ALTOS

Technical Notes

BrainSphere P10 F7 Onboard NIC Limitation for Ubuntu

ALTOS

Version 1.0
April 12, 2022

Revision History

Ver.	Date	Description
1.0	Apr 12, 2022	First release

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Summary

The following BrainSphere P10 F7 onboard Intel I219-V NIC limitation is verified with Ubuntu 18.04.06 LTS and 20.04.03 LTS. For other release may or may not have the same limitation.

Ubuntu version	Kernel version	Limitation
18.04.06 LTS	4.15.0-156 (Default kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
	4.15.0-162 (Updated kernel)	Onboard Intel I219-V NIC CANNOT work. (Built-in driver does not work and add-on driver cannot be compiled.)
	5.4.0-84 (HWE kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
	5.4.0-104 (Updated HWE kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
20.04.03 LTS	5.4.0-81 (Default kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
	5.4.0-104 (Updated kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
	5.13.0-35 (HWE default)	Built-in driver can work with onboard Intel I219-V NIC.

NOTE [1]. The following driver is verified that can work.

https://www.intel.com/content/www/us/en/download/14611/intel-network-adapter-driver-for-pcie-intel-gigabit-ethernet-network-connections-under-linux.html

Limitation

BrainSphere P10 F7 uses Intel I219-V as onboard NIC and some of Ubuntu Linux cannot detect the NIC during or after OS installation. This is due to some of Ubuntu Linux built-in driver does not work with Intel I219-V. Installing additional driver after OS installation is required to make the NIC working under the OS. If the kernel is updated after additional NIC driver is installed, the installed additional NIC won't work. The additional NIC driver need to be installed again. But for some release of Ubuntu, the driver installation will be failed (cannot be compiled during the installation process) after kernel update. The limitation and verified release of Ubuntu is as below table (the same table as in Summary section).

Ubuntu version	Kernel version	Limitation
18.04.06 LTS	4.15.0-156 (Default kernel)	Installing additional driver is required to make onboard Intel I219-V NIC work.[1]
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Installing Additional Intel I219-V Driver

For installing the additional Intel NIC driver, "gcc" and "make" are needed. With internet connection, "gcc" and "make" installation would be easier. So an additional add-on NIC (for example, Intel Gigabit CT2 Desktop Adapter based on Intel 82574L) which can be supported by Ubuntu built-in driver need to be installed in the system in advanced. The add-on NIC can be removed after the additional driver for Intel I219-V is installed.

Installing gcc and make.
```
#sudo apt update
#sudo apt install gcc make
```

Download the driver from the link below and copy it to BrainSphere P10 F7. Extra the downloaded driver.
https://www.intel.com/content/www/us/en/download/14611/intel-network-adapter-driver-for-pcie-intel-gigabit-ethernet-network-connections-under-linux.html
```
#tar zxvf e1000e-3.8.4.tar.gz
```

Entering the driver source folder. Compile and deploy the driver.
```
#cd e1000e-3.8.4/src/
#make
#sudo make install
```

Remove the running driver and make the new driver to work immediately.
```
#sudo rmmod e1000e
#sudo modprobe e1000e
```

Update the driver in boot image to make new driver can work from every time system boot.
```
#sudo update-initramfs –u
```

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