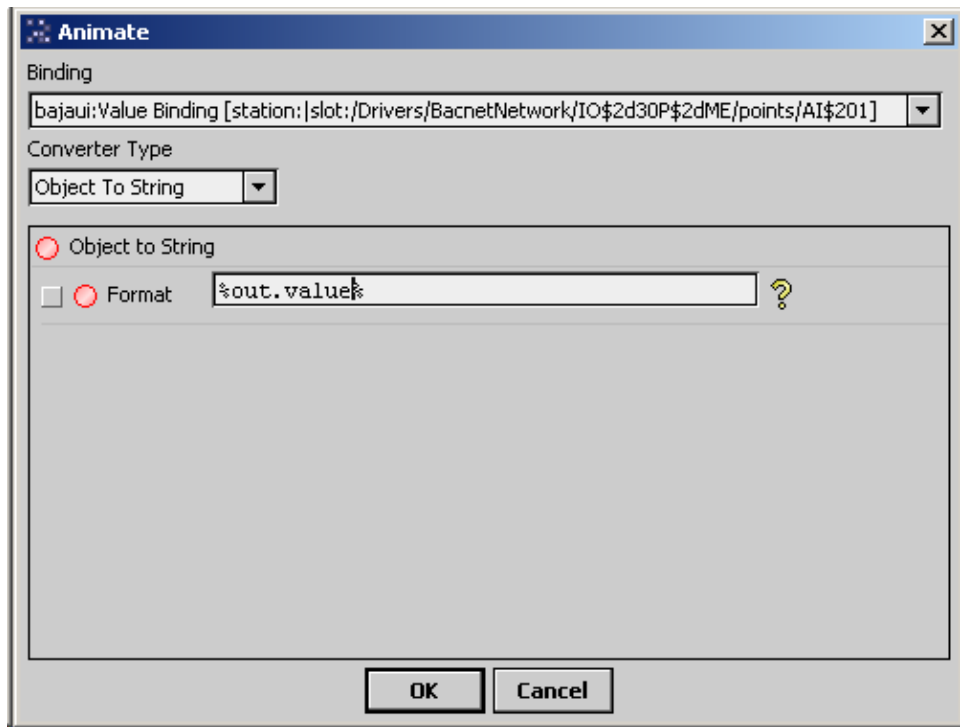
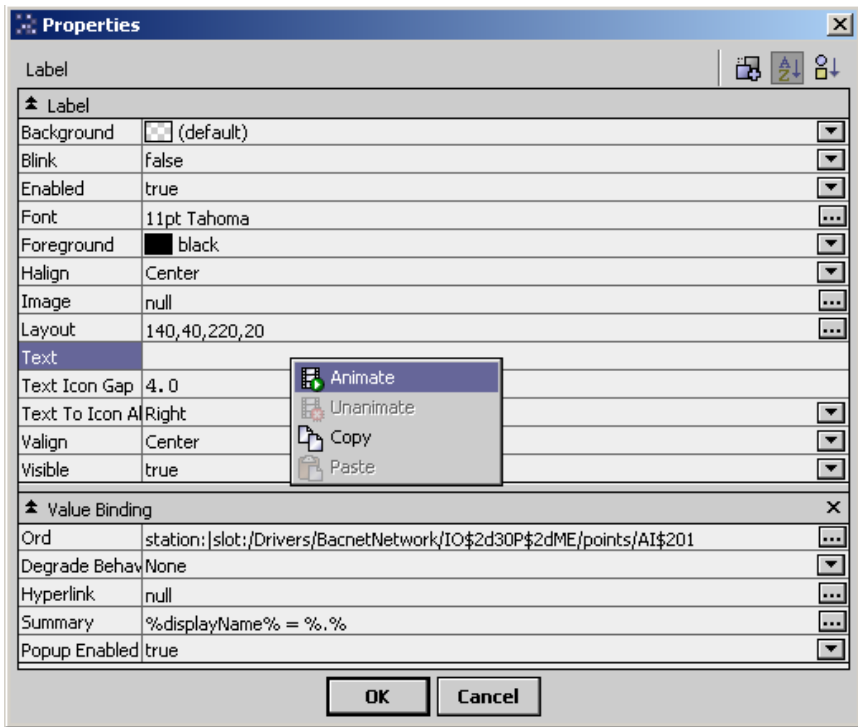


Create the hierarchy of the site as show beside

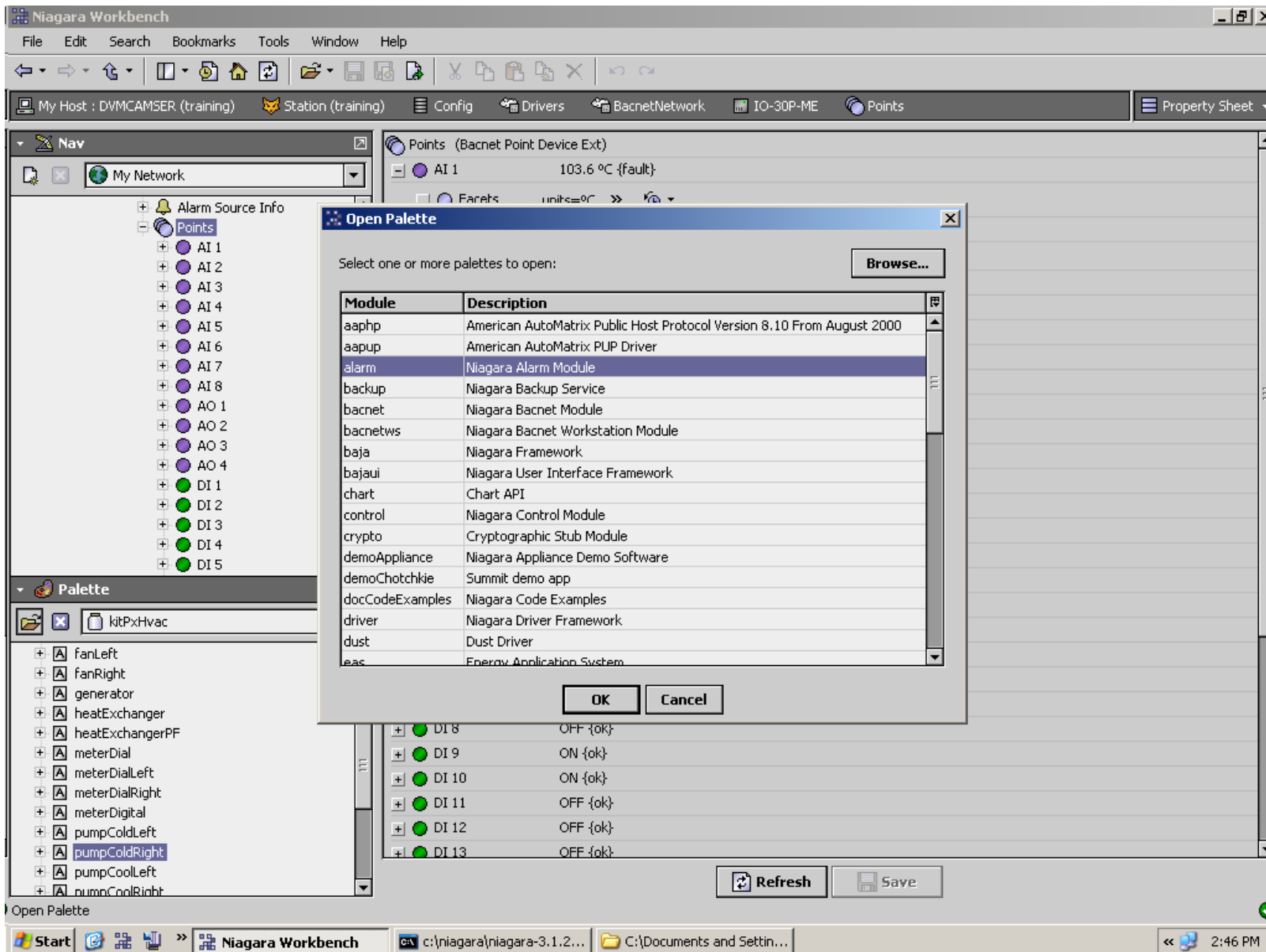


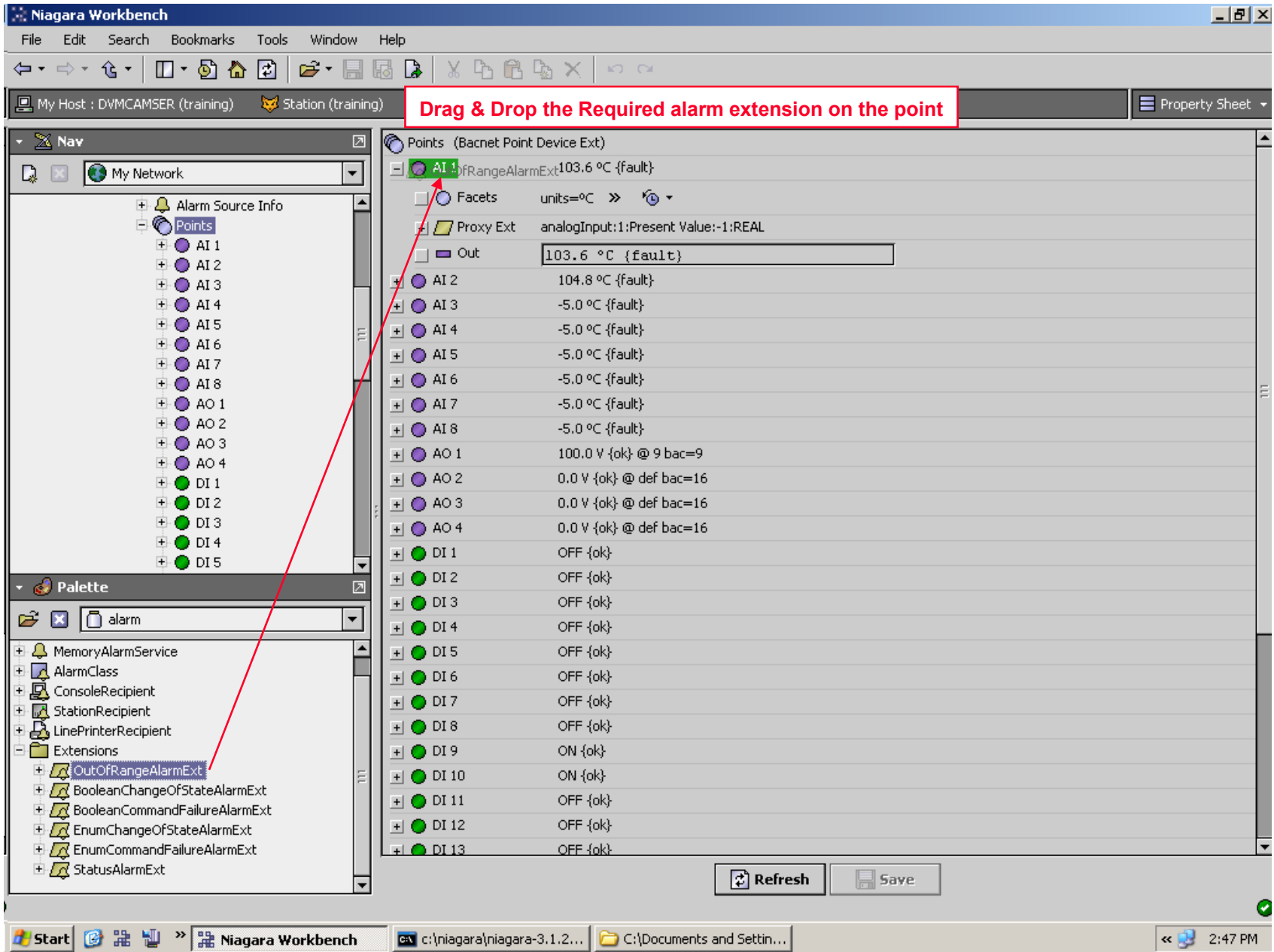
The label is the most commonly used graphic.... it may be used for display & animation of analog as well as digital values





# Alarming & Scheduling





**Niagara Workbench**

File Edit Search Bookmarks Tools Window Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork IO-30P-ME Points Property Sheet

**Nav**

My Network

- Alarm Source Info
  - Points
    - AI 1
    - AI 2
    - AI 3
    - AI 4
    - AI 5
    - AI 6
    - AI 7
    - AI 8
    - AO 1
    - AO 2
    - AO 3
    - AO 4
    - DI 1
    - DI 2
    - DI 3
    - DI 4
    - DI 5

**Palette**

alarm

- MemoryAlarmService
- AlarmClass
- ConsoleRecipient
- StationRecipient
- LinePrinterRecipient
- Extensions
  - OutOfRangeAlarmExt
  - BooleanChangeOfStateAlarmExt
  - BooleanCommandFailureAlarmExt
  - EnumChangeOfStateAlarmExt
  - EnumCommandFailureAlarmExt
  - StatusAlarmExt

**Property Sheet**

- To Offnormal Text
- To Normal Text
- Hyperlink Ord: null
- Sound File: null
- Alarm Icon: null
- Alarm Instructions: 0 Instructions
- Fault Algorithm: Out Of Range Fault Algorithm
  - High Limit: 327 °C
  - Low Limit: -50 °C
  - Deadband: 0.00 [0.00 - +inf]
  - High Limit Text
  - Low Limit Text
  - Limit Enable:  lowLimitEnable  highLimitEnable
- Offnormal Algorithm: Out Of Range Algorithm
  - High Limit: 28 °C
  - Low Limit: 18 °C
  - Deadband: 0.00 [0.00 - +inf]
  - High Limit Text
  - Low Limit Text
  - Limit Enable:  lowLimitEnable  highLimitEnable
- Alarm Class: Default Alarm Class
- Meta Data

AI 2 104.7 °C {fault}

Refresh Save

**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork IO-30P-ME Points Bacnet Point Manager

**Nav**

My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
    - Services
      - UserService
      - CategoryService
      - JobService
      - AlarmService**
        - Default Alarm Class
      - History
      - Audio
      - LogHistory
      - ProgramService
      - BackupService
      - TimeSyncService
      - WebService

**Palette**

alarm

- MemoryAlarmService
- AlarmClass
- ConsoleRecipient**
- StationRecipient
- LinePrinterRecipient
- Extensions
  - OutOfRangeAlarmExt
  - BooleanChangeOfStateAlarmExt
  - BooleanCommandFailureAlarmExt
  - EnumChangeOfStateAlarmExt
  - EnumCommandFailureAlarmExt
  - StatusAlarmExt

**Database** 37 objects

Name	Out	Object ID	Property ID	Index	Read	Write
AI 1	103.6 °C {fault,alarm,unackedAlarm}	analogInput:1	Present Value	-1	Polled	readonly
AI 2	104.7 °C {fault}	analogInput:2	Present Value	-1	Polled	readonly
AI 3	-5.0 °C {fault}	analogInput:3	Present Value	-1	Polled	readonly
AI 4	-5.0 °C {fault}	analogInput:4	Present Value	-1	Polled	readonly
AI 5	-5.0 °C {fault}	analogInput:5	Present Value	-1	Polled	readonly
AI 6	-5.0 °C {fault}	analogInput:6	Present Value	-1	Polled	readonly
AI 7	-5.0 °C {fault}	analogInput:7	Present Value	-1	Polled	readonly
AI 8	-5.0 °C {fault}	analogInput:8	Present Value	-1	Polled	readonly
AO 1	100.0 V {ok} @ 9 bac=9	analogOutput:1	Present Value	-1	Polled	OK
AO 2	0.0 V {ok} @ def bac=16	analogOutput:2	Present Value	-1	Polled	OK
AO 3	0.0 V {ok} @ def bac=16	analogOutput:3	Present Value	-1	Polled	OK
AO 4	0.0 V {ok} @ def bac=16	analogOutput:4	Present Value	-1	Polled	OK
			Present Value	-1	Polled	readonly
			Present Value	-1	Polled	readonly
DI 3	OFF {ok}	binaryInput:3	Present Value	-1	Polled	readonly
DI 4	OFF {ok}	binaryInput:4	Present Value	-1	Polled	readonly
DI 5	OFF {ok}	binaryInput:5	Present Value	-1	Polled	readonly
DI 6	OFF {ok}	binaryInput:6	Present Value	-1	Polled	readonly
DI 7	OFF {ok}	binaryInput:7	Present Value	-1	Polled	readonly
DI 8	OFF {ok}	binaryInput:8	Present Value	-1	Polled	readonly
DI 9	ON {ok}	binaryInput:9	Present Value	-1	Polled	readonly
DI 10	ON {ok}	binaryInput:10	Present Value	-1	Polled	readonly
DI 11	OFF {ok}	binaryInput:11	Present Value	-1	Polled	readonly
DI 12	OFF {ok}	binaryInput:12	Present Value	-1	Polled	readonly
DI 13	OFF {ok}	binaryInput:13	Present Value	-1	Polled	readonly
DI 14	OFF {ok}	binaryInput:14	Present Value	-1	Polled	readonly
DI 15	OFF {ok}	binaryInput:15	Present Value	-1	Polled	readonly
DI 16	OFF {ok}	binaryInput:16	Present Value	-1	Polled	readonly
DO 1	OFF {ok} @ 9 bac=9	binaryOutput:1	Present Value	-1	Polled	OK
DO 2	ON {ok} @ 9 bac=9	binaryOutput:2	Present Value	-1	Polled	OK
DO 3	OFF {ok} @ def bac=16	binaryOutput:3	Present Value	-1	Polled	OK
DO 4	OFF {ok} @ def bac=16	binaryOutput:4	Present Value	-1	Polled	OK

New Folder New Edit Discover Cancel Add Match

**Drag & drop the alarm console on to the Alarm service in the services folder**

Start Niagara Workbench c:\niagara\niagara-3.1.2... C:\Documents and Sett... 2:48 PM

Nav

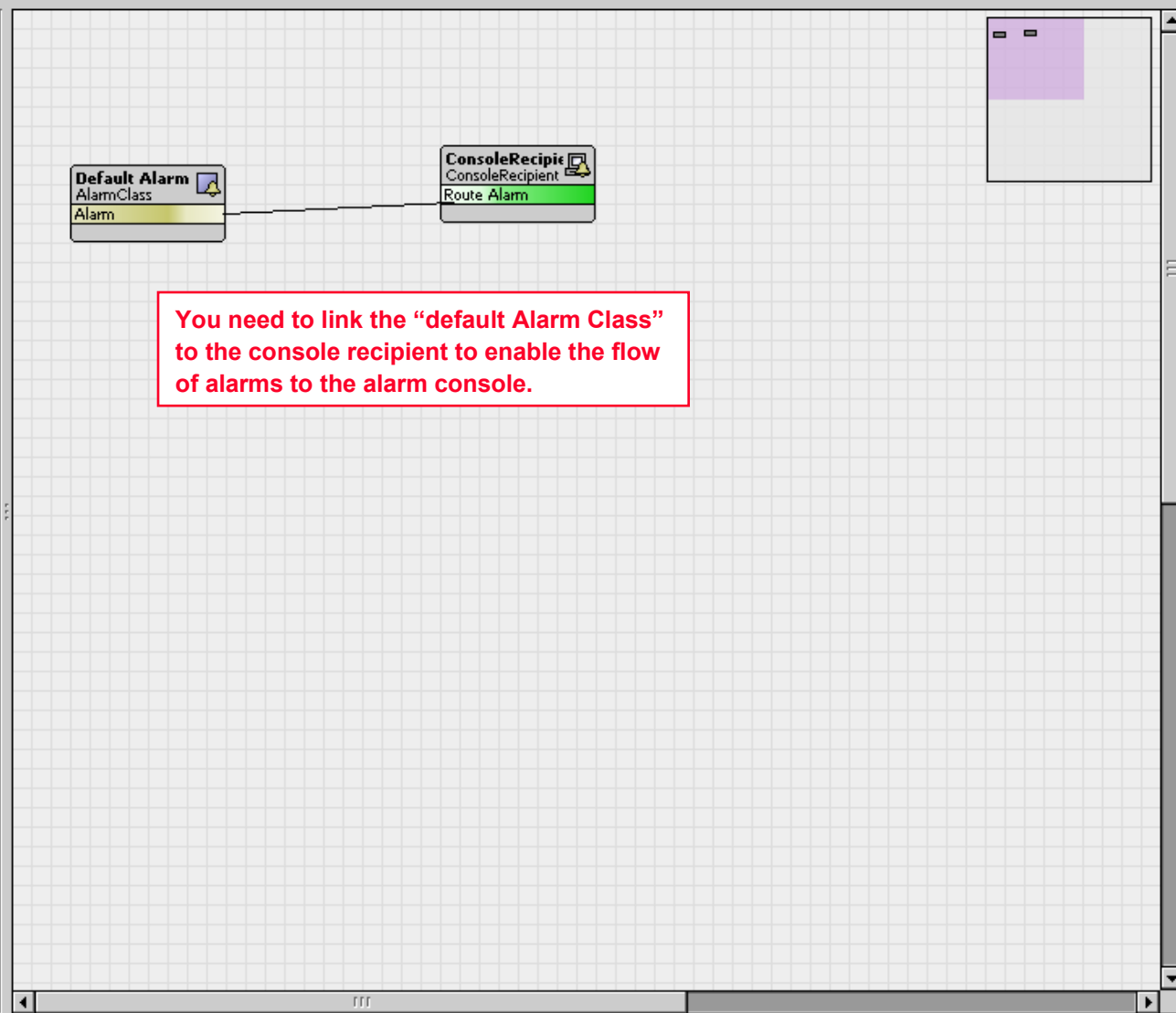
My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
    - Services
      - UserService
      - CategoryService
      - JobService
      - AlarmService
        - Default Alarm Class
        - ConsoleRecipient
      - HistoryService
      - AuditHistory
      - LogHistory
      - ProgramService
      - BackupService
      - TimeSyncService

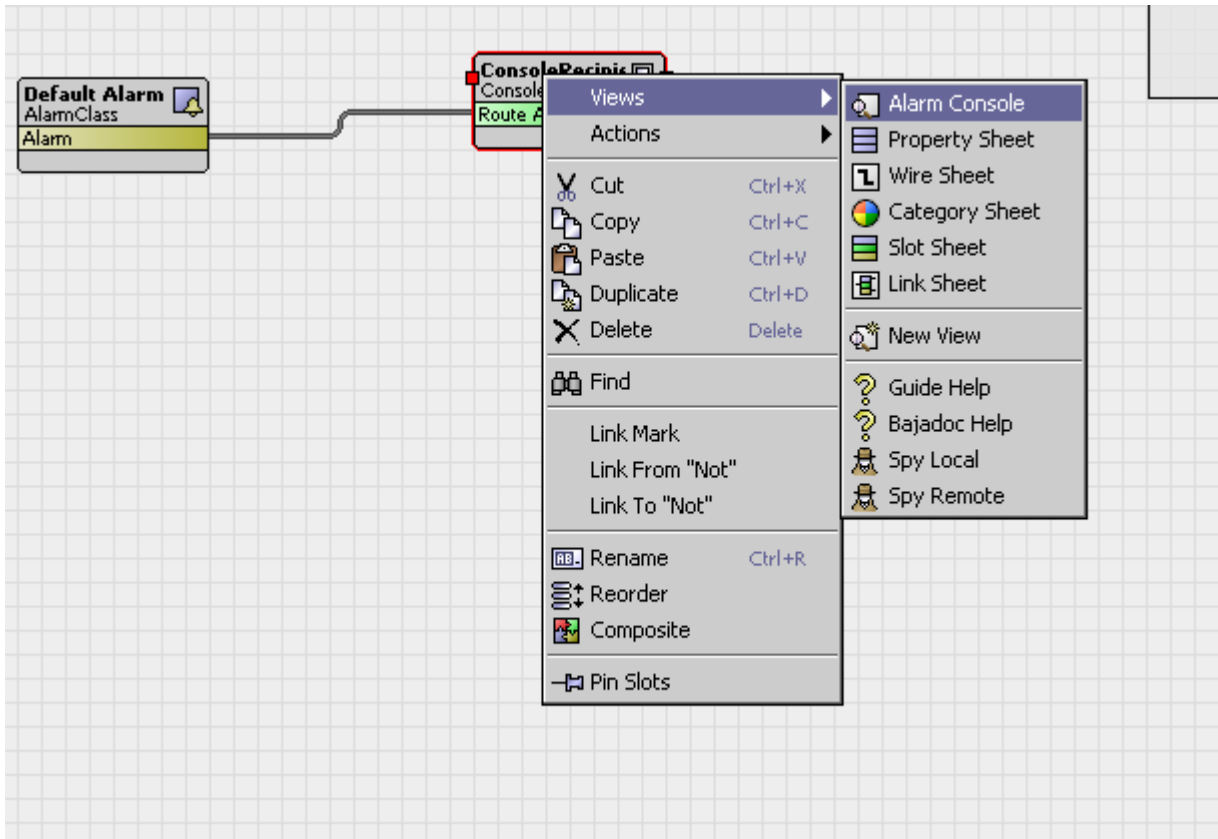
Palette

alarm

- MemoryAlarmService
- AlarmClass
- ConsoleRecipient
- StationRecipient
- LinePrinterRecipient
- Extensions
  - OutOfRangeAlarmExt
  - BooleanChangeOfStateAlarmExt
  - BooleanCommandFailureAlarmExt
  - EnumChangeOfStateAlarmExt
  - EnumCommandFailureAlarmExt
  - StatusAlarmExt



Link: "defaultAlarmClass.alarm" -> "ConsoleRecipient.routeAlarm"



**Niagara Workbench**

File Edit Search Bookmarks Tools Window Alarm Help

My Host : DVMCAMSER (training) Station (training) Config Services AlarmService ConsoleRecipient Alarm Console

**Nav**

My Network

- My Host : DVMCAMSER (training)
  - My Modules
  - My File System
  - Platform
  - Station (training)
    - Config
      - Services
        - UserService
        - CategoryService
        - JobService
        - AlarmService**
          - Default Alarm Class
          - ConsoleRecipient
        - HistoryService
        - AuditHistory
        - LogHistory
        - ProgramService
        - BackupService
        - TimeSyncService

**Open Alarm Sources** 10 Sources / 20 Alarms

Timestamp	Source State	Ack State	Source	Alarm Class	Prio
03-Dec-07 12:31:49 PM Asia/Calcutta	Normal	0 Acked / 2 Unacked	LonNetwork XL-SMART	defaultAlarmClass	255
03-Dec-07 12:31:35 PM Asia/Calcutta	Normal	0 Acked / 3 Unacked	LonNetwork XFL522B	defaultAlarmClass	255
03-Dec-07 3:53:41 AM Asia/Calcutta	Normal	0 Acked / 1 Unacked	BacnetNetwork HB5CR01	defaultAlarmClass	255
03-Dec-07 3:53:28 AM Asia/Calcutta	Normal	0 Acked / 1 Unacked	BacnetNetwork HB5CR03	defaultAlarmClass	255
28-Nov-07 10:04:28 PM Asia/Calcutta	Normal	0 Acked / 1 Unacked	LonNetwork XFL521	defaultAlarmClass	255
03-Dec-07 12:36:12 PM Asia/Calcutta	Offnormal	0 Acked / 5 Unacked	LonNetwork XFL521B	defaultAlarmClass	255
03-Dec-07 12:36:07 PM Asia/Calcutta	Offnormal	0 Acked / 2 Unacked	LonNetwork XI500	defaultAlarmClass	255
03-Dec-07 12:36:03 PM Asia/Calcutta	Offnormal	0 Acked / 1 Unacked	LonNetwork XL10VAV2	defaultAlarmClass	255
03-Dec-07 12:35:59 PM Asia/Calcutta	Offnormal	0 Acked / 3 Unacked	LonNetwork XL800	defaultAlarmClass	255
04-Dec-07 2:48:22 PM Asia/Calcutta	Offnormal	0 Acked / 1 Unacked	AI 1	defaultAlarmClass	255

Acknowledge Hyperlink Notes Silence Filter

**Instructions**

Start Niagara Workbench c:\niagara\niagara-3.1.2... C:\Documents and Sett... 2:50 PM

**Open Alarm Sources** 10 Sources / 20 Alarms

Timestamp	Source State	Ack State	Source	Alarm Class	Priority
03-Dec-07 12:31:49 PM Asia/Calcutta	Normal	0 Acked / 2 Unacked	LonNetwork XL-SMART	defaultAlarmClass	255
03-Dec-07 12:31:35 PM Asia/Calcutta	Normal	0 Acked / 3 Unacked	LonNetwork XFL522B	defaultAlarmClass	255
03-Dec-07 3:53:41 AM Asia/Calcutta	Normal	0 Acked / 1 Unacked	BacnetNetwork HB5CR01	defaultAlarmClass	255
03-Dec-07 3:53:28 AM Asia/Calcutta	Normal	0 Acked / 1 Unacked	BacnetNetwork HB5CR03	defaultAlarmClass	255
28-Nov-07 10:04:28 PM Asia/Calcutta	Normal	0 Acked / 1 Unacked	LonNetwork XFL521	defaultAlarmClass	255
03-Dec-07 12:36:12 PM Asia/Calcutta	Offnormal	0 Acked / 5 Unacked	LonNetwork XFL521B	defaultAlarmClass	255
03-Dec-07 12:36:07 PM Asia/Calcutta	Offnormal	0 Acked / 2 Unacked	LonNetwork XI500	defaultAlarmClass	255
03-Dec-07 12:36:03 PM Asia/Calcutta	Offnormal	0 Acked / 1 Unacked	LonNetwork XL10VAV2	defaultAlarmClass	255
03-Dec-07 12:35:59 PM Asia/Calcutta	Offnormal	0 Acked / 3 Unacked	LonNetwork XL800	defaultAlarmClass	255
04-Dec-07 2:00:00 PM Asia/Calcutta	Offnormal	0 Acked / 1 Unacked	AI 1	defaultAlarmClass	255

- Acknowledge
- Acknowledge Most Recent
- Hyperlink
- Notes
- Alarm Details
- Force Clear

...

Acknowledge

Hyperlink

Notes

Silence



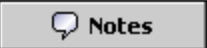
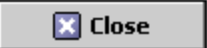
Filter

...

**Instructions**

**Alarm Record** [X]

<b>timestamp</b>	04-Dec-07 2:48:22 PM Asia/Calcutta	
<b>uuid</b>	125ca80c-a431-435e-bb98-ae3bd0b4542d	
<b>sourceState</b>	Offnormal	
<b>ackState</b>	Unacked	
<b>ackRequired</b>	true	
<b>source</b>	local: station: slot:/Drivers/BacnetNetwork/IO-30P-ME/points/AI 1/OutOfRangeAlarmExt	
<b>alarmClass</b>	defaultAlarmClass	
<b>priority</b>	255	
<b>normalTime</b>	null	
<b>ackTime</b>	null	
<b>user</b>	Unknown User	
<b>alarmData</b>	<b>sourceName</b>	AI 1
	<b>highLimit</b>	28.0 °C
	<b>presentValue</b>	103.6 °C
	<b>alarmValue</b>	103.6
	<b>offnormalValue</b>	103.6 °C
	<b>deadband</b>	0.0 °C
	<b>status</b>	{alarm}
	<b>toState</b>	highLimit
	<b>msgText</b>	
	<b>Count</b>	1
<b>fromState</b>	normal	
<b>TimeZone</b>	Asia/Calcutta (+5)	
<b>alarmTransition</b>	Offnormal	
<b>lastUpdate</b>	04-Dec-07 2:48:22 PM Asia/Calcutta	



**Niagara Workbench**

File Edit Search Bookmarks Tools Window Manager Help

My Host : DVMCAMSER (training) Station (training) Config Drivers BacnetNetwork HBSCR01 Schedules Bacnet Schedule Import Manager

**Nav**

- My Network
  - WebService
  - PlatformServices
  - Drivers
    - NiagaraNetwork
    - BacnetNetwork
      - Local Device
      - Bacnet Comm
      - Monitor
      - Tuning Policies
      - HBSCR01
        - Alarm Source Info
        - Points
        - Alarms
        - Schedules
        - Trend Logs
        - Config
      - IO-30P-ME
      - HBSCR03
      - ModbusAsyncNetwork

**Palette**

- alarm
- MemoryAlarmService
- AlarmClass
- ConsoleRecipient
- StationRecipient
- LinePrinterRecipient
- Extensions
  - OutOfRangeAlarmExt
  - BooleanChangeOfStateAlarmExt
  - BooleanCommandFailureAlarmExt
  - EnumChangeOfStateAlarmExt
  - EnumCommandFailureAlarmExt
  - StatusAlarmExt

**Discovered** 1 objects

Object Name	Object ID	Schedule Type	Data Type
Calendar1	calendar:1	schedule:CalendarSchedule	

**Database** 1 objects

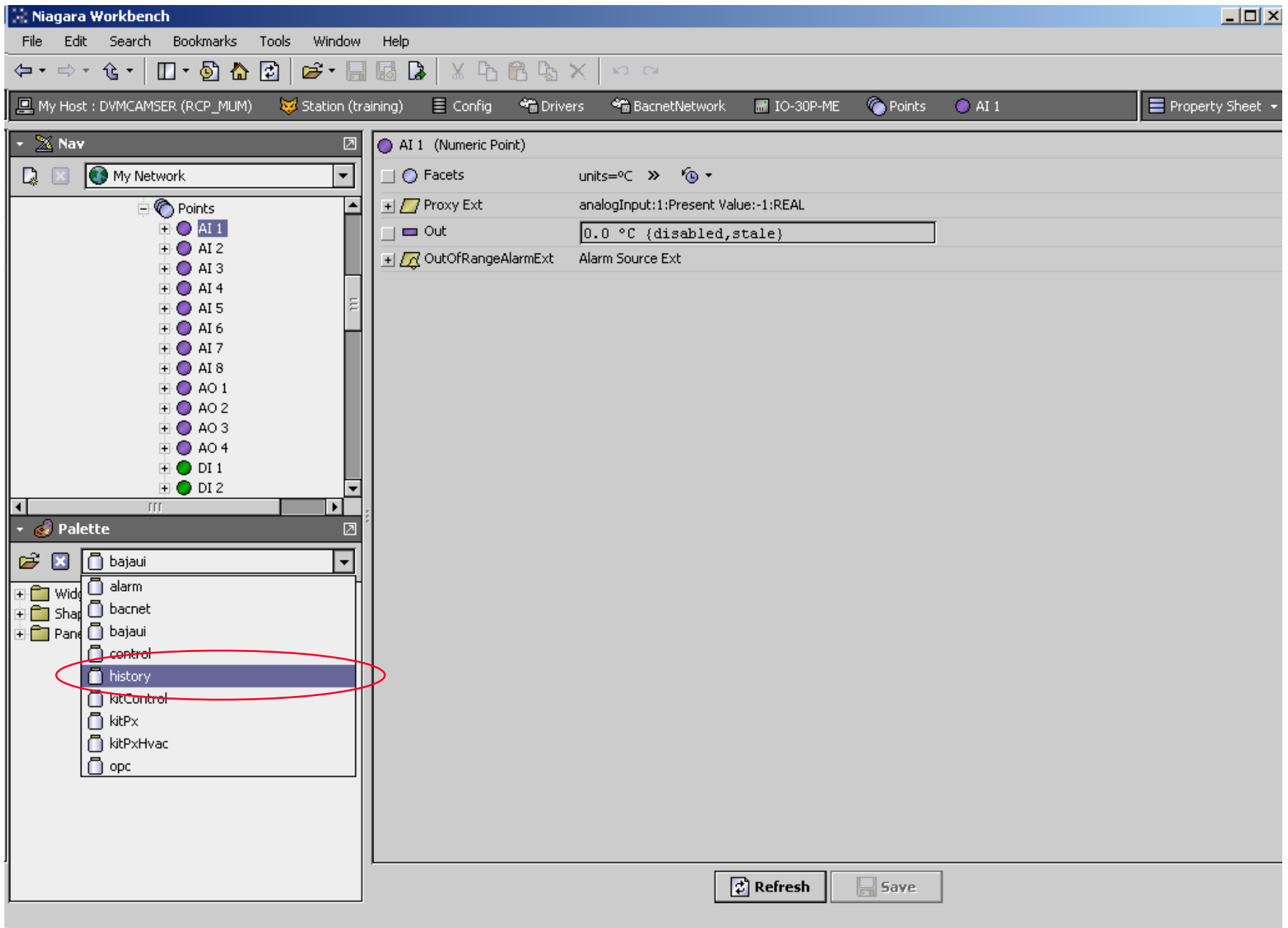
Name	Type	Object Id	State	Status	Last Success	Priority For Writing	Execution T
Calendar1	Calendar Schedule	calendar:1	Idle	{ok}	04-Dec-07 3:05 PM Asia/Calcutta	16	Manual

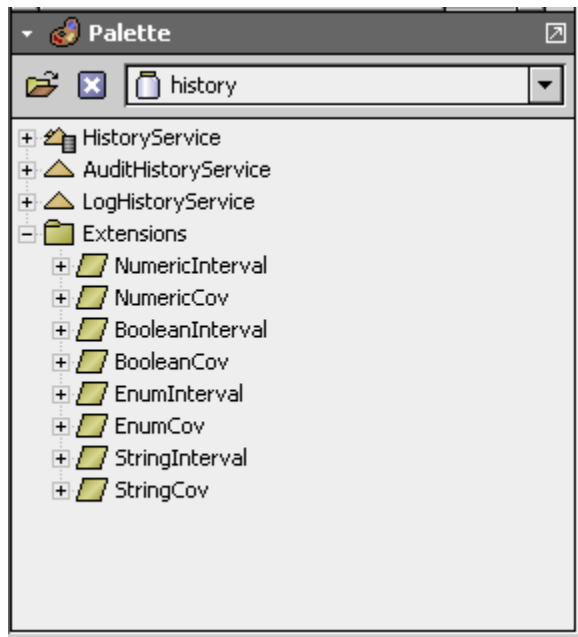
New Edit Discover Cancel Add Match Import

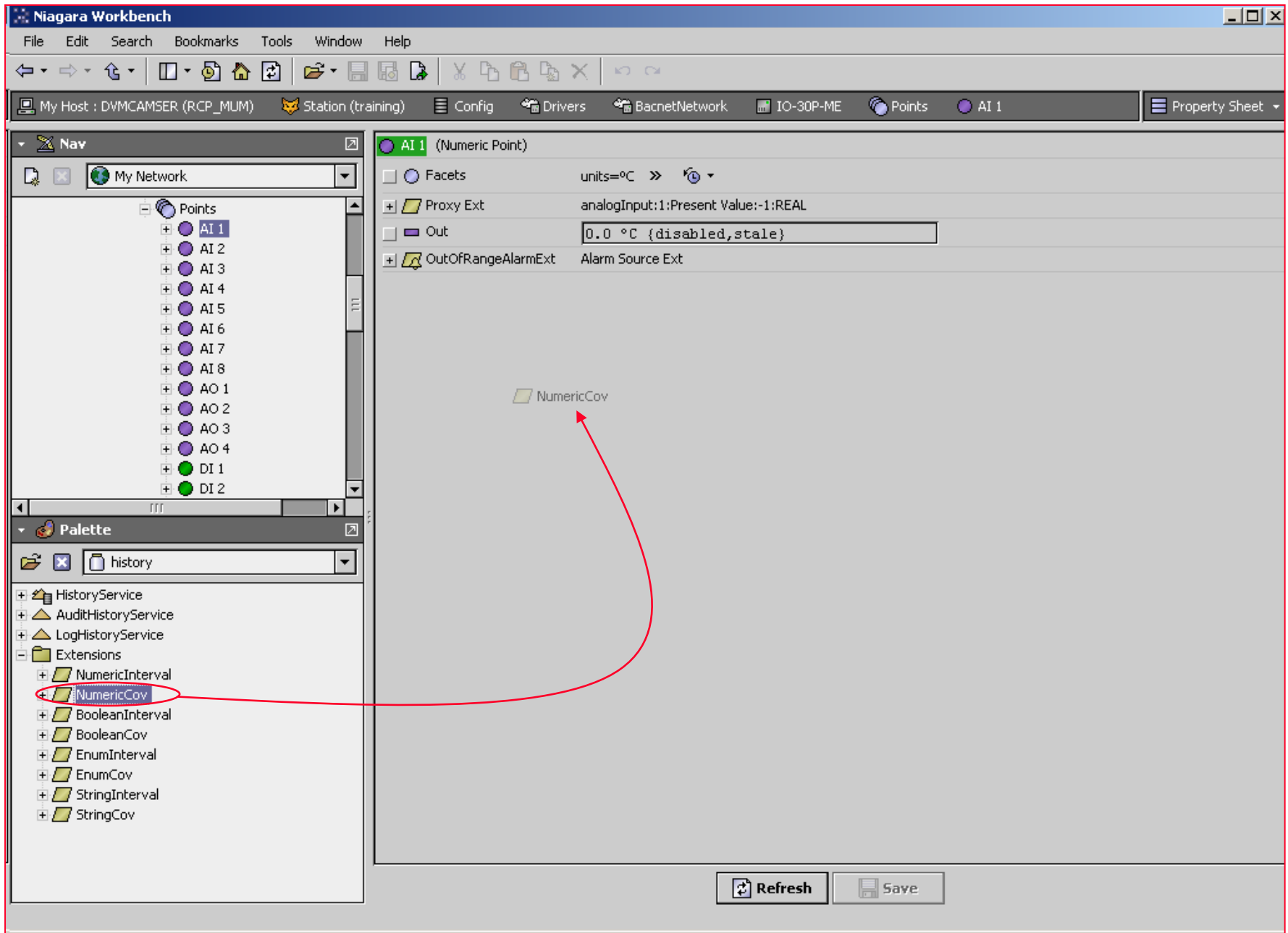
Discover: Start the discovery process



# History Configuration







Name

?

NumericCov

OK Cancel

OutOfRangeAlarmExt Alarm Source Ext

NumericCov Numeric Cov History Ext

Status {disabled}

Fault Cause

Enabled  true

Active Period Days of week  Sun  Mon  Tue  Wed  Thu  Fri  Sat  
Time Range 12:00:00 AM Asia/Calcutta to 12:00:00 AM Asia/Calcutta

Active  true

History Name %parent.parent.name% ?

History Config History Config

Id

Source

Time Zone NULL (+0)

Record Type history NumericTrendRecord

Capacity Record Count 500 records

Full Policy Roll

Interval irregular

valueFacets units=°C

minRolloverValue  null 0.00

maxRolloverValue  null 0.00

precision 32 bit

Change Tolerance 1.00

Precision 32 bit


Min Rollover Value  null 0.00


Max Rollover Value  null 0.00

Refresh Save




DI 1 (Boolean Point)

Facets falseText=OFF,trueText=ON >>  ▾

 Proxy Ext binaryInput:1:Present Value:-1:ENUMERATED

Out OFF {disabled,stale}

 BooleanCov Boolean Cov History Ext

Status {disabled}


Fault Cause

Enabled  true ▾

Active Period Days of week  Sun  Mon  Tue  Wed  Thu  Fri  Sat

Time Range 12:00:00 AM Asia/Calcutta  to 12:00:00 AM Asia/Calcutta

Active  true

History Name %parent.parent.name% 

History Config History Config

Id

Source


Time Zone NULL (+0)

Record Type history BooleanTrendRecord  ▾

Capacity Record Count ▾ 500 records

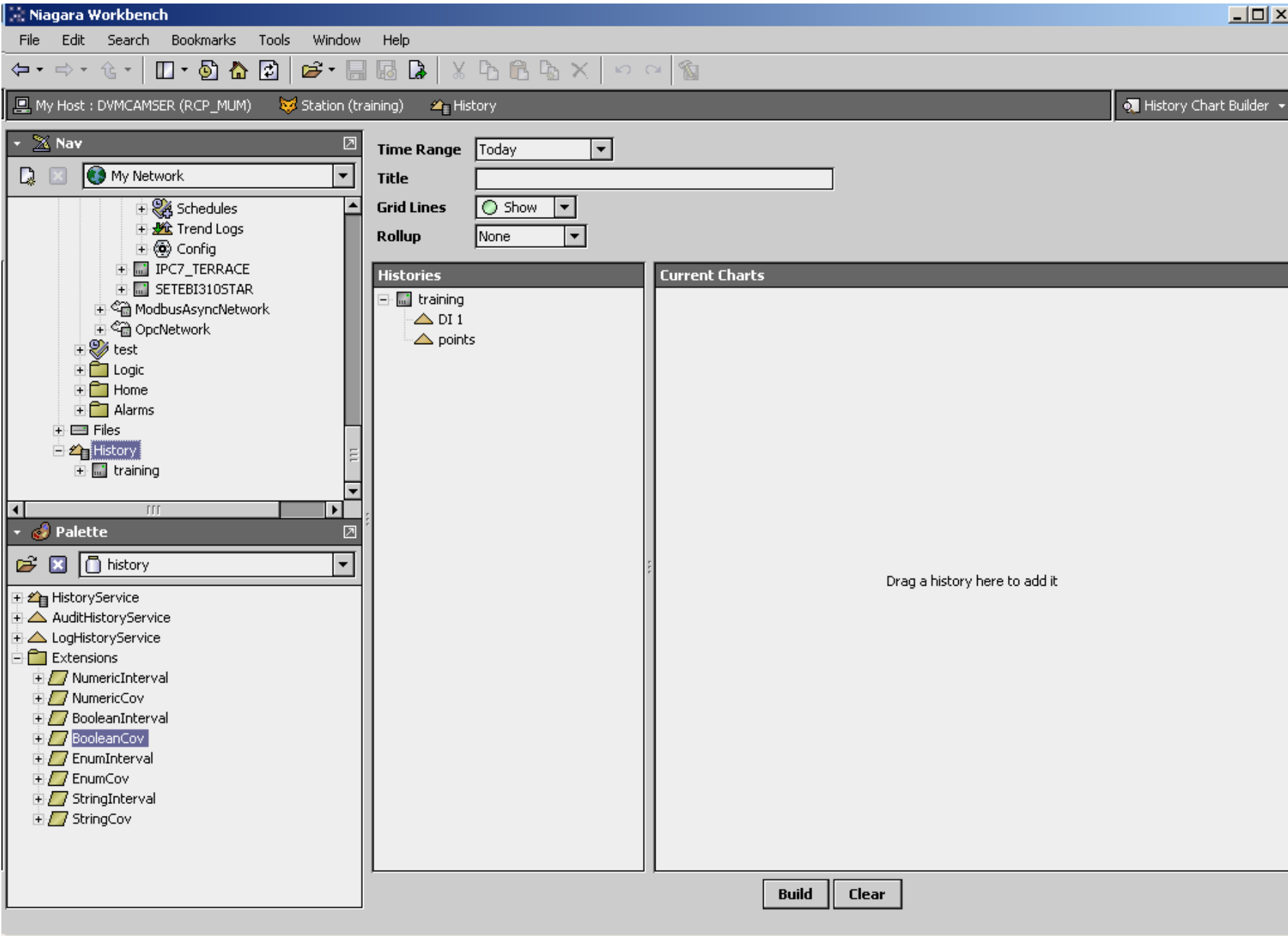
Full Policy Roll ▾

Interval irregular

valueFacets falseText=OFF,trueText=ON >>  ▾

 Refresh

 Save



**Niagara Workbench**

File Edit Search Bookmarks Tools Window Help

My Host : DVMCAMSER (RCP\_MUM) Station (training) History History Chart Builder

**Nav**

- My Network
  - SETEBI310STAR
  - ModbusAsyncNetwork
  - OpcNetwork
  - test
  - Logic
  - Home
  - Alarms
  - Files
  - History
    - training
      - AI 1
      - AuditHistory
      - DI 1
      - LogHistory

**Time Range** Today

**Title**

**Grid Lines** Show

**Rollup** None

**Histories**

- training
  - AI 1
  - DI 1

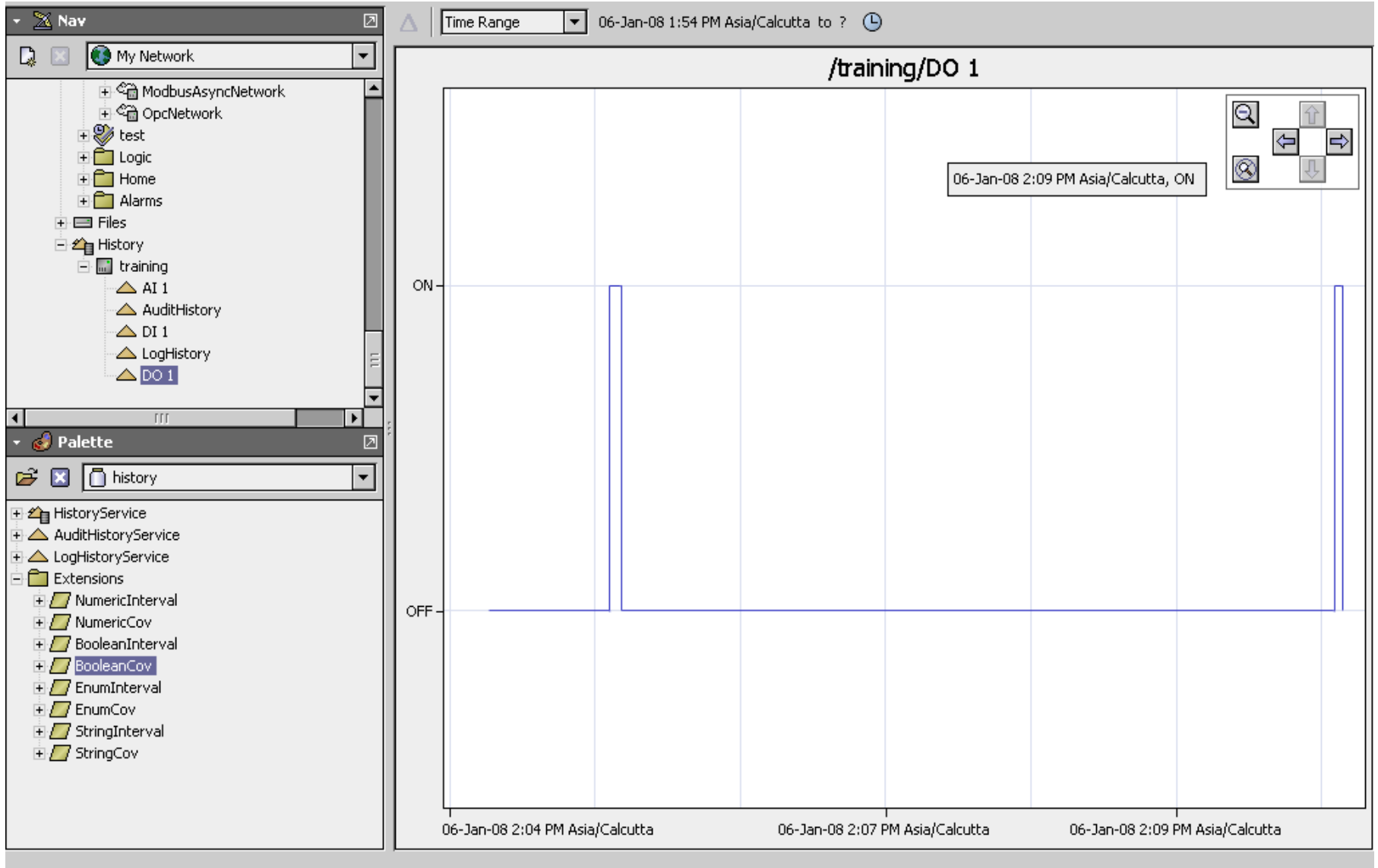
**Current Charts**

/training/AI\$201 Line Chart

**Palette**

- HistoryService
- AuditHistoryService
- LogHistoryService
- Extensions
  - NumericInterval
  - NumericCov
  - BooleanInterval
  - BooleanCov
  - EnumInterval
  - EnumCov
  - StringInterval
  - StringCov

**Build** **Clear**



Time Range 06-Jan-08 1:54 PM Asia/Calcutta to ?

/training/DO 1

11 records

Timestamp	Trend Flags	Status	Value
06-Jan-08 1:54:36 PM Asia/Calcutta	{start}	{disabled,stale}	OFF
06-Jan-08 2:04:59 PM Asia/Calcutta	{ }	{stale}	OFF
06-Jan-08 2:04:59 PM Asia/Calcutta	{ }	{ok}	OFF
06-Jan-08 2:05:48 PM Asia/Calcutta	{ }	{overridden}	OFF
06-Jan-08 2:05:49 PM Asia/Calcutta	{ }	{overridden}	ON
06-Jan-08 2:05:53 PM Asia/Calcutta	{ }	{ok}	ON
06-Jan-08 2:05:54 PM Asia/Calcutta	{ }	{ok}	OFF
06-Jan-08 2:10:48 PM Asia/Calcutta	{ }	{overridden}	OFF
06-Jan-08 2:10:48 PM Asia/Calcutta	{ }	{overridden}	ON
06-Jan-08 2:10:51 PM Asia/Calcutta	{ }	{ok}	ON
06-Jan-08 2:10:51 PM Asia/Calcutta	{ }	{ok}	OFF

Time Range 06-Jan-08 1:54 PM Asia/Calcutta to ?

/training/DO 1 11 records

Timestamp	Trend Flags	Status	Value
06-Jan-08 1:54:36 PM Asia/Calcutta	{start}	{disabled,stale}	OFF
06-Jan-08 2:04:59 PM Asia/Calcutta	{}	{stale}	OFF
06-Jan-08 2:04:59 PM Asia/Calcutta	{}	{ok}	OFF
06-Jan-08 2:05:48 PM Asia/Calcutta	{}	{overridden}	OFF
06-Jan-08 2:05:49 PM Asia/Calcutta	{}	{overridden}	ON
06-Jan-08 2:05:53 PM Asia/Calcutta	{}	{ok}	ON
06-Jan-08 2:05:54 PM Asia/Calcutta	{}	{ok}	OFF
06-Jan-08 2:10:48 PM Asia/Calcutta	{}	{overridden}	OFF
06-Jan-08 2:10:48 PM Asia/Calcutta	{}	{overridden}	ON
06-Jan-08 2:10:51 PM Asia/Calcutta	{}	{ok}	ON
06-Jan-08 2:10:51 PM Asia/Calcutta	{}	{ok}	OFF

- Reset Column Widths
- Export
- Timestamp
- Trend Flags
- Status
- Value

**Export**

**Export**

Action **Setup**

Select Exporter Table to CSV

View internally

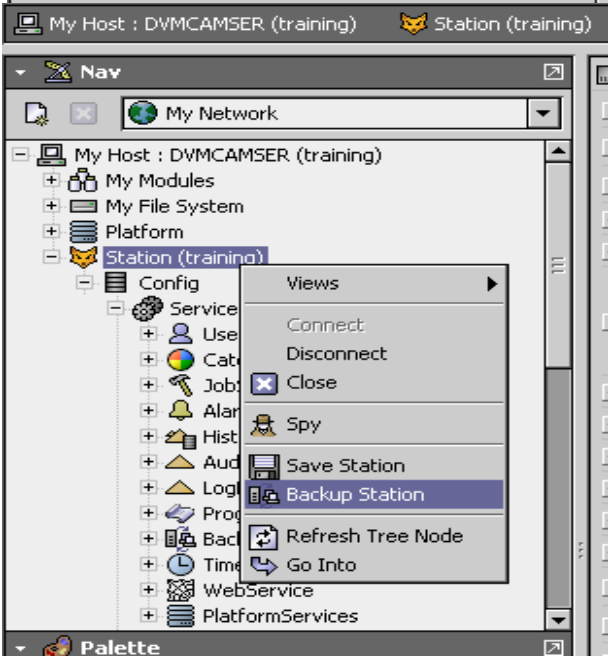
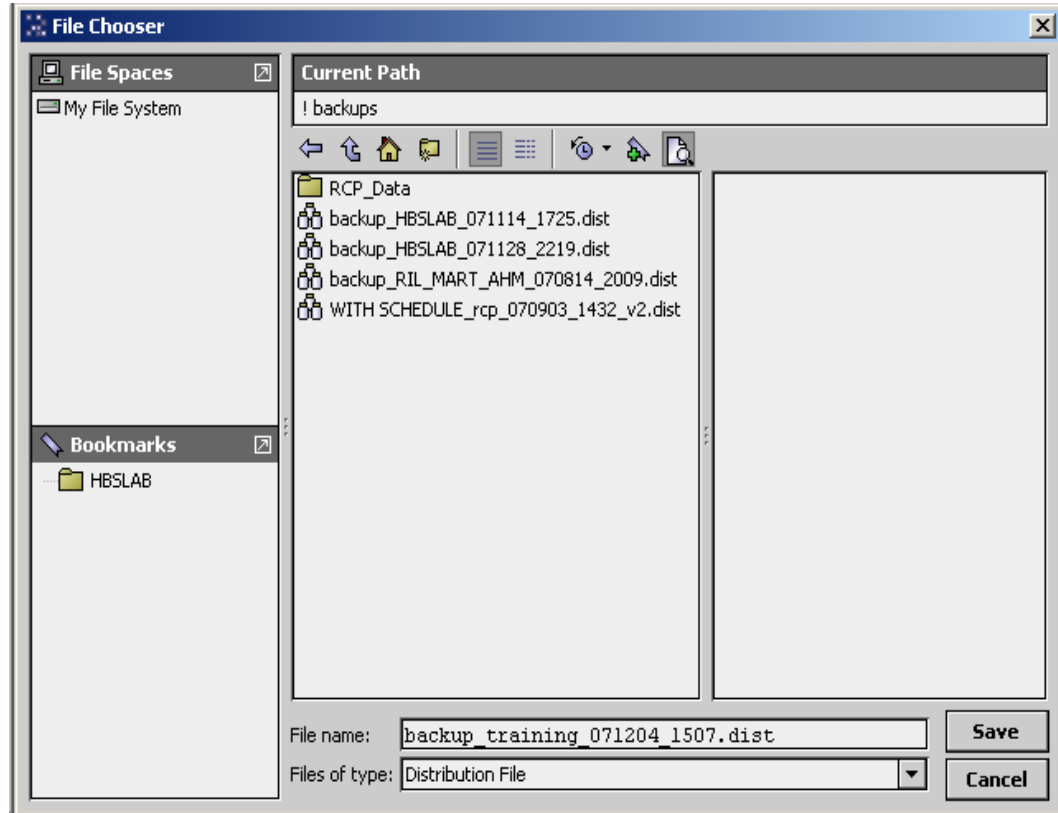
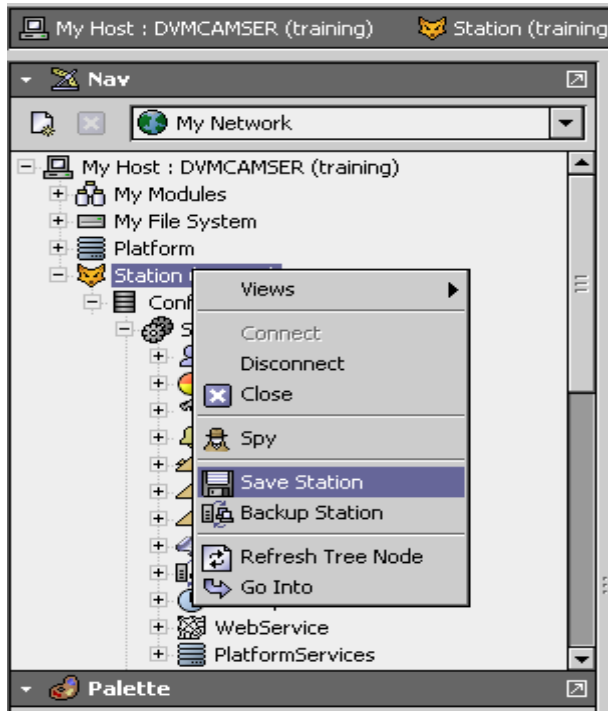
View with external application

Save to file

file: /C:/D01

**Browse**

# Backup & Restore of the station



# Platform details

The screenshot shows the Niagara Workbench interface. The main window title is "Niagara Workbench". The menu bar includes File, Edit, Search, Bookmarks, Tools, Window, and Help. The address bar shows "localhost". The breadcrumb navigation shows "My Host (Maverick) > Platform > Platform Administration".

The left sidebar (Nav) shows a tree view under "My Network":

- My Host (Maverick)
  - My Modules
  - My File System
  - Platform
    - Dialup Configuration
    - Distribution File Installer
    - File Transfer Client
    - Lexicon Installer
    - License Manager
    - Module Manager
    - Platform Administration
    - Station Copier
    - Station Director
    - TCP/IP Configuration
    - User Manager
  - Remote File System
  - Station (demo)

The main content area contains a list of actions:

- View Details
- Update Authentication
- Change HTTP Port
- Change Date/Time
- Change Output Settings
- View Daemon Output
- Set Module Filter
- Commissioning
- Reboot

On the right, the "Platform Administration" section displays system details:

- Baja Version:** Tridium 3.0.75
- System Home:** c:\niagara\niagara-3.0.75
- Host:** My Host (Maverick)
- Daemon HTTP Port:** 3011
- Host ID:** Win-74E8-8499-EB19-0D56
- Model:** None
- Local Date:** 20-Apr-05
- Local Time:** 13:19
- Local Time Zone:** America/Detroit (-5/-4)
- Operating System:** Windows XP (5.1)
- Architecture:** x86
- Module Contents:** doc+ui+runtime
- Strip line nos.:** false
- Java Virtual Machine:** Installed
- Number of CPUs:** 1
- Current CPU Usage:** 35%
- Overall CPU Usage:** 95%

At the bottom, a "Filesystem" table is shown:

Filesystem	Total	Free
C:\	58,605,088 KB	35,735,172 K



# Honeywell

[www.honeywell.com](http://www.honeywell.com)

