RealView® Development Suite v4.1
Installation Guide for Windows and Red Hat Linux

Release Information

The following changes have been made to this book.

Change History

Date	Issue	Confidentiality	Change
September 2003	A	Non-Confidential	RealView Developer Suite v2.0 Release
January 2004	B	Non-Confidential	RealView Developer Suite v2.1 Release
December 2004	C	Non-Confidential	RealView Developer Suite v2.2 Release
May 2005	D	Non-Confidential	RealView Developer Suite v2.2 SP1 Release
March 2006	E	Non-Confidential	RealView Development Suite v3.0 Release
March 2007	F	Non-Confidential	RealView Development Suite v3.1 Release
February 2008	G	Non-Confidential	RealView Development Suite v3.1 Professional Release
September 2008	H	Non-Confidential	RealView Development Suite v4.0 Release
6 November 2009	I	Non-Confidential	RealView Development Suite v4.0 SP3 Release
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Proprietary Notice

Confidentiality Status

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Unrestricted Access is an ARM internal classification.

Product Status

The information in this document is final, that is for a developed product.

Web Address

`http://www.arm.com`

Contents

1 System requirements

The minimum specification of computer for use with ARM® *RealView® Development Suite* (RVDS) v4.1 must have a 1GHz Pentium III class processor with 512MB of system memory.

The recommended specification is a Pentium 4 class machine with 1GB of memory.

See the following sections for more details:

- *Supported platforms*
- *DSTREAM and RealView ICE host software*.

Note

If you have RVDS Professional edition, the minimum recommended specification for ARM Profiler is a 2GHz dual-core processor with 1GB of memory.

1.1 Supported platforms

RVDS v4.1 is supported on:

- Windows 7 Enterprise Edition
- Windows 7 Professional Edition
- Windows Vista Business Edition SP2
- Windows Vista Enterprise Edition SP2
- Windows XP Professional SP3
- Windows Server 2003 (ARM Compiler toolchain only)
- Solaris 10 (ARM Compiler toolchain only)
- Red Hat Enterprise Linux WS version 4 for Intel x86 using Gnome Window Manager and bash Shell
- Red Hat Enterprise Linux WS version 5 for Intel x86 using Gnome Window Manager and bash Shell.

All tools support both 32-bit and 64-bit versions of these operating systems where available. However, DSTREAM and RealView ICE does not support 64-bit versions of Red Hat Linux nor the installation of 64-bit USB drivers on Windows Vista.

Note

RVDS v4.0 uses the FLEX*net* license management software, owned by Flexera Software Inc. To use floating licenses, TCP/IP networking must be configured and running on every relevant computer. See the *FLEXnet for ARM® Tools License Management Guide v4.3* for more information.

1.2 DSTREAM and RealView ICE host software

The latest version of the DSTREAM and RealView ICE host software available at the time of the RVDS v4.1 release is installed with the **Full** product selection. However for:

- hardware debugging you require a DSTREAM or RealView ICE run control unit connected to the host using TCP/IP or USB
- capturing and analyzing trace with RealView Debugger from an *Embedded Trace Buffer*™ (ETB™) you require a DSTREAM or RealView ICE run control unit connected to the host using TCP/IP or USB
- capturing and analyzing trace with RealView Debugger from an *Embedded Trace Macrocell*™ (ETM™) you require a RealView Trace or RealView Trace 2 data capture unit connected to the host through a RealView ICE run control unit
- hardware profiling you require a RealView ICE run control unit connected to the host using TCP/IP or USB in conjunction with a RealView Trace 2 data capture unit connected to the host using USB.

Note

RealView Debugger does not support tracing from the external trace port of a SoC with DSTREAM.

You must purchase the DSTREAM, RealView ICE, RealView Trace, and RealView Trace 2 hardware separately, depending on your debug and trace requirements. When you purchase the DSTREAM or RealView ICE hardware, a version of the DSTREAM and RealView ICE host software is included.

See *DSTREAM Setting Up the Hardware* or *RealView® ICE and RealView Trace Setting Up the Hardware* for more information.

Networking software

To make a remote connection to target hardware with a DSTREAM or RealView ICE unit, your operating system must be installed with its supplied networking software.

2 Installing RealView Development Suite on Windows

To install RVDS v4.1, you can:

- use the ARM RealView Software Wizard, and follow the on-screen prompts
- run the command-line installer, which is useful for installing from a batch file for unattended installations (see *Installing RealView Development Suite from the command line* on page 7).

Note

RVDS does not support multiple concurrent installations. Uninstall any other versions of RVDS before installing this RVDS v4.1.

See the following sections for more details:

- *Installing on Windows with the ARM RealView Software Wizard*
- *Modifying or uninstalling RealView Development Suite* on page 4.

Note

The product must be installed from an account with administrator privileges.

Note

It is recommended that you read the release notes for important information about this release before continuing with the installation.

2.1 Installing on Windows with the ARM RealView Software Wizard

To install RVDS v4.1:

1. Do one of the following:
   - If you are installing RVDS from a CD, insert the CD into the CD-ROM drive.

     The ARM RealView Software Wizard starts automatically. If it does not start, run the program `setup.exe` in the top-level directory of the CD-ROM.
   - If you are installing a patch, download the patch from the ARM website and run `setup.exe`.
2. Follow the on-screen prompts to install RVDS.

   The Customize panel of the ARM RealView Software Wizard lists all component software options. Select:
   - **Full** to install all component software. This is the default option.
   - **No Documentation** to install the default component software without documentation.
   - **ARM Compiler Only** to install only the ARM Compiler toolchain.
   - **RVD Only** to install only RealView Debugger.
   - **RVI Only** to install only the DSTREAM and RealView ICE host software.

   To choose your own set of installation options, then select or deselect the options as required. The installation type changes to `Custom`.

   Note

   You can set up or modify the environment variables after the installation is complete by using the `armenv` tool (see the *RealView® Development Suite Getting Started Guide* for more details).
3. Continue with the installation.
4. When the software installation is complete, the ARM License Wizard is launched. If you already have a network FLEX*net* license server set up and running, or if you want to defer installing a license to a later time, click **Cancel**. Otherwise, follow the prompts to install your license file or go to the ARM licensing web site to obtain a license.
5. If you installed the DSTREAM and RealView ICE host software, see *Completing the DSTREAM and RealView ICE host software installation* on page 10 for additional steps that are required to complete the installation of the DSTREAM or RealView ICE unit.

Note

On Windows platforms, RVDS depends on C runtime libraries from Microsoft Visual Studio 2005 Service Pack 1 release. The C library is not installed by RVDS directly. Instead the Microsoft installer for the C library, `vcredist_x86_2005sp1_atl_fix.exe`, is provided in the root of the installation media. You must run this installer before attempting to use RVDS. The Microsoft installer might require a reboot of your computer.

2.2 Modifying or uninstalling RealView Development Suite

To modify or uninstall RVDS:

1. Make sure that no RVDS component is running before you start.
2. Select **Start** → **Programs** → **ARM** → **Modify or Uninstall RVDS 4.1 *edition*** to launch the ARM RealView Software Wizard.
3. Follow the on-screen prompts.
4. On the Product Setup panel, select:
   - **Modify** to change the installed components
   - **Uninstall** to completely remove RVDS from your computer.
5. If you are prompted to reboot, you must reboot your computer to complete the uninstall.

Note

RealView Debugger stores DSTREAM and RealView ICE configuration (RVConfig `.rvc`) files in your RealView Debugger home directory. The default RealView Debugger home directory is:

`C:\Documents and Settings\`*`username`*`\Application Data\ARM\rvdebug\4.1`

When RVDS is uninstalled, the files in this directory are not removed.

3 Installing RealView Development Suite on Red Hat Linux

To install RVDS v4.1, you can:

- use the ARM RealView Software Wizard, and follow the on-screen prompts
- run the command-line installer, which is useful for installing from a batch file for unattended installations (see *Installing RealView Development Suite from the command line* on page 7).

Note

RVDS does not support multiple concurrent installations. Uninstall any other versions of RVDS before installing this RVDS v4.1.

See the following sections for more details:

- *Installing on Red Hat Linux with the ARM RealView Software Wizard*
- *Modifying or uninstalling RealView Development Suite* on page 6.

Note

Do not install as root, or other privileged user. If you do, then configuration files that might have to be modified by other RealView components (such as DSTREAM or RealView ICE) cannot be changed, and can cause configuration failures.

Note

Read the release notes for important information about this release before continuing with the installation.

3.1 Installing on Red Hat Linux with the ARM RealView Software Wizard

To install RVDS v4.1:

1. Insert the CD into the CD-ROM drive.
2. If the CD-ROM drive does not automount:
   a. `su` as root.
   b. Mount the CD-ROM drive by typing:
      `mount` *`device mount-dir`*
      where *`device`* is the path of your CD-ROM drive, for example `/dev/cdrom`, and *`mount-dir`* is the path to an existing directory where the CD-ROM is to be mounted, for example, `/mnt/cdrom`
   c. Exit as root.
3. Move to the top-level CD-ROM directory. For example:
   `cd /mnt/cdrom`
4. Start the ARM RealView Software Wizard:
   `setuplinux.bin`
5. Follow the on-screen prompts to install RVDS.
   The Customize panel of the ARM RealView Software Wizard lists all component software options. Select:
   - **Full** to install all component software. This is the default option.
   - **No Documentation** to install the default component software without documentation.
   - **ARM Compiler Only** to install only the ARM Compiler toolchain.
   - **RVD Only** to install only RealView Debugger.
   - **RVI Only** to install only the DSTREAM and RealView ICE host software.

   To choose your own set of installation options, select or deselect the options as required. The installation type changes to `Custom`.

   Note

   You can set up or modify the environment variables after the installation is complete by using the `armenv` tool (see the *RealView® Development Suite Getting Started Guide* for more details).
6. Before you continue with the installation, you must export your RVDS license.

Note

The ARM License Wizard is not available on Red Hat Linux.

7. The installer generates a script file that sets up the environment variables for RVDS v4.1, `install_directory/RVDS41env.posh`.

   Use the `source` command with the appropriate shell script to add the new environment to the current shell. You can also generate these shell script files using the `armenv` tool. See the *RealView® Development Suite Getting Started Guide* for more details.
8. If you installed the DSTREAM and RealView ICE host software, see *Completing the DSTREAM and RealView ICE host software installation* on page 10 for additional steps that are required to complete the installation of the DSTREAM or RealView ICE unit.

3.2 Modifying or uninstalling RealView Development Suite

To modify or uninstall RVDS:

1. Make sure that no RVDS component is running before you start.
2. Start the ARM RealView Software Wizard:

   `setuplinux.bin`
3. Follow the on-screen prompts.
4. On the Product Setup panel, select:
   - **Modify** to change the installed components
   - **Uninstall** to completely remove RVDS from your computer.
5. Follow the instructions to complete the required action.

Note

RealView Debugger stores DSTREAM and RealView ICE configuration (RVConfig `.rvc`) files in your RealView Debugger home directory. The RealView Debugger home directory is:

`~/rvd`

When RVDS is uninstalled, the files in this directory are not removed.

Uninstalling multiple ARM products

To uninstall multiple ARM products, do one of the following:

- Run the `install_directory/bin/uninstall.sh` command.
- Launch the ARM RealView Software Wizard with the `-unistall` option:

  `setuplinux.bin -uninstall`

  If you specify the `uninstall` option without the `-` prefix, then you must also specify the ARM product to uninstall (see *Uninstalling from the command line* on page 9 for details).

4 Installing RealView Development Suite from the command line

You can install RVDS using a CLI command:

- On Windows, use:
  `setupcli.exe`
- On Red Hat Linux, use:
  `setupclilinux.bin`

Note

RVDS does not support multiple concurrent installations. Uninstall any other versions of RVDS before installing this RVDS v4.1.

These commands perform a non-interactive installation of RVDS. Use command-line options to specify the location, level, and the product variant for the installation. See the following sections for more details:

- *Getting help on the command line installer*
- *Installing on Windows*
- *Installing on Red Hat Linux* on page 8
- *Choosing the level of installation* on page 8
- *Installing a variant on a non-native platform* on page 8
- *Uninstalling from the command line* on page 9
- *Product syntax* on page 9
- *Variant syntax* on page 9.

Note

Also see *Completing the DSTREAM and RealView ICE host software installation* on page 10 for additional steps that are required to complete the installation of the DSTREAM or RealView ICE unit.

4.1 Getting help on the command line installer

You can get help on the command line installer:

- On Windows, enter:
  `setupcli.exe help [command]`
- On Red Hat Linux, enter:
  `setupclilinux.bin help [command]`

4.2 Installing on Windows

If the CD is in drive `D:`, and `C:\Program Files\ARM` is your chosen installation directory, enter the following command:

```
D:\setupcli.exe install --source D: --target "C:\Program Files\ARM" --env
SYSTEM
```

If you prefer to set up the user environment rather than the system environment, specify `--env USER` instead. This restricts the environment settings to your login on the computer.

You can also install RVDS to a network share, but each user must then setup their environment to run RVDS as follows:

```
cd "W:\ARM\bin\win_32-pentium"
armenv --system -p RVDS
```

During installation, the installer asks you to agree to the *End User License Agreement* (EULA). Enter **yes**.

Note

The product must be installed from an account with administrator privileges.

Note

On Windows platforms, RVDS depends on C runtime libraries from Microsoft Visual Studio 2005 Service Pack 1 release. The C library is not installed by RVDS directly. Instead the Microsoft installer for the C library, `vcredist_x86_2005sp1_atl_fix.exe`, is provided in the root of the installation media. You must run this installer before attempting to use RVDS. The Microsoft installer might require a reboot of your computer.

4.3 Installing on Red Hat Linux

If the media is mounted as `/mnt/cdrom` and `/opt/ARM/RVDS` is your chosen installation directory, enter the following command:

```
/mnt/cdrom/setupclilinux.bin install --source /mnt/cdrom \
--target "/opt/ARM/RVDS"
```

During installation, the installer asks you to agree to the EULA. Enter **yes**.

4.4 Choosing the level of installation

You can choose the level of installation with the optional `--level` *`option`* argument, where *`option`* can be one of the following:

- **Full** to install all component software. This is the default option.
- **No Documentation** to install all component software without documentation.
- **ARM Compiler Only** to install only the ARM Compiler toolchain.
- **RVD Only** to install only RealView Debugger.
- **RVI Only** to install only the DSTREAM and RealView ICE host software.

For example, to install only the ARM Compiler toolchain, enter the following command:

- On Windows:

  ```
  D:\setupcli.exe install --source D: --target "C:\Program Files\ARM"
  --env SYSTEM --level "ARM Compiler Only"
  ```

- On Red Hat Linux:

  ```
  /mnt/cdrom/setupclilinux.bin install --source /mnt/cdrom \
  --target "/opt/ARM/RVDS" --level "ARM Compiler Only"
  ```

4.5 Installing a variant on a non-native platform

You can install the Windows or Red Hat Linux variant of RVDS on a non-native platform. For example, you might install the Red Hat Linux variant as a shared installation on a Windows server, because some of your users are using Red Hat Linux.

To install RVDS on a non-native platform, use the `--var platform [win32|linux]` argument to specify the non-native platform. For example, to install the Red Hat Linux variant of RVDS on Windows, enter:

```
D:\setupcli.exe install --source D: --target "C:\Program Files\ARM" --var
platform linux --shared
```

See *Variant syntax* on page 9 for details on the syntax of `--var`.

`--shared` prevents non-native elements of the installer from running. In this example, elements such as adding items to the Gnome Application menu are not performed.

Installing both variants on a single platform

To install both the Windows and Red Hat Linux variants of RVDS on a single platform, for example on Red Hat Linux:

1. Install the Red Hat Linux variant:

   ```
   /mnt/cdrom/setupclilinux.bin install --source /mnt/cdrom \
   --target "/opt/ARM/RVDS"
   ```

2. Install the Windows variant:

   ```
   /mnt/cdrom/setupclilinux.bin install --source /mnt/cdrom \
   --target "/opt/ARM/RVDS" --var platform win_32 --shared
   ```

   `--shared` prevents non-native elements of the installer from running. In this example, elements such as launching the ARM License Wizard and adding items to the Windows Start menu are not performed.

4.6 Uninstalling from the command line

You can uninstall RVDS from the command line:

- On Windows, enter:

  ```
  setupcli.exe uninstall --product product [--var variant] [--root root]
  [--shared]
  ```

- On Red Hat Linux, enter:

  ```
  setuplilinux.bin uninstall --product product [--var variant] [--root root]
  [--shared]
  ```

See *Product syntax* for details on the syntax for `product`.

See *Variant syntax* for details on the syntax for `variant`.

`--root root` is the root of your installation. The default is specified by the `ARMROOT` environment variable.

`--shared` prevents non-native elements of the uninstaller from running. For example, when uninstalling a Windows variant on Red Hat Linux, elements such as removing the ARM License Wizard and removing items from the Windows Start menu are not performed. See *Installing a variant on a non-native platform* on page 8.

Note

RealView Debugger stores DSTREAM and RealView ICE configuration (RVConfig `.rvc`) files in your RealView Debugger home directory:

- On Windows, the default RealView Debugger home directory is:

  `C:\Documents and Settings\username\Application Data\ARM\rvdebug\4.1`

- On Red Hat Linux, the RealView Debugger home directory is:

  `~/rvd`

When RVDS is uninstalled, the files in these directories are not removed.

Note

To uninstall multiple ARM products, prefix the `uninstall` option with a hyphen. Do not include any other option, for example:

```
setupcli.exe -uninstall
```

4.7 Product syntax

The syntax for specifying the product is:

`-product category [name [version [revision]]]`

where:

category The product identifier, for example, `RVDS`.

name Do not use this argument (the default name is `Contents`).

version The version number of the product, for example, `4.1`. If you do not specify a version, the most recent version of the installed product is used.

revision A specific build number for the product. If you do not specify a build number, the most recent build of the installed product is used.

For example, to uninstall RVDS v4.1 on Windows, enter:

```
setupcli.exe uninstall --product RVDS 4.1
```

4.8 Variant syntax

The syntax for specifying the variant is:

`--var name value [name value]...`

Identifies a variant of the same product.

name The type of the variant, for example, `platform`. It is recommended that you use only the `platform` variant.

value The specific variant, either `linux` or `win_32`.

For example, to uninstall the Red Hat Linux variant of RVDS v4.1, enter:

```
setuplilinux.bin uninstall --product RVDS 4.1 --var product linux
```

5 Completing the DSTREAM and RealView ICE host software installation

If you have chosen to install the DSTREAM and RealView ICE host software, then you must set up your DSTREAM or RealView ICE hardware for use. The following sections describe how to do this:

- *Using DSTREAM or RealView ICE over a network*
- *Installing the USB device driver on Windows XP SP2 and Windows Vista*
- *Installing the USB device driver on Red Hat Linux* on page 11
- *Updating the DSTREAM or RealView ICE firmware* on page 11.

Note

You must purchase the RealView ICE hardware separately.

5.1 Using DSTREAM or RealView ICE over a network

To use a RealView ICE unit over a network, you must run the RVI Config IP utility to set up the network settings on that unit.

For information on using the RVI Config IP utility, see the *DSTREAM and RealView® ICE Using the Debug Hardware Configuration Utilities*.

5.2 Installing the USB device driver on Windows XP SP2 and Windows Vista

1. Connect the DSTREAM or RealView ICE unit to your PC using a USB cable, then power-on the unit.
2. Windows detects the connection, and a new hardware dialog appears.
3. Follow the on-screen instructions.

Note

If you have already installed the DSTREAM and RealView ICE host software, you can find the drivers at the following location:

install_directory`\RVI\Drivers\usb_driver\...\...\win_32-pentium`

Additional information

Be aware of the following when installing the DSTREAM or RealView ICE USB driver:

- If you have USB 1.1 and USB 2.0 ports on your PC, connecting the DSTREAM or RealView ICE unit to a USB 1.1 port results in the following message:

  ```
  HI-SPEED USB Device Plugged into non-HI-SPEED USB Hub
  ```

  DSTREAM and RealView ICE are compatible with both ports, so you can either continue on USB 1.1 or move to an available USB 2.0 port for improved USB performance.

  If you are profiling with a RealView Trace 2 unit, use a USB 2.0 port.

  Note

  Profiling and tracing from the external trace port of a SoC with DSTREAM is not supported.

- The DSTREAM and RealView ICE host software provides new versions of the USB drivers for DSTREAM or RealView ICE. When upgrading from an earlier RealView ICE installation you can continue using the existing drivers without any problems.

  It is possible to upgrade to the new drivers as follows:

  1. Open Windows Device Manager. To do this:
     a. Select **Control Panel** from the **Start** menu.
     b. Double-click on **System** to open the System Properties dialog box.
     c. Select the **Hardware** tab.
     d. Click **Device Manager**. The Device Manager dialog box is displayed.
  2. Expand the **Universal Serial Bus controllers** group.
  3. Select **RealView ICE Hardware on USB**.
  4. Right-click and choose **Update Driver...**. The Hardware Update Wizard is displayed.
  5. Install the USB driver as described in *Installing the USB device driver on Windows XP SP2 and Windows Vista*.

- RealView ICE releases earlier than the version provided with this RVDS release are unable to use the new drivers.

  To revert the USB drivers provided with an earlier RealView ICE release:

  1. Open Windows Device Manager. To do this:
     a. Select **Control Panel** from the **Start** menu.
     b. Double-click on **System** to open the System Properties dialog box.
     c. Select the **Hardware** tab.
     d. Click **Device Manager**. The Device Manager dialog box is displayed.
  2. Expand the **Universal Serial Bus controllers** group.
  3. Select **RealView ICE Hardware on USB**.
  4. Right-click and choose **Uninstall**.
  5. Click **OK**.
  6. RealView ICE or RealView Trace are removed from the device tree.
  7. Install the earlier RealView ICE release.
- Windows XP SP1 is no longer supported by the driver that is located in:

  install_directory`\RVI\Drivers\usb_driver\...\win_32-pentium`.

  An earlier version that supports Windows XP SP1 is provided in:

  install_directory`\RVI\Drivers\usb_driver\...\win_32-pentium\old`.

  Use this location in step 3 of the procedure for reverting back to an earlier RealView ICE release on Windows XP SP1.

5.3 Installing the USB device driver on Red Hat Linux

Before connecting the DSTREAM unit, RealView ICE unit, or RealView Trace 2 unit on a Red Hat Linux platform, do the following:

1. If you want to connect to the DSTREAM unit, RealView ICE unit, or RealView Trace 2 unit using USB, install the `libusb` library (`/usr/lib/libusb-0.1.so.4`). This is usually located in the `libusb` or `libusb-0.1-4` package from your Red Hat Linux distribution.
2. Set the correct permissions on the USB device nodes. The `usb-install` script (as used during the DSTREAM and RealView ICE installation) is provided to do this. You can find this script at:

   install_directory`/RVI/Drivers/usb_driver/.../linux-pentium/usb-install`

   Note

   You must run the `usb-install` script before connecting to DSTREAM, RealView ICE, or RealView Trace 2.

   The script requires root access to write to the `/etc` directory, and prompts for the root password if it is not run as root.

5.4 Updating the DSTREAM or RealView ICE firmware

To check if you have to update the firmware of your DSTREAM or RealView ICE unit:

1. Start the RVI Update utility:
   - On Windows, select **Start** → **All Programs** → **ARM** → **RealView ICE v*N.n*** → **RealView ICE Update**.
   - On Red Hat Linux platforms, select the appropriate shortcut. The shortcut depends on the version of Red Hat Linux and the desktop environment that you are using.

     If no desktop shortcut is available, enter the following commands at the command-line:

     ```
     source RVDS41env.posh
     rviupdate
     ```
2. Connect to your DSTREAM or RealView ICE unit.
3. Make a note of the Version, for example `3.4.59 build 59`
4. Compare the version with the latest version of the firmware file, for example:

   install_directory`\RVI\Firmware\...\...\ARM-RVI-4.0.0-25-base.rvi`

   where `4.0.0` is the version number, and `25` is the build number.

5. If the firmware version is different, you are recommended to update the firmware to the latest version.

For information on using the RVI Update utility to update your firmware, see the *DSTRAM and RealView® ICE Using the Debug Hardware Configuration Utilities*.