ST-LINK server

About this release note

This release note contains information about the latest version of the ST-LINK server application for ST-LINK/V2, ST-LINK/V2-1, and STLINK-V3 boards.

ST-LINK-SERVER is the part number of this application.

Table 1. ST-LINK server 2.1.1 release summary

Type	Summary
Minor release	Added digital signature for Windows and macOS

Customer support

For more information or help concerning ST-LINK/V2, ST-LINK/V2-1, and STLINK-V3 boards, contact the nearest STMicroelectronics sales office. For the complete list of STMicroelectronics offices and distributors, refer to the *www.st.com* webpage.

Software updates

Software updates and all the latest documentation can be downloaded from the STMicroelectronics support webpage at www.st.com/en/development-tools/st-link-server.

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For further information contact your local STMicroelectronics sales office.

www.st.com

1 General information

1.1 Overview

The ST-LINK-SERVER is an application sharing the debug interface of a single ST-LINK board among several host applications, typically debugging and monitoring tools. Of course, two debugging tools cannot simultaneously control the same target, but both might have access to it if appropriate connection settings are chosen.

The ST-LINK-SERVER also has access to several boards with one single tool to launch and control the debugging of these boards.

The host application must be able to connect to the ST-LINK-SERVER instead of connecting directly to the ST-LINK USB interface.

Other ST-LINK interfaces (such as Virtual COM port and mass storage, if provided) are not managed through the ST-LINK-SERVER, but might be used simultaneously.

ST-LINK-SERVER interfaces with ST-LINK probes, which run on dedicated STM32 microcontrollers based on the Arm® Cortex®-M processor.

Note: *Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*

1.2 Host PC system requirements

- Multi-OS support: Windows® 10, Windows® 11, Linux® 64-bit, or macOS® operating systems

A driver must be installed before connecting an ST-LINK/V2 or an ST-LINK/V2-1 board with a Windows® 10 or Windows® 11 PC via the USB. This installation is not mandatory for the STLINK-V3 boards but allocates an ST-specific name to the ST-LINK COM ports in the system device manager. The driver is automatically installed by the toolsets supporting ST-LINK. It is also available from the STSW-LINK009 dedicated page at the *www.st.com* website.

On Linux®, the application relies on `libusb-1.0`, which must be installed separately. For instance, on Ubuntu®, this is done through the command `sudo apt-get install libusb-1.0`.

On Linux®, users must be granted rights to access the ST-LINK USB devices. If not already done, it might be necessary to install one of the packages (depending on the Linux® version) provided by the ST-LINK, ST-LINK/V2, ST-LINK/V2-1, and STLINK-V3 board firmware upgrade package (STSW-LINK007) in its folder `AllPla tforms/StlinkRulesFilesForLinux`.

Note: *macOS® is a trademark of Apple Inc., registered in the U.S. and other countries and regions.*

Linux® is a registered trademark of Linus Torvalds.

Ubuntu® is a registered trademark of Canonical Ltd.

All other trademarks are the property of their respective owners.

1.3 Licensing

ST-LINK-SERVER is delivered under the *Mix Ultimate Liberty+OSS+3rd-party V1* software license agreement (SLA0048).

1.4 Toolset first versions

Toolset first versions supporting the ST-LINK-SERVER

- STM32CubeIDE 1.0.0
- STM32CubeProgrammer (STM32CubeProg) 1.3.0
- Keil® MDK v5.27
- IAR Systems® EWARM 8.30
- SW4STM32 2.2.0

2 ST-LINK server 2.1.1

Software package content

The zip file contains five packages:

1. For Windows® `st-stlink-server.2.1.1-1.msi`
2. For macOS® X `st-stlink-server.2.1.1-2.pkg`
3. For Linux® Debian® `st-stlink-server-2.1.1-1-linux-amd64.deb`
4. For Linux® Red Hat® `st-stlink-server-2.1.1-1-linux-amd64.rpm`
5. For other Linux® OS `st-stlink-server-2.1.1-1-linux-amd64.install.sh`

The zip file also contains the raw binary for Linux® (out of any installation package): `stlink-server.2.1.1-1`, and a `readme.txt` file.

Note: *Red Hat® is a registered trademark of Red Hat, Inc.*

Debian is a registered trademark of Software in the Public Interest, Inc.

What is new

- On Windows®: Added digital signature for `stlink-server.exe` and `.msi`.
- On macOS®: Fixed `SLA0048.txt` license display in `.pkg`. Added digital signature for `stlink-server`, `.dylib`, and `.pkg`.

3 Known problems and limitations

1. ST-LINK-SERVER provides simultaneous communication channels to a single ST-LINK board (and target microcontroller behind) but does not manage priorities between client applications. As a consequence, a new connection attempt might disturb or kill a previously established connection if, for instance, the second client application drives the reset of the target or stops the core.
    The typical use case for sharing target accesses is one application controlling the target (a debugger for instance), and one application monitoring the target (and connecting without impacting the target state).

2. The SWV (Serial Wire Viewer) feature cannot be shared between applications. Only one application is allowed to control it. The behavior in the case of conflicting applications is not predictable.
    In case of instabilities with SWV in shared mode, firstly try the same SWV configuration out of the shared mode.

3. When connecting to an STM32 target, the first client application connection selects the protocol (SWD or JTAG). In further connections, the protocol must be the same (if a JTAG connection is attempted while an SWD is already set, the new connection fails).
    Conversely, the protocol frequency is enforced by the last caller. Any attempt to modify the frequency of one protocol has no impact on the other.

4. The default connection setting is localhost port 7184. The server only accepts sockets from the local host. The port might be modified (implementation dependent), however, for correct behavior, all clients must use the same port. Only one instance of the server must run.

5. On Windows® and Linux®, it is necessary to uninstall a previous version, if present, before installing the new one.

6. On macOS®, `stlink-server` might require a signed version of `/usr/local/lib/libusb-1.0.0.dylib` to run correctly. It is installed by the `.pkg` and must not be replaced with an unsigned version.

7. Long commands might result in timeout when done on a target at a very low SWD frequency (5 kHz). Either increase the SWD frequency or connect to the target in the direct (not shared) mode.

8. ST-LINK/V1 boards (now obsolete) are not supported by ST-LINK-SERVER.

4 Release information for previous releases

4.1 ST-LINK-SERVER 1.0

- Fix the SWO trace issue
- Normalized error log
- Add JTAG support

4.2 ST-LINK-SERVER 1.1.1

Software package content

The zip file contains five packages:

1. For Windows® `st-stlink-server.1.1.1-3.msi`
2. For macOS® `st-stlink-server.1.1.1-3.pkg`
3. For Linux® Debian® `st-stlink-server-1.1.1-3-linux-amd64.deb`
4. For Linux® Red Hat® `st-stlink-server-1.1.1-3-linux-amd64.rpm`
5. For other Linux® OS `st-stlink-server-1.1.1-3-linux-amd64.rpm`

What is new

- Added support for STLINK-V3SET

4.3 ST-LINK-SERVER 1.3.0

Software package content

The zip file contains five packages:

1. For Windows® `st-stlink-server.1.3.0-4.msi`
2. For macOS® `st-stlink-server.1.3.0-4.pkg`
3. For Linux® Debian® `st-stlink-server-1.3.0-4-linux-amd64.deb`
4. For Linux® Red Hat® `st-stlink-server-1.3.0-4-linux-amd64.rpm`
5. For other Linux® OS `st-stlink-server-1.3.0-4-linux-amd64.install.sh`

The zip file also contains the raw binary for Linux® (out of any installation package): `stlink-server.1.3.0-4`, and a `readme.txt` file.

What is new

- Improved robustness in case of intensive client connection/disconnection sequences
- Fixed issue preventing installation on macOS® Catalina
- Added license information to the Linux® package

4.4 ST-LINK-SERVER 2.0.2

Software package content

The zip file contains five packages:

1. For Windows® `st-stlink-server.2.0.2-3.msi`
2. For macOS® X `st-stlink-server.2.0.2-3.pkg`
3. For Linux® Debian® `st-stlink-server-2.0.2-3-linux-amd64.deb`
4. For Linux® Red Hat® `st-stlink-server-2.0.2-3-linux-amd64.rpm`
5. For other Linux® OS `st-stlink-server-2.0.2-3-linux-amd64.install.sh`

The zip file also contains the raw binary for Linux® (out of any installation package): `stlink-server.2.0.2-3`, and a `readme.txt` file.

What is new

- Update from `libusb 1.0.22` to `libusb 1.0.23` to fix ST-LINK detection issue in some USB context
- Modified error messages, especially in the case of several running instances
- Allowed commands with a payload greater than 1428 bytes (and up to 6144 bytes) after segmentation
- Partial fix of timeout issue at SWD frequency less than 1 MHz (50/200/500 kHz).
  At least, `libSTLinkUSBDriver 6.0.0.0` is necessary for a full fix. The issue might remain at 5 kHz.
- Enhanced robustness against ST-LINK disconnection
- Updated standalone installer on Linux® for correct downgrade check and suppression of a wrong error message

4.5 ST-LINK-SERVER 2.1.0

Software package content

The zip file contains five packages:

1. For Windows® `st-stlink-server.2.1.0-1.msi`
2. For macOS® X `st-stlink-server.2.1.0-1.pkg`
3. For Linux® Debian® `st-stlink-server-2.1.0-1-linux-amd64.deb`
4. For Linux® Red Hat® `st-stlink-server-2.1.0-1-linux-amd64.rpm`
5. For other Linux® OS `st-stlink-server-2.1.0-1-linux-amd64.install.sh`

The zip file also contains the raw binary for Linux® (out of any installation package): `stlink-server.2.1.0-1`, and a `readme.txt` file.

What is new

- Added support of miscellaneous commands for performance enhancement (API extended to version 3).
- Do not enumerate ST-LINK boards (v1, obsolete), as they are not supported.

Revision history

Table 2. Document revision history

Date	Revision	Changes
13-Sep-2017	1	Initial version.
28-Nov-2017	2	Updated: • *Chapter 2.2: Software package* content Added: • *Chapter 2.3: What's new*
22-Feb-2019	3	Updated: • *Section 2* ST-LINK-SERVER latest version • *Section 3* on the configuration in shared mode Added: • STLINK-V3 support in *Introduction*, *Customer support*, and *General information* • *Section 4: Release information for previous releases*
10-Feb-2020	4	Updated: • *Section 3 Known problems and limitations* • *ST-LINK-SERVER 1.1.1* moved to *Section 4 Release information for previous releases* Added: • Release information in *ST-LINK-SERVER 1.3.0*
27-Nov-2020	5	Updated: • *Table 1* switch to the new major release • *Section 3 Known problems and limitations* • *ST-LINK-SERVER 1.3.0* moved to *Section 4 Release information for previous releases* Added: • Release information in *ST-LINK-SERVER 2.0.2*
25-Aug-2021	6	Updated: • *Table 1* switch to the new minor release • Supported operating systems in *Section 1.2 Host PC system requirements* • Software package content and what is new in *Section 2 ST-LINK-SERVER 2.0.2*
14-Apr-2022	7	Updated: • *Table 1* switch to the new minor release • *ST-LINK-SERVER 2.0.2* moved to *Section 4 Release information for previous releases* Added: • Release information in *ST-LINK-SERVER 2.1.0*
11-Dec-2023	8	Updated: • Table 1 switch to the new minor release • Section 1.2 Host PC system requirements regarding several operating systems • Section 3 Known problems and limitations linked to macOS[®] • Section 4.5 ST-LINK-SERVER 2.1.0 moved to Section 4 Release information for previous releases Added: • Release information in Section 2 ST-LINK server 2.1.1

Contents