New Features for Cisco IOS-XE 17.6.1

The following are the new features available for the IR1101 on release 17.6.1:

Per Port DHCP Address Allocation

No new CLI added. The device on interface FA0/0/1 should get 192.0.2.90.

The minimum configuration looks like the following example:

```
conf t
  ip dhcp excluded-address 192.0.2.1 192.0.2.80
  ip dhcp excluded-address 192.0.2.100 192.0.2.255
  ip dhcp use subscriber-id client-id
end

conf t
  ip dhcp pool 16
    network 192.0.2.0 255.255.255.0
      address 192.0.2.90 client-id Fa0/0/1 ascii
end
```

The show output CLI appears like the following:

```
Router#show ip dhcp binding
Bindings from all pools not associated with VRF:
IP address Client-ID/ Lease expiration Type State Interface
Hardware address/
User name
192.0.2.90 0046.6130.2f30.2f31 Infinite Manual Active Unknown
```

Note   The client-id has to be the short-name of the interface. Use "Fa" for FastEthernet interface. Use "Gi" for GigabitEthernet interface.

Custom Controlled LED

The IR-1101 has a non-blinking tri-color custom LED, which can be controlled with the following executive privilege CLI.

```
router# set platform hardware custom-led <0-7>
```

The numbers 0-7 are as follows:

- 0: Off

- 1: Blue

- 2: Green

- 3: Red

- 4: Blue/Green

- 5: Blue/Red

- 6: Green Red

- 7: Blue/Green/Red

Support DSL SFP Firmware Signing and Signature Validation

An optional IOS filepath has been added to the end of the existing upgrade command. The file must be signed with SFP-VADSL2-I key. The file could be in bootflash:/flash:, usbflash0 or msata:. It cannot be from any remote file system.

Command Line Interface

The command line interface for upgrading the module follows:

router# **upgrade hw-module subslot 0/0 sfp 0** *<IOS filepath>*

Options to the command are:

```
Router#upgrade hw-module subslot 0/0 sfp 0 ?
  bootflash:  Firmware filename on local driver
  crashinfo:  Firmware filename on local driver
  flash:      Firmware filename on local driver
  usbflash0:  Firmware filename on local driver
```

The following is an example of the command usage:

```
Router#upgrade hw-module subslot 0/0 sfp 0 bootflash:sfp8455_rel.bin
Digital signature successfully verified in file bootflash:sfp8455_rel.bin
Upgrade SFP firmware on interface GigabitEthernet0/0/0 from 1_62_8463 to 1_62_8455
Connection will be disrupted, Continue(Y/N)?y
Start ebm upgrade!!
..........................................................................
..........................................................................
..........................................................................
..........................................................................
```

```
firmware update success!!
```

DSL SFP Annex M support

Support is the same as it was for Annex-J in 17.5.1

Support Four ADSL MIB Objects

MIB support has been added to obtain the DSL line speed and attainable rate on the IR1101.

The new MIBS are shown below:

1.3.6.1.2.1.10.94.1.1.4.1.2 ADSL-LINE MIB:adslAtucChanCurrTxRate

1.3.6.1.2.1.10.94.1.1.5.1.2 ADSL-LINE MIB:adslAturChanCurrTxRate

1.3.6.1.2.1.10.94.1.1.2.1.8 ADSL-LINE MIB:adslAtucCurrAttainableRate

1.3.6.1.2.1.10.94.1.1.3.1.8 ADSL-LINE MIB:adslAturCurrAttainableRate

Command Line Interface

On a router with a DSL SFP connected to ADSL DSLAM, the following existing SNMP CLIs can be used to verify support for the above OIDs:

```
!configure SNMP Server
!--------------------
snmp-server community public RO
snmp-server manager
!
!verify MIB OIDs
!--------------
snmp get-next v2c 33.33.33.102 public oid 1.3.6.1.2.1.10.94.1.1.4.1.2
!
```

The following command can also be used to gather the MIB values from another SNMP Client (for example, a linux device):

```
$ snmpwalk -v 2c -c public 33.33.33.102 1.3.6.1.2.1.10.94.1.1.4.1.2
```

Digital IO Enhancement

Support has been added to allow some digital I/O ports to be managed by IOSd, and some other digital IO ports to be managed by IOx container apps. An updated CLI has been added and the YANG model for Digital IO Enhancement has been updated.

The 17.5.1 version of the CLI is:

```
Router(config)# alarm contact attach-to-iox
```

Note   With release 17.5.1, **alarm contact attach-to-iox** gave IOX control for ALL digital IO ports (1 thru 4).

The 17.6.1 version of the CLI is:

```
Router(config)#alarm contact 1 ?
application Set the alarm application
attach-port-to-iox Enable selected Digital IO Ports access from IOX
description Set alarm description
enable Enable the alarm/digital IO port
output Set mode as output
severity Set the severity level reported
threshold Set the digital IO threshold
trigger Set the alarm trigger

Router(config)#alarm contact 1 attach-port-to-iox

Router#show alarm
Alarm contact 0:
Not enabled.
Digital I/O 1:
Attached to IOX.
Digital I/O 2:
Not enabled.
Digital I/O 3:
Not enabled.
Digital I/O 4:
Not enabled.
```

In the updated CLI, <1-4> are the number of digital I/O ports to assign to IOx for container apps.

Note   With release 17.6.1, each digital IO port can be assigned to IOX individually.