Certification authorities

For proper functioning, the following certification authorities must be available in the operating system / software used. If one or more certification authorities are missing, download them below and import them according to the instructions.

Public certification authorities

Public certificate authorities are already included in the current operating systems.

Public digital certificates at Jade University are issued in cooperation with the DFN-CERT.

GÉANT-TCS - HARICA

Public digital certificates from **GÉANT-TCS - HARICA** have been issued by GÉANT in conjunction with the Hellenic Academic & Research Institutions Certification Authority **since January 2025**. This results in the certification chains described on this website.

Certification chains for server certificates (TLS)

For all server certificates issued from March 6, 2025

- HARICA TLS RSA Root CA 2021
(SHA1-FP: 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D)
  - GEANT TLS RSA 1
(SHA1-FP: BE:7F:0B:36:F8:8A:22:DD:DE:D3:62:DB:9A:F7:9C:8E:65:82:B9:19)

- HARICA TLS ECC Root CA 2021
(SHA1-FP: BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48)
  - GEANT TLS ECC 1
(SHA1-FP: CC:73:33:46:67:05:F1:43:BE:7D:76:DD:B8:E7:74:40:7A:3D:91:C8)

Certification chains for user certificates (S/MIME)

For all user certificates issued on or after March 6, 2025

- HARICA Client RSA Root CA 2021
(SHA1-FP: 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E)
  - GEANT S/MIME RSA 1
(SHA1-FP: 8D:45:56:68:2A:35:09:BE:EA:90:1B:0D:C7:8C:F8:0D:C6:F0:2A:CA)

- HARICA Client ECC Root CA 2021
(SHA1-FP: BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00)
  - GEANT S/MIME ECC 1

(SHA1-FP: 57:B1:33:3A:E7:FB:B2:AC:53:0B:D8:FF:09:A0:2F:24:AA:19:DB:D8)

Internal certification bodies

Internal digital certificates at Jade University are issued by the University Computer Centre. These root certification authorities are used here:

- HS-WOE Certificate Authority (hs-woe.de)
  - HS-WOE Certificate Authority (META)

Operating systems

Microsoft Windows

Devices in the PC network system (e.g. devices in the pool rooms / virtual desktops) are already equipped with all certification authorities, so no change is necessary here. On all other devices, they must be logged in as **users with administrative rights** to integrate certification authorities.

- Start → Manage Computer Certificates (type in)
- Certificates - Local Computer
  - Trusted Root Certification Authorities → Certificates
    - HS-WOE Certificate Authority (hs-woe.de)
    - HS-WOE Certificate Authority (META)

Missing certification authorities can be added by right-clicking on the respective folder Certificates → All tasks → „Import…“. add them.

Apple iOS/iPadOS

- Settings → General → Profiles
  - HS-WOE Certificate Authority (META)
- Settings → General → Info → Certificate Trust Settings
  - HS-WOE Certificate Authority (META): enabled
  - HS-WOE Certificate Authority (hs-woe.de): enabled

The easiest way to get missing certificate authorities onto the device is from an existing (mobile) network access.

- Download the above certificate authorities with Safari.
- Load configuration profile: Allow
- Go to Settings → General → Profiles
- Tap on the new profile
- Tap on „Install“ in the upper right corner and follow the instructions
- Tap on „Done“

- Repeat the process with the other certification authorities.

- Go to Settings → General → About → Certificate Trust Settings
- Activate all certification authorities

Apple macOS

To integrate certification authorities, you must be logged in as a local user with administrative rights.

- Finder → Applications → Utilities → Keychain Administration
- Keychain System
    - HS-WOE Certificate Authority (hs-woe.de)
    - HS-WOE Certificate Authority (META)

The easiest way to add missing certificate authorities to the device is from an existing network access.

- Click on the above certificate authorities in a browser.
- Select „Open with: Keychain Access“
- Use the „System“ keychain
- Repeat the process for all certificate authorities.

Google Android

- Settings → Security → (Advanced) → Encryption and Credentials
    - User credentials
        - HS-WOE Certificate Authority (META) - Installed for WLAN
        - HS-WOE Certificate Authority (hs-woe.de) - Installed for WLAN

The easiest way to get missing certificate authorities onto the device is from an existing (mobile) network access. Download the above certificate authorities with a browser and open the downloaded file. The „Name Certificate“ dialogue appears:

- Certificate name:
    - HS-WOE Certificate Authority (hs-woe.de)
    - HS-WOE Certificate Authority (META)
- Use of credentials: WLAN

Ubuntu Linux

- Passwords and encryption
    - sudo apt install seahorse
- Filter entries (3 dots top right) → Show all
- Certificates → System Trust
    - HS-WOE Certificate Authority (hs-woe.de)
    - HS-WOE Certificate Authority (META)

The easiest way to get missing certificate authorities onto the device is from an existing network access. Download the above certificate authorities to the Downloads folder using a browser. Then add

them system-wide:

```
cd ~/Downloads
sudo trust anchor hs-woe_certificate_authority_hs-woe.de-20161121.pem
sudo trust anchor hs-woe_certificate_authority_meta-20140601.pem
```

To check, restart the „Passwords and Encryption“ application once.

Software

Mozilla Firefox

Mozilla Firefox is available for Apple macOS, Linux and Microsoft Windows, but usually uses its own built-in certificate store.

- Application menu (3 horizontal bars) → Settings → Privacy & Security → Certificates → Show Certificates…
- Map certification authorities:
  - Wilhelmshaven/Oldenburg/Elsfleth University of Applied Sciences.
    - HS-WOE Certificate Authority (hs-woe.de)
    - HS-WOE Certificate Authority (META)

Missing certification authorities can be added via the button „Import…“. button.