

# GS.Gate

Release Notes

Version 1.2

## Summary

Information on the GS.Gate 1.2 product family is available in these release notes. Please read this document carefully! You are advised to install this upgrade, as this release both resolves problems and provides new features.

The release notes should give you an understanding of the new version and make the upgrade easier. Please do not hesitate to provide us with feedback if you are still missing information in this regard. We will gladly take this into account in the future. You can find our contact information at the end of this document. We wish you much success with the new release GS.Gate 1.2.

Kirchheim near Munich, June 1, 2023

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## 1 Scope of Delivery & General Release Information

### installation file (patch image)

available for download in the customer portal:

[Products](#) → [GS.Gate](#) → [Patches](#)

### GS.Gate Manual

available for download in the customer portal:

[Products](#) → [GS.Gate](#) → [Manuals](#)

### these Release Notes

available for download in the customer portal:

[Products](#) → [GS.Gate](#) → [Release Notes](#)

Following additional components are needed for operational use of the GS.Gate:

- genucenter with version 8.1 or higher for the central administration
- at least one genubox for use as VPN gateway, rendezvous server and communication server

GS.Gates are shipped pre-installed. Following additional components are needed for installation of non pre-installed GS.Gates:

- Deploymentserver with version 8.1 or higher
- L4Installer with version 2.0p7 or higher

### 1.1 Information on the Web

The following product manuals and information sources are available.

#### The GS.Gate Manual

provides an introduction to the GS.Gate structure and functionality, first steps for users, and covers how to use the genua software.

It is available for download on the customer portal:

[Products](#) → [GS.Gate](#) → [Manuals](#)

#### Mounting and Maintenance manual

The Mounting and Maintenance manual gives detailed instructions for installing and maintaining the GS.Gate. It also lists information about the device dimensions, power supply and other relevant technical data.

It is available for download on the customer portal:

[Products](#) → [GS.Gate](#) → [Manuals](#)

### **genucenter Central Management Station manual**

The genucenter manual describes how to create, configure, and manage GS.Gates on the Central Management Station.

It is available for download on the customer portal:

[Products](#) → [genucenter](#) → [Manuals](#)

### **Web help**

Additional howtos, tips, and information are available at <https://kunde.genua.de/en> in the section [Products](#) → [GS.Gate](#) → [Knowledge Base](#). This Knowledge Base is continuously updated with further instructions and supplies the latest informations.

### **these Release Notes**

These Release Notes are also available online in the customer portal:

<https://kunde.genua.de/en> via [Downloads](#) → [GS.Gate](#) → [Release-Notes](#).

## 2 New Features & Improvements

### 2.1 Software Upgrades

GS.Gate 1.2 benefits from updated software components in terms of stability, performance and usability.

### 2.2 New app.host

GS.Gate 1.2 contains the new app.host with version 2.3.0. It contains the following new features:

- Buildroot updated to version V2023.02
  - Docker Engine 23.0.1
  - Kernel 6.1.14
- app.control updated to version 1.2.2
- Docker Registry updated to version 2.8.1

### 2.3 New Corporate Design

genua GmbH has a new corporate design. Graphical interfaces in GS.Gate 1.2 were changed accordingly. Thus, the Web GUI, which can be accessed via the SVC interface, features the new corporate design.

## 3 Important Fixed Issues

A selection of important bugs resolved by GS.Gate 1.2 is listed here:

### 3.1 Security Fixes

Besides other fixes, GS.Gate 1.2 contains following selection of Security Fixes. Therefore, we recommend to upgrade to this version as soon as possible.

#### **KKSA-2021-0001: IPC Partner Invalidation**

In IPC messages across CPU cores the authorization to reply to an IPC message ist not correctly revoked. Thus, if the original receiver has been terminated, the message can reach a different receiver. In order to exploit this vulnerability, an attacker needs extensive control over the L4 system with a new receiving thread that has its data structures at the same address as the original and which got created at precisely the right time. On vs-top this is not possible without exploiting additional security flaws. The problem has been fixed.

#### **KKSA-2021-0002 L4Re IPC Messages**

In certain cases IPC messages between L4Re threads are not handled correctly, which can make the receiving thread crash. To exploit this, an attacker must be able to craft specific IPC messages, which requires exploiting additional security flaws. The problem has been fixed.

#### **KKSA-2021-0003 IRQ Management**

An error in IRQ message processing in the kernel can lead to an invalid state and thus crash the kernel. The problem has been fixed.

#### **KKSA-2021-0004 Error in IPC message processing**

In certain situations an error in IPC message processing can lead to an invalid state in the kernel, causing it to crash. The problem has been fixed.

#### **KKSA-2022-0002 System Crash**

Because of a bug in the micro kernel, an attacker who is able to break out of the guest compartment and execute code in the kernel of the virtualisation host by exploiting different security issues can freeze the whole system. The problem has been fixed.

#### **KKSA-2022-0009 VM Monitor can cause a System Crash**

A missing check allows a virtual machine monitor to cause a system crash. Attacking the system with the privileges of a virtual machine monitor requires exploitation of other vulnerabilities. The problem has been fixed.

#### **KKSA-2022-0010 Missing TLB Invalidation**

Incorrectly implemented invalidation of TLBs might cause unstable behaviour in the guest operating system. An attack on other compartments is not possible. The problem has been fixed.



## 4 Hardware Compatibility & Software Support Period

### 4.1 Hardware Compatibility

GS.Gate 1.2 supports the previous GS.Gate hardware.

### 4.2 Software Support Period

GS.Gate 1.0 is no longer supported.

GS.Gate 1.1 was a genua internal version and was not published.

GS.Gate 1.2 will be supported until the next release.

### 4.3 Discontinued Versions and Incompabilities

#### Discontinued Software Versions

Support for GS.Gate 1.0 is discontinued with this release. We recommend to upgrade to the new version 1.2 as soon as possible.

## 5 Upgrade Instructions & Requirements

A guidance for the initial installation of the GS.Gate software can be found in the GS.Gate Manual.

To upgrade the GS.Gate software from a former version follow these steps.

### 5.1 Prerequisites

#### genucenter Version 8.1

Please ensure that your genucenter uses at least 8.1 before updating your GS.Gate appliances to version 1.2. If this is not the case, please update your genucenter accordingly. To do so, follow the instructions in the genucenter version 8.1 manual and Release Notes.



**Warning!** Upgrading the GS.Gate appliances with a genucenter version previous to 8.1 may cause unexpected behavior while using the GS.Gate appliances.

#### L4Installer Version 2.0p7

New installations require L4Installer version 2.0p7. The installer can be acquired automatically as described in section *Automatic Download of the Software via genucenter*. If your genucenter does not have internet access or if you prefer manual installation, please refer to the knowledge base article describing manual installation in the customer support portal.

### 5.2 Where to Download the GS.Gate Software

#### Automatic Download of the Software via genucenter

The genucenter enables you to download appliance software via the genucenter web interface. Please refer to the instructions in genucenter manual, too. To update the appliance software, please follow these steps:

1. In the explorer view, select genucenter and navigate to the menu [Advanced](#) → [Software Management](#).
2. (Optional) Specify a proxy server which can be used to access the genua support server.
3. (Optional) Specify an alternative server, where appliance software has been deposited.

4. In the section **Download Software for Appliances** click the button [Save and Execute](#). For the software of an appliance type to be downloaded, at least one appliance of the desired type must have been added to genucenter. The check box **Fetch only latest software** allows for only the latest patch levels to be downloaded.

### Manual download of the patch

Follow these steps if your genucenter does not have internet access or you prefer manual installation:

1. Log in to the [Customer Portal](#).
2. Download the installation file (Patch Image) from the Customer Portal:

[Products](#) → [GS.Gate](#) → [Patches](#)

3. Transfer the file to following folder on the genucenter:  
`/var/center/images/GS.Gate/`
4. Set the appropriate file permissions on the genucenter with the following commands:  
`chmod 644 /var/center/images/GS.Gate/*`
5. Run the following command on the genucenter  
`sync_software_versions`

### Manual Download of the recmote Module

A fitting *recmote* module is necessary for recording remote maintenance sessions on the GS.Gate.

That module is shipped with genubox version 8.1p4 and can be downloaded then automatically via your genucenter.

Follow these steps if your genucenter does not have internet access or you prefer manual installation:

1. Log in to the [Customer Portal](#).
2. Download the *recmote* module from our customer portal that matches the patchlevel B810\_004:  
<https://kunde.genua.de/en/products/view/65847.html> [Products](#) → [genubox](#) → [Patches](#) → [genubox 8.1 Patches](#)
3. Navigate in the root domain of your genucenter GUI to [Advanced](#) → [Modules](#).
4. Click in the upper field marked with [Browse...](#)
5. Select the downloaded module in the shown file selection menu.
6. Upload the module to your genucenter by clicking the button [Upload](#).

### 5.3 GS.Gate Appliances Update

After importing the new GS.Gate software into the genucenter, you can upgrade the GS.Gate by following these steps:

#### Remote Update

1. Select the appliance in the genucenter GUI which shall be upgraded.
2. In the menu **System** → **Basic** set the software version either to *Most recent version* or to *1.2* and set the patch level preferably to *Most recent version*.
3. Click on *Update Appliance* at the bottom of the page. Enable the option *update software/firmware* in the popup menu displayed. Confirm the update job by clicking *Execute*.
4. After the next reboot, the GS.Gate will use the new software version. The bootloader will also be updated if required. The system automatically reboots after the successful bootloader update.

#### Manual Update with File

1. Select the domain in your genucenter, where the GS.Gates to be updated are located and navigate to **Maintenance** → **Create Jobs**.
2. Choose the job *Update configuration and software with file* in the category *Configuration/Software*.
3. Select the GS.Gates that have to be updated in the bottom list and click *Execute*.
4. Enable the checkbox *Update software/firmware* in the popup menu displayed and confirm the job by clicking *Execute*.
5. Wait for job completion and then click on *Download*.
6. Click on *Download* in the bottom of the upcoming page to download the file *update.tgz*.
7. Afterwards, the file *update.tgz* can be uploaded via the GS.Gates web GUI that is available at <http://100.64.98.1/> over the SVC network interface. Be aware that the filename must be *update.tgz*.
8. After the next reboot, the GS.Gate will use the new software version. The bootloader will also be updated if required. The system automatically reboots after the successful bootloader update.

## 6 How to Contact Us

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