

Applicable platform:

Generic

Issue/problem description:

We plan to run VTS test, after flashing Android O upgrading to Android P image (For example: SDM845.LA.2.0-00082-STD.PROD-2) and Google GSI image(system-aosp_arm64_a-2018-08-05.img) on SDM845 MTP, the phone can't be booted up. We can find below error logs, due to don't find library "vendor.display.config@1.0.so" and other vendor libraries(**library name begin with vendor**). Other platforms have same issues.

If we flash Android pure P image and GSI image on same MTP, can't reproduce this issue, the phone can be booted up.

Logs:

04-15 03:22:05.294 2261 2261 D vndksupport: Loading /vendor/lib64/hw/android.hardware.graphics.composer@2.1-impl.so from current namespace instead of sphal namespace.
04-15 03:22:05.295 2261 2261 D vndksupport: Loading /vendor/lib64/hw/hwcomposer.sdm845.so from current namespace instead of sphal namespace.
04-15 03:22:05.296 2261 2261 E HAL : load: module=/vendor/lib64/hw/hwcomposer.sdm845.so
04-15 03:22:05.296 2261 2261 E HAL : dlopen failed: library "vendor.display.config@1.0.so" not found
04-15 03:22:05.296 2261 2261 I ComposerHal: falling back to gralloc module
04-15 03:22:05.296 2261 2261 D vndksupport: Loading /vendor/lib64/hw/gralloc.sdm845.so from current namespace instead of sphal namespace.
04-15 03:22:05.296 2261 2261 E ComposerHal: failed to open framebuffer device: Invalid argument
04-15 03:22:05.296 2261 2261 E android.hardware.graphics.composer@2.1-service: Could not get passthrough implementation for android.hardware.graphics.composer@2.1::IComposer/default.

Issue Analysis:

Android P GSI image: doesn't include vendor libraries.

Pure Android P image: build and put vendor defined libraries both in "system" and "vendor" partition. After flashing Android P GSI image, system partition doesn't have vendor defined libraries. But vendor partition has vendor defined libraries. So the phone can be booted up.

Android O upgrading to Android P image: build and put vendor defined libraries only in system partition. After flashing Android P GSI image, system partition doesn't have vendor defined libraries . And vendor partition doesn't have vendor defined libraries, so don't find vendor defined libraries on the whole phone, and phone can't be booted up.

Workaround solution:

This is Google AOSP Android P Android Treble original issue. We have discussed with Google engineer by google ticket. Google engineer gave workaround by copying vendor defined libraries in vendor partition as following three patches on Android O upgrading to Android P image. Don't need change on pure Android P image.

We'll merge and release patch 1 & patch 2 in code base and **update release note for patch 3**. Please upgrade to new base line to get these changes in time. Also, you can merge them in your code base manually.

[Patch 1] code path: /vendor/qcom-proprietary/ship/common

From 444552aab91a0044c3b72c79cb51f9ab3e78997d Mon Sep 17 00:00:00 2001

From: Vinay Verma <vvinay@qti.qualcomm.com>

Date: Sun, 5 Aug 2018 10:22:40 +0530

Subject: [PATCH] Copy vendor defined libraries in vendor partition

For OTA configuration VNDK is disabled and HAL intermediate libraries are not copied in vendor. Vendor HAL processes will link to this library for binder communication.

As libraries are present only in system image it will be swapped by GSI and that will lead to failure in vendor process start-up

Copying required libs in vendor to satisfy GSI requirement.

Change-Id: I7eef84dab8dcc71b4d0a71c733b4b21e19d58144

config/Android.mk | 98 +++
1 file changed, 98 insertions(+)

diff --git a/config/Android.mk b/config/Android.mk

index d3a4aad..6c9fcb3 100644

--- a/config/Android.mk

+++ b/config/Android.mk

@@ -33,3 +33,101 @@ endif

```
$(shell cat device/qcom/$(TARGET_PRODUCT)/public.libraries-qli.txt > $(TARGET_OUT_ETC)/
public.libraries-qli.txt)
$(shell cat $(QC_PROP_ROOT)/common/config/public.libraries-qli.txt >> $(TARGET_OUT_ETC)/
public.libraries-qli.txt)
```

```
#-----
```

```
+
```

```
+ifeq ($(ENABLE_EXTRA_VENDOR_LIBS),true)
```

```
+ifeq ($(BOARD_VNDK_VERSION),)
```

```
+
```

```
+EXTRA_VENDOR_LIBRARIES := \
```

```
+ com.qualcomm.qli.ant@1.0 \
```

```
+ com.qualcomm.qli.bluetooth_audio@1.0 \
```

```
+ vendor.display.color@1.0 \
```

```
+ vendor.display.config@1.0 \
```

```
+ vendor.display.postproc@1.0 \
```

```
+ vendor.qli.data.factory@1.0 \
```

```
+ vendor.qli.esepowermanager@1.0 \
```

```
+ vendor.qli.gnss@1.0 \
```

```
+ vendor.qli.hardware.alarm@1.0 \
```

```
+ vendor.qli.hardware.camera.device@1.0 \
```

```
+ vendor.qli.hardware.data.dynamicdds@1.0 \
```

```
+ vendor.qli.hardware.data.latency@1.0 \
```

```
+ vendor.qli.hardware.data.qmi@1.0 \
```

```
+ vendor.qli.hardware.factory@1.0 \
```

```
+ vendor.qli.hardware.fingerprint@1.0 \
```

```
+ vendor.qli.hardware.fm@1.0 \
```

```
+ vendor.qli.hardware.improvetouch.touchcompanion@1.0 \
```

```
+ vendor.qli.hardware.iop@1.0 \
```

```
+ vendor.qli.hardware.perf@1.0 \
```

```
+ vendor.qli.hardware.qdutils_disp@1.0 \
```

```
+ vendor.qli.hardware.qteeconnector@1.0 \
```

```
+ vendor.qli.hardware.radio.am@1.0 \
```

```
+ vendor.qli.hardware.radio.ims@1.0 \
```

```
+ vendor.qli.hardware.radio.lpa@1.0 \
```

```
+ vendor.qli.hardware.radio.qcrilhook@1.0 \
```

```
+ vendor.qli.hardware.radio.qtiradio@1.0 \
```

```
+ vendor.qli.hardware.radio.uim@1.0 \
```

```
+ vendor.qli.hardware.radio.uim_remote_client@1.0 \
```

```
+ vendor.qli.hardware.radio.uim_remote_server@1.0 \
```

```
+ vendor.qli.hardware.sensorscalibrate@1.0 \
```

```
+ vendor.qli.hardware.soter@1.0 \
```

```
+ vendor.qli.hardware.tui_comm@1.0 \
```

```

+ vendor.qti.hardware.wigig.netperftuner@1.0 \
+ vendor.qti.hardware.wigig.supptunnel@1.0 \
+ vendor.qti.ims.callinfo@1.0 \
+ vendor.qti.voiceprint@1.0 \
+ vendor.display.color@1.1 \
+ vendor.display.config@1.1 \
+ vendor.qti.gnss@1.1 \
+ vendor.qti.hardware.radio.ims@1.1 \
+ vendor.qti.hardware.radio.uim@1.1 \
+ vendor.qti.hardware.vpp@1.1 \
+ vendor.display.color@1.2 \
+ vendor.display.config@1.2 \
+ vendor.qti.gnss@1.2 \
+ vendor.qti.hardware.radio.ims@1.2 \
+ vendor.qti.hardware.radio.ims@1.3 \
+ vendor.qti.gnss@2.0 \
+ vendor.qti.hardware.iop@2.0 \
+ vendor.qti.hardware.radio.qtiradio@2.0 \
+ vendor.qti.gnss@2.1 \
+ libdrm \
+
+define define-extra-vendor-lib
+include $$ (CLEAR_VARS)
+LOCAL_MODULE := $1.extra-vendor-lib-gen
+LOCAL_MODULE_CLASS := SHARED_LIBRARIES
+LOCAL_PREBUILT_MODULE_FILE := $$ (TARGET_OUT_INTERMEDIATE_LIBRARIES) / $1.so
+LOCAL_STRIP_MODULE := false
+LOCAL_MULTILIB := first
+LOCAL_MODULE_TAGS := optional
+LOCAL_INSTALLED_MODULE_STEM := $1.so
+LOCAL_MODULE_SUFFIX := .so
+LOCAL_VENDOR_MODULE := true
+include $$ (BUILD_PREBUILT)
+
+ifneq ($$ (TARGET_2ND_ARCH),)
+ifneq ($$ (TARGET_TRANSLATE_2ND_ARCH),true)
+include $$ (CLEAR_VARS)
+LOCAL_MODULE := $1.extra-vendor-lib-gen
+LOCAL_MODULE_CLASS := SHARED_LIBRARIES
+LOCAL_PREBUILT_MODULE_FILE := $$$ ($$ (TARGET_2ND_ARCH_VAR_PREFIX)
TARGET_OUT_INTERMEDIATE_LIBRARIES) / $1.so
+LOCAL_STRIP_MODULE := false

```

```

+LOCAL_MULTILIB := 32
+LOCAL_MODULE_TAGS := optional
+LOCAL_INSTALLED_MODULE_STEM := $1.so
+LOCAL_MODULE_SUFFIX := .so
+LOCAL_VENDOR_MODULE := true
+include $$ (BUILD_PREBUILT)
+endif # TARGET_TRANSLATE_2ND_ARCH is not true
+endif # TARGET_2ND_ARCH is not empty
+endif
+
+$(foreach lib,$(EXTRA_VENDOR_LIBRARIES),\
+ $(eval $(call define-extra-vendor-lib,$(lib))))
+
+include $(CLEAR_VARS)
+LOCAL_MODULE := vendor-extra-libs
+LOCAL_MODULE_TAGS := optional
+LOCAL_REQUIRED_MODULES := $(addsuffix .extra-vendor-lib-gen,$(
EXTRA_VENDOR_LIBRARIES))
+include $(BUILD_PHONY_PACKAGE)
+endif
+endif
--
1.8.2.1

```

[Patch 2] code path: /vendor/qcom-opensource/core-utils

From f8e4da2f66061b064b859ffadc9ec8a4c89a8eab Mon Sep 17 00:00:00 2001
From: padarshr <padarshr@codeaurora.org>
Date: Mon, 6 Aug 2018 16:24:12 +0530
Subject: [PATCH] Enforce QSSI only on Android-P or later launching devices.

OTA devices, that had launched prior to P, don't need to be imposed with QSSI enforcements. So, this adds a check to enforce QSSI only on the new launch devices starting android-P, through the product shipping API level.

Change-Id: I5ee0ea927e0a1905cc2a2c1ee356e03d69c0d629

build/QSSI_violators.mk | 9 +++++++-
1 file changed, 8 insertions(+), 1 deletion(-)

diff --git a/build/QSSI_violators.mk b/build/QSSI_violators.mk
index cfd2bcc..3e84362 100644

```
--- a/build/QSSI_violators.mk
+++ b/build/QSSI_violators.mk
@@ -8,6 +8,13 @@ qssi_violators: $(PRODUCT_OUT)/module-info.json
```

```
# module-info.json is not included when ONE_SHOT_MAKEFILE,
# hence disable qssi_violators for that as well.
+# Also, QSSI enforcement is needed only for android-P(and above) new-launch devices.
ifndef ONE_SHOT_MAKEFILE
-files: qssi_violators
+ ifdef PRODUCT_SHIPPING_API_LEVEL
+ ifneq ($(call math_gt_or_eq,$(PRODUCT_SHIPPING_API_LEVEL),28),)
+ files: qssi_violators
+ endif
+ else # PRODUCT_SHIPPING_API_LEVEL is undefined
+ files: qssi_violators
+ endif
endif
--
1.8.2.1
```

[Patch 3] code path: /vendor/qcom/skunk(Different platform may have small different configuration).
This patch won't be merged. It will be updated by release note.

From 7b4cbf2fd63e1e65ef2889382279d6fdbe4b7226 Mon Sep 17 00:00:00 2001
From: Pawan Chilka <c_pchilk@qti.qualcomm.com>
Date: Fri, 22 Jun 2018 16:01:19 +0530
Subject: [PATCH] OTA Build for O-MR1 to P

Change-Id: Ifd9b7e5636c875db748cfd9435a03f5d1f962ae6

```
---
BoardConfig.mk | 4 ++--
manifest.xml | 4 ++--
sdm845.mk | 18 ++++++++-----
3 files changed, 17 insertions(+), 9 deletions(-)
```

```
diff --git a/BoardConfig.mk b/BoardConfig.mk
index 29deb28..afebf45 100644
--- a/BoardConfig.mk
+++ b/BoardConfig.mk
@@ -201,5 +201,5 @@ TARGET_ENABLE_MEDIADRM_64 := true
```

#Flag to enable System SDK Requirements.
#All vendor APK will be compiled against system_current API set.

```

-BOARD_SYSTEMSDK_VERSIONS:=28
-BOARD_VNDK_VERSION:= current
+#BOARD_SYSTEMSDK_VERSIONS:=28
+#BOARD_VNDK_VERSION:= current
diff --git a/manifest.xml b/manifest.xml
index d2a398d..a09cad2 100644
--- a/manifest.xml
+++ b/manifest.xml
@@ -25,7 +25,7 @@ WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
 NEGLIGENCE
 OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
 IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-->
-<manifest version="1.0" type="device" target-level="3">
+<manifest version="1.0" type="device" target-level="2">
<hal format="hidl">
<name>android.hardware.boot</name>
<transport>hwbinder</transport>
@@ -199,7 +199,7 @@ IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
<hal format="hidl">
<name>android.hardware.keymaster</name>
<transport>hwbinder</transport>
- <version>4.0</version>
+ <version>3.0</version>
<interface>
<name>IKeymasterDevice</name>
<instance>default</instance>
diff --git a/sdm845.mk b/sdm845.mk
index 10a894f..ad366a0 100644
--- a/sdm845.mk
+++ b/sdm845.mk
@@ -239,7 +239,7 @@ PRODUCT_PROPERTY_OVERRIDES += \
PRODUCT_PROPERTY_OVERRIDES += \
vendor.qcom.bluetooth.soc=cherokee

-PRODUCT_FULL_TREBLE_OVERRIDE := true
+#PRODUCT_FULL_TREBLE_OVERRIDE := true
PRODUCT_VENDOR_MOVE_ENABLED := true

PRODUCT_PROPERTY_OVERRIDES += rild.libpath=/vendor/lib64/libril-qc-hal-qmi.so
@@ -251,7 +251,7 @@ PRODUCT_PROPERTY_OVERRIDES +=
ro.vendor.qti.sys.fw.bg_apps_limit=60

```

KMGK_USE_QTI_SERVICE := true

#Enable KEYMASTER 4.0

-ENABLE_KM_4_0 := true

+ENABLE_KM_4_0 := false

ifneq (\$(strip \$(TARGET_USES_QSSI)),true)

DEVICE_PACKAGE_OVERLAYS += device/qcom/sdm845/overlay

@@ -280,9 +280,9 @@ SDM845_DISABLE_MODULE := true

ENABLE_VENDOR_RIL_SERVICE := true

Enable vndk-sp Libraries

-PRODUCT_PACKAGES += vndk_package

+#PRODUCT_PACKAGES += vndk_package

-PRODUCT_COMPATIBLE_PROPERTY_OVERRIDE:=true

+#PRODUCT_COMPATIBLE_PROPERTY_OVERRIDE:=true

#Enable WIFI AWARE FEATURE

WIFI_HIDL_FEATURE_AWARE := true

@@ -294,7 +294,6 @@ WIFI_HIDL_FEATURE_DUAL_INTERFACE := true

QC_WIFI_HIDL_FEATURE_DUAL_AP := true

TARGET_USES_MKE2FS := true

-\$ (call inherit-product, build/make/target/product/product_launched_with_p.mk)

TARGET_MOUNT_POINTS_SYMLINKS := false

@@ -305,3 +304,12 @@ TARGET_MOUNT_POINTS_SYMLINKS := false

ifeq (\$(ENABLE_VENDOR_IMAGE), true)

VENDOR_SECURITY_PATCH := 2018-06-05

endif

+

+PRODUCT_PACKAGES += vendor-extra-libs

+

+++ This flag will copy HAL intermediate

+++ libs in vendor partition

+ENABLE_EXTRA_VENDOR_LIBS := true

+

+

+\$ (call inherit-product, build/make/target/product/product_launched_with_o_mr1.mk)

--

Qualcomm
2018-09-12 23:55:33 PDT
zk_sw@wingtech.com