



CFG Crux

Release Notes

Version: CRUX-19.04

Revision: 0.0

Intel Confidential



Copyright © 2019, Intel Corporation. All rights reserved.

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and other countries.

* Other names and brands may be claimed as the property of others.

This document contains information on products in the design phase of development.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT, OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED OR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your Intel account manager or distributor to obtain the latest specifications and before placing your product order.

Copies of documents that have an order number and are referenced in this document or in other Intel literature can be obtained from your Intel account manager or distributor.

CFG Crux 19.04 Release Notes

About This Document

This document lists the release notes for CFG Crux. Using CFG NocStudio, users can define NoC architectures, describe specifications and requirements, optimize the NoC design and finally generate the NoC IP files such as RTL, testbench, synthesis scripts, NoC IP documentation etc.

Audience

This document is intended for users of NocStudio:

- NoC Architects
- NoC Designers
- SoC Architects

Prerequisite

Before proceeding, you should generally understand:

- Basics of Network on Chip technology

Related Documents

The following documents can be used as a reference to this document.

- CFG NocStudio Crux User Manual
- CFG Crux IP Integration Spec

Customer Support

For technical support about this product and general information, contact CFG Support.

Revision History

Revision	Date	Updates
0.0	04/08/2019	Initial Version

Contents

About This Document.....	3
Audience.....	3
Prerequisite	3
Related Documents.....	3
Customer Support.....	3
1 Deliverables.....	6
2 Installation.....	7
2.1 Licensing.....	7
2.2 Deliverables / Tarball set	7
3 Feature Updates	9
3.1 8-Bit Data Interface.....	9
3.2 Multicast Support	9
3.3 GUI Shortcuts.....	9
4 EDA Tool Compatibility	10
5 Errata	11
6 Changes to Commands and Properties	12
6.1 Command Changes.....	12
6.2 Default Property Changes.....	12
6.3 Mesh Property Changes	12
6.4 Bridge Property Changes	12
6.5 Host Property Changes.....	12
6.6 Interface Property Changes.....	12
6.7 Link Property Changes.....	12
6.8 Router Property Changes	13
6.9 VC Property Changes	13

1 DELIVERABLES

- CFG NocStudio Package contains N7 version of the tool supporting 16 layers and 256 bridges.
- NocStudio executable with interactive GUI.
- Verification checkers to be used in the DV environment.
- Sanity Test Bench.
- Documentation
 - a. NocStudio User Manual: The User Guide describes how to set up a system using NocStudio and how to use it to generate CFG IP.
 - b. IP Integration Spec: The Integration Manual describes how to integrate a configured network into a larger subsystem.
 - c. Technical Reference Manual: The Technical Reference Manual describes how the functionality of the various NoC elements, the features and functions available, and how to dynamically change the functions using the programmer's mode.

2 INSTALLATION

2.1 LICENSING

NocStudio uses FlexLM based licensing hosted by Intel Central Licensing group using two dedicated license servers: one in Santa Clara and the other is located in Israel.

In addition to LM_PROJECT, a linux environmental variable *NETSPD_LICENSE_FILE* shall be set as shown below in order to access the licenses. The LM_PROJECT is essential for users not to check out the wrong combination of license features by accident.

```
setenv NETSPD_LICENSE_FILE
```

```
7010@netspeed01p.elic.intel.com:7010@netspeed02p.elic.intel.com
```

For teams without LM_PROJECT defined, a node-locked license file may be issued. Simply copy over the license file under NocStudio installation directory and renamed it as “license.dat”. If the license file resides in a separated folder, user may set environment variable *LM_LICENSE_FILE* before opening NocStudio.

2.2 DELIVERABLES / TARBALL SET

The CFG IPs and their configuration tool NocStudio have been packaged individually for maximum flexibility allowing mix and match. Each release is tagged with <yy><mm> where yy is the last 2 digits of the year and mm is the month in integer. As an example, release in Jan 2019 will be referenced as 1901 release. Un-tar all individual tarballs delivered as part of the tarball set using the command below.

```
linux% tar zxvf <tarball_name>.tar.gz
```

Here is a snippet of tarball set in 1904 release: netspeed-<release>.<package>.tar.gz

Tarball name	Description	Category
netspeed-1904.tar.gz	NocStudio	Base
netspeed-1904.iculibpkg.tar.gz	Unicode ICU lib package	Base
netspeed-1904.cruxpkg.tar.gz	Crux IP package (non-AMBA)	NSIP IP
netspeed-1904.orionpkg.tar.gz	Orion IP package	AMBA IP
netspeed-1904.geminipkg.tar.gz	Gemini IP package	AMBA IP
netspeed-1904.pegasuspkg.tar.gz	Pegasus IP package	AMBA IP



netspeed-1904.ocppkg.tar.gz	OCP support package	Connectivity
netspeed-1904.daupkg.tar.gz	Deadlock Avoidance Unit	System
netspeed-1904.syscpkg.tar.gz	SysC (PA) support package	Flow
netspeed-1904.cpp61pkg.tar.gz	C++ Modeling API support package for gcc 6.1	Flow

Note:

The release makes use of Qt libraries covered under LGPL: <http://qt-project.org/downloads>

3 FEATURE UPDATES

3.1 8-BIT DATA INTERFACE

In this release, the narrowest NSIP interface data width can be 8-bits. This allows system to create a separate layer to carry small packet with minimal area impact.

3.2 MULTICAST SUPPORT

In this release, single flit multicast support has been supported and it's a license-controlled feature. Please contact CFG support for details.

3.3 GUI SHORTCUTS

Keyboard shortcuts for switching tooltip ON and OFF (Ctrl + t), display nodes as (X,Y) or Grid number (Ctrl + n) and enable web browser to open the [noc_reference_manual.html](#) after gen_ip automatically or not (Ctrl + g) have been added in the new release.

4 EDA TOOL COMPATIBILITY

- Cadence EDA tools were used for verification and synthesis of this product.
 - Incisive RTL Simulator 15.22.018
 - Design Compiler RTL Synthesis N-2017.09-SP3
 - HAL Linting tool 15.20.027
 - Conformal 16.20.s240
- Compatibility testing has been done with VCS N-2017.12-SP2-4.
- For Platform Architect, used GCC version is gcc-6.1.0a. (Backward compatible upto gcc-5.2.0-64)
- Please refer to IP Integration specification to enable/disable specific CFG checker in order to resolve or workaround any verification related issues, if any.

Contact your CFG or Synopsys support team for assistance.

5 ERRATA

None

6 CHANGES TO COMMANDS AND PROPERTIES

6.1 COMMAND CHANGES

Command Name	Comment
add_multicast_group	Command to create a group of bridges that serves as a multicast destination
del_multicast_group	Command to delete a previously added multicast group
list_multicast_groups	Command to list all the previously added multicast groups

6.2 DEFAULT PROPERTY CHANGES

None

6.3 MESH PROPERTY CHANGES

None

6.4 BRIDGE PROPERTY CHANGES

None

6.5 HOST PROPERTY CHANGES

None

6.6 INTERFACE PROPERTY CHANGES

Command Name	Comment
multicast_enable	Command to enable an interface to send multicast traffic

6.7 LINK PROPERTY CHANGES

None

6.8 ROUTER PROPERTY CHANGES

None

6.9 VC PROPERTY CHANGES

None



Intel Corporation
2200 Mission College Blvd,
Santa Clara, CA - 95054.