

NetSpeed Crux

Release Notes

Version: CRUX-18.01

Revision: A.0

NetSpeed Crux 18.01a Release Notes

About This Document

This document lists the release notes for NetSpeed Crux. Using NetSpeed 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 Designers
- NoC Architects
- SoC Architects

Prerequisite

Before proceeding, you should generally understand:

- Basics of NetSpeed Crux IP Technology

Related Documents

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

- NetSpeed NocStudio User Manual

Customer Support

For technical support about this product, please contact support@netspeedsystems.com

For general information about NetSpeed products refer to: www.netspeedsystems.com

Revision History

Revision	Date	Updates
0.0	Feb 19, 2018	Initial Release
A.0	Mar 14, 2018	Internal Release

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1 Deliverables

- NetSpeed NocStudio Package and one of the license options:
 - N7 version supporting 8 layers and 256 bridges
 - N6 version supporting 4 layers and 128 bridges
 - N5 version supporting 4 layers and 60 bridges
 - N4 version supporting 2 layers and 32 bridges
 - N3 version supporting 1 layers and 12 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 NetSpeed 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

- NocStudio uses FlexLM based licensing.
 - Linux CentOS 5.5 or higher
 - For node-locked license file, copy over the license file under NocStudio installation directory and renamed it as “license.dat”. If the license file resides in a separated folder, please set environment variable LM_LICENSE_FILE with the proper path.
 - For floating licensing scheme, please download and extract netspeed.flexlmpkg.tar.gz for 32- or 64-bit license daemon and follow FlexLM documentation.

NOTE: Please use a Linux machine to unpack release tarball set. Unpack Linux tarball set on Windows machines may cause problems with symbolic links.

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

3 Feature Update: Design Methodology

3.1 GUI – COMMAND AUTO COMPLETE

New release allows user to enter commands in GUI console window with the new command auto complete feature. GUI command console displays all the commands with the improved tab-complete option. Pressing Tab once completes the command if there is only a single option and pressing twice will list all matching commands.

3.2 LINK PROP UPDATE

New release allows users to set the link properties <link_prop> of multiple links in a single line with { }.

Before 1801:

```
link_prop 11 output_register on
link_prop 12 output_register on
link_prop 13 output_register on
...
```

In 1801:

```
link_prop {11 12 13 ...} output_register on
```

4 Feature Updates: System Interconnect

4.1 MULTI-CAST MODELING ENHANCEMENT

Continuous refinement on host and router modeling in NocStudio with `add_traffic_d` command to support multicast type traffic. This is a license-controlled feature, please contact NetSpeed support team for details.

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5 Feature Updates: Streaming Protocol

None

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6 EDA Tool Compatibility

- Cadence EDA tools were used for verification and synthesis of this product.
 - Incisive RTL Simulator 15.22-s018
 - Genus RTL Synthesis 16.22-s033_1
 - HAL Linting tool 15.20-s027
 - Conformal 16.20-s240
- Compatibility testing has been done with VCS vcs-mx/L-2016.06 and Synopsys Design Compiler L-2016.03-SP5.
- Please contact NetSpeed support team (support@netspeedsystems.com) for additional platform and tool compatibility details.

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7 Errata: System Interconnect

None

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8 Errata: Streaming Protocol

None

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9 Changes to Commands and Properties

Please refer to NocStudio Help → User Manual Supplement for details.

9.1 COMMAND CHANGES

Command Name	Comment
reset_clock_domains	Deprecated
reset_power_domains	Deprecated
reset_voltage_domains	Deprecated
del_clock_domain	Replace reset_clock_domains
del_power_domain	Replace reset_power_domains
del_voltage_domain	Replace reset_voltage_domains
list_vcs	New command to print VCs information between a source and a destination
plot_graph	New command to plot graphs with a given set of points for visualization
set_pmf	New command to set the Probability Mass function associated with a name for host modeling

MESH PROPERTY CHANGES

Property Name	Comment
perf_register_clear_on_read	Property to enable hardware to automatically reset/clear event counter registers upon read
max_distance_from_routerconn	Property to set the maximum manhattan distance (in mm) between a bridge and its router conn when running "tune_router_conn"

9.2 HOST PROPERTY CHANGES

None

BRIDGE PROPERTY CHANGES

Property Name	Comment
unified_domain	Property to set the unified domain (clock, power and RTL grouping if applicable) of a bridge

INTERFACE PROPERTY CHANGES

None

9.3 LINK PROPERTY CHANGES

None

ROUTER PROPERTY CHANGES

Property Name	Comment
unified_domain	Property to set the unified domain (clock, power and RTL grouping if applicable) of a router

9.4 VC PROPERTY CHANGES

None

9.5 DEFAULT PROPERTY CHANGES

Property Name	Comment
vc_depth_tooltip	Property to enable displaying VC buffer depths and stats in tooltip window

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