

Simics Model Library for Intel ® Platform codename Rocket Lake-S Simulation Environment

WW04'20 Startup User's Guide

Jan 2020

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Model Library for Intel® Platform codename Rocket Lake-S Startup User's Guide

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Revision History

| Revision Number | Description | Revision Date |
|-----------------|--|---------------|
| WW51 | Includes support for Intel® ME Consumer version 7069 <ul style="list-style-type: none">• Base 1000 version 25• Eclipse 1001 version 11• Rocket Lake-S External Model Library 7961 version pre33 RVP BIOS Simics Image based on - 482 | Dec 2019 |
| WW04 | Includes support for Intel® ME Consumer and Intel® ME Corporate version 1116 <ul style="list-style-type: none">• Base 1000 version 25• Eclipse 1001 version 11• Rocket Lake-S External Model Library 7961 version pre33 RVP BIOS Simics Image based on - 503 | Jan 2020 |

1. Simics Model Library for Intel® Platform codename Rocket Lake-S Features

1.1 General Feature Summary

Simics is a commercial full system simulation tool suite available from Wind River Systems, Inc. The Simics Model Library for Intel® Platform codename Rocket Lake-S is intended to provide critical pre-silicon and post-silicon simulation BIOS support for the Rocket Lake-S platform. This Simics release is intended to aid in early BIOS development on platforms and components which may continue to be in a design phase of development.

1.2 Supported Feature

- a. Using Intel Rocket Lake-S RVP BIOS booting to Win10 OS
- b. Consumer Intel® ME

| # | Components | Status |
|-----|--|---------------|
| 1. | Microcode Update Patch | Not supported |
| 2. | Intel GOP | Not supported |
| 3. | VBT | Not supported |
| 4. | Boot Guard ACM | Not supported |
| 5. | Intel Audio | Not supported |
| 6. | Camera | Not supported |
| 7. | iTouch | Not supported |
| 8. | Boot to OS | Supported |
| 9. | Intel® ME Power Gating | Not supported |
| 10. | Warm Reset, Cold Reset | Supported |
| 11. | ME tools(MEinfo, FPT, MEManuf, FWUpdate) | Not supported |

1.3 Hardware Requirements

The following is the minimum requirement of the Host for Simics.

| | Microsoft Windows® 64-bit |
|--------------------------|--|
| Host Architecture | x86-64 |
| OS | Win7, Win8, Win10 |
| Memory | Min 2GB, Strongly Recommend 8GB |
| Hard disk | Several GB |

1. in general about 2GB and at least as much memory as the working set in the simulate machine, in order to avoid swapping.
2. Highly dependent on the amount of storage space used in the simulated machine. Simics itself requires a few hundred MB.

1.4 Simics Decryption Keys

Following are the decryption keys for packages of Rocket Lake-S Simics.

| Name | Major Version | Number | Version | Decryption key |
|---------------------------------|---------------|--------|---------|--|
| Simics Base | 6.0 | 1000 | 25 | dadf16a4850e0d09fa5587cc8658de25287a c4a67b7fef03e460f9f9c5e51551 |
| Simics Eclipse | 6.0 | 1001 | 11 | 01bfe4499a924e00e5d00b3f46091e31e94f bfa784f2aafe2945dde9fecab2f1 |
| External RKL-S Model Library | 6.0 | 7961 | Pre33 | c34a8e0fd0b5cfa1e977da87458841f4826c 873035f85d85c46d1deb3e5299f9 |

1.5 Installation Instructions

1.5.1 Window Installation Instructions

Here are the step-by-step installation instructions:

- 1) Install the Simics base package first by right-clicking the downloaded file and selecting "run as administrator". Click "yes" if you receive a user account control dialog.
- 2) Enter the installation key for the package being installed and click "decrypt".
- 3) Click "next" to begin the installation.
- 4) Acknowledge that your company has signed a custom Simics software license agreement: Select "yes" and "next".
- 5) Install to the default location: Click "next"
- 6) Select a license file: Click "browse" and select the license file you downloaded in step (1). Click "next".
- 7) Click "install" to begin the installation.
- 8) Click "finish" to exit the installation.
- 9) Install the remaining packages by repeating steps 3-10 with the other package executable. A new dialog will appear "register the add-on with the selected Simics installation": Use the default and select "next"
- 10) For Simics version please refer [here](#)

2. Configuration and Simulation with Simics

Rocket Lake-S Simulation model behave as standard Simics Simulation model. Please refer to Simics Installation Guide, Simics Getting Started, and Hindsight User Guide for generic Simics information.

Note: For Location of document list see Section 3 below.

Below is a quick startup information to set up Simics workspace

Simics uses a workspace area to access user specific data. The workspace file structure is automatically created with workspace-setup script from installation folder. Upon running Simics after installing the first time or on installing a new/updated package, Simics asks the user to establish their "workspace". The default is "c:\Simics-workspace". Click "OK" and "Yes" to create the directory.

2.1 License

Please refer to the installation guide [License Installation chapter] or contact your Simics representative at your company to obtain License capabilities.

If your Simics representatives do not have that information, please contact your Intel representative to get license information.

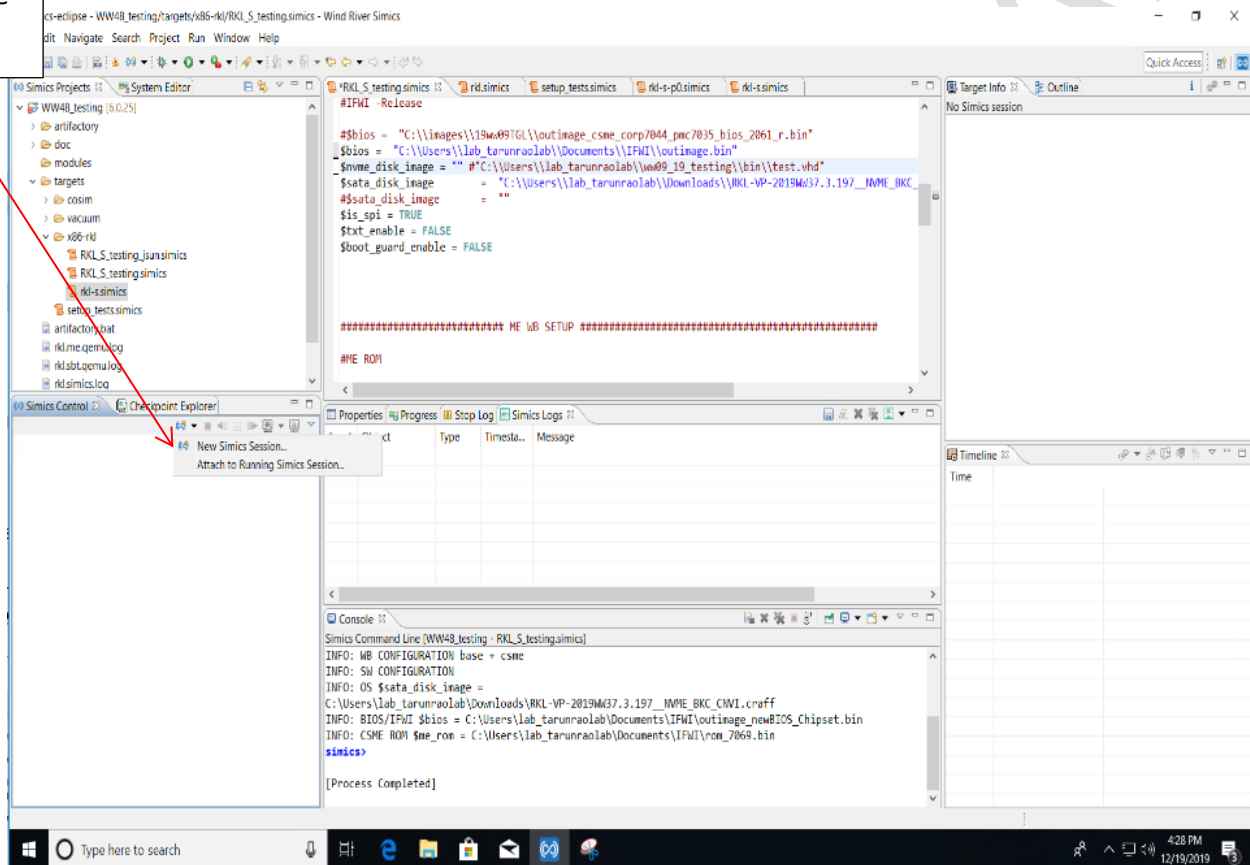
Note: It is required to set the VENDOR Simics path from the License file to the latest license daemon location from the latest drop. Older daemon may not support newer package.

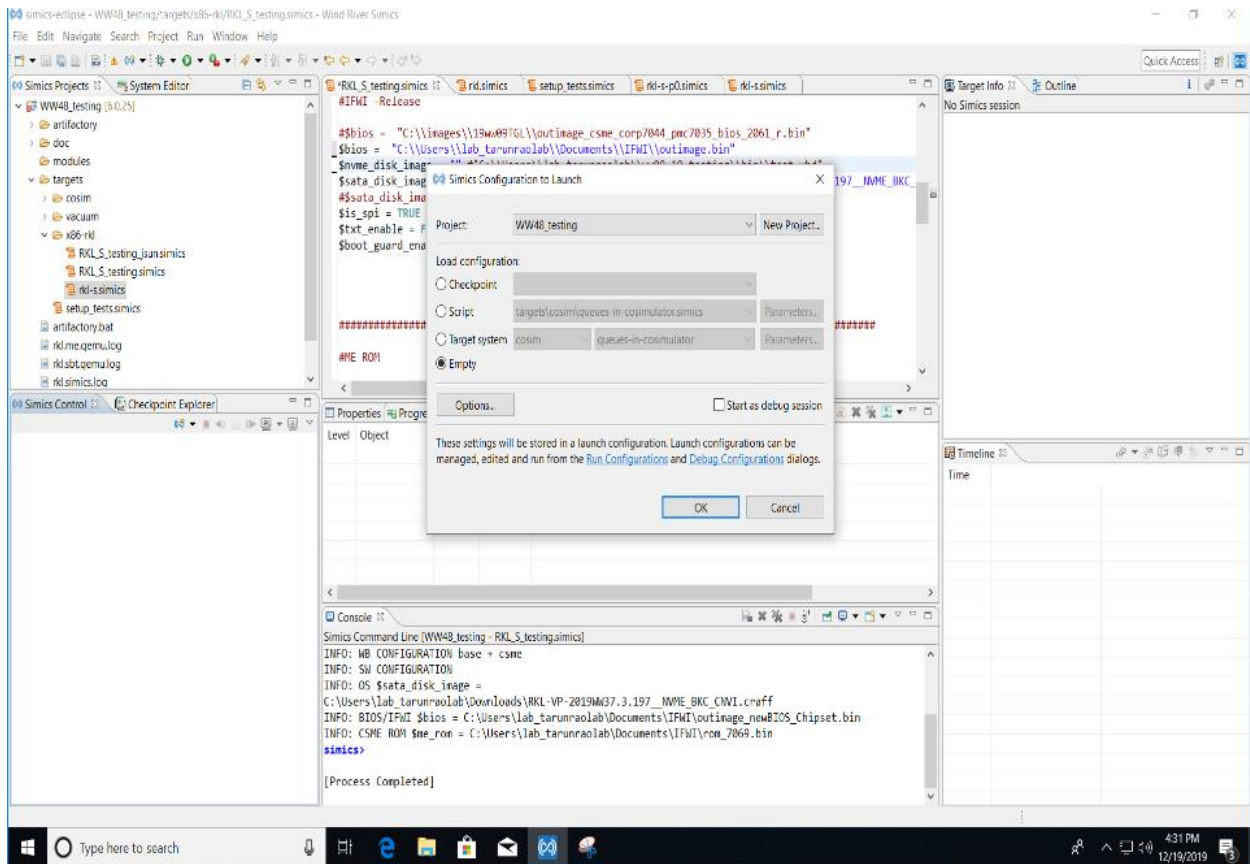
2.2 Starting Simics

To Start Simics Eclipse:

- 1) If this is the first time you use Simics Eclipse, you need to create project by clicking File->Simics Project
- 2) Specify a Project name. The default is Simics Project
- 3) Click Finish
- 4) You will see a directory with c:\simics-workspace\SimicsProject with targets\
- 5) You can start to load Simics by clicking the following icon

Click here
to start
Simics





6) You should see 3 windows. Click on Run->Run to run the project.



2.3 Rocket Lake-S Simics Specific Information

In order to run a software simulation with Simics for TGL model, runtime scripts which are referred to as session scripts need to be created. The session scripts can be created manually. For example

```
$nvme_disk_image = "<path>/<Win_image_filename>.craff"
$sata_disk_image = " "
$me_rom = "<path>/<CSME_ROM_filename>.bin"
$bios = "<path>/<bios_filename>.bin"

# Enable CSME WB
$wb = "csme"

run-command-file "%simics%\\targets\\x86-rkl\\rkl-s.simics"
```

2.4 Simics Rocket Lake-S Smoke Test Configuration

The RVP SPI binary image used for Smoke Test is also included in the drop. The following are the exact test Configuration. Please download the Intel® ME package separately

| Intel - WW04'20_RKL_S | | | |
|--|--------------|---------------------------|-----|
| Platform Ingredients | | | |
| Ingredient | | Version | |
| OS | | R55 | |
| Firmware | BIOS | 503 | |
| | CSE | 15.0.0.1116 | |
| | PMC | 150.2.00.1005 | |
| | Chipset | 7.0.2.0 | |
| | PPHY | PPhy_11.0.100.6001 | |
| | IDM | samfw_v01.7.00.0 | |
| Simics Package | pchc | pchc_15.0.0.7009 | |
| | Base Package | simics-pkg-1000-6.0.25 | |
| | Eclipse | simics-pkg-1001-6.0.11 | |
| | RKL Model | simics-pkg-7961-6.0.pre33 | |
| | | | |
| IFWI - outimage_bios503_csme_111_pmc_1005_sam_pphy_Release_ifwi_cons.bin | | | |
| | | Test Results | |
| Serial no | UCIS | Domain | SPI |
| 1 | Boot to OS | WIN - BIOS | |
| 2 | Warm Reset | WIN - BIOS | |
| 3 | Cold Reset | WIN - BIOS | |

2.5 Help

Simics contains an extensive online help system. To get help on Simics related features type "help" in the command line window or type "help <utility-name>" in the command line window. Additionally, once can select "Help" in the contents on the Simics control window.

2.6 Documentation

Each of the Simics model installed contains a documentation folder. For Simics base model, it also includes a Documentation.html at the Root Folder. This documentation provide a description of the purpose for each document listed below, and they are located at *C:\Program Files\Simics\Simics xx\Simics x.x.xx\doc*

[Release Notes](#)
[Installation Guide](#)
[Getting Started](#)
[Hindsight User's Guide](#)
[Analyzer User's Guide](#)
[Accelerator User's Guide](#)
[Ethernet Networking Technology Guide](#)
[Product Family Overview](#)
[Simics Target Guides](#)
[Simics Reference Manuals](#)
[Model Builder User's Guide](#)
[Extension Builder User's Guide](#)
[DML Reference Manual](#)
[Additional Manuals](#)

2.7 Limitations

2.7.1 Improving Performance

To improve simulation performance, please enable VMP. First, ensure that you have Intel VT-x enabled in BIOS. Then load the vmxmon driver using scripts provided depending on you OS environment.

Windows:

1. Open command prompt as administrator
2. Run the **load.bat** file in the following location:

"<path to simics installation folder>\Simics 6\Simics <version>\vmxmon\load.bat"

Note: You might need to disable Driver Signature Verification in Windows as the latest version does not contain signed driver for VMP.

Linux:

1. Open a terminal
2. cd to scripts folder of the Simics base package "<path to simics installation folder>/simics-6.0/simics-6.0.x/scripts"

3. Run the **vmp-kernel-install.sh** script using sudo and giving the writable directory path after the script name, i.e.

```
"sudo ./vmp-kernel-install.sh /tmp"
```

2.8 Known Issues

N/A

2.9 Fixed Issues

N/A

2.10 Features (Use cases) Tested

- Boot to OS-Consumer, Corporate
- Warm Reset
- Cold Reset