Native RHSC-ET Installation Guide
Semiconductor Business Unit

CPS Team

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Ansys

Introduction

The RedHawk-SC Electrothermal has been integrated to RHSC platforms since v2021R1. The software program operates on Linux type computer platforms. Use of Native RedHawk-SC Electrothermal requires an Ansys license. To download and install the Native RedHawk-SC program, perform the following steps:

- Download software from the ANSYS Customer Portal website
- Perform the installation
- RedHawk-SC software license Information
- Set up RedHawk-SC environment

Downloading Redhawk-SC Software

Download release tar ball.
Go to Ansys Customer Portal using below link:

https://support.ansys.com/AnsysCustomerPortal/en_us/Downloads/Semiconductor+Products

Node: the release package includes **SeaScape 2021_R1.2, RedHawk-SC Electrothermal CPA Engine v2020R3 Package, Mechanical Engine 2020R1.1 – Linux64** and **Electronics Package.**

SeaScape Products (RedHawk-SC) Downloads

Product Name	Size (Bytes)	md5sum	Details
SeaScape 2021_R1.2	2,032,674,892	63b4f1116a8bef9a5d3ea0a38d02a979	Release Notes

RedHawk-SC Electrothermal Solver Downloads

Product Name	Size (Bytes)	md5sum	Details
RedHawk-SC Electrothermal CPA Engine v2021R2 Package - Linux64	446,274,513	81039b12166ef05afaf66707db4c10ad	
Electronics Package	108,299,105	ca06df03df64c7abee4a73d6fdefd159	
RedHawk-SC Electrothermal CPA Engine v2020R3 Package	547,503,450	104048276a6d3120cdcade2ad9557bfd	
Mechanical Engine 2020R1.1 - Linux64	1,249,324,626	ff0b9a309d4c585072c1a843a28baeb5	

Note: for RHSC release version, it can only use CPA v2020R3.

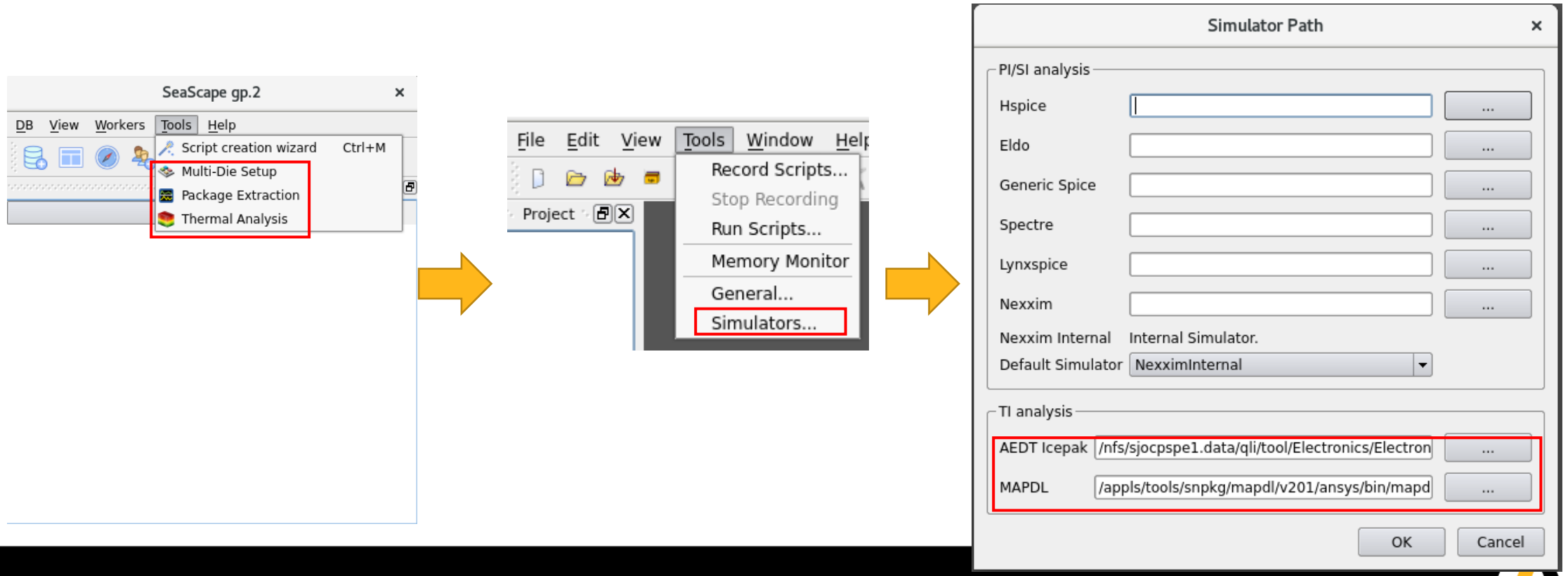
Program Installation

Download the software in the <*tarball_directory*>, such as */disk1/ecad/*, from where you want to install RedHawk-SC. Follow the instructions below.

- **cd <*tarball_directory*>**
- **xz –d seascape_rhe16_2021_R1.0.txz**
- **tar xvf seascape_rhe16_2021_R1.0.tar**
- **tar –xzf CPA_Engine_Linux64e6_V2020R3.tar.gz**
- **tar -xzf MAPDL_2020R1.1.tar.gz**
- **tar -zxf Electronics.tar.gz**
- **Go to "tarball_dir/seascape_release/2021_R1.0/linux_x86_64_rhel6/bin/"**
- **run install_cps.sh –l /point/to/cpa/layout –m /point/to/mechanical/mapdl/v201 –e /point/to/Electronics**

Add MAPDL and AEDT Icepak Link through GUI

User can also set the MAPDL link by the following steps.
1.Click "Tools" -> "Simulators" to open Simulator Path dialog box.
2.Enter the MAPDL path , for example, “/appls/tools/snpkg/mapdl/v201/ansys/bin/mapdl”
And set the default simulator to NexximInternal, then click OK
3.For the AEDT Icepak usage, please refer document “Icepak Boundary Condition Usage In RHSC-ET.pdf”.



License Package Information

Item	Flow Type	Design Type	Flow	Check License
1	Electrothermal	3D	Bring up ET GUI	RHSC 3tkn+RHSC-ET
2	Thermal	2D	SelfHeat only	RHSC 3tkn+CTA RHSC 3tkn+CTA-EX RHSC 3tkn+RHSC-ET
3	Thermal	2D	FIT analysis	RHSC 3tkn+CTA RHSC 3tkn+CTA-EX RHSC 3tkn+RHSC-ET
4	CPS	2D	CPS backannotation	RHSC 3tkn+CTA RHSC 3tkn+CTA-EX RHSC 3tkn+RHSC-ET
	Thermal	2D	Global Temperature analysis	RHSC 3tkn+CTA RHSC 3tkn+CTA-EX RHSC 3tkn+RHSC-ET
	Thermal	3D	Global Temperature analysis	RHSC 3tkn+RHSC-ET
5	CPS	3D	CPS back-annotation	RHSC 3tkn+RHSC-ET
6	Thermal	2D	CTM Generation	RHSC 3tkn+CTA RHSC 3tkn+CTA-EX RHSC 3tkn+RHSC-ET
7	CPS	2D	Pkg co-visulaization and pkg extraction	RHSC 3tkn+CPA RHSC 3tkn+RHSC-ET
8	CPS	3D	Pkg co-visulaization and pkg extraction	RHSC 3tkn+RHSC-ET
9	3DIC	3D	Coupling view	RHSC 3tkn+RHSC-ET
10	3DIC	3D	Detail analysis	RHSC 3tkn+RHSC-ET RHSC 3tkn+MDO
11	3DIC	3D	Fly reduction	RHSC 3tkn+RHSC-ET
12	3DIC	RAF-3D	Fly reduction/interface point data only	NA (ICC license)
13	CPM	3D	Dynamic (with CPM of another die in pkg netlist)	RHSC 3tkn+RHSC-ET RHSC 3tkn+MDO

Setting Up the Environment

- **Set RedHawk-SC path and license:**

– setenv RHSCROOT <choose the version installed on your server>
– set path = ($RHSCROOT/bin $path)
– setenv LM_LICENSE_FILE <To your redhawk_sc, redhawk_cta_ex or redhawk_sc_electrothermal license>
– setenv ANSYSLMD_LICENSE_FILE <To your License server >

- **To execute RedHawk-SC:**

- $RHSCROOT/bin/redhawk run.py
- $RHSCROOT/bin/redhawk -console (GUI Mode)

Ansys License Server Migration

All products from Semiconductor Business unit of Ansys will support checking out licenses from the new Ansys License Manager (CVD), please upgrade to new license daemon at any point after July 7, 2020.

Migration Steps

1.Get the Ansys License Manager kit from below:

https://support.ansys.com/AnsysCustomerPortal/en_us/Downloads/Current+Release

Current Releases -> Tools -> ANSYS Enterprise License Manager

Or please check with your Sales or Technical Account Manager to get this kt.

2. Send an internal notification to the Ansys tool users.
3. Stop the **apacheda** license server using **lmdown** command from FlexLM.
4. Use new license file which issued after July 7, 2020, and it has VENDOR line **ansyslmd.**
5. Restart the license with step1.

If you have two or more daemons out of **ansyslmd**, **apacheda**, **hclmd** etc, you can do:

a. Shut down all the **apacheda** daemons.
b. Merge these license files into one by keeping up to the VENDOR line only ONCE and then append other FEATURE/INCREMENT lines on to it.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