Debug Analyzer Tool user manual

Debug analyzer is the tool that helps the user in understanding the debug response of any register. It has the pre- maintained database in it that maps the bit values to their specific meanings. User can clone the tool from the bit bucket link: Code base.

Git clone <code_link>

User must compile the code on the host machine. To compile the code, use the following:

cd mem_tool_dump; make;

Provide the input file to be used for which the memory dumps need to be taken. Input file must be in the following format:

REG={Module_name,reg_name,address,endianness}

In above command:

Module name: Name of the module for which debugging is to be done such as I2C, QSPI.
Reg_name: Name of the register in the module. To have the dump of all registers in the module specify all.
Address: Address of the register for the dump. In case of all register dump specify base address.
Endianness: Endianness of the module is specified in "LE" or "BE" format.

User can run the tool for the following two modes:

a. **Kernel mode**: The tool can be run on the kernel console and the value for each address will be fetched by the tool only.
b. **CCS mode**: The tool must be executed on the host machine and need to provide the dump corresponding to the registers in the input file. The CCS help script is also provided by the tool to take the dump corresponding to the input file.

Output from the tool can be fetched in the following two modes:

a. **Display mode**: Display for the memory dump and their corresponding bit mappings is displayed on the console which can be redirected to some file.
b. **XML mode**: Display for the memory dump and their corresponding bit mapping is recorded in the XML file. Use the dump_analyzer.html client based web interface to analyze the data.

Command has the following format:
Usage: ./dump_analyze -i <INPUT_FILE_NAME> -m <ccs/kernel> -o <txt/xml>
-i Input file name
-m Mode in which to operate <ccs/kernel
-o Output form: display/xml

Run the following command for debugging in kernel mode:

1. Take the code to the board on the Linux using SCP.
2. Build the code using make command.
3. Check input file is present at the build location.
4. Run the command: ./dump_analyzer -i input_file -m kernel -o xml
5. For XML, launch the web page and copy the memtool_dump.xml file in text area and analyze from he table formed.
6. For display format, analyze the content displayed on the console.

Run the following command for debugging in ccs mode:

1. Move to the directory ($PATH/mem_tool_dump/src) of the tool on the host machine.
2. Build the tool using make.

To generate the ccs script corresponding to the input use the below command:

3. ./dump_analyze -i <input_file_name> -c <chain_position>
    a. -I specifies the input file
    b. -c specifies the chain position to be used for reading the values.
4. To generate the dump use command:
    a. ./dump_analyzer -i input_file -m ccs -o xml

The dump from the above command can be analyzed using either the display mode or XML mode.

Known limitations:

1. Tool currently do not support 64-bit register dump.
2. Stress testing for the tool is not done, may have some corner case. Kindly report the bugs at udit.agarwal@nxp.com
3. XML documents for all the modules are not currently added in the tool. Will be done in future.