



OPC-HTTP Gateway

1		1
2	,	1
1	1
2	2
3	2
4	3
3		3
1	3
2	3
4		3
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2	4
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10	16
11	18
12	18

1

HTTP-
HTTP(S) , OPC- OPC-
(DA1, DA2, DA3 UA).
OPC-

2

2.1

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1. OPC-HTTP Gateway
2. OPC-HTTP Gateway
sales@aggsoft.ru
3. OPC-HTTP Gateway
OPC-HTTP Gateway
4. **OPC-HTTP Gateway** "AS IS".
- 5.
6. OPC-HTTP Gateway

7. HTTP Gateway
HTTP Gateway.

OPC-
OPC-

2.2

shareware-

- 21
-
- 65535

2.3

2.4

OPC-HTTP Gateway	https://www.aggsoft.ru/support/
------------------	---

3

3.1

- Windows 2000 SP 4 - Windows 11 (x86 x64,).

, (,), , COM- , .

3.2

OPC-HTTP Gateway.

Gateway" , OPC-HTTP Gateway "\Programs Files\OPC-HTTP
 OPC-HTTP Gateway

4

4.1

opchttpgate.xml
 opchttpgate.exe. OPC UA
 opcuahttpgate.xml, opcuahttpgate.exe

HTTP-

```

:

<Config>
  <Log file="opchttpgate.log" info="1" warning="1" error="1" limit="1000000" />
  <HTTPServer port="80;443" ssl="0" auth="1" staticfilepath="files\" log="1"
logdetailed="0">
  <Users>
    <User login="admin" password="admin" />
    <User login="user" password="user" />
  </Users>
  <AllowedIPs>
    <IP>127.0.0.*</IP>
    <IP>192.168.1.*</IP>
  </AllowedIPs>
</HTTPServer>
</Config>

```

4.2

"Log" XML

```

<Log file="opchttpgate.log" info="1" warning="1" error="1" limit="1000000" />

```

file (; :) -

info (; : 1) -
 "1" (),

warning (; : 1) -
 info,

error (; : 1) -
 info,

limit (; : 100000) -

4.3

"DesktopModeSettings" XML

:

```
<DesktopModeSettings>
  <CustomTitle addversion="1">File OPC Server</CustomTitle>
  <CustomLabel>Uptime</CustomLabel>
  <ExitPassword enabled="1">admin</ExitPassword>
  <StopPassword enabled="1">admin</StopPassword>
</DesktopModeSettings>
```

CustomTitle (; :) -
"addversion" "1",

CustomLabel (; :) -

ExitPassword (; :) -
"enabled" "1",
"blockuserlogout" "1",

StopPassword (; :) -
"enabled" "1",

4.4 HTTP-

"File" XML

HTTP-

:

```
<HTTPServer port="80;443" ssl="0" auth="1" staticfilepath="files\" log="1"
logdetailed="0">
```

port (; : 80) - TCP- TCP- .
(«;»). HTTP-

ssl (; : 0) -
«1» (),
«0», 443, HTTP- SSL.
SSL.

websocket (`<1>` (), ; : 0) - [WebSocket](#) ;

auth (`<1>` (), ; HTTP- : 0) - HTTP-
 « » (Basic Authentication). Users HTTP- «

staticfilepath (; : files\) -
 GET.

log (`<1>` (), HTTP- ; : 1) -

logdetailed - `<1>` (), HTTP-

(Users)

```

:
<User login="admin" password="admin" />

```

IP- (AllowedIPs)

```

IP- IP- , HTTP-
IP-
IP- «?» «*».
:
192.168.1.* - IP- 192.168.1.0 192.168.1.255

```

AllowedOPC

```

, OPC
,
"?" "*"
server_id ( ) -
host ( : ) - IP- OPC-
, OPC HTTP.

```

```

:
<AllowedOPC>
  <!-- remove all "OPC" nodes if you want to allow access for all. Mask characters *
  and ? are allowed -->
  <OPC server_id="opcserver Instance.*" host="*">
    <User login="*" />
  </OPC>
</AllowedOPC>

```

«opcserver Instance».

OPC-

4.5

SSL

HTTP-
SSL

SSL,

01ServerCert.pem -
01ServerKey.pem -

127.0.0.1.

OpenSSL.

SSL

4.6 WebSocket

"demo_websocket.html",

JSON.

[HTTP](#)

4.7

OPC UA

OPC-HTTP Gateway

OPC UA

- None ()
- Sign ()
- Sign & Encrypt ()

- Basic128Rsa15
- Basic256
- Basic256Sha256

OPC-HTTP Gateway

OPC UA
"None".

OPC-HTTP Gateway

() OPC

Application Uri:urn:aggsoft.com.opc.client.application

Serial Number: 00f8e216f16b422e72

Signature algorithm: sha256RSA

Issuer: CN = aggsoft.com.opc.client@localhost;O = aggsoft.com;C = DE

Sucject: CN = aggsoft.com.opc.client@localhost;O = aggsoft.com;C = DE

Thumbprint: 2603744fb26c3345f6880e451fe76b9e19c0

5

Windows.

(cmd.exe)

cmd.exe

Windows Vista

: opchttpgate.exe /AI

: opchttpgate.exe /R

"OPC HTTP Gateway Service"

(cmd.exe)

ophttpgate.exe /?

6 HTTP-

6.1

HTTP

1. HTTP- GET POST.
2. POST: «application/x-www-form-urlencoded».
3. POST POST, HTTP-
«Post Data»,
4. HTTP- JSON
Content-Type «application/json; charset=utf-8».
5. (, -
) , HTTP- 400 (Bad Request -)).
6. (,
) , HTTP- 403 (Access Denied -
)).
7. HTTP- ,

WebSocket

1. HTTP- WebSocket.
2. JSON, UTF-8.
3. HTTP- (
4. HTTP- , JSON.
5. HTTP-
(subscribe) OPC , ,

6.2

(write)

13	
1	Null ()
2	Smallint ()
3	Integer ()
4	Single ()
5	Double ()
6	
7	
8	
11	
16	ShortInt ()
17	
18	
19	
20	Int64
21	Word64

6.3

OPC

OPC

():

0x00 -

(BAD).

0x40 -

(UNCERTAIN).

0xC0 -

(GOOD).

BAD:

0x04 - (CONFIG ERROR).
 0x08 - (NOT CONNECTED).
 0x0C - (DEVICE FAILURE).
 0x10 - (SENSOR FAILURE).
 0x14 - (LAST KNOWN).
 0x18 - OPC (COMM FAILURE).
 0x1C - (OUT OF SERVICE).

UNCERTAIN:

0x44 - (LAST USABLE).
 0x50 - (SENSOR CAL).
 0x54 - (EGU EXCEEDED).
 0x58 - (SUB NORMAL).

GOOD:

0xD8 - (LOCAL OVERRIDE).

6.4

JSON

```

success - « » « »;
processed - , data,
data -
  name - OPC OPC-
  group - OPC.
  value - OPC.
  data_type - _____
  quality - _____ OPC, OPC
  timestamp - , OPC
  ( UTC). OPC, OPC
  update_count - 0, OPC API.

```

```

clsid - OPC- .
desc - OPC- .
path - ( OPC UA) OPC .
          "\u000D" ASCII CR.

```

6.5

```

          OPC- .
: get-servers.json
:
host ( , ) - IP- .
      HTTP-
      HTTP:
http://127.0.0.1/get-servers.json?host=192.168.1.180
http://127.0.0.1/get-servers.json

WebSocket JSON:

{"command": "get-servers", "host": "192.168.1.180"}
{"command": "get-servers"}

:

{"command": "get-servers", "success": true, "processed": 1, "data":
[{"name": "opcserverim.Instance.1", "desc": "Demo server", "clsid": "{0a9db5fd-
4ca5-4611-84fb-3f5b75692fa9}", }]}

OPC UA: discovery-
            Local Discovery Server OPC Foundation

```

6.6

```

          OPC- .
: get-tag-tree.json
:

```

server (,) - OPC-

host (,) - IP- OPC-
OPC UA ,

HTTP:

http://127.0.0.1/get-tag-tree.json?server=opcserversim.Instance.1

WebSocket JSON:

```
{"command": "get-tag-tree", "server": "opcserversim.Instance.1"}
```

WebSocket JSON OPC UA:

```
{"command": "get-tag-tree",  
"server": "opc.tcp://192.168.1.3:16664/OpenOpcUaCoreServer"}
```

OPC DA:

```
{"command": "get-tag-tree", "success": true, "data":  
[{"name": "Channel1.Device1.Tag1", "data_type": 8},  
{"name": "Channel1.Device1.Tag2", "data_type": 3},  
{"name": "Channel1.Device1.Tag3", "data_type": 3},  
{"name": "Channel2.Device1.Tag1", "data_type": 3}]}
```

OPC UA:

```
{"command": "", "success": true, "data":  
[{"name": "NS4|string|  
ByteString", "display_name": "ByteString", "data_type": 0, "path": "NonUaNodeComplianceTest"},  
{"name": "NS4|string|  
SByte", "display_name": "SByte", "data_type": 0, "path": "NonUaNodeComplianceTest"},  
{"name": "NS4|string|  
Time", "display_name": "Time", "data_type": 0, "path": "NonUaNodeComplianceTest"},  
{"name": "NS4|string|  
String", "display_name": "String", "data_type": 0, "path": "NonUaNodeComplianceTest"}]}
```

OPC UA

OPC

(Node Id)

OPC

1. (, NS4).
2. (number, string, octet, guid).
3. (, ByteString).

"path"

"\".

6.7

```

poll_rate ( ) OPC
: subscribe.json
:
server ( , ) - OPC
host ( , ) - IP- OPC
group ( OPC- OPC- ) -
tag ( , ) - ( ) OPC-
Get Tag Tree.
poll_rate ( , ) -
OPC- , 1000 , OPC- 200

```

OPC DA

« » («|»).

OPC UA

(\u0009) (\u000D).

HTTP:

<http://127.0.0.1/subscribe.json?server=opcserver.sim.Instance.1&group=MyGroup1&tag=Channel1.Device1.Tag1|Channel1.Device1.Tag2>

WebSocket JSON:

```

{"command": "subscribe", "server": "opcserver.sim.Instance.1", "group": "MyGroup1",
"tag": "Channel1.Device1.Tag1|Channel1.Device1.Tag2", "poll_rate": 30000}
{"command": "subscribe", "server": "opcserver.sim.Instance.1", "group": "MyGroup1",
"tag": "Channel1.Device1.Tag1\u000DChannel1.Device1.Tag2"}

```

:

```

{"command": "subscribe", "success": true, "processed": 1}

```

```
{ "command": "subscribe", "success": false, "processed": 0 }
```

6.8

```

HTTP-
OPC-
: unsubscribe.json
:
server (
,
) - OPC-
host (
,
) - IP- OPC-
group (
,
) -
tag,
group «*»,
tag (
,
) - (
group.
)

```

HTTP:

```

http://127.0.0.1/unsubscribe.json?server=opcserver Instance.1&tag=Channel1.Device1.Tag1|
Channel1.Device1.Tag2
http://127.0.0.1/unsubscribe.json?server=opcserver Instance.1&group=MyGroup
http://127.0.0.1/unsubscribe.json?server=opcserver Instance.1&group=*

```

WebSocket JSON:

```

{ "command": "unsubscribe", "server": "opcserver Instance.1", "tag":
"Channel1.Device1.Tag1| Channel1.Device1.Tag2" }
{ "command": "unsubscribe", "server": "opcserver Instance.1", "group": "MyGroup" }
{ "command": "unsubscribe", "server": "opcserver Instance.1", "group": "*" }
:
{ "command": "unsubscribe", "success": true, "processed": 1 }

{ "command": "unsubscribe", "success": false, "processed": 0 }

```

6.9

```

: list-subscribed.json
:
server ( , ) - OPC- .
host ( , ) - IP- OPC- .
group ( , ) -
group «*», .

HTTP:
http://127.0.0.1/list-subscribed.json?server=opcserverim.Instance.1&group=*

WebSocket JSON:
{"command": "list-subscribed", "server": "opcserverim.Instance.1", "group": "*" }
:
{"command": "list-subscribed", "success": true, "data":
[{"name": "Channell.Devicel.Tag1", "group": "MyGroup"},
{"name": "Channell.Devicel.Tag2", "group": "MyGroup"},
{"name": "Channell.Devicel.Tag3", "group": "MyGroup"}]}

```

6.10

```

OPC , OPC HTTP- OPC- .
.
' ,
(SyncRead). ,
OPC .
: read.json
:
server ( , ) - OPC- .
host ( , ) - IP- OPC- .

```

```

group (
    ,
    tag,
    group «*»,
    .

tag (
    ,
    ) - ( .
    group.
    ).

```

HTTP:

http://127.0.0.1/read.json?server=opcserver.sim.Instance.1&tag=Channel1.Device1.Tag1

WebSocket JSON:

```

{"command": "read", "server": "opcserver.sim.Instance.1", "tag":
"Channel1.Device1.Tag1"}

```

:

```

{"command": "read", "success": true, "processed": 1,
"data": [{"name": "Channel1.Device1.Tag1", "group": "MyGroup",
"value": "123", "quality": "0xC0", "timestamp": "2016-10-27 06:23:24", "data_type":
8}]}

```

WebSocket

:

```

{"command": "read", "async": true, "success": true, "processed": 1,
"data": [{"name": "Channel1.Device1.Tag1", "group": "MyGroup",
"value": "123", "quality": "0xC0", "timestamp": "2016-10-27 06:23:24", "data_type":
8}]}

```

data -

:

name -

group -

value -

data_type - _____

quality - _____ OPC , OPC .

timestamp - , OPC .

6.11

```

        OPC
    ,
    OPC-
    .

: write.json

:

server (
    ,
) - OPC-
.

host (
    ,
) - IP- OPC-
.

group (
    ,
) -
.

tag (
    ,
) - OPC.

value (
    ,
) -
.

data_type (
    ,
) -
.

```

HTTP:

```

http://127.0.0.1/write.json?
server=opcserver Instance.1&group=MyGroup&tag=Channel1.Device1.Tag1&value=321&data_type=8

```

WebSocket JSON:

```

{"command": "write", "server": "opcserver Instance.1", "group": "MyGroup", "tag":
"Channel1.Device1.Tag1", "value": "321", "data_type": 8}

```

:

```

{"command": "write", "success": true, "processed": 1}

```

6.12

```

-
,
jQuery
demo.html
«files»

URL-
:

HTTP : http://127.0.0.1:8080/demo.html

```

HTTPS : <https://127.0.0.1:8443/demo.html> (,
SSL ,

).
HTTP UA : http://127.0.0.1:8080/demo_http_ua.html

WebSocket : http://127.0.0.1:8080/demo_websocket.html

,
OPC-HTTP Gateway. ,
.