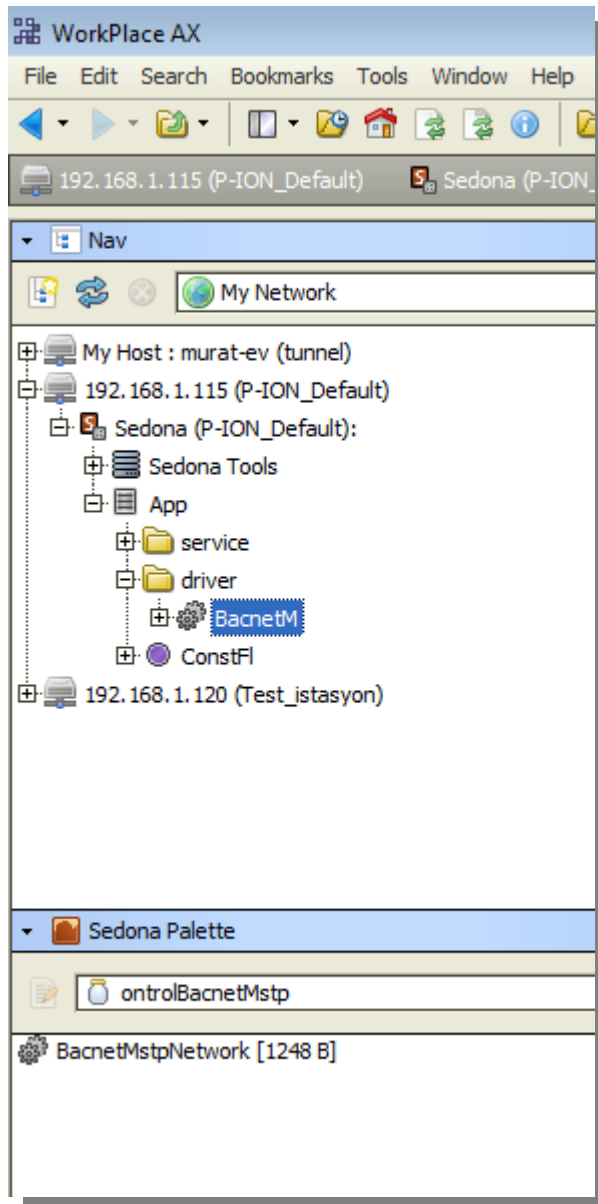


Using BACnet drivers on Ontrol Sedona products

(Features as of Mar 2015)



Ontrol Bacnet Drivers for Sedona

- ontrolBacnetIp
- ontrolBacnetMstp

OntrolBacnet DRIVERS REQUIRE MINIMAL CONFIGURATION

The Ontrol Bacnet palettes have only a single component.

You only need to add a BacnetIpNetwork or BacnetMstpNetwork to your app.

No need to add individual components for each value to be exposed over BACnet

Each and every slot in your app becomes magically available to your BACnet supervisor

Bacnet Network settings (IP)

BacnetIpNetwork Properties

preview (ontrolBacnetIP::BacnetIpNetwork)

<input type="checkbox"/> Meta	Group [1] >>
<input type="checkbox"/> Ping Time Sec	30 s
<input type="checkbox"/> Local Device Id	111 [0 - 65535]
<input type="checkbox"/> System Status	0 [0 - 255]
<input type="checkbox"/> Port	47808 [0 - 65535]

Port
Default 0xBAC0


pingTime
not used

Local Device ID
Bacnet property

Bacnet Network settings (MSTP)

Serial Port number
Set to:
1 for P-ION
1 for R-ION main bus
2 for R-ION aux. bus

BacnetMstpNetwork Properties

 BacnetM (ontrolBacnetMstp::BacnetMstpNetwork)

<input type="checkbox"/> <input checked="" type="radio"/> Meta	Group [1] >>
<input type="checkbox"/> <input checked="" type="radio"/> Ping Time Sec	30 s
<input type="checkbox"/> <input checked="" type="radio"/> Local Device Id	111 [0 - 65535]
<input type="checkbox"/> <input checked="" type="radio"/> System Status	0 [0 - 255]
<input type="checkbox"/> <input checked="" type="radio"/> Port Number	1 [0 - 255]
<input type="checkbox"/> <input checked="" type="radio"/> Baudrate	38400 [9600 - 38400]
<input type="checkbox"/> <input checked="" type="radio"/> Mstp Address	11 [0 - 254]

pingTime
not used

Local Device ID
Bacnet property

Baud Rate

MSTP Address
address on RS485 bus

Sedona slots modeled as BACnet objects

This driver exposes each sedona slot in your app as an individual BACnet object.

Sedona component slots exposed as BACnet objects

ObjectType	=	AnalogValue / BinaryValue
ObjectInstance	=	1024 x (componentId + 1) + slotId
propertyId	=	“Present Value”
propertyArrayIndex	=	None or -1

Sedona components exposed as BACnet objects

DEPRECATED

ObjectType	=	Proprietary 255
ObjectInstance	=	sedona component ID in the app
propertyId	=	“Present Value”
propertyArrayIndex	=	slotId on the sedona component

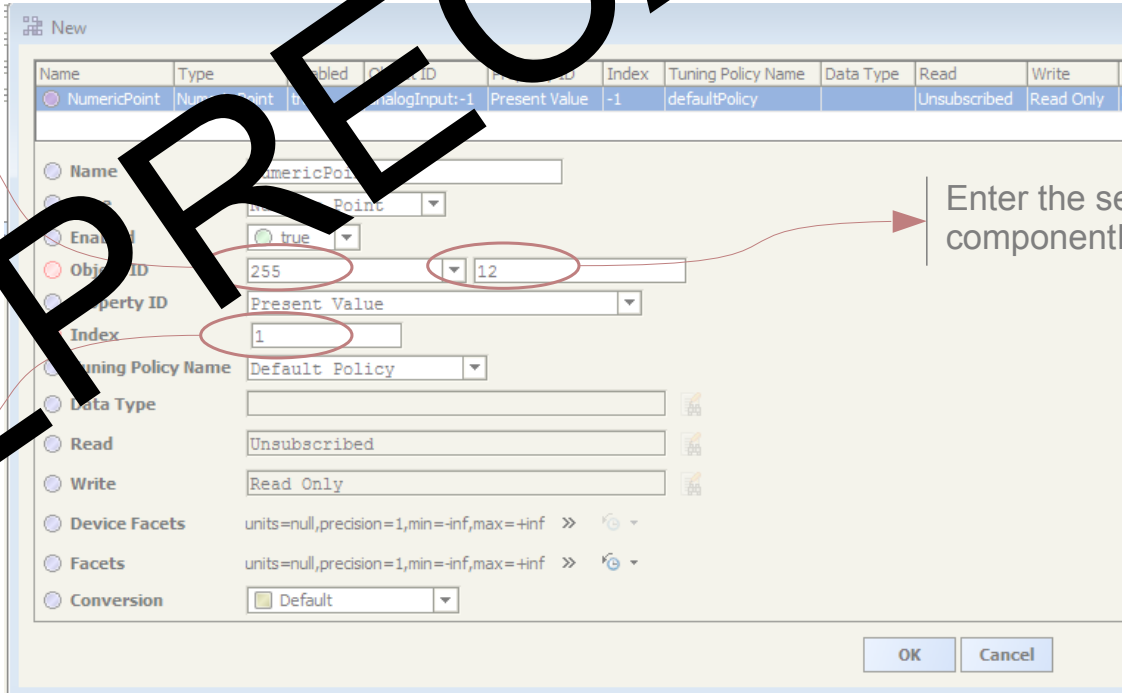
Using this modeling scheme, BACnet master devices can read from and write to any Sedona slot.

Adding a point in Niagara^{AX} BACnet driver

Points need to be added manually as the Niagara^{AX} BACnet driver doesn't handle discovery of proprietary objects very gracefully.

Simply click NEW button in the BacnetPoint Manager view.

DEPRECATED



Always type 255 as objectType instead of choosing from the pull-down box

Enter the sedona slot number in the propertyArrayIndex field

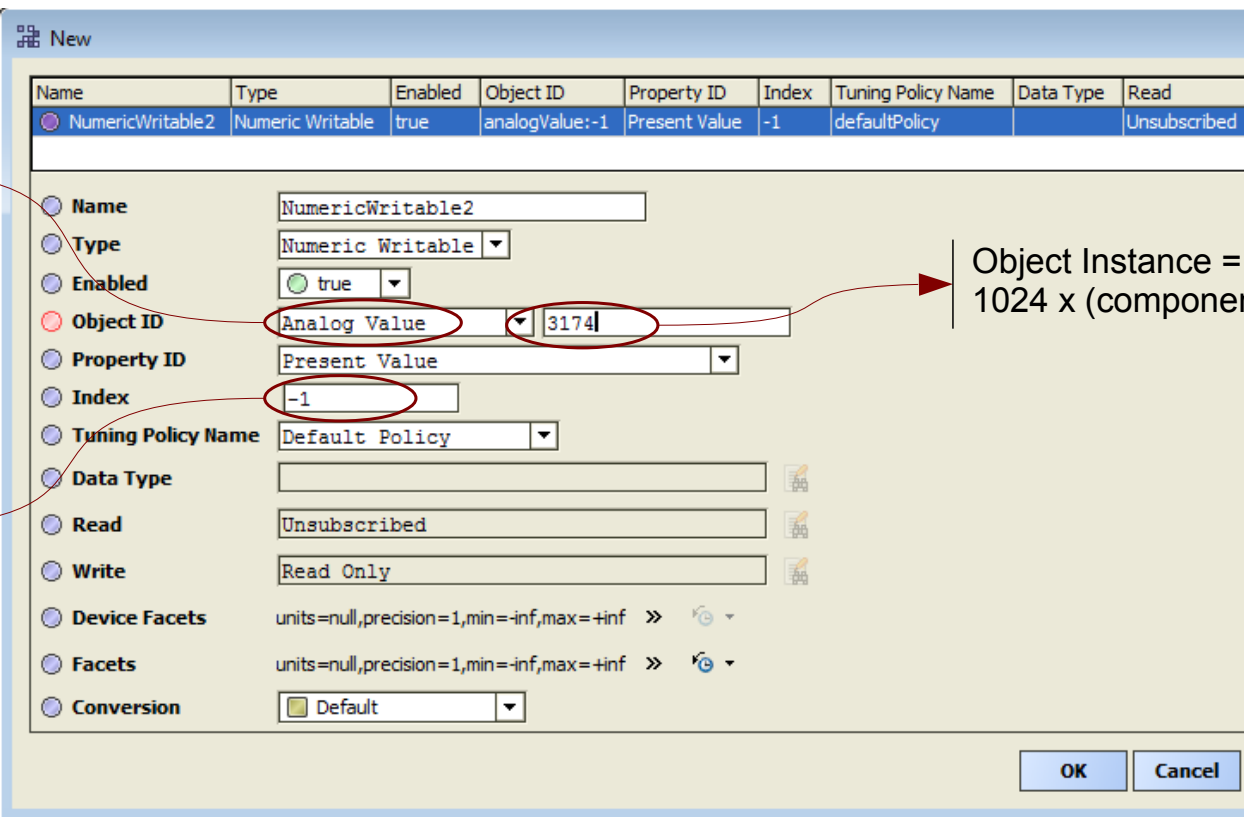
Enter the sedona componentId

Name	Type	Enabled	Object ID	Property ID	Index	Tuning Policy Name	Data Type	Read	Write
NumericPoint	NumericPoint	true	255	Present Value	1	defaultPolicy		Unsubscribed	Read Only

Adding a point in Niagara^{AX} BACnet driver

Points need to be added manually as it is not possible to discover every component/every slot in the app from the Niagara^{AX} with slot names.

Simply click NEW button in the BacnetPoint Manager view.



Select AnalogValue or BinaryValue

Object Instance = $1024 \times (\text{componentId} + 1) + \text{slotId}$

Leave as -1

Name	Type	Enabled	Object ID	Property ID	Index	Tuning Policy Name	Data Type	Read
NumericWritable2	Numeric Writable	true	analogValue:-1	Present Value	-1	defaultPolicy		Unsubscribed

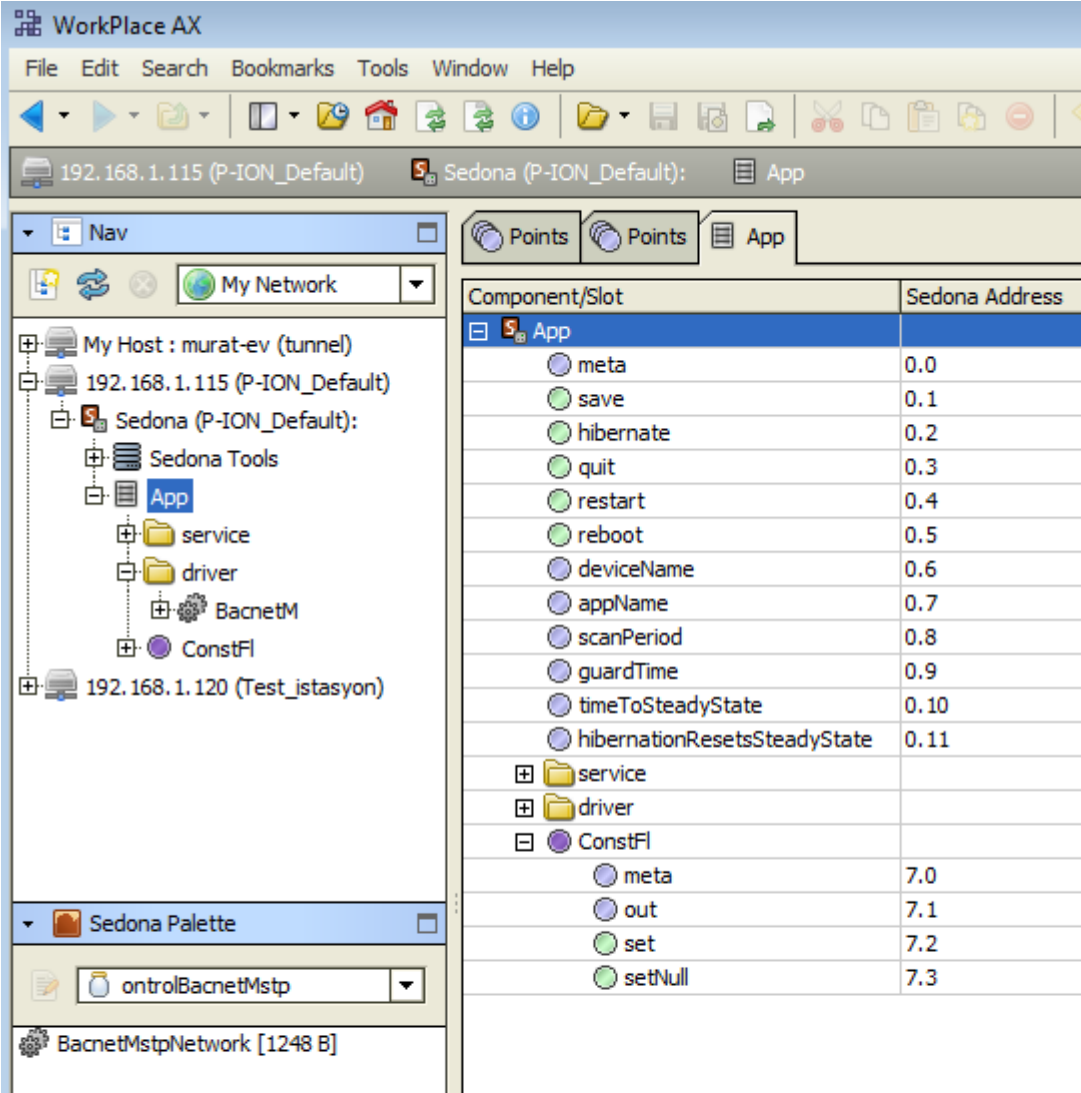
Name: NumericWritable2
 Type: Numeric Writable
 Enabled: true
 Object ID: Analog Value (3174)
 Property ID: Present Value
 Index: -1
 Tuning Policy Name: Default Policy
 Data Type:
 Read: Unsubscribed
 Write: Read Only
 Device Facets: units=null,precision=1,min=-inf,max=+inf
 Facets: units=null,precision=1,min=-inf,max=+inf
 Conversion: Default

OK Cancel

Where do I find the sedona component ID & slot numbers in my app? (the easy way)

If you have the `ontrolSedonaUtil` module, simply double-click on the App header and navigate to any component/slot in your app.

Read the `componentId` and `slotId` in the right column.



The screenshot shows the Workplace AX interface. The left pane displays a tree view of the network configuration. The right pane shows a table of component/slot IDs and their corresponding Sedona addresses.

Component/Slot	Sedona Address
App	
meta	0.0
save	0.1
hibernate	0.2
quit	0.3
restart	0.4
reboot	0.5
deviceName	0.6
appName	0.7
scanPeriod	0.8
guardTime	0.9
timeToSteadyState	0.10
hibernationResetsSteadyState	0.11
service	
driver	
ConstFl	
meta	7.0
out	7.1
set	7.2
setNull	7.3

Where do I find the sedona component ID & slot numbers in my app? (the native AX method)

Determining ComponentId

Open the propertySheet view
for the parent of the component.
Read componentId in the appropriate line

Property Sheet of parent

Meta	Group [1]	
+	forOx	control::F2I [forOx:32]
+	fanUpDn	ontrolTrigger::TrigNumericUpDown [fanUpDn:33]
+	isAuto	control::Cmpr [isAuto:34]
+	Const4	control::ConstFloat [Const4:36]
+	fanSpd	control::ASW [fanSpd:37]
+	FanSpdR	ontrolControl::RegFloat [FanSpdR:45]
+	FanCmd	control::Mul3 [FanCmd:52]
+	Const33	control::ConstFloat [Const33:65]

Determining SlotId

Open the slotSheet view for the component.
Count down from the top, starting at zero.

Slot Sheet of component

	Name	Type	Facets
0	meta	sys::int	[config]
1	out	sys::float	[readonly]
2	in1	sys::float	[]
3	in2	sys::float	[]

BACnet Protocol Implementation Conformance Statement

Date: November 15, 2014
Vendor Name: Ontrol
Product Name: BACnet driver for Ontrol IP capable Sedona devices
Product Model Number: ontrolBacnet kit, compatible with PION & RION series controllers
Application Software Version: 1.1
Firmware Revision: 1.2.28
BACnet Protocol Revision: 1.40

Product Description:
 This driver will run on any Ontrol IP based Sedona Framework device including the P-ION plant controller and the R-ION series room controllers.

BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K):

Supported BIBBs	BIBB Name
DS-RP-B	Data Sharing – ReadProperty – B
DS-WP-B	Data Sharing – WriteProperty – B
DM-DDB-B	Device Management – Dynamic Device Binding - B

Segmentation Capability:

- Able to transmit segmented messages Window Size _____
- Able to receive segmented messages Window Size _____

Standard Object Types Supported:

No dynamically creatable or deletable types

Object Type	Optional Properties	Writable Properties	Notes
Device	Description	-	
Analog Value	Description	PresentValue	
Binary Value	Description	PresentValue	
Proprietary Type 255 (models any sedona component)	Description Present Value	Present Value	<u>Modeling for sedona slot values</u> ObjectType = Proprietary 255 ObjectInstance = sedonaCompId PropertyId = PresentValue PropertyArrayIndex = slotId

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
- MS/TP master (Clause 9), baud rate(s): _____
- MS/TP slave (Clause 9), baud rate(s): 9600 - 19200 - 38400
- Point-To-Point, EIA 232 (Clause 10), baud rate(s): _____
- Point-To-Point, modem, (Clause 10), baud rate(s): _____
- LonTalk, (Clause 11), medium: _____
- BACnet/ZigBee (ANNEX O)
- Other: _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) Yes No

Networking Options:

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
 - Does the BBMD support registrations by Foreign Devices? Yes No
 - Does the BBMD support network address translation? Yes No

Network Security Options:

- Non-secure Device - is capable of operating without BACnet Network Security
- Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
 - Multiple Application-Specific Keys:
 - Supports encryption (NS-ED BIBB)
 - Key Server (NS-KS BIBB)

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ISO 10646 (UTF-8)
- IBM™/Microsoft™ DBCS
- ISO 8859-1
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS X 0208