Intel® Visual Compute Accelerator Product Family

Release Notes for 2.3 release

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Document Revision History

Date	Revision	Changes
December 2018	1.0	Create document with all information about 2.3 release.

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1.   Overview

The Intel® Visual Compute Accelerator (Intel® VCA) family equips Intel® Xeon® Scalable processor and Intel® Xeon® processor E5-based platforms with Iris® Pro Graphics and Intel® Quick Sync Video media transcode capabilities. Comprised of three Intel® Xeon® processors, this PCIe* add-in card delivers outstanding total cost of ownership and is supported by a rich ecosystem of server OEMs, ISVs, and solutions. Applications include:

- Broadcast – Ultra-high channel density with high visual quality.
- Remotely rendered graphics – High video quality, low latency graphics for enterprise productivity and anytime anywhere gaming.
- Multi-party communication – Video-enabled B2B, B2C, and C2C communication with massive scaling

2.   Release packages content

- Package **"IntelVisualComputeAccelerator_BIOS_2.3.26.zip"** contains:
  – VCA-BIOS_0ACGC305_0ACIE204_201810251032.img
- Package **"IntelVisualComputeAccelerator_EEPROM_2.3.26.zip"** contains:
  – M.2_support/eeprom_dafbb163.bin
  – eeprom_c3456134.bin
- Package **"IntelVisualComputeAccelerator_Build_Scripts_2.3.26.zip"** contains:
  – build_scripts-2.3.26.tar.gz
- Package **"IntelVisualComputeAccelerator_Host_CentOS_7.4_k4.14.20_2.3.26.zip"** contains:
  – daemon-vca-2.3.26-0.x86_64.rpm
  – kernel-4.14.20_1.2.3.26.VCA-1.x86_64.rpm
  – kernel-headers-4.14.20_1.2.3.26.VCA-1.x86_64.rpm
  – vca_patches_kernel_4.14.20_2.3.26_src.tar.gz
  – vcadebug-2.3.26.rpm
  – vcass-modules-4.14.20_1.2.3.26.VCA-2.3.26-0.x86_64.rpm
- Package **"IntelVisualComputeAccelerator_Host_Debian_8.7_ k4.14.20_2.3.26.zip"** contains:
  – daemon-vca-2.3.26-amd64.deb
  – linux-headers-4.14.20-1.2.3.26.vca_1.0_amd64.deb
  – linux-image-4.14.20-1.2.3.26.vca_1.0_amd64.deb
  – vca_patches_kernel_4.14.20_2.3.26_src.tar.gz
  – vcadebug-2.3.26.deb
  – vcass-modules_2.3.26-1_amd64.deb
- Package **"IntelVisualComputeAccelerator_Host_Ubuntu_16.04.3_k4.14.20_2.3.26.zip"** contains:
  – daemon-vca-2.3.26-amd64.deb
  – linux-headers-4.14.20-1.2.3.26.vca_1.0_amd64.deb
  – linux-image-4.14.20-1.2.3.26.vca_1.0_amd64.deb
  – vca_patches_kernel_4.14.20_2.3.26_src.tar.gz
  – vcadebug-2.3.26.deb
  – vcass-modules_2.3.26-1_amd64.deb
- Package **"IntelVisualComputeAccelerator_Kernels_Development_Package_2.3.26.zip"** contains:
  – kernel-devel-4.14.20_1.2.3.26.VCA-1.x86_64.rpm
  – linux-headers-4.14.20-1.2.3.26.vca_1.0_amd64.deb
  – vca_patches_kernel_4.14.20_2.3.26_src.tar.gz
- Package **"IntelVisualComputeAccelerator_Kernel_3.10.107_Patches_2.3.26.zip"** contains:
  – 0001-Add-.config.patch
  – 0002-Enabled-Xen-support-in-.config.patch
  – 0003-Add-VCA-to-EXTRAVERSION.patch
  – 0004-Added-kernel-devel-to-compilation.patch
  – 0005-net-add-skb_checksum_setup.patch
  – 0006-xen-netback-fix-fragment-detection-in-checksum-setup.patch
  – 0007-xen-netback-handle-IPv6-TCP-GSO-packets-from-the-gue.patch
  – 0008-xen-netback-enable-IPv6-TCP-GSO-to-the-guest.patch
  – 0009-Fixed-kernel-to-not-install-firmware-in-lib-firmware.patch
  – 0010-Added-compilation-and-linker-flags-required-by-SDL-D.patch
  – 0011-IOMMU-Adding-domain-mapping-for-all-slots-of-NTB-bus.patch
  – 0012-Allow-PCI-passtrough-for-BDW-graphics-despite-RMRR-u.patch
  – 0013-Apply-VCA-IOMMU-workaround-to-host-NTB-devices.patch
  – 0014-SKL-GPU-8086-193a-recognized-as-VCA_GPU-by-IOMMU.patch

- 0015-Add-default-values-to-.config.patch
- Package **"IntelVisualComputeAccelerator_Persistent_Reference_CentOS_7.4_k4.14.20_2.3.26.zip"** contains:
  - vca_disk_24gb_reference_k4.14.20_centos7.4_2.3.26.vcad.gz
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- Package **"IntelVisualComputeAccelerator_Persistent_Reference_Ubuntu_16.04.3_2.3.26.zip"** contains:
  - vca_disk_24gb_reference_k4.14.20_ubuntu16.04_2.3.26.vcad.gz
- Package **"IntelVisualComputeAccelerator_Sources_2.3.26.zip**" contains:
  - daemon-vca-2.3.26-0.src.rpm
  - vca_apps_2.3.26_src.tar.gz
  - kernel-3.10.107_1.2.3.26.VCA-1.src.rpm
  - kernel-4.14.20_1.2.3.26.VCA-1.src.rpm
  - vca_kernel_4.14.20_2.3.26_src.tar.gz
  - vca_patches_kernel_4.14.20_2.3.26_src.tar.gz
  - vcass-modules-2.3.26-0.src.rpm
  - vca_modules_2.3.26_src.tar.gz
- Package **"IntelVisualComputeAccelerator_Volatile_Reference_CentOS_7.4_k4.14.20_2.3.26.zip"** contains:
  - vca_baremetal_reference_k4.14.20_centos7.4_2.3.26.img
- Package **"IntelVisualComputeAccelerator_Volatile_Reference_Ubuntu_16.04.3_2.3.26.zip"** contains:
  - vca_baremetal_reference_k4.14.20_ubuntu16.04_2.3.26.img
- Package **"IntelVisualComputeAccelerator_Windows_Image_Creation_Package_2.3.26.zip"** contains:
  - answer_files
  - vca_create_windows_image.ps1
  - VCA_Windows_drivers
  - VCAgent

3. New/Changed features

New features added since previous, 2.2, release:

- Enabled Intel® Media Server Studio 2018 R2 HF1 (aka. PV5) on "reference" [1] VCA images for CentOS 7.4
- Enabled Intel® Media Server Studio 2018 R2 HF1 (aka. PV5) on "reference" VCA images for Ubuntu OS 16.04.3 LTS
- Updated VCA BIOS microcode to the newest versions (C6 for VCA2, 1E for VCA1)
- Reduced BAR size (on both sides, card and host) to 1GB in VCA2 EEPROM 2.12
- Added support for kernel 4.14.20
- "vca-disk" (persistent) image for both, Ubuntu OS 16.04.3 LTS and CentOS 7.4, have the same size – 24 GB.
- Extended "vcactl info node-os" command to return more information about booted image (like kernel & vcass-modules version, OS distro)
- KVM & KVMGT reference images can be taken from 2.2 release – no SW changes between 2.2 and 2.3 release

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[1] "Reference" means that Intel® Media Server Studio has been already installed inside VCA image OS

4. Known issues

ID	Issue ID	Exposure	Title & Workaround
1	2315807	High	Soft Lockup during run iperf on Windows. **Workaround:** N/A
2	2725888	High	vca-disk w/ kernel 4.14 got stuck during heavy workload. **Workaround:** This problem is due to overloading host hard/SSD drive where vca-disk images are stored. It is a HW limitation that VCA SW cannot avoid. As a WA please use faster drive, use more drives to split vca-disks between them or locate vca-disk images inside host RAM memory.
3	2059474	Medium	Sometimes nodes may stuck in "link_down" or "net_device_ready" status after card OS reboot. **Workaround:** Reboot or reset VCA node.
4	2561372	Medium	"skl_dmc_ver1_27.bin" FW doesn't load in VCA Image OS w/ kernel 3.10 and MSS PV5 **Workaround:** N/A
5	2161106	Medium	Performance for Windows BM for third node is degraded (NodeToHost direction only). **Workaround:** Reboot or reset VCA node.
6	2338237	Medium	vcactl recover-BIOS command returns Gold BIOS timeout. **Workaround:** Repeat procedure
7	2246521	Medium	"vca_kvmgtctl.sh" script can run few VMs with the same MAC and IP. **Workaround:** N/A
8	2243516	Medium	KVMGT can boot 2 VMs from the same image. **Workaround:** N/A
9	2834458	Medium	"vcactl boot" command can hang on randomly node on Gigabyte server w/ 8 VCA2 cards. **Workaround:** Observed hang is not really error. Booting procedure very slowing down. WA – repeat procedure or reboot host.
10	2806255	Medium	Failed on handshake after "vcactl os-shutdown -> vcactl boot" sequence (invalid cmd in BIOS). **Workaround:** Repeat procedure
11	2331645	Medium	Low performance for downstream for Win10 VM under KVM hypervisor. **Workaround:** N/A
12	2539721	Low	"vcainfo" command ask for node's password after wrong command execution. **Workaround:** N/A
13	2707878	Low	User can set different characters in config auto-boot. **Workaround:** N/A
14	2869206	Low	Can set a mask with character, i.e. "abcd" (instead of numeric value). **Workaround:** N/A
15	2207885	Low	Difference in modules naming between .deb and .rpm. **Workaround:** N/A
16	1796380	Low	Confusing message in "vca_config_upgrade.sh" script. **Workaround:** N/A
17	1538975	Low	"vca_config_upgrade.sh" script doesn't recover removed option in manual mode. **Workaround:** N/A

5. Fixed issues

ID	Issue ID	Exposure	Title
1	2850623	High	Low GFX Bench Performance on KVMGT with 1 VM per node.
2	2646679	High	VCA BIOS (VCA1 & VCA2) need to update its uCode (microcode).
3	2561428	High	CentOS volatile reference image has only ~470 MB of free space for root ("/") partition.
4	2713823	High	KW issue: Buffer Overflow - Non-null Terminated String
5	2860211	High	Crash system while open BlockIO device with number too high number (i.e. 9999999999999)
6	2860084	High	"vcactl help" doesn't exist on Ubuntu.
7	2674072	High	Command "vcactl config-use" froze machine.
8	2539646	Medium	"vcainfo load gpu" error - can't install packages.
9	2546434	Medium	Command about VM's status returns error on KVMGT.
10	2546818	Medium	Soft lockups on Gigabyte while running iperf test.
11	2744873	Medium	Little free space on root partition on centos with kernel 4.14.
12	2754218	Medium	"autoboot" feature failed while one of nodes is in wrong state.
13	2754234	Medium	VM on KVM crash due to out-of-memory.
14	2775336	Medium	Invalid permission for sysfs files for kernel 4.14.
15	2440437	Medium	MAC is not set correctly for 9th and higher VM in KVMGT.
16	2844589	Medium	Missing MSS samples for reference image w/ kernel 3.10.
17	2815245	Medium	BlockIO basic script random iteration fail - whole test fail.
18	2300033	Medium	Can't change vcactl config when wrong value is set.
19	1789719	Low	VCA Images with Centos 7.4 boots very long (VCA2 card only).
20	2329069	Low	Failed to change "va-min-free-memory-enabled-node" option in VCA config file.
21	2470922	Low	ICMP-watchdog doesn't restore network on Windows node.
22	2391102	Low	Firewall works but throws error on Ubuntu image.
23	2743713	Low	"vcactl config-default" should close BlockIO devices
24	2113406	Low	Apps' headers contains <linux/virio*.h> instead of VCA modules virtio headers.