How−to Upgrade LEM, WCM, and RXT Card Firmware From Versions 3.0.1 to 3.2.x

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Introduction

This document describes the ONS 15800/801 firmware download and upgrade procedure for wavelength channel module (WCM), line extender modules (LEMs), and Receive Transponder (RXT) cards from version 3.0.1 to version 3.2.x.

Warning: This procedure is potentially traffic−affecting.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- How to change and set IP addresses on a Windows−based PC (that is, Windows 95, Windows 98, Windows NT and Windows 2000).
- How to connect to an ONS 1580x node through the Cisco Photonics Tool Kit (CPTK) configuration tool.

Components Used

- A PC that runs Windows 95, Windows 98, Windows NT, or Windows 2000, with a hard disk and serial or Ethernet port.
- CPTK Software Version 1.6.1 or later.
- File **Alem10gh_32x.fl** (registered customers only) This file contains the firmware executable, available on the Cisco website. Please note that you require a special access code for this download.
- File **txt301to32x.zip** (registered customers only) This file includes these two files available on the Cisco website.

- **txt_fwupgrade_324.fl** This file contains the configuration commands.
- **tl1connect.exe** You need this file for the semi−automated procedure if you upgrade on a system with the TL1 agent.

Note: Please note that you require a special access code for this download.

The information in this document is based on these software and hardware versions:

- WCM−10G−M
- WCM−10H−M
- LEM−10G−M
- LEM−10H−M
- RXT−10G−M
- RXT−10H−M

Note: The starting version of these cards must be 3.0.1.

This procedure applies to any release of the ONS 15800 or ONS 15801 supervisory system.

Different steps are necessary in case the network element (NE) agent installed is a TL1 agent or a proprietary agent. Refer to the section specific to your network configuration.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Upgrade Without a TL1 Agent

Note: Cisco strictly recommends that you activate no connections to the NE during this procedure, other than those that the procedure requires.

This section applies when the Control and Monitoring Processor (CMP) Operations Administration Maintenance and Provisioning (OAM&P) processor card is configured or executing the proprietary agent.

The recommended approach is to perform these steps in parallel for a maximum number of eight (8) cards per NE at the same time. Ensure that you perform all these steps in strict sequence.

Step 1: Download the Firmware from 3.0.1 to 3.2.x Using CPTK

Complete these steps:

1. Place a check mark in the left column in order to select the LEM, WCM, or RXT card(s) you want to update.

   For each checked item, verify whether the application firmware installed is actually 3.0.1 in order to ensure that you do not download the executable on the wrong card. Select each item, click the right−mouse button, and verify the label.
2. Choose the **Extended Actions** tab from the main menu and select the **File Download** > **Application & Config** from the Extended Actions menu. The Browse dialog window appears.
3. Choose the filename **Alem10gh_32x.fl** which corresponds to version 3.2.x firmware.

4. Push the **Load** button for the download file action.

   If the download fails, because the connection to the NE is broken or the NE resets, the CPTK notifies you of this failure with a message box saying either `Connection to host lost` or `Download Failed`. In this case, repeat the procedure starting from step 1 above.

   When the download succeeds, a message box with the `Download completed` message appears. In case of a partial failure, the message reads, `Download completed but failed on <List>`, where `<List>` includes the name and position of the card(s) where the failure occurred. Take note of the card(s) in the list and repeat for them the procedure from step 1.

Step 2: Reset the Card(s) Twice Through CPTK

Complete these steps:

1. Select the card to be reset in the unit display (through the check mark).

   Select the same card(s) as in step 1 in the Step 1: Download the Firmware from 3.0.1 to 3.2.x Using CPTK section.
2. Choose the **Board Reset** action from the Extended Actions menu.
3. Click **OK** in the Board Reset dialog window.

   After a few seconds, the labels corresponding to the checked items appear in red for about one minute, to indicate they have been successfully restarted. If some items do not change color, it means the corresponding cards did not successfully restart. Take note of the items, uncheck them, and continue with the next step. At the end, repeat the procedure only for the failed items in the procedure from step 1.
4. Repeat the procedure a second time, from step 1.

Step 3: Use CPTK to Verify that the Card now Runs the Correct Firmware Version

Complete these steps:

1. Select the upgraded card(s) in the unit display (through the check mark).

   Select the same card(s) as in step 1 of the Step 1: Download the Firmware from 3.0.1 to 3.2.x Using CPTK section.
2. Choose **Board Details** from the Actions menu.
3. Verify that the version of the firmware for this board is now 3.2.x.

   If the version is not 3.2.x, you need to repeat the procedure from the start.

Step 4: Download the Card Configuration Stored in File txt_fwupgrade_324.fl

Complete these steps:

Note: This configuration is for the WCM, LEM, or RXT card(s) previously upgraded to the 3.2.x firmware version. (These cards are already selected from previous steps).

1. Choose the **Extended Actions** tab from the main menu and select **File Download > Application & Config** from the Extended Actions menu.

2. Within the Browse dialog window, choose the **txt_fwupgrade_324.fl** file.
3. Push the **Load** button for the download file action.

   If the download fails, because the connection to the NE is broken or the NE resets, the CPTK notifies you of this failure with a message box that reads either `Connection to host lost` or `Download Failed`. In this case, you need to repeat the procedure starting from step 1 above.

   When the download succeeds, a message box with the `Download completed` message appears.

   In case of a partial failure, the message box says `Download completed but failed on <List>`, where `<List>` includes the name and position of the card(s) where the failure occurred. Take note of the card(s) in the list and repeat the procedure for them starting from step 1.

Upgrade with TL1 Agent

Use this section when the CMP OAM&P processor card is configured with, or executing, the TL1 agent.

The recommended approach is to perform the steps in parallel for a maximum number of eight (8) cards per NE at the same time. It is mandatory to perform all the steps below in strict sequence.

Manual Procedure

Complete these steps:

1. Connect to CMP as a TL1 user (Telnet port 1000) as shown here:

   ```
   telnet <ip address> 1000
   ACT-USER::<UserID>:<Ctag>::<Password>;
   ```

   Where:

   - **UserID** = The User Identifier has access level 1, 2 or 4.
   - **CTag** = Alphanumeric string of six characters or less (for example: A123).
   - **Password** = The password required for UserID.

   If the command is successfully executed, the response is `COMPLD`.
2. Retrieve the card list and version with this command:

   ```
   RTRV-VER::ALL:<Ctag>;
   ```

   If the command successfully executes, the response is `COMPLD`.
3. Take note of the WCM, LEM, or RXT card(s) with version 3.0.1 that need to be upgraded.
4. For each card, put each unit to be upgraded in maintenance status in order to disable TL1 agent querying the card(s) with this command:

   ```
   RMV-EQPT::<aid>:<Ctag>;
   ```

   Where:

   - **aid** = CardName−bay#−shelf#−slot# (valid entries are those resulting from step 3).
   - **CTag** = Alphanumeric string of six characters or less (for example: A123).
5. Verify that each card is in maintenance. Use this command:

   ```
   RMV-EQPT::<aid>:<Ctag>;
   ```

Where:

- **aid** = CardName−bay#−shelf#−slot# (valid entries are those resulting from step 3).
- **CTag** = Alphanumeric string of six characters or less (for example: A123).

The corresponding response must contain the string `<aid>:OOS−MT`. If not, repeat the procedure from step 2.

6. Follow the whole procedure in the Upgrade without a TL1 Agent section.
7. For each of the card(s) at step 3, from the TL1 agent connection, type this command to restore the unit in service:

```
RST−EQPT::<aid>:<Ctag>;
```

Where:

- **aid** = CardName−bay#−shelf#−slot# (valid entries are those resulting from step 3).
- **CTag** = Alphanumeric string of six characters or less (for example: A123).

8. For each of the card(s) at step 3, verify that each card is in service. Use this command:

```
RTRV−EQPT::<aid>:<Ctag>;
```

Where:

- **aid** = CardName−bay#−shelf#−slot# (valid entries are those resulting from step 3).
- **CTag** = Alphanumeric string of six characters or less (for example: A123).

9. Close the Telnet connection.

Semi−Automated Procedure

Complete these steps:

1. Open a command prompt window and move to the directory where the tl1connect file resides, and run this command to retrieve the card list and version.

```
tl1connect −l <File> −f "WCM, LEM, RXT" retr <ipaddr> <username> <passwd>
```

Where:

- **File** = The file that contains the retrieved card list, including the version, with lines formatted as follows: "<aid>:<Version>,<SCC>,<Bios>,<S/N>".
- **ipaddr** = The IP address of the NE's CMP controlling the cards.
- **username**= The user identifier for the TL1 connection having access level 1, 2 or 4.
- **passwd** = The password related to the username.

2. Take note of the WCM, LEM, or RXT card(s) with version 3.0.1 that need to be upgraded by opening the text file file written in the previous step, and taking into account the aid strings at lines where the version string is 3.0.1.
3. Run this command to put in maintenance the cards to be upgraded:

```
tl1connect maint <ipaddr> <username> <passwd> <[AID]+>
```

Where:

- **ipaddr** = The IP address of the NE's CMP controlling the cards.
- **username** = The user identifier for the TL1 connection with access level 1, 2 or 4.
- **passwd** = The password related to the username.

- **[AID]+** = A space separated list of AIDs (AID syntax defined above within section 3.1), corresponding to the card(s) to be upgraded: valid entries are those chosen at step 2.

4. Follow the procedure in Upgrade without TL1 Agent, section B.
5. Run this command to restore the upgraded card(s) in service:

```
tl1connect serv <ipaddr> <username> <passwd> <[AID]+>
```

The arguments are the same as specified in step 3.

Note: Run the program **tl1connect** with option **−h** for an explanation of the available options and arguments.

Related Information

- **Cisco ONS 15800 and 15801 Product Support**
- **Long Haul/Extended Long Haul Networking Solutions**
- **Technical Support & Documentation − Cisco Systems**

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