

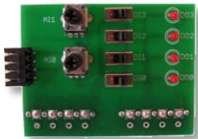


PG5 Starter Training ***Email application***

Daniel Ernst | EN02 | 2013-02-26



Email application Introduction



Material required

- Notebook or computer
- PCD1 E-Controller
- USB cable
- Training board
- Ethernet cable
- (Energy Meter starter box)

Software required

- PG5 Core at least Version 2.1.027
- Saia® Web Editor 5 (included in PG5 Core)
- Java at least Version XXX

Lessons required

- Lesson 1
- Lesson 2
- Lesson 3 PG5 Core
- Lesson 4 Web Editor
- (Energy Meter application)
- (File system application)

Aims of the email application

- Send an email with data from the controller



Email application Introduction

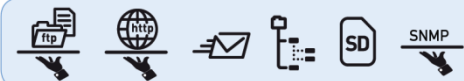
Explanation / Introduction

What is necessary to achieve this?

- Program produced in Lessons 3 and 4
- Ethernet connection to Saia® PCD1 E-Controller
- Monitor with web browser
- (Energy Meter starter box)
- (Program from Energy Meter application)



Email application Introduction



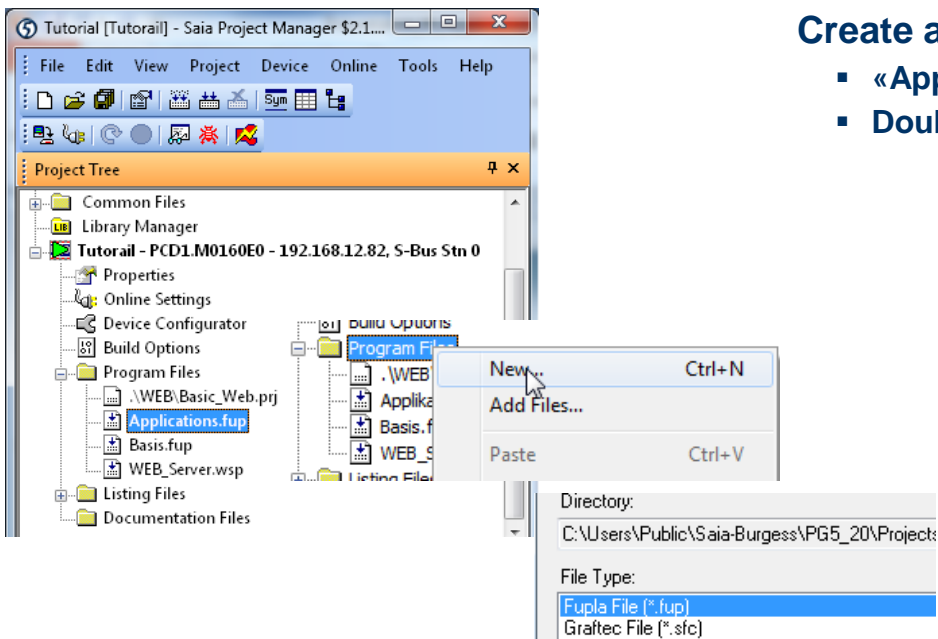
AutomationServer
im Basisgerät
integriert

AutomationServer

- The PCD's integral AutomationServer includes, among other things, the possibility of sending emails
- This feature lets you send files with log data or alarms by email

The sending of emails must be permitted in the network. Most company networks are too restrictive. Therefore, clarify in advance if this is permitted.

Email application Project Manager



Create a new Fupla file

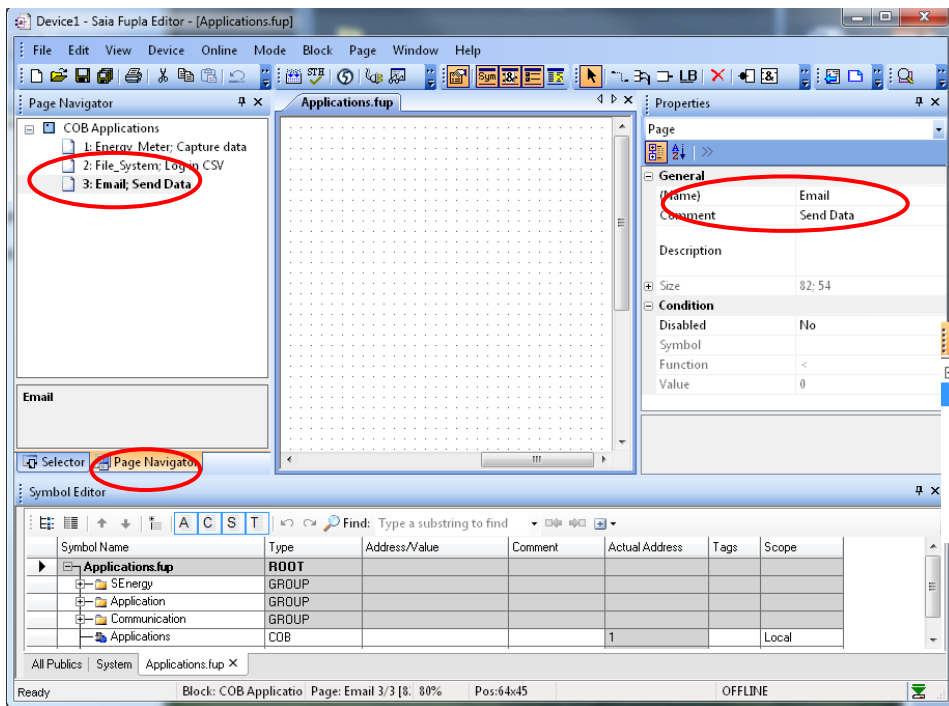
- «Applications.fup»
- Double click to open the file

If this step has already been done in another application tutorial, it may be skipped.

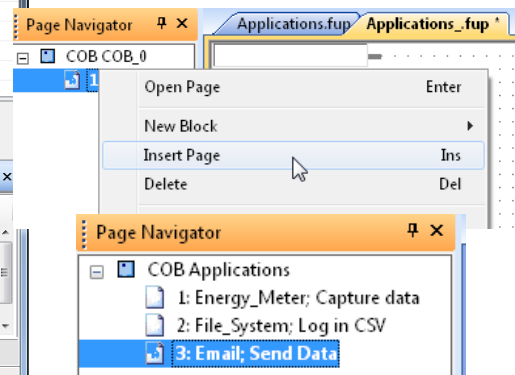
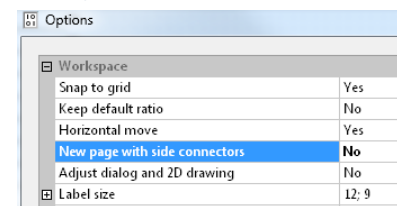
Email application Project Manager

Generate a new Fupla page

- Select «Page» tab
- Right click and select «Insert Page»
- Rename page as «Email»



If you do not want connectors to be created automatically in a new Fupla page, this can be disabled with: View → Options → New page with side connectors = No

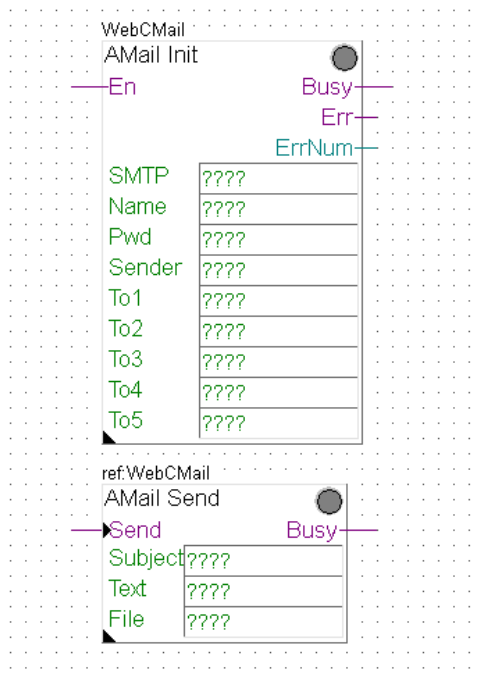
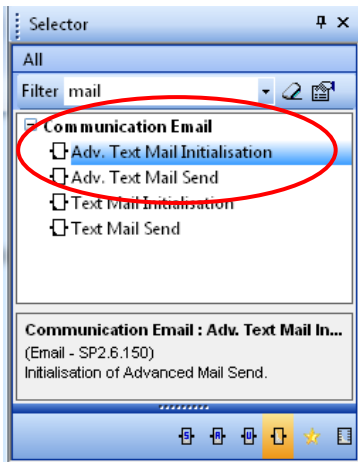


Email application

Program email transmission

Position email FBoxes

- Put in place FBox «Adv. Text Mail Init», which stores the data used for email transmission, such as SMTP server and password
- Put in place FBox «Adv. Text Mail Send», which sends an email with text and file attachment to the addresses in the “Init” FBox





Email application

Program email transmission

Create symbols

- Email FBoxes need symbols to contain the data for email transmission, such as address, SMTP server password, etc.
- Create symbols as shown in the illustration and make them public. This will enable them to be called from the web project.

Symbol Editor

Find: Type a substring to find

Symbol Name	Type	Address/Value	Comment	Tags	Scope
Application.fup	ROOT				
Communication	GROUP				
SEnergy	GROUP				
Application	GROUP				
E-Mail	GROUP				
On	F				Public
SendInProgress	F				Public
Send	F				Public
SMTP	TEXT	...			Public
Name	TEXT	...			Public
Pwd	TEXT	...			Public
Sender	TEXT	...			Public
To1	TEXT	...			Public
To2	TEXT	...			Public
To3	TEXT	...			Public
To4	TEXT	...			Public
To5	TEXT	...			Public
Subject	TEXT	...			Public
MailText	TEXT	...			Public
File	TEXT	...			Public

Nice to know:
Multiple consecutively numbered symbols can be generated automatically by attaching start and end numbers:

Symbol Name	Type	Address/Value
Applications.fup	ROOT	
SEnergy	GROUP	
Application	GROUP	
Communication	GROUP	
Applications	COB	
To1..5		



Symbol Name	Type
Applications.fup	ROOT
SEnergy	Grp
Application	Grp
Communication	Grp
Applications	CC
To1	
To2	
To3	
To4	
To5	



Email application

Program email transmission

Link symbols with FBoxes

- Connect symbols created to inputs and outputs as shown
- Drag the text symbols created into the appropriate green FBox fields

WebCMail

AMail Init

Application.EMail.On En Busy

Err

Err Num

SMTP

Application.EMail... Name

Application.EMail... Pwd

Application.EMail... Sender

Application.EMail... To1

Application.EMail... To2

Application.EMail... To3

Application.EMail... To4

Application.EMail... To5

ref:WebCMail

AMail Send

Application.EMail.Send Send Busy

Subject Application.EMail...

Text Application.EMail...

File Application.EMail...

E-Mail		GROUP			
On	F				Public
SendInProgress	F				Public
Send	F				Public
SMTP	TEXT			...	Public
Name	TEXT			...	Public
Pwd	TEXT			...	Public
Sender	TEXT			...	Public
To1	TEXT			...	Public
To2	TEXT			...	Public



Email application

Program email transmission

Email parameters for email transmission

- Various parameters are needed to set up email transmission:

SMTP: IP address of SMTP server
 Name: Login name of email account
 Pwd: Password for email account
 Sender: Email address of sender

- For test purposes, a free mail address has been set up with GMX. Access data is as follows:

Name: 1st_day@gmx.ch
 Pwd: log4saia

Find out SMTP server address

- GMX SMTP server has address: mail.gmx.net
 → F-Box requests IP of SMTP server
- Open the Command window in Windows (cmd.exe)
- Enter <<ping mail.gmx.net>>
- The response shows the IP address of the SMTP server
 213.165.64.20

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. Alle Rechte vorbehalten.
C:\Users\ch2erda0>ping mail.gmx.net
Ping wird ausgeführt für mail.gmx.net [213.165.64.20] mit 32 Bytes Daten:
Antwort von 213.165.64.20: Bytes=32 Zeit=40ms TTL=47
Antwort von 213.165.64.20: Bytes=32 Zeit=40ms TTL=47
Antwort von 213.165.64.20: Bytes=32 Zeit=42ms TTL=47
Antwort von 213.165.64.20: Bytes=32 Zeit=44ms TTL=47
Ping-Statistik für 213.165.64.20:
    Pakete: Gesendet = 4, Empfangen = 4, Verloren = 0
    (0% Verlust)
    Ca. Zeitangaben in Millisek.:
    Minimum = 40ms, Maximum = 142ms, Mittelwert = 66ms
C:\Users\ch2erda0>
```

SMTP server must allow
 unencrypted authentication
 (no SSL)!



Email application

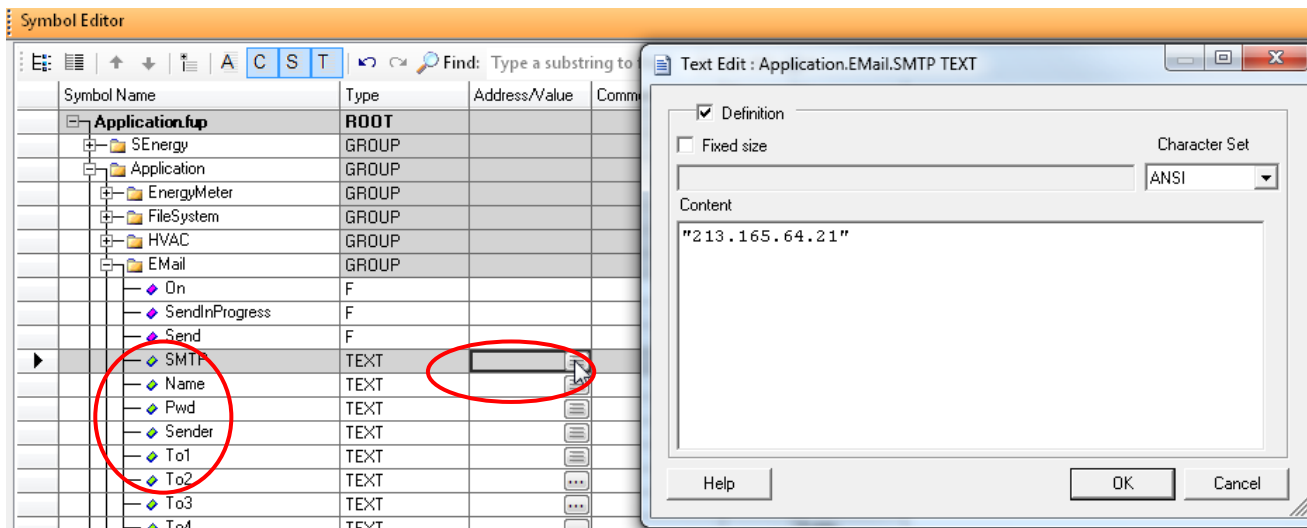
Program email transmission

Enter email parameters

- Email parameters are entered in the text symbols created. (Text must always be contained within speech marks “”)

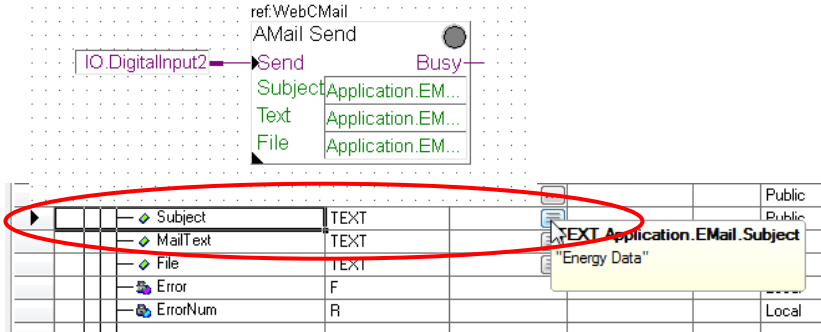
SMTP: 213.165.64.21 → country-specific, so must be checked
Name: 1st_day@gmx.ch
Pwd: log4saia
Sender: 1st_day@gmx.ch

- “To” symbols contain the email addresses, to which an email will be sent
- Indicate your own email address at “To1”, e.g. **Firstname.Surname@saia-burgess.com**



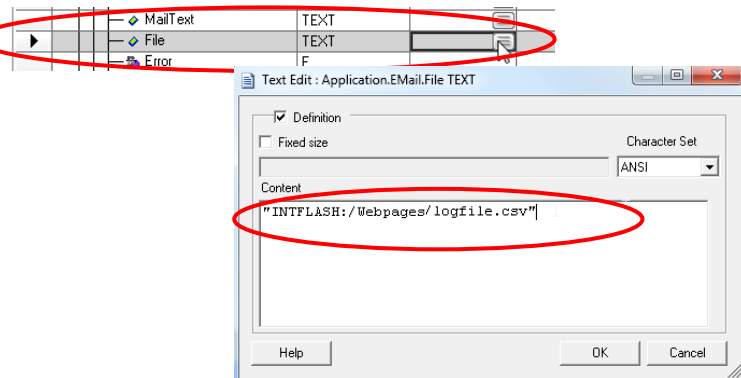
Email application

Program email transmission



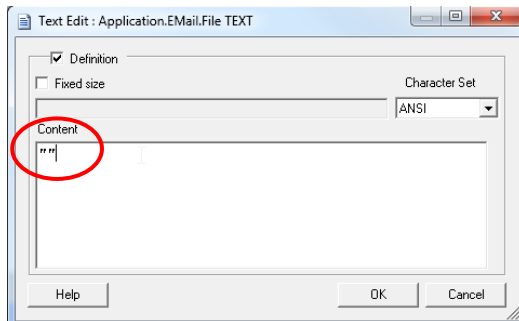
Enter email text and data

- In F-Box “Adv. Text Mail Initialisation”, configure text and data for transmission.
- As “Subject”, select “Energy Data”
- As “Text”, select “New energy data”



If the file system application has already been completed:

- The file saved containing log data can be attached to the email
- Enter path and filename from file system application at “File” symbol
- The path created in the file system application is: “Intflash:/Webpages/logfile.csv”



If the file system application has not yet been completed:

- There is no file available for attachment to the email
- The “File” symbol is left blank. Two speech marks “” must be entered in the symbol



Email application

Program email transmission

Configure Mail Init F-Box

- Port: 25
- Use authentication: Yes

Compile and download project

The screenshot displays the software interface for configuring an email application. On the left, a ladder logic diagram is visible, featuring an 'AMail Init' block with inputs for 'En', 'Busy', 'Err', and 'ErrNum', and outputs for 'SMTP Name', 'Pwd', 'Sender', 'To1', 'To2', 'To3', 'To4', and 'To5'. Below it, a 'Send' block is shown with inputs for 'Subject' and 'Body', and outputs for 'Busy' and 'Err'. The right pane shows the 'Properties' window for 'Communication Email:Adv. Text Mail Initialisation' with the following settings:

Communication Email:Adv. Text Mail Initialisation	
General	
(Name)	WebCMail
Comment	
Adjust Parameters	
----- SMTP Mail Server	
Port	25
Use authentication	Yes
----- Text limits	
Subject	40
Text	80
----- Mail Send	
Send attempts	3
Delay in seconds	60,0
----- Diagnostics	
Static Symbols	
Port	Communication.AMailInit0.Port
Send attempts	Communication.AMailInit0.Ret



Email application

Program email transmission

Send email

- Go online
- Zoom to view values at inputs and outputs
- Double click to open “Application.Email.On” and set as 1. This switches on the email function.

The screenshot displays the Saia PCD software interface for configuring an email application. The main workspace shows a tree view of objects. The 'WebCMail' object is expanded, showing 'Mail Init' and 'Mail Send' sub-objects. The 'Application.Email.Enable' property is circled in red. The 'Edit Data [Device1]' dialog box is open, showing the 'New Value' field set to 1, also circled in red.

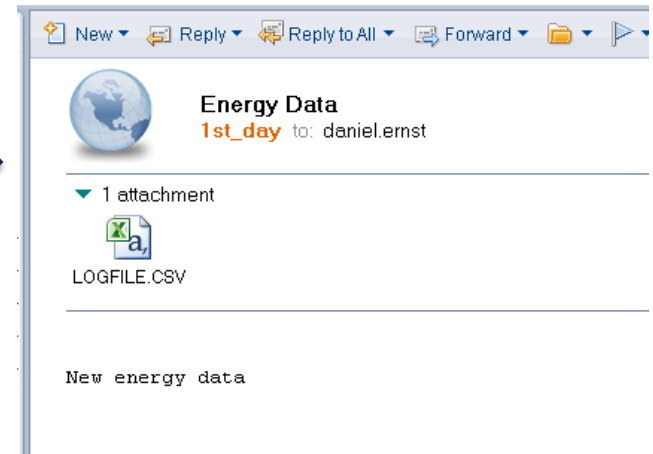
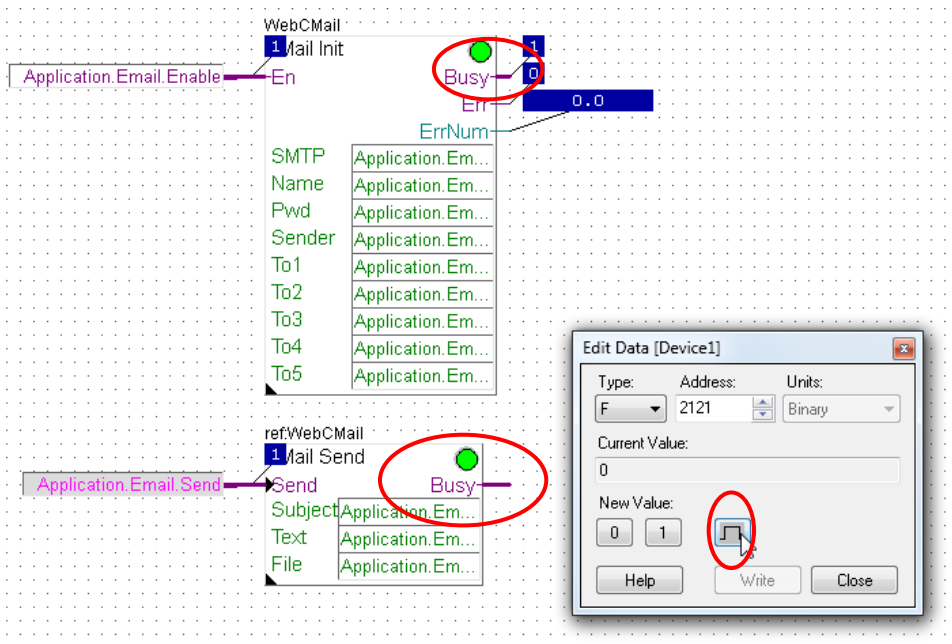
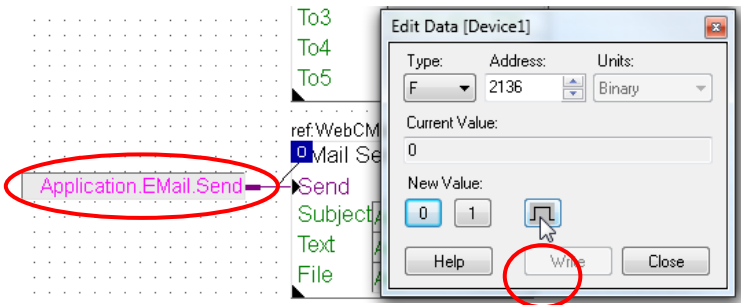
Object	Property	Value
WebCMail	Mail Init	0
WebCMail	Busy	0
WebCMail	Err	0.0
WebCMail	ErrNum	0.0
WebCMail	SMTP Name	Application.Em...
WebCMail	Pwd	Application.Em...
WebCMail	Sender	Application.Em...
WebCMail	To1	Application.Em...
WebCMail	To2	Application.Em...
WebCMail	To3	Application.Em...
WebCMail	To4	Application.Em...
WebCMail	To5	Application.Em...
refWebCMail	Mail Send	0
refWebCMail	Busy	0
refWebCMail	Send	0
refWebCMail	Subject	Application.Em...
refWebCMail	Text	Application.Em...
refWebCMail	File	Application.Em...

Email application

Program email transmission

Send email

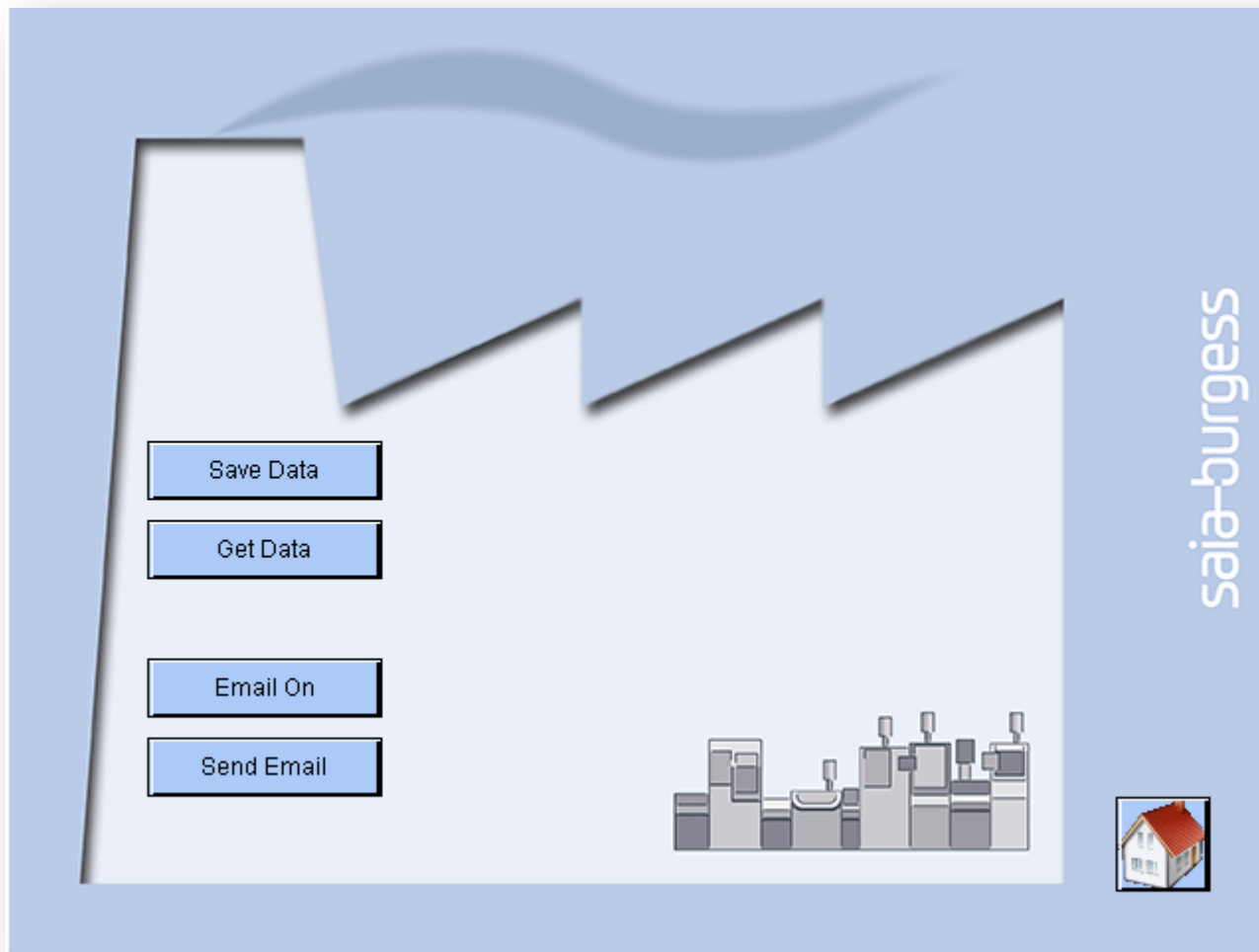
- Double click to open “Application.Email.Send” and start email transmission with the pulse button
- Email transmission is indicated by a 1 at the “Busy” outputs
- If no error occurs, the F-Box status indicator will remain green
- Within a short time, the email and attached *.csv file will appear in the mailboxes at the addresses indicated





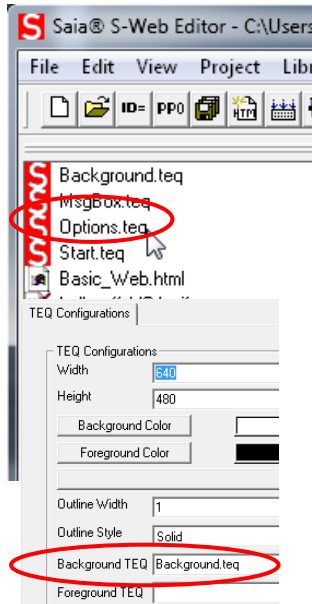
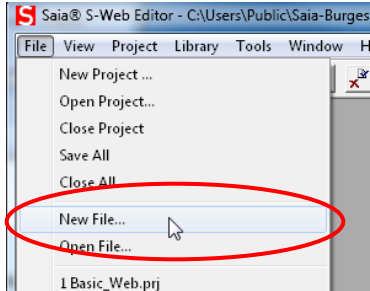
Email application Create web project

Email transmission via web interface should be possible



Email application

Create web project



Open the old web project from Lesson 4

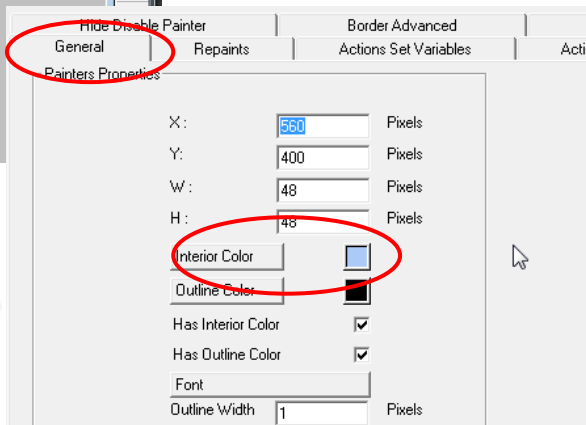
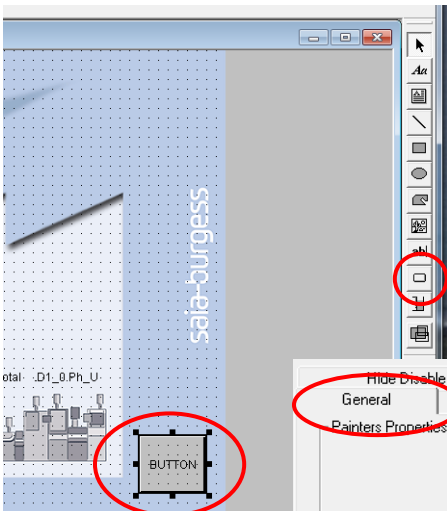
Create a new page «Options»

- Create new file «Options.teq»
- Right click on drawing area and open «Teq View Configurations»
- Select «Background.teq» as background

This step may be skipped if it has already been completed.

Set up jump to new page

- Open page: Start.teq
- Place a button
- Open the options
 - Change the color
 - Under «Repaints», select «Edit a Source» and link to file: mail.gif
 - Open tab «Actions Jump» and set up a «View Jump» to the new page: Options.teq



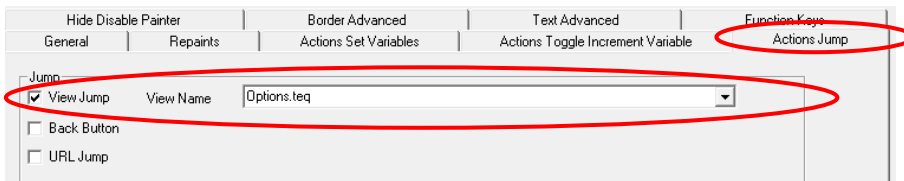
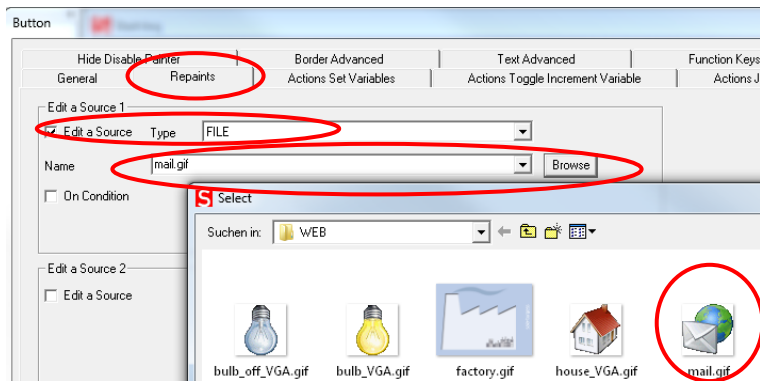


Email application

Create web project

- Open tab «Repaints»
 - Select «Edit a Source», Type = File
 - Browse to select file: mail.gif
- Open tab «Actions Jump»
 - Set up a «View Jump» to the new page: Options.teq

This step may be skipped if it has already been completed.

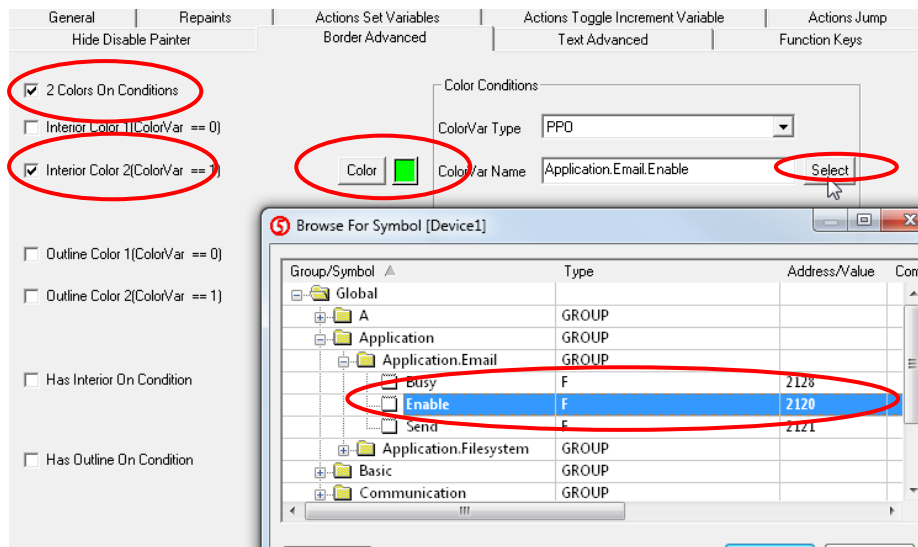
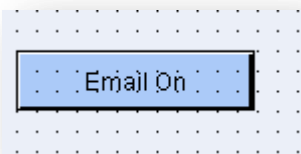
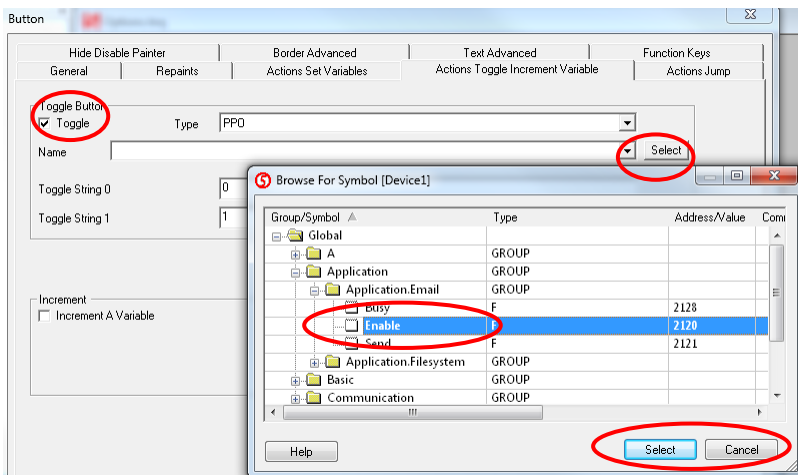
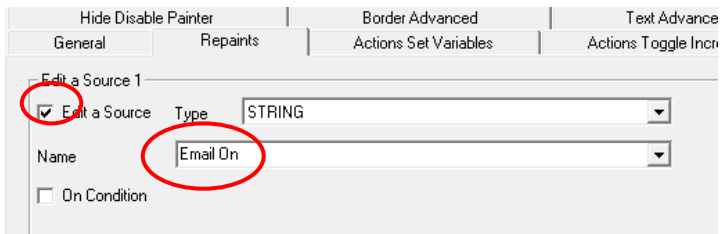


Email application

Create web project

Activate email function at click of button

- Open page «Options.teq»
- Insert a button
- Double click to open button options
- Rename button as «Email On»
- Select the option «Actions Toggle Increment Variable» and activate toggle checkbox
- Select symbol «Application.EMail.Enable» and type «PPO»
- Select border color under «Border Advanced»
- Select «Interior Color == 1», green color
- Select symbol «Application.EMail.Enable» in «Color Conditions»

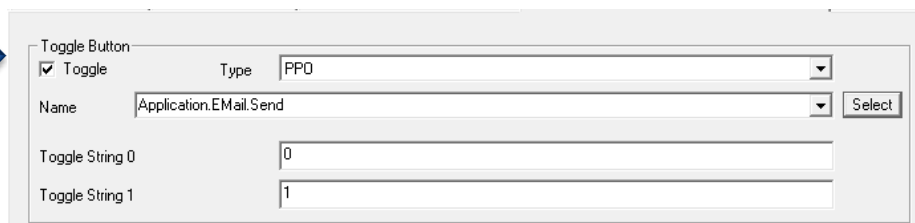
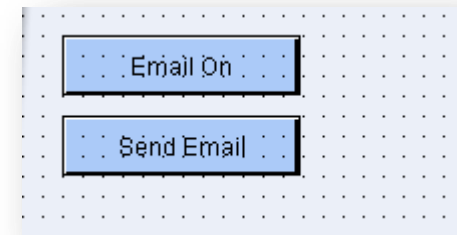
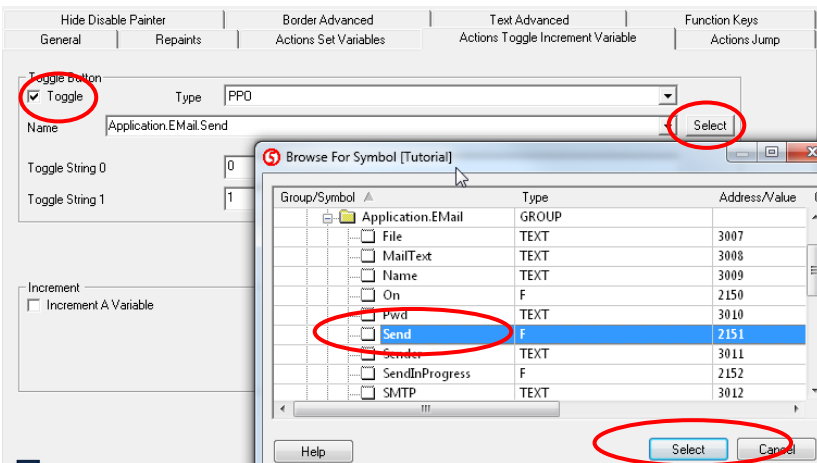
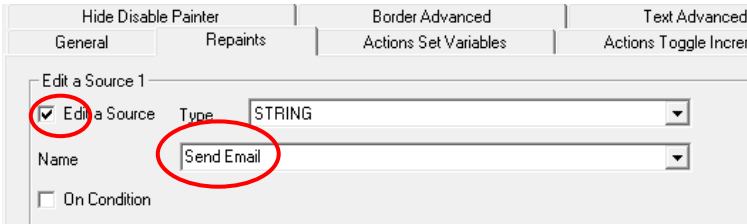


Email application

Create web project

Send email at click of button

- Open page «Options.teq»
- Insert a button
- Double click to open button options
- Rename button as «Send Email»
- Select the option «Actions Toggle Increment Variable» and activate toggle checkbox
- Select symbol «Application.EMail.Send» and type «PPO»



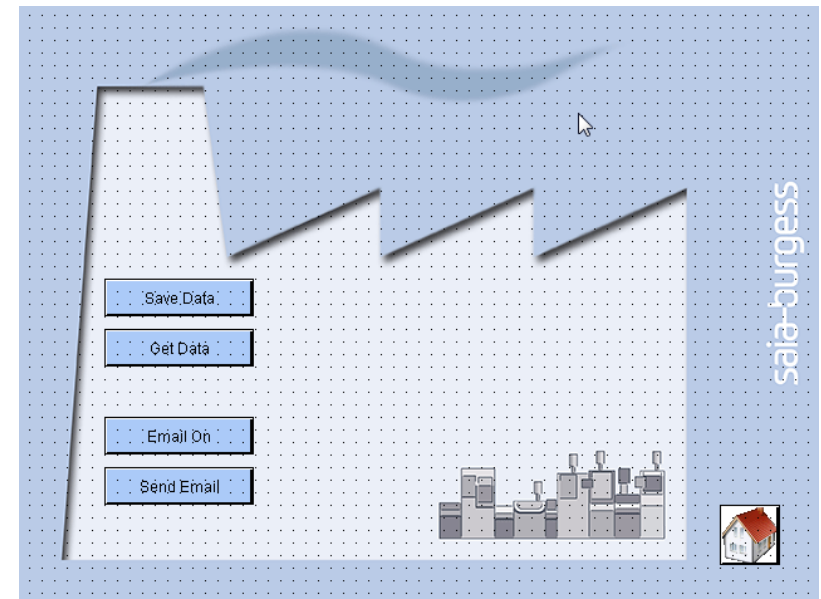
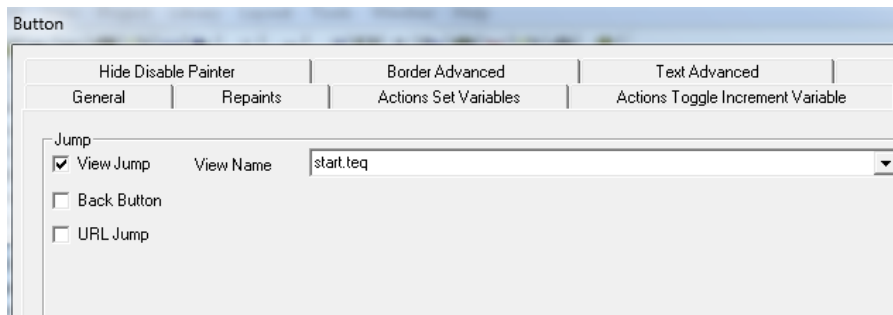
Email application

Create web project

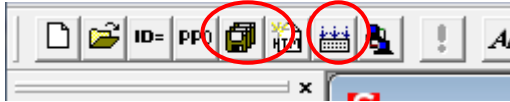
Set up a jump back to the start page

- Open page: `FileSystem.teq`
- Place a button and specify image: `house_VGA.gif`
- Set up a «View Jump» to page: `Start.teq`

This step may be skipped if it has already been completed.



Email application Download project

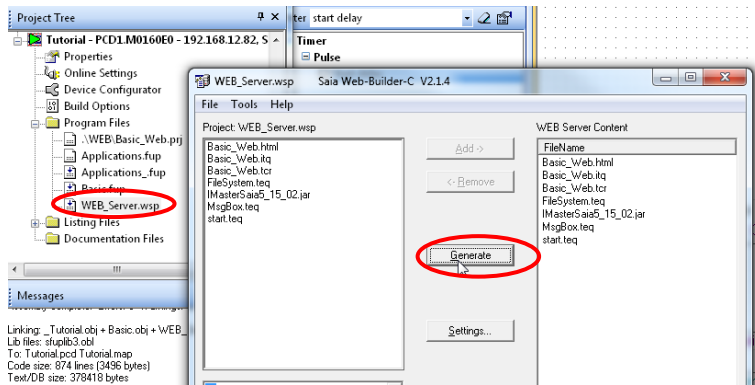


Compile Web Editor project

- Save and compile the web project
- Exit the Web Editor

Add new files to Web Build

- Open WEB_Server.wsp
- Add all files to WEB Server Content
- Create with «Generate Build»
- Exit



Compile and download project

Email application Open web project

Call web project from browser

- Enter IP/basic_web.html in browser
- Open email application page
- Press the «Email On» button
- Send an email with «Send Email»

