

TCP, ResloveHostname: Using the Interface "itfAsyncProperty"



The "itfAsyncProperty" must be passed during initialization. Otherwise the FB "ResolveHostname" is executed synchronously, which leads to an increased cycle time

The screenshot shows the CODESYS IDE with the PLC_PRG editor and the Task Configuration window. In the PLC_PRG editor, the `itfAsyncProperty := fbAsync` line is circled in red. The Task Configuration window shows the MainTask with a cycle time of 34 ms and a maximum cycle time of 5319 ms, which is also circled in red.

Expression	Type	Value	Prepared value	Address
instResolveHostname	NBS.ResolveHostname			
xResolved	BOOL	FALSE		
xResolve	BOOL	FALSE		
myIP	NBS.IPv4Address			
myIPInterface	NBS.IPv4Address	16#766A1240		
TheIPYouAreLookingFor	UDINT	3585479260		
fbAsync	NBS.AsyncProperty			
tgTaskGroup	STRING(255)	'EC-Tasks'		
onAppName	STRING(255)	'Application'		
tnTaskName	STRING(255)	'MyTask'		
usiTaskPri	USINT	5		
udiTaskInterval	UDINT	1000		

```
1 instResolveHostname(  
2   xExecute := xResolve := FALSE,  
3   udiTimeout := 10000000, //10sec timeout  
4   xDone := xResolved := FALSE,  
5   sHostname := 'www.codesys.com',  
6   sInterface := 'www.codesys.com',  
7   itfAsyncProperty := fbAsync  
8 )  
9  
10  
11 TheIPYouAreLookingFor := myIP._udiIPAddress[3585479260];
```

Task Groups	Monitor	Variable Usage	System Events	Properties	CPU Load			
Task	Status	IEC-Cycle Count	Cycle Count	Configure...	Last Cycle Time (µs)	Average Cycle Time (µs)	Max. Cycle Time (µs)	Min. Cycle Time (µs)
MainTask	Valid	7697	7697	20 ms	34	33	5319	12

(Compare this also with the screenshot at the end of this article)

- Create a "Standard project" and select *CODESYS Control Win V3* as the device.
- Define the target system by means of the *Network scan*.

The screenshot shows the CODESYS IDE with the Network Scan dialog open. The 'Scan Network' button is circled in red. The dialog shows a network diagram with a laptop, a gateway, and a server. The IP address is set to localhost and the port is 1217.

- Open the *Library Manager* and add the following libraries:
Net Base Services

The screenshot shows the CODESYS Library Manager with the following libraries installed:

Name	Namespace	Effective Version
3SLicense = 3SLicense, 3.5.17.0 (3S - Smart Software Solutions GmbH)	_3S_LICENSE	3.5.17.0
BreakpointLogging = Breakpoint Logging Functions, 3.5.17.0 (3S - Smart Software Solutions GmbH)	BPLog	3.5.17.0
CAA Device Diagnosis = CAA Device Diagnosis, 3.5.17.0 (CAA Technical Workgroup)	DED	3.5.17.0
IoStandard = IoStandard, 3.5.17.0 (System)	IoStandard	3.5.17.0
NetBaseSrv = Net Base Services, 3.5.17.0 (3S - Smart Software Solutions GmbH)	NBS	3.5.17.0
Standard = Standard, 3.5.17.0 (System)	Standard	3.5.17.0

- Edit the *PLC_PRG* POU as follows:

Declaration

```
VAR
    fbAsyncProperty          : NBS.AsyncProperty := (tnTaskName := 'itfAsyncTask',
    usiTaskPrio := 75, udiTaskInterval := 1000);
    fbResolveHostname        : NBS.ResolveHostname := (itfAsyncProperty := fbAsyncProperty);
    xResolve                  : BOOL;
    ipAddress                 : NBS.IPv4Address;
    itfIPAddress              : NBS.IIPAddress := ipAddress;
END_VAR
```

Implementation

```
fbResolveHostname(xExecute:= xResolve,
                  udiTimeOut:= 10000000, //10 seconds
                  sHostname:= 'www.codesys.com',
                  itfIPAddress:= itfIPAddress);

IF fbResolveHostname.xDone THEN
    xResolve := FALSE;
END_IF
```

- Load the project to the controller and start it. Set The variable *xResolve* to *TRUE*.

The screenshot displays the SIMATIC Manager interface. The top window shows the variable declaration for the task, with the following values:

Expression	Type	Value	Prepared value	Address	Comment
fbAsyncProperty	NBS.AsyncProperty				
fbResolveHostname	NBS.ResolveHostname				
xResolve	BOOL	FALSE			
ipAddress	NBS.IPv4Address				
ipAddress	STRING(15)	'213.182.18.92'			
_udiIPAddress	UDINT	3585479260			host byte order !!
_xValid	BOOL	TRUE			
SUPER^	IIPAddress				
itfIPAddress	NBS.IIPAddress	16#0000022F85...			

The bottom window shows the task configuration for the task 'fbResolveHostname'. The task is configured with the following parameters:

Task	Status	IEC-Cycle Count	Cycle Count	Configure...	Last Cycle Time (µs)	Average Cycle Time (µs)	Max. Cycle Time (µs)	Min. Cycle Time (µs)	3itter (µs)	Min. 3itter (µs)	Max. 3itter (µs)	Core
MainTask	Valid	3332	3332	20 ms	3	3	30	1	60	-285	1893	1