MODULE DOCUMENTATION

WolfVision Cynap, AV clients (Crestron)

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1 INTRODUCTION

1.1 Version

Version	Date (dd/mm/yy)	Remarks
1.00	01/04/2016	Release
1.10.0	24/04/2016	Added logic in process buffer to handle new Extended Length Header commands (Cynap Firmware 1.04)
1.11.0	23/05/2016	Added logic for whiteboard, mirroring netdrive, and cleaning up functions
1.12.0	08/07/2016	Added Webconference, Dual screen, audioplayer, PDF mode in Web, Master Volume/Mute, Mic Mute and minor bug fixes.

1.2 Purpose

The purpose of this document is to provide information about the Crestron Cynap Client Test environment and help migrate the software modules to new projects.

1.3 References

Cynap Simpl Windows test environment for Crestron processors.

1.4 Readers guide

- Chapter 3 General description

- Graphics template

- Compilation & test

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2   GENERAL DESCRIPTION

2.1   Who should read using this documentation

This documentation is intended as a guide that explains the concept and structure behind the Cynap test environment for the Crestron control system.

It is assumed that the reader is familiar with Crestron's development tools and have, at minimum attended Crestron's 101 training class.

2.2   Getting started with the test environment.

The Cynap test environment (including all related modules) are provided by Wolfvision GmbH.

In order to utilize the test environment, or any Crestron modules, Crestron's development tools (see 4.2 Software) are needed.

2.2.1   Files

The following files are included in the test environment file(Cynap.zip):

File	Description
Cynap.smw	The SIMPL Windows project file. The main file for the test environment.
Cynap_Client.usp	The Cynap client module, written in SIMPL+
Cynap_Client.ush	SIMPL+ compile file generated from Cynap_Client.usp.
Cynap.vtp	The Visiontool Pro-e template file(uncompiled) for the touch panel.
Cynap.vtz	The compiled graphics file for the touch panel which is loaded to the touch panel.
Cynap.sig	Crestron Test Manager signal file.
Cynap.lpz	3-series SimplWindows program file. This is uploaded to the processor.
Cynap.sgd	Smart Graphics Data file generated by Visiontool Pro-e for Simpl Windows.
Cynap_Module_Help.pdf	The help file for the Cynap client. Can be accessed in Simpl Windows by using F1.

2.2.2   Modules

The Cynap Client and the IBM keyboard module are the only modules needed to interact with the Cynap hardware.

The Cynap client facilitates the control and communication of/with the Cynap hardware. The IBM keyboard module allows for the user to enter URLs used for the browser function.

2.2.3   Simpl Windows folder structure

The test environment is organized into separate sections. First is S-1: Cynap_Client which is the module responsible for the communication with the Cynap.

The folder(Subsystem) S-2: Keyboard contains the symbols needed for the keyboard functionality, which are a Crestron IBM Keyboard module, a termination buffer and Delay symbol used to clear entries once enter is pressed.

The next folder S-3: UI Logic, holds the symbols needed to allow the provided touch panel graphics to function. The graphics combined with these symbols allows the test environment to mimic the web interface provided by the Cynap.

As such this folder is not necessary, in order to use the Cynap module in a new project.

2.2.4   Communication

All communication with the Cynap hardware is done over TCP/IP using port 50915.
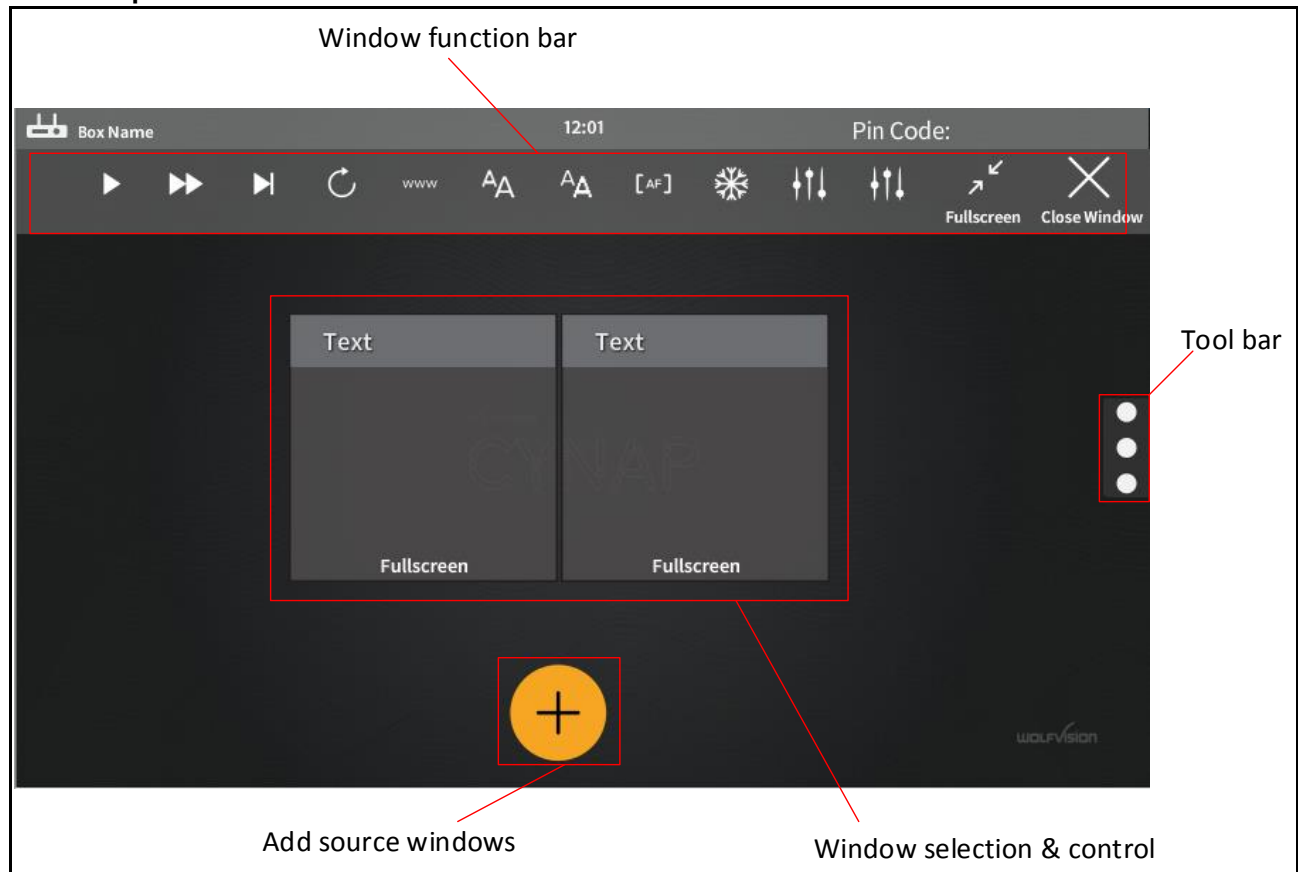
3   GRAPHICS TEMPLATE

3.1   Overview

The touch panel template file(Cynap.vtp), which is used for the test environment, contains all graphical components and elements needed to use the Cynap client on a Crestron touch panel.

3.2   Graphics Theme

The theme is graphically driven, meaning we do not use any theme, but each button/element has a graphic for its states. This allows for easier copying and pasting into existing project files without the need of a Crestron Theme to be present or matched.

3.3   Graphics structure

3.3.1 Main

The main page has 5 elements.

- Main Header Bar
  This area shows the current time, the name of the Cynap box for easy connection, an icon indicating that the module is connected, and a Pin Code popup area if a pin code is needed.

- Source Selection
  The button on the bottom of the page will display a popup window with available sources to choose from. Adding a source will bring up a new window in the Active Window List.

- Active Windows List
  The center of the panel is for showing what the active sources are on each window. The windows are color coded to match the Cynap display with the color appearing in the top left of each window.

  By selecting an active window, the color code will disappear, and be replaced by a full color boarder around the window. This will also activate the Edit Bar window.

- Edit Bar
  The edit bar window will always display 2 icons on the right.

  1) Fullscreen/Normal.
     This button will make the currently selected window either fullscreen, or return it to normal size.
     If a window is in fullscreen mode, it will also appear on the window in the Active Window List.

  2) Close Window.
     This button will close the currently select window, and remove it from the Active Window List.

  Some sources may also have additional functions that will be displayed here, via a Dynamic Button List.

- Tools Bar
  The Tools bar will display a popup that has the system functions in it.

  1) Downloads
     Press to bring up a browse window with all downloaded files

  2) Recording
     Press to Start/Pause/Stop recording

  3) Snapshots
     Press to take a snapshot of the current cynap screen

  4) Streaming
     Press to toggle the streaming on/off.

  5) Link to Stream
     Press to display or hide a QR code on the screen

  6) Freeze
     Press to freeze or unfreeze the main screen

  7) Close Windows
     This will close all active windows.

  8) End Presentation
     Pressing this will display a popup allowing the user to end the presentation with or without saving snapshots and recordings.

  9) Power
     Toggles the power on and off.

3.3.2   Subpage Reference List

The Subpage Reference List is a SmartGraphics control that allows a designer to create a scrollable list, but reference an actual subpage as the list item. What this means is that we can make a subpage and repeat it with unique data in each element.

We have 2 Subpage Reference Lists, (SRL's).

The first is used for the Active source windows on the main page.
This SRL has 3 Digital joins. 1 for Visibility On/Off, 1 for Fulscreen On/Off, and 1 for the Press.
This SRL has 3 Analog joins. 1 for Border Color, 1 for Passive Color, and 1 for the Current Source.
This SRL has 1 Serial join, used for the Current Source Name Text.

The second is used for the list of available drives.
This SRL has 2 Digital joins. 1 for Visibility On/Off, and 1 for the Press.
This SRL has 1 Analog join, used for the image of the Drive Type.
This SRL has 1 Serial joins, used for the Drive Name Text.

We are also using a Dynamic Button List for the Edit bar buttons.
This DBL has 2 Digital joins. 1 for Visibility On/Off, and 1 for the Press.
This DBL has no Analog joins.
This DBL has no Serial joins.

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4 COMPILATION & TEST

4.1 Hardware

The software modules was developed and compiled using the following hardware:

Lenovo T430(2349-KAG)	Intel Core i7 (3520M CPU 2.9GHz) 16 GB Ram 500 Gb SSD Harddisk
Lenovo T520(4243-5JG)	Intel Core i7 (2640M CPU 2.8GHz) 16 GB Ram 256 Gb SSD Harddisk

4.2 Software

The following software tools have been used during the development and test process:

Microsoft

Software	Version
Windows	7 Professional Service Pack 1

Crestron

Software	Version
Simpl Windows	4.03.24.00
Simpl Windows library	508
Simpl+ Cross compiler	1.3
VisionTools Pro-e	6.0.07.00
Device Database	75.07.002.00
Crestron Database	57.00.003.00
Crestron Core 3 UI Controls	2.09.05.08
Toolbox	2.41.513.00

4.3 Compilation process

4.3.1 Software

The test environment consists of multiple files, where "Cynap.smw" is the main project file. Open it in Crestron's SIMPL Windows. Once loaded, press the F12(Convert/Compile) button to convert the project into a compiled file.

Once the project has been compiled the file will have to be uploaded to the Crestron Processor. Depending on your default settings in SIMPL Windows, you might be asked to upload directly from within the application. It is, however recommended that this process is performed using Crestron's Toolbox application.

4.3.2 Graphics

The Cynap.vtp file is opened using Crestron's VisionTools Pro-e software. Once opened, press the F12 key in order to initiate the compile procedure.

When the compilation process has completed(without failures) a new file will have been generated called Cynap.vtz.

This is the graphics file that will have to be uploaded to the touch panel.

4.4 Installation/Upload process

4.4.1 Software

When Crestron's Toolbox is open, select the "I" icon from the icons list. Alternatively, this function can also be selected from Tools->System Info.

This will open a new dialog window. Depending on your settings, the window might attempt to connect to a previously used connection. Use the "Pencil" icon at the bottom of the window in order to enter the IP address of the Processor.

Select Functions->SIMPL Program->SIMPL Program(Program 01) from the tool bar.

Press "Browse", locate the Cynap.lpz file and select "Open".

Once selected press "Send" in order to start the transfer.

When the send procedure is complete the processor will reboot and execute the project.

4.4.2 Graphics

Although the upload can be done directly in VisionTools Pro-e, it is recommended to use Crestron's Toolbox for this purpose.

When Crestron's Toolbox is open, select the "I" icon from the icons list. Alternatively this function can also be selected from Tools->System Info.

This will open a new dialog window. Depending on your settings, the window might attempt to connect to a previously used connection. Use the "Pencil" icon at the bottom of the window in order to enter the IP address of the Touch Panel.

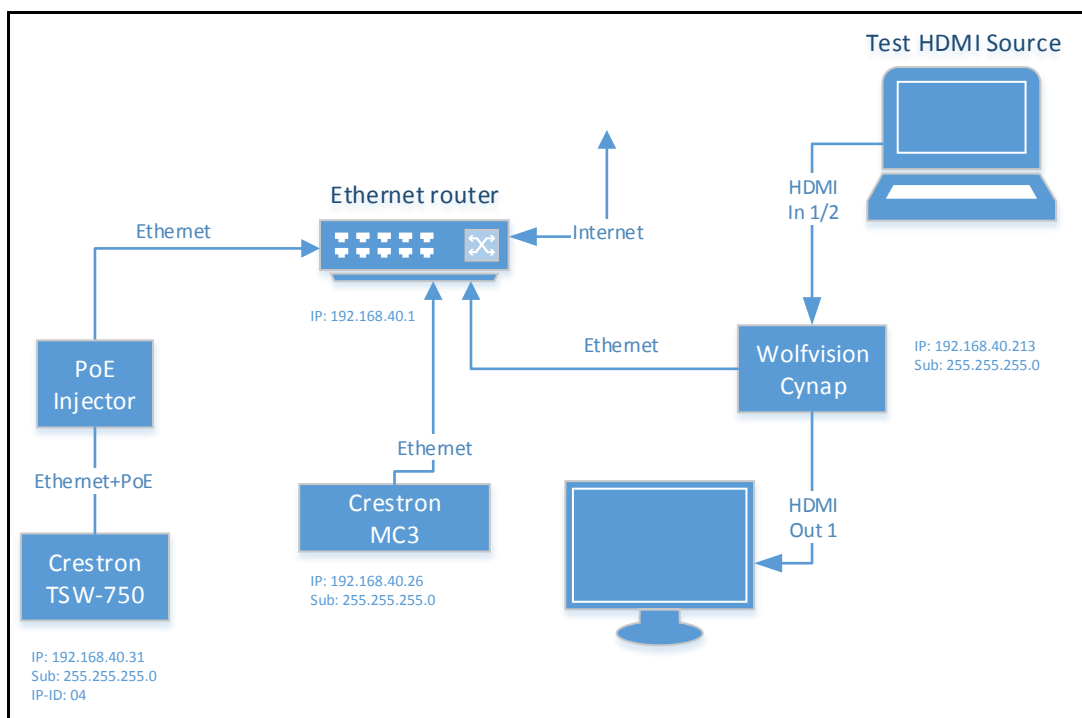Select Functions->Project.. from the tool bar.

Press "Browse", locate the Cynap.vtz file and select "Open".

Once selected press "Send" in order to start the transfer of the graphics.

When the send procedure is complete the panel will reboot and load the new graphics.

4.5 Test hardware

The test environment is setup in accordance to the following diagram:

4.5.1   Crestron TSW-750 Panel

Ensure that the panel is setup to connect to the Crestron MC3 processor using IP-ID 04.

This can be done on the panel's setup menu (refer to the Crestron manual about entering setup menu).

In the setup menu, press "IP Table Setup" and "Add/Edit" the first entry. Use the default port of 41794.

Once the IP Table (IP-ID) settings have been entered (and the program has been loaded to the processor) the "Online" light will turn on.

4.6   Firmware

The Cynap Client has been tested with the following firmware.

Device	Firmware
Crestron MC3 processor	1.501.0013 (mc3_1.012.0017.puf)
Crestron TSW-750	1.02.0017 (tsxxx0_series_1.02.0017.002.puf)

Device	Firmware
WolfVision Cynap	1.06f (Build 20160627150016)