

## DrvBACnet

DrvBACnet är en drivrutin till Web Port för kommunikation via protokollet BACnet. Drivrutinen har i dagsläget stöd för BACnet via IP utan stöd för BBMD. Ytterligare funktioner kommer att släppas via uppdateringar. Adressering kan ske både via objekttyp och objektnamn. Frågor sker pollande men COV kommer även implementeras.

### Installation

Installationen av DrvBACnet görs genom att välja DrvBACnet vid installationen av Web Port. Se *kapitel 1* för mer information kring installationsprocessen.

### Konfiguration

För att använda DrvBACnet skapas för en IO-enhet enligt kapitel 3.2.1 i manualen. Utöver generella inställningar (se kapitel 3.2.4 i manualen) finns följande inställningar:

#### Port

BACnet port, exempelvis BAC0, BAC1 osv.

#### Standard IP

Anger IP-adress för det nätverkskort BACnet-frågor skickas via.

#### IO-enhet

Device-namn för den enhet IO-enheten skall kommunicera med. Detta kan även utelämnas och i stället anges i taggen genom att ange detta enligt **devicenamn@teknisk adress**.

BACnet-enheter kan också adresseras genom sitt devicenummer. Detta anges då enligt **device:devicenummer**

#### Ladda om konfiguration

Om denna ruta bockas i kommer konfigurationen av en BACnet-enhet läsas om då IO-enheten sparas. Detta kan vara användbart om programmeringen ändrats i styrsystemet.

Konfigurationsfiler sparas under /assets/import/drvbacnet/devices/

För mer information om hur IO-enheter skapas, redigeras och tas bort se kapitel 3 i manualen.

### Taggar

För att läsa och skriva värden från en BACnet-enhet måste taggar skapas i Web Port och adresseras mot de signaler som önskas. För mer information om hur tagglistor och taggar skapas se kapitel 4 i manualen.

#### *" Tips:*

Skapa en tagglista för varje IO-enhet. Detta för att få en bra struktur och enkelt hitta taggar i listorna.

Taggar som knyts till en IO-enhet av typen DrvBACnet kan ha följande datatyper:

Datatyp i OPC	Datatyp i Web Port
BOOLEAN	DIGITAL

UNSIGNED_INT	ULONG
SIGNED_INT	LONG
REAL	REAL
DOUBLE	DOUBLE
DATE	DATE
TIME	TIME
CHARACTER_STRING	STRING
BIT_STRING	BITSTRING
ENUMERATED	ENUM
WEEKLY_SCHEDULE	SCHEDULE

Adresser hittas enklast via en BACnet browser.

### BACnet-objekt

Web Port kan läsa BACnet-objekt antingen via dess objektnamn (object-name) eller via dess objekttyp följt av : och instansnummer. Proprietära objekt läsas genom att skriva objekttyp:instans där objekttyp anges som nummer.

Följande BACnet-objekt stöds i Web Port:

<b>analog-input</b>	<b>=0</b>
<b>analog-output</b>	<b>=1</b>
<b>analog-value</b>	<b>=2</b>
<b>binary-input</b>	<b>=3</b>
<b>binary-output</b>	<b>=4</b>
<b>binary-value</b>	<b>=5</b>
<b>calendar</b>	<b>=6</b>
<b>command</b>	<b>=7</b>
<b>device</b>	<b>=8</b>
<b>event-enrollment</b>	<b>=9</b>
<b>file</b>	<b>=10</b>
<b>group</b>	<b>=11</b>
<b>loop</b>	<b>=12</b>
<b>multi-state-input</b>	<b>=13</b>
<b>multi-state-output</b>	<b>=14</b>
<b>notification-class</b>	<b>=15</b>
<b>program</b>	<b>=16</b>
<b>schedule</b>	<b>=17</b>
<b>averaging</b>	<b>=18</b>
<b>multi-state-value</b>	<b>=19</b>
<b>trendlog</b>	<b>=20</b>
<b>life-safety-point</b>	<b>=21</b>
<b>life-safety-zone</b>	<b>=22</b>

accumulator	=23
pulse-converter	=24
event-log	=25
global-group	=26
trend-log-multiple	=27
load-control	=28
structured-view	=29
access-door	=30
timer	=31
access-credential	=32
access-point	=33
access-rights	=34
access-user	=35
access-zone	=36
credential-data-input	=37
network-security	=38
bitstring-value	=39
characterstring-value	=40
date-pattern-value	=41
date-value	=42
datetime-pattern-value	=43
datetime-value	=44
integer-value	=45
large-analog-value	=46
octetstring-value	=47
positive-integer-value	=48
time-pattern-value	=49
time-value	=50
notification-forwarder	=51
alert-enrollment	=52
channel	=53
lighting-output	=54
binary-lighting-output	=55
proprietary-min	=128
proprietary-max	=1023
max-bacnet-type	=1024
max-ashrae-type	=55

## Parametrar

Följande parametrar kan användas på BACnet-objekt. Parametrar kan nås antingen via sitt namn eller sitt nummer. Proprietära parametrar nås alltid via sitt nummer. I den tekniska adressen anges först objekt-id sedan en punkt (.) och därefter parametern. Om en olika positioner i en array skall nås anges detta inom klamrar []. Skrivningar görs i dagsläget alltid med nivå 16.

acked-transitions	=0
ack-required	=1
action	=2
action-text	=3
active-text	=4

active-vt-sessions	=5
alarm-value	=6
alarm-values	=7
all	=8
all-writes-successful	=9
apdu-segment-timeout	=10
apdu-timeout	=11
application-software-version	=12
archive	=13
bias	=14
change-of-state-count	=15
change-of-state-time	=16
notification-class	=17
blank-1	=18
controlled-variable-reference	=19
controlled-variable-units	=20
controlled-variable-value	=21
cov-increment	=22
date-list	=23
daylight-savings-status	=24
deadband	=25
derivative-constant	=26
derivative-constant-units	=27
description	=28
description-of-halt	=29
device-address-binding	=30
device-type	=31
effective-period	=32
elapsed-active-time	=33
error-limit	=34
event-enable	=35
event-state	=36
event-type	=37
exception-schedule	=38
fault-values	=39
feedback-value	=40
file-access-method	=41
file-size	=42
file-type	=43
firmware-revision	=44
high-limit	=45
inactive-text	=46
in-process	=47
instance-of	=48
integral-constant	=49
integral-constant-units	=50
issue-confirmed-notifications	=51
limit-enable	=52

list-of-group-members	=53
list-of-object-property-references	=54
list-of-session-keys	=55
local-date	=56
local-time	=57
location	=58
low-limit	=59
manipulated-variable-reference	=60
maximum-output	=61
max-apdu-length-accepted	=62
max-info-frames	=63
max-master	=64
max-pres-value	=65
minimum-off-time	=66
minimum-on-time	=67
minimum-output	=68
min-pres-value	=69
model-name	=70
modification-date	=71
notify-type	=72
number-of-apdu-retries	=73
number-of-states	=74
object-identifier	=75
object-list	=76
object-name	=77
object-property-reference	=78
object-type	=79
optional	=80
out-of-service	=81
output-units	=82
event-parameters	=83
polarity	=84
present-value	=85
priority	=86
priority-array	=87
priority-for-writing	=88
process-identifier	=89
program-change	=90
program-location	=91
program-state	=92
proportional-constant	=93
proportional-constant-units	=94
protocol-conformance-class	=95
protocol-object-types-supported	=96
protocol-services-supported	=97
protocol-version	=98
read-only	=99
reason-for-halt	=100

recipient	=101
recipient-list	=102
reliability	=103
relinquish-default	=104
required	=105
resolution	=106
segmentation-supported	=107
setpoint	=108
setpoint-reference	=109
state-text	=110
status-flags	=111
system-status	=112
time-delay	=113
time-of-active-time-reset	=114
time-of-state-count-reset	=115
time-synchronization-recipients	=116
units	=117
update-interval	=118
utc-offset	=119
vendor-identifier	=120
vendor-name	=121
vt-classes-supported	=122
weekly-schedule	=123
attempted-samples	=124
average-value	=125
buffer-size	=126
client-cov-increment	=127
cov-resubscription-interval	=128
current-notify-time	=129
event-time-stamps	=130
log-buffer	=131
log-device-object-property	=132
enable	=133
log-interval	=134
maximum-value	=135
minimum-value	=136
notification-threshold	=137
previous-notify-time	=138
protocol-revision	=139
records-since-notification	=140
record-count	=141
start-time	=142
stop-time	=143
stop-when-full	=144
total-record-count	=145
valid-samples	=146
window-interval	=147
window-samples	=148

maximum-value-timestamp	=149
minimum-value-timestamp	=150
variance-value	=151
active-cov-subscriptions	=152
backup-failure-timeout	=153
configuration-files	=154
database-revision	=155
direct-reading	=156
last-restore-time	=157
maintenance-required	=158
member-of	=159
mode	=160
operation-expected	=161
setting	=162
silenced	=163
tracking-value	=164
zone-members	=165
life-safety-alarm-values	=166
max-segments-accepted	=167
profile-name	=168
auto-slave-discovery	=169
manual-slave-address-binding	=170
slave-address-binding	=171
slave-proxy-enable	=172
last-notify-record	=173
schedule-default	=174
accepted-modes	=175
adjust-value	=176
count	=177
count-before-change	=178
count-change-time	=179
cov-period	=180
input-reference	=181
limit-monitoring-interval	=182
logging-object	=183
logging-record	=184
prescale	=185
pulse-rate	=186
scale	=187
scale-factor	=188
update-time	=189
value-before-change	=190
value-set	=191
value-change-time	=192
align-intervals	=193
interval-offset	=195
last-restart-reason	=196
logging-type	=197

restart-notification-recipients	=202
time-of-device-restart	=203
time-synchronization-interval	=204
trigger	=205
utc-time-synchronization-recipients	=206
node-subtype	=207
node-type	=208
structured-object-list	=209
subordinate-annotations	=210
subordinate-list	=211
actual-shed-level	=212
duty-window	=213
expected-shed-level	=214
full-duty-baseline	=215
requested-shed-level	=218
shed-duration	=219
shed-level-descriptions	=220
shed-levels	=221
state-description	=222
door-alarm-state	=226
door-extended-pulse-time	=227
door-members	=228
door-open-too-long-time	=229
door-pulse-time	=230
door-status	=231
door-unlock-delay-time	=232
lock-status	=233
masked-alarm-values	=234
secured-status	=235
absentee-limit	=244
access-alarm-events	=245
access-doors	=246
access-event	=247
access-event-authentication-factor	=248
access-event-credential	=249
access-event-time	=250
access-transaction-events	=251
accompaniment	=252
accompaniment-time	=253
activation-time	=254
active-authentication-policy	=255
assigned-access-rights	=256
authentication-factors	=257
authentication-policy-list	=258
authentication-policy-names	=259
authentication-status	=260
authorization-mode	=261
belongs-to	=262



credential-disable	=263
credential-status	=264
credentials	=265
credentials-in-zone	=266
days-remaining	=267
entry-points	=268
exit-points	=269
expiry-time	=270
extended-time-enable	=271
failed-attempt-events	=272
failed-attempts	=273
failed-attempts-time	=274
last-access-event	=275
last-access-point	=276
last-credential-added	=277
last-credential-added-time	=278
last-credential-removed	=279
last-credential-removed-time	=280
last-use-time	=281
lockout	=282
lockout-relinquish-time	=283
master-exemption	=284
max-failed-attempts	=285
members	=286
muster-point	=287
negative-access-rules	=288
number-of-authentication-policies	=289
occupancy-count	=290
occupancy-count-adjust	=291
occupancy-count-enable	=292
occupancy-exemption	=293
occupancy-lower-limit	=294
occupancy-lower-limit-enforced	=295
occupancy-state	=296
occupancy-upper-limit	=297
occupancy-upper-limit-enforced	=298
passback-exemption	=299
passback-mode	=300
passback-timeout	=301
positive-access-rules	=302
reason-for-disable	=303
supported-formats	=304
supported-format-classes	=305
threat-authority	=306
threat-level	=307
trace-flag	=308
transaction-notification-class	=309
user-external-identifier	=310

user-information-reference	=311
user-name	=317
user-type	=318
uses-remaining	=319
zone-from	=320
zone-to	=321
access-event-tag	=322
global-identifier	=323
verification-time	=326
base-device-security-policy	=327
distribution-key-revision	=328
do-not-hide	=329
key-sets	=330
last-key-server	=331
network-access-security-policies	=332
packet-reorder-time	=333
security-pdu-timeout	=334
security-time-window	=335
supported-security-algorithm	=336
update-key-set-timeout	=337
backup-and-restore-state	=338
backup-preparation-time	=339
restore-completion-time	=340
restore-preparation-time	=341
bit-mask	=342
bit-text	=343
is-utc	=344
group-members	=345
group-member-names	=346
member-status-flags	=347
requested-update-interval	=348
covu-period	=349
covu-recipients	=350
event-message-texts	=351
event-message-texts-config	=352
event-detection-enable	=353
event-algorithm-inhibit	=354
event-algorithm-inhibit-ref	=355
time-delay-normal	=356
reliability-evaluation-inhibit	=357
fault-parameters	=358
fault-type	=359
local-forwarding-only	=360
process-identifier-filter	=361
subscribed-recipients	=362
port-filter	=363
authorization-exemptions	=364
allow-group-delay-inhibit	=365

<b>channel-number</b>	<b>=366</b>
<b>control-groups</b>	<b>=367</b>
<b>execution-delay</b>	<b>=368</b>
<b>last-priority</b>	<b>=369</b>
<b>write-status</b>	<b>=370</b>
<b>property-list</b>	<b>=371</b>
<b>serial-number</b>	<b>=372</b>
<b>blink-warn-enable</b>	<b>=373</b>
<b>default-fade-time</b>	<b>=374</b>
<b>default-ramp-rate</b>	<b>=375</b>
<b>default-step-increment</b>	<b>=376</b>
<b>egress-time</b>	<b>=377</b>
<b>in-progress</b>	<b>=378</b>
<b>instantaneous-power</b>	<b>=379</b>
<b>lighting-command</b>	<b>=380</b>
<b>lighting-command-default-priority</b>	<b>=381</b>
<b>max-actual-value</b>	<b>=382</b>
<b>min-actual-value</b>	<b>=383</b>
<b>power</b>	<b>=384</b>
<b>transition</b>	<b>=385</b>
<b>egress-active</b>	<b>=386</b>
<b>interface-value</b>	<b>=387</b>
<b>fault-high-limit</b>	<b>=388</b>
<b>fault-low-limit</b>	<b>=389</b>
<b>low-diff-limit</b>	<b>=390</b>
<b>strike-count</b>	<b>=391</b>
<b>time-of-strike-count-reset</b>	<b>=392</b>
<b>default-timeout</b>	<b>=393</b>
<b>initial-timeout</b>	<b>=394</b>
<b>last-state-change</b>	<b>=395</b>
<b>state-change-values</b>	<b>=396</b>
<b>timer-running</b>	<b>=397</b>
<b>timer-state</b>	<b>=398</b>
<b>command-time-array=</b>	<b>430</b>
<b>current-command-priority</b>	<b>=431</b>
<b>last-command-time</b>	<b>=432</b>
<b>value-source</b>	<b>=433</b>
<b>value-source-array</b>	<b>=434</b>
<b>max-bacnet-property-id</b>	<b>=4194303</b>

### Importskript

För att förenkla import av BACnet-enheter kan importskript skapas. Dessa placeras under /assets/import/drvbacnet/. Skripten skrivs i JavaScript och ett exempel finns inkluderat vid installation (example.js).