

Chapter 9

Configuring ATM-over-ADSL Interfaces

J4300 and J6300 Services Routers with asymmetrical DSL (ADSL) Annex A or Annex B PIMs can use an ATM interface to send network traffic through a point-to-point connection to a DSLAM. ATM-over-ADSL interfaces are not supported on J2300 Services Routers.



NOTE: You can configure J4300 and J6300 Services Routers with ADSL PIMs for connections through DSL only, not for direct ATM connections.

You configure the underlying ADSL as an ATM interface with an interface name of *at-pim/0/port*. Multiple encapsulation types are supported on both the physical and logical ATM-over-ADSL interface.

You can configure Point-to-Point Protocol over Ethernet (PPPoE) over ATM to connect through DSL lines. For PPPoE on an ATM-over-ADSL interface, you must configure encapsulation on both the physical and logical interfaces. To configure encapsulation on an ATM-over-ADSL physical interface, use Ethernet over ATM encapsulation. To configure encapsulation on an ATM-over-ADSL logical interface, use the PPPoE over AAL5 LLC encapsulation. LLC encapsulation allows a single ATM virtual connection to transport multiple protocols.

When you configure a point-to-point encapsulation such as PPP on a physical interface, the physical interface can have only one logical interface (only one unit statement) associated with it.

For more information about configuring PPPoE, see “Configuring Point-to-Point Protocol over Ethernet” on page 481.

To configure physical ATM interfaces for ADSL, include the `vpi 0` statement at the [edit interfaces *at-pim/0/port* atm-options] hierarchy level, the `operating-mode` statement at the [edit interfaces *at-pim/0/port* dsl-options] hierarchy level, and the `encapsulation` statement at the [edit interfaces *at-pim/0/port*] hierarchy level:

```
[edit interfaces at-pim/0/port]
  atm-options {
    vpi 0;
    dsl-options;
    operating-mode (adsl2plus | ansi-dmt | auto | etsi | itu-annexb-ur2 |
                  itu-annexb-non-ir2 | itu-dmt | itu-dmt-bis);
  }
```

```

        encapsulation (atm-pvc | ethernet-over-atm);
    }
}

```

Configure logical interface properties by including the `encapsulation` statement, `family` statement, and `vci` statement:

```

unit logical-unit-number {
    encapsulation (atm-vc-mux | atm-nlpd | atm-cisco-nlpd | atm-snap |
        atm-ppp-vc-mux | atm-ppp-llc | ether-over-atm-llc | ppp-over-ether-over-atm-llc);
    family inet{
        vci vpi-identifier.vci-identifier;
    }
}

```

You can include these statements at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number*]
- [edit logical-routers *logical-router-name* interfaces *interface-name* unit *logical-unit-number*]

To configure ATM-over-ADSL network interfaces for the J-series Services Router:

1. Set the ATM virtual path identifier (VPI) to 0 (zero) by including the `vpi 0` statement at the [edit interfaces *interface-name* atm-options] hierarchy level:

```

[edit interfaces at-pim/0/port atm-options]
vpi 0;

```

2. Configure the ADSL operating mode on the physical ATM interface by including the `operating-mode` statement at the [edit interfaces *interface-name* dsl-options] hierarchy level:

```

[edit interfaces at-pim/0/port dsl-options]
operating-mode mode;

```

By default, the mode is `auto`, which means the ADSL line autonegotiates the setting to match the setting of the DSLAM located at the central office.

You can configure the operating mode to be one of the following for Annex A PIMS:

- `adsl2plus`—Set the ADSL line to train in the ITU G.992.5 mode.
- `ansi-dmt`—Set the ADSL line to train in the ANSI T1.413 Issue 2 mode.
- `auto`—Set the ADSL line to autonegotiate the setting to match the setting of the DSLAM located at the central office. The ADSL line trains in the ANSI T1.413 Issue 2 (`ansi-dmt`) or ITU G.992.1 (`itu-dmt`) mode.
- `itu-dmt`—Set the ADSL line to train in the ITU G.992.1 mode.
- `itu-dmt-bis`—Set the ADSL line to train in the ITU G.992.3 mode.
- `itu-lite`—Set the ADSL line to train in the G.992.2 mode.

- `itu-lite-bis`—Set the ADSL line to train in the G.992.4 mode.

You can configure the operating mode to be one of the following for Annex B PMS:

- `adsl2plus`—Set the ADSL line to train in the ITU G.992.5 mode.
 - `auto`—Set the ADSL line after autonegotiating the setting to match the setting of the DSLAM located at the central office.
 - `etsi`—Set the ADSL line to train in the ETSI TS 101 388 V1.3.1 mode.
 - `itu-dmt`—Set the ADSL line to train in the ITU G.992.1 mode.
 - `itu-dmt-bis`—Set the ADSL line to train in the ITU G.992.3 mode.
 - `itu-annexb-ur2`—Set the ADSL line to train in the ITU G.992.1 Deutsche Telekom UR-2 mode.
 - `itu-annexb-non-ur2`—Set the ADSL line to train in the ITU G.992.1 non-UR-2 mode.
 - `itu-dmt`—Set the ADSL line to train in the ITU G.992.1 mode.
3. Configure the physical interface encapsulation type by including the encapsulation statement at the `[edit interfaces at-pim/0/port]` hierarchy level:

```
[edit interfaces at-pim/0/port]
encapsulation type;
```

ATM-over-ADSL interfaces support the following encapsulations on the physical interface:

- `atm-pvc`—ATM permanent virtual circuits (PVCs).
 - `ether-over-atm`—Ethernet over ATM encapsulation. For interfaces that carry IPv4 traffic, use this type of encapsulation.
4. Configure the logical interface encapsulation type by including the encapsulation statement:

```
encapsulation type;
```

You can include this statement at the following hierarchy levels:

- `[edit interfaces interface-name unit logical-unit-number]`
- `[edit logical-routers logical-router-name interfaces interface-name unit logical-unit-number]`

ATM-over-ADSL interfaces support the following encapsulations on the logical interface:

- `atm-vc-mux`—Use ATM VC multiplex encapsulation. You can only configure the `inet` family when you use this type of encapsulation.

- **atm-nlpd**—Use ATM network layer protocol ID (NLPD) encapsulation. You can only configure the `inet` family when you use this type of encapsulation.
- **atm-cisco-nlpd**—Use Cisco NLPD encapsulation. You can only configure the `inet` family when you use this type of encapsulation.
- **atm-snap**—Use ATM subnetwork attachment point (SNAP) encapsulation.
- **atm-ppp-vc-mux**—Use PPP over ATM AAL5 multiplex encapsulation.
- **atm-ppp-llc**—Use ATM PPP over AAL5 logical link control (LLC) encapsulation.
- **ether-over-atm-llc**—For interfaces that carry IPv4 traffic, use Ethernet over LLC encapsulation. You cannot configure multipoint interfaces if you use this type of encapsulation.
- **ppp-over-ether-over-atm-llc**—Use PPP over Ethernet over ATM LLC encapsulation. You cannot configure the interface address when you use this encapsulation type. Instead, you configure the interface address on the PPP interface.

5. Configure the family protocol type by including the **family** statement:

```
family family;
```

You can include this statement at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number*]
- [edit logical-routers *logical-router-name* interfaces *interface-name* unit *logical-unit-number*]

6. Configure the virtual channel identifier (VCI) type and value by including the **vci** statement:

```
vci vpi-identifier.vci-identifier;
```

You can include this statement at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number*]
- [edit logical-routers *logical-router-name* interfaces *interface-name* unit *logical-unit-number*]