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How to manage eWON communication using scripting

1 Purpose

Sometimes it is needed that the Internet communication of the eWON has to be controlled by an external device, as for example a PLC which is connected to the eWON.

This document will for every communication setting of the eWON reflect the corresponding comcfg parameter and will also indicate which status field can be used to check the status.

With this information the eWON integrator should be able to design his own eWON program and like this manage the eWON communication using Tags or user defined Web pages.

In this document we will list the corresponding **comcfg** parameters and the **estat** parameters.

The comcfg parameters are the configuration parameters of the eWON. So these parameters will allow you to configure the communication settings of the eWON.

The estat parameters are status information given back by eWON. So these parameters will allow you to control the communication status.

The comcfg and the estat parameters can be read and modified using the basic Getsys/ Setsys commands. Please refer to the general Programming guide for detailed information of the use of the GetSYS/SetSys commands.

Example of setting a comcfg parameter:

```
SETSYS COM, "LOAD"
SETSYS COM, "PPPClPhone1",0123456789
SETSYS COM, "SAVE"
CFGSAVE :   REM to write setting into flash
```
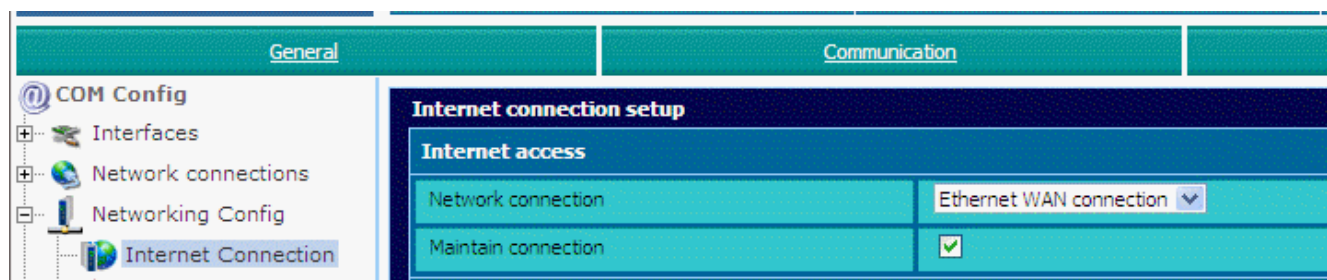
Example of reading an estat parameter:

```
SETSYS INF,"load"
A$ = GETSYS INF,"VPNIP"
```

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2 Internet connection settings

System Setup/ Communication/ Networking Config/ Internet Connection

Possible Network connection types (eWON type depending):

No Internet Access
Modem Connection
Ethernet Wan Connection
ADSL

2.1 Comcfg.txt parameter

Network connection = "WANCnx"

WANCnx	**Network connection**
0	No Internet Access
1	Modem Connection
2	Ethernet Wan Connection
3	ADSL

Maintain connection = "WANPermCnx"

WANPermCnx	**Maintain connection**
0	disabled
1	enabled

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2.2 Linked Script examples

2.2.1 Open the connection:

```
Setsys COM,"load"
Setsys COM,"WANCnx","2"                              : REM (1, 2 or 3)
Setsys COM,"WANPermCnx","1"
Setsys COM,"save"
```

2.2.2 Close the connection:

```
Setsys COM,"load"
Setsys COM,"WANCnx","0"
Setsys COM,"WANPermCnx","0"
Setsys COM,"save"
```

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3 Online IP addresses

Diagnostic / Status/ Status

Status	
Description	Value
PPP allocated IP address	0.0.0.0
Current IP transparent forward address	0.0.0.0
VPN allocated IP address	0.0.0.0
PPP accumulated incoming traffic	0
PPP accumulated outgoing traffic	0
ADSL Line status	
ADSL WAN status	
ADSL Local IP	0.0.0.0
ADSL Remote IP	0.0.0.0
ADSL Primary DNS	0.0.0.0
ADSL Secondary DNS	0.0.0.0

3.1 ESTATparameters

Status	Estat parameter
PPP allocated IP address	PppIp
Current IP transparent forwarding address	TfIp
VPN allocated IP address	VpnIp
ADSL Local IP	ADSLLocalIp
ADSL Remote IP	ADSLRemoteIp
ADSL Primary DNS	ADSLDNS1
ADSL Secondary DNS	ADSLDNS1

3.2 PRG group fields

Next to the estat parameters, eWON allows also to read or force some special program parameters by scripting. For this the commands GETSYS PRG or SETSYS PRG has to be used. For example to hang up the modem, the command <setsys prg, "PPPIP", 0> can be used.

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Parameter	Description
PPPIP (read/write String)	When the eWON is offline, the value returned is "0.0.0.0". When the eWON is online the value returned is the dotted IP address allocated for the PPP connection The parameter can be written in order to disconnect the eWON. The only value accepted when writing in this parameter is 0 (setsys prg, "PPPIP", 0)
WANIP (read only String)	This parameter returns the string corresponding to the current WAN IP address. When the eWON is offline, the value returned is "0.0.0.0". If no-ip has been called, then WANIP returns the IP returned by no-ip, otherwise the actual physical WAN IP address (PPP or Ethernet) is returned. REM1: if getsys prg,"WANIP" is called in a ONWAN event it is likely that if a no-ip request is scheduled through publish ip address, it is not yet finished when the ONWAN is called. REM2: getsys prg,"WANIP" returns the same value as getsys prg,"PPPIP" if no-ip is not (yet) called and WAN interface is on modem, BUT writing to WANIP does not close the WAN connection like writing to PPPIP may close the PPP connection.
VPNIP (read only String)	Currently allocated VPN ip address. If eWON is not connected to VPN this is 0.0.0.0
TRFWD (read/write String)	Transparent forwarding IP address. The parameter can be used to write or read the routing parameter. The parameter is only active when the PPP connection is established

3.3 Linked script examples

3.3.1 Check if modem is online

```
A$ = GETSYS PRG,"PPPIP"
IF (A$="0.0.0.0") THEN
   Print "Modem offline"
   PPPStatusTag@ = 0
Else
   Print "Modem online, IP:"; A$
   PPPStatusTag@ = 1
END
```

3.3.2 Check if VPN is established

```
A$ = GETSYS PRG,"VPNIP"
IF (A$="0.0.0.0") THEN
   Print "VPN not established"
   VPNStatusTag@ = 0
Else
   Print "VPN established, IP:"; A$
   VPNStatusTag@ = 1
END
```

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4 GSM Modem information

System Setup/ Communication/ Interfaces/ Modem

4.1 Comcfg.txt parameters

Modem Init String= "ModemInitStr"

Operator Selection= "GSMOpId"

GSMOpId	Description
0	The operator is selected automatically by the modem
X	X is the Operator Id that must be manually selected.

REM: the X value can be obtained from the GsmOperList parameter provided in the estat file. This list has the following form: GsmOperList:[{opna:"BEL PROXIMUS ",opid:" **20601**",stat:"="},{opna:"BASE ",opid:"**20620**",stat:"-"},{opna:"B mobistar ",opid:" **20610**",stat:"-"}]
Each entry provides an operator name, id and status.
To select the Operator "Bel Proximus", set GSMOpID=20601

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GSM Pin Code= "PIN"

Display Level on Led= "ModDispLvl"

ModDispLvl	Description
0	Signal level not displayed on Modem Led
1	Signal level displayed on Modem Led

PDP context definition= "PdpApnUse"

PdpApnUse	Description
0	disabled
1	enabled

Access Point Name= "PdpApn"

4.1.1 Auto Band

The eWON GSM modem (Wavecom) is normally working on 1 or 2 bands. In order to cover the 4 possible bands a mechanism is added to try and switch automatically between 900E-1800 and 850-1900.

Added Comcfg Parameter= "GsmBand"

GsmBand	Description
0	The modem band is not Specified. Current value in modem is used
1	850
2	900E
3	1800
4	1900
5	850 1900
6	900E 1800
7	900E 1900
10	Enable band autodetection

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4.2 ESTAT parameters

Signal Level = "GSMSignal"

> Note: The signal Level can also be retrieved using the IOserver "eWON" and the register "GSM_LEV" (See eWON General Reference guide for detailed explications).

Network = "GsmNetReg"

GsmNetReg	GSM Status
1	Home network
2	Searching registration
3	Registration denied
4	unknown registration
5	Roaming
101	Registration in progress

GsmNetReg=1 o 5 means registered

> Note: The GSM Network info can also be retrieved using the IOserver "eWON" and the register "GSM_REG" (See eWON General Reference guide for detailed explications).

Available Operators = "GsmOperList"

Initialization status of the modem= "ModemInitStatus"

ModemInitStatus	Description
10	The modem is waiting for initialization to start
5	The initialization is in progress
0	The initialization is finished.

GSM Band detection= "GsmBand"

> Important: The GsmBand status is only valid when the ModemInitStatus is 0 (initialization is finished)

GSM Operator= "GsmOpId"

> This flag is filled during modem initialization with the current operator. This flag is also updated before each GSM call.

> Important: The GsmBand status is only valid when the ModemInitStatus is 0 (initialization is finished)

4.3 Linked Scripts

4.3.1 Modem reboot

```
SetSys Prg,"MdmRst",1
```

This command will execute an asynchronous modem reboot request.

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4.3.2 OnPPP

This command can be used to execute an action when the PPP connection goes online or offline. Detailed explication of the OnPPP can be found in the General Programming Guide.

Script example:

```
ONPPP "goto PppAction"
END
PppAction:
I%=GETSYS PRG,"EVTINFO"
IF I%=1 then
PRINT "Online with address";GETSYS PRG,"PPPIP"
ELSE
PRINT "PPP Going offline"
ENDIF
END
```

4.3.3 Hang UP

```
setsys prg, "PPPIP", 0
```

4.3.4 Trigger the modem connection

To trigger the connection either create an scheduled action (sendmail, sendftp, etc) or use the maintain connection option.

Script example :
By scripting we will first activate the «Maintain connection» and wait for the Internet connection. Once the Internet connection is established we will uncheck the «Maintain connection». Doing so, the connection will be dropped once the connection timeout parameters have been reached.

```
GoOnline:
LOGEVENT "Online connection triggered by scripting", 101
SETSYS COM,"load"
SETSYS COM,"WanCnx",1
SETSYS COM,"WANPermCnx",1
SETSYS COM,"save"
PRINT Time$;"Maintain connection activated"
Tset 1,5
Ontimer 1, "Goto CheckConnection"
END
CHECKConnection:
A$ = Getsys PRG, "PPPIP"
IF A$ <> "0.0.0.0" THEN
Tset 1,0
SETSYS COM,"load"
SETSYS COM,"WanCnx",1
SETSYS COM,"WANPermCnx",0
SETSYS COM,"save"
PRINT Time$;"Maintain connection deactivated"
LOGEVENT "Online connection established. PPP IP address: " + A$, 101
ENDIF
```

Note: instead of a timer, you can also use the OnPPP command

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5 ADSL Modem information

System Setup/ Communication/ Interfaces/ ADSL

System Setup/ Communication/ Network connections/ ADSL

Diagnostic / Status/ Status

Status	
Description	Value
PPP allocated IP address	0.0.0.0
Current IP transparent forward address	0.0.0.0
VPN allocated IP address	0.0.0.0
PPP accumulated incoming traffic	0
PPP accumulated outgoing traffic	0
ADSL Line status	
ADSL WAN status	
ADSL Local IP	0.0.0.0
ADSL Remote IP	0.0.0.0
ADSL Primary DNS	0.0.0.0
ADSL Secondary DNS	0.0.0.0

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5.1 Comcfg.txt parameter

Connection Type = "AdslCnxType"

AdslCnxType	Connection Type
0	PPPoE or PPPoA

User Name = "AdslUser"

Password = "AdslPass"

PPP Mode = "AdslPPPMode"

AdslPPPMode	PPP Mode
0	PPPoE LLC
1	PPPoA VC-Mux
2	PPPoA LLC

VPI = "AdslVPI"

VCI = "AdslVCI"

ADSL connection timeout = "AdslCnxTO"

5.2 ESTAT parameters

ADSL Line Status = "ADSLOperStatus"

ADSLOperStatus	Line Status
0	Idle
1	Online
2	Bootup_load
3	Handshake

ADSL WAN status = "ADSLWanStatus"

ADSLWanStatus	Wan Status
0	Other
1	Up
2	Down

ADSL Local IP = "ADSLLocalIp"

ADSL Remote IP = "ADSLRemoteIp"

ADSL Primary DNS = "ADSLDNS1"

ADSL Secondary DNS = "ADSLDNS2"

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Indication if eWON has an ADSL modem= "HasAdsl"

HasVPN	Description
0	eWON without ADSL modem
1	eWON with ADSL modem

5.3 Linked Script examples

5.3.1 OnWAN

This command can be used to execute an action when the WAN connection status changes (at ADSL connection or disconnection). Detailed explication of the OnWAN can be found in the General Programming Guide.

```
ONWAN "goto WANAction"
END
WANAction:
I%=GETSYS PRG,"EVTINFO"
IF I%=1 Then
PRINT "ADSL Online with address :";GETSYS PRG,"WANIP"
ELSE
PRINT "ADSL Going offline"
ENDIF
```

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6 VPN connection settings

Detailed information about the VPN settings configuration can be found in the KB-0018-0-EN (Using eWON with OpenVPN).pdf.

Hereunder we will only list the parameters concerning the VPN activation and deactivation.

6.1 Comcfg.txt parameter

VPN connection type= "VPNCnxType"

VPNCnxType	Description
0	Disable VPN
1	Listen for incoming VPN from client
2	Establish outgoing VPN to server

6.2 ESTAT parameters

Indication if eWON has VPN capabilities= "HasVPN"

HasVPN	Description
0	eWON without VPN capabilities
1	eWON has VPN capabilities

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6.3 Linked Scripts

6.3.1 OnVPN

This command can be used to execute an action when the VPN connection status changes (at VPN connection or at disconnection). Detailed explication of the OnVPN can be found in the General Programming Guide.

Script example:

```
ONVPN "goto VPN_Action"
END
VPN_Action:
I%=GETSYS PRG,"EVTINFO"
IF I%=1 then
PRINT "VPN Online"
ELSE
PRINT "VPN Going offline"
ENDIF
END
```