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Voltus-XFi Custom Power Integrity Solution What's New

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Cadence Design Systems, Inc. (Cadence), 2655 Seely Ave., San Jose, CA 95134, USA.

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Voltus-XFi Custom Power Integrity Solution

This chapter provides a high-level overview of the new and enhanced features in the IC 23.1 release.

IC23.1 ISR3

What's New and Enhanced

Features

New Form to Customize Data Loading of the EM-IR Analysis Results	New
A new form, *DB Load Options*, has been introduced to improve efficiency and speed when loading the analysis results. You can use this form to: ■ enable caching of net data, that is, keep the nets once loaded in memory to speed up subsequent reload in the same session ■ select the layers to be loaded ■ customize and save the result loading setting for the EM, IR, and SPGS analyses	
Ability to Store and Load History Items	New
The *Results* tab in the Voltus-XFi GUI now allows you to preserve the history of simulation results. Using this feature, you can view and load multiple simulation results corresponding to the saved history items. The file naming convention for the history items is according to the maestro history name, that is, the default name is `Interactive` for the active setup of the view and is the user-specified name for the setup state of the view.	
GUI Enhanced for Better Debugging	New
The Voltus-XFi GUI has been enhanced to indicate the status of a simulation run. When you view the simulation run results in the *Results* tab, the corner name color and tooltip displays the status of the simulation run. The following are the color codes and tooltips for corner names: ■ a red-highlighted corner name indicates that the run has failed. The tooltip displays the status as "*simulation failed*", timestamp, and the path to the history directory. ■ a yellow-highlighted corner name indicates that the simulation run is complete but the EM-IR results are not generated. The tooltip displays the status as "*EMIR Results database is not found*", timestamp, and the path to the history directory. ■ a green-highlighted corner name indicates that the simulation run has passed. The tooltip displays the status as "*simulation passed*", timestamp, and the path to the history directory.	

Filtering Options Added to Legend Window for Customization of Violation Range	New

The *Legend* button in the Voltus-XFi Results Browser now lets you customize the range of violations you want to view and control the display of plots.

The Legend window now includes the following for the IR and SPGS analyses:

- *Min - Max slider* - lets you view the violations that fall within the specific slider range. When you move the Min - Max sliders up and down, the display is updated according to the new slider positions.
- *Redistribute the values between selected ranges* button - re-distributes the range on the ruler and the plot is updated to reflect this new range.
- *Plot out of range values* button - lets you view the violation values outside the redistributed Min - Max slider range. For example, if the redistributed range is between “69.41” and “17.13”, and *Plot out of range values* is enabled, the violations above and below the slider marks are also displayed in “deep red” and “deep blue”, respectively.
- *Reset* button - restores the default values of the Min - Max filters.

The Legend window now includes the following for the EM analysis:

- *Customize* button- lets you view violations that fall within the specified minimum and maximum value for a specific color range.
- *Redistribute ranges* button- re-distributes the range based on the specified minimum and maximum values, and the plot is updated to reflect this new range.
- *Restore default ranges* button - restores the default values for each data range.

Additional Columns Added to Net Summary	New

The following new columns have been added to the *Net Summary* section in the *Results* tab and Voltus-XFi Results Browser:

- *Max IR peak(mV)*
- *Max IR avg(mV)*
- *Max J/Jmax*
- *Max J/Jmax peak*
- *Max J/Jmax avg*
- *Max J/Jmax absavg*
- *Max J/Jmax acpeak*
- *Max\nJ/Jmax rms*
- *Max J/Jmax peak_SHE*
- *Max J/Jmax avg_SHE*
- *Max J/Jmax absavg_SHE*
- *Max J/Jmax acpeak_SHE*
- *Max J/Jmax rms_SHE*

Drag-and-Drop Feature for Grouping of Power Nets	New

You can now use the drag-and-drop feature to easily group and ungroup the global nets and its corresponding virtual nets in the *Setup – Power Nets* tab.

New Option to Display Device Layers	New

You can now use the *Show Device Layers* option from the *Filter Layer from Results* drop-down button in the Voltus-XFi Results Browser to control the display of the device layers given in the self-heating effect (SHE) analysis parameter file. When this option is selected, the device layers from the parameter file will be displayed along with the DSPF layers. The *Show Device Layers* option is applicable only to the EM SHE plots.

Environment Variables

enableSmallerPrecision	New
Displays smaller precision IR drop values in the *IR* tab of the Voltus-XFi Results Browser assistant.	
cornerName	New
Specifies the name of the corner at which extraction will be performed.	
loadResultsSettingsFile	New
Specifies to load the .json file containing the result loading settings that was saved using the *DB Load Options* form.	

IC23.1 Base

What’s New and Enhanced

Features

Distributed Processing Support for Extraction	New
A new form, *Voltus XFi Job Policy Editor,* has been introduced to interactively specify the distributed processing options that enable you to speed the extraction run. You can now set up job policies and define the methods of how distributed processing jobs are submitted to the local or remote hosts.	

SKILL Functions

vxfiSetLVSQueryOutputDirectory	New
Specifies the path to the directory in which the input LVS data is stored.	
vxfiSetLVSRunName	New
Specifies the LVS run name used while running extraction.	
vxfiSessionRegisterCreationCallback	New
Registers a SKILL function as callback to be called whenever the event for which it is registered is occurred. You can specify registration of session trigger callbacks through `.cdsinit`.	
vxfiSessionConnect	New
Registers a SKILL callback to be connected to a known signal or trigger emitted from a Voltus-XFi session.	