Configuring VDSL2 Bonding and Single-Wire Pair

Very-high-bit-rate digital subscriber line 2 (VDSL2) bonding combines two copper wire pairs to increase the capacity or extend the copper network's reach. For a customer, this means enhanced data rate and operation on longer loops. A single-wire pair enables you to configure profile 8a through 17a and ADSL on line 0, and profile 8a through 30a on line 1. VDSL2 bonding and single-wire pair are supported on **C897VAB-K9** series router.

This chapter contains the following sections:

Restrictions

The following restrictions are applicable to VDSL2 bonding on the Cisco 800 Series Routers:

- VDSL2 bonding is supported only on the C897VAB-K9 Series Router.
- Even though C897VAB-K9 is a bonding SKU, bonding is not the default configuration. The ADSL mode and VDSL single-wire mode are supported in the default configuration. You should enable bonding using the **line-mode bonding** command.
- The **no line-mode bonding** and **default line-mode bonding** commands change the configuration to 'single-wire' on Line 0, which is the default configuration.
- The line-mode configuration is removed from the router whenever you change the operating mode. You have to run the command again in the new operating mode to configure bonding.

Configuring Bonding in Auto Mode

You can configure bonding either in **auto** mode or **VDSL2**. The default configuration is **auto**.

Perform the following tasks to configure bonding in **auto** mode:

SUMMARY STEPS

1. **configure terminal**
2. **controller VDSL** *slot*
3. **operating mode** *mode*
4. **line-mode bonding**
5. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `router#configure terminal`	Enters global configuration mode when using the console port.
Step 2	**controller VDSL** *slot* **Example:** `router(config)# controller vdsl 0`	Enters controller configuration mode.
Step 3	**operating mode** *mode* **Example:** `router(config)# operating mode auto`	Specifies the operating mode. The operating mode is **auto**.
Step 4	**line-mode bonding** **Example:** `router(config-controller)# line-mode bonding`	Enables bonding mode in CPE.
Step 5	**exit** **Example:** `router(config-controller)# exit`	Exits controller configuration mode.

Configuring Bonding in VDSL2 Mode

Perform the following tasks to configure bonding in VDSL2 mode:

SUMMARY STEPS

1. **configure termina**l
2. **controller VDSL** *slot*
3. **operating mode** *mode*
4. **line-mode bonding**
5. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure termina**l **Example:** `router#configure terminal`	Enters global configuration mode when using the console port.
Step 2	**controller VDSL** *slot* **Example:** `router(config)# controller vdsl 0`	Enters controller configuration mode.
Step 3	**operating mode** *mode* **Example:** `router(config)# operating mode vdsl2`	Specifies the operating mode. The operating mode is VDSL2.
Step 4	**line-mode bonding** **Example:** `router(config-controller)# line-mode bonding`	Enables bonding mode in CPE.
Step 5	**exit** **Example:** `router(config-controller)# exit`	Exits the controller mode.

Configuring a Single-Wire Pair on Line 0

Perform the following tasks to configure single-wire pair on line 0:

SUMMARY STEPS

1. **configure terminal**
2. **controller VDSL** *slot*
3. **line-mode single-wire line** *line-number*
4. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `router#configure terminal`	Enters global configuration mode when using the console port.
Step 2	**controller VDSL** *slot* **Example:** `router(config)# controller vdsl 0`	Enters controller configuration mode.
Step 3	**line-mode single-wire line** *line-number* **Example:** `router(config-controller)# line-mode single-wire line 0`	Enables 8a through 17a profile and ADSL on line 0 in single-wire (nonbonding) mode.
Step 4	**exit** **Example:** `router(config-controller)# exit`	Exits controller configuration mode.

Configuring a Single-Wire Pair on Line 1

Perform the following tasks to configure single-wire pair on line 1.

SUMMARY STEPS

1. **configure terminal**
2. **controller VDSL** *slot*
3. **line-mode single-wire line** *line-number* [profile 30a]
4. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**configure terminal** **Example:** `router#configure terminal`	Enters global configuration mode when using the console port.

	Command or Action	Purpose
Step 2	**controller VDSL** *slot* **Example:** `router(config)# controller vdsl 0`	Enters controller configuration mode.
Step 3	**line-mode single-wire line** *line-number* [profile 30a] **Example:** `router(config-controller)# line-mode single-wire line 1 profile 30a`	Enables profile 8a through 30a profile on line 1 in single-wire (non-bonding) mode. If profile 30a is not specified, profiles 8a to 17a are enabled on that line.
Step 4	**exit** **Example:** `router(config-controller)# exit`	Exits the controller mode.

Configuration Examples

The following example shows how to enable bonding in auto mode:

```
router# configure terminal
router(config)# controller vdsl 0
router(config)# operating mode auto
router(config-controller)# line-mode bonding
router(config-controller)# exit
```

The following example shows how to enable VDSL2 bonding:

```
router# configure terminal
router(config)# controller vdsl 0
router(config)# operating mode vdsl2
router(config-controller)# line-mode bonding
router(config-controller)# exit
```

The following example shows how to remove bonding:

```
router# configure terminal
router(config)# controller vdsl 0
router(config)# no operating mode
router(config-controller)# no line-mode bonding
router(config-controller)# exit
```

The following example shows how to enable profile 8a through 17a on line 0:

```
router# configure terminal
router(config)# controller vdsl 0
router(config-controller)# line-mode single-wire line 0
router(config-controller)# exit
```

The following example shows how to enable profile 30a on line 1:

```
router# configure terminal
router(config)# controller vdsl 0
router(config-controller)# line-mode single-wire line 1 profile 30a
router(config-controller)# exit
```

The following example shows how to remove profile 30a from line 1:

```
router# configure terminal
router(config)# controller vdsl 0
```

```
router(config-controller)# no line-mode single-wire line 1
router(config-controller)# exit
```