

# Abstract TCP Server – part 3

## Mission

To add configuration to the Abstract Server using xml-files.

## Background

Previous exercise [Abstract TCP Server – part 1](#) and [part 2](#)

Slides: [ServerFramework1.pdf](#), [ServerFramework2.pdf](#) and [ServerFramework3.pdf](#)

XML files see

- <https://www.w3schools.com/xml/default.asp>
- <https://support.microsoft.com/da-dk/help/307548/how-to-read-xml-from-a-file-by-using-visual-c>

## Assignment 1 – Create Configuration file

Make an xml-configuration file, with **one** root e.g. ServerConfig and with values for

- ServerPort
- ShutDownPort
- Possible servername
- Possible debuglevel (inf, warning, error)
- ...

Use any text editor.

## Assignment 2 – Read Configuration File

In the AbstractTCPServer somewhere in the initialization (e.g. in the constructor or the Main/Start-method) read the config-file and use the values for setting up the server.

To open config-file use:

```
XmlDocument configDoc = new XmlDocument();  
configDoc.Load( "<< configFile >> ");
```

To read e.g. a port number:

```
XmlNode xxNode = configDoc.DocumentElement.SelectSingleNode("NameOfTag");  
if (xxNode != null)  
{  
    String xxStr = xxNode.InnerText.Trim();  
    Int xx = Convert.ToInt32(xxStr);  
}
```

## Extra E1 – Improve the Configuration

To be more free where to locate the configuration-file you are to read an environment variable, which value hold the location.

### Step 1: create environment variable

Open file explorer, right click at my PC and chose properties, choose Advanced System Settings, and then click environment variable (danish – 'miljøvariable').

Now make a new entry for the system 'AbstractServerConf' with a value some path on your computer e.g. c:\conf\server, where you have placed your config-file.

### Step 2: read the environment variable

see: <https://learn.microsoft.com/en-us/dotnet/api/system.environment.getenvironmentvariable?view=net-8.0>

```
String path = Environment.GetEnvironmentVariable("AbstractServerConf")
```

### Step 3: use this path for open / load the xml config-file (see assignment 4)