



Arm[®] Socrates[™]

Version 1.6.0

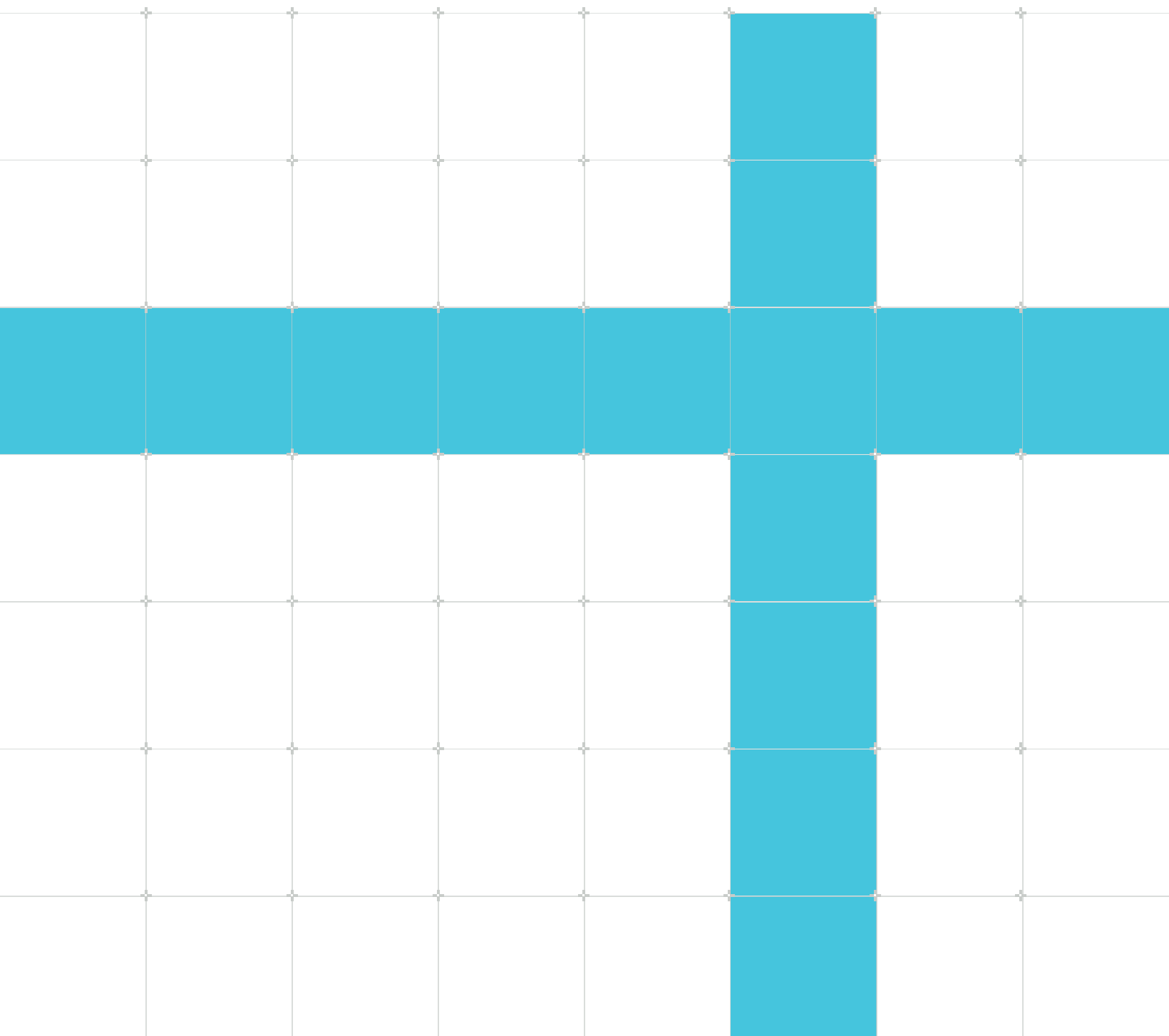
Installation Guide

Non-Confidential

Copyright © 2018–2021 Arm Limited (or its affiliates).
All rights reserved.

Issue 01

101400_010600_01_en



Arm® Socrates™

Installation Guide

Copyright © 2018–2021 Arm Limited (or its affiliates). All rights reserved.

Release Information

Document history

Issue	Date	Confidentiality	Change
0100-00	20 July 2018	Confidential	First release for 1.0
0102-00	23 November 2018	Confidential	First release for 1.2
0103-00	8 February 2019	Confidential	First release for 1.3
010301-00	18 March 2019	Confidential	First release for 1.3.1
010302-00	24 May 2019	Confidential	First release for 1.3.2
010303-00	16 July 2019	Confidential	First release for 1.3.3
010304-00	1 October 2019	Confidential	First release for 1.3.4
0104-00	6 February 2020	Confidential	First release for 1.4
010401-00	12 June 2020	Confidential	First release for 1.4.1
0105-00	25 September 2020	Non-Confidential	First release for 1.5
0105-01	23 October 2020	Non-Confidential	Second release for 1.5
1.6.0-01	18 June 2021	Non-Confidential	First release for 1.6.0. Document issue numbering style updated.

Proprietary Notice

This document is protected by copyright and other related rights and the practice or implementation of the information contained in this document may be protected by one or more patents or pending patent applications. No part of this document may be reproduced in any form by any means without the express prior written permission of Arm. No license, express or implied, by estoppel or otherwise to any intellectual property rights is granted by this document unless specifically stated.

Your access to the information in this document is conditional upon your acceptance that you will not use or permit others to use the information for the purposes of determining whether implementations infringe any third party patents.

THIS DOCUMENT IS PROVIDED “AS IS”. ARM PROVIDES NO REPRESENTATIONS AND NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE

DOCUMENT. For the avoidance of doubt, Arm makes no representation with respect to, and has undertaken no analysis to identify or understand the scope and content of, third party patents, copyrights, trade secrets, or other rights.

This document may include technical inaccuracies or typographical errors.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL ARM BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF ANY USE OF THIS DOCUMENT, EVEN IF ARM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This document consists solely of commercial items. You shall be responsible for ensuring that any use, duplication or disclosure of this document complies fully with any relevant export laws and regulations to assure that this document or any portion thereof is not exported, directly or indirectly, in violation of such export laws. Use of the word “partner” in reference to Arm’s customers is not intended to create or refer to any partnership relationship with any other company. Arm may make changes to this document at any time and without notice.

If any of the provisions contained in these terms conflict with any of the provisions of any click through or signed written agreement covering this document with Arm, then the click through or signed written agreement prevails over and supersedes the conflicting provisions of these terms. This document may be translated into other languages for convenience, and you agree that if there is any conflict between the English version of this document and any translation, the terms of the English version of the Agreement shall prevail.

The Arm corporate logo and words marked with ® or ™ are registered trademarks or trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere. All rights reserved. Other brands and names mentioned in this document may be the trademarks of their respective owners. Please follow Arm’s trademark usage guidelines at <https://www.arm.com/company/policies/trademarks>.

Copyright © 2018–2021 Arm Limited (or its affiliates). All rights reserved.

Arm Limited. Company 02557590 registered in England.

110 Fulbourn Road, Cambridge, England CB1 9NJ.

(LES-PRE-20349)

Confidentiality Status

This document is Non-Confidential. The right to use, copy and disclose this document may be subject to license restrictions in accordance with the terms of the agreement entered into by Arm and the party that Arm delivered this document to.

Unrestricted Access is an Arm internal classification.

Product Status

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

Web Address

developer.arm.com

Progressive terminology commitment

Arm values inclusive communities. Arm recognizes that we and our industry have used terms that can be offensive. Arm strives to lead the industry and create change.

This document includes terms that can be offensive. We will replace these terms in a future issue of this document.

If you find offensive terms in this document, please contact terms@arm.com.

Contents

1 Introduction.....	7
1.1 Product revision status.....	7
1.2 Intended audience.....	7
1.3 Conventions.....	7
1.4 Additional reading.....	8
1.5 Feedback.....	8
2 The Socrates IP Tooling platform.....	10
2.1 About Socrates.....	10
2.2 Installation overview.....	11
3 Setting up your environment.....	13
3.1 Cleaning your environment.....	13
3.2 Installation requirements.....	13
3.3 Memory settings.....	14
3.4 GTK3 support.....	15
4 Installing and starting the software.....	16
4.1 Product bundles.....	16
4.2 Installing Socrates.....	16
4.3 Installation Health Check script.....	17
4.4 Starting Socrates.....	17
4.5 Troubleshooting.....	17
4.5.1 Cannot restore segment prot after reloc error.....	18
4.5.2 Java runtime environment fatal error.....	18
4.5.3 IP Catalog association I/O error.....	18
4.5.4 Workspace name cannot contain space character.....	18
4.5.5 Help content or training videos do not open.....	19
5 Setting up licensing.....	20
5.1 Setting up the license environment.....	20
5.2 Required licenses.....	21
A Revisions.....	23

A.1 Revisions.....23

1 Introduction

1.1 Product revision status

The *rxpy* identifier indicates the revision status of the product described in this manual, for example, *r1p2*, where:

- rx** Identifies the major revision of the product, for example, *r1*.
- py** Identifies the minor revision or modification status of the product, for example, *p2*.

1.2 Intended audience

This Installation Guide is intended for users who are installing the Arm Socrates™ IP Tooling platform.

1.3 Conventions

The following subsections describe conventions used in Arm documents.







Glossary

The Arm Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the Arm® Glossary for more information: developer.arm.com/glossary.

Typographic conventions

Convention	Use
<i>italic</i>	Introduces citations.
bold	Highlights interface elements, such as menu names. Denotes signal names. Also used for terms in descriptive lists, where appropriate.
monospace	Denotes text that you can enter at the keyboard, such as commands, file and program names, and source code.
monospace bold	Denotes language keywords when used outside example code.
monospace <u>underline</u>	Denotes a permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.
<and>	Encloses replaceable terms for assembler syntax where they appear in code or code fragments. For example: <pre>MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2></pre>

Convention	Use
SMALL CAPITALS	Used in body text for a few terms that have specific technical meanings, that are defined in the <i>Arm® Glossary</i> . For example, IMPLEMENTATION DEFINED , IMPLEMENTATION SPECIFIC , UNKNOWN , and UNPREDICTABLE .
 Caution	This represents a recommendation which, if not followed, might lead to system failure or damage.
 Warning	This represents a requirement for the system that, if not followed, might result in system failure or damage.
 Danger	This represents a requirement for the system that, if not followed, will result in system failure or damage.
 Note	This represents an important piece of information that needs your attention.
 Tip	This represents a useful tip that might make it easier, better or faster to perform a task.
 Remember	This is a reminder of something important that relates to the information you are reading.

1.4 Additional reading

This document contains information that is specific to this product. See the following documents for other relevant information:

Table 1-2: Arm Publications

Document name	Document ID	Licensee only
<i>Arm® Socrates™ User Guide</i>	101399	No
<i>Arm® Socrates™ Release Note</i>	PJDOC-1779577084-32899	Yes

1.5 Feedback

Arm welcomes feedback on this product and its documentation.

Feedback on this product

If you have any comments or suggestions about this product, contact your supplier and give:

- The product name.
- The product revision or version.
- An explanation with as much information as you can provide. Include symptoms and diagnostic procedures if appropriate.

Feedback on content

Information about how to give feedback on the content.

If you have comments on content then send an e-mail to errata@arm.com. Give:

- The title Arm® Socrates™ Installation Guide.
- The number 101400_010600_01_en.
- If applicable, the page number(s) to which your comments refer.
- A concise explanation of your comments.

Arm also welcomes general suggestions for additions and improvements.



Arm tests the PDF only in Adobe Acrobat and Acrobat Reader, and cannot guarantee the quality of the represented document when used with any other PDF reader.

2 The Socrates IP Tooling platform

Familiarize yourself with the Socrates™ IP Tooling platform, and the installation and setup procedures.

2.1 About Socrates

Socrates™ IP Tooling platform is an environment for exploring, configuring, and building Arm IP ready for integration into a *System on Chip* (SoC).

The following examples show you some of the ways you can use Socrates™.

Designing a SoC

If you want to:

- Investigate Arm® IP features, properties, and configuration options
- Use this information to decide which IP to use in your system or subsystem design
- See which IP you already have licenses for
- Provide your procurement team with a detailed list of part numbers for the IP that you want to license

You can:

- Browse the **IP Catalog** and view information in **Socrates Help**
- Filter the **IP Catalog** by IP name or supported protocols
- Export information from the **Bill of Materials** about required and alternative part numbers



You can open Socrates without a license. This enables you to browse the **IP Catalog** and view the videos.

Managing IP bundles

If you want to:

- Ensure that the **IP Catalog** stays up-to-date with the latest release information
- Make finding the location of downloaded IP easier
- Update the **IP Catalog** entries so they are correctly associated with the latest IP bundles

You can:

- View notifications for product and **IP Catalog** updates
- Enter shared download locations for all licensed IP bundles

- Enable automatic refreshing of associations

Develop a system with Arm IP

If you want to:

- Understand IP configuration options, interfaces, and protocols
- Integrate IP into a system
- Build IP-XACT and Verilog output
- Automate the configuration and build procedures

You can:

- Browse the **IP Catalog** and view technical documentation in **Socrates Help**
- Organize and configure IP in the **Project Explorer**
- See validation and configuration errors in the **Create Configured IP** window
- Automatically build simple IP as part of the configuration procedure
- Use the *Command Line Interface* (CLI), and script-based API, for script-based solutions

Creating a high-level view of a SoC design

If you want to:

- Create a high-level view of your SoC design, containing configured IP instances and their high-level connections
- Choose the most suitable interconnect IP for your design, based on the high-level connectivity requirements of the other IP in your design
- Use this high-level view for further refinement and development of your design

You can:

- Use the **System Specification**, from the **Generators** group in the **IP Catalog**, to create an empty System Specification
- Add instances of your required non-interconnect IP to the System Specification
- Use **Interconnect Assistant** to select, configure, and add the most suitable interconnect IP to the System Specification, automatically creating all the required high-level connections

2.2 Installation overview

Follow the installation checklist steps:

Procedure

1. Clean your environment if you have a previous Socrates™ installation, or a previous installation of any of the Socrates™ System Builder, Socrates™ DE, CoreLink™ Creator, or CoreSight™ Creator tools. Ensure that your environment meets the installation requirements, and install any missing prerequisite software. See [3 Setting up your environment](#) on page 13

2. Run and follow the installation wizard. See [4 Installing and starting the software](#) on page 16.
3. Set up the server daemons and licenses. See [5 Setting up licensing](#) on page 20. You only need to do this if this is the first time that you have installed a Socrates™ product, or if you want to change your licensing setup.

3 Setting up your environment

Check and implement the installation environment and software requirements.

3.1 Cleaning your environment

You can remove previous installations of Socrates™ software.

Remove any previous installation of Socrates™, or the prior products Socrates™ System Builder, Socrates™ DE, CoreLink™ Creator, or CoreSight™ Creator before installing the latest version.

To uninstall, go to the installation location and run the following commands:

```
$ cd <install location>
$ ./uninstall
```

If you receive a prompt requesting permission to delete leftover files, click **Yes**.

Ensure that the installation directory is empty. You can then restore the backed-up workspace, if applicable.

See the *Arm Socrates™ Release Note* for more information on updating the tool version.

3.2 Installation requirements

Ensure that your software environment complies with the installation requirements.

An environment health check feature is provided with the installer. Use the health check to see the status of dependencies, and troubleshoot runtime issues. See [4.3 Installation Health Check script](#) on page 16.

The installation requirements are as follows:

- Enterprise Linux Red Hat operating system:
 - Version 6, 64-bit.
 - Version 7, 64-bit.
- At least 2.5GB of RAM.
- At least 4GB of free disk space for the installation.



If the installation fails due to a lack of available disk space, follow the steps in [3.1 Cleaning your environment](#) on page 13 before you restart the installation procedure.

- Additional disk space depending on the number of user projects, and the size of the projects.
- Certain libraries are necessary to successfully run and complete the installation. Use a package manager, for example `yum`, to find and install libraries. The required libraries are:
 - `redhat-lsb-core.i686`.



Depending on your Linux setup, you might require this library to allow the license manager to start automatically.

- `glibc.i686`.
- RHEL6: `compat-libstdc++.i686`, both 33 and 296 packages.
- RHEL7: `compat-libstdc++ 33` package, both `i686` and `x86_64` versions.
- `libxml2.i686`.
- `libXrandr.i686`.
- `libXcursor.i686`.
- `libSM.i686`.
- `libICE.i686`.
- `libstdc++.i686`.
- `zlib.x86_64` for 64-bit installations.
- `libxml2.x86_64`.

Missing libraries prompt an error message at installation or runtime, for example:

```
Xalan: error while loading shared libraries: libstdc++.so.5: cannot open shared
object file: No such file or directory
```

To free disk space after Linux library installations, run:

```
yum clean all
```

For more information about installing and using packages, see the Known Issues section of the *Arm Socrates™ Release Note*.

3.3 Memory settings

To ensure that your Socrates™ installation runs correctly, you can change the default settings for Java heap space.

By default Socrates uses an initial heap size (`-Xms`) of 512MB and a maximum heap size (`-Xmx`) of 2048MB.

Increasing the initial heap size can improve start up performance. Increasing the maximum heap size enables you to configure large configurations, such as those possible with CoreLink™ CMN-600.

To update the heap sizes:

1. Open <install location>/ARM-Socrates.ini.
2. Edit the following lines, where m stands for megabytes.

```
-Xms512m  
-Xmx2048m
```

3.4 GTK3 support

Socrates™ uses GTK2 graphics toolkit by default.

If you are using RHEL7, changing the version of GTK that Socrates™ uses can help avoid issues on some Linux machines.

Known Issues are described in the *Arm Socrates™ Release Note*.

If you experience any other issues, you can set Socrates™ to use GTK3 on RHEL7:

1. Locate the <install location>/Arm-Socrates.ini file.
2. Delete or comment out the following lines:

```
--launcher.GTK_version  
2
```

To ensure that the browser widget is correctly working:

1. Locate the <home directory>/armSocrates/configuration/config.ini file.
2. Delete or comment out the following line:

```
org.eclipse.swt.browser.DefaultType=mozilla
```

4 Installing and starting the software

Install and run the Socrates™ IP Tooling platform.

4.1 Product bundles

Socrates™ is delivered as part of a download bundle. Socrates™ functionality is enabled with licenses.

Socrates™ is delivered through:

- The Arm® IP delivery server (<https://connect.arm.com>) under the part number SYSOC-BN-00001 Socrates™ 64-Bit Installer.
- Arm® Flexible Access using <http://developer.arm.com/downloads-beta>.

4.2 Installing Socrates

There is a wizard to guide you through the installation process.

About this task

If you have an earlier installation of any Socrates™ tool, uninstall it before installing the current version. See [3.1 Cleaning your environment](#) on page 13 for more information.

To prepare for installation and start the installation wizard:

Procedure

1. Change to the directory of the unpacked installer bundle:
`$ cd <path to ARM-Socrates-x.x.x-Linux-x86-64-Install>` where `x.x.x` is the three or four-digit release number
2. You must have execute permissions to run the installer. To make the installer executable, run:
`$ chmod +x ARM-Socrates-x.x.x-Linux-x86-64-Install` where `x.x.x` is the three or four-digit release number
3. Start the installer:
`$./ARM-Socrates-x.x.x-Linux-x86-64-Install` where `x.x.x` is the three or four-digit release number



During the installation procedure, you are prompted for an installation location. This location must be either an empty directory or a non-existent- directory. If no directory exists, Socrates™ creates one. When the installation is complete, do not move the installation directory location.

4. The installation wizard opens. Follow the on-screen instruction to install.

4.3 Installation Health Check script

Arm® provides an Installation Health Check script. This script is run as part of the standard installation.

The script uses your current environment settings to check required dependencies, and to identify common installation problems. The script can be found in your installation directory, in `<install location>/etc/install/health_check`, named `checkInstallation.sh`.

The results of the Installation Health Check are presented as the final step of the installation wizard.

4.4 Starting Socrates

Use the `socrates.sh` command or double-click the Socrates™ icon to start Socrates™.

You can run `socrates.sh` directly from the installation location, through an alias to the installation location, or you can add the installation location to your path variable.

The Installation Health Check script runs the first time that you start the software, or the first time that you run a new version.

Depending on the licenses available to you, you might be asked to select a license.

When you restart Socrates™, select a workspace for your projects. The default Workspace area is created in `/<home directory>/armSocrates/workspace`.

4.5 Troubleshooting

Identify and resolve troubleshooting issues that are associated with setting up licensing, and installing or running the software using the following information.

For a list of known technical issues and solutions for your version of Socrates™, see the *Arm® Socrates™ Release Note*.



As a first step in troubleshooting issues, Arm® recommends that you run the Installation Health Check script. See [4.3 Installation Health Check script](#) on page 16 for more instructions.

4.5.1 Cannot restore segment prot after reloc error

This error occurs when starting Socrates™:

```
home/arm/ARM-Socrates/jre/bin/../../lib/i386/client/libjvm.so: cannot restore segment  
prot  
after reloc: Permission denied
```

A file permissions conflict due to a Linux security feature causes this error. The following actions might resolve this issue:

- Turn off the security feature by navigating to `/etc/selinux/config` and using the following command:

```
SELINUX=disabled
```

- Allow libraries to be relocated in memory using the following command:

```
chcon -t texrel_shlib_t /opt/cubrid/lib/libcubridsa.so.8
```

4.5.2 Java runtime environment fatal error

This error causes the tool to crash while using the GUI:

```
# A fatal error has been detected by the Java Runtime Environment:  
#  
# SIGSEGV (0xb) at pc=0x00000036a6e471d0,pid=1958, tid=139794478638848  
#...
```

This error represents a memory access violation that is caused by a conflict between some versions of Eclipse and RealVNC. Update to RealVNC Server version 5.0.5 to resolve this issue.

4.5.3 IP Catalog association I/O error

This error can occur when associating IP in the IP Catalog:

```
An IO error was encountered when walking the file tree starting at: ...
```

The behavior can occur when long paths are required to reference IP Bundles in shared Windows and Linux locations. Resolve the error by shortening these paths.

4.5.4 Workspace name cannot contain space character

If the workspace name contains the space character, for example `my workspace`, then it is shown in the **Data Explorer** with a red cross, you must modify the name.

4.5.5 Help content or training videos do not open

Some Socrates™ help content and training videos load in an external web browser. Your default browser is normally used. Sometimes the help content does not open.

Your default browser is not set in Socrates™

In some environments your default web browser might not be set in Socrates™.

Solution

1. Select **Window > Preferences > General > Web Browser**
2. Click **New**
3. Enter a name for your browser
4. Enter the location of your browser
5. Click **OK**
6. Tick the checkbox next to your browser to set it as the default external web browser

5 Setting up licensing

Set up the license server on a Linux platform. This enables runtime functionality.

5.1 Setting up the license environment

Socrates™ uses FlexNet License Management from Flexera Software. The license setup depends on the product licenses that you have. Set up your licensing environment using the following steps.

Generate and download the license files

1. Log in to the Arm® licensing portal <https://developer.arm.com/support/licensing>.
2. Enter your product serial number. If you have more than one product, enter the serial numbers individually. Contact your Arm® account manager to obtain the appropriate serial numbers.
3. Enter machine host ID and other requested information.
4. Click **Save** to download a `license.dat` file.

Install the license daemon

The license daemon `armlmd` is required to host the licenses used by Socrates IP Tooling Platform. Download `armlmd` from <https://silver.arm.com/browse/BX002>. Use the search term **BX002 - FLEXnet binaries and utilities**.

Check the license daemon

Ensure that `armlmd` is correctly installed. Run:

```
cd BX002-PT-00004-r11p15-00re10
./lmutil lmver armlmd
```

Check that the output is the `armlmd` information, as follows. Take particular note of the version:

```
lmutil - Copyright (c) 1989-2017 Flexera Software LLC. All Rights Reserved.
FlexNet Licensing v11.15.0.0 build 215548 (ipv6) x64_lsb (liblmgr.a), Copyright
(c) 1988-2017 Flexera Software LLC. All Rights Reserved.
```

Edit the license files

Edit the license files for your application to enter the path to the `armlmd` license server daemon. Set the daemon ports, and the server hostname and host ID.

Set the environment variables on client workstations

Set the environment variable `ARMLMD_LICENSE_FILE` to the location of the `armlmd` license files, for example `27001@testserver.com`.

Start the license daemons on the server

To start the license daemon for the Socrates™ IP Tooling Platform, run:

```
/home/arm/Licensing/lmgrd -c /home/arm/Licensing/armlmd_lic.dat
-l /home/arm/armlmd_lic_log.log
```

This command invokes the `armlmd` daemon, and saves the daemon log to `/home/arm/armlmd_lic_log.log`.

5.2 Required licenses

Socrates™ uses several different licenses. The specific licenses that you have determine which IP you are able to configure and build.

Start-up without a license

You can start up Socrates without a license. Select the **No License** option.

Socrates licenses

To start Socrates™, and configure most IP, you must have at least one of the following Socrates™ licenses:

- A full **Socrates** license.
- A **Socrates** configuration only license, which enables you to configure Arm IP, but not build.
- A legacy **Socrates** `system_builder` license, which gives the same functionality as the full license.
- A **Socrates Arm Flexible Access Mainstream** license, which enables you to configure Flexible Access IP.

IP licenses

You can configure most IP without having a license for it. However, to build IP-XACT and Verilog output you must download a licensed IP bundle to your system and associate it with the corresponding entry in the **IP catalog**. For more information, see the *Arm® Socrates™ User Guide*.

Configuration licenses

For CoreLink™ network interconnect IP: NIC-450, NIC-400, NIC-400-Lite, or the NIC-400 add-ons, you must have one of the following licenses:

- `nic-400_network_ic` to configure and build a CoreLink™ NIC-400 Network Interconnect, and any of its add-ons
- `nic-400-lite_network_ic` to configure and build a CoreLink™ NIC-400-Lite Network Interconnect
- `TLX-400_Option` to enable TLX-400 Network Interconnect Thin Links functionality
- `QoS-400_Option` to enable QoS-400 Network Interconnect Advanced Quality of Service functionality
- `QVN-400_Option` to enable QVN-400 Network Interconnect Advanced QoS for Virtual Networks functionality
- `DPE-400_Option` to enable DPE-400 Data Parity Extensions for NIC-400 functionality



The NIC-400 add-ons are only compatible with NIC-400, they cannot be used with NIC-400-Lite.

For CoreLink™ CMN-600 Coherent Mesh Network, you must have one of the following licenses:

- `arm_corelink_cmn_600_4` to enable a CMN-600 mesh with up to 8 XPs and up to 4 processor clusters
- `arm_corelink_cmn_600_12` to enable a CMN-600 mesh with up to 16 XPs and up to 12 processor clusters
- `arm_corelink_cmn_600_32` to enable a CMN-600 the maximum 8x8 mesh with up to 64 processor clusters
- `arm_corelink_cmn_600_cml` to enable CMN-600 CML license features

For CoreLink™ CMN-600AE, you must have one of the following licenses:

- `arm_corelink_cmn_600ae_2` (PL615-LC-00201) to enable a CMN-600AE mesh with up to 6 XPs and 2 RN-F instances without CAL (4 with CAL)
- `arm_corelink_cmn_600ae_4` (PL615-LC-00401) to enable a CMN-600AE mesh with up to 8 XPs and 4 RN-F instances without CAL (8 with CAL)
- `arm_corelink_cmn_600ae_8` (PL615-LC-00801) to enable a CMN-600AE mesh with up to 16 XPs and 8 RN-F instances without CAL (16 with CAL)

All CMN-600AE licenses include *Coherent Multichip Link* (CML) functionality.

For CoreLink™ CMN-650 Coherent Mesh Network, you must have one of the following licenses:

- `arm_corelink_cmn_rhodes_4` (PL604-LC-00401) to enable a CMN-650 mesh with up to 100 MXPs and 4 RN-F instances (8 RN-F instances with CAL2, 16 RN-F instances with CAL4)
- `arm_corelink_cmn_rhodes_12` (PL612-LC-01201) to enable a CMN-650 mesh with up to 100 MXPs and 12 RN-F instances (24 RN-F instances with CAL2, 48 RN-F instances with CAL4)
- `arm_corelink_cmn_rhodes_max` (PL614-LC-03201) to enable a CMN-650 mesh with up to 100 MXPs and 256 RN-F instances (128 RN-F instances with CAL2, 64 RN-F instances with CAL4)

Appendix A Document revisions

This appendix describes the changes between released issues of this document.

A.1 Revisions

This appendix describes changes between released issues of this book.

Table A-1: Issue 0101-00

Change	Location
First release	-

Table A-2: Differences between issues 0101-00 and issue 0102-00

Change	Location
Updated for 1.2 requirements	4.2 Installing Socrates on page 16

Table A-3: Differences between issues 0102-00 and issue 0103-00

Change	Location
Updated for 1.3 requirements	3.2 Installation requirements on page 13
Added information about changing memory setting for Java heap sizes	3.3 Memory settings on page 14
Added information for changing GTK version	3.4 GTK3 support on page 15

Table A-4: Differences between issues 0103-00 and issue 010301-00

Change	Location
Updated FlexNet Licensing version	5.1 Setting up the license environment on page 20
Updated description of <code>arm_corelink_cmn_600_cml</code>	5.2 Required licenses on page 21

Table A-5: Differences between issue 010301-00 and issue 010302-00

Change	Location
Updated to 1.3.2 release	-

Table A-6: Differences between issue 010302-00 and issue 010303-00

Change	Location
Added new Arm Flexible Access license information	5.2 Required licenses on page 21

Table A-7: Differences between issue 010303-00 and issue 010304-00

Change	Location
Added new license information for CMN products	5.2 Required licenses on page 21

Table A-8: Differences between issue 010304-00 and 0104-00

Change	Location
Updated information for product bundle downloading	4.1 Product bundles on page 16
Clarified third-party requirements <code>compat-libstdc++</code> for RHEL6 and RHEL7	3.2 Installation requirements on page 13
Added new information regarding starting Socrates™	4.4 Starting Socrates on page 17
Added configuration only license information	5.2 Required licenses on page 21
Updated information for Socrates™ supporting GTK3	3.4 GTK3 support on page 15

Table A-9: Differences between issue 0104-00 and 010401-00

Change	Location
Updated installation instructions to version 1.4.1 and reworded for clarity	4.2 Installing Socrates on page 16
Updated licenses for CMN-600AE	5.2 Required licenses on page 21

Table A-10: Differences between issue 010401-00 and 0105-00

Change	Location
First Non-Confidential release	-

Table A-11: Differences between issue 0105-00 and 0105-01

Change	Location
No technical or functional changes	-

Table A-12: Differences between issue 0105-01 and 1.6.0-01

Change	Location
Editorial changes, including product version and document issue styles	Throughout
Updated reference to Arm Flexible Access	4.1 Product bundles on page 16
Updated description of product version	4.2 Installing Socrates on page 16
Added reference to Release Note	4.5 Troubleshooting on page 17
Added Troubleshooting section	4.5.5 Help content or training videos do not open on page 18
Updated license information	5.2 Required licenses on page 21