Device Access Server
Introduction
http://www.infineon.com/DAS
DAS Device Access Server

DAS = Abstraction of physical connection

Tool to Device
DAS Mission

DAS
any tool
any wire
any device
DAS Multi-Tool Operation

Host PC 1
- Test Sequencer Tool
- UDAS Server
  - USB
  - TCP/IP

LAN/WAN

Host PC 2
- Debugger Tool

Test Board
- Device under Test
  - miniWiggler
  - SPD, DAP or JTAG

Copyright © Infineon Technologies AG 2015. All rights reserved.
DAS Implementations with UDAS Server

Interfaces
› JTAG
› DAP
› SPD
› ARM SWD
› Simulator (C-Models)

Supported Devices
› XC800
› XC166, XE166/XC2000
› TriCore™, AURIX™
› XMC4000, XMC1000
DAS Hardware
DAP miniWiggler V3

- Up to 2 MByte/s, low latency (< 150 µs for single access)
- More information [www.infineon.com/DAS](http://www.infineon.com/DAS)
DAS Tools

- Part of DAS Installation
- Allow to demonstrate and check the DAS operation
- All tools are fully generic
  (no interface type or device type specific adaptation code inside)
- MCD Basic Client uses the MCD library on top of DAS
  - MCD implements run control (start, stop, breakpoints, etc.)
  - MCD API is core centric and generic
  - MCD implementation is device specific
- MCDS Trace Viewer for AURIX™ Emulation Devices
DAS Tools
Device Scanner for Multi Device

![Device Scanner Screenshot]

- **Host Computer**: localhost
- **Device Options**:
  - XC166-Family
  - XMC4000-Family
  - TriCore-Family
  - XC800-Family

![Device Info Screenshot]

- **Device XMC4000-Family**
  - Device ID0 is 0x101DB083
  - Device ID1 is 0x00000000
  - Valid Address Maps: 0

- **Connected over DAS Server**
  - Name: UDAS
  - Provider: Infineon
  - Release V3.0 (Jan 30 2012) based on
  - Server library V3.0 and DAS API V4.0
  - Host address "localhost" on port 64605
  - Process ID 4368
  - Server provides these ports:
    - DummyDevice: 1 instances
    - JTAG: 4 instances

Using Port JTAG 1

- **Execution Frontend (ECF)**
  - Name: UDAS JDS
  - Provider: Infineon
  - Release V1.1 (Jan 30 2012)

- **ECF Hardware**
  - Name: DAS JDS miniWiggler JTAG/DAP/SPD V2
  - Provider: Infineon
  - Serial Number: MWSB9GGXA

Copyright © Infineon Technologies AG 2015. All rights reserved.
DAS Tools: Multi Client

DAS Server Control Panel
- Host Computer: localhost
- Running DAS Servers:
  - UDAS
  - XC800-Family
  - XC166-Family
  - TriCore-Family

DAS Device Scanner
- Host Computer: localhost
- Running DAS Devices:
  - XC800-Family
  - XC166-Family
  - TriCore-Family

XC800-Family (JTAG 0, Device 0)
- Reset
- Reset and Halt
- Device Info
- Help
- Success
- Address: 0
- Map: 0
- Bytes: 4
- Value: 0
- Write
- Read

TriCore-Family (JTAG 2, Device 0)
- Reset
- Reset and Halt
- Device Info
- Help
- Success
- Address: 0
- Map: 0
- Bytes: 4
- Value: 0
- Write
- Read
DAS Perfmeter

- Measures key performance figures
- Allows quantitative comparison of DAS implementations
- Part of the standard DAS installation
Parallel View with DAS and MCD Basic Client

- MCD API is core centric
- DAS is device (access HW) centric
MCD Basic Client

- Open one instance per core
- Supports remote connection via TCP/IP
Connect AURIX™ TriBoard and click on button

This powerful tool is free of charge but also without support
UDAS_Console Server

- Allows analysis of tool and device behavior e.g. for debugging of the multi-tool setup itself
- Needs to be started manually from DAS installation directory
- Factor 10x-40x for DAS latency between visible and minimized console window → Tool becomes slow when not minimized
DAS Installer

- Removes automatically old USB drivers
- Configures firewall
Summary

› DAS as tool connection is a standard for Infineon
  - On-board wiggler for evaluation boards
  - miniWiggler for customer boards

› Supports JTAG, DAP, SPD and SWD

› DAS hides the details of the device connection from the tool

› Proven technology broadly used internally and by customers

http://www.infineon.com/DAS