**Intel(R) Trace Hub for WCOS – User Guide (CCA/DCI)**

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# ***2 About this Document***

This User Guide helps to understand the host-target setup for WCOS platform and the usage of Intel® Trace Hub in debugging with the event traces.

Windows Core OS(WCOS) is a modern version of the Windows operating system and is aimed at making Windows a universal platform for all devices. WCOS platform which we have right now is a pre release version which does not have major user interface like regular windows operating system and doing operations from WCOS is very limited.

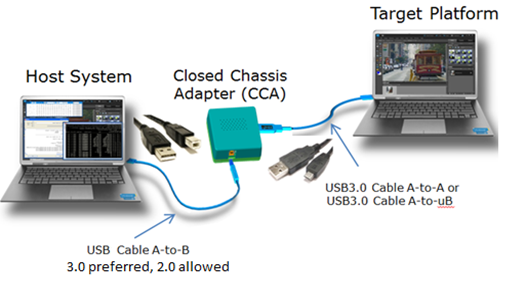
How ever WCOS allows the configurations and interface with Remote sessions using telnet, so most of the operations we will be doing through telnet and command line options.

# ***3 How to setup a Target System***

## **3.1 Prerequisites**

This document currently refers to SKL RVPs as Target Systems.

* Connect the target system to host system with CCA device.



* Connect the target system to a network and disable the windows firewalls.
  + Connect to WCOS system with telnet
  + Copy paste the below command to add exclusion of host ip address  & incoming/outgoing of host tcp/ip packets to WCOS

*netsh advfirewall firewall add rule name="Allow from <host ip address>" dir=in action=allow protocol=ANY remoteip=<host ip address>*

* + Sometimes to check the connection between target and host machine we may need to ping the ip address and check. Ping packets also disabled by default in WCOS. To enable ping command ,copy and execute the below command

*netsh advfirewall firewall add rule name="Allow incoming ping requests IPv4" dir=in action=allow protocol=icmpv4*

* Note: Both target and host system should be connected to same network.

Figure Target Setup

**BIOS Settings:**

* Intel Advanced Menu->PCH-IO Configuration->Trace Hub Configuration Menu->Trace Hub Enable Mode <**Host Debugger**>
* Intel Advanced Menu->CPU Configuration->Debug Interface<**Enabled**>
* Intel Advanced Menu->CPU Configuration->Direct Connect Interface<**Enabled**>
* Intel Advanced Menu->pch IO->eff scs configurations ->\*Sd card 3.0 controller**<Disabled>**

## **3.2 Injecting ITH driver to WCOS**

**Driver and Service Installation Package:** Driver Package will be a part of the respective project BKC Release. Copy the installation package to a local location in target and install. This will install the Intel® Trace Hub Device Driver and the Redirect Service.

For WCOS use ITH Pre-Silicon build,since the target and host systems are not connected directly ,instead both are connected to global network.

Prerequisites:

VNC Viewer should be installed on Host, this will help to take server remotely.

OS version/build, Driver which need to be injected.

Procedure:

Take the Server into remote via VNC Viewer

Navigate to path (WCOS Server) where the image need driver update (example - [\\wosext\EXTRoot\OSA](file:///\\wosext\EXTRoot\OSA))

Once image is identified then Right click and select Mount option

Now select SetImageGenEnv.cmd and right click and select run as Administrator

Once Command prompt opened type below command

*>> C:\Workspace>ImageApp.exe C:\Users\Administrator\Desktop\OS-A-Images\18894.19H2\_LKF-CENT-WCOS-2019WW20.2.333-Pre.ffu /MountAndInstall:C:\Workspace\Installer-Release-64-bit\ITH-PreSi-10.0.17686.73-x64-Release\Drivers;C:\Workspace\DCHUDrivers\Installer-Release-64-bit\ ITH-PreSi-10.0.17686.73-x64-Release\Drivers\ITH.inf*

(Before running the above command please copy necessary files in the location shared in above command. For example paste ffu image in OSA-images folder on desktop, driver which need to update in workspace folder)

## **3.3 Verification**

1. **Verifying Driver Installation**
   1. Connect to WCOS with telnet
   2. >>sc query ITH
   3. This will display the information about the driver if installed correctly.
2. **Verifying Service installation**
   1. Connect to WCOS with telnet
   2. >>sc query type =service
   3. This will display list of services installed and their running status. Check for “Intel Redirect Service” and check status for “Running”.
   4. If the service is not in running state you may start it manually by using below command

>>sc start "Intel(R) Trace Redirect Service"

# ***4 How to setup a Host System***

## ***4.1 Installing DAL***

Use the following instructions to install the PVT software onto the host system:

1. Go to the [PVT Software Download](https://wiki.ith.intel.com/display/ITPII/Download+Center) homepage

2. Select the latest release PVT software version or the engineering version that corresponds to your CPU project and save the installer to a directory of your choice.

3. After download is complete, double-click the resulting installer executable to start the installation process; then, follow the Installation Shield Wizard instructions (default option) to install the PVT software. The installation takes approximately 1-2 hours.

Short cuts to each high-level application are shown under the respective folder following the Start -> All Programs -> Intel.

## ***4.3 Verification***

**Verifying PVT installation:**

* Verify Config Console and Python Console are in installed programs.

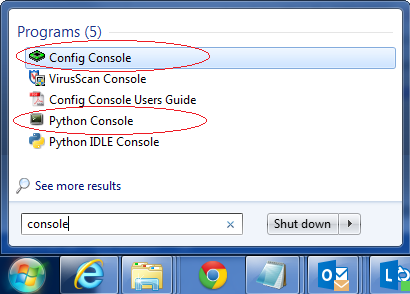


Figure Verifying Config Console and Python Console

## **4.3 Selecting Platform**

* Run Config Console and select SKL\_SPT\_DCI\_ReferenceSettings, apply.
* Once selected, the selection will be set as default.

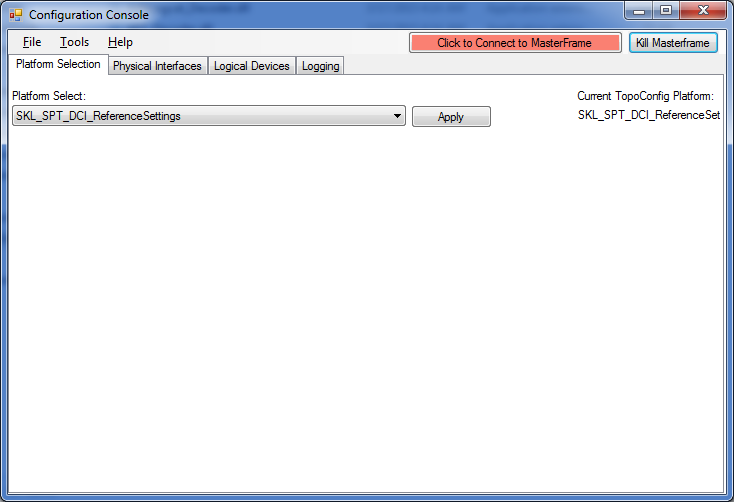


Figure Selecting Platform

Use the following basic commands (in the order listed) to test out the basic function of the DCI:

|  |  |  |
| --- | --- | --- |
| Sequence & Command | | DCI Function |
|  | itp.devicelist | Lists all the JTAG devices of the system under debug. |
|  | itp.halt() | CPU enters probemode and saves states. |
|  | itp.go() | CPU exits probemode and restores states. |

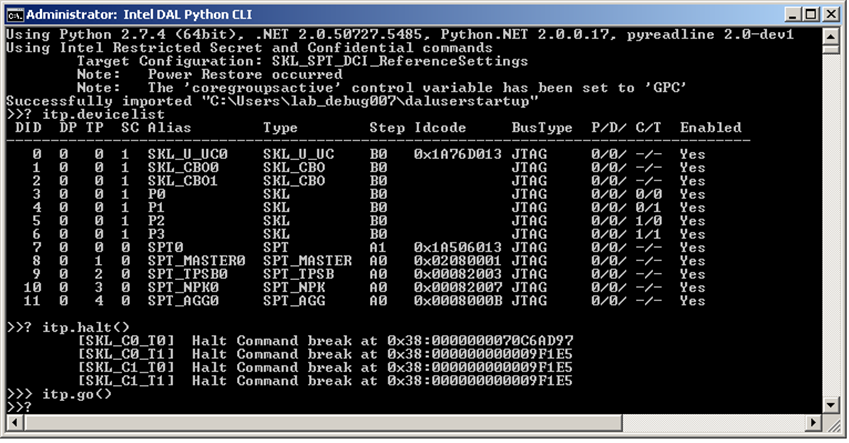


Figure Testing DAL Installation

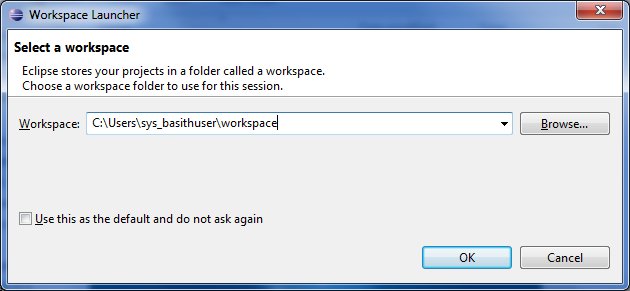
Now the target and Host are ready with all connections and installations. The next step is to use Eclipse GUI to start tracing.

# ***5 Start using Eclipse UI***

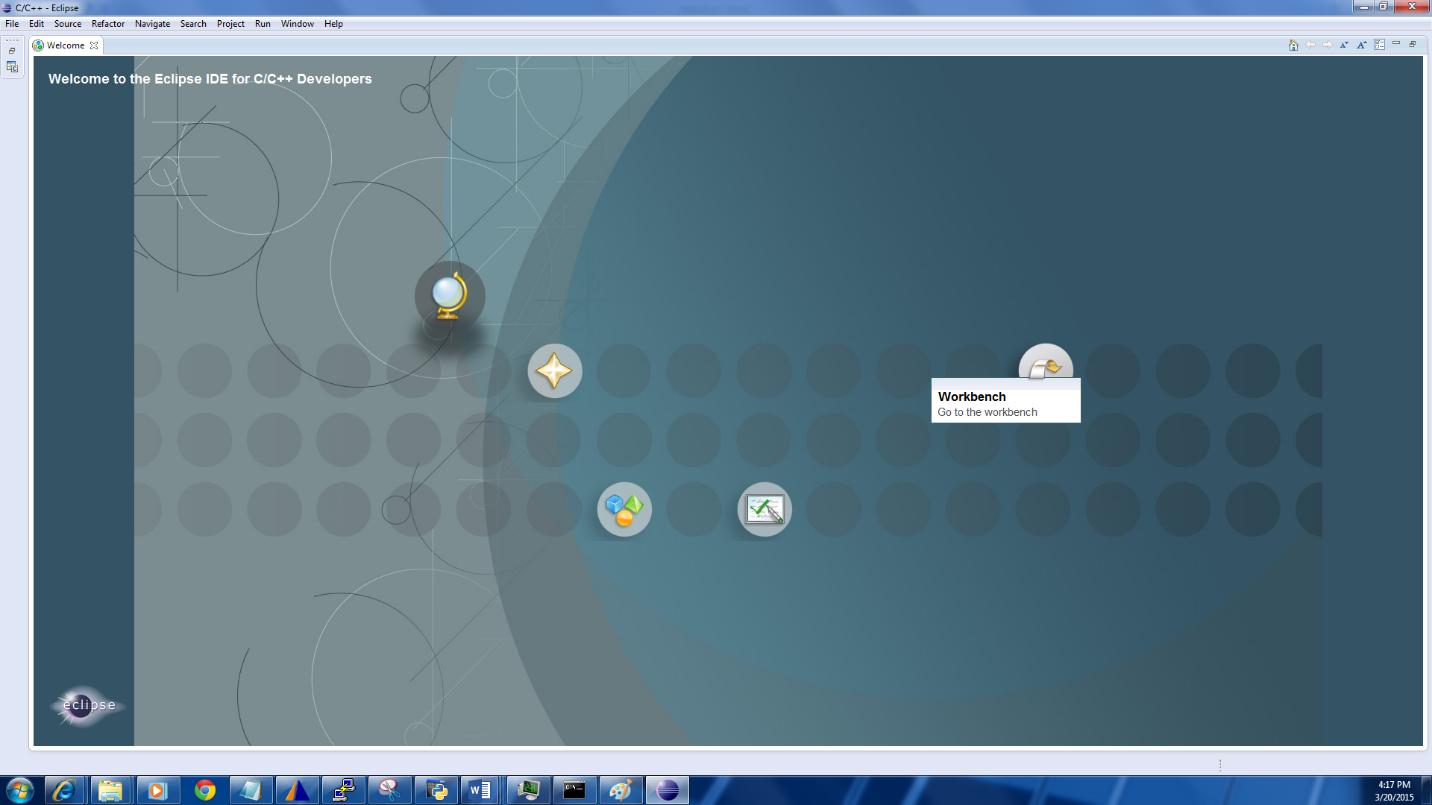
## **5.1 Launching Eclipse**

Run C:\Intel\npksdk\startEclipse.cmd.

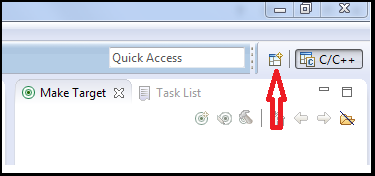
Select a work space.



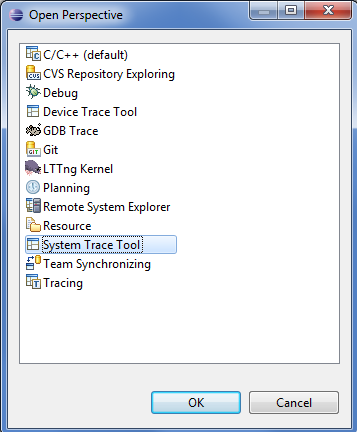
Click on the Workbench



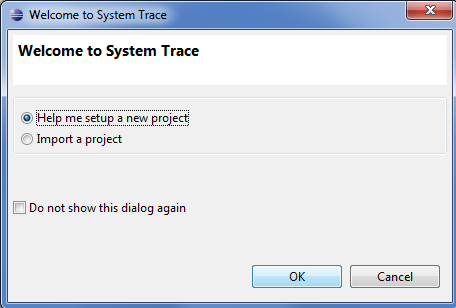
Click on Open Perspective



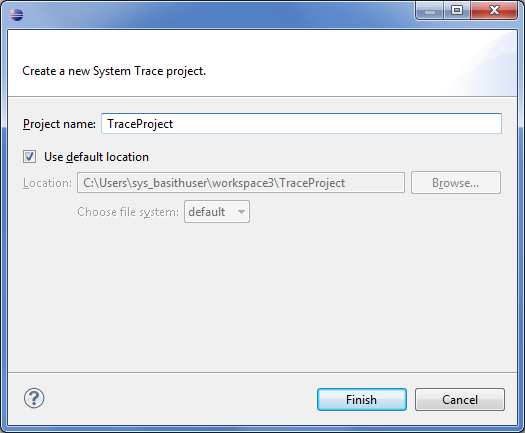
Select System Trace Tool



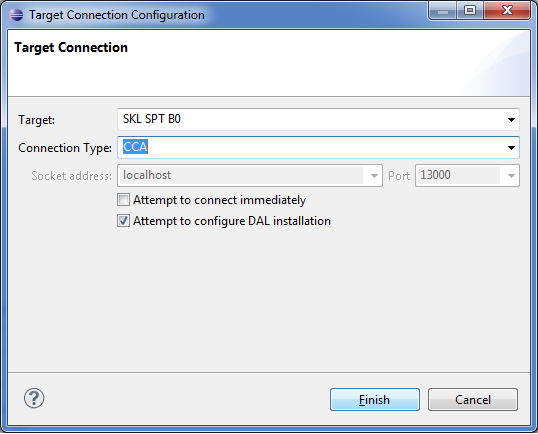
Click OK



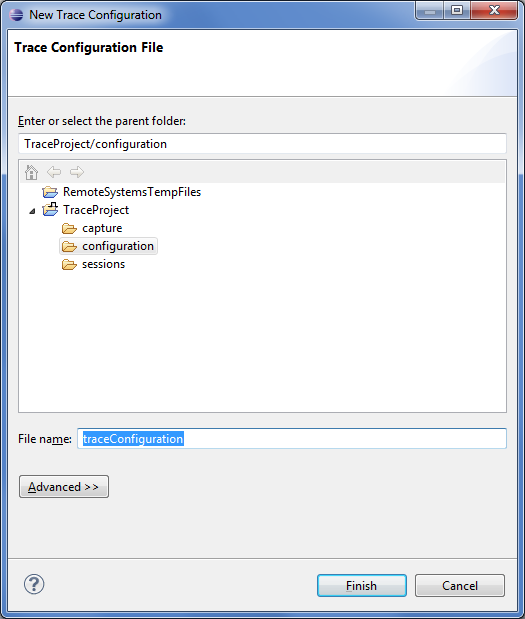
Click on Finish Button



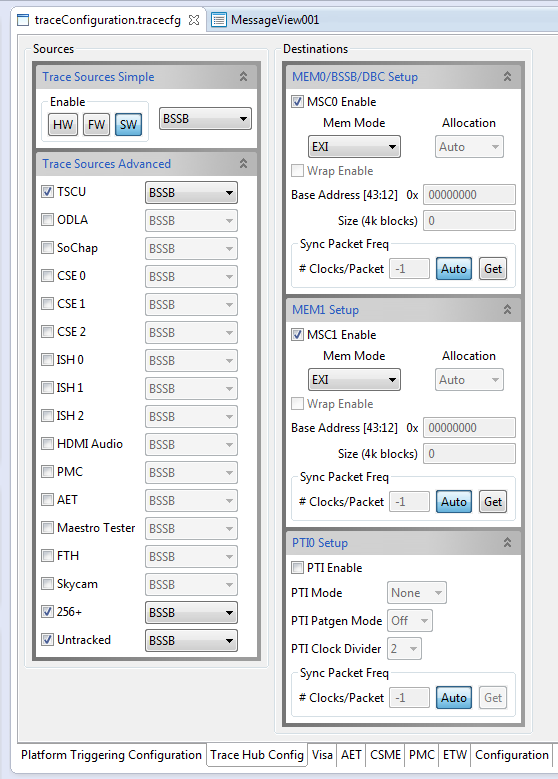
Select Target and Connection Type



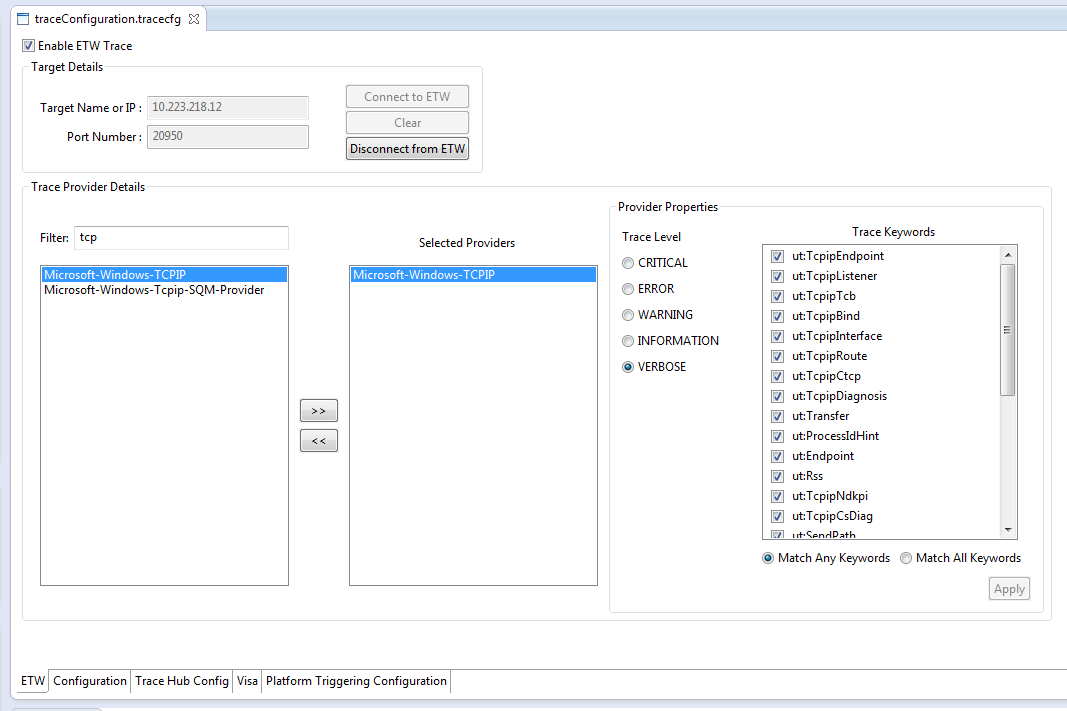
Give name for Trace Configuration File and click on Finish Button



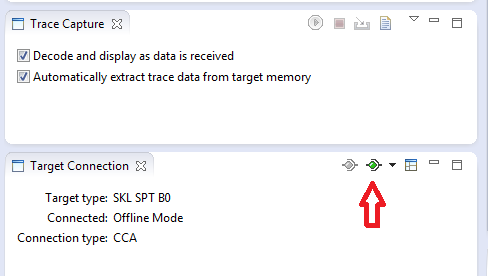
Configure Trace Hub for CCA



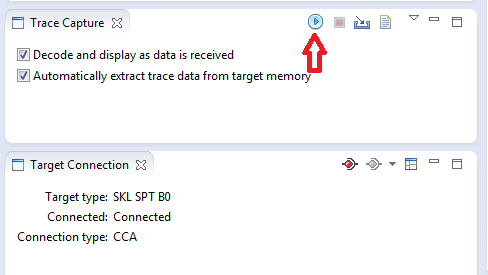
Enable ETW, Select Providers, Select Provider Properties and Trace Keywords. Apply and Save.



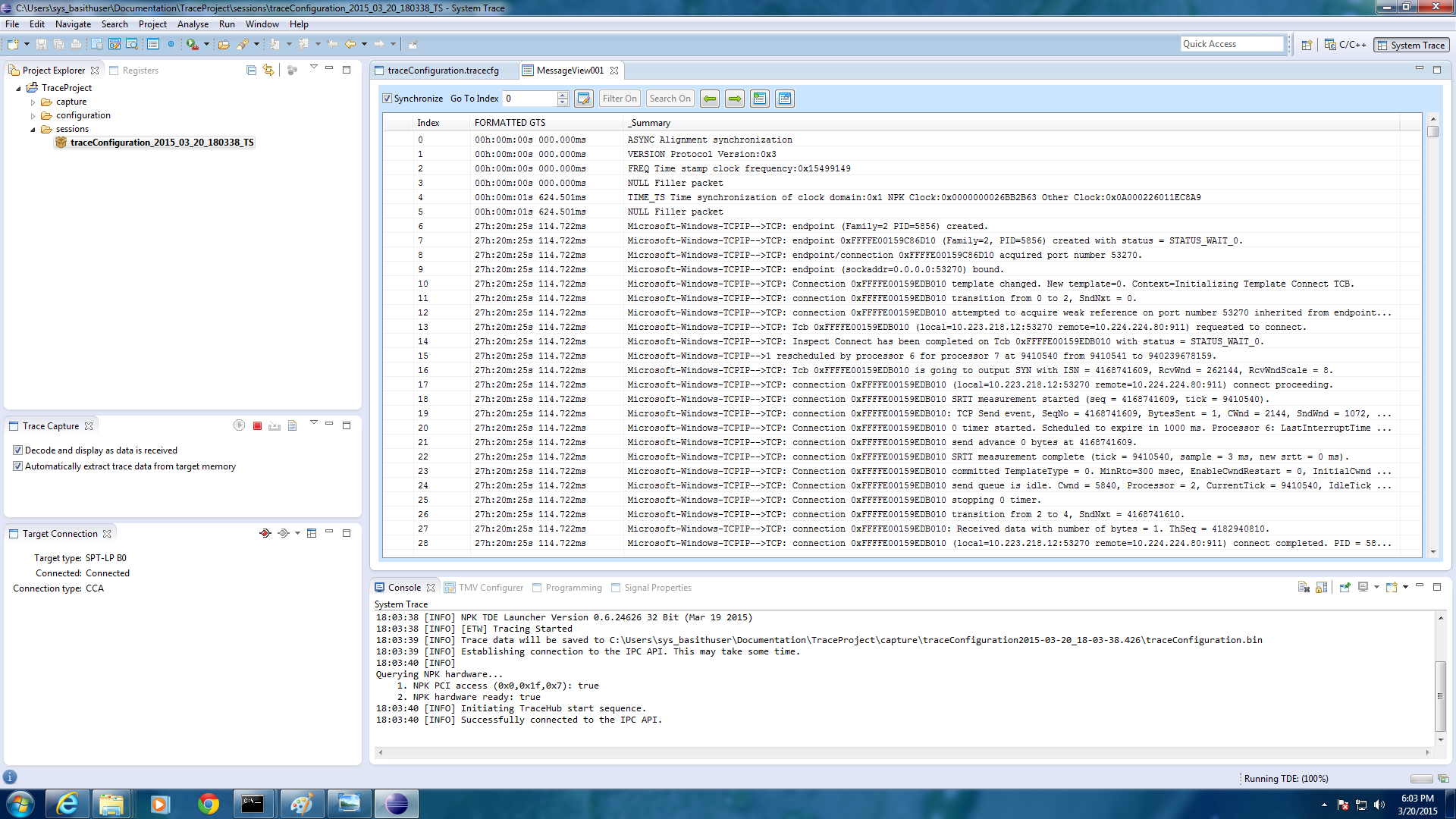
Click on below showed button to connect to target



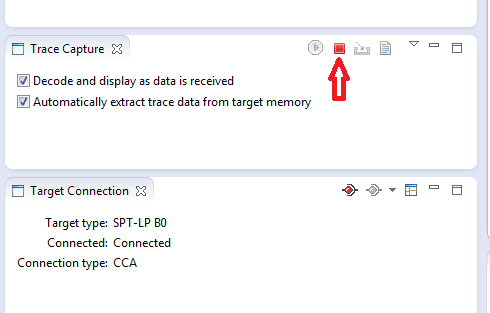
Click on below showed button to start capture.



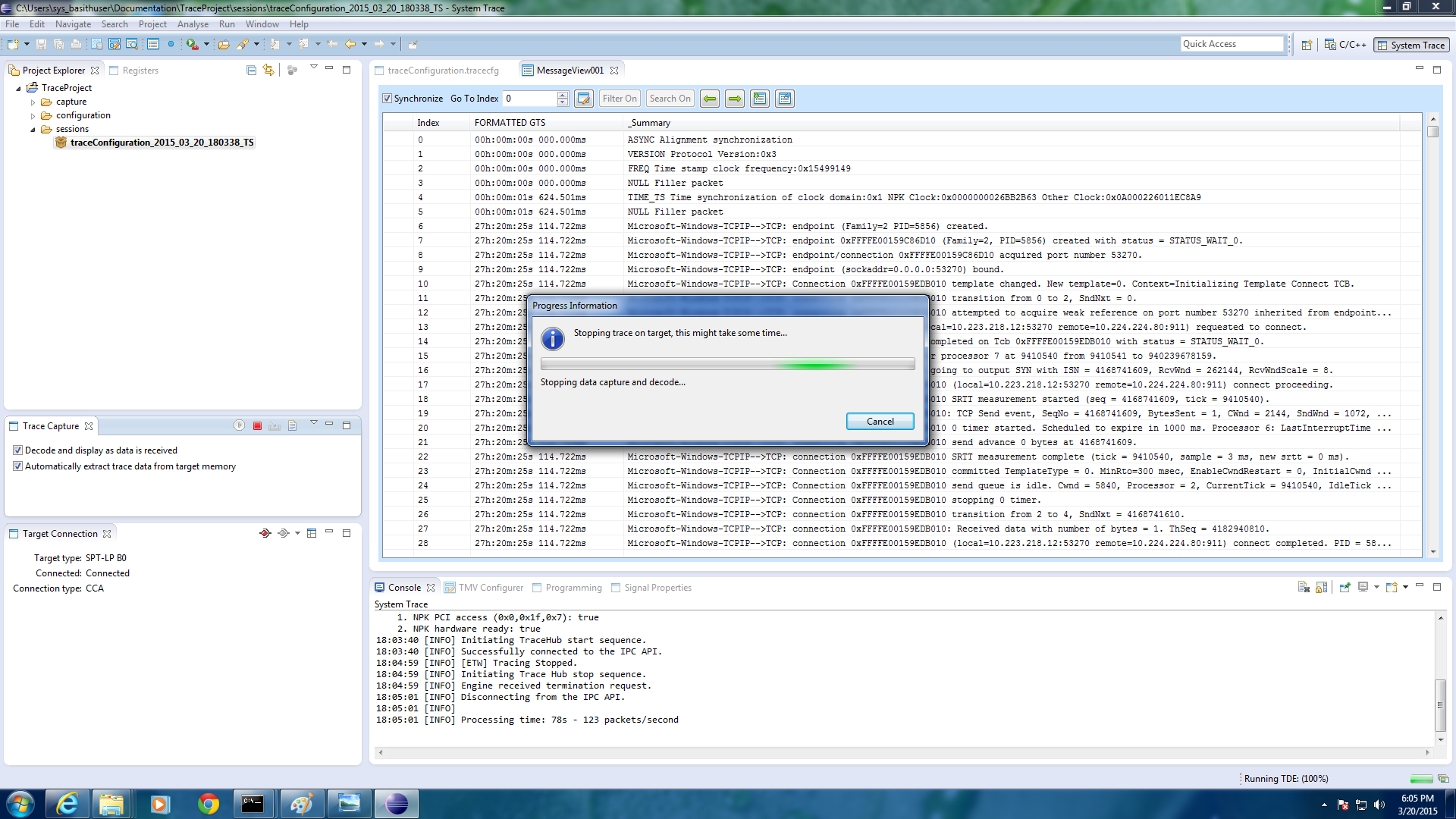
Live Streaming



Click on below showed button to stop capture.

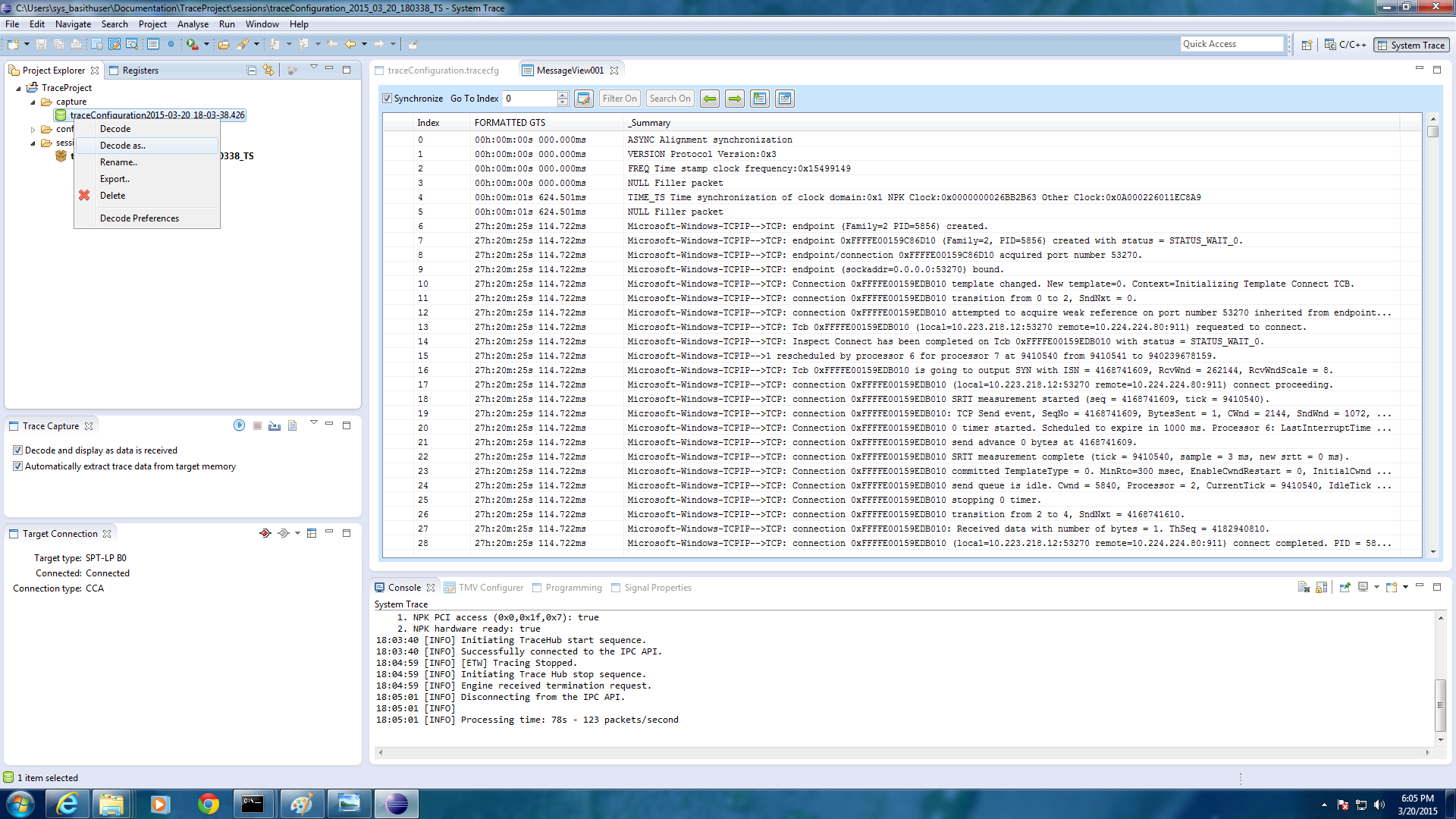


Stopping..

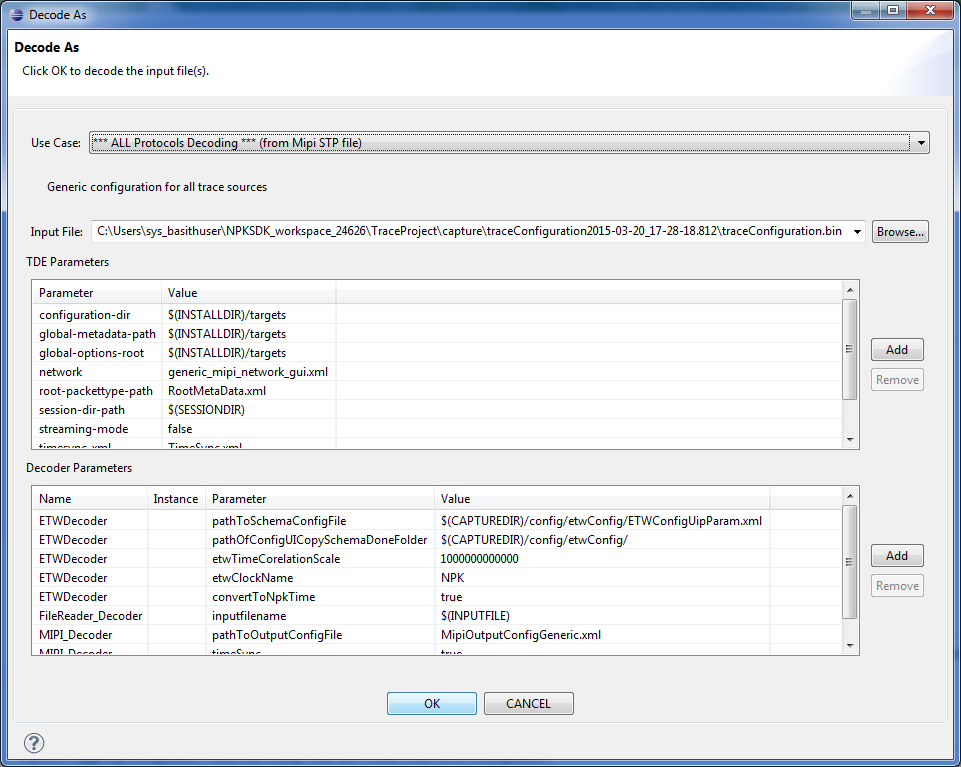


The captured trace can be decoded as shown below.

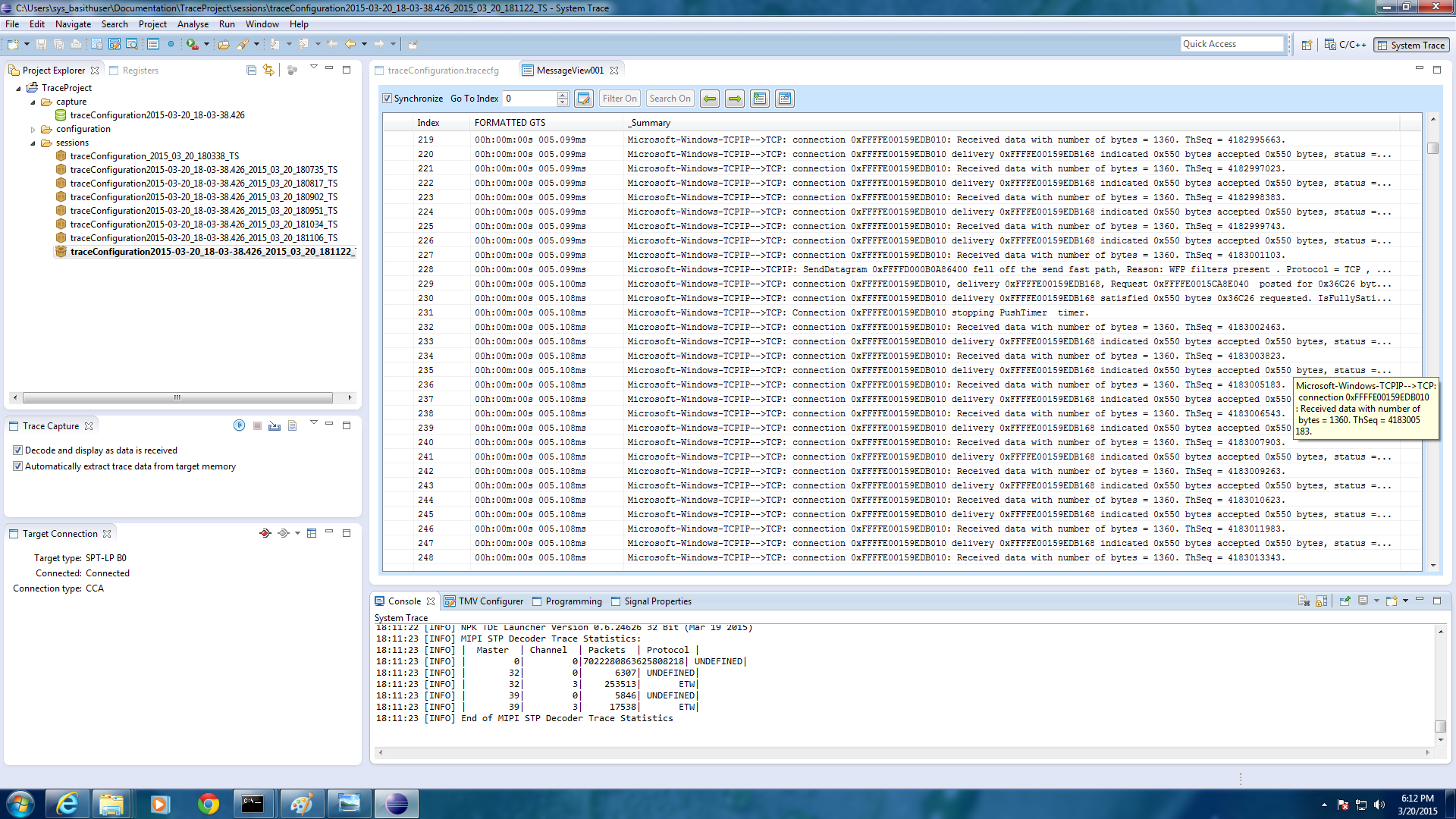
Right Click on the captured trace and select “Decode as..”



Select the decode use case.



Sample Decoded trace capture.



TMV Configuring for ETW

Check ETW Default Checkbox and then click on Apply button

