# Open BMC Development (Part 3) Adding IPMI Function Configuration

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摘要 This article describes how to configure the KCS channel of IPMI in the OpenBMC environment, and implements function debugging by modifying the configuration file, adding the ipmitool installation package, and downloading the IPMI code.

The summary is generated in C Know , supported by DeepSeek-R1 full version, go to experience>

## Open bmc supports modifying ipmi

OpenBmc already supports some functions of ipmi itself, so there is no need to develop from scratch. You only need to open the corresponding configuration items to complete the modification. Steps to modify ipmi:

### 1. Change the ipmi channel setting to kcs.

Because we are using the romulus platform, we need to look in the romulus configuration file, that is, in: ~/openbmc-master/meta-ibm/meta-romulus/conf/machine/romulus.conf to find the platform dependency file, require inc file. After checking, we can know that the ipmi configuration is in the openpower.inc file.

```
KMACHINE = "aspeed"
KERNEL_DEVICETREE = "${KMACHINE}-bmc-opp-${MACHINE}.dtb"
UBOOT_MACHINE = "ast_g5_ncsi_config"

require conf/machine/include/ast2500.inc
require conf/machine/include/obmc-bsp-common.inc
require conf/machine/include/openpower.inc
require conf/machine/include/p9.inc

PHOSPHOR_MRW_LICENSE = "Apache-2.0"
PHOSPHOR_MRW_LIC_FILES_CHKSUM = "file://LICENSE;md5=e3fc50a88d0a364313df4b21ef20c29e"
PHOSPHOR_MRW_URI = "git://github.com/open-power/romulus-xml"
PHOSPHOR_MRW_REV = "14b471fbf37f5fb60261de001df83caf5f96d81f"

PREFERRED_PROVIDER_virtual/openpower-occ-control-config-native = "romulus-occ-control-config-native"
PREFERRED_PROVIDER_virtual/phosphor-led-manager-config-native = "romulus-led-manager-config-native"
PREFERRED_PROVIDER_virtual/phosphor-logging-callouts = "romulus-phosphor-logging-callouts-native"
~
```



Find openpower.Inc, the path of this file is:

~/openbmc-master/meta-openpower/conf/machine/include. Modify the obmc-host-ipmi-hw option to phophor-ipml-kcs. As follows:

- **Modify the detailed settings of kcs**

```
yu@yu-VirtualBox:~/openbmc-master/meta-openpower/conf/machine/include$ ls
openpower.inc  p8.inc  p9.inc
yu@yu-VirtualBox:~/openbmc-master/meta-openpower/conf/machine/include$ cat openpower.inc
OBMC_MACHINE_FEATURES += "\
        obmc-phosphor-fan-mgmt \
        obmc-phosphor-chassis-mgmt \
        obmc-phosphor-flash-mgmt \
        obmc-host-ipmi \
        obmc-host-ctl \
        obmc-host-state-mgmt \
        obmc-chassis-state-mgmt \
        obmc-bmc-state-mgmt \
        "

# Add OpenPOWER OEM commands handler library
VIRTUAL-RUNTIME_phosphor-ipmi-providers:append:df-openpower = " \
    openpower-ipmi-oem \
"

PREFERRED_PROVIDER_virtual/obmc-host-ipmi-hw = "phosphor-ipmi-kcs"
PREFERRED_PROVIDER_virtual/obmc-chassis-mgmt = "packagegroup-op-apps"
PREFERRED_PROVIDER_virtual/obmc-fan-mgmt = "packagegroup-op-apps"
PREFERRED_PROVIDER_virtual/obmc-flash-mgmt = "packagegroup-op-apps"
PREFERRED_PROVIDER_virtual/obmc-system-mgmt = "packagegroup-op-apps"
PREFERRED_PROVIDER_virtual/obmc-host-ctl ?= "obmc-op-control-host"
PREFERRED_PROVIDER_virtual/phosphor-ipmi-fru-hostfw-config ?= "hostboot-inventory-config-native"
PREFERRED_PROVIDER_virtual/openpower-fru-vpd-layout ?= "openpower-fru-vpd-layout-native"
PREFERRED_PROVIDER_virtual/openpower-fru-inventory ?= "openpower-fru-inventory-example-native"
PREFERRED_PROVIDER_virtual/openpower-fru-properties ?= "openpower-fru-properties-example-native"
```



1. download ipmi source code, devtool modify linux-aspeed
2. Find the file path:

openbmc-master/build/workspace/sources/linux-aspeed/arch/arm/boot/dts/aspeed-bmc-opp-romulus.dts.

```
yu@yu-VirtualBox:~/openbmc-master/build/workspace/sources/linux-aspeed/arch/arm/boot/dts$ ll aspeed-bmc-opp-romulus.dts
-rw-r--r-- 1 yu yu 6412 10月 25 20:03 aspeed-bmc-opp-romulus.dts
yu@yu-VirtualBox:~/openbmc-master/build/workspace/sources/linux-aspeed/arch/arm/boot/dts$
```

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Add a line of ipmi kcs3 channel information to the file

&kcs3 {

status = "okay";

aspeed,lpc-io-reg = <0xca2>;

};

```
&ibt {
        status = "okay";
};

&kcs3 {
        status = "okay";
        aspeed,lpc-io-reg = <0xca2>;
};

&vhub {
        status = "okay";
};

&adc {
        status = "okay";
};
```

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### 3. Add ipmitool installation package

Modify the file packagegroup-op-apps.bb

```
yu@yu-VirtualBox:~/openbmc/meta-openpower/recipes-phosphor/packagegroups$ ls
packagegroup-obmc-apps.bbappend                packagegroup-obmc-yaml-providers.bbappend
packagegroup-obmc-ipmid-providers.bbappend     packagegroup-op-apps.bb
packagegroup-obmc-phosphor-debugtools.bbappend
yu@yu-VirtualBox:~/openbmc/meta-openpower/recipes-phosphor/packagegroups$
```

打包ipmitool工具文件

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Vi packagegroup-op-apps.bb, add a line like ipmitool \.

```
SUMMARY_${PN}-system = "OpenPOWER System"
RDEPENDS_${PN}-system = " \
        pdbg \
        croserver \
        ipmitool \
       "
~
```

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### 4. Download ipmi code

Ipmi code download command: devtool modify phosphor-ipmi-host

By default, the ipmi code is downloaded to the ~/openbmc/build/romulus/workspace/sources/ path. Modify the corresponding ipmi code and the generated image will recompile the code to take effect.

### 5. Recompile

If you are worried that the image has not been updated, you can clear the image first: bitbake -c clean obmc-phosphor-image

Then compile again.

Flash the compiled image to the board, open the kcs channel on the board, and the ipmi function can be used for service debugging.

### 6. Test ipmi function

The BMC has loaded the ipmitool package. You can also send ipmitool commands on the BMC. Enter the command line to perform

Enter the command: ipmitool raw 0x6 0x1

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