Programming Chassis Electronic Control Units (ECUs) With DiagnosticLink

54-308

FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional
Century Class Conventional
Argosy
Cargo
Columbia
122SD and Coronado
> Business Class M2
> Cascadia
> 108SD/114SD
> New Cascadia

Freightliner Service Bulletin

Description of Revisions: *This bulletin replaces the version dated 10/31/2019. Figures have been updated and steps have been revised to clarify vehicle programming.*

General Information

IMPORTANT: The process of reading and uploading parameters should **not** be performed if there are parameters on the vehicle's chassis ECUs that are not intended to be recorded in a service record. Only one service record per ECU, per vehicle, will be stored on the server. Once a new service record for an ECU is created, the old record is no longer available for download.

There are two different procedures for programming chassis ECUs with DiagnosticLink:

- Updating functioning vehicle chassis ECUs by uploading the parameters of the vehicle's ECUs to the server and then downloading these parameters with the updated software.
- Overwriting the parameters and software installed on the ECU with the most recent parameter sets and software from the server by directly using 'Program Device' in DiagnosticLink.

Retain the parameter information contained on a vehicle's chassis ECU when the chassis ECU is functional. A vehicle's functioning ECUs should be considered the primary source for parameters. To retain parameters:

1. Read the current vehicle's chassis ECUs parameters and upload them to the server in the 'Program Device' window.
2. Then program the chassis ECU with updated software using 'Program Device.' The parameters just uploaded will be downloaded with the updated software.

Overwrite the parameters and software installed on the ECU when:

- performing the initial programming of a spare part ECU, or
- when attempting to recover an incorrectly parameterized ECU.

If upgrading an ECU to newer hardware when the current ECU is functional, do the following:

1. Read the current ECU parameters and upload them to the server in the 'Program Device' window.
2. Install the new ECU hardware.
3. Overwrite the new ECU using 'Program Device.'

This will transfer the parameters from the old ECU to the new ECU.

Programming Chassis ECUs in DiagnosticLink

1. Park the vehicle on a level surface, shut down the engine, and apply the parking brakes. Chock the tires.
2. Connect the vehicle to DiagnosticLink. Make sure that DiagnosticLink is updated to the latest version (8.13 at the time of publication) or newer. To update DiagnosticLink, select 'Tools' from the top menu and then select 'Update' from the dropdown menu. See **Fig. 1.**

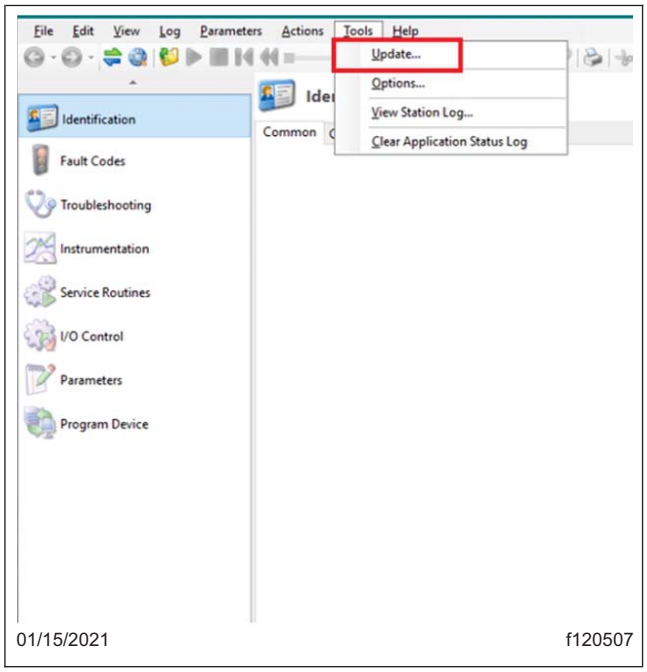
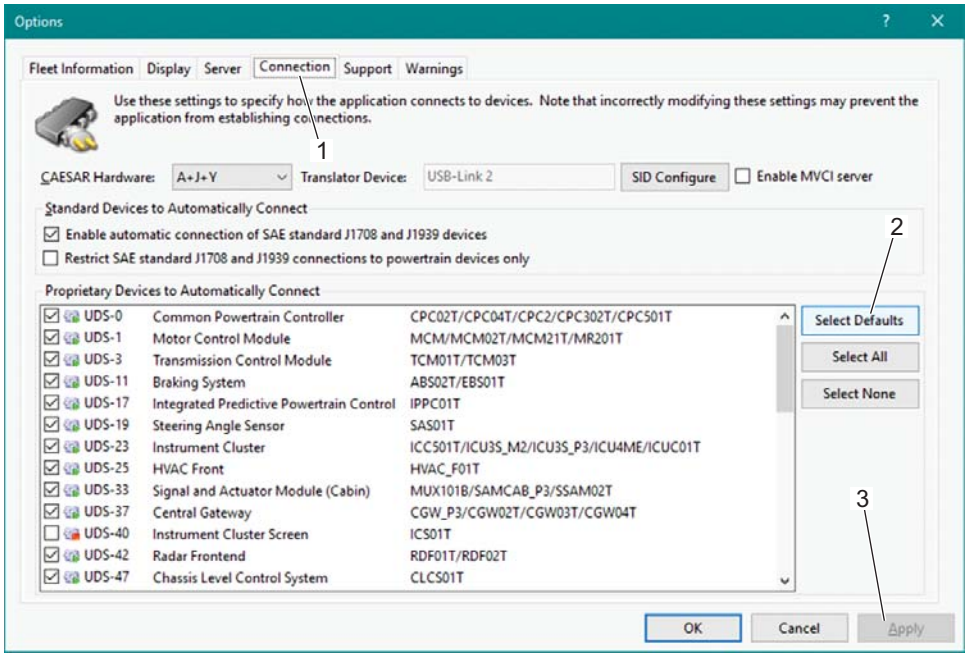


Fig. 1, Updating DiagnosticLink to the Latest Version

2.1 When programming, we recommend configuring DiagnosticLink to connect only to 'Default' ECUs.

To make this change in DiagnosticLink:

- Select 'Tools' from the top menu, and then select 'Options' from the drop down menu.
- Find and select the 'Connection' tab. See **Fig. 2.**
- Select the 'Select Defaults' button on the right side of the window, then select 'Apply.'



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1. 'Connection' Tab
2. 'Select Defaults' Button
3. 'Apply' Button

Fig. 2, Configuring DiagnosticLink to Connect to Default ECUs

3. Address any pre-existing conditions or fault codes.

NOTE: In DiagnosticLink an ECU is called a 'device.'

4. Select 'Program Device' from the upper left-hand side of the window. See **Fig. 3.**

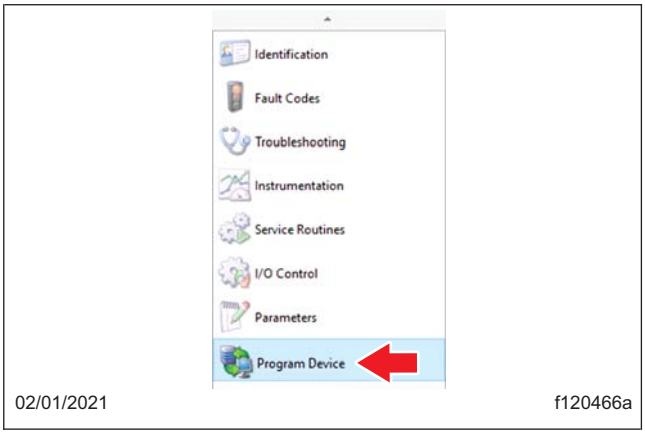

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Fig. 3, Selecting Program Device (ECU)

5. Remove any 'Request Pending' **downloads and serial numbers** in the main window by selecting the 'Request Pending' list item(s) and then selecting the 'Remove' button on the right-hand side of the window. Do not select 'Remove All;' selecting 'Remove All' deletes all data pending **upload**. See **Fig. 4.**

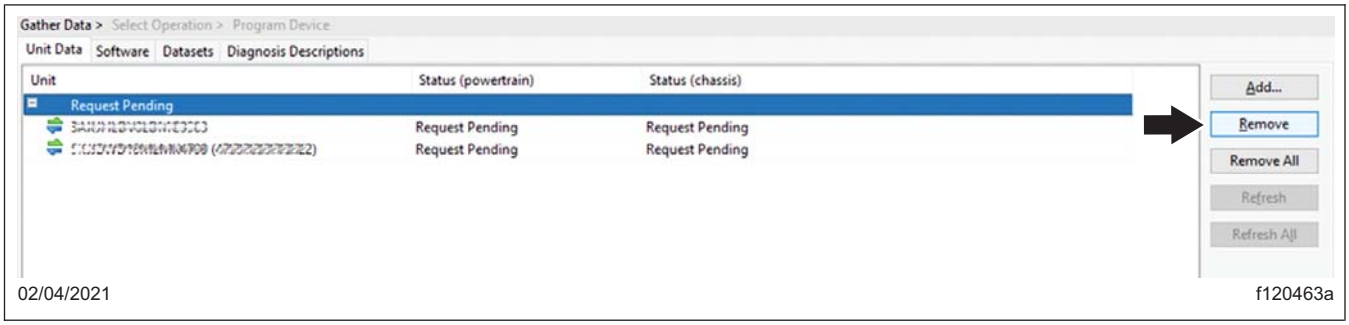
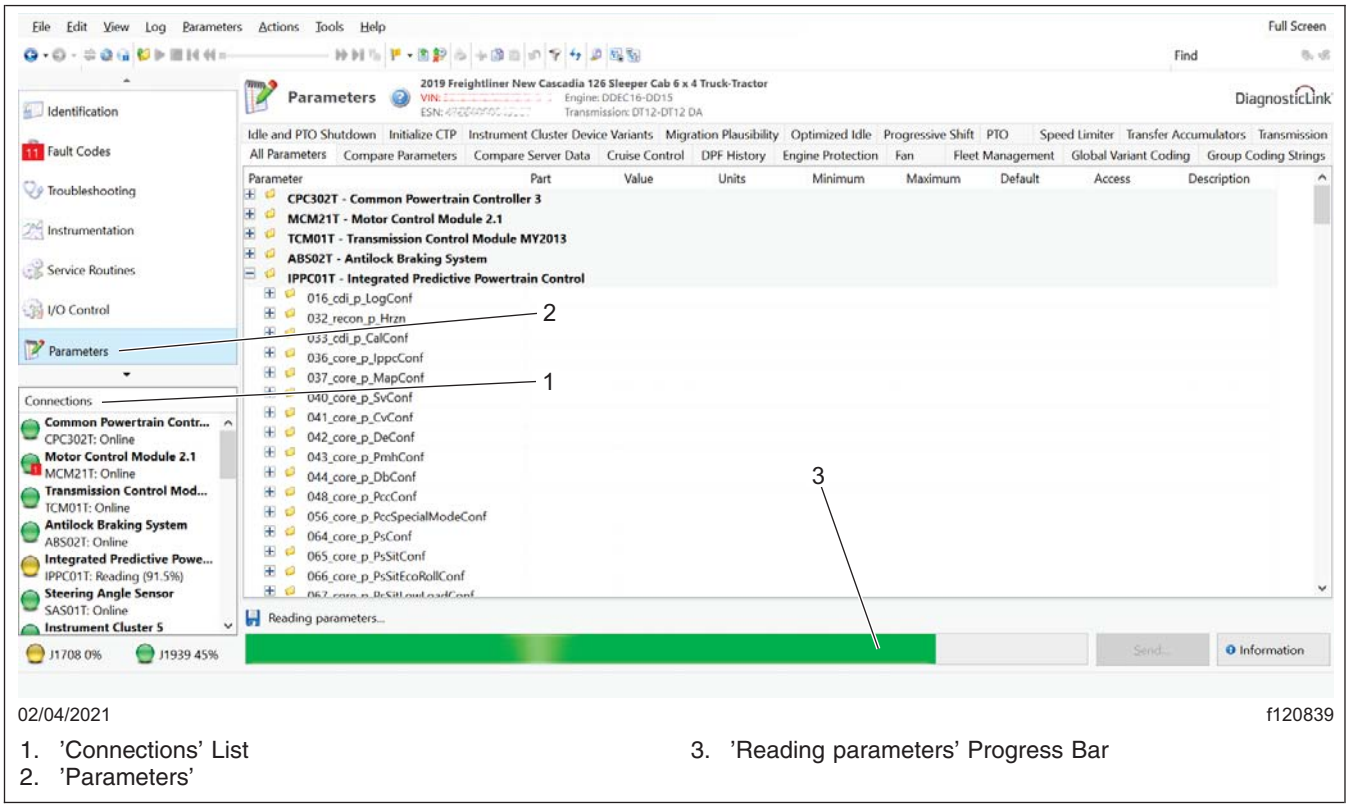


Fig. 4, Removing Pending Requests

6. Turn the ignition ON and allow time for all the default vehicle ECUs to connect. (Default vehicle ECUs are listed on the bottom left-hand side of the window under 'Connections' in **Fig. 5.)**



1. 'Connections' List
2. 'Parameters'
3. 'Reading parameters' Progress Bar

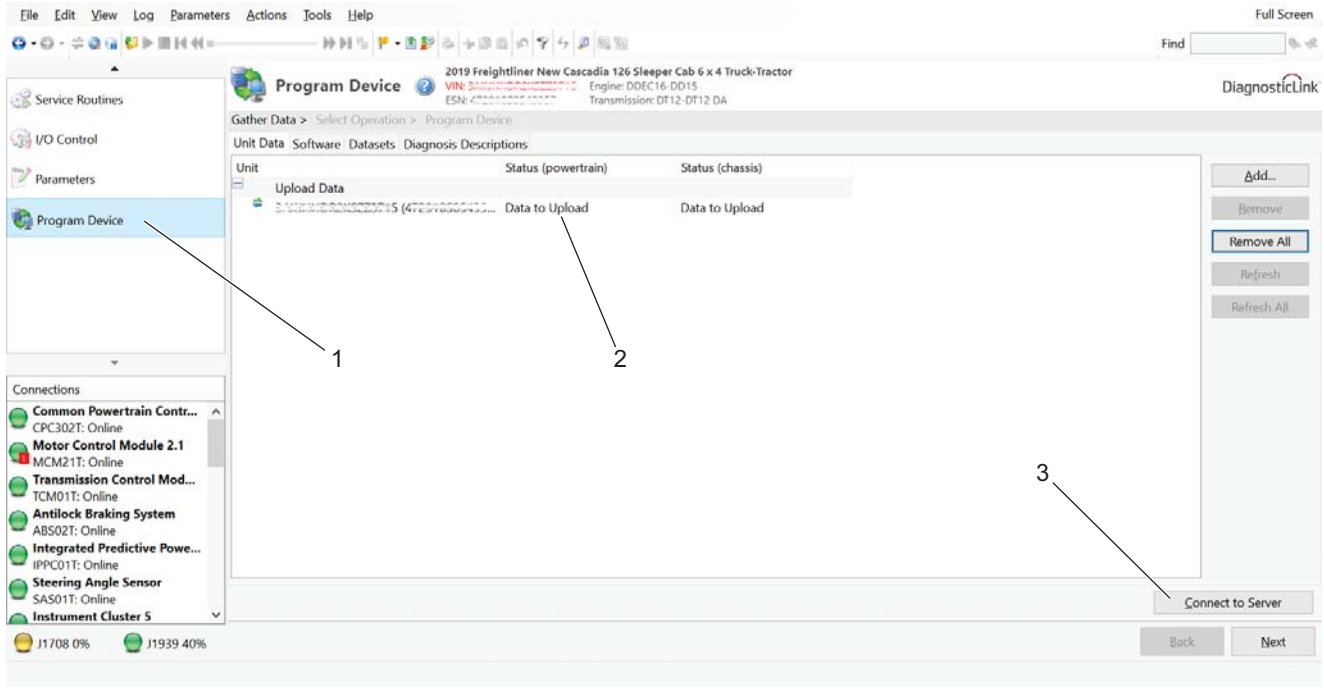
Fig. 5, Connecting Default ECUs and Reading Vehicle Parameters on DiagnosticLink

7. If programming functional chassis ECUs, select 'Parameters' on the upper left-hand part of the window and then continue with the following substeps.

If performing the initial programming of a spare part ECU or attempting to recover an incorrectly parameterized ECU, continue with step 8.

7.1 DiagnosticLink will read the parameters of the vehicle's connected ECUs. Wait until the 'Reading parameters . . . ' bar indicates this process is complete. See **Fig. 5.**

7.2 Select 'Program Device' on the upper left-hand part of the window. There should be data to upload; this data is the parameters of the vehicle's ECUs that have just been read. Select the 'Connect to Server' button to upload the vehicle's ECUs parameters to the server. See **Fig. 6.**



1. 'Program Device'
2. 'Data to Upload'
3. 'Connect to Server'

Fig. 6, Uploading Parameters of Vehicle ECUs to the Server

7.3 Use your DTNAConnect information to connect to the server. Your sign-in to the server will remain active until DiagnosticLink is closed. See **Fig. 7.**

Fig. 7, Login Window

7.4 Select 'Add' to add a download request for the vehicle by entering the vehicle identification number (VIN). See **Fig. 8.**

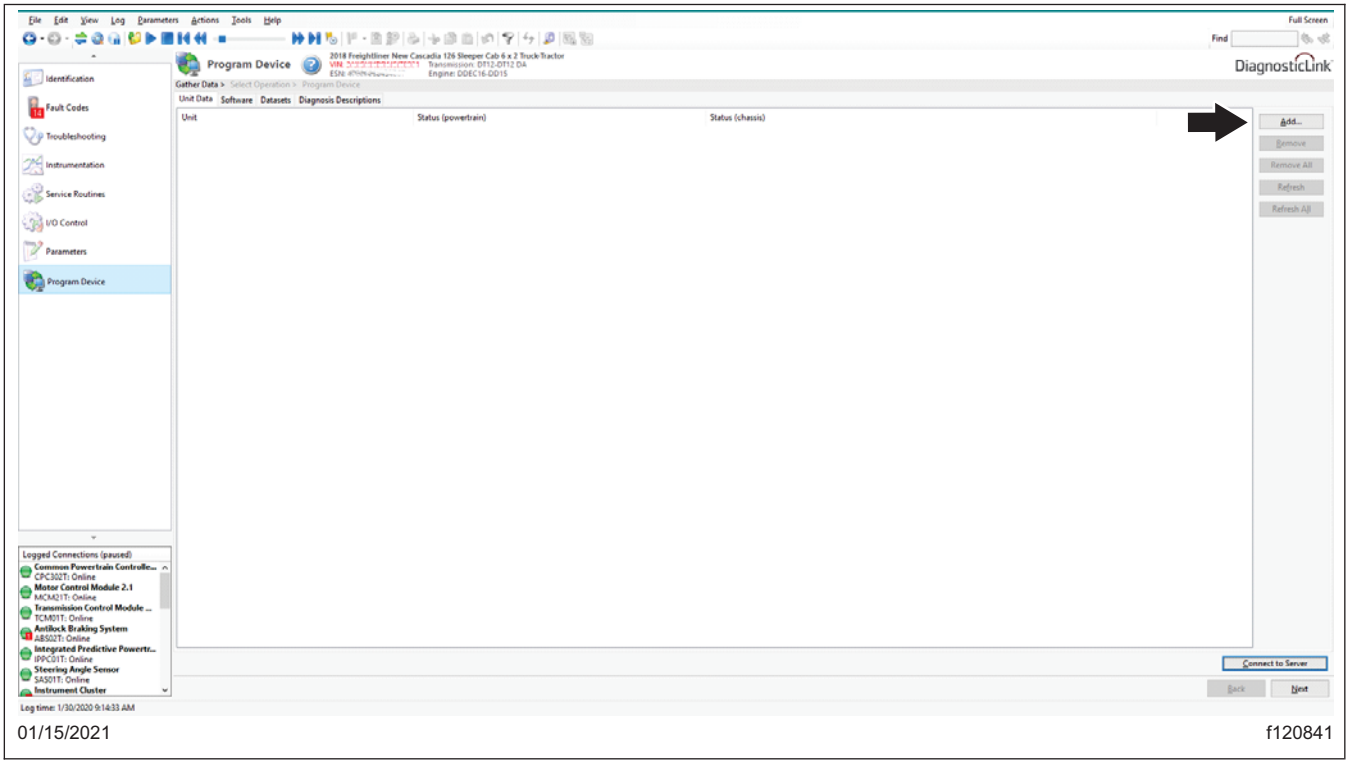


Fig. 8, Adding the VIN to Download Updated Server Data

7.5 Make sure the correct VIN and hardware information is populated in the window, then select 'OK.' See **Fig. 9.**

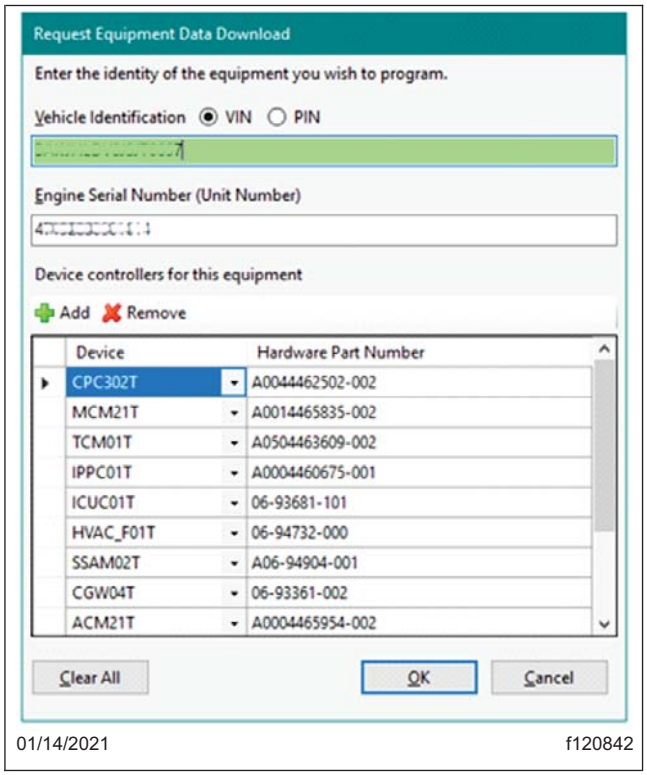


Fig. 9, Verify VIN and Hardware Information

7.6 There should be a request pending status for the VIN. Select 'Connect to Server' as shown in **Fig. 10,** to download the updated software and parameters for the vehicles ECUs.

The server will provide any new software that may be available for this vehicle's default ECUs as well as parameter sets based on the parameters that were just uploaded.

When the process is completed, go to step 9.

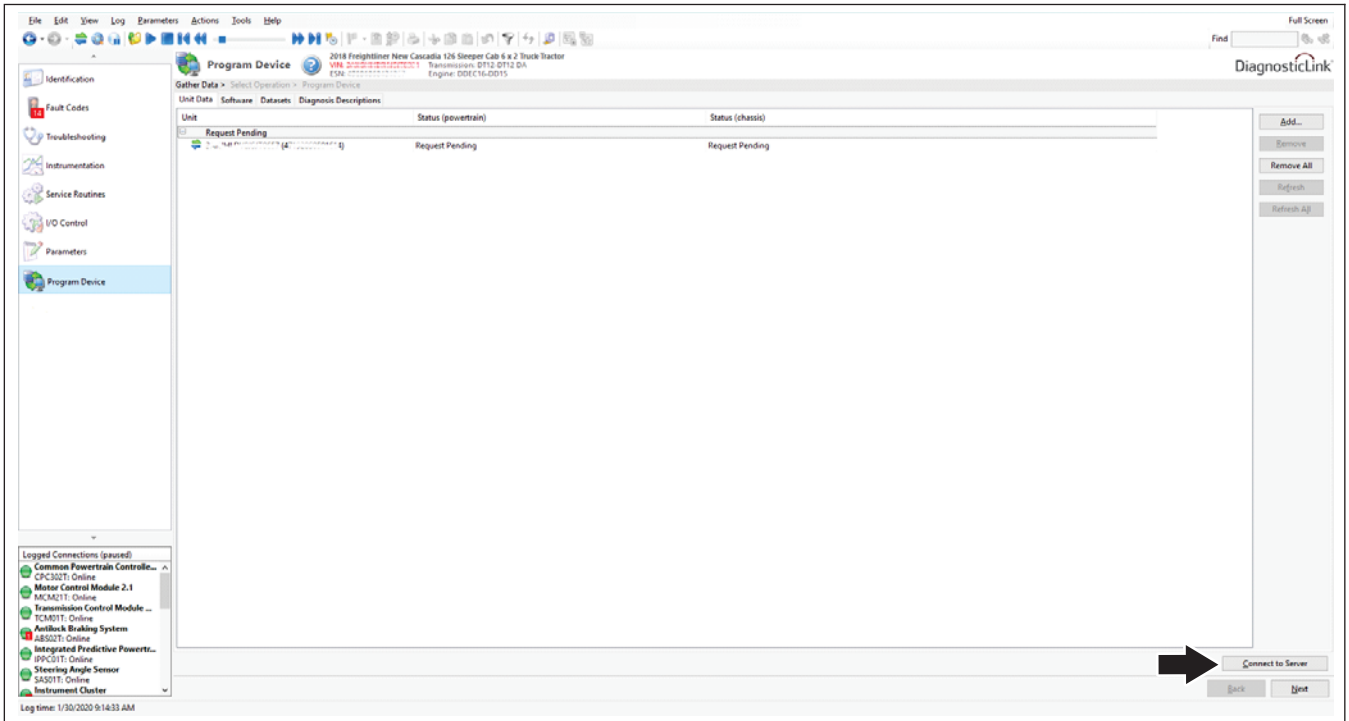


Fig. 10, Downloading Updated Vehicle ECU Software and Parameters

8. If performing the initial programming of a spare part ECU or attempting to recover an incorrectly parameterized ECU, select 'Program Device' on the upper left-hand part of the window.

   8.1 Use your DTNAConnect information to connect to the server; see **Fig. 7.** Your sign-in to the server will remain active until DiagnosticLink is closed.

   8.2 Select 'Add' to add a download request for the vehicle by entering the vehicle VIN. See **Fig. 8.**

   8.3 Make sure the correct VIN and hardware information is populated in the window, then select 'OK.' See **Fig. 9.**

   8.4 There should be a request pending status for the VIN. Select 'Connect to Server' to download the software and parameters for the vehicle's ECU(s) that need to be overwritten. See **Fig. 10.**

   The server will provide any new software that may be available for this vehicle's default ECUs.

9. Once the data has been downloaded, select 'Next.' See **Fig. 11.**

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FLD Conventional
Business Class
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Argosy
Cargo
Columbia
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> Cascadia
> 108SD/114SD
> New Cascadia

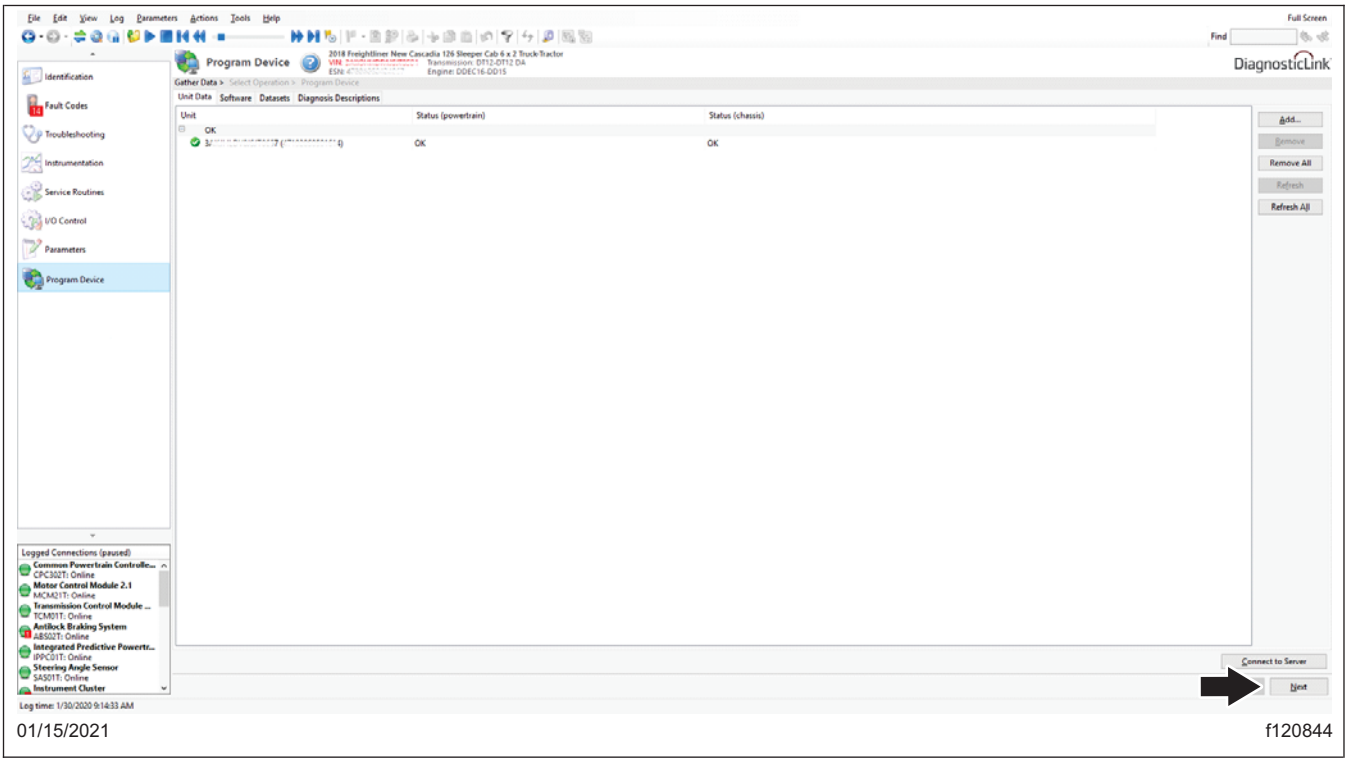
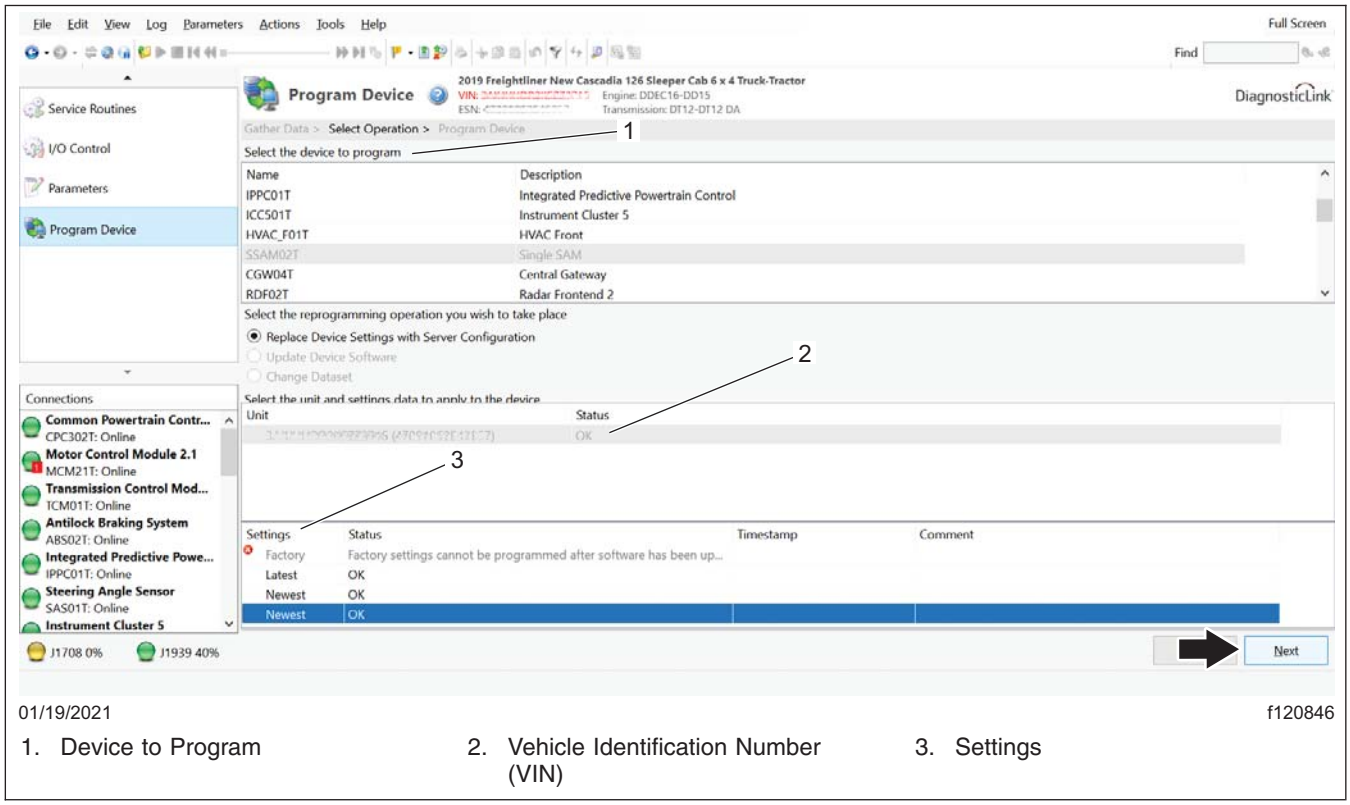


Fig. 11, Selecting Next

NOTE: 'Latest' is the last service record (may be older software) and 'Newest' is the most up to date software available for the installed hardware. If the last service record is the most up to date software available, no 'Newest' record will be provided.

10. Select the device (ECU) to program, select the VIN, and select either 'Latest' or 'Newest.' Then select 'Next.' See **Fig. 12**.



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1. Device to Program
2. Vehicle Identification Number (VIN)
3. Settings

Fig. 12, Selecting the Device (ECU) to Program With 'Latest' or 'Newest' Software

11. Verify the VIN and hardware part number again, then select 'Start' to program the selected device (ECU). See **Fig. 13.**

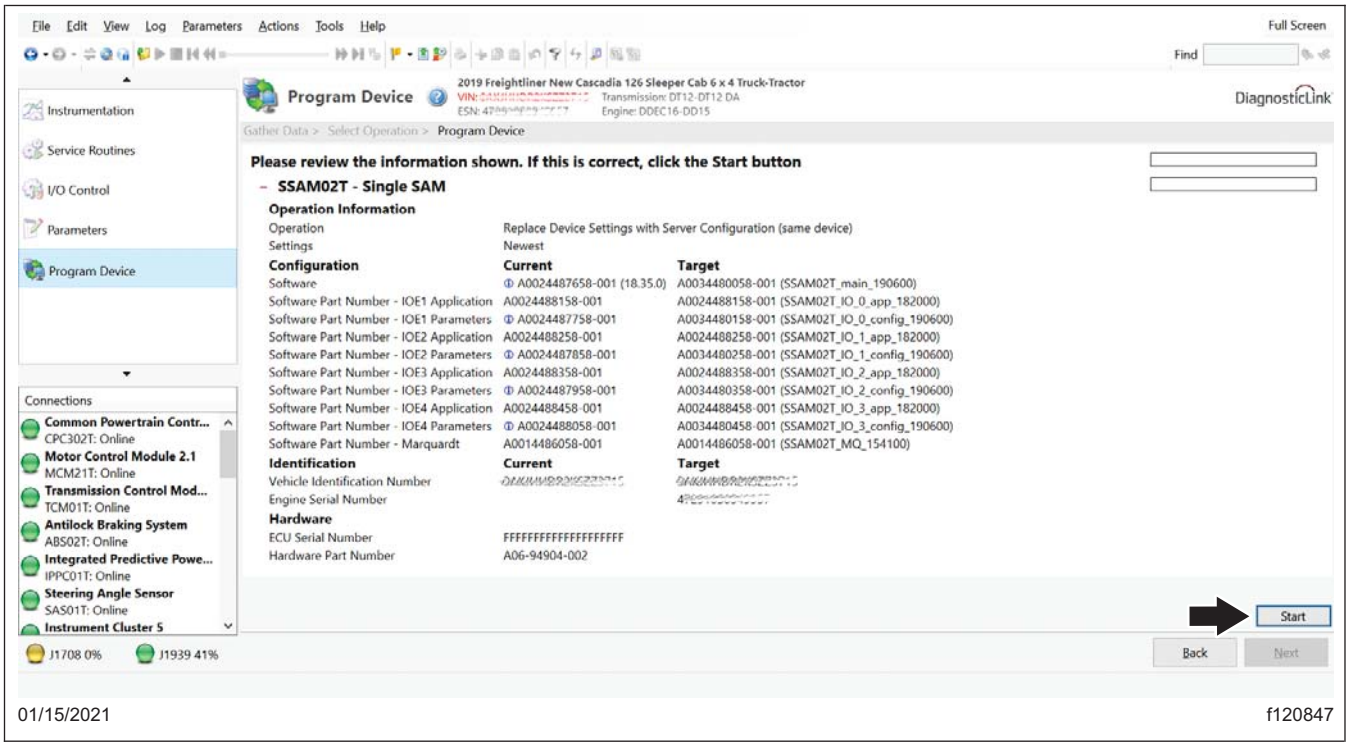


Fig. 13, Select Start to Program the Selected Device (ECU)

12. The updated software and parameters will be installed on the device (ECU) as shown in **Fig. 14.**

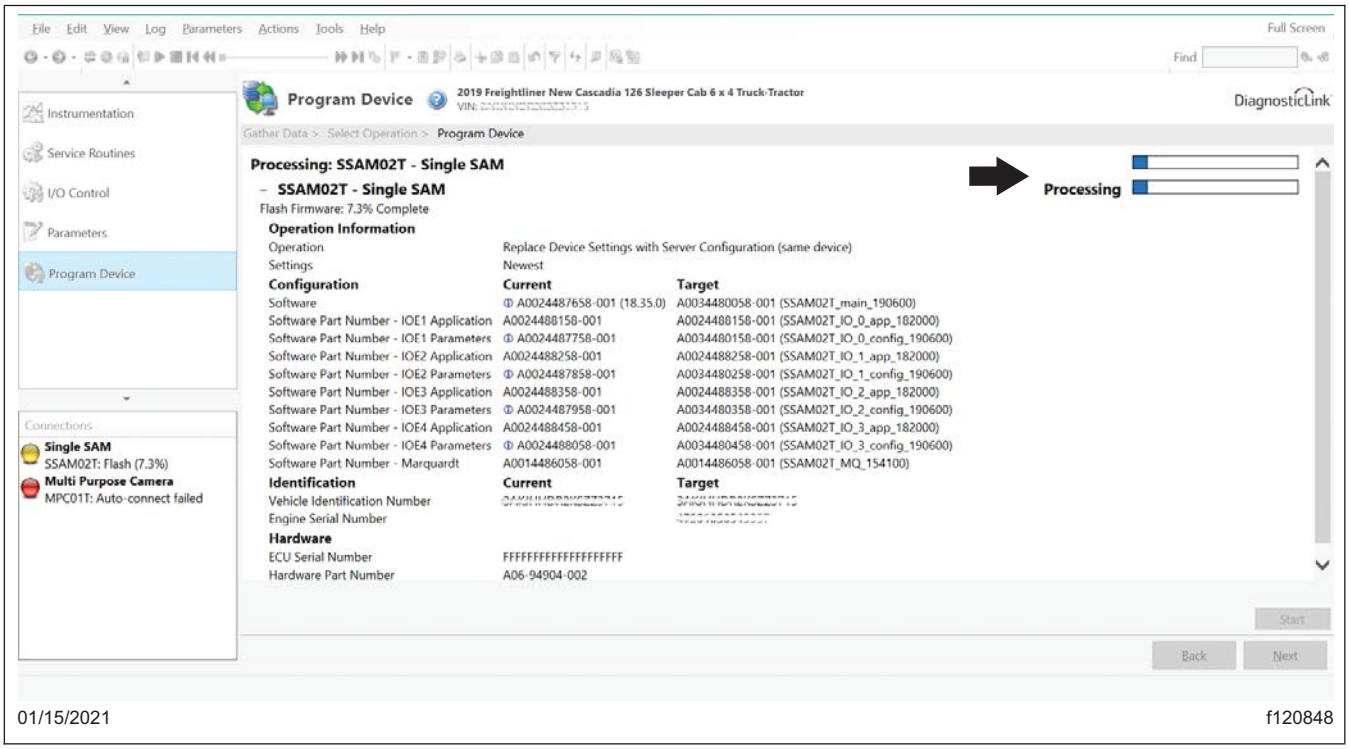


Fig. 14, Programming the Device (ECU)

13. When programming is complete, the page will display the message: 'The device was successfully programmed' to indicate the ECU has been successfully updated. Select 'Finish.'

    IMPORTANT: After programming is complete, the following banner message may appear in DiagnosticLink: 'The connected vehicle contains chassis devices with incompatible software versions, you will need to update these control devices using Program Device. Select here for more information.' If this banner message is shown, continue with the next sub-step. Otherwise, go to the next step.

    13.1 Select the banner message. See **Fig. 15**.

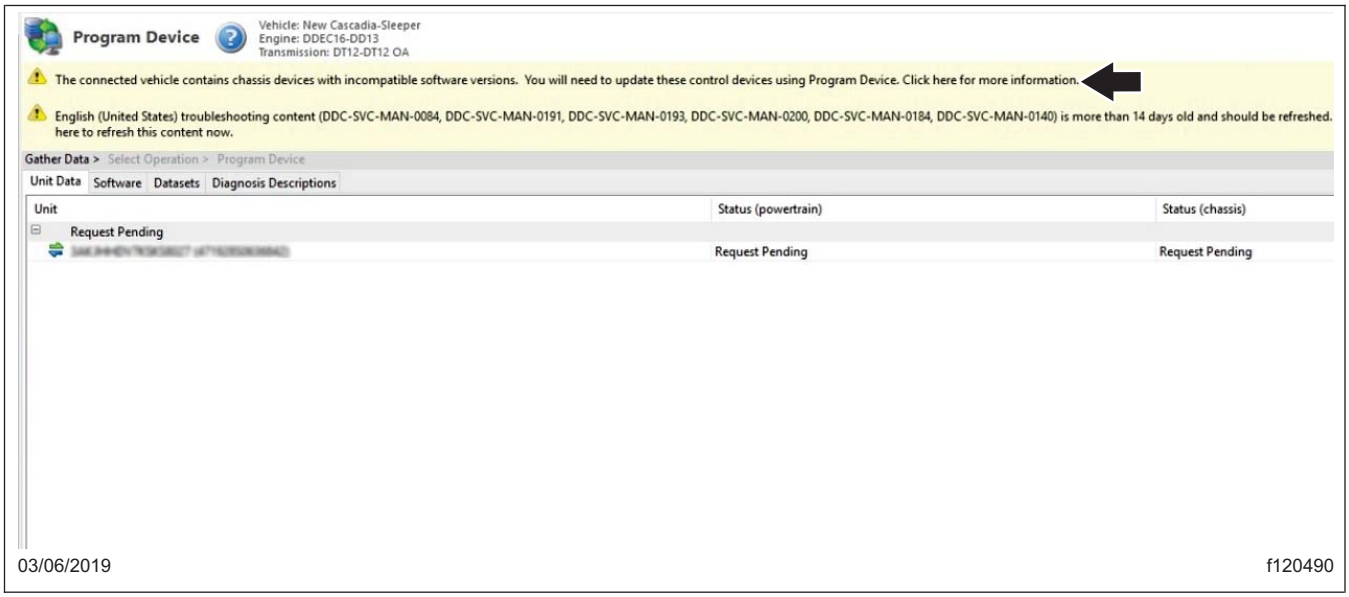


Fig. 15, Selecting the Banner Message

13.2 Print or take a screen shot of the incompatible chassis devices (ECUs). See **Fig. 16**.

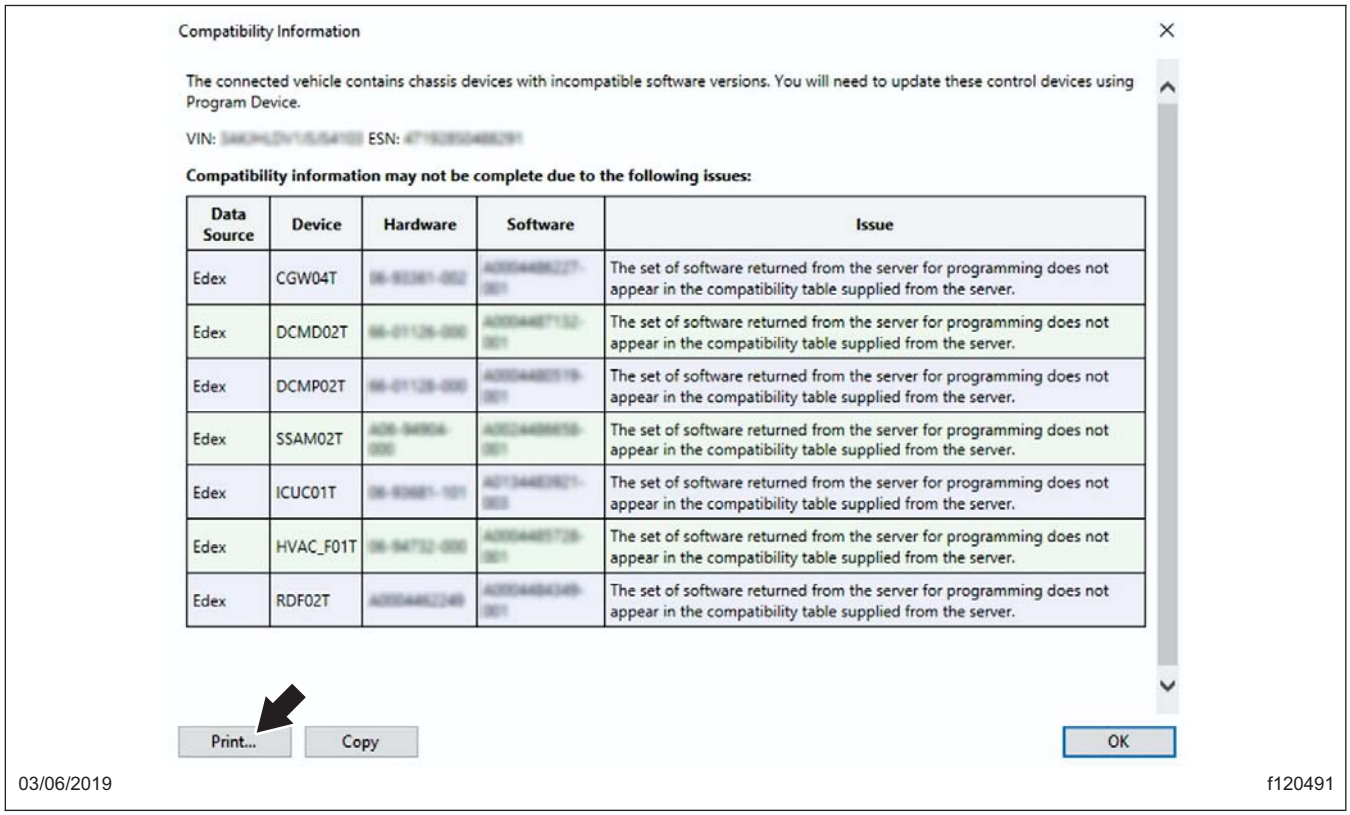


Fig. 16, Printing the List of Incompatible Chassis Devices (ECUs)

NOTE: In some cases, the compatible hardware part number may be different from the hardware currently installed on the vehicle. If this is the case, the hardware may need to be replaced.

13.3 Program all devices (ECUs) listed as incompatible from the previous step:

- Select 'Program Device' on the upper left-hand part of the window.
- Select the device (ECU) to program, select the VIN, and select either 'Latest' or 'Newest.' Then select 'Next.'
- Verify the VIN and hardware part number then select 'Start' to program the selected device (ECU).
- Repeat until all incompatible devices (ECUs) are programmed.

IMPORTANT: After a programming, some fault codes may become active and some ECUs may not auto-connect. Cycling the ignition may clear the faults and connect the ECUs.

14. Turn the ignition to the OFF position, unplug from the diagnostic port and close and restart DiagnosticLink. Wait one minute.
15. Cycle the ignition 3 times, waiting 30 seconds between key OFF and key ON.

NOTE: This action will enable Intelligent Predictive Powertrain Control (IPPC) to start communicating on Roll Call, and eliminate codes for the IPPC not communicating.

16. Turn the key to the ON position for the fourth time and connect the vehicle to DiagnosticLink.
17. Click on the 'Actions' menu and scroll down and select 'Instrument Cluster Automatic Configuration.' See **Fig. 17.**

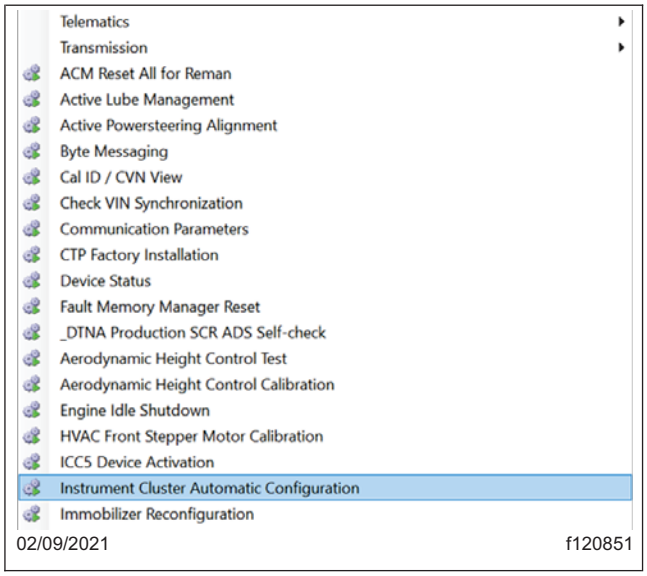
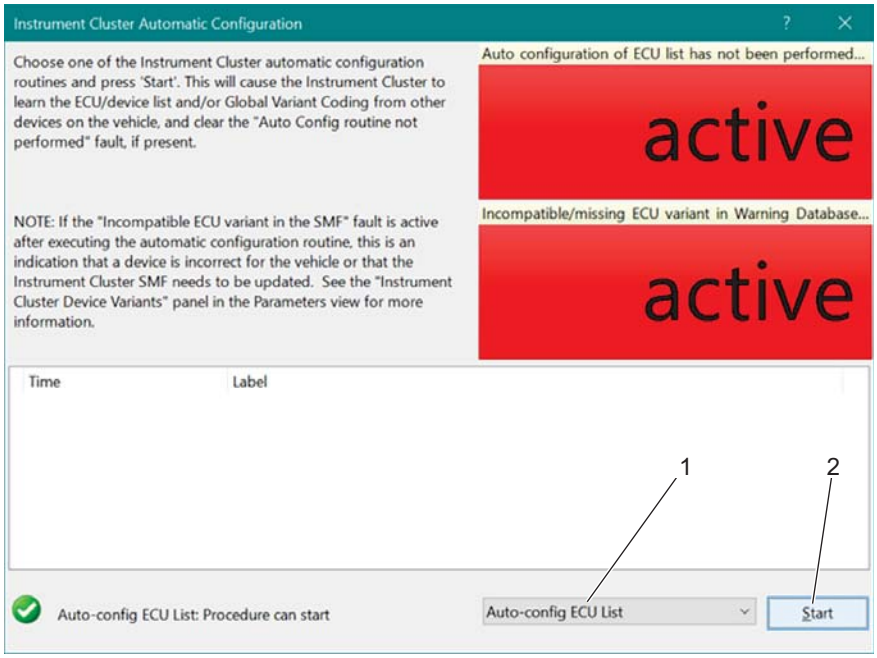


Fig. 17, 'Actions Menu,' 'Instrument Cluster Automatic Configuration' Selected

18. Verify that the menu selection at the bottom of the window is 'Auto-config ECU List' and select 'Start.' See **Fig. 18.**



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1. Auto-config ECU List Selected
2. Start Button

Fig. 18, 'Instrument Cluster Automatic Configuration' Window

19. Once the configuration step is complete, turn the ignition to the OFF position, unplug from the diagnostic port, and close and restart DiagnosticLink. Wait one minute.
20. Turn the key to the ON position and connect the vehicle to DiagnosticLink.
21. Clear inactive faults and troubleshoot any active faults.
22. Turn the ignition to the OFF position, unplug from the diagnostic port, and close DiagnosticLink.

Warranty

This is an informational bulletin only. Warranty does not apply.