Kaby Lake System Agent Initialization Code Version 3.7.6.0

September 2019

Revision 3.7.6.0

Intel Restricted Secret

1 Introduction

- Product: Kaby Lake System Agent Initialization Code
- Developed by: Intel Corporation
- Software version released date: <September, 2019>

Note: This document is cumulative and includes information on previous versions. The version information is presented with the newest release first and then regressing through earlier versions.

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Note: This sample code is to be used in accordance with the DCL document that came with the samples. Refer to the DCL for intended purpose of the sample and recommendations for testing that should not be performed with these samples.

Note: **Visual Studio 2013 Update 5 patch is needed**.
Update with release information can be obtained at following link:
https://support.microsoft.com/en-in/help/3021976/description-of-visual-studio-2013-update-5.

1.1 Purpose of System Agent Initialization Code

This is sample Initialization Code for memory detection and initialization of Kaby Lake System Agent devices. It supports detection and initialization of System Agent devices and complies with the requirements in the BIOS specification.

The System Agent Initialization Code is intended for use as part of Intel BIOS. An OEM may need to modify the code to meet specific platform designs, error handling features, platform specific BIOS features, or other local requirements.

1.2 Target Customers

The System Agent Initialization Code is intended for use as part of Intel BIOS. The code is compatible with both mobile and desktop products.

1.3   Version Release History

Version	Description	Release Date
0.5.0	Initial external release	December 3, 2015
0.6.0	Kabylake Alpha Update	January 8, 2016
0.6.1	Kabylake Alpha Update	January 29, 2016
0.7.0	Kabylake Beta Update	February 26, 2016
0.7.1	Kabylake Beta Update	March 11, 2016
0.7.2	Kabylake Beta Update	March 25, 2016
0.7.3	Kabylake Beta Update	April 8, 2016
0.8.0	Kabylake Beta Update	April 22, 2016
0.8.1	Kabylake Beta Update	May 6, 2016
0.9.0	Kabylake Beta Update	May 20, 2016
0.9.1	Kabylake Beta Update	June 8, 2016
1.0.0	• U/Y HR'16 RS1 • U23e Alpha • SR'17 S/H/Y/U Beta	June 10, 2016
1.0.1	• U/Y HR'16 RS1 • U23e Alpha RS1 • SR'17 S/H/Y/U Beta	June 17, 2016
1.0.2	• SR'17 U/Y/S/H Beta	July 8, 2016
1.0.3.0	• SR'17 S/H/Y/U Beta Consumer / Corporate* Update	July 22, 2016
1.0.4.0	• SR'17 S/H/Y/U Beta Consumer / Corporate* Update	Aug 12, 2016
1.0.5.0	• SR'17 S/H/Y/U Beta Consumer / Corporate* Update	Sep 2, 2016
1.1.0.0	• PV U/Y HR'16 RS1 • Update SR'17 S/H/Y/U • Update U23e RS1	Sep 23, 2016
1.2.0.0	PV SR'17 S42 – consumer PCV SR'17 Y/U Update PCV SR'17 H/U32e/ all Corp SKUs	Oct, 7, 2016
1.3.0.0	PV SR'17 H – consumer PC/PV* SR'17 S42/H/ and Y/U22 – Corporate* Beta SR'17 S22 with RS1	Oct,22,2016
1.4.0.0	Update for PR3 Update U/Y HR'16 RS1 Update U23e RS1 Update SR'17 S/H/Y/U	November,4,2016
1.4.1.0	Update for all Kabylake platforms	November,18,2016
1.5.0.0	PV SKL on KBL Platforms with Win7/Win8.1 Post SR'17 update – PR2	December,2,2016

	Update to U23e	
1.6.0.0	PV U32e (both Consumer and Corporate) PR2 (both Consumer and Corporate)	January 24, 2017
1.7.0.0	Pre-ES KBL-R Post SR'17 update	February 10, 2017
1.8.0.0	KBL-R Beta Post SR'17 update	February 23, 2017
1.9.0.0	KBL-R Beta Post SR'17 update	March 09, 2017
2.0.0.0	KBL-R Beta Post SR'17 update	March 24, 2017
2.1.0.0	KBL-R Beta Post SR'17 update	April 7, 2017
2.2.0.0	KBL-R Beta Post SR'17 update	April 25, 2017
2.3.0.0	Added Coffee Lake-S support	May 19, 2017
2.2.1.0	KBL-R PV	May 26, 2017
2.4.0.0	KBL-R PC/PV RS2 PC/PV CFL-S with Kaby Point PCH Beta	June 2, 2017
2.5.0.0	**KBL-R PC/PV** **RS2 PC/PV** Aligning with KBL-R PR1 BKC Release.	June 23, 2017
2.5.1.0	**KBL/PV** **KLB-R/ PV** **CFL-S with Kaby Point PCH Beta** Aligning with KBL/KBL-R RS2 corporate PV BKC Release.	July 7, 2017
2.6.0.0	**KBL/PV** **KBL-R/ PV** **CFL-S with Kaby Point PCH Beta** Aligning with CFL-S with Kaby Point PCH BKC release	July 21, 2017
2.6.1.0	**KBL/PV** **KBL-R/ PV** **CFL-S with Kaby Point PCH Beta** Aligning with CFL-S with Kaby Point PCH WW31 BKC release	Aug 4, 2017
2.6.2.0	**CFL-S with Kaby Point PCH Consumer PV RS2** **KBL/PV** **KBL-R/ PV** Aligning with CFL-S62/S42 + KBP-H PCH Consumer PV BKC release WW32 RS2	August 08, 2017
2.7.0.0	**KBL/KBL-R RS3 WW33 BKC** Aligning with KBL/KBL-R BKC release WW33 RS3	August 18, 2017

2.7.2.0	**KBL/KBL-R RS3 WW36 BKC RS3** **CFL-S with Kaby Point PCH PR1 RS2** Aligning with KBL/KBL-R BKC WW36 RS3 & CFL S 62 /CFL S 42 + KBP-H PCH PR1 RS2	September 8, 2017
2.8.0.0	**KBL/KBL-R RS3 WW39 BKC RS3** **Aligning with KBL/KBL-R BKC WW39 RS3**	September 29, 2017
2.8.1.0	**KBL/KBL-R RS3 WW41 BKC** Aligning with KBL/KBL-R BKC WW41 RS3	October 11, 2017
2.9.0.0	**KBL/KBL-R RS3 WW44 BKC** Aligning with KBL/KBL-R BKC WW44 RS3	October 31, 2017
2.9.2.0	**CFL-S with Kaby Point PCH** Aligning with CFL-S62/S42 + KBP-H BKC WW47 RS3	November 24, 2017
3.0.0.0	**KBL/PV** **KBL-R/ PV** Aligning with KBL legacy U22/S42/H42 PV BKC release WW49	December 8, 2017
3.0.1.0	**KBL/KBL-R PR1** Aligning with KBL-Y22 PV, KBL U22 PV, KBL U23e PV and KBL R PR1 BKC	December 22, 2017
3.1.1.0	**CFL-S with Kaby Point PCH** Aligning with CFL-S62/S42 + KBP-H Consumer PV BKC WW06 RS3	February 9, 2018
3.1.2.0	**CFL-S with Kaby Point PCH** Aligning with CFL-S62/42+KBP-H Consumer PR1 BKC WW10 RS3	March 8, 2018
3.2.0.0	**KBL/KBL-R/KBL-YR** Aligning with KBL-YR RS4 BKC WW15	April 12, 2018
3.2.1.0	Update for KBL-YR/KBL-R/KBL/CFL	May 10, 2018
3.3.0.0	Update for KBL-YR/KBL-R/KBL/CFL	May 22, 2018
3.3.1.0	Aligning with KBL U42 Beta BKC WW25	June 22, 2018
3.4.0.0	Update for KBL-YR/KBL-R/KBL/CFL	June 22, 2018
3.5.0.0	Aligning with Coffee Lake S82, KBP-H Beta Best Known Configuration (BKC) (Microsoft Windows* 10 64-bit RS3) WW25	June 22, 2018
3.6.0.0	Aligning with KBL-G RS4 Corp BKC release WW26'2018	June 29, 2018
3.6.1.0	Aligning with AML-Y22 5W PR1 BKC WW29'2018	July 20, 2018
3.6.1.1	Aligning with KBL-R RS4 PV BKC WW32.1'2018	Aug 2, 2018
3.6.2.0	Aligning with AML-Y22 7W PV BKC WW31'2018	Aug 2, 2018
3.6.3.0	Aligning with Coffee Lake S82, Kaby lake PCH-H PV Best Known Configuration (BKC) (Microsoft Windows* 10 64-bit Redstone 4) WW37'2018	Sep 11, 2018
3.6.4.0	Aligning with AML Y22 5W RS5 Beta WW40'2018	Sep 30, 2018

3.6.5.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Oct 22, 2018
3.6.6.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Nov 14, 2018
3.6.7.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Nov 17, 2018
3.6.7.1	Update for KBL-YR/KBL-R/KBL/CFL/AML	Dec 17, 2018
3.6.8.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Dec 22, 2018
3.6.9.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Jan 10, 2019
3.7.0.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Mar 07, 2019
3.7.1.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Apr. 01, 2019
3.7.2.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Apr. 25, 2019
3.7.3.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	May 06, 2019
3.7.4.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Jun. 05, 2019
3.7.5.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Jun. 10, 2019
3.7.6.0	Update for KBL-YR/KBL-R/KBL/CFL/AML	Sep. 04, 2019

2   Version 3.7.6 Details

2.1   New Feature

2.1.1   Feature 1

- Description/ Solution:

  [KBL/AML] Integrate latest available GOP V1092

- Platform Affected

  KBL/AML

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

  /KabylakeSiliconPkg/SampleCode/IntelGraphicsPeimVbt/PeiVbt.bin

2.2   Fixed Bugs

None

Release Notes 2019
8   **Intel Restricted Secret**

3   Version 3.7.5 Details

3.1   New Feature

None

3.2   Fixed Bugs

None

4   Version 3.7.4 Details

4.1   New Feature

None

4.2   Fixed Bugs

None

5 Version 3.7.3 Details

5.1 New Feature

None

5.2 Fixed Bugs

5.2.1 Bug Name 1

- Description/ Solution:

  [CFL] IFWI-CFL: CPU stepping showing unknown in BIOS page on CFL-S-KBPH R0 config

- Platform Affected

  CFL

- Affected Files:

  / KabylakeSiliconPkg/Cpu/Include/CpuRegs.h

  / KabylakeSiliconPkg/SystemAgent/MemoryInit/Include/MrcInterface.h

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/ MemoryInit.c

  / KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/CpuRegs.h

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcOemPlatform .c

6 Version 3.7.2 Details

6.1 New Feature

6.1.1 Feature 1

- Description/ Solution:

  [KBL][MRC] - Remove High-Z from DDR4 RttWr values

- Platform Affected

  KBL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/Source/Services/MrcCrosser.c

6.2 Fixed Bugs

6.2.1 Bug Name 1

- Description/ Solution:

  [KBL] 64-bit PCI MMIO Read/Write does not work

- Platform Affected

  KBL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/PeiDxeSmmMemoryAddressEncodeDecodeLib/MemoryAddressEncodeDecodeLib.c

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/MemoryInit.c

6.2.2 Bug Name 2

- Description/ Solution:

  [AML][KBLR][MRC] Training Failures seen during Round Trip Latency using LPDDR3 2133 Memory.

  Failures are seen during Round Trip Latency training, with certain bytes reporting failing margin response.

  Root Cause:

  MRC was changing the CLK when CKE is ON, which is not allowed per spec, and then issued a JEDEC reset to bring the DRAM back to working condition.

  Solution:

New flow is changing CLK while CKE is OFF, which makes it robust and per spec.

- Platform Affected

AML/KBLR

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/Source/Services/MrcCrosser.c

6.2.3   Bug Name 3

- Description/ Solution:

[[AML][KBLR][MRC] Refresh 2X Status does not indicate when the MC is in 2X Refresh

When CLTM_ENABLE is set within "DDR_PTM_CTL_0_0_0_MCHBAR_PCU", REFRESH2X_STATUS within "MPVTDTRK_CR_DDR_THERM_CAMARILLO_STATUS_IMPH_REG" should reflect if the MC is currently in 2X refresh mode. For REFRESH2X_STATUS to properly display if 2X Refresh rate is enabled, the Ddr4SkipRefreshEn field needs to be disabled (set to zero) in "PCU_CR_DDR_PTM_CTL_PCU_REG"Failures are seen during Round Trip Latency training, with certain bytes reporting failing margin response.

Solution:

Ddr4SkipRefreshEn is register field which enables/disables the DDR4 DRAM Temperature controlled Refresh skipping logic. When this field is set in the MC, REFRESH2X_STATUS will become updated when Hot/Warm status is identified.

This change exposes a new setup option for "Ddr4 Skip Refresh En" which is enabled by default.

- Platform Affected

AML/KBLR

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/MemoryConfig.h

/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Include/MrcInterface.h

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/Source/Api/MrcGeneral.c

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/Source/McConfiguration/MrcPowerModes.c

7 Version 3.7.1 Details

7.1 New Feature

7.1.1 Feature 1

- Description/ Solution:

  [AML Y42 AEP]: Add AmberLake Y42 AEP CC board Support

  Add AML-Y42 LP3 AEP CC mPhy and GPIO table, USB Xchi mapping and connectuivity

- Platform Affected

  AML-Y42

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/PlatformBoardId.h

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcOemPlatform.c

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcSetup.c

7.1.2 Feature 2

- Description/ Solution:

  [AML] Add MRC Related Board Support for AML-Y 42 CC Board.

  New AML-Y 42 Closed-Chassis board (board id = 0x85) needs the memory related Board Inputs set, including DqsMapCpu2Dram, SPD, and DqByteMap.

  Additional Change:

  Add AML-Y 42 Board support in MRC MiniBIOS

- Platform Affected

  AML-Y42

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcOemPlatform.c

7.2 Fixed Bugs

7.2.1 Bug Name 1

- Description/ Solution:

  BIOS programming of GT chicken bits in GTTMMADR 0xD00[3:1] to activate fix for stability/robustness on Gen9 based products

- Platform Affected

  SKL/AML/KBL/CFL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

8   Version 3.7.0 Details

8.1   New Feature

8.1.1   Feature 1

- Description/ Solution:

  [KBL/AML] Integrate latest GOP V1086 and VBIOS V1064

- Platform Affected

  KBL/AML

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

8.1.2   Feature 2

- Description/ Solution:

  [AML][Y42][AEP] Adding AML-Y42 LP3 AEP BoardID, mPhy and GPIO table, USB Xchi mapping and connectuivity .

- Platform Affected

  AML-Y42

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/PlatformBoardId.h

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcOemPlatform.c

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/MEMORY/MrcSetup.c

8.2   Fixed Bugs

8.2.1   Bug Name 1

- Description/ Solution:

  [Security] PEI ASSERT Error observer and SUT hanging at PC 0050 With Debug BIOS V151

- Platform Affected

  AML-Y42 /Y22

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

8.2.2　　Bug Name 2

- Description/ Solution:

  64-bit PCI MMIO Read/Write does not work:

  64-bit MMIO Read/Write does not work for PCI devices.This needs to be split into 2 DWORD Read/Writes.Platform Affected

- Platform Affected

  KBL/CFL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/BdatAccessHandler/Dxe/BdatAccessHandler.h

  /KabylakeSiliconPkg/SystemAgent/BdatAccessHandler/Dxe/BdatFactory.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGmmInitLib/PeiGmmInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaDmiInitLib/PeiSaDmiInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPcieTrainingErrorCount.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegDisableSteps.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PciExpressInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.c

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

9   Version 3.6.9 Details

9.1   New Feature

None

9.2   Fixed Bugs

None

10 Version 3.6.8 Details

10.1 New Feature

None

10.2 Fixed Bugs

None

11 Version 3.6.7.1 Details

11.1 New Feature

None

11.2 Fixed Bugs

None

12 Version 3.6.7 Details

12.1   New Feature

None

12.2   Fixed Bugs

None

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13 Version 3.6.6 Details

13.1 New Feature

13.1.1 Feature 1

- Description/ Solution:

  Integrate latest GOP V1084

- Platform Affected

  KBL/AML

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

13.2 Fixed Bugs

13.2.1 Bug Name 1

- Description/ Solution:

  [OC] CFL-S 8+2 fully unlocked CPU change TjMax

- Platform Affected

  CFL-S82

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.inf

14 Version 3.6.5 Details

14.1 New Feature

None

14.2 Fixed Bugs

None

15   Version 3.6.4 Details

15.1   New Feature

15.1.1   Feature 1

- Description/ Solution:

  [KBL/AML] Integrate latest available GOP V1082 and VBIOS V1060

- Platform Affected

  KBL/AML

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

15.2   Fixed Bugs

None

16   Version 3.6.3 Details

16.1   New Feature

None

16.2   Fixed Bugs

16.2.1   Bug Name 1

- Description/ Solution:

  Randomly yellow bang observed while hot-plug the TBT device in port A & port B
- Platform Affected

  CFL-S82
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

16.2.2   Bug Name 2

- Description/ Solution:

  BIOS W/A for Erratum KBL121
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

17   Version 3.6.2.0 Details

17.1   New Feature

None

17.2   Fixed Bugs

None

18   Version 3.6.1.1 Details

18.1   New Feature

None

18.2   Fixed Bugs

None

19 Version 3.6.1 Details

19.1 New Feature

None

19.2 Fixed Bugs

19.2.1 Bug Name 1

- Description/ Solution:

  ANDD structure of the DMAR table contains PCI enumerated devices

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/Dmar/Dmar.aslc
  /KabylakeSiliconPkg/SystemAgent/Include/DmaRemappingTable.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

19.2.2 Bug Name 2

- Description/ Solution:

  EFI_PCI_ROOT_BRIDGE_IO_PROTOCOL.PollMem() and
  EFI_PCI_ROOT_BRIDGE_IO_PROTOCOL.PollIo() takes longer than the given delay

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.inf
  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciRootBridge.h
  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciRootBridgeIo.c

20   Version 3.6.0 Details

20.1   New Feature

20.1.1   Feature 1

- Description/ Solution:

    Integrate latest GOP V1080 for AML 7W along with GT DID change in BIOS

- Platform Affected

    AML

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

    /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

20.2   Fixed Bugs

None

21 Version 3.5.0 Details

21.1 New Feature

None

21.2 Fixed Bugs

None

2019

22 Version 3.4.0 Details

22.1 New Feature

None

22.2 Fixed Bugs

None

23 Version 3.3.1 Details

23.1 New Feature

None

23.2 Fixed Bugs

None

24 Version 3.3.0 Details

24.1 New Feature

24.1.1 Feature 1

- Description/ Solution:

  [SKL/KBL/CFL] Integrate latest available GOP V1079

- Platform Affected

  SKL/KBL/CFL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

24.1.2 Feature 2

- Description/ Solution:

  [CFL][KBP][OC] Core Ratio up to 120 on CFL-S 8+2 K SKU

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

24.2 Fixed Bugs

None

25 Version 3.2.1 Details

25.1 New Feature

25.1.1 Feature 1

- Description/ Solution:

  [KBL/CFL] Integrate latest GOP V1078

- Platform Affected

  KBL/CFL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

25.1.2 Feature 2

- Description/ Solution:

  Add BIOS support for KBL-Y Refresh from System Agent side

- Platform Affected

  KBL-Y Refresh

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

25.2 Fixed Bugs

None

26 Version 3.2.0 Details

26.1 New Feature

None

26.2 Fixed Bugs

26.2.1 Bug Name 1

- Description/ Solution:

    BIOS should override platform VR parameters based on Platform ID and not CPU ID

- Platform Affected

    CFL82/62/42

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

27   Version 3.1.2 Details

27.1   New Feature

None

27.2   Fixed Bugs

None

28 Version 3.1.1 Details

28.1 New Feature

28.1.1 Feature 1

- **Description:**
  Add support for CFL S 2+2/2+1 sku which are fused down version of 4+2
- **Solution:**
  Add SA and GT DID to BIOS to support these new skus
- **Platform Affected:**
  CFL
- **Affected Files:**
  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

28.2 Fixed Bugs

None

29   Version 3.0.1 Details

29.1   New Feature

None

29.2   Fixed Bugs

None

30 Version 3.0.0 Details

30.1 New Feature

30.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1074

- Platform Affected

  KBL/SKL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

30.2 Fixed Bugs

None

31 Version 2.9.2 Details

31.1 New Feature

None

31.2 Fixed Bugs

None

32 Version 2.9.0 Details

32.1 New Feature

32.1.1 Feature 1

- Description/ Solution:

  Back out GOP to 1070

- Platform Affected

  CFL/KBL/SKL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

32.2 Fixed Bugs

None

33   Version 2.8.1 Details

33.1   New Feature

33.1.1   Feature 1

- Description/ Solution:

Update Integrate latest GOP 1073 and back out integrated GOP 1072

- Platform Affected

CFL/KBL/SKL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim. efi

33.2   Fixed Bugs

33.2.1   Bug Name 1

- Description/ Solution:

Update Integrate latest GOP 1073 and back out integrated latest GOP 1072

- Platform Affected

CFL/KBL/SKL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim. efi

33.2.2   Bug Name 2

- Description/ Solution:

BIOS work around to toggle CD Clock frequency to recover CD CLK PLL During HD Audio Init. BIOS work around recommended to recover CD Clock PLL when DP Mode Link Rate is 2.16GHz & 4.32GHz.

- Platform Affected

CFL/KBL/SKL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsI nitLib.c

/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSwitchableGraphicsInitLib/Pe
iSwitchableGraphicsInit.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

34 Version 2.8.0 Details

34.1 New Feature

None

34.2 Fixed Bugs

34.2.1 Bug Name 1

- Description/ Solution:

  Stop the 0% slider from turning off backlight
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Igfx.asl

34.2.2 Bug Name 2

- Description/ Solution:

  Allow specification of BCLM values from Dxe Policy settings
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsDxeConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLibrary.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.h

35   Version 2.7.2 Details

35.1   New Feature

None

35.2   Fixed Bugs

None

36 Version 2.7.0 Details

36.1 New Feature

36.1.1 Feature 1

- Description/ Solution:

  SKL/KBL/CFL - Integrate latest CFL GOP 1069

- Platform Affected

  All

- Affected Files:

  /2016_Kabylake/KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

36.1.2 Feature 2

- Description/ Solution:

  TBT BIOS: Native PCIe enumeration

- Platform Affected

  All

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

36.2 Fixed Bugs

None

37   Version 2.6.2 Details

37.1   New Feature

None

37.2   Fixed Bugs

None

38   Version 2.6.1 Details

38.1   New Feature

None

38.2   Fixed Bugs

None

39 Version 2.6.0 Details

39.1 New Feature

39.1.1 Feature 1

- Description/ Solution:

  Add CFL-S 4+2 support in KBL code with SA & GT DID change
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

39.2 Fixed Bugs

39.2.1 Bug Name 1

- Description/ Solution:

  System fails Legacy Boot to Win7x86 and DOS using Skylake [GT3] CPU on Kabylake BIOS
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

39.2.2 Bug Name 2

- Description/ Solution:

  CFL-S failing Preset 10 in SigTest
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c

40 Version 2.5.1 Details

40.1 New Feature

None

40.2 Fixed Bugs

None

41 Version 2.5.0 Details

41.1 New Feature

None

41.2 Fixed Bugs

41.2.1 Bug Name 1

- Description/ Solution:

  DGPU VR cannot be disabled for RTD3 flows due to non-enabled BIOS/EC flow causing 6-7W power consumption even when the device is in D3 Cold.

- Platform Affected

  2−Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegSsdt.asl

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SwitchableGraphicsConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/Private/SaConfigHob.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSwitchableGraphicsInitLib/PeiSwitchableGraphicsInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

42 Version 2.4.0 Details

42.1 New Feature

42.1.1 Feature 1

- Description/ Solution:

  Debug BIOS Asserts on RVP17 after adding code to configure RTD3 GPIOs on PEG1 SLOT

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.h

42.2 Fixed Bugs

None

43 Version 2.2.1 Details

43.1 New Feature

43.1.1 Feature 1

- Description/ Solution:

  Integrate SKL/KBL GOP V1066 which has CFL-S 6+2 sku support
- Platform Affected

  All
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

43.2 Fixed Bugs

None

44 Version 2.3.0 Details

44.1 New Feature

44.1.1 Feature 1

- Description/ Solution:

  [CFL][OC] BCLK Aware Adaptive voltage feature is enabled

  [CFL][OC] DDR runtime OC feature is enabled

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

44.1.2 Feature 2

- Description/ Solution:

  Integrate SKL/KBL GOP V1066 which has CFL-S 6+2 sku support

- Platform Affected

  All

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

44.1.3 Feature 3

- Description/ Solution:

  CFL BIOS: [OC] Realtime Memory Timings enable/disable

  CFL BIOS: [OC] Voltage PLL trim for all CPU domains

  CFL/CNL/ICL OC - New PLL Trim option for Ring, GT, SA, Mc

  CFL BIOS: Support for Ring down bin disable

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/OverClockingConfig.h

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

44.2 Fixed Bugs

None

45 Version 2.2.0 Details

45.1 New Feature

None

45.2 Fixed Bugs

45.2.1 Bug Name 1

- Description/ Solution:

   ISP does not have _DEP listed in PEP.asl

- Platform Affected

  All

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Imgu.asl

45.2.2 Bug Name 2

- Description/ Solution:

  SX functionality is not working with third party Hybrid/Switchable Graphics card connected

- Platform Affected

  All

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.h

46   Version 2.1.0 Details

46.1   New Features

46.1.1 Feature 1

- Description/ Solution:

    KBL/SKL - Integrate latest GOP 1064

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

46.2   Fixed Bugs

    None

47 Version 2.0.0 Details

47.1 New Features

47.1.1 Feature 1

- Description/ Solution:

  Clean up unnecessary code for booting Windows for MinTree - SA

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/Library/PeiSaPolicyLib.h
  /KabylakeSiliconPkg/SystemAgent/Include/SaPolicyCommon.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Igfx.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Sa.asl
  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SaMiscPeiPreMemConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/Library/PeiSaPolicyLib.h
  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaPolicy.h
  /KabylakeSiliconPkg/SystemAgent/Include/SaAccess.h
  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLibrary.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLibrary.h
  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c
  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

47.2   Fixed Bugs

47.2.1 Bug Name 1

- Description/ Solution:

  Debug_Error message reduction

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSmmAccessLib/PeiSmmAccessLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiPcieInitLib/LowLevel/PcieTrainingLinkRecovery.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaDmiInitLib/PeiSaDmiInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/PcieTrainingEqSettings.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PciExpressInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.c

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PcieComplex.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.c

  /KabylakeSiliconPkg/SystemAgent/SmmAccess/Dxe/SmmAccessDriver.c

48 Version 1.9.0 Details

48.1 New Features

None

48.2 Fixed Bugs

None

49   Version 1.8.0.0 Details

49.1   New Features

None

49.2   Fixed Bugs

49.2.1 Bug Name 1

- Description/ Solution:

  PostMemSaReset function can be improved for responsiveness

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/GraphicsInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

50 Version 1.7.0.0 Details

50.1 New Features

50.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1063 and VBIOS 1050
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

50.2 Fixed Bugs

50.2.1 Bug Name 1

- Description/ Solution:

  Image Signal Processor blocking HW DRIPS and allowing 100% SW DRIPS
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Imgu.asl

51   Version 1.6.0.0 Details

51.1   New Features

51.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest VBIOS 1049 and latest GOP 1061, 1062

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

51.1.2 Feature 2

- Description/ Solution:

  Update DID 0x5914 for KBL-R

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

51.2   Fixed Bugs

51.2.1 Bug Name 1

- Description/ Solution:

  RVP11 S3 resume time out of criteria

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/GraphicsInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsP
  mInit.c

51.2.2 Bug Name 2

- Description/ Solution:

SSID for Intel GFX device could not be configured in KBL FSP

- Platform Affected

  FSP Platforms only

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/GraphicsInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

51.2.3 Bug Name 3

- Description/ Solution:

  One line seems duplicate in SA PCIe init code risk which may burn power with unused port

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLibDisable.c

51.2.4 Bug Name 4

- Description/ Solution:

  Remove PEGS Method from PegOnOff.asl to detect PEG port presence and and do it using IsPchLinkDmi () function in .c and load PEG SSDT based on that

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegSsdt.asl

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PciExpressInit.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

51.2.5 Bug Name 5

- Description/ Solution:

  BCLK Heci message should remove ASSERT
- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

51.2.6 Bug Name 6

- Description/ Solution:

  GTTMMADR offset 0x4090 bit[8] should be set for SKL
- Platform Affected

  SKL platform

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPm
  Init.c

51.2.7 Bug Name 7

- Description/ Solution:

  RVP8 - NVIDIA NVS 810 Card cannot assign enough free resources on a Dual
  Graphics config
- Platform Affected

  2–Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

52 Version 1.5.0.0 Details

52.1 New Features

None

52.2 Fixed Bugs

None

53 Version 1.4.1.0 Details

53.1 New Features

53.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1058

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

53.1.2 Feature 2

- Description/ Solution:

  Enable eDP Panel for Cove Creek

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.h

53.2 Fixed Bugs

53.2.1 Bug Name 1

- Description/ Solution:

  Clean up unused Library and Modules from SiliconPkg : Phase4 SA parts

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

54 Version 1.4.0.0 Details

54.1 New Features

54.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1057

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

54.2 Fixed Bugs

54.2.1 Bug Name 1

- Description/ Solution:

  Update Dynamic PCIEXBAR solution fix

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLib.asm
  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLib.nasm
  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLibGcc.S

54.2.2 Bug Name 2

- Description/ Solution:

  Add CD Clock Initialization by BIOS

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/GraphicsInitLib.h

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsP
mInit.c

54.2.3 Bug Name 3

- Description/ Solution:

  GPIO 2-tier GPE handling (_L6F) may miss an event

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegSsdt.asl

54.2.4 Bug Name 4

- Description/ Solution:

  Config Block linkage and document updates

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GmmConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsDxeConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiPreMemConfig.
  h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/PcieDxeConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/PciePeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/PciePeiPreMemConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SaMiscPeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SaMiscPeiPreMemConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SkycamConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SwitchableGraphicsConfig.
  h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/VbiosDxeConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/VtdConfig.h

54.2.5 Bug Name 5

- Description/ Solution:

  Request T12 timing to meet >500ms as VESA spec

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/GraphicsInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaInitLib.h

/KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLibDisable.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

54.2.6 Bug Name 6

- Description/ Solution:

Enable Ph2/3 on PEG immediately after clearing DEFER_OC

- Platform Affected

2-Chip

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.c

54.2.7 Bug Name 7

- Description/ Solution:

Invalid UUID error in _OSC

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

54.2.8 Bug Name 8

- Description/ Solution:

Global_remove_if_unreferenced usage should be cleared

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c

/SystemAgent/SaInit/Dxe/GraphicsInit.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

54.2.9 Bug Name 9

- Description/ Solution:

    Platform recovery is not working in high BCLK

- Platform Affected

    2-Chip

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

54.2.10 Bug Name 10

- Description/ Solution:

    [OC] Command stretch with N:1 is not working

- Platform Affected

    2-Chip

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

54.2.11 Bug Name 11

- Description/ Solution:

    BIOS should use LPC as default HPET and IOxAPIC requester/completer ID

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/AcpiTables/Dmar/Dmar.asl
    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

54.2.12 Bug Name 12

- Description/ Solution:

    Legacy IO low latency mode is required for some robotic applications

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PcieComplex.c
    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.inf

54.2.13 Bug Name 13

- Description/ Solution:

    SA PCIe init code risk which may burn power with unused port

- Platform Affected

ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaPcieInitLib.h

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/AdditionalDisableSteps.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SaPegLowLevelFactory.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegDisableSteps.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.inf

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLibDisable.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLibDisable.inf

54.2.14   Bug Name 14

- Description/ Solution:

    Request to have BCT interface for modify Pcds

- Platform Affected

    FSP Platforms only

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLib.asm

    /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLibGcc.S

54.2.15   Bug Name 15

- Description/ Solution:

    KBL FSP BIOS : SUT is hangs at Post code "0096" when CSM control is set to ON

- Platform Affected

    FSP Platforms only

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

54.2.16   Bug Name 16

- Description/ Solution:

Assert when booting in PeiSaOcInitLib.c

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.inf

55   Version 1.3.0.0 Details

55.1   New Features

55.1.1   Feature 1

- Description/ Solution:

    KBL/SKL - Integrate latest GOP 1056 and VBIOS 1047

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

55.2   Fixed Bugs

55.2.1 Bug Name 1

- Description/ Solution:

    [KBL S/H SG]: eGPU FAN is continuously rotating with B0/B1 Processor without any workload.

- Platform Affected

    2–Chip

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

56 Version 1.2.0.0 Details

56.1 New Features

None

56.2 Fixed Bugs

None

57   Version 1.1.0.0 Details

57.1   New Features

57.1.1   Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1054

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

57.2   Fixed Bugs

57.2.1 Bug Name 1

- Description/ Solution:

  Update for RC1.1.0 feedback. Replace gIntelDxeGraphicsVbtGuid with gIntelGraphicsVbtGuid for backward compatibility.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/GopPolicy.h

57.2.2 Bug Name 2

- Description/ Solution:

  Update NVS for RC 1.1.0 feedback

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaNvs.h

57.2.3 Bug Name 3

- Description/ Solution:

  Fix SA RC Klocwork issues

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklP egPrivateLowLevel.c

57.2.4 Bug Name 4

- Description/ Solution:

  Changed LSPCON setting does not reflected in the VBT after IFWI flashing

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/GopPolicy.h

58   Version 1.0.5 Details

58.1   New Features

58.1.1   Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1053

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

58.1.2   Feature 2

- Description/ Solution:

  KabyLake OC board porting

- Platform Affected

  2–Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/PlatformBoardId.h

58.2   Fixed Bugs

58.2.1 Bug Name 1

- Description/ Solution:

  OC: When setting Maximum GT frequency in BIOS menu to 300MHz the ratio in the MMIO is being set to 350MHz

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

58.2.2 Bug Name 2

- Description/ Solution:

  Change PEI_MIN_MEMORY_SIZE size back to 48MB during PEI phase
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

58.2.3 Bug Name 3

- Description/ Solution:

  Clean-up LCD Control BIOS Setup options
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsDxeConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

58.2.4 Bug Name 4

- Description/ Solution:

  Add the missing SmBusLib depedency in PeiSaiPolicyLib.inf
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf

58.2.5 Bug Name 5

- Description/ Solution:

  V50 FSP GCC build boot fail with KBPI board, this issue can't reproduce with RVP3 KBLY.
- Platform Affected

  2–Chip
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

58.2.6 Bug Name 6

- Description/ Solution:

  FreePool usage in PEI clean up for Pch, Cpu, Core, SystemAgent, Csme and Security.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInit Lib.c

58.2.7 Bug Name 7

- Description/ Solution:

  [OC] System does not seem to be factoring BCLK into fast boot flow

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

59   Version 1.0.4 Details

59.1   New Features

59.1.1   Feature 1

- Description/ Solution:

  Need CSM support for FSP Wrapper Build
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

59.1.2   Feature 2

- Description/ Solution:

  Dynamics update solution to detect KBL and SKL for DMAR OEM Table ID
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.h

59.2   Fixed Bugs

59.2.1 Bug Name 1

- Description/ Solution:

  Inserting any X8 or X4 PCIe card in to the PEG slot will cause the debug BIOS to ASSERT and fail to boot
- Platform Affected

  ALL
- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

59.2.2 Bug Name 2

- Description/ Solution:

  SA_DT: For silicon NVS, it should consume config block

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Protocol/SaGlobalNvsArea.h
  /KabylakeSiliconPkg/SystemAgent/Include/Private/Protocol/SaNvs.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaGlobalNvsArea.h
  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaNvs.h

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PciExpressInit.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.h

59.2.3 Bug Name 3

- Description/ Solution:

  Incorrect usage of assert_efi_error

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSmmAccessLib/PeiSmmAccessLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.c

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/MemoryTest.c

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciRootBridgeIo.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PcieComplex.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c

59.2.4 Bug Name 4

- Description/ Solution:

  Merging from SKL: SKL-BIOS Missing Graphic Device ID for IOTG_44e and IOTG_43e

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

59.2.5 Bug Name 5

- Description/ Solution:

System does not seem to be factoring BCLK into fast boot flow

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

60 Version 1.0.3 Details

60.1 New Features

60.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 1051 and VBIOS 1045

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

60.2 Fixed Bugs

60.2.1 Bug Name 1

- Description/ Solution:

  PEG GFX have no display on KBL PPV system for B0 Unit

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiDxeSmmSaPlatformLib/SaPlatformLibrary.c

60.2.2 Bug Name 2

- Description/ Solution:

  Yellow bang for IGD device in Device Manager with Aperture Size set to 4096MB

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h

/KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiPreMemConfig.h

/KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

61   Version 1.0.2 Details

61.1   New Features

N/A

61.2   Fixed Bugs

61.2.1 Bug Name 1

- Description/ Solution:

Need SysBIOS to set 0x9044[30] = 1 as Frame Buffer Caching is not enabled

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

61.2.2 Bug Name 2

- Description/ Solution:

HSDPreset10 coefficients update for PEG

- Platform Affected

2-Chip

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c

61.2.3 Bug Name 3

- Description/ Solution:

TCO_STS bit does not be cleared as expected in PchSmmClearSmi()

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

62 Version 1.0.1 Details

62.1 New Features

62.1.1 Feature 1

- Description/ Solution:

  Moved cpu strap, BCLK and overclocking mailbox programming to pre-memory to allow for higher BCLK frequency and stable OC flows

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/OverClockingConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaOcInitLib.h
  /KabylakeSiliconPkg/SystemAgent/Include/SaPolicyCommon.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLibNull/PeiSaOcInitLibNull.c

62.1.2 Feature 2

- Description/ Solution:

  Integrate the latest GOP 1049

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

62.1.3 Feature 3

- Description/ Solution:

  Enable MicroChip eSPI Support on KBL

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.inf

62.2   Fixed Bugs

62.2.1 Bug Name 1

- Description/ Solution:

  Unable to install any Windows OS on GT3 Systems when CSM=ON

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

62.2.2 Bug Name 2

- Description/ Solution:

  Fix some MRC policy prints

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

62.2.3 Bug Name 3

- Description/ Solution:

  Changes in Active Processor Core values are not reflecting in BIOS and OS

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SaPcieTrainingLinkRecovery.c

62.2.4 Bug Name 4

- Description/ Solution:

  Since we only use 32bit width for MCHBAR base address, we should change our whole source code to use UINT32 for MCHBAR

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/BdatAccessHandler/Dxe/BdatFactory.c

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaPcieDmiLib.h

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaPcieInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGmmInitLib/PeiGmmInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaDmiInitLib/PeiSaDmiInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/AdditionalDisableSteps.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PciExpressInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLib.asm

  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLib.nasm

  /KabylakeSiliconPkg/SystemAgent/Library/SecSaLib/Ia32/SecSaLibGcc.S

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

62.2.5 Bug Name 5

- Description/ Solution:

  KBL GT2 down GT1 - SPC Unit registers in Gfx need to be locked after checking the GT config with right programming sequence

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

62.2.6 Bug Name 6

- Description/ Solution:

  FSP: Remove PcdImageRevision and use PcdSiliconVersionxxxx to report FSP Image version

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLibFsp.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

62.2.7 Bug Name 7

- Description/ Solution:

  Peg1Enable set to disabled sometimes results in Timeout disabling link

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

62.2.8 Bug Name 8

- Description/ Solution:

  Make CONFIG_BLOCK_HEADER static to avoid inline memcpy codegen that fails to link

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
/KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c
/KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.inf

62.2.9 Bug Name 9

- Description/ Solution:

MCFG MMIO config space at 0xe0000000 is not reserved in the memory map table

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

62.2.10 Bug Name 10

- Description/ Solution:

Fixes for CLANG compiler issues with NOOPT option for KBL Reference code

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaDmiInitLib/PeiSaDmiInitLib.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/PcieTrainingMargining.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPcieTrainingLinkRecovery.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.c
/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

62.2.11 Bug Name 11

- Description/ Solution:

Remove PcdImageRevision and use PcdSiliconVersionxxxx to report FSP Image version

Version 1.0.1 Details

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLibFsp.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

62.2.12   Bug Name 12

- Description/ Solution:

  Removed extra space from External code when restricted code removed

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

63   Version 1.0.0 Details

63.1   New Features

N/A

63.2   Fixed Bugs

N/A

64 Version 0.9.1 Details

64.1 New Features

N/A

64.2 Fixed Bugs

64.2.1 Bug Name 1

- Description/ Solution:

SSC disable PEG BIOS option cause issues with BIOS boot

- Platform Affected

2-Chip

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklP egPrivateLowLevel.c

64.2.2 Bug Name 2

- Description/ Solution:

The OEM Table ID still show SKL for Kabylake processor

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/AcpiTables/Dmar/Dmar.h

65 Version 0.9.0 Details

65.1 New Features

N/A

65.2 Fixed Bugs

N/A

66   Version 0.8.1 Details

66.1   New Features

66.1.1 Feature 1

- Description/ Solution:

  KBL/SKL - Integrate latest GOP 9.0.1048 and VBIOS 1041

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

66.2   Fixed Bugs

66.2.1   Bug Name 1

- Description/ Solution:

  Remove MSR defines from CpuRegs.h that are in ArchitecturalMsr.h Part 4:
  MSR_IA32_MTRRCAP, Part 3: MSR_IA32_FEATURE_CONTROL,Part 6, Part 5:
  MSR_PMG_CST_CONFIG, Part 2

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PciExpressInit.
  c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLi
  b.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLi
  bDisable.inf

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PciExpressInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PciExpressInit.h

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.inf

66.2.2 Bug Name 2

- Description/ Solution:

  REMAPBASE/LIMIT register definition macros are not correct

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

66.2.3 Bug Name 3

- Description/ Solution:

  MCFG MMIO config space at 0xe0000000 is not reserved in the memory map table

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c
  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.inf

67 Version 0.8.0 Details

67.1 New Features

67.1.1 Feature 1

- Description/ Solution:

  Integrate latest GOP 9.0.1047 and VBIOS 1040

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

67.1.2 Feature 2

- Description/ Solution:

  EDRAM support on KBL J0 stepping

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SaMiscPeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsP
  mInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

67.2 Fixed Bugs

67.2.1 Bug Name 1

- Description/ Solution:

  Use Cpuid.h and Msr .h files from UefiCpgPkg, and remove duplicated defines from
  CpuRegs.h

- Platform Affected

  ALL

- Affected Files:

   /KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/CpuRegs.h

67.2.2 Bug Name 2

- Description/ Solution:

   TPGV PEG SSDTs are not getting loaded because of incorrect SSDT selector variable

- Platform Affected

   ALL

- Affected Files:

   /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

67.2.3 Bug Name 3

- Description/ Solution:

   External version of RC 0.71 SA RC DxeLegacyRegionLib should be NULL class and remove LegacyRegionInstall() API

- Platform Affected

   ALL

- Affected Files:

   /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLib/DxeLegacyRegion.c

   /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLib/DxeLegacyRegionLib.inf

   /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLibNull/DxeLegacyRegionLibNull.c

   /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLibNull/DxeLegacyRegionLibNull.inf

   /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.c

   /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf

67.2.4 Bug Name 4

- Description/ Solution:

   Issues in limiting to PKGC6 in SKL and KBL

- Platform Affected

   ALL

- Affected Files:

   /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c
   /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/AdditionalDisableSteps.c

67.2.5 Bug Name 5

- Description/ Solution:

  Generate SA GlobalNvs asl code and header file from GenNvs tool.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/SaNvs.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/SaSsdt.asl
  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaGlobalNvsArea.h
  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaNvs.h

68 Version 0.7.3 Details

68.1 New Features

68.1.1 Feature 1

- Description/ Solution:

  BIOS support for BCLK Aware V/F curve

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/OverClockingConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

68.1.2 Feature 2

- Description/ Solution:

  Integrate latest GOP 9.0.1046 and VBIOS 1039

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

68.2 Fixed Bugs

68.2.1 Bug Name 1

- Description/ Solution:

  Prevent to use Uefi as file/protocol/ppi name in SA RC

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.inf

2019

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.h

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaAcpi.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitDxe.h

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.h

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

68.2.2 Bug Name 2

- Description/ Solution:

  SPCUnit - Random IA writes to a Power on FSM control register causes an Invalid Arc

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

68.2.3 Bug Name 3

- Description/ Solution:

  Lot of ASL warning messages on KBL Project- Fix SA ASL Warnings

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgDgpuPch.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgUlt.asl

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgUlx.asl

69 Version 0.7.2 Details

69.1 New Features

69.1.1 Feature 1

- Description/ Solution:

  V31_FSP and Debug Build get assert and post code dd00

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/MiscDxeConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.inf
  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/MemoryInit.c
  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/PeiMemoryInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/PeiMemoryInitLibFsp.inf

69.1.2 Feature 2

- Description/ Solution:

  Clean up SvPolicy or SV relative wording in CPU RC

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/MemoryInit.c
  /KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/PeiMemoryInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/MiscDxeConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.inf

69.1.3 Feature 3

- Description/ Solution:

  Builds a HOB to preserve the Policy data which are need for both Pei and Dx

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.h
  /KabylakeSiliconPkg/SystemAgent/SmmAccess/Dxe/SmmAccess.inf
  /KabylakeSiliconPkg/SystemAgent/SmmAccess/Dxe/SmmAccessDriver.c
  /KabylakeSiliconPkg/SystemAgent/SmmAccess/Dxe/SmmAccessDriver.h

69.1.4 Feature 4

- Description/ Solution:

  Add support for SG/HG for KBL-Y

- Platform Affected

  1-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgAcpiTablesPch.inf
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgDgpuPch.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgSsdtPch.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgUlt.asl
  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SwitchableGraphics/Pch/SgUlx.asl
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.h

69.1.5 Feature 5

- Description/ Solution:

  Clean remain BID & BBID

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/SaSsdt/Igfx.asl

69.2   Fixed Bugs

69.2.1   Bug Name 1

- Description/ Solution:

  Lot of ASL warning messages on KBL Project

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

69.2.2 Bug Name 2

- Description/ Solution:

  Several cleans up in RoyalPark

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaPcieVersion.h
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLibFsp.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.h
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.h

69.2.3 Bug Name 3

- Description/ Solution:

  "Detect Legacy VGA" option works as "Always On" even without external GFX
  connected

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

69.2.4 Bug Name 4

- Description/ Solution:

  FSP shoudn't take decision to initial Gfx when CB pass VBT pointer

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInit
    Lib.c

69.2.5 Bug Name 5

- Description/ Solution:

    Silicon package SystemAgent should NOT include DataHub protocol

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.h

69.2.6 Bug Name 6

- Description/ Solution:

    BIOS cannot detect some of old PEG Video cards when "Detect Legacy VGA" is
    selected as CSM control

- Platform Affected

    ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

69.2.7 Bug Name 7

- Description/ Solution:

    [Need BIOS OPTION to DISABLE IOMMU DEVICE ENUMERATION] - Fixing the issue
    by skipping DMAR so OS does not take control of IOMMU device

- Platform Affected

    ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

69.2.8 Bug Name 8

- Description/ Solution:

KBL-DT: Board ID is shown as 'TBD' in BIOS setup on KBL-S board.

- Platform Affected

  2-Chip

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/MemoryInit/MiniBios/Common/PlatformBoardId.h

69.2.9 Bug Name 9

- Description/ Solution:

AMD/NVDIA SG Card fan and LED is always on even when dGPU is not in use

- Platform Affected

  ALL

- Affected Files:

/KabylakePlatSamplePkg/Library/PeiPolicyUpdateLib/PeiSaPolicyUpdatePreMem.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSwitchableGraphicsInitLib/PeiSwitchableGraphicsInit.c
/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SwitchableGraphicsInit.c

70   Version 0.7.1 Details

70.1   New Features

70.1.1 Feature 1

- Description/ Solution:

  Support New Kabylake CPU Family ID Changes in SA code

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGmmInitLib/PeiGmmInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/AdditionalDisableSteps.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SaPegLowLevelFactory.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PcieComplex.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PciExpressInit.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSkyCamInitLib/PeiSkyCamInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.c
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/PciExpressInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

70.1.2 Feature 2

- Description/ Solution:

  Handle both enable/disable case of CSM properly in KabylakeSiliconPkg

- Platform Affected

  ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Include/Private/Library/LegacyRegion.h
/KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLib/DxeLegacyRegion.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLib/DxeLegacyRegionLib.inf
/KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLibNull/DxeLegacyRegionLibNull.c
/KabylakeSiliconPkg/SystemAgent/Library/Private/DxeLegacyRegionLibNull/DxeLegacyRegionLibNull.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/LegacyRegion.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/LegacyRegion.h

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.c

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.h

70.1.3 Feature 3

- Description/ Solution:

  Integrate latest GOP 9.0.1044

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

70.2 Fixed Bugs

70.2.1 Bug Name 1

- Description/ Solution:

  BIOS doesn't program Ring related options in Overclocking menu

- Platform Affected

  2-Chip

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaOcInitLib/PeiSaOcInitLib.c

70.2.2 Bug Name 2

- Description/ Solution:

  Need BIOS OPTION to DISABLE IOMMU DEVICE ENUMERATION

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h

    /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/MiscDxeConfig.h

    /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/SaPrintPolicy.c

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

    /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/VTd.c

70.2.3 Bug Name 3

- Description/ Solution:

    GT2 override values are not enumerated properly in OS, according to the changed Bios settings

- Platform Affected

    ALL

- Affected Files:

    /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

70.2.4 Bug Name 4

- Description/ Solution:

    The DIMM SPD serial number is not stored correctly in SMBIOS table 17

- Platform Affected

    ALL

- Affected Files:

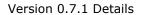   /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType17.c

70.2.5 Bug Name 5

- Description/ Solution:

    Incorrect values were observed in some of DMI/PEG registers

- Platform Affected

    2-Chip

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieDmiLib/PeiSaPcieDmiLib.c

70.2.6 Bug Name 6

- Description/ Solution:

  Replace hardcoded values for memory type with MdePkg enums

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType17.c

71   Version 0.7.0 Details

71.1   New Features

71.1.1 Feature 1

- Description/ Solution:

  Incorporate SA RC 0.7.0 draft1 review feedbacks

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsDxeConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiPreMemConfig.
  h#

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/IgdDxeConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SaRestrictedConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/MemInfoHob.h

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Ppi/GraphicsPlatformPolicyPpi.h
  /KabylakeSiliconPkg/SystemAgent/Include/Private/Protocol/SaIotrapSmi.h

  /KabylakeSiliconPkg/SystemAgent/Include/Private/SaConfigHob.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/BdatAccess.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/GopPolicy.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/IgdOpRegion.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaGlobalNvsArea.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/SaPolicy.h

  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/GraphicsInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.inf

71.2   Fixed Bugs

71.2.1   Bug Name 1

- Description/ Solution:

  Replace hardcoded values for memory type with MdePkg enums

- Platform Affected

ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType17.c

71.2.2 Bug Name 2

- Description/ Solution:

  Due to the structure alignment change, need to change the start address of Zeromem target.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

71.2.3 Bug Name 3

- Description/ Solution:

  Fixed SaDataHob Natural Alignment issue.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/SaDataHob.h

71.2.4 Bug Name 4

- Description/ Solution:

  Fix natural alignment issue in MemInfoHob.h.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/MemInfoHob.h

71.2.5 Bug Name 5

- Description/ Solution:

  Remove duplicate code in SA PolicyInitLib

- Platform Affected

  ALL

- Affected Files:

  KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/MrcOemPlatform.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLibFsp.inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLibrary.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLibSample.c
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/PeiSaPolicyLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/PeiSaPolicyLibBasic
  .inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/PeiSaPolicyLibrary.
  h

  /2016_Kabylake/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/Sa
  PrintPolicy.c

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/MemInfoHob.h

71.2.6 Bug Name 6

- Description/ Solution:

  Remove dependencies on SMRAM.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLibFsp.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

71.2.7 Bug Name 7

- Description/ Solution:

  Merging SKL fix to KBL stream. Skylake's maximum link width (MLW) of PCI
  Express Controller (B0:D1:F0) is always x16

- Platform Affected

  ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklP
egPrivateLowLevel.c

71.2.8 Bug Name 8

- Description/ Solution:

All touched files in SA should have year header to 2016.

- Platform Affected

ALL

- Affected Files:

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.
asl

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsP
eiConfig.h

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPol
icyLib.c

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/Pei
SaPolicyLib.c

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInit
Lib/PeiGraphicsPmInit.c

/2016_Kabylake/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.c

71.2.9 Bug Name 9

- Description/ Solution:

XDCI _DSM return Integer 0 for unsupported UUID instead of returning a buffer
containing 0

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/AcpiTables/HostBus.asl

71.2.10   Bug Name 10

- Description/ Solution:

KBL Security: SINIT launch failing when DVMT pre-allocated size set as 2048M

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiPreMemConfig.
h

71.2.11   Bug Name 11

- Description/ Solution:

  Fix SA RC Klocwork issues.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/PcieT
  rainingMargining.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklP
  egPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/DisplayInitLib.h#2

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInit
  Lib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SaPe
  gLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/IgdOpRegion.c

71.2.12   Bug Name 12

- Description/ Solution:

  SA RC null library needs to be reviewed/cleaned up/ and validated.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaPcieInitLib.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklP
  egPrivateLowLevel.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLi
  b.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLi
  bDisable.c

  /KabylakeSiliconPkg/SystemAgent/Include/Private/Library/SaInitLib.h#3 edit

  /KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h#3 edit

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/AdditionalDis
  ableSteps.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsI
  nitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsI
  nitLib.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLibDisable.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLibDisable.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLibNull/PeiGraphicsInitLibNull.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLibNull/PeiGraphicsInitLibNull.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/AdditionalDisableSteps.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLib.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLibDisable.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/PeiSaPcieInitLibDisable.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLibNull/PeiSaPcieInitLibNull.c

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLibNull/PeiSaPcieInitLibNull.inf

71.2.13   Bug Name 13

- Description/ Solution:

  Point out all API's usage(Produces/Consumes) on all inf files

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/DxeSaPolicyLib/DxeSaPolicyLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLibFsp.inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/PeiSaPolicyLibBasic.inf

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSmmAccessLib/PeiSmmAccessLib.inf
  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmmSaPcieLib/DxeSmmSaPcieLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInitLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLibNull/PeiDisplayInitLibNull.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLib.inf

/KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/PeiSaInitLibFsp.inf

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiEvLoaderLib/Pei EvLoaderLib.inf

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/P eiMemoryInitLib.inf

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/P eiMemoryInitLibFsp.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.inf

/KabylakeSiliconPkg/SystemAgent/SaInit/Smm/SaLateInitSmm.inf

/KabylakeSiliconPkg/SystemAgent/SmmAccess/Dxe/SmmAccess.inf

71.2.14   Bug Name 14

- Description/ Solution:

Add missing GUIDs back into EvLoader code by correctly defining in SiPkg.dec

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiEvLoaderLib/EvL oaderPeim.c

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiEvLoaderLib/EvL oaderPeim.h

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiEvLoaderLib/Pei EvLoaderLib.inf

/KabylakeSiliconPkg/SystemAgent/MemoryInit/Library/Private/PeiMemoryInitLib/S ource/Include/MrcVersion.h

71.2.15   Bug Name 15

- Description/ Solution:

Display correct EDRAM size.

- Platform Affected

ALL

- Affected Files:

/KabylakeSiliconPkg/SystemAgent/Include/SaRegs.h

71.2.16   Bug Name 16

- Description/ Solution:

Peg max link speed policy configuration being bypassed in furcation cases where other Gen3 endpoint is present

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaPcieInitLib/LowLevel/SklPegPrivateLowLevel.c

71.2.17 Bug Name 17

- Description/ Solution:

  Break the current HOB_SAVE_MEMORY_DATA which includes everything MRC is outputting (Inputs, Outputs, Save, etc) into 2 separate HOBs.One HOB that only has the Save info (MrcSave). Second HOB that has the rest.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/BdatAccessHandler/Dxe/BdatFactory.h

  /KabylakeSiliconPkg/SystemAgent/Include/MemInfoHob.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/MemInfo.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/DxeSmbiosMemoryLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/DxeSmbiosMemoryLib.inf

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosMemory.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType16.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType17.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/SmbiosType19.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitFsp.c

71.2.18 Bug Name 18

- Description/ Solution:

  Break the current HOB_SAVE_MEMORY_DATA which includes everything MRC is outputting (Inputs, Outputs, Save, etc) into 2 separate HOBs.One HOB that only has the Save info (MrcSave). Second HOB that has the rest.

- Platform Affected

  ALL

Version 0.7.0 Details

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/BdatAccessHandler/Dxe/BdatFactory.h

  /KabylakeSiliconPkg/SystemAgent/Include/MemInfoHob.h

  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/MemInfo.h

  /KabylakeSiliconPkg/SystemAgent/Library/Private/DxeSmbiosMemoryLib/DxeSmbiosMemoryLib.c

72 Version 0.6.1 Details

72.1 New Features

72.1.1 Feature 1

- Description/ Solution:

  Integrate latest GOP 9.0.1043 and VBIOS 1037

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.
  efi

72.1.2 Feature 2

- Description/ Solution:

  Create PCH RC PSF library and move all PSF accesses to it. Provide necessary API
  for other RC modules.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiVtdInitLib/PeiVtdInitLib.inf

72.1.3 Feature 3

- Description/ Solution:

  Use PCH register definition in ASL code.

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/AcpiTables/PegSsdt/PegOnOff.asl

72.2 Fixed Bugs

72.2.1 Bug Name 1

- Description/ Solution:

Fixing NaturalAlignment found issues in CpuBiosGuardConfig.h and IgdDxeConfig.h

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/IgdDxeConfig.h

72.2.2 Bug Name 2

- Description/ Solution:

  System hangs at Post Code 0x92 when Aperture size is set to 4GB

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiConfig.h

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/GraphicsPeiPreMemConfig.h

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLibBasic/PeiSaPolicyLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiGraphicsInitLib/PeiGraphicsPmInit.c

  /KabylakeSiliconPkg/SystemAgent/PciHostBridge/Dxe/PciHostBridge.c

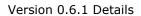## 72.2.3 Bug Name 3

- Description/ Solution:

  SUT is not booting to Legacy OS with FSP VS/ GCC Bios

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInit.c

  /KabylakeSiliconPkg/SystemAgent/SaInit/Dxe/SaInitUefi.c

72.3   Known Issues

None

73 Version 0.6.0 Details

73.1 New Features

73.1.1 Feature 1

- Description/ Solution:

  Extended PostCodes to be added by SA DT in the RC - Added few more postcodes in SA code

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiDisplayInitLib/PeiDisplayInitLib.c

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInit.c
  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

73.1.2 Feature 2

- Description/ Solution:

  Integrate latest GOP 9.0.1040 and VBIOS 1034

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/IntelGraphicsPeim/Binaries/IntelGraphicsPeim.efi

73.2 Fixed Bugs

73.2.1 Bug Name 1

- Description/ Solution:

  Natural alignment for CPU_TXT_PREMEM_CONFIG - Save on CPU_TXT_PREMEM_CONFIG size by reducing some UINT64 elements to UINT32 and ajdust the order for natural alignment

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Library/Private/PeiSaInitLib/SaInitPreMem.c

73.2.2   Bug Name 2

- Description/ Solution:

  Do not set x2APIC OptOut by default in DMAR table - Request to clear x2APIC OPT OUT bit in DMAR table by default

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/VtdConfig.h
  /KabylakeSiliconPkg/SystemAgent/Library/PeiSaPolicyLib/PeiSaPolicyLib.c

73.2.3   Bug Name 3

- Description/ Solution:

  Request to fix SA Config block DWORD size alignment issues captured by Natural Alignment check

- Platform Affected

  ALL

- Affected Files:

  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/PcieDxeConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/PciePeiPreMemConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/ConfigBlock/SwitchableGraphicsConfig.h
  /KabylakeSiliconPkg/SystemAgent/Include/Protocol/MemInfo.h

73.3   Known Issues

None

74 Version 0.5.0 Details

Initial Release

74.1 New Features

None

74.2 Fixed Bugs

None

74.3 Known Issues

None

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