Intel® Quartus® Prime Pro Edition

Version 20.1 Software and Device Support Release Notes

Updated for Intel® Quartus® Prime Design Suite: **20.1**

Contents

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1. Intel® Quartus® Prime Pro Edition Version 20.1 Software and Device Support Release Notes

This document provides late-breaking information about the Intel® Quartus® Prime Pro Edition software release version 20.1.

For additional information about this software release, see the Intel Quartus Prime Pro Edition README file in the following location:*<installation directory>/* `quartus/readme.txt`

For information about operating system support, see the following web page: Intel FPGA Operating System Support.

Related Information

Intel Quartus Prime Standard Edition Software and Device Support Release Notes

1.1. New Features and Enhancements

Intel Quartus Prime Pro Edition Software Version 20.1 includes functional and security updates. Keep your software up-to-date and follow the technical recommendations that help improve the security of your Intel Quartus Prime installation. Additional security updates are planned and will be provided as they become available. You should promptly install the latest version when it is released.

Intel Quartus Prime Pro Edition Software Version 20.1 includes the following new features and enhancements:

- Enhanced the Intel Quartus Prime GUI as follows:
  - Added a GUI for the `report_design_metrics` command.
  - Improved visual consistency of dialog boxes and forms.
- Added support for Intel Stratix® 10 devices to the Intel FPGA Power and Thermal Calculator.
- Improved device family migration when you change device families in the Intel Quartus Prime GUI. When you change devices families in the Intel Quartus Prime GUI, you can choose to remove assignments that are invalid for the newly selected device family.
- Added support for Avalon® ST Credit Protocol.
- Added support for new Intel Stratix 10 security features.

  For details, see *Intel Stratix 10 Device Security User Guide*.

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- Enhanced Timing Analyzer as follows:

  — For full compilations started from the GUI, the interactive Timing Analyzer tool opens automatically at the end of a successful full compilation by default.

  This default behavior can be disabled from the **Settings ➤ Timing Analyzer** menu in the Intel Quartus Prime GUI.

  — By default, when the interactive Timing Analyzer tool opens (either automatically or manually), it runs the most common steps (Create Timing Netlist, Read SDC, and Update Timing Netlist) without user intervention.

  This default behavior can be disabled from the **Settings ➤ Timing Analyzer** menu in the Intel Quartus Prime GUI.

  — Many Timing Analyzer reports now aggregate data across multiple operating conditions at once, instead of generating a different report for each set of operating conditions. This change displays only the worst-case timing paths across multiple operating conditions.

  To control which operating conditions are considered in an aggregated report, use the `set_operating_conditions` command, which now accepts a list of conditions instead of only one. Likewise, the `get_operating_conditions` command now returns one or more operating conditions, as applicable.

  The following reporting commands support aggregation and enable aggregation by default:

  - `create_timing_summary`
  - `report_clock_fmax_summary`
  - `report_timing`
  - `report_path`
  - `report_exceptions`
  - `report_min_pulse_width`

  These reports appear as aggregated in the set of reports generated by the default Timing Analyzer flow.

  You can disable aggregation manually for these commands with the `-split_by_corner` option, which makes the commands generate a folder of single-corner reports.

  In addition, the path objects returned by `get_timing_path` and `get_path` are also aggregated, as they match what is reported by `report_timing` and `report_path`. To see which operating conditions a path object belongs to, use the following command: `get_path_info -operating_conditions <object>`.

  — In certain compilation modes, the Fitter (Finalize) stage takes advantage of time borrowing capability in some of the flip-flops in Intel Stratix 10 and Intel Arria® 10 devices to produce better timing results.

  As a result of this optimization, the timing analysis reports might contain line items indicating borrowed time.

  If your design contains level-sensitive latches, time borrowed at these latches is not automatically analyzed unless you use the following Timing Analyzer command: `update_timing_netlist -dynamic_borrow` in the Timing Analyzer.

  To learn more about time borrowing, see "*Time Borrowing*" in *Intel Quartus Prime Pro Edition User Guide: Timing Analyzer*.

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- Added ability to limit hierarchies processed with Fast Forward compilation. You can skip IP or legacy user code, or focus on one sub-block of large design. By default, Fast Forward compilation runs on your entire design.

- Enhanced Snapshot Viewer by adding support for intermediate Fitter snapshots.

- Enhanced Design Assistant as follows:
  — Added synthesis design rule check
  — Added clock domain crossing (CDC) and reset (RES) checks
  — Added check timing design rule check
  — Added additional design closure design rule checks
  — Added STA signoff rule checks

- Enhanced Advanced Link Analyzer as follows:
  — Improved the linear pulse fitting and SNDR analysis engine to enable link/channel debugging and optimization.
  — Added PAM4 jitter (Jnu/Jrms/Jeo) analysis (Beta).
  — Added Package Designer which enables standards compliance link tests.
  — Added Pre-Simulation Checklist and Pre-Analysis Checklist to enable you to check and fine-tune simulation and analysis settings.

- Enhanced engineering change order (ECO) support as follows:
  — Added beta support for creating new LUT logic with the `create_new_node` and `place_node` commands.

    Details of the limitations of these commands will be provided in an update of the *Intel Quartus Prime Pro Edition User Guide: Design Optimization*.
  — Added `create_wirelut` command to insert a wire LUT on a path.
  — Enhanced `make_connection` command to support changing connections to and from HIPI registers.
  — Added `-tieoff` option to `make_connection` command to create a new atom for tieoff, if none are present.
  — Enhanced the `make_connection` and `remove_connection` commands to automatically change all RAM atoms in the same location.
  — Added ability to invoke ECO commands interactively from the Fitter Tcl console.

- Signal Probe support for Intel Stratix 10 is production-level now.

- Added new device status to indicate device support level. for details, see Changes in Device Support on page 8.

- Added three columns in Device Window to indicate timing model status, power model status, and devices status. Also, see Timing Model, Power Model, and Device Status on page 10.

Intel Quartus Prime Pro Edition Software Version 20.1 also includes bug fixes. Review Software Issues Resolved on page 13 and Software Patches Included in this Release on page 14 to see if this version contains fixes for or otherwise resolves any of your customer service requests.

1.2. Changes to Software Behavior

This section documents instances in which the behavior and default settings of the Intel Quartus Prime Pro Edition software have been changed from earlier releases of the Intel Quartus Prime Pro Edition software.

- Intel Quartus Prime Pro Edition software now requires processors with one of the following microarchitectures:
  - Intel Nethalem (2008) or later
  - AMD Bulldozer (2011) or later

  Processors must support SSE4.2 or later.

- The Intel Stratix 10 device family has been removed from the Convert Programming File (CPF) utility. Use the Programming File Generator (PFG) tool instead.

- The Early Place stage of the Fitter has been removed.

- Starting with the Intel Agilex™ device family, the EDA netlist writer does not support IBIS model generation. The EDA netlist writer continues to support IBIS model generation for earlier device families.

  You can download IBIS models for all device families from the following web page: IBIS Models for Intel Devices. This page is updated as IBIS models for devices become available.

- Intel FPGA IP cores are transitioning to a new version number scheme. Previously, IP core version numbers aligned with Intel Quartus Prime version numbers.

  Under the new scheme, IP core version numbers move to a three-part version numbering scheme (*X.Y.Z*) that is independent of Intel Quartus Prime version numbers. Changes in the parts of an IP core version number indicate different things and might require actions on your part:

  - *X*: A change in *X* indicates a major revision of the IP. You must regenerate the IP.

  - *Y*: A change in *Y* indicates that the IP includes new features, but retains backwards compatible behavior, ports, and parameters with all *X* level IP cores. Regenerate the IP to include these new features.

  - *Z*: A change in *Z* indicates that the IP includes bug fixes and minor improvements, but retains backwards compatible behavior, ports, and parameters with all *X* level IP cores. Regenerate the IP to include the fixes and improvements.

  In addition, new IP cores start their version numbering at 1.0.0. Existing IP cores adopt the new numbering scheme but increment the version number from their current version number.

  Review your IP core release notes to confirm the versioning scheme for your IP core.

  Refer to the Intel Quartus Prime Default Settings File (`.qdf`), `<Quartus Prime installation directory>/quartus/bin/assignment_defaults.qdf`, for a list of all the default assignment settings for the latest version of the Intel Quartus Prime software.

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1.3. Operating System Support

Information about operating system support for the Intel Quartus Prime Design Suite is available on the Operating System Support page of the Intel FPGA website.

Related Information

- Operating System Support
- Download Center for FPGAs

1.4. Memory Recommendations

A full installation of the Intel Quartus Prime Pro Edition software requires up to 75 GB of available disk space.

Intel recommends that your system be configured to provide virtual memory equal to the recommended physical RAM that is required to process your design.

Note: Peak virtual memory might exceed these recommendations. These recommendations are based on the amount of physical memory required to achieve runtime within 10% of that achieved on hardware with an infinite amount of RAM.

Table 1.   Memory Requirements for Processing Designs

These requirements are the same for both Windows and Linux installations.

Family	Device	Recommended Physical RAM
Intel Agilex	AGFA014-R0	64 GB
Intel Arria 10	10AT115, 10AX115	48 GB
	10AX090	44 GB
	10AS066, 10AX066	32 GB
	10AS057, 10AX057	30 GB
	10AS048, 10AX048	28 GB
	10AX032, 10AS032	24 GB
	10AX027, 10AS027	22 GB
	10AX022, 10AS022	20 GB
	10AX016, 10AS016	18 GB
Intel Cyclone® 10 GX	10CX85, 10CX105, 10CX150, 10CX220	18 GB
Intel Stratix 10	1SG280L, 1SX280L, 1SG280H, 1SX280H, 1SG280E 1SG250L, 1SX250L, 1SG250H, 1SX250H, 1ST250E 1SG210H, 1SX210H, 1SM21BH, 1SM21CH, 1SM21BE 1SM21CE, 1ST210E	64 GB
	1SG165H, 1SX165H, 1SM16BH, 1SM16CH, 1SM16BE, 1SM16CE, 1ST165E	48 GB
	1SG110H, 1SX110H 1SG085H, 1SX085H	32 GB

1.5. Device Support and Pin-Out Status

Table 2.   Final Device Support

Final compilation, simulation, timing analysis, and programming support is available for the devices listed in this table. These devices have finalized device models, bitstream, and firmware.

Device Family	Devices
Intel Arria 10	10AS016, 10AS022, 10AS027, 10AS032, 10AS048, 10AS057,10AS066, 10AT090, 10AT115, 10AX016, 10AX022, 10AX027, 10AX032, 10AX048, 10AX057, 10AX066, 10AX090, 10AX115
Intel Cyclone 10 GX	10CX085, 10CX105, 10CX150, 10CX220
Intel Stratix 10	1SD280P, 1SG085H, 1SG110H, 1SG165H, 1SG166H, 1SG210H, 1SG10MH, 1SG211H, 1SG250H, 1SG250L, 1SG280H, 1SG280L, 1SM16BE, 1SM16BH, 1SM16CH, 1SM21BE, 1SM21BH, 1SM21CH, 1ST040E, 1ST165E, 1ST085E, 1ST085E-AS, 1ST110E, 1ST110E-AS, 1ST210E, 1ST250E, 1ST280E, 1SX085H, 1SX110H, 1SX165H, 1SX210H, 1SX250H, 1SX250L, 1SX280H, 1SX280L

Table 3.   Preliminary Device Support

Full compilation, simulation, timing analysis, and programming support is available for the devices listed in this table.

Device Family	Devices
Intel Agilex	AGFA014-R0, AGFB014-R0
Intel Stratix 10	1SD110P, 1SD110P-S1, 1SD280P-S1, 1SG110H-S1, 1SG280H-S2, 1SG280H-S3, 1SG280L-S2, 1SG280L-S3, 1SM21BH-S1, 1SM21CH-S1, 1SX110H-S1, 1SX280H-S3, 1SX280L-S3

Table 4.   Advance Device Support

Compilation, simulation, and timing analysis support is provided for these devices. The compiler generates pinout information for these devices in this release, but does not generate programming files.

Device Family	Devices
Intel Stratix 10	1SD21BP, 1SG040H, 1SG065H, 1SX040H, 1SX065H

Table 5.   Initial Device Support

Compilation, simulation, and timing analysis support is provided for these devices. Programming files and pinout information are not generated for these devices in this release.

Device Family	Devices
Intel Agilex	AGFA014, AGFB014

1.5.1. Changes in Device Support

Starting with Intel Quartus Prime Version 20.1, a new device support level is introduced: **Preliminary** device support.

For devices with **Preliminary** device support, Intel Quartus Prime provides full compilation, simulation, timing analysis, and programming support but the device models, bitstreams, and firmware for the devices are not finalized.

Devices with **Final** device support (previously *Full*) have finalized device models, bitstreams, and firmware.

The definitions of **Initial** and **Advance** device support levels are unchanged.

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For information about known device issues and workarounds, see the Intel FPGA Knowledge Base.

1.6. Timing Model, Power Model, and Device Status

Only devices with a timing model, power model, and device status of **Final** are suitable for production systems.

Table 6. **Timing Model, Power Model, and Device Status**

Device Family	Device	Timing Model Status	Power Model Status	Device Status
Intel Agilex	AGFA014-R0, AGFB014-R0	Preliminary	Preliminary	Preliminary
Intel Arria 10	10AX016, 10AS016, 10AX022, 10AS022, 10AX027, 10AS027, 10AX032, 10AS032,	Final – 16.1 [1] [2]	Final – 17.0	Final – 17.0
	10AX048, 10AS048	Final – 16.0.2 [2]		
	10AX057, 10AS057, 10AX066, 10AS066, 10AX090	Final – 16.0.1 [2]	Final – 16.0.1	Final – 16.0.1
	10AX115, 10AT115	Final – 16.0 [2]	Final – 16.0	Final – 16.0
Intel Cyclone 10 GX	10CX085, 10CX105, 10CX150, 10CX220	Final – 17.0	Final – 18.0	Final – 18.0
Intel Stratix 10	1SG280L, 1SX280L, 1SG250L, 1SX250L	Final – 18.0.1	Final – 18.1.1	Final – 18.1.1
	1SG280H, 1SX280H, 1SG250H, 1SX250H, 1SG210H, 1SX210H, 1SG165H, 1SX165H, 1SG110H, 1SX110H, 1SG085H, 1SX085H	Final – 18.1.1	Final – 18.1.1	Final – 18.1.1
	1ST280E, 1ST250E	Final – 18.1.1	Final – 19.4	Final – 19.4
	1SM21BH, 1SM21CH, 1SM16BH, 1SM16CH	Final – 19.1	Final – 19.1	Final – 19.1
	1SG166H, 1SG211H	Final – 19.1	Final – 19.3	Final – 19.3
	1ST210E, 1SM21BE, 1ST165E, 1SM16BE	Final – 19.2	Final – 19.4	Final – 19.4
	1SD280P, 1ST040E, 1ST085E, 1ST110E	Final – 20.1	Final – 20.1	Final – 20.1
	1SD110P, 1SD21BP, 1SG040H, 1SG065H, 1SX040H, 1SX065H	Preliminary	Preliminary	Preliminary

Related Information

System Design with Advance FPGA Timing Models

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[1] Devices with a -1 speed grade were finalized in Intel Quartus Prime software version 17.0

[2] All military grade devices were finalized in Intel Quartus Prime software version 18.0.1.

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1.7. IBIS Models

Table 7.   IBIS Model Status for the Intel Quartus Prime Pro Edition Software Release Version 20.1

Device families have IBIS model statuses that are either Advance, Preliminary, or Final.

Device Family	IBIS Model Status
Intel Arria 10	Final – 16.1.2
Intel Cyclone 10 GX	Final – 17.0
Intel Stratix 10	Final – 18.1

Starting with the Intel Agilex device family, IBIS models are available only online at the following web page: IBIS Models for Intel Devices. This page is updated as IBIS models for devices become available.

1.8. EDA Interface Information

Table 8.   Synthesis Tools Supporting the Intel Quartus Prime Pro Edition Software Release Version 20.1

Synthesis Tools	Version
Mentor Graphics* Precision	Mentor Graphics* Precision versions that support the Intel Quartus Prime software are typically released after the release of the Intel Quartus Prime software. Contact Mentor Graphics for versions of Mentor Graphics Precision that support Intel Quartus Prime Pro Edition Software Release Version 20.1.
Synopsys* Synplify, Synplify Pro, and Synplify Premier	Synopsys Synplify, Synplify Pro, and Synplify Premier versions that support the Intel Quartus Prime software are typically released after the release of the Intel Quartus Prime software. Contact Synopsys for versions of Synopsys Synplify, Synplify Pro, and Synplify Premier that support Intel Quartus Prime Pro Edition Software Release Version 20.1.

Table 9.   Simulation Tools Supporting the Intel Quartus Prime Pro Edition Software Release Version 20.1

The following simulation tools support RTL and functional gate-level simulation.

Simulation Tools	Version
Aldec Active-HDL	10.5 (Windows 32-bit only)
Aldec Riviera-PRO	2019.10 (64-bit only)
Cadence Incisive Enterprise Simulator (IES)	15.20 (64-bit Linux only)
Cadence Xcelium Parallel Logic Simulation	19.09 (64-bit Linux only)
Mentor Graphics ModelSim* PE	2019.2 (Windows 32-bit only)
Mentor Graphics ModelSim SE	2019.2 (64-bit only)
Mentor Graphics ModelSim-Intel FPGA Edition	2020.1 (32-bit only)
Mentor Graphics Questa* Advanced Simulator	2019.2 (64-bit only)
Synopsys VCS and VCS MX	P-2019.06 (64-bit Linux only)

1.9. Antivirus Verification

The Intel Quartus Prime software release version 20.1 has been verified virus free with the following software:

Antivirus Verification Software

McAfee VirusScan Command Line for Linux64 Version: 6.1.3.242
AV Engine version: 6010.8670 for Linux64.
Dat set version: 9562 created Mar 16 2020

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1.10. Software Issues Resolved

The following customer service requests were fixed or otherwise resolved in Intel Quartus Prime Pro Edition Version 20.1:

Table 10.   Issues Resolved in the Intel Quartus Prime Pro Edition Version 20.1

Customer Service Request Numbers							
00278095	00279317	00284692	00342609	00390911	00391697	00392696	00400360
00401537	00402321	00404576	00411549	00412506	00421573	00421601	00424475
00425747	00427752	00428814	00429367	00430330	00434759	00435057	00436013
00437034	00437809	00438878	00442144	00442483	00443318	00444704	00445587
00446470	00447408	00448582	00449572	00450492	00450556	00451876	00451883
00452515	00452675	00452677	00454036	00456190	00456931	00456987	00457323
00457655	00458390	00459850	00459864	00461871	00461994	00462192	00462856
00463194	00463534	00463815	00465179	00465469	00465570	00465810	00465944
00466089	00467382	00468782	00469064	00469277	00470809	00470889	00471935
00472196	00472221	00472992	00473043	00473628	00475157	00475343	00475473
00476032	00476240	00476701	00476774	00476783	00476840	00477257	00477294
00477370	00477599	00477646	00477655	00477973	00479471	00481910	00482388
00482683	00483041	00483866	00485233	00487065	00489028	00489214	00489309
00489547	00489679	00489974	00490605	00490677	00490680	00490688	00491832
00492070	00495580	00498084	00499403	00499972	04358659	11319086	11358636
11366471	11383264	11384460	11387324	11403468	11410768		

1.11. Software Patches Included in this Release

Intel Quartus Prime Pro Edition Version 20.1 contains the following patches for previous versions of Intel Quartus Prime Pro Edition software:

Table 11.   Software Patches included in Intel Quartus Prime Pro Edition Version 20.1

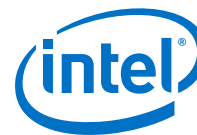| Software Version	Patch	Customer Service Request Number
Intel Quartus Prime software version 19.4	0.20	00499403
Intel Quartus Prime software version 19.4	0.18	–
Intel Quartus Prime software version 19.4	0.16	00476240
Intel Quartus Prime software version 19.4	0.15	–
Intel Quartus Prime software version 19.4	0.14	–
Intel Quartus Prime software version 19.4	0.13	–
Intel Quartus Prime software version 19.4	0.12fw	–
Intel Quartus Prime software version 19.4	0.11	00466636
Intel Quartus Prime software version 19.4	0.10	00465469
Intel Quartus Prime software version 19.4	0.08	00490680
Intel Quartus Prime software version 19.4	0.05	–
Intel Quartus Prime software version 19.4	0.04fw	–
Intel Quartus Prime software version 19.4	0.02	–
Intel Quartus Prime software version 19.4	0.01	00465570
Intel Quartus Prime software version 19.3	0.45fw	00487065
Intel Quartus Prime software version 19.3	0.43	–
Intel Quartus Prime software version 19.3	0.42	–
Intel Quartus Prime software version 19.3	0.41	–
Intel Quartus Prime software version 19.3	0.40fw	–
Intel Quartus Prime software version 19.3	0.39	–
Intel Quartus Prime software version 19.3	0.38	00485233
Intel Quartus Prime software version 19.3	0.36	00489679
Intel Quartus Prime software version 19.3	0.34	00490680
Intel Quartus Prime software version 19.3	0.33	–
Intel Quartus Prime software version 19.3	0.32	–
Intel Quartus Prime software version 19.3	0.29	–
Intel Quartus Prime software version 19.3	0.28	00477257
Intel Quartus Prime software version 19.3	0.27	00475157
Intel Quartus Prime software version 19.3	0.26	11358636
Intel Quartus Prime software version 19.3	0.23	–
Intel Quartus Prime software version 19.3	0.22	–

continued...

Software Version	Patch	Customer Service Request Number
Intel Quartus Prime software version 19.3	0.20	00475343
Intel Quartus Prime software version 19.3	0.19	00465810
Intel Quartus Prime software version 19.3	0.17	00465321
Intel Quartus Prime software version 19.3	0.16	–
Intel Quartus Prime software version 19.3	0.14	00463815
Intel Quartus Prime software version 19.3	0.13	–
Intel Quartus Prime software version 19.3	0.11	–
Intel Quartus Prime software version 19.3	0.09r	00469277
Intel Quartus Prime software version 19.3	0.08	–
Intel Quartus Prime software version 19.3	0.07	–
Intel Quartus Prime software version 19.3	0.02	00456931
Intel Quartus Prime software version 19.3	0.01	–
Intel Quartus Prime software version 19.2	0.16	–
Intel Quartus Prime software version 19.2	0.15	00465810
Intel Quartus Prime software version 19.2	0.14	–
Intel Quartus Prime software version 19.2	0.12	00433840
Intel Quartus Prime software version 19.1	0.45	00436013
Intel Quartus Prime software version 19.1	0.44	–
Intel Quartus Prime software version 19.1	0.43r	–
Intel Quartus Prime software version 19.1	0.43	–
Intel Quartus Prime software version 19.1	0.42	00465570
Intel Quartus Prime software version 19.1	0.41	–
Intel Quartus Prime software version 19.1	0.39	00459864
Intel Quartus Prime software version 19.1	0.37	00436358
Intel Quartus Prime software version 19.1	0.35	00450147
Intel Quartus Prime software version 19.1	0.34	00451876
Intel Quartus Prime software version 19.1	0.33	00459850
Intel Quartus Prime software version 18.1.1	1.24	00473667
Intel Quartus Prime software version 18.1.1	1.23	00433102
Intel Quartus Prime software version 18.1	0.41	–
Intel Quartus Prime software version 18.1	0.27	–
Intel Quartus Prime software version 18.0.1	1.59	00433102
Intel Quartus Prime software version 18.0.1	1.58	00451876
Intel Quartus Prime software version 18.0.1	1.57	00443318
Intel Quartus Prime software version 18.0	0.34	00433102

Software Version	Patch	Customer Service Request Number
Intel Quartus Prime software version 18.0	0.33	–
Intel Quartus Prime software version 17.1.2	2.22	00433102
Intel Quartus Prime software version 17.1.1	1.42	00433102
Intel Quartus Prime software version 17.0.2	2.08	00433102
Intel Quartus Prime software version 17.0	0.19	–

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1.12. Latest Known Intel Quartus Prime Software Issues

Information about known issues that affect the Intel Quartus Prime software version 20.1 is available in the Intel Programmable Solutions Knowledge Base.

Table 12. Important Known Issues Affecting Intel Quartus Prime Pro Edition Version 20.1

Description	Workaround
(Linux only) After installing the Nios® II Embedded Design Suite in a multi-user environment, you might not be able to launch Nios II Software Build Tools (SBT) for Eclipse.	For details and workarounds, see the following article in the Intel Programmable Solutions Knowledge Base: Why can I not run Nios II Software Build Tools (SBT) for Eclipse in Intel Quartus Prime Pro Edition Version 20.1?
If your LC_ALL environment variable does not match the locale settings (such as LANG), a Perl warning might be generated during IP generation: `perl: warning: Setting locale failed.` This warning also results in IP generation failure.	Ensure that your operating system locale is set up correctly. In particular, the locale specified with the LC_ALL environment variable must match the locale settings (such as LANG).
For Intel Agilex devices, the Intel Agilex 1.5V True Differential Signaling I/O standard is not supported in Intel Quartus Prime Pro Edition Version 20.1	Change the I/O standard from 1.5V True Differential Signaling to True Differential Signaling in your Quartus Settings File (`*.qsf`) when migrating your design to Intel Quartus Prime Pro Edition Version 20.1
For Intel Stratix 10 devices, Intel Quartus Prime reports an error message if there is an invalid pin placement of the HPS EMIF IP PLL reference clock and RZQ pin.	For details, see the following article in the Intel Programmable Solutions Knowledge Base: Are there any placement restrictions for the Intel Stratix 10 HPS EMIF IP PLL reference clock and RZQ pin?
For Intel Stratix 10 devices, compiling existing Intel Quartus Prime projects with Intel Quartus Prime Version 20.1 might result in the following error message: `Error (20834) When you enable the CvP setting, you must make sure design is CvP capable.`	If you do not intend to perform CvP, remove the following QSF setting: `set_global_assignment -name CVP_MODE "CORE INITIALIZATION AND UPDATE"`
Logic Analyzer Interface (LAI) is not supported.	N/A
The Intel Quartus Prime Pro Edition software might fail to program the 1ST085E-AS or 1ST110E-AS security feature-enabled devices via the AVSTx8 configuration mode.	Do not program the 1ST085E-AS or 1ST110E-AS security feature-enabled devices via the AVSTx8 configuration mode.

You can find known issue information for previous versions of the Quartus Prime software on the Knowledge Base webpage.

Information about known software issues that affect previous versions of the Quartus II software is available on the Intel Quartus Prime and Quartus II Software Support webpage.

Information about issues affecting the Intel FPGA IP Library is available in the *Intel FPGA IP Release Notes*.

Related Information

- Intel FPGA Knowledge Base
- Intel Quartus Prime and Quartus II Software Support
- Intel FPGA IP Release Notes

1.13. Intel Quartus Prime Pro Edition Version 20.1 Software and Device Support Release Notes Archives

Intel Quartus Prime Pro Edition	Publication
19.4	Intel Quartus Prime Pro Edition Version 19.4 Software and Device Support Release Notes
19.3	Intel Quartus Prime Pro Edition Version 19.3 Software and Device Support Release Notes
19.2	Intel Quartus Prime Pro Edition Version 19.2 Software and Device Support Release Notes
19.1	Intel Quartus Prime Pro Edition Version 19.1 Software and Device Support Release Notes
18.1	Intel Quartus Prime Pro Edition Version 18.1 Software and Device Support Release Notes
18.0	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes
17.1	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes
17.0	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes

1.14. Document Revision History

Table 13.   The Intel Quartus Prime Pro Edition Software Release Version 20.1 Document Revision History

Document Version	Intel Quartus Prime Version	Changes
2020.04.13	20.1	• Initial release.

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