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S32S2xxTV Development Package 3.1.2

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1. Release Description

NXP Semiconductors is pleased to announce the release of the S32S2xxTV Development Package 3.1.2 for S32 Design Studio 3.1.

1.1. Release Content

- Support for wizards creating application and library projects for the S32S247TV processor [1]
- Support for wizard creating S32S2xxTV projects from project examples
- Project examples for the S32S2xxTV processor family
- Support for S32 Configuration Tool
- Support for S32 Debugger
- GDB debug connection to Synopsys® Virtualizer Development Kit (VDK)
- Integrated S32S247TV SDK EAR 0.8.1 (Windows only)

2. What's New

2.1. Supported Devices

The package provides support for the S32S247TV processor.

2.2. New Features

- Creating application and library projects.
- Creating projects from project examples.
- On-chip debugging with the S32 Debug Probe.
- Debugging in the simulation mode using Synopsys® VDK. This feature is available in Windows only.
- Integrated S32S247TV SDK EAR 0.8.1. This feature is available in Windows only.

2.3. Synopsys® VDK Integration

The following versions of Synopsys® tools are supported in this release:

- Synopsys® Virtualizer Runtime, version N-2017.12-6
- VDK for NXP S32S247C MCU product family, version N-2017.12-R7.0.0

Synopsys® tools are available for Windows only.

Recommendation: Install Synopsys® Virtualizer Runtime on the developer's workstation before installing S32 Design Studio 3.1.

[1] A project is created with the RAM build configurations only.

Synopsys® Virtualizer Runtime includes the VP Explorer plug-in to be installed on S32 Design Studio 3.1. When launched, the S32 Design Studio 3.1 installer looks for the existing Virtualizer Runtime installation. If found, the VP Explorer plug-in is installed on S32 Design Studio 3.1 silently. If Virtualizer Runtime is not detected, the plug-in can be installed later. Then the required VDK should be installed on the workstation.

After installing Synopsys® Virtualizer Runtime, set the following environment variables in Windows (**Control Panel** > **System** > **Advance System Settings** > **Environment Variables**):

SNPS_VP_HOME=<Synopsys Installation Directory>\<product_version> \VirtualizerRuntime\SLS \windows

SNPS_VP_PRODUCT=VSDK

Note: The `S32S.vpcfg` VDK configuration file starts simulation in the Thumb state. To run in the ARM state, use the `S32S_arm.vpcfg` file.

3. Installation and Licensing

The development package shall be installed on S32 Design Studio 3.1 using the **S32DS Extensions and Updates** wizard. Make sure to install the latest **S32 Design Studio Platform** and **S32 Design Studio Platform Tools** updates.

To install the development package:

1. Launch S32 Design Studio 3.1.
2. Choose **Help** > **S32DS Extensions and Updates** from the menu bar.
3. In the **S32DS Extensions and Updates** dialog box, select **S32S2xxTV development package** from the list and click **Install/Update**.
4. Review the information on the confirmation page and click **Next**.
5. Accept the license terms. Click **Finish** to complete the installation.

After the installation completes, S32 Design Studio 3.1 automatically prompts to be restarted.

You can download updates from the website manually to install the development package on the computer with no access to the internet:

1. Download the archive file.
   a. Go to the www.nxp.com Product List page.
   b. Select S32 Design Studio from the list.
   c. Select the development package and click **Download Selected Files** to save the archive file in a local folder.
2. Install the development package.
   a. Choose **Window** > **Preferences** from the menu bar.
   b. In the **Preferences** dialog box, click **S32 Design Studio** > **S32DS Extensions and Updates**.
   c. Click **Add...**.
   d. Click **Archive** in the **Add Site** dialog box.

e. Navigate to the directory with the downloaded ZIP file. Choose it and click **Open**, then click **OK**.
f. Choose **Help** > **S32DS Extensions and Updates** from the menu bar and continue the installation as usual.

4. Technical Support

The S32 Design Studio 3.1 general issues are tracked through the S32DS Public NXP Community space:

https://community.nxp.com/community/s32/s32ds

For confidential cases and cases which cannot be publicly shared on NXP Community please follow the steps described here:

https://community.nxp.com/docs/DOC-329745

Appendix A. Known Issues and Workarounds

- **The EmbSys Registers view cannot read some registers**: Some peripheral registers are displayed as “not read”, "?" or "xxxxxx" when clicked to be updated.

  Workaround: Some registers are not supported by the current version of Synopsys VDK. No workaround available.

- **CMSIS DAP debug failure**: The CMSIS DAP debugging is not supported due to performance issues.

  Workaround: No workaround available.

- **Build fails after attaching SDK to an existing project**: The SDK functionality is supported only for attaching an SDK using project creation wizard. Attaching SDK to an existing project results in incorrect handling of the startup and linker files.

  Workaround: Right-click the project in Project Explorer, click Build Configurations Explorer on the context menu and exclude the *startup_ARMCR52.c* and *system_ARMCR52.S* files from the build configuration. Then open the project properties, click **C/C++ Build** > **Settings** > **Standard S32DS C Linker** > **General** and replace the included linker script with the SDK one.

- **Semihosting does not work for a project with NewLib Nano and S32 Debugger**: There is no semihosting output in the debugger console during debugging.

  Workaround: Update the rdimon specs file. Navigate to the *<s32ds_install_dir>/S32DS/build_tools/gcc_b1620/gcc-6.3-arm32-eabi/arm-none-eabi/newlib/lib* folder, open the *rdimon-v2m.specs* file. Find the rdimon_libgloss line:

  ```
  %{!specs=nano.specs:-lrdimon-v2m} %{specs=nano.specs:-
  lrdimon_nano}
  ```

And replace it with the following one:

```
%{!specs=nano.specs:-lrdimon-v2m} %{specs=nano.specs:-lrdimon-
v2m_nano}
```

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