Quartus Prime Standard Edition Software and Device Support Release Notes Version 15.1

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This document provides late-breaking information about the Altera® Quartus® Prime Standard Edition software release version 15.1.

The Quartus II software is now the Quartus Prime software. The Quartus Prime software is available in three editions based on your design requirements: Pro, Standard, and Lite Edition.

- Quartus Prime Pro Edition—The Quartus Prime Pro Edition software is optimized to support the advanced features in Altera's next-generation FPGAs and SoCs, starting with the Arria® 10 device family.

  Use the Quartus Prime Pro Edition software if you are starting a new Arria 10 design or if your Arria 10 design requires features that are only available in the Quartus Prime Pro Edition software.

  The Quartus Prime Pro Edition software is free with an active Quartus Prime Standard Edition software license during beta release. Please contact your Altera sales representative for more details.

  For more information, refer to the *Quartus Prime Pro Edition Software and Device Support Release Notes Version 15.1*.

- Quartus Prime Standard Edition—The Quartus Prime Standard Edition software includes the most extensive support for Altera's latest device families and requires a subscription license.

  Use the Quartus Prime Standard Edition software for the following types of designs:

  - Designs that target non-Arria 10 devices.
  - Existing Arria 10 designs that you have created using the Subscription Edition of the Quartus II software.
  - Active Arria 10 designs that will go to production in the next 6 months

- Quartus Prime Lite Edition–The Quartus Prime Lite Edition provides an ideal entry point to Altera's high-volume device families and is available as a free download with no license required.

For information about operating system support, refer to the **readme.txt** file in your **altera/<*version number*> /quartus directory**.

Related Information

Quartus Prime Pro Edition Software and Device Support Release Notes Version 15.1

New Features and Enhancements

The Quartus Prime Standard Edition software release version 15.1 includes the following new features and enhancements:

ISO 9001:2008 Registered

- Programming support for Arria 10 10AX115 ES3 devices.
- Programming support for all MAX® 10 devices.
- Finalized power models for all MAX 10 devices.
- A Spectra-Q™ Hybrid Placer with advanced placement and routing algorithms for more predictable timing closure.
- Significant performance (Fmax) improvement for default compilations of Arria 10 designs.
- A Spectra-Q Physical Synthesis feature for improved Fmax on designs that require high synthesis effort.
- Lower peak virtual memory requirements for Arria 10 designs.
- A multi-corner timing visualization feature in the TimeQuest Timing Analyzer.
- A logic depth report for early design analysis.
- A Periphery to Core Placement and Routing Optimization feature.
- Functional safety support for MAX 10 devices.

Operating System Support

Information about OS support for the Quartus Prime Design Suite® is available on the Operating System Support page of the Altera website.

Related Information
Operating System Support

Memory Recommendations

A full installation of the Quartus Prime software requires up to 24 GB of available disk space.

Altera 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 may 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
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

Family	Device	Recommended Physical RAM
Arria V	5AGXB5, 5AGTD7, 5AGXB7, 5ASXB5, 5ASTD5	16 GB
	5AGXB1, 5AGXB3, 5AGTD3, 5ASTD3, 5ASXB3	12 GB
	5AGXA7, 5AGTC7	10 GB
	5AGTC3, 5AGXA3, 5AGXA5	8 GB
	5AGXA1	6 GB
Arria V GZ	5AGZE7	16 GB
	5AGZE3, 5AGZE5	12 GB
	5AGZE1	8 GB
Arria II GX	EP2AGX260	6 GB
	EP2AGX95, EP2AGX125, EP2AGX190	4 GB
	EP2AGX65	2 GB
	EP2AGX45	1.5 GB
Arria II GZ	EP2AGZ350	8 GB
	EP2AGZ300	6 GB
	EP2AGZ225	4 GB
Cyclone V	5CEA9, 5CGTD9, 5CGXC9	8 GB
	5CEA2, 5CGXC3, 5CEA4, 5CGXC4, 5CEA5, 5CGTD5, 5CGXC5, 5CSEA5, 5CSTD5, 5CSXC5, 5CSEA6, 5CSXC6, 5CEA7, 5CGTD7, 5CGXC7, 5CSEA2, 5CSEA4, 5CSXC2, 5CSXC4, 5CSTD6	6 GB
Cyclone IV E	EP4CE115	1.5 GB
	EP4CE55, EP4CE75	1 GB
	EP4CE6, EP4CE10, EP4CE15, EP4CE22, EP4CE30, EP4CE40	512 MB
Cyclone IV GX	EP4CGX110, EP4CGX150	2 GB
	EP4CGX50, EP4CGX75	1.5 GB
	EP4CGX15, EP4CGX22, EP4CGX30	512 MB
MAX 10	10M50	2 GB
	10M16	2 GB
	10M25	2 GB
	10M40	2 GB
	10M04, 10M08	1 GB
	10M02	512 MB

Family	Device	Recommended Physical RAM
MAX V	All	512 MB
MAX II	All	512 MB
Stratix V	5SEEB, 5SGXAB, 5SGXB9, 5SGXBB	28 GB
	5SGXA9, 5SEE9	24 GB
	5SGTC7, 5SGXA7, 5SGSD8	20 GB
	5SGSD5, 5SGXA5, 5SGXB5, 5SGSD6, 5SGXB6	16 GB
	5SGXA3, 5SGSD4, 5SGXA4, 5SGTC5	12 GB
	5SGSD3	8 GB
Stratix IV	EP4SGX530, EP4SE530, EP4SE820, EP4S40G5, EP4S100G5	12 GB
	EP4SE360 EP4SGX360, EP4S100G3, EP4S100G4	8 GB
	EP4SGX290	6 GB
	EP4SE230 EP4SGX110, EP4SGX230, EP4S40G2, EP4S100G2	4 GB
	EP4SGX70	2 GB

Changes in Device Support

Table 2: Device Support Fixed

Description	Workaround
EyeQ does not run without PRBS checker in Arria 10 designs The EyeQ **Start** button is grayed out when attempting to test a transceiver channel. This issue occurs when testing a transceiver channel without first associating either a hard or soft PRBS checker to that channel.	This issue is fixed in Quartus Prime software version 15.1
Miscorrelation in Arria V and Arria V SoC core-to-periphery timing models There is a timing model miscorrelation in a subset of core-to-periphery data paths in the final timing models of Arria V devices and Arria V SoCs. This issue might lead to incorrect FPGA output for designs that have low setup slack on the impacted paths.	The final timing models for these devices are updated in the Quartus II software version 15.0 Update 2. These updated final timing models are included in the Quartus Prime Standard Edition software 15.1. For more information, refer to the **Altera Knowledge Base**.

Table 3: Device Support Removed

These device families are no longer supported by the Quartus Prime software.

Device Family Removed	Support Removed in...	Last Supported in...
Cyclone III	14.0	13.1
Stratix III		

Related Information

Altera Knowledge Base

For more information about known device issues and workarounds.

Changes to Software Behavior

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

Refer to the 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 Quartus Prime software.

The default setting for synchronizer identification in the TimeQuest Timing Analyzer has changed

- For metastability analysis, the default setting for synchronizer identification (SYNCHRON-IZER_IDENTIFICATION) has changed from OFF to AUTO.
- During static timing analysis, the TimeQuest Timing Analyzer automatically treats the project-wide synchronizer identification OFF setting as AUTO. You may apply the OFF setting to individual instances.
- TimeQuest Timing Analyzer's automatic synchronizer detection feature might report clock-crossing transfers between related clocks as synchronizers. To suppress the reporting of these clock-crossing transfers, set SYNCHRONIZER_IDENTIFICATION to OFF for the associated registers.

Note: The TimeQuest Timing Analyzer lists all the auto-detected synchronizers in the metastability report. However, the report only shows the calculated mean time between failures (MTBF) values for synchronizers that you specify using the FORCED or FORCED IF ASYNCHRONOUS setting. Otherwise, the MTBF values appear as Not Calculated.

Related Information

Migrating to Quartus Prime Pro Edition

For more information on how to migrate your design to Quartus Prime Pro Edition software.

Device Support and Pin-Out Status

The Arria 10 ordering part number (OPN) list has been updated for the Quartus Prime software version 15.1.

Table 4: Full Device Support

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

Device Family	Devices
MAX 10	10M02, 10M04, 10M08, 10M16, 10M25, 10M40, 10M50
Arria 10	10AS066ES, 10AX066ES, 10AX115ES, 10AX115E2, 10AT115E2, 10AX115E3

Table 5: 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
Arria 10	10AX016, 10AS016, 10AX022, 10AS022, 10AX027, 10AS027, 10AX032, 10AS032, 10AX048, 10AS048, 10AX057, 10AS057, 10AX066, 10AS066, 10AX090, 10AX115, 10AT115

Timing and Power Models

Table 6: Timing and Power Model Status

Device Family	Device	Timing Model Status	Power Model Status
Arria 10	10AX016, 10AS016, 10AX022, 10AS022, 10AX027, 10AS027, 10AX032, 10AS032,10AX048, 10AS048, 10AX057, 10AS057, 10AX066, 10AS066, 10AX090, 10AX115, 10AT115	Preliminary	Preliminary
Arria V	5AGXB5, 5AGXB7	Final – 12.1 SP1[1]	Final – 13.1
	5AGTD7		Final – 14.0
	5AGXA1, 5AGXA3, 5AGTC3	Final – 13.0 SP1 [1]	Final – 14.0
	5AGXA5, 5AGXA7	Final – 13.1 [1]	Final – 14.0
	5AGXB1, 5AGXB3, 5AGTD3	Final – 13.0 [1]	Final – 13.1
	5AGTC7	Final – 13.1 [1]	Final – 13.1
Arria V GZ	All	Final – 12.1 SP1 [2]	Final – 13.0

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[1] The timing model was updated in the Quartus Prime software version 15.1.

[2] The timing model was updated in the Quartus II software version 13.1.

Device Family	Device	Timing Model Status	Power Model Status
Arria V SoC	5ASXB3, 5ASXB5, 5ASTD3, 5ASTD5	Final – 14.0 [1]	Final – 14.0
Cyclone V	5CEA2, 5CEA4, 5CEA7, 5CEA9, 5CGXC7, 5CGXC9, 5CGTD7, 5CGTD9	Final – 13.0 SP1	Final – 13.1
	5CEA5, 5CGXC4, 5CGXC5	Final – 13.1	Final – 13.1
	5CGXC3		Final – 14.0
Cyclone V SoC	5CSEA2, 5CSEA4, 5CSXC2, 5CSXC4	Final – 14.0	Final – 14.1
	5CSEA5, 5CSEA6, 5CSXC5, 5CSXC6, 5CSTD5, 5CSTD6		Final – 14.0
Stratix V	5SGXA7, 5SGXA5, 5SGTC5, 5SGTC7	Final – 12.1 [2]	Final – 13.0
	5SGSD3, 5SGSD4, 5SGSD5, 5SGXA3, 5SGXA4, 5SGXB5, 5SGXB6, 5SGXAB, 5SGXA9, 5SEE9, 5SEEB, 5SGXB9, 5SGXBB	Final – 12.1 SP1 [2]	Final – 13.0
	5SGSD6, 5SGSD8	Final – 13.0 SP1 [2]	Final – 13.0
MAX 10	10M02, 10M04, 10M08	Final – 15.1 [3]	Final – 15.1
	10M16, 10M25, 10M40, 10M50	Preliminary	Final – 15.1

The current version of the Quartus Prime software also includes final timing and power models for the Arria II GX, Arria II GZ, Cyclone IV E, Cyclone IV GX, MAX II, MAX II Z, MAX V, and Stratix IV device families. Timing models for these device families became final in the Quartus Prime software versions 11.1 or earlier.

Related Information
System Design with Advance FPGA Timing Models

[3] Timing model statuses for MAX 10 A6 speed grade parts remain as Preliminary.

IBIS Models

Table 7: IBIS Model Status for the Quartus Prime Standard Edition Software Release Version 15.1

Device Family	IBIS Model Status
Arria 10	Preliminary - 15.1
Arria V	Correlated with PHY device operation – 14.0
Arria II GX	Correlated with PHY device operation – 11.1
Arria II GZ	Correlated with PHY device operation – 11.1
Cyclone® V	Correlated with PHY device operation – 14.0
Cyclone IV E	Correlated with PHY device operation – 11.1
Cyclone IV GX	Correlated with PHY device operation – 11.1
MAX 10	Preliminary - 15.1
MAX V	Correlated with PHY device operation – 11.1
Stratix® V	Correlated with PHY device operation – 13.0 SP1
Stratix IV	Correlated with PHY device operation – 11.1

EDA Interface Information

Table 8: Synthesis Tools Supporting the Quartus Prime Standard Edition Software Release Version 15.1

Synthesis Tools[4]	Version	NativeLink Support
Mentor Graphics® Precision	2015a	Yes
Synopsys® Synplify, Synplify Pro, and Synplify Premier	2015.09	Yes

Table 9: Simulation Tools Supporting the Quartus Prime Standard Edition Software Release Version 15.1

Simulation Tools	Version	NativeLink Support
Aldec Active-HDL	10.2 Update 2	Yes
Aldec Riviera-PRO	2015.06	Yes
Cadence Incisive Enterprise Simulator (IES)	14.2 (Linux only)	Yes
Mentor Graphics® ModelSim® PE	10.4b	Yes

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[4] EDA Synthesis tools that support the Quartus Prime software version 15.1 will be released by vendors shortly after the release of the Quartus Prime software. Contact your vendor account manager for details.

Simulation Tools	Version	NativeLink Support
Mentor Graphics ModelSim SE	10.4b	Yes
Mentor Graphics ModelSim-Altera	10.4b	Yes
Mentor Graphics Questa®	10.4b	Yes
Synopsys VCS and VCS MX	2014.12-SP1 (Linux only)	Yes

OS support for Mentor Graphics ModelSim-Altera version 10.4b (requires 32-bit libraries)

- Windows 7 SP1 (64-bit)
- Windows 8.0 (64-bit)
- Windows Server 2008 R2 SP1(64-bit)
- Red Hat Enterprise Linux 5.10 (64-bit)
- Red Hat Enterprise Linux 6.5 (64-bit)

Table 10: Formal Verification (Equivalence Checking) Tools Supporting the Stratix IV Devices with the Quartus Prime Software Release Version 15.1

Formal Verification Tools	Version	NativeLink Support
Cadence Encounter Conformal	8.1	—

Antivirus Verification

The Quartus Prime software release version 15.1 has been verified virus free using the following software:

Antivirus Verification Software for Windows

McAfee VirusScan Enterprise + AntiSpyware Enterprise Version: 8.8.0 (8.8.0.1445)
Scan Engine Version (32 bit): 5700.7163
Scan Engine Version (64 bit): 5700.7163
DAT Version: 7947.0000

Antivirus Verification Software for Linux

McAfee VirusScan Enterprise for Linux Version 1.9.1
Engine Version: 5700.7163
DAT Version: 7720

Software Issues Resolved

Table 11: Issues Resolved in the Quartus Prime Standard Edition Software Release Version 15.1

Customer Service Request Numbers							
10862080	11105385	11124637	11135089	11141171	11149570	11158022	11167635

Customer Service Request Numbers							
10878547	11105672	11124841	11135198	11141384	11149808	11158125	11167669
10883440	11105681	11125071	11135269	11141542	11149859	11158257	11167674
10883471	11106598	11125138	11135356	11141566	11150513	11158331	11167845
10885212	11106990	11125208	11135421	11141640	11150802	11158477	11167958
10885947	11107946	11125418	11135508	11141803	11151190	11158563	11168191
10885950	11108600	11125584	11135569	11141824	11151277	11158594	11168230
10892091	11108775	11125705	11135681	11141829	11151357	11158731	11168303
10920072	11110396	11125750	11135906	11142103	11151530	11158739	11168337
10920118	11111315	11125846	11135983	11142141	11151599	11159235	11168511
10933585	11111747	11126348	11136172	11142282	11151698	11159310	11168561
10946818	11113233	11126415	11136214	11142294	11151733	11159314	11168694
10977147	11113514	11126511	11136218	11142557	11151763	11159748	11168813
10996907	11113839	11126694	11136286	11142806	11151931	11159858	11169085
11015296	11113999	11126832	11136345	11142837	11152192	11159916	11169254
11021149	11114516	11127019	11136360	11142903	11152421	11159919	11169431
11023713	11114547	11127052	11136423	11142934	11152673	11159976	11169573
11030147	11115223	11127082	11136479	11143004	11152682	11159999	11169809
11044704	11115451	11127490	11136530	11143135	11152787	11160111	11169879
11046299	11115475	11127610	11136539	11143326	11152798	11160283	11169916
11057603	11115499	11127797	11136564	11143574	11152809	11160443	11170090
11057839	11115600	11128425	11136692	11143640	11152855	11160929	11170151
11057967	11115674	11128517	11136832	11143725	11153125	11160936	11170246
11058599	11115746	11128551	11136847	11143873	11153141	11161137	11170399
11068759	11115783	11128780	11136969	11144038	11153238	11161179	11170793
11071020	11115928	11128950	11137286	11144047	11153355	11161341	11170831
11071496	11115936	11129023	11137618	11144279	11153494	11161582	11171012
11071916	11116050	11129385	11137625	11144337	11153662	11161584	11171353
11082793	11116130	11129478	11137653	11144364	11153686	11161710	11171421
11084149	11116174	11129481	11137814	11144551	11153821	11161858	11171469
11084647	11116975	11129791	11138086	11144648	11154132	11161870	11171851
11085158	11117121	11129817	11138093	11145016	11154307	11161897	11172256

Customer Service Request Numbers							
11086602	11117435	11129958	11138116	11145035	11154542	11162036	11172593
11087448	11118052	11130129	11138227	11145182	11154639	11162353	11172960
11087744	11118216	11130272	11138545	11145188	11154644	11162503	11173137
11087992	11118538	11130386	11138575	11145370	11154919	11162570	11173566
11088076	11118624	11130835	11138576	11145784	11155113	11163002	11173597
11089708	11118641	11130910	11138577	11145887	11155259	11163045	11174387
11090915	11118658	11130992	11138709	11145900	11155291	11163053	11174397
11091272	11118670	11131017	11138760	11146014	11155618	11163193	11175494
11093686	11118908	11131058	11138974	11146015	11155900	11163288	11176200
11094319	11119184	11131059	11139004	11146123	11156078	11163312	11176286
11094819	11119240	11131108	11139175	11146127	11156258	11163664	11176422
11095168	11119333	11131110	11139327	11146310	11156321	11163861	11176494
11095169	11120342	11131127	11139374	11146423	11156358	11164367	11176576
11095566	11120371	11131362	11139581	11146438	11156362	11164523	11177070
11096157	11120792	11131839	11139609	11146970	11156368	11164697	11177119
11096378	11120804	11132093	11139704	11147210	11156443	11164742	11177497
11096612	11120875	11132213	11139734	11147213	11156463	11164760	11178192
11097314	11121042	11132788	11139737	11147391	11156497	11165067	11178281
11097659	11121135	11133130	11139792	11147400	11156524	11165132	11178413
11097976	11121420	11133278	11139992	11147497	11156587	11165426	11178465
11098079	11121645	11133289	11139999	11147643	11156785	11165444	11179230
11098867	11121865	11133328	11140079	11147780	11156830	11165809	11179311
11100557	11122024	11133424	11140106	11147843	11156860	11165884	11179854
11100650	11122473	11133621	11140251	11148117	11157014	11166164	11179909
11101271	11122479	11134095	11140253	11148669	11157256	11166270	11180617
11102178	11122641	11134111	11140690	11148688	11157325	11166756	11181937
11103129	11122803	11134235	11140709	11148791	11157380	11166886	11182817
11103231	11122852	11134417	11140848	11148938	11157541	11167185	11183047
11103510	11123240	11134578	11140861	11149113	11157800	11167251	11184312
11104420	11124197	11134787	11140869	11149173	11157804	11167508	
11105329	11124588	11134852	11141025	11149510	11157891	11167634	

Software Patches Included in this Release

Table 12: Software Patches included in the Quartus Prime Standard Edition Software Release Version 15.1

Software Version	Patch	Customer Service Request Number
Quartus II software version 15.0.2	2.14	11171353 11168230 11167508
Quartus II software version 15.0.2	2.11	11156078 11156443
Quartus II software version 15.0.2	2.09	11161179
Quartus II software version 15.0.2	2.07	—
Quartus II software version 15.0.2	2.05	11145763
Quartus II software version 15.0.2	2.01	—
Quartus II software version 15.0.1	1.10	11156078 11156443
Quartus II software version 15.0.1	1.09	11151733
Quartus II software version 15.0.1	1.08	11161582
Quartus II software version 15.0.1	1.07	11156524
Quartus II software version 15.0.1	1.04	—
Quartus II software version 15.0.1	1.03	11030147
Quartus II software version 15.0	0.31	11156443
Quartus II software version 15.0	0.30	10920118
Quartus II software version 15.0	0.29	11143860
Quartus II software version 15.0	0.28	11115451 11155272
Quartus II software version 15.0	0.25	11143326
Quartus II software version 15.0	0.21	11111315
Quartus II software version 15.0	0.19	11140897
Quartus II software version 15.0	0.14	—
Quartus II software version 15.0	0.13	11147740
Quartus II software version 15.0	0.12	11097659
Quartus II software version 15.0	0.11	—
Quartus II software version 15.0	0.04b	11134111

Software Version	Patch	Customer Service Request Number
Quartus II software version 15.0	0.01we	—
Quartus II software version 14.1a10s	0.09sa	11130129 11139609
Quartus II software version 14.1.1	1.20	—
Quartus II software version 14.1.1	1.19	11163776
Quartus II software version 14.1.1	1.18	—
Quartus II software version 14.1.1	1.14	11132788
Quartus II software version 14.1.1	1.11	11133424
Quartus II software version 14.1.1	1.05	11118658
Quartus II software version 14.1	0.38	—
Quartus II software version 14.1	0.35	11143135
Quartus II software version 14.1	0.33	—
Quartus II software version 14.1	0.19	11115928
Quartus II software version 14.0.2	2.18	—
Quartus II software version 14.0	0.34	11124197
Quartus II software version 13.1.4	4.64	—
Quartus II software version 13.1.4	4.57	11115746
Quartus II software version 13.1.1	1.18	11150513
Quartus II software version 13.1	0.118	11135508
Quartus II software version 13.0sp1	1.dp6c	—
Quartus II software version 13.0sp1	1.84	11164742

Known Issues and Workarounds

This section provides information about the following known issues that affect the Quartus Prime Standard Edition software version 15.1.

Description	Workaround
For DSP Builder, floating-point designs targeting Arria 10 devices cause an internal error to occur in Mentor Graphics ModelSim Altera Edition version 10.4b.	Simulate your design using ModelSim Altera Edition version 10.3d or ModelSim SE version 10.4b.

Description	Workaround

When you regenerate the Altera I/O Phase-Locked Loop (Altera IOPLL) IP core in the Quartus Prime software, the name of a PLL in the netlist might change. As a result, the Quartus Prime software might ignore any Quartus Settings File (QSF) assignments or Synopsys Design Constraint (SDC) constraints containing the modified PLL name.
 	
For example, the name of the PLL might change from
 	
`u0|iopll_0|altera_pll_i|`
`general[0].gpll~IOPLL`
 	
to
 	
`u0|iopll_0|altera_pll_i|twentynm_`
`pll|iopll_inst`
	If your design contains any QSF assignments or SDC constraints that target I/O PLL nodes, check the names of the PLLs and make any necessary updates.
	
	In the Altera IOPLL IP parameter editor, ensure that you fill in the **Clock Name** field for the output clock. The PLL name change issue does not affect the SDC clock names produced by `derive_pll_clocks` as long as the **Clock Name** field is not blank.
	
	Altera recommends checking the clock names to make sure they remain consistent when you migrate your design to the Quartus Prime software version 15.1.

Timing violations might occur when you enable the Periphery to Core Placement and Routing Optimization feature for Arria 10 ES devices.	This issue will be fixed in a future release of the Quartus Prime Standard Edition software.

Latest Known Quartus Prime Software Issues

Information about known software issues is available on the Quartus Prime Software Support webpage.

You can find known issue information for previous versions of the Quartus II software on the Altera Knowledge Database webpage.

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

Related Information

- **Quartus Prime Software Support**
- **Altera Knowledge Database**
- **Altera IP Release Notes**

Document Revision History

Table 13: Quartus Prime Software Release Version 15.1 Document Revision History

Date	Version	Changes
November 2015	15.1.0	Initial release.