Getting started

Creating a TCP-IP protocol Client application
1. Introduction

In this guide we propose, as an example, the design of a simple Client supervision application TCP/IP protocol based; this example is a little step towards the design of more complex SCADA applications, but it can be useful for anybody who approaches for the first time to a SCADA, and in particular to Winlog Pro software, to quickly understand the potential related to Client/Server structures over intranet and internet networks.

Suppose that you want to realise a TCP/IP protocol based Client that replies the supervision interface of a previously created Server application that is connected to its field devices using any supported protocol.

Let’s start using one of the example applications described in the following guides:

- Getting started - Creating a simple Siemens Modbus protocol application
- Getting started - Creating a simple Siemens Omron SYSMAC protocol application
- Getting started - Creating a simple Siemens PPI protocol application
- Getting started - Creating a simple Siemens MPI protocol application

We will use one of these examples as Server.
2. Server application configuration

To modify an existing supervision project, it is necessary to use Project Manager, the Winlog Pro integrated development environment that provides different tools (Gate Builder, Template Builder, Code Builder).

Run Project Manager selecting own icon from Start menu.

Create Test project as described in the previous guides

Then select Rename from Project menu and insert Test Server as new project name.

![Server project](image)

Between Configuration folder elements select Options.

In TCP/IP select Run Time with TCP/IP Server.

![TCP/IP Server configuration](image)

This application must be installed and executed on the Server station (es. SERVER - IP Address: 192.168.1.10)
3. Client application configuration

Use again the same Test project created as described in the previous guides.

Then select Rename from Project menu and insert Test Client as new project name.

Client project

Between Configuration folder elements select Options.

In TCP/IP deselect Run Time with TCP/IP Server.

TCP/IP Client configuration
Between Configuration folder elements select Channels.

Define the logic channel 1 to communicate using TCP/IP Client protocol.

Protocol configuration

It is also necessary to configure TCP/IP connection specifying Server IP address and Timeout (an example is shown in the picture).

Protocol configuration

This application must be installed and executed on the Clientstation (es. CLIENT - IP Address: 192.168.1.1)
4. Creating variables database

It is possible to configure Client application to read historical files (variables database and Alarm/Events database) from local archive or from Sever application archive.

In case your network is provided with Microsoft support, between Configuration folder elements, select Options and in Client select Use Client for Microsoft network.

As example we can create a template for variables historical analysis (Trends).
From Project Manager select Template folder and create a new template, selecting the item New>File from Edit menu. Rename the just created template using the name Trends, do this selecting it and then using Rename item from Edit menu.

The next step is to insert into the created template a chart; select Chart object among the ones on the upper bar (.), then click into the template choosing the right size. To enable the option the allows to download historical files from a Server station, use Property Editor, click alongside of the property Show Server Button and select True.
Now run the project Test Client, in Project Manager select Execute... from Project menu.

Now we are entering in the "run-time" phase that is application execution mode. Winlog Pro Client samples Sever variables using TCP/IP.

At project startup, main template will appear automatically.

From Supervision menu recall Trends template (Templates...) in which it will be possible to choose pressing Server button, to use local historical data or Server station historical data for charts.
As example we can create a template for alarms historical analysis (Alarms).

From **Project Manager** select **Template** folder and create a new template, selecting the item **New>File** from **Edit** menu. Rename the just created template using the name **Alarms**, do this selecting it and then using **Rename** item from **Edit** menu.

The next step is to insert into the created template an alarm table; select **Histview** object among the ones on the upper bar ( ), then click into the template choosing the right size. To enable the option the allows to download historical files from a Server station, use **Property Editor**, click alongside of the property **Show Server Button** and select **True**.

Now run again the project Test Client and from **Supervision** menu recall **Alarms** template (**Templates...**) in which it will be possible to choose pressing **Server** button, to use local historical data or Server station historical data.
The possibility to read historical data directly from a Server station is particularly useful when Client station is not always connected so all process historical data are not available in its archive.
5 Client/Server link examples

In this example we have created a Client application that simply repeats the user interface available on the Server station.

One Client – one Server configuration

Obviously it is not obligatory to create, as described in the example, a Client application just alike to the Server one; it is possible to read and write even only a subset of the variables available on the Server and to create different templates to analyse process variables; furthermore a Client application can be even Server, so it is possible to create more complex network architectures (see the following examples).

One Client – N Servers configuration

The same Client application can be connected, using different logical channel (from 1 to N), to N Server stations each one connected to its peripheral devices; in this case, for each Server, must be defined on Client station a TCP/IP protocol logical channel configured with the Server station IP address.


N Client – one Server configuration

N Client stations can be connected to the same Server station; in this case, for each Client station, must be defined a TCP/IP protocol logical channel configured with the Server station IP address.

One Client/Server – one Client/Server configuration

Two or more Server stations connected to their devices (for example using logical channel 2), can be even Clients; for each Client station, must be defined a TCP/IP protocol logical channel (for example logical channel 1) configured with the Server station IP address.