SecureGateway Services Reference

Secure, authenticated gateway service that fronts a FrameworX runtime (TServer) for multi-site and edge deployments.

Secure communication gateways for multi-site deployments.

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What TSecureGateway does

`TSecureGateway` (`TSecureGatewayService.exe`) is a Windows service that sits in front of a FrameworX runtime (TServer) and relays authorized runtime traffic to it. It listens on a local TCP port and forwards each accepted connection to a TServer at a configured `RemoteIP:RemotePort`, optionally authenticating the caller first. In short: a hardened, authenticating reverse-proxy for the FrameworX client–server protocol, used to connect projects and sites across network boundaries while controlling exactly what may talk to what.

> **What it carries — and what it does NOT**
>
> TSecureGateway forwards **FrameworX runtime traffic to a TServer**: Rich Client and Smart Client sessions, remote Device channels, and Dataset database connections.
> It is **not** a VPN, and **not** a field-protocol proxy — it does not speak Modbus, S7, EtherNet/IP, or any device protocol. To reach a PLC across a boundary, run a TServer near the device (it polls the controller locally) and let TSecureGateway secure the TServer hop. See Remote Channels.

Architecture patterns

Pattern	Description
1-to-1	A single remote site connects to a single TServer.
1-to-many	Many remote sites aggregate to one master / central project.
Traffic control	Only the source/destination pairs you configure are forwarded.
Site isolation	Remote sites see only the gateway — never each other, nor the topology behind it.

Typical deployment — edge gateway in front of a cell

A common layout puts TSecureGateway on an edge computer in front of a production cell:

1. A TServer **inside** the cell polls the field device locally (read-only) using its protocol driver.
2. TSecureGateway, on the edge computer, forwards the FrameworX hop to that in-cell TServer (`RemoteIP` = the in-cell TServer).
3. A central FrameworX server, or a Rich / Smart Client, connects to the gateway's `LocalPort`.

Only the FrameworX protocol crosses the boundary; the device protocol stays inside the cell. You get traffic control, site isolation, and optional Windows-Authentication / RuntimeUsers validation on the hop — without ever exposing the controller.

Installation

Location

The service ships with the product and is **not** installed by default. Both files are in the install root:

- `C:\Program Files\Tatsoft\FrameworX\fx-10\TSecureGatewayService.exe`
- `C:\Program Files\Tatsoft\FrameworX\fx-10\TSecureGatewayService.exe.config`

Install / uninstall the service

TSecureGateway registers as a Windows service through the standard .NET installer. From an **elevated** command prompt, using the .NET Framework v4 `InstallUtil.exe`:

Install

```
cd "C:\Program Files\Tatsoft\FrameworX\fx-10"
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\InstallUtil.exe TSecureGatewayService.exe
```

Uninstall

```
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\InstallUtil.exe /u TSecureGatewayService.exe
```

After installation the service appears in `services.msc` as **TWebGateway Service** and logs to the Windows Event Viewer. (On a 32-bit install, use the `Framework` path instead of `Framework64`.)

Change the configuration

1. Edit `TSecureGatewayService.exe.config` (see *Configuration* below).
2. Restart the service so it re-reads the file.

The configuration is read only at startup, so every change requires a service restart.

Run in the foreground for testing

From FrameworX 10.1.6, `TSecureGatewayService.exe` also runs as a normal foreground process, for testing, without registering a Windows service. Run it from a command prompt with one of these options:

Option	Effect
`/console`	Runs the gateway in the foreground with its installed settings, from `TSecureGatewayService.exe.config`.
`/config:<settings file>`	Runs the gateway in the foreground with the `<appSettings>` of the given file instead of the installed settings. The file has the same format as `TSecureGatewayService.exe.config`. A relative path is resolved from the current folder.

```
TSecureGatewayService.exe /config:C:\Test\gateway-test.config
```

With `/config`, a test starts a gateway instance of its own, with its own ports and with the Windows Authentication relay on or off, without editing the installed configuration file. In foreground mode the gateway writes its messages to the console instead of the Windows Event Viewer, and Ctrl+C stops it. The process exits with code 0 after a normal stop, 1 when the gateway fails to start, and 2 for a usage or settings file error. Use these options from a command prompt only, not in the service registration. Running the gateway as a Windows service is unchanged.

Configuration

All settings live in the `<appSettings>` section of `TSecureGatewayService.exe.config` as `<add key="..." value="..."/>` entries. Keys are case-insensitive.

Core parameters

Key	Description	Notes
LocalPort	TCP port the gateway listens on.	Set `0` to use Windows Authentication only.
LocalPortWA	Listening port for Windows-Authenticated connections.	Set `0` if not used.
RemoteIP	IP / host of the target `TServer.exe` computer.	The runtime the gateway forwards to.
RemotePort	TServer port (without Windows Authentication).	
RemotePortWA	TServer port for Windows-Authenticated connections.	Alternative to `RemotePort`.
WA	Authentication mode.	`true` = Windows Authentication only.

Optional parameters

Key	Description	Usage

RuntimeUsers Project	Path to a solution whose `RuntimeUsers` table validates connecting users.	Cannot be combined with `CheckRuntimeUsersWA`.
CheckRuntime UsersWA	Validate connecting users via Windows Authentication.	Cannot be combined with `RuntimeUsersProject`.
TargetCF	Enable .NET Compact Framework client support.	Windows CE deployments.
EnableSSL	TLS on the connection from the gateway to the remote TServer (`RemotePort` / `RemotePortWA`).	Default `false`.
LocalEnableSSL	From FrameworX 10.1.6, TLS on the local Windows Authentication listener (`LocalPortWA`).	Default `false`. Separate from the runtime server switch described in Runtime Startup Reference.

Shipped configuration file

From FrameworX 10.1.6, the `TSecureGatewayService.exe.config` file shipped with the product keeps every setting disabled, as before, and each sample setting is on its own commented line. To enable a setting, remove the comment markers around its line only. The file also states which settings the service needs before it starts: `LocalPort` or `LocalPortWA`. The multi-port redirect sample is no longer in the shipped file, because it needs extra system setup before it works. To use multiple redirections, add the keys as described below.

Multiple redirections

A single gateway can forward several local ports to several TServers. Set `ExtraCount` to the number of **additional** redirections, then number each key starting at 2:

```
<add key="ExtraCount" value="2"/>      <!-- number of extra redirects; unlimited -->

<add key="LocalPort2" value="3200"/>   <!-- numbering starts at 2 -->
<add key="RemoteIP2"  value="site1.local"/>
<add key="RemotePort2" value="3101"/>

<add key="LocalPort3" value="3300"/>
<add key="RemoteIP3"  value="site2.local"/>
<add key="RemotePort3" value="3101"/>
```

The pattern continues for `LocalPort`, `RemoteIP`, `RemotePort`.

> Windows Authentication and multi-port redirection are mutually exclusive — enabling `WA` disables the extra redirections.

Configuration examples

Single-site gateway

```
<add key="LocalPort"  value="3101"/>
<add key="RemoteIP"   value="192.168.1.100"/>
<add key="RemotePort" value="3101"/>
```

Multi-site with Windows Authentication

```
<add key="LocalPortWA" value="3102"/>
<add key="WA"          value="true"/>
<add key="ExtraCount"  value="2"/>

<add key="LocalPort2" value="3200"/>
<add key="RemoteIP2"  value="site1.local"/>
<add key="RemotePort2" value="3101"/>

<add key="LocalPort3" value="3300"/>
<add key="RemoteIP3"  value="site2.local"/>
<add key="RemotePort3" value="3101"/>
```

Edge gateway in front of a cell

The gateway forwards inbound FrameworX connections to an in-cell TServer that owns the device channel and polls the PLC locally:

```
<add key="LocalPort"  value="3101"/>
<add key="RemoteIP"   value="10.100.0.40"/>   <!-- in-cell TServer; it holds the PLC channel -->
<add key="RemotePort" value="3101"/>
<add key="RuntimeUsersProject" value="C:\FrameworX\Cell1.dbsln"/>
```

Service management

Start / stop

```
net start "TWebGateway Service"
net stop  "TWebGateway Service"
```

(Use the exact name shown in `services.msc` after install.)

Verify

On start, the service writes its redirection table to the Windows Event Viewer:

```
First redirect :: LocalPort: 3101, RemoteIP: localhost, RemotePort: 3101
Extra Redirection Table:
Listen on ipv4:     Connect to ipv4:
Address    Port     Address         Port
0.0.0.0    3100     192.168.80.129  3100
0.0.0.0    3102     192.168.80.129  3101
```

Monitor

- Windows Event Viewer — startup, redirect table, authentication results
- Performance Monitor — connection / traffic counters
- Network traces — connection-level debugging

Limitations

- Windows Authentication disables multi-port redirection.
- Configuration changes require a service restart.
- Each redirection needs a unique `LocalPort`.
- The same `RemotePort` may be reused across different `RemoteIP` targets.
- Forwards the FrameworX runtime protocol only — not device / field protocols.

Troubleshooting

Symptom	Check
Service won't start	Event Viewer for the startup error; confirm the `.config` is valid XML.
Port conflict	`netstat -ano` to find the process already holding the port.
Connection refused	Firewall rules on both the gateway and the TServer hosts.
Authentication fails	The `WA` setting, and the `RuntimeUsersProject` / `CheckRuntimeUsersWA` pairing.
Redirects not applied	Restart the service after editing the `.config`.

In this section...
