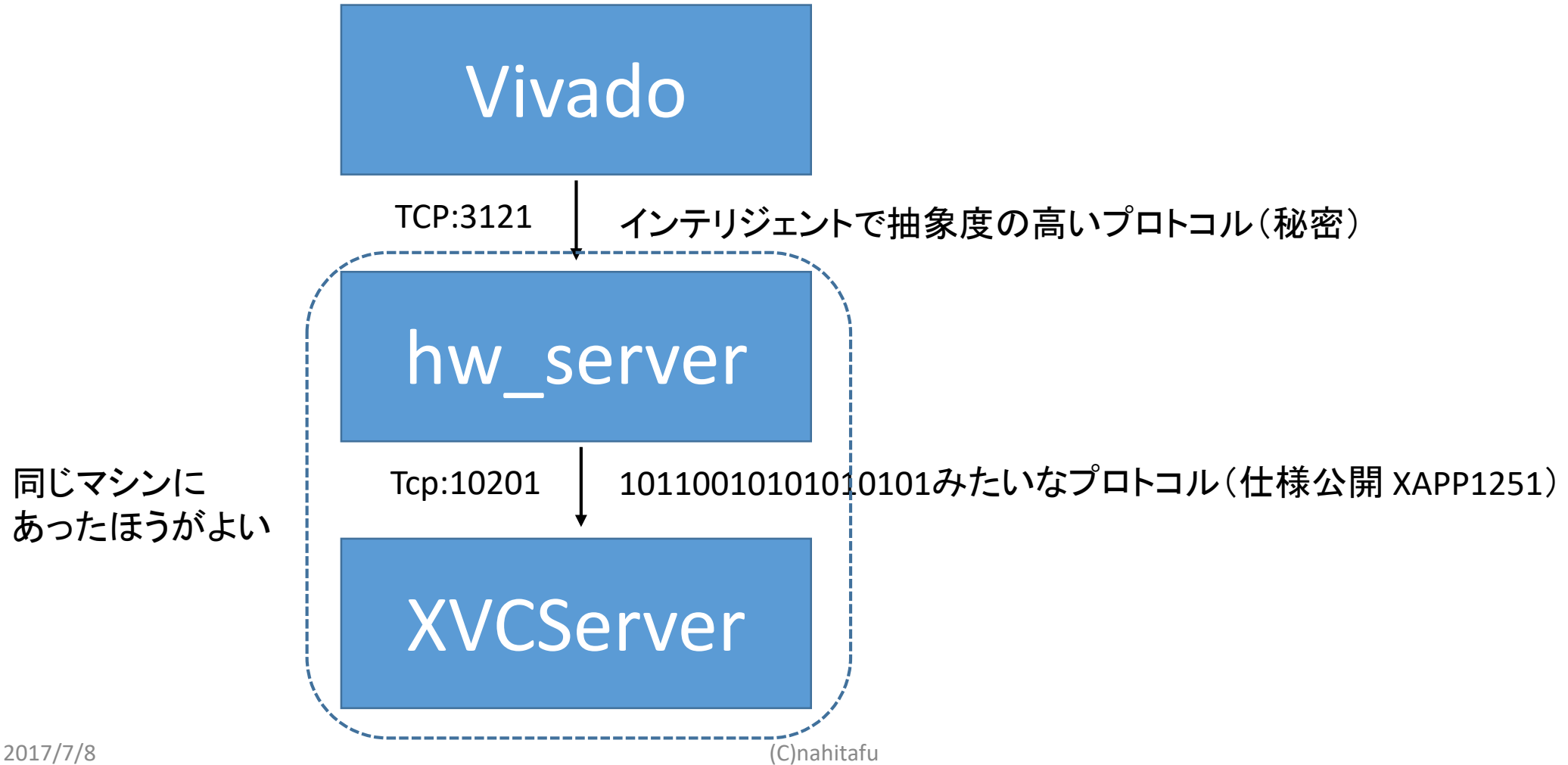


Amazon F1に Virtual JTAGでつないでみた

2017/7/8

@nahitafu

概要



リモートでJTAG接続する方法

- AmazonのマネジメントコンソールでTCPのポート3121(hw_server)を開ける

The screenshot shows the AWS Management Console interface for configuring a security group. At the top, there are buttons for 'セキュリティグループの作成' (Create Security Group) and 'アクション' (Actions). Below this is a search bar with the text 'search : sg-a7fd48c1' and a 'フィルターを追加' (Add Filter) button. A table lists the security groups, with one entry selected: 'sg-a7fd48c1' with the description 'FPGA Developer AMI-1-2-4-...' and 'VPC ID' 'vpc-40206c24'. The description for this group is 'This security group was generated by AWS Marketplace and is based on recomme...'. Below the table, the console shows the details for the selected security group 'セキュリティグループ: sg-a7fd48c1'. There are tabs for '説明' (Description), 'インバウンド' (Inbound), 'アウトバウンド' (Outbound), and 'タグ' (Tags). The 'インバウンド' tab is active, showing a table of inbound rules. The table has columns for 'タイプ' (Type), 'プロトコル' (Protocol), 'ポート範囲' (Port Range), and 'ソース' (Source). The rule shown is for 'すべてのTCP' (All TCP) traffic on port '0 - 65535' from source '0.0.0/0'. The text '(C)nahitafu' is visible at the bottom of the rule's source field.

Name	グループ ID	グループ名	VPC ID	説明
<input checked="" type="checkbox"/>	sg-a7fd48c1	FPGA Developer AMI-1-2-4-...	vpc-40206c24	This security group was generated by AWS Marketplace and is based on recomme...

タイプ	プロトコル	ポート範囲	ソース
すべてのTCP	TCP	0 - 65535	0.0.0/0

F1でJTAGのサーバを起動する(2つ)

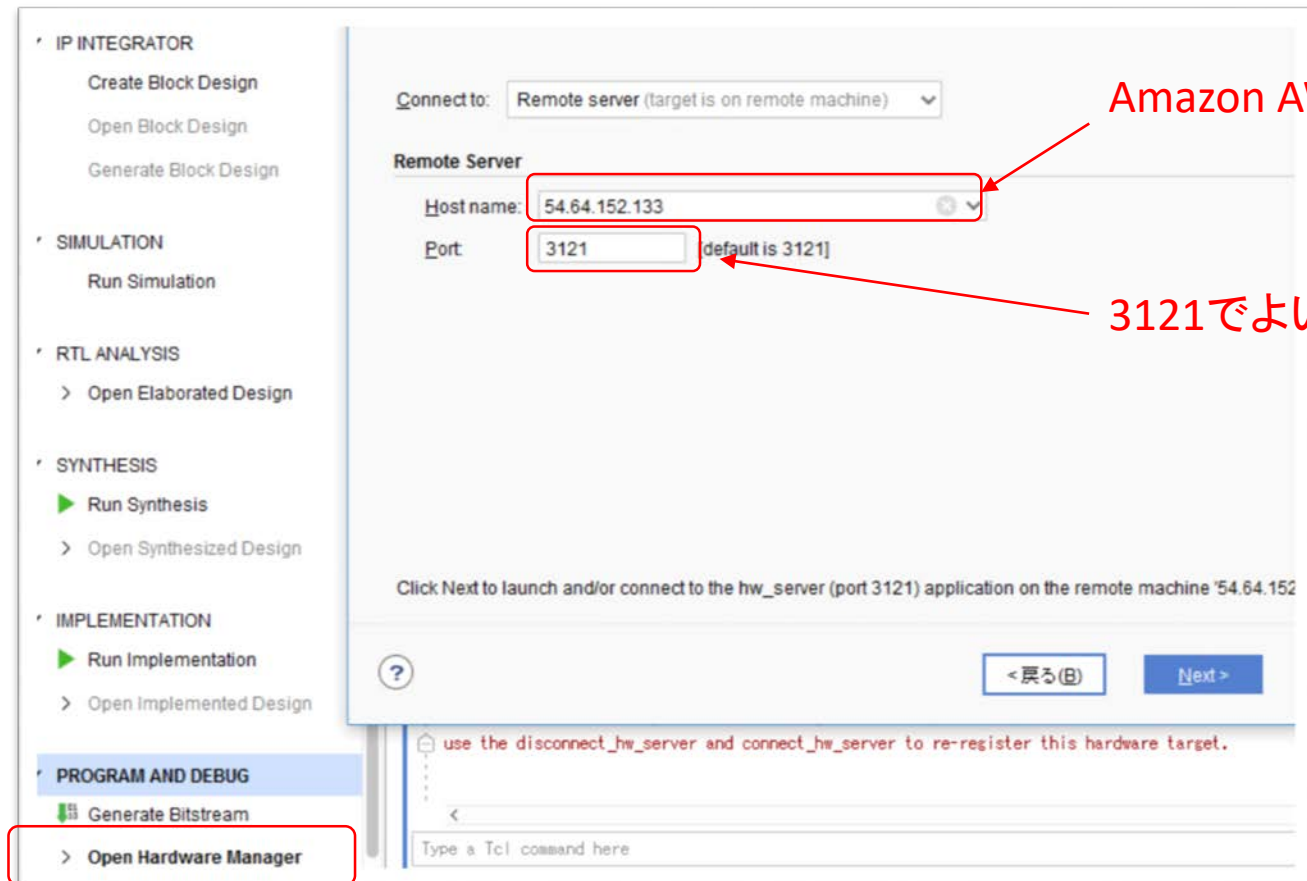
```
$ sudo fpga-start-virtual-jtag -S 0 &
```

```
$ hw_server &
```

```
[centos@ip-172-31-25-122 ~]$  
***** Xilinx hw_server v2017.1  
**** Build date : Apr 14 2017-19:01:52  
** Copyright 1986-2017 Xilinx, Inc. All Rights Reserved.  
  
INFO: hw_server application started  
INFO: Use Ctrl-C to exit hw_server application  
  
INFO: To connect to this hw_server instance use url: TCP:ip-172-31-25-122:3121  
  
[centos@ip-172-31-25-122 ~]$ sudo fpga-start-virtual-jtag -S 0 &  
[2] 22028  
[centos@ip-172-31-25-122 ~]$ Starting Virtual JTAG XVC Server for FPGA slot id 0, listening to TCP port 10201.  
Press CTRL-C to stop the service.  
█
```

Vivadoで接続

- Vivado 2017.1を使うこと！



これを押すと、おそらくつながる

...が、実機を借りれていない

Open New Hardware Target

Select Hardware Target

Select a hardware target from the list of available targets, then set the appropriate JTAG clock (TCK) frequency. If you do not see the expected devices, decrease the frequency or select a different target.

Hardware Targets

No target. Use "Add Xilinx Virtual Cable (XVC)" or "Back" button to obtain a target.

Add Xilinx Virtual Cable (XVC)

Hardware Devices (for unknown devices, specify the Instruction Register (IR) length)

No device

Hardware server: 54.64.152.133:3121

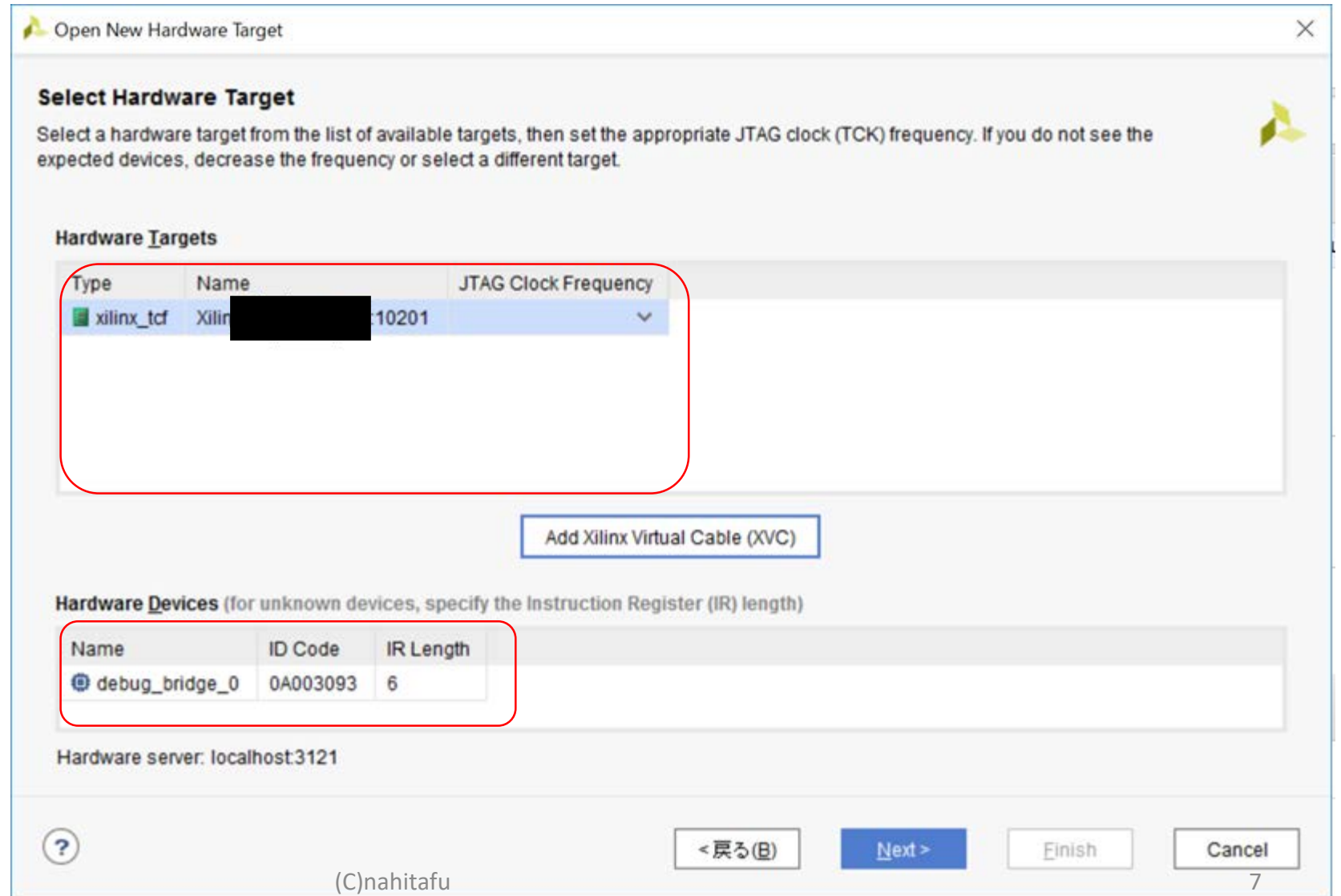
2017/7/8

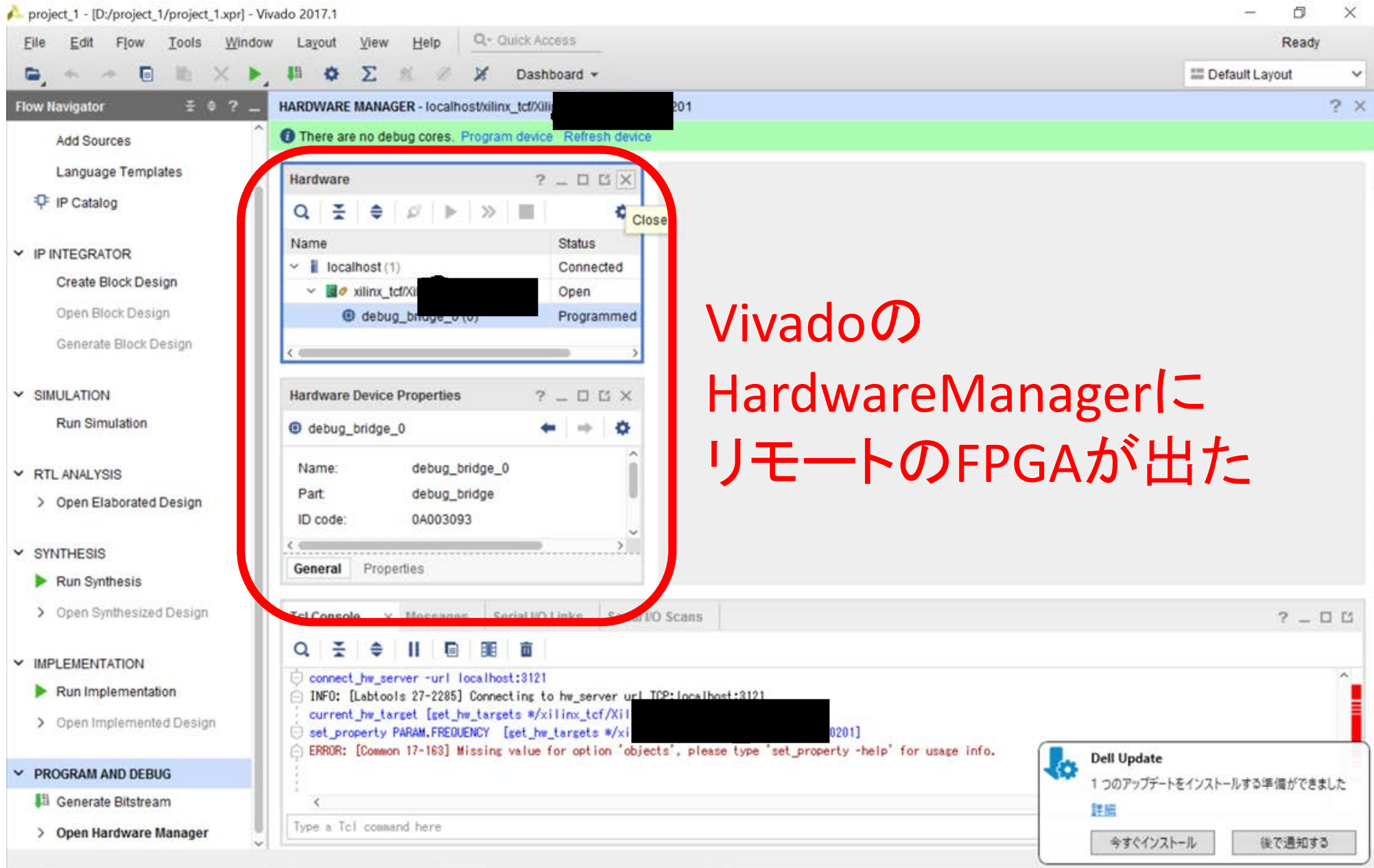
<戻る(B) Next >

```
[centos@ip-172-31-25-122 ~]$ open Virtual JTAG over PCIe failed
open Virtual JTAG over PCIe failed
open Virtual JTAG over PCIe failed
open Virtual JTAG over PCIe failed
open Virtual JTAG over PCIe failed
open Virtual JTAG over PCIe failed
```

千田さんのF1をお借りしてやってみた

hw_serverが入って
いないので
TCP:10201の
XVCServerのポートを
開けてもらった





Vivadoの
HardwareManagerに
リモートのFPGAが出た

おまけ Hw_serverのプロトコル

The image shows a Wireshark network traffic capture window. The title bar reads "イーサネット (not port 3389) からキャプチャ中". The menu bar includes "ファイル(E)", "編集(E)", "表示(V)", "移動(G)", "キャプチャ(C)", "分析(A)", "統計(S)", "電話(Y)", "無線(W)", "ツール(T)", and "ヘルプ(H)". The toolbar contains various icons for file operations and analysis. The main display area shows a list of captured packets. The selected packet (No. 911) is a TCP packet from source 381.480665 to destination 933.384.842019. The data field is expanded to show 616 bytes of data, which is a JSON message. The JSON message is as follows:

```
.....E. JtagCabl
e.contextChanged
.[{"ID": "jsn-XVC
-54.10201":1
0201", "S erverID"
:"jss7", "Manufac
turer": "Xilinx",
"Product ID": "XVC
", "Serial": "54.6
4.10201"
, "Descri ption": "
Connecti on reset
by peer ", "isAct
ive":true, "isErr
or":true }]......
.E.Jtag. contextC
hanged.[ {"ID": "j
sn-XVC-5 4.64.152
.133:102 01", "Nam
e": "whol e scan c
hain", "i dCode": 2
55, "irLe n": 0, "is
Tap":true }].....
..E.Xico m_v1.00.
```

The bottom status bar shows "Data (data.data), 616 バイト" on the left, "(C)nahitafu" in the center, and "パケット数: 1092 · 表示: 320 (29.3%) | プロファイル: Default" on the right.