

# Global Diagnostic System 2 (GDS2) User Guide



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# GDS2 User Guide Introduction

The Global Diagnostic System (GDS2) Guide provides a quick reference overview of the GDS2 System.

Everything contained in this manual is based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

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## General Information

GDS2 is designed for use by trained service personnel to diagnose and repair automotive electronic systems. Every attempt has been made to provide complete and accurate technical information based on factory service information available at the time of publication. However, the right is reserved to make changes at any time without notice.

To familiarize yourself with GDS2 and its capability, and how to use it, please read through the User's Guide before putting the GDS2 to work.

GDS2 provides the following capabilities in multiple languages:

- Read codes, code status, Freeze Frame data and Clear Codes.
- Read VIN, ECU part numbers and software numbers.
- Record, store and replay Stored data.
- Control and monitor Output Control functions.
- Configure and Reset functions.
- Record or display history of the previous vehicle diagnostic sessions.

**Important:** SPS programming of vehicle controllers is not supported in GDS2. For SPS Pass Through programming with the J2534 interface tool, use the TIS2Web SPS application.

## Customer Support Overview

To obtain assistance with a question or problem concerning service operations, tools or to arrange for warranty and non-warranty repairs, telephone your local Customer Support Center.

### Before Calling

Before making a call to the Helpdesk, be sure to have the following information ready:

- Business name, address and ACDelco TIS2Web login ID
- Telephone number where the technician may be reached.

Prepare a brief description of the problem:

- Tell when the problem occurred.
- List any error codes displayed.
- Tell what accessories were being used when the problem occurred, and vehicle information.
- Telephone number where the technician may be reached.

### Making the Call

The ACDelco Aftermarket Support Center is available with the purchase of GDS2 software. GDS2 users may contact the following toll-free number for assistance:

1-888-212-8959

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## Important PC Hardware Guidelines

ACDelco provides IT guidelines to help users have a seamless experience when using TIS2Web software applications. To avoid unnecessary compliance issues with TIS2Web, please review and adhere to the stated infrastructure guidelines at the following link:  
<http://www.gmdesolutions.com/services/standards.php>

These guidelines for GM Dealers also apply to independent users, Professional Service Centers and Key Fleets using ACDelco Aftermarket subscriptions. For questions on these guidelines, contact 888-212-8959, prompt #2.

# GDS2 Installation

## GDS2 Component Overview

The GDS2 software contains the following modules which will be initially installed and updated frequently in certain periods.

- GDS2 Base System:

Installed GDS2 base software in the PC.

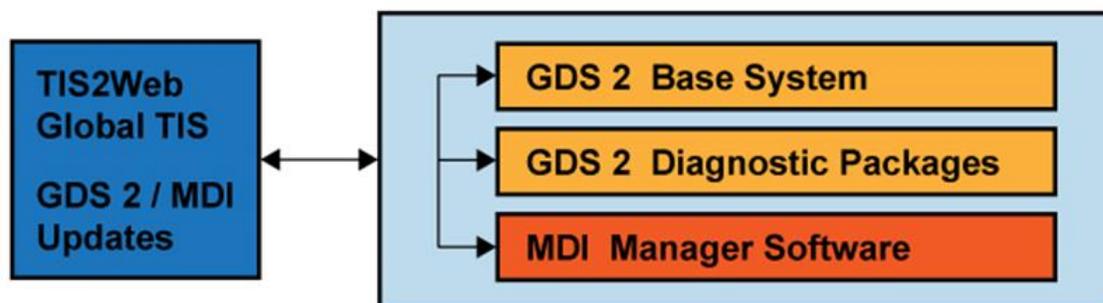
- GDS2 Diagnostic Packages:

Diagnostic data packages for vehicle models which execute the diagnostic routines with the vehicle controllers.

- J2534 Device Software (separate Application):

Application for update and configuration of the J2534 programming interface tool.

Users will be prompted to install MDI (Multiple Diagnostic Interface) Manager. Aftermarket customers will use the compatible J2534 interface tool and related software. If you are using a J2534 interface tool, you will not load the MDI Manager Software.



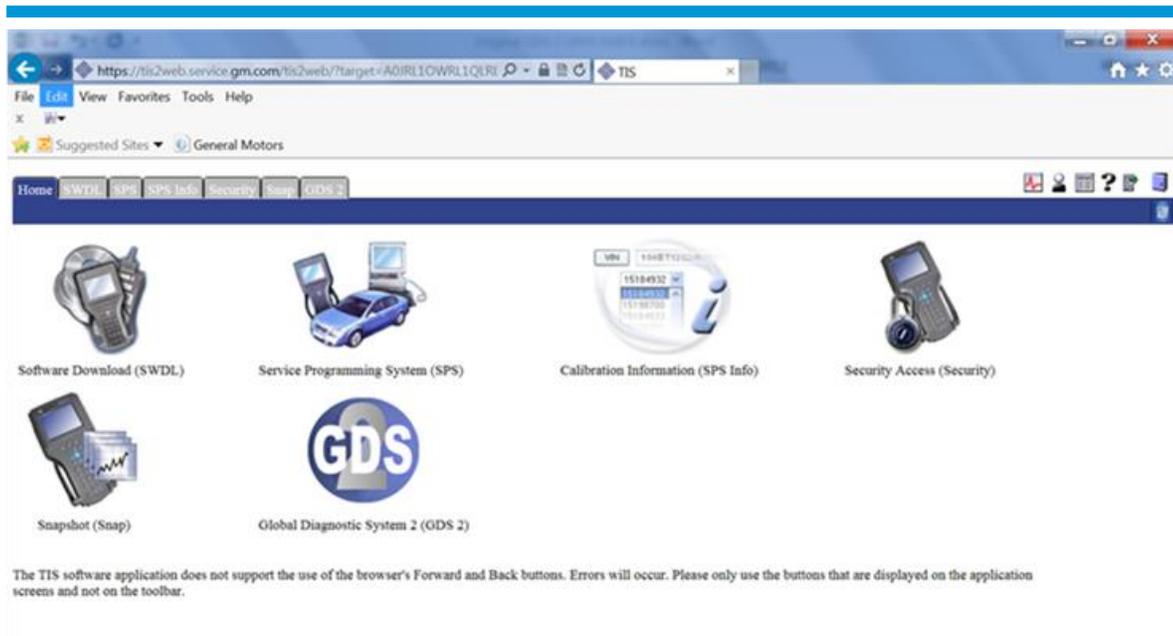
## Installation

GDS2 can be installed directly as a download from TIS2Web.

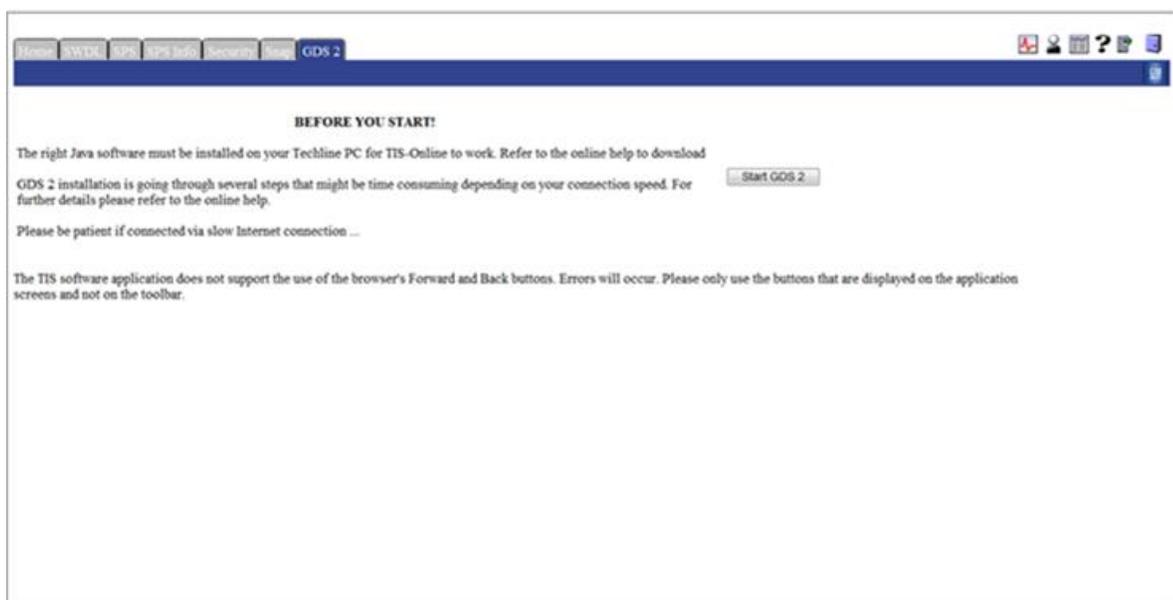
**Note:** A minimum of 2 GB of RAM is required to run GDS2. Download and installation is dependent upon the internet bandwidth available during the download process. The GDS2 application needs to be loaded on each shop PC individually. Once the initial application installation is complete, GDS2 will run in either a standalone mode when launched from the PC desktop icon or from TIS2Web.

### Installation of GDS2

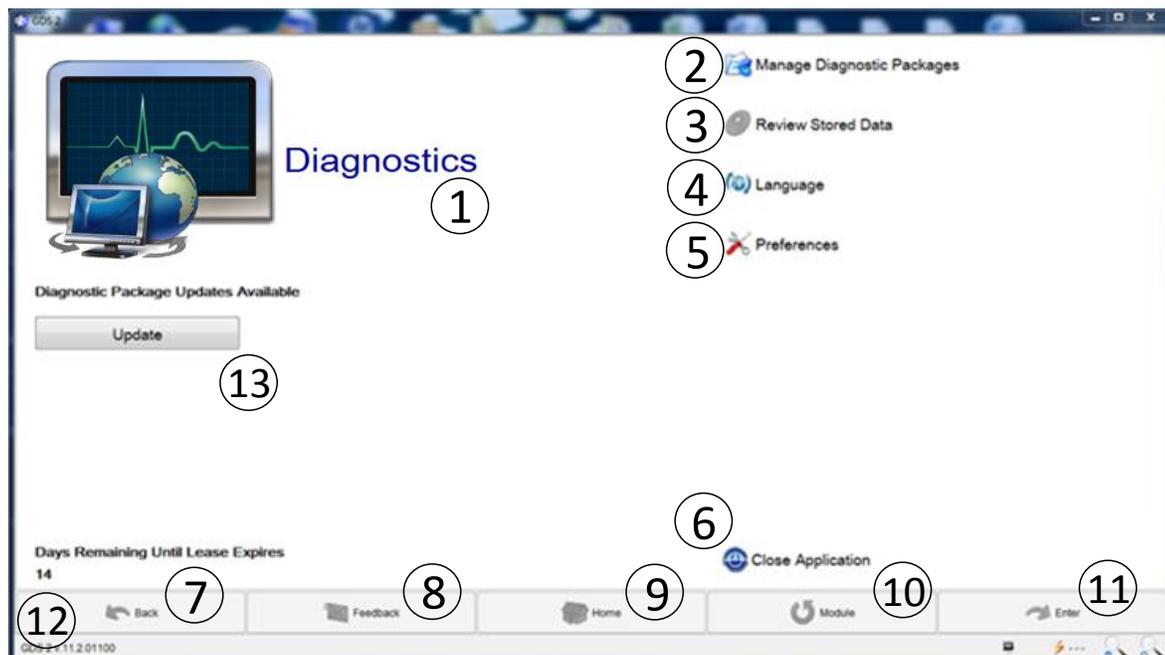
- PC must be started in Admin mode.
- Enter the TIS2Web application. Click “Continue”.
- A software version screen will be displayed. Click “OK”.
- Select GDS2 from the TIS2Web home page.



- Select “Start GDS2” from the “BEFORE YOU START SCREEN” screen.



- A pop-up window will appear with an update data bar. The GDS2 installation may go through several steps.



- Once GDS2 is installed, select the appropriate language and click “OK”. The main application screen will be displayed next. A GDS2 logo will now also be displayed on your desktop. GDS2 Software Version and GM Global Version will appear at the bottom left hand corner of the screen (12).
- You must install the Diagnostic Package prior to using the application. If a Diagnostic Package is not installed, a “No diagnostic packages installed in application” message appears on the GDS2 main menu. See Download and Update GDS2 Diagnostic Packages, below.

### Installation from TIS2Web

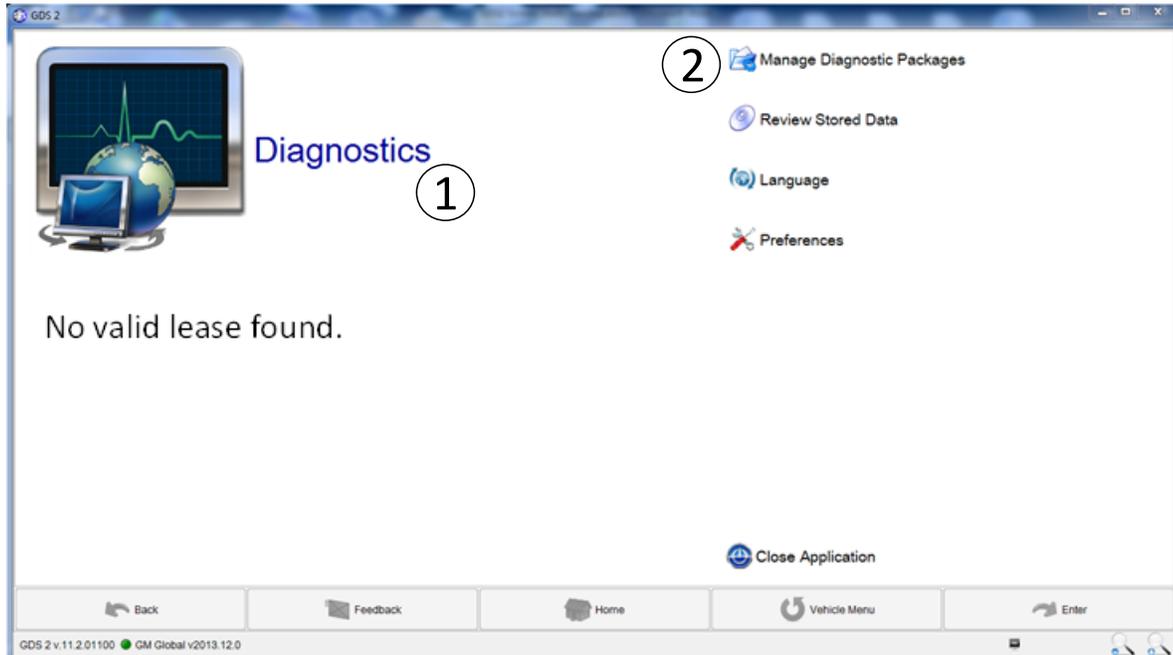
**Note:** During the installation from TIS2Web, approximately 50 MB of data is downloaded via the internet.

Depending on your computer's security, your firewall may require reconfiguration to perform TIS2Web functions.

**Note:** The described update processes require that the PC is always running in Admin mode.

## GDS2 License Control System (Lease)

The GDS2 lease prevents the unauthorized use of GDS2. To renew the GDS2 lease it is required to launch GDS2 from the TIS2Web.

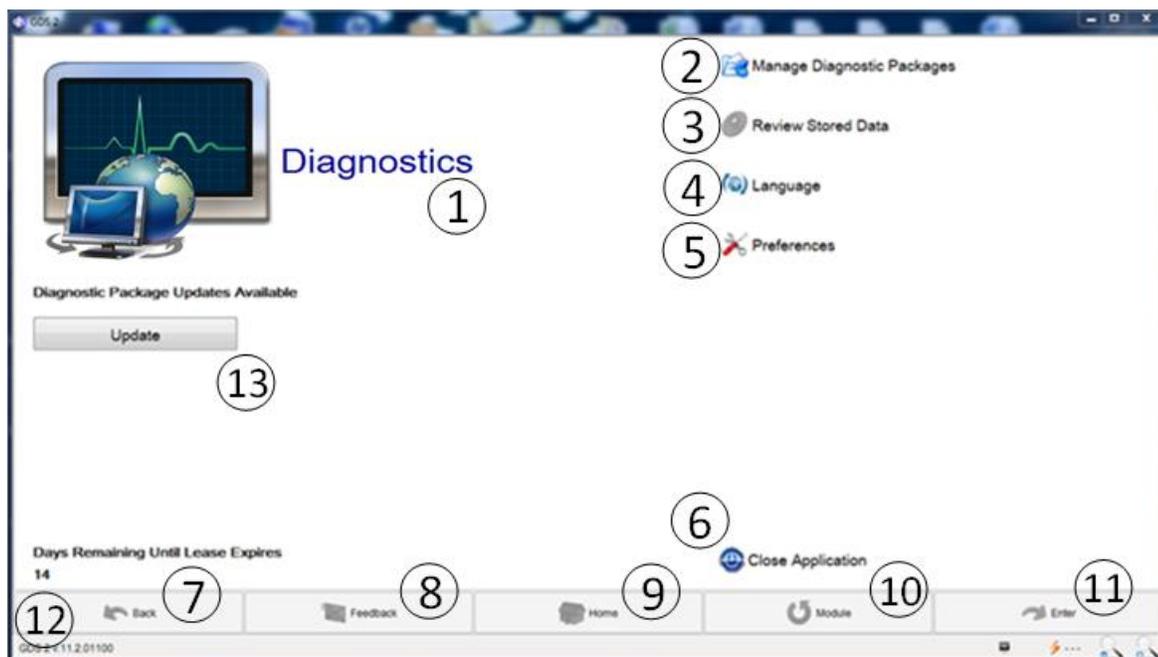


If the GDS2 lease renewal fails, an error message, “No Valid lease found” prompts the user to launch the GDS2 application from TIS2Web for lease renewal.

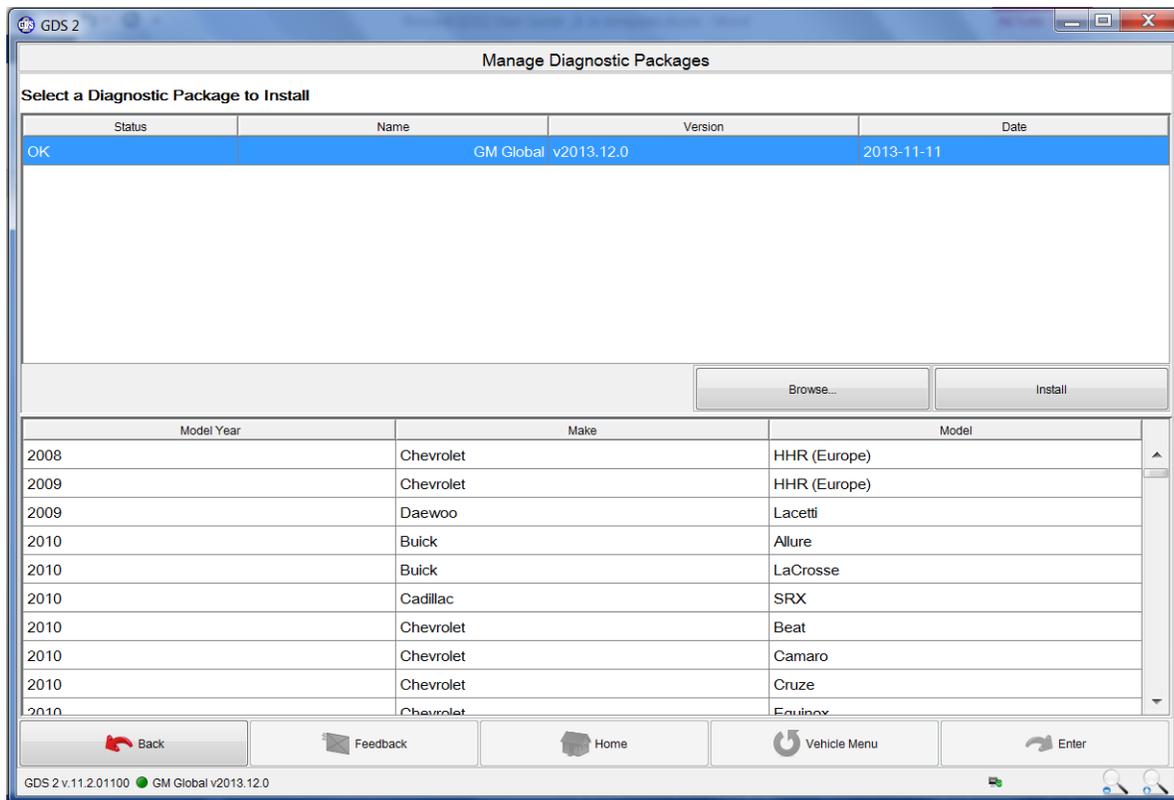
If the lease agreement fails, click on the Diagnostic Client (2), delete the Software Key and launch the Application. If difficulties persist, ensure the computer is in admin mode by returning to the desktop GDS2 Shortcut icon, right click, and select “Run as administrator”.

## Download and Update GDS2 Diagnostic Packages

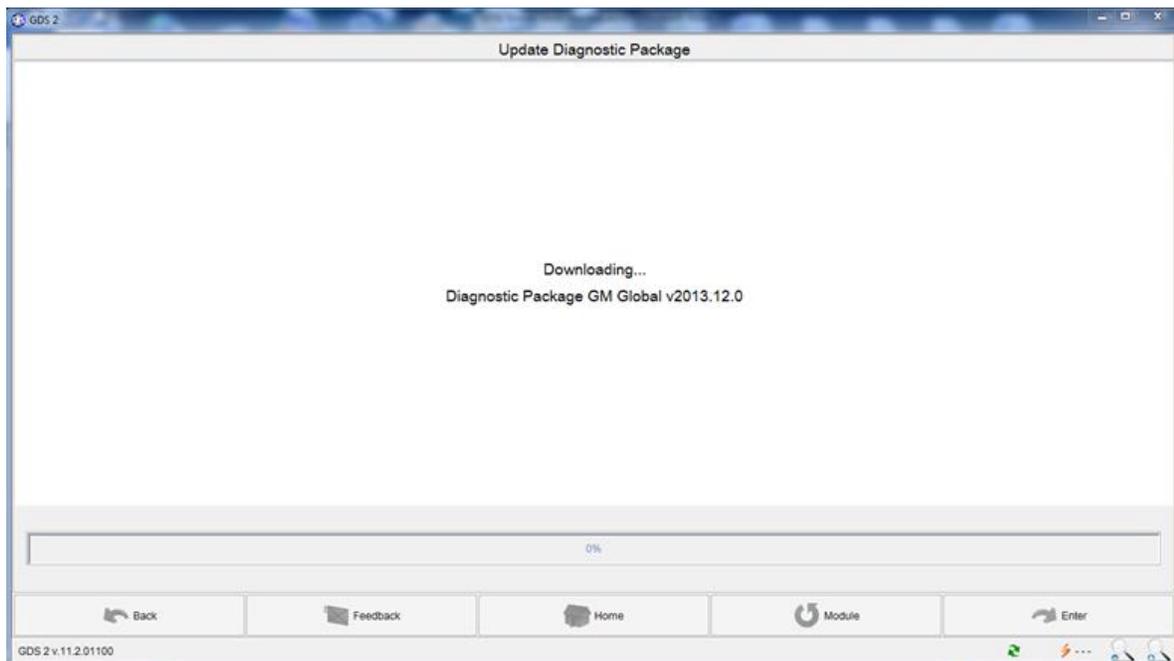
GDS2 Diagnostic Packages are diagnostic applications, which control the communication and the diagnostic services between GDS2 and the vehicle controller.



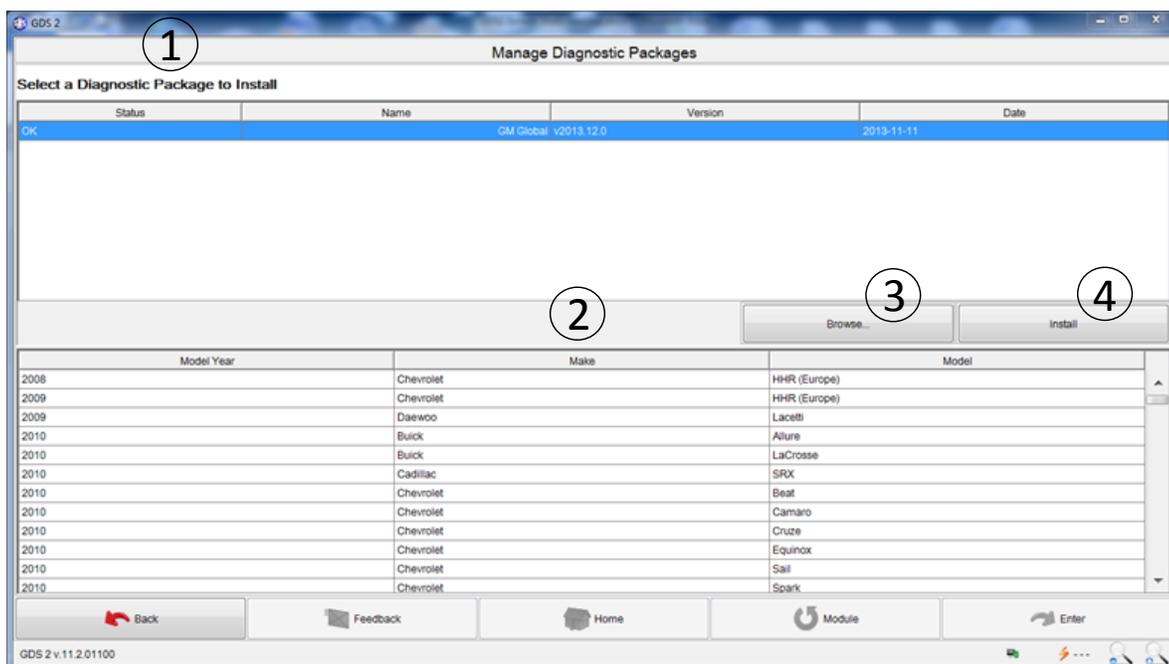
- Click on “Manage Diagnostic Packages” (2) to install a diagnostic package or click on “Update” (13) if the Diagnostic Updates Available selection is displayed.



- For User ID all Valid Diagnostic packages will appear below the “Update Diagnostic Package” heading.



- Select the diagnostic package (1) you want to download from the list on the screen. All available applications will be downloaded. Model Year, Make, and Model will appear towards the bottom of the screen for the package highlighted (2). Review By selecting Browse (3). When you find the diagnostic package desired, select “Install” (4).
- As a diagnostic package is loaded, installation will be displayed on the screen. Loading time will vary depending upon the size of the diagnostic files to be installed.



- After the diagnostic package is installed GDS2 will close itself and restart automatically. Please wait until the GDS2 window comes up again showing the startup screen. This may take a while. Don't try to manually restart GDS2 during this timeframe.

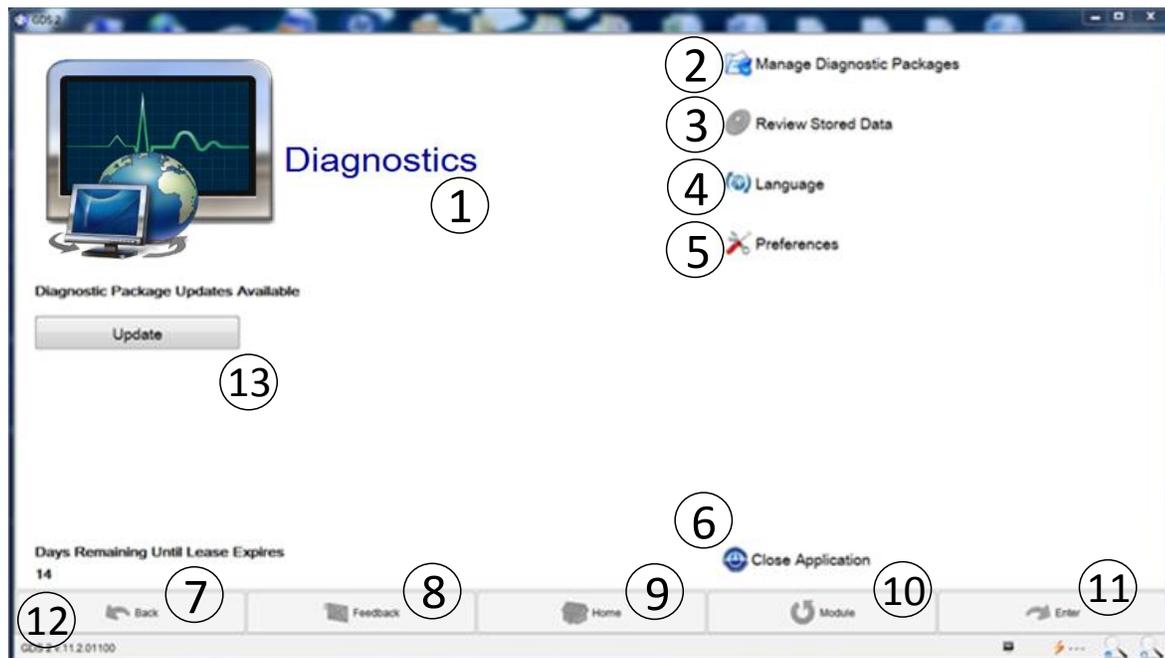
## Uninstallation of GDS2

GDS2 can be uninstalled by starting the following programs:

For Windows 7, Win 7 Pro, or Vista Business

“Start” (Windows 7 Logo) – Control Panel – Programs – Programs and Features – Uninstall a program – Double click on “GDS2” – Select “Yes”

## Change the GDS2 Language/Regional Settings



Select “Language” (4) from the GDS2 main application screen. A list of available languages will be displayed. Select the appropriate language and exit the screen by selecting “Back” (7).

GDS2 memorizes some settings the user changes during a diagnostic session, such as zoom-level or font size. By selecting “Preferences” (5) GDS2 settings can be configured and saved.

# Getting Started

## Prior to using GDS2

It is important to observe the following precautions:

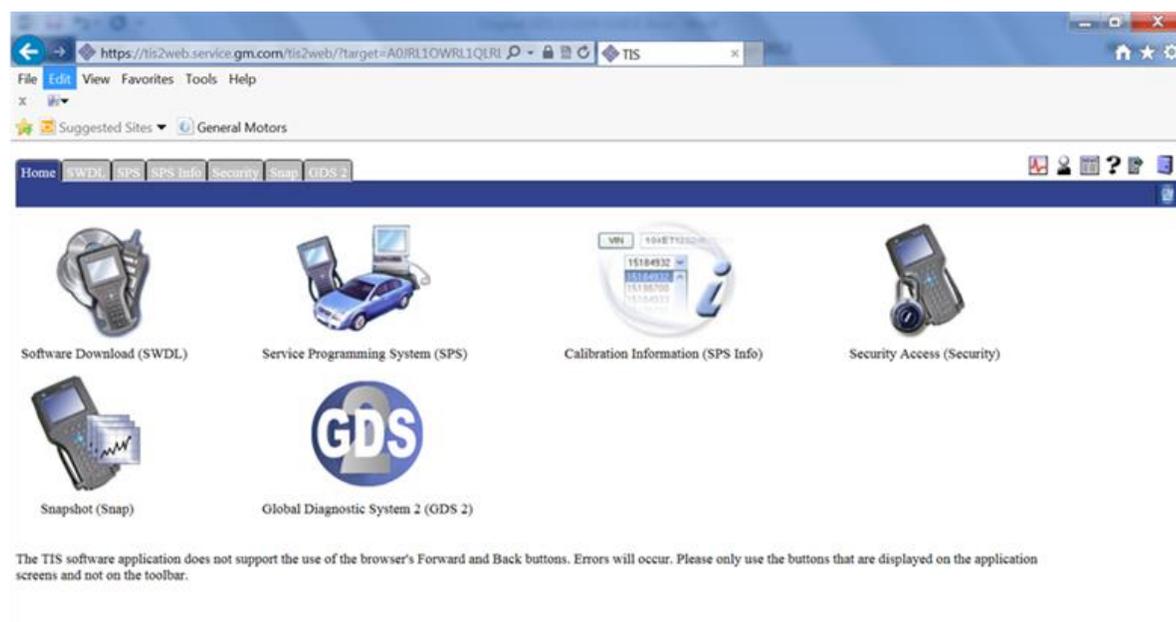
**Caution:**

- To help avoid vehicle module damage, only use current versions of the J2534 interface tool and software. GDS2 and the J2534 interface tool must have the latest software. Failure to update the device with the latest software may result in misdiagnosis of vehicle.
- Make sure the vehicle battery is fully charged. Battery voltage for GDS2/J2534 interface tool should be between 12–14 volts for a 12-volt vehicle. Due to the time requirements of diagnosing a controller, install a constant voltage power supply battery charger/maintainer SPS Programming Support Tool (North American Usage) to maintain system voltage. Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming.
- If a constant voltage power supply battery charger/maintainer is not available, DO NOT connect a regular battery charger. Connect a fully charged 12V jumper or booster pack disconnected from AC voltage supply.
- Make sure the cable connections are secured.
- In using a laptop computer/other display device for GDS2, ensure that the power supply is properly connected. If powered by an AC power cord, ensure the computer is receiving power. If the laptop is operating from its internal power source (battery), then make sure it is adequately charged to utilize the GDS2 program.

**Note:** In order to reduce the potential for signal loss, the J2534 interface tool should be configured for the most stable communication option at your location. You can choose from USB, Ethernet, or Wireless Ethernet.

# GDS2 Start - Up Procedure

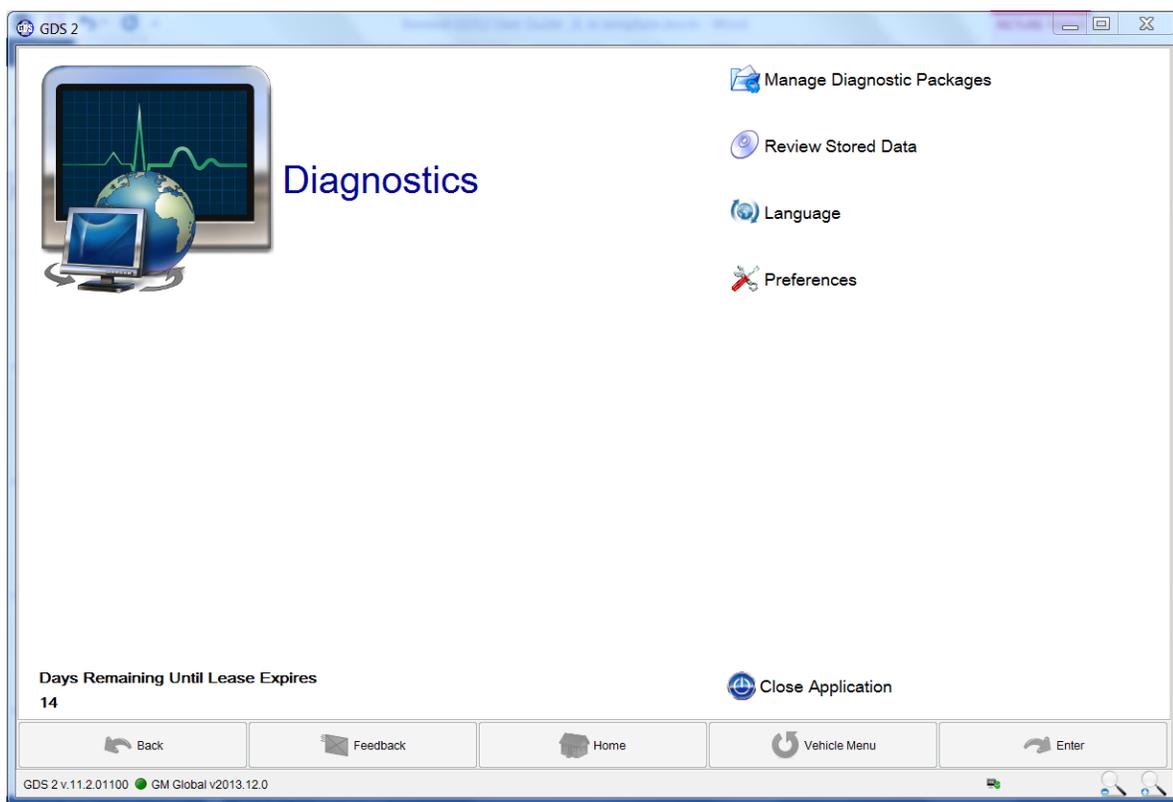
## Starting GDS2



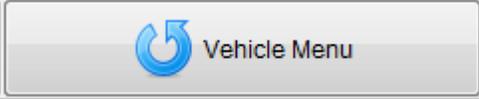
GDS2 can be started through TIS2Web by clicking the “GDS2” icon. Alternatively GDS2 can be launched in standalone mode through the Windows Start menu.

## Navigation Selections

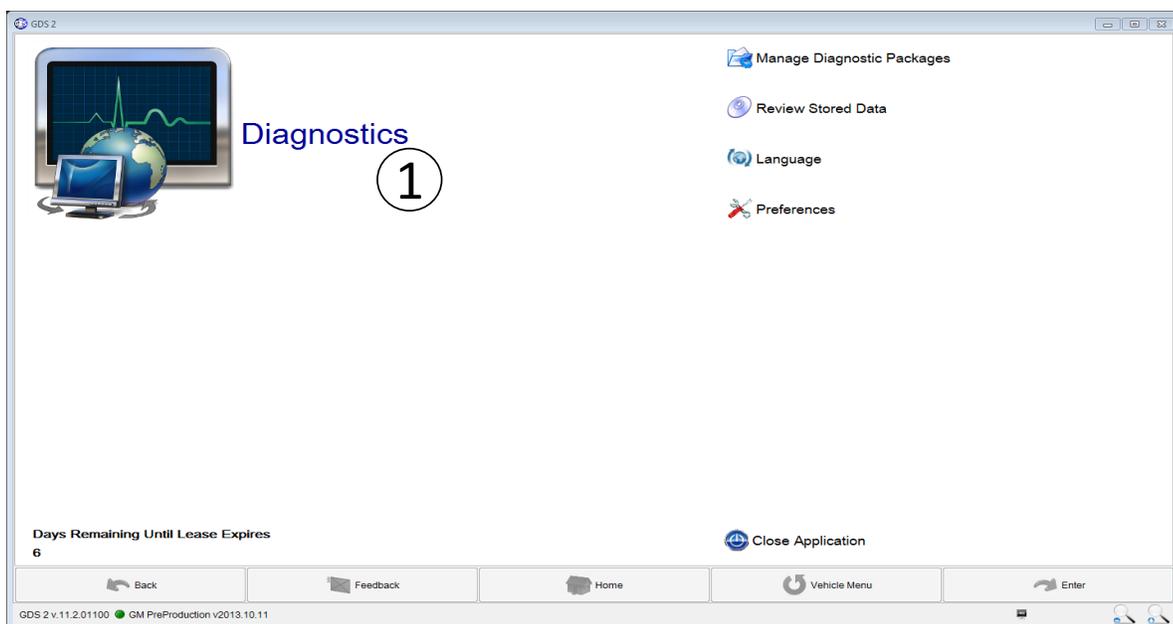
There are 5 main navigation selections available towards the bottom of all GDS2 screens. Selections not active for the current screen will be displayed in grey.



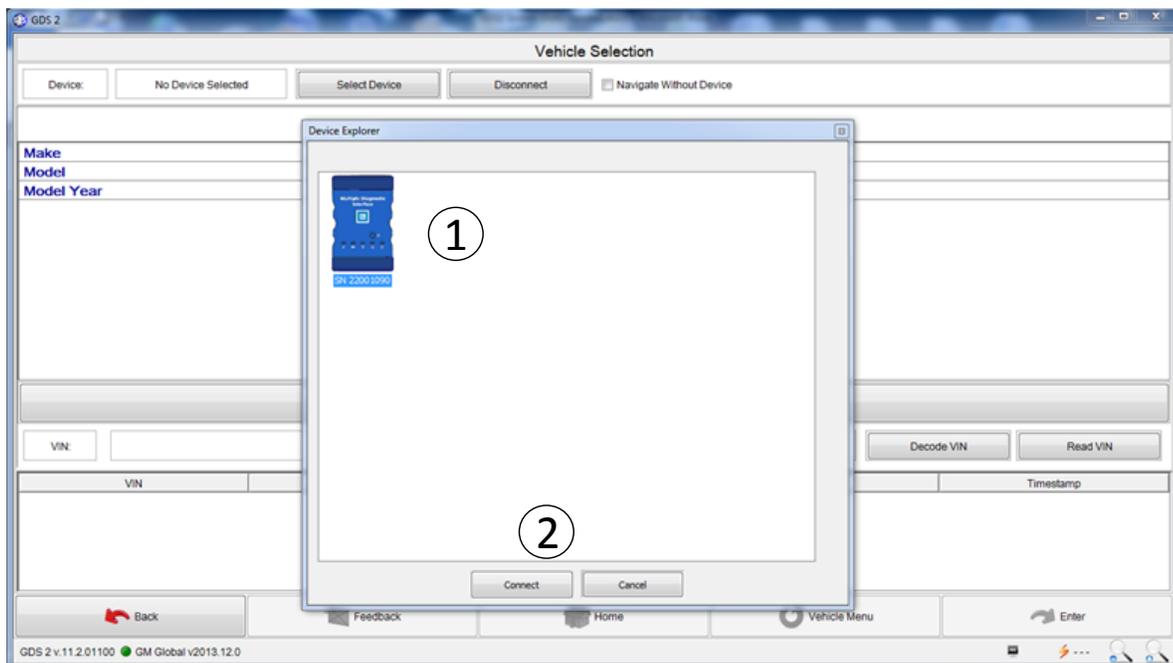
The selections have the following functions:

Navigation Selections	Functions
	Returns you to the previous screen
	<p>This selection will be available at some time in the future. This selection (8) is your opportunity to provide feedback on any problems that you may have experienced with the application, or suggestions of any improvements that you would like to see. We would also like to hear comments on what we are doing right. When describing problems, please be as descriptive as possible. Explain exactly what you were doing when the problem occurred and if the problem is reproducible.</p>
	Returns you to the main application screen.
	Takes you back to a previous menu for the selected vehicle.
	Allows you to make a selection.

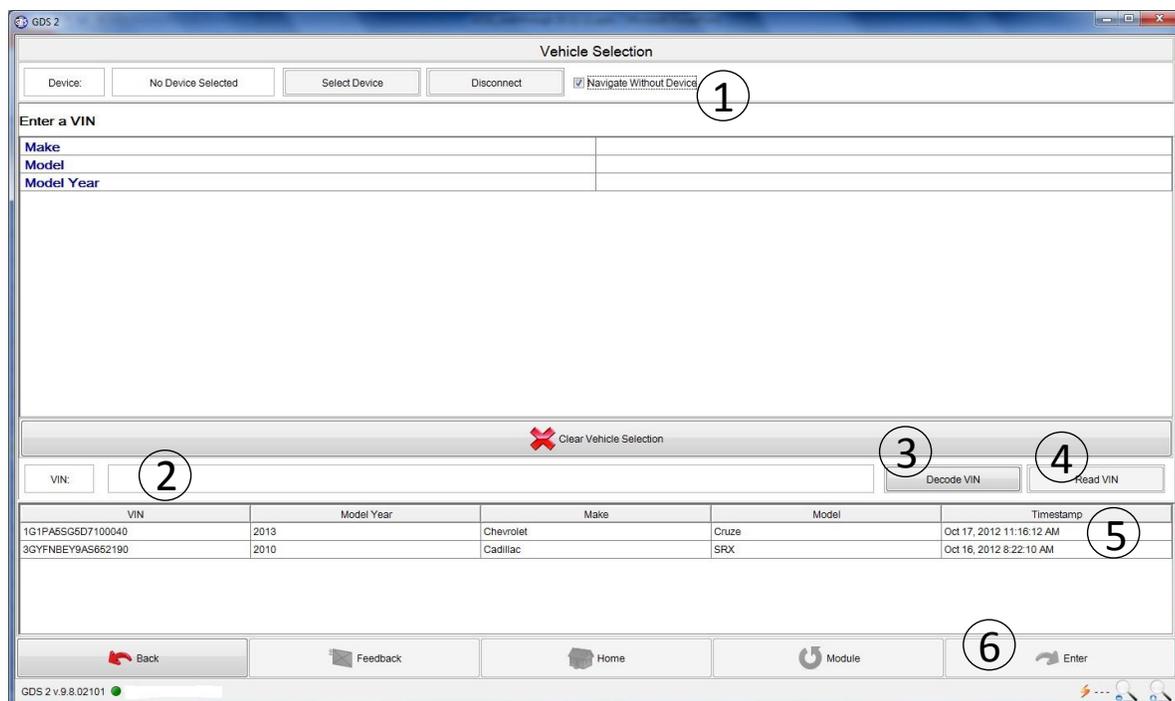
## Entering Vehicle / J2534 Programming Interface Tool Information



1. Select the Diagnostics icon (1) from the main application screen.
2. The Vehicle Selection Menu will be displayed.

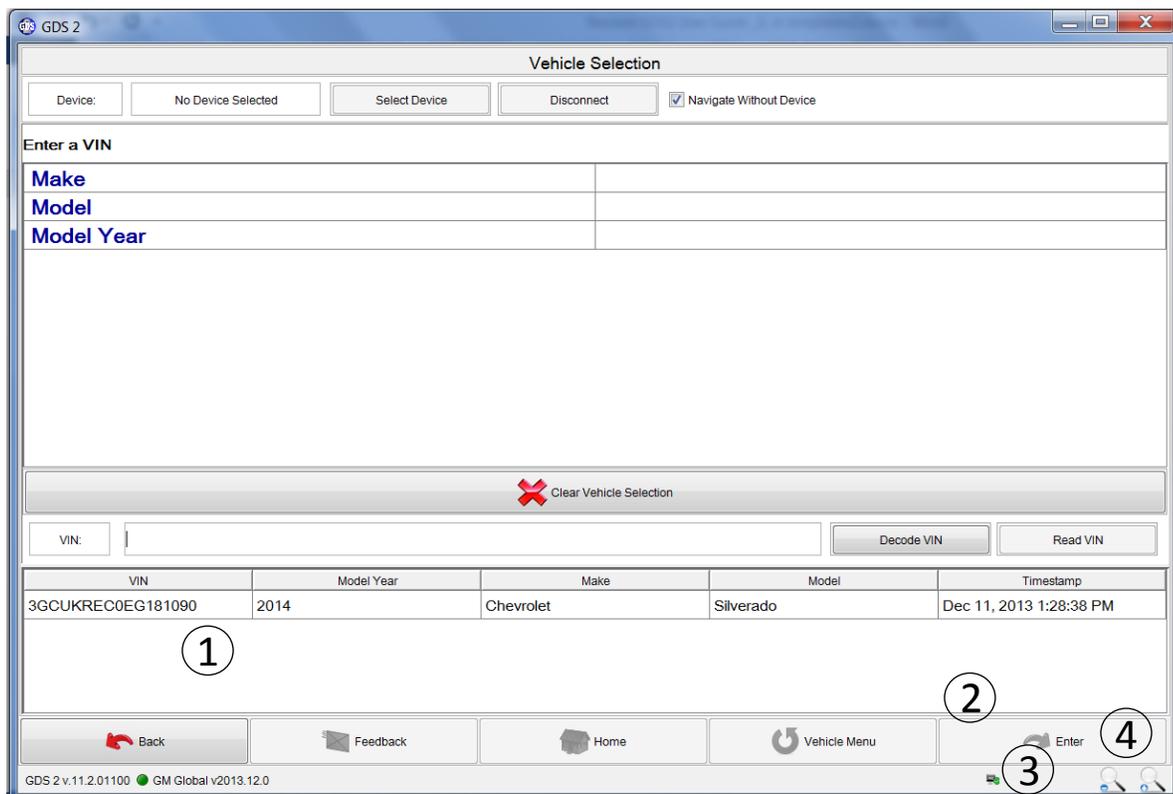


- **J2534 Interface Tool Selection:** All J2534 interface tools available on the various networks at the dealership are displayed. You can select the J2534 interface tool that you are using to perform vehicle diagnostics. For J2534 interface tool connection, highlight the available J2534 interface tool (1) by clicking on it and select "Connect". Choose "Select Device" to check for new J2534 interface tools on the available networks.



To continue GDS2 without any connected J2534 interface tool, select “Navigate Without Device” (1). After the initial connection to a J2534 interface tool by a specific PC, the subsequent connections will be made automatically when the specific J2534 interface tool is available.

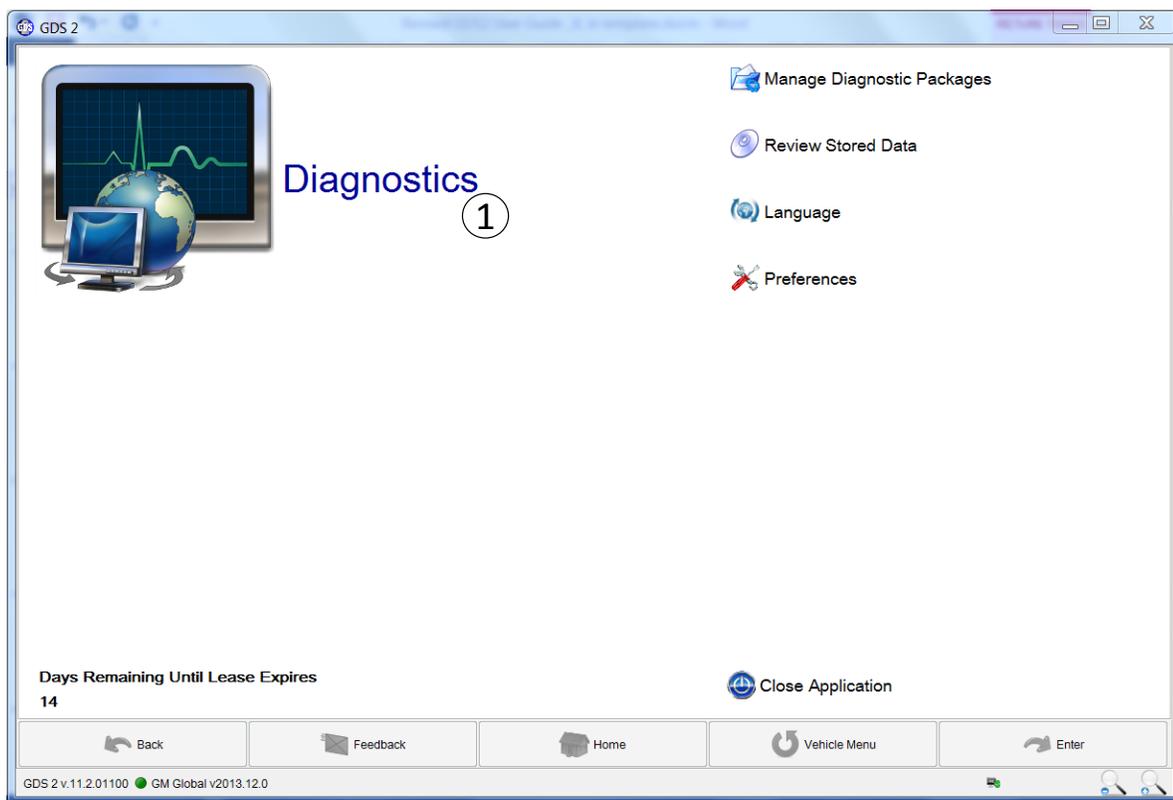
- VIN Entry: Given the J2534 interface tool is connected to the vehicle, the VIN number (2) will be automatically received by the GDS2 software. If not, the Vehicle Identification Number (2) can be manually entered (J2534 interface tool connection required). After the VIN is entered, the vehicle's Make, Model, and Model Year will be displayed on the screen. The VIN can also be read by selecting “Read VIN” (4), then “Decode VIN” (3). “Timestamp” (5) provides a record of when the data was originally viewed/stored. To proceed in the diagnostics process, Select “Enter” (6).
- Vehicle Identification Selection: If you do not want to enter a VIN, the vehicle Make, Model and Model Year can be selected through a series of screens. You are also able to select a number of diagnostic options, depending upon the functions you want to explore: Module Diagnostics, Diagnostic Trouble Codes, Identification Information, Control Functions, Configure/Reset Functions etc.



- Vehicle Diagnostic History: If a vehicle has been diagnosed previously with GDS2, the VIN and associated information will be stored towards the bottom of the screen. Entire diagnostic sessions for multiple VINs can be displayed and stored. Highlight the vehicle you want to diagnose (1) and select “Enter” (2).

# Diagnostics

## Diagnostic Data Display



To enter Diagnostics, select the Diagnostics icon (1) from the main application screen.

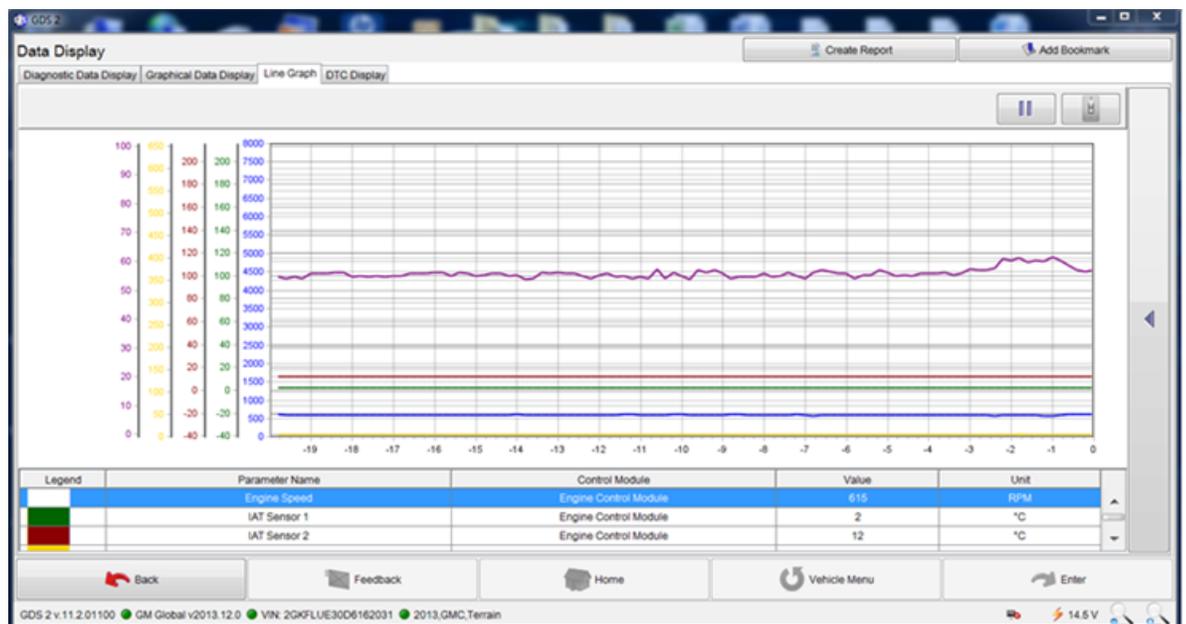
The screenshot shows the GDS2 Diagnostic Data Display application. The window title is "GDS 2". The main area is titled "Data Display" and contains a tabbed interface with "Diagnostic Data Display" selected. Below the tabs, there is a dropdown menu showing "Engine Data". To the right of the dropdown are several icons: a pause button, a mobile device icon, a lock icon, and two arrows pointing up and down. The main content is a table with the following columns: "Parameter Name", "Control Module", "Value", and "Unit".

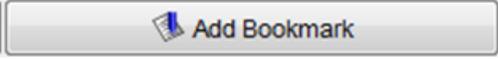
Parameter Name	Control Module	Value	Unit
Engine Speed	Engine Control Module		RPM
Desired Idle Speed	Engine Control Module		RPM
ECT Sensor	Engine Control Module		°C
IAT Sensor 1	Engine Control Module		°C
IAT Sensor 2	Engine Control Module		°C
Ambient Air Temperature	Engine Control Module		°C
Cold Start-Up	Engine Control Module		
MAF Sensor	Engine Control Module		g/s
Engine Load	Engine Control Module		%
Accelerator Pedal Position	Engine Control Module		%
Throttle Position	Engine Control Module		%
MAP Sensor	Engine Control Module		kPa
MAP Sensor	Engine Control Module		V
BARO	Engine Control Module		kPa
Calculated BARO	Engine Control Module		kPa
BARO Sensor	Engine Control Module		V
Air/Fuel Equivalence Ratio Command	Engine Control Module		
Fuel Control Loop Status	Engine Control Module		

At the bottom of the application, there are navigation buttons: "Back", "Feedback", "Home", "Vehicle Menu", and "Enter". The status bar at the very bottom displays: "GDS 2 v:11.2.01100 GM Global v2013.12.0 VIN: 3GCUKREC0EG181090 2014,Chevrolet,Silverado,3GC".

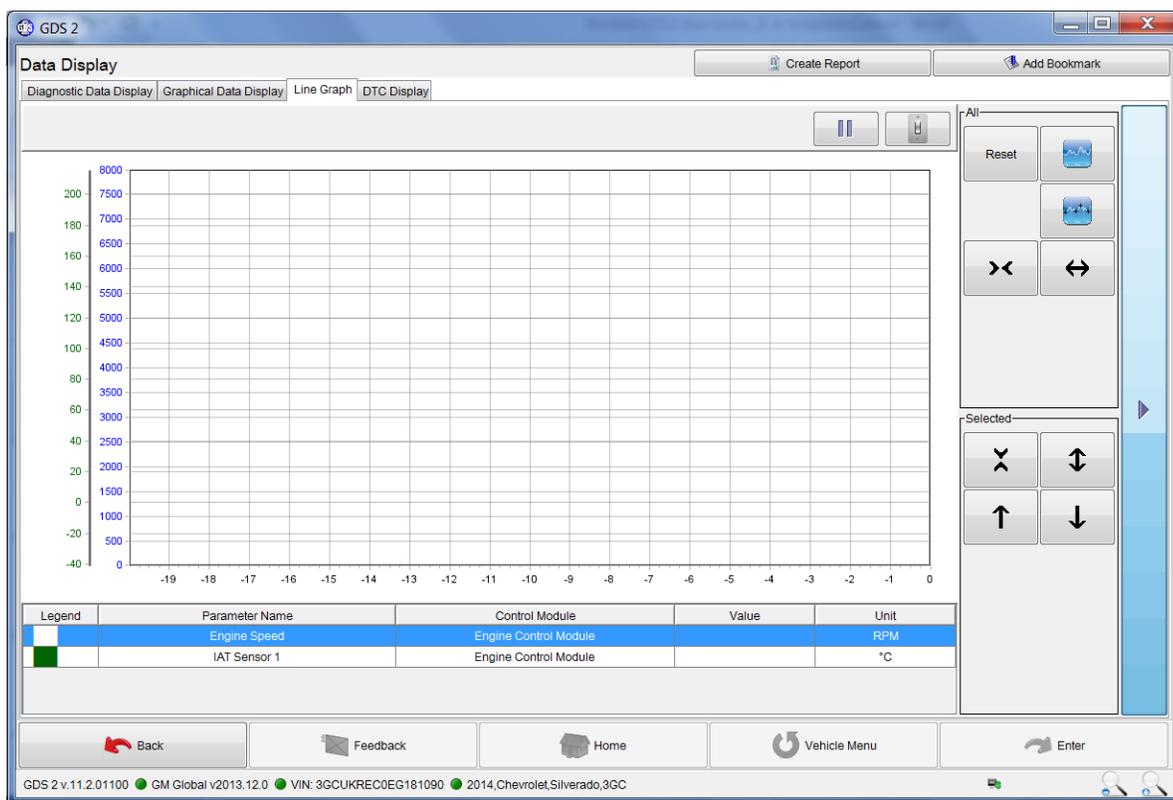
The Diagnostic Data Display application provides real-time status of the vehicle controller data and signals. On the GDS2 Diagnostic Data Display, available data lists are available from a drop down menu.

Data Display Icons	Description
	Click on this selection to pause the display of data.
	Click on the light switch to change the data from English to Metric Units.
	Click the lock to move highlighted data to the top of the data list
	Click the up arrow, to scroll the highlighted bar one parameter up. Selection not available from the first parameter.
	Click the down arrow, to scroll the highlighted bar one parameter down.
	Click on the plus magnifying glass to increase the size of highlighted displayed data.
	Click on the minus magnifying glass to decrease the size of the highlighted displayed data.



<b>Data Display Icon</b>	<b>Description</b>
	This icon marks data points (with hash marks) on graphed data lines.
	This icon can be used to provide a graph of previously stored data for the selected data list.
	Add Bookmark can be used to “tag” the data as a bookmark for future retrieval.
<b>LINE GRAPH</b>	The Line Graph tab can be used to provide a graph of previously stored data for the selected data list.
	Module can be used to return to the list of available vehicle modules.

The slide below provides additional directional selections for graphical displays.



The Scroll Bar is found on the right of the graph and selection drop down menu. It allows you to scroll up or down in the data lists.

## DTC Display

When Diagnostic Trouble Codes (DTC)/DTC Display is selected, a summary screen with a set of columns including Control Module Name, Control Module Status, and DTC Count are displayed.

The screenshot shows the 'Vehicle DTC Information' window in GDS 2. The window title is 'GDS 2' and the main title is 'Vehicle DTC Information'. There is a button 'Add Snapshot Bookmark' in the top right corner. Below the title bar is a 'DTC Summary' tab. The main area contains a table with the following columns: Status, Control Module Name, Control Module Status, and DTC Count. The table lists 20 control modules. The status column contains icons: a green checkmark for 'No DTCs Stored', a red X for 'Not Connected', and a yellow triangle with an exclamation mark for 'DTCs Stored'. The DTC Count column shows the number of DTCs for each module. Below the table are three buttons: 'Clear DTCs', 'Refresh', and 'Details'. At the bottom of the window are five navigation buttons: 'Back', 'Feedback', 'Home', 'Module', and 'Enter'. The status bar at the very bottom displays 'GDS 2 v. 9.6.00300', 'GM PreProduction v2012.10.5', 'VIN: 1G11H5SA1DU100096', '2013,Chevrolet,Malibu', and '14.4 V'.

Status	Control Module Name	Control Module Status	DTC Count
✓	Engine Control Module	No DTCs Stored	0
✗	Fuel Pump Control Module	Not Connected	
✓	Transmission Control Module	No DTCs Stored	0
✓	Electronic Brake Control Module	No DTCs Stored	0
✓	Parking Brake Control Module	No DTCs Stored	0
⚠	Multi-Axis Acceleration Sensor Module	DTCs Stored	1
✓	Power Steering Control Module	No DTCs Stored	0
✓	Steering Wheel Angle Sensor Module	No DTCs Stored	0
✗	Suspension Control Module	Not Connected	
✓	Body Control Module	No DTCs Stored	0
✓	Inflatable Restraint Sensing and Diagnostic Module	No DTCs Stored	0
✓	Passenger Presence Module	No DTCs Stored	0
✓	Instrument Cluster	No DTCs Stored	0
✗	Headlamp Control Module	Not Connected	
✓	Radio	No DTCs Stored	0
✗	Digital Radio Receiver Control Module	Not Connected	
✗	Telematic Vehicle Localization and Immobilization Control Module	Not Connected	
✗	Mobile Telephone Control Module	Not Connected	
✓	Telematics Communication Interface Control Module	No DTCs Stored	0
✓	HVAC Control Module	No DTCs Stored	0
✓	Seat Memory Control Module	No DTCs Stored	0
✗	Rear Seat Heating Control Module	Not Connected	

## Refresh DTCs

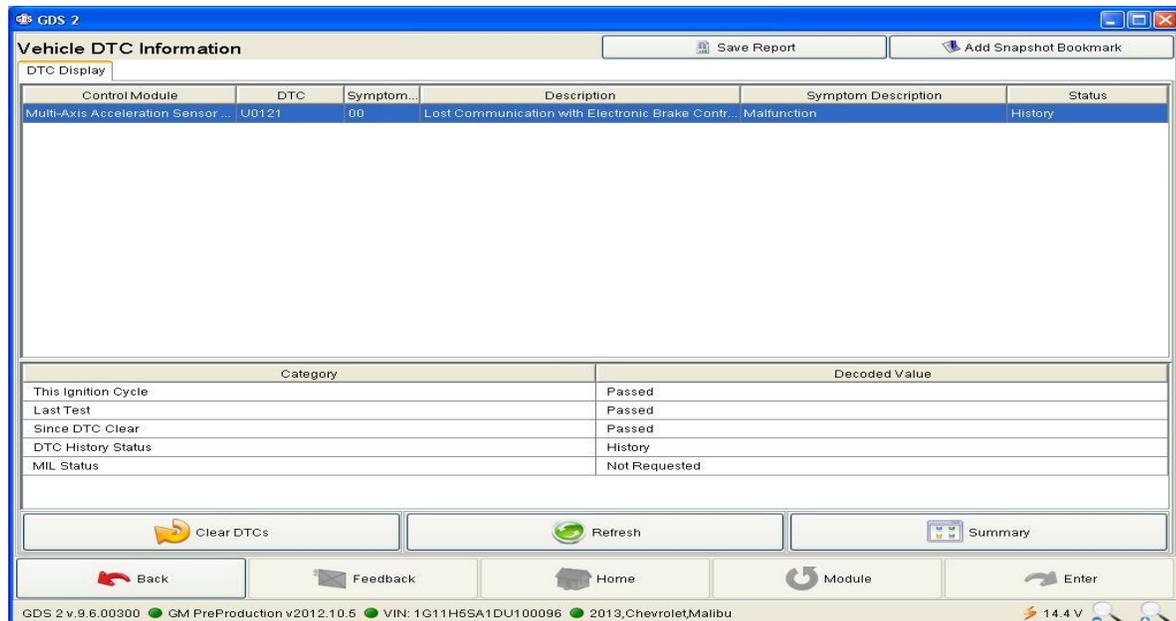
If 'Refresh' is selected, GDS2 will request a DTC update from the controller.

The screenshot shows the 'Vehicle DTC Information' window in GDS 2. It features a table with columns for Status, Control Module Name, Control Module Status, and DTC Count. Below the table are buttons for 'Clear DTCs', 'Refresh', and 'Details'. At the bottom, there are navigation buttons: 'Back', 'Feedback', 'Home', 'Module', and 'Enter'. The status bar at the very bottom displays 'GDS 2 v. 9.6.00300', 'GM PreProduction v2012.10.5', 'VIN: 1G11H5SA1DU100096', '2013,Chevrolet,Malibu', and '14.4 V'.

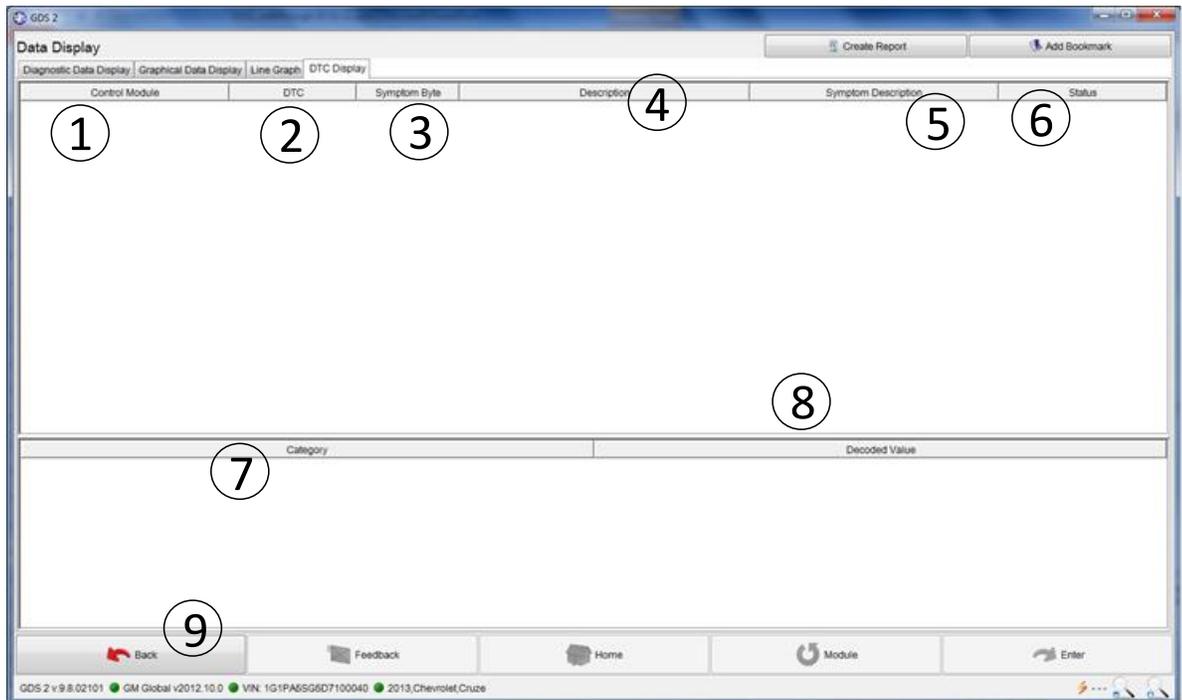
Status	Control Module Name	Control Module Status	DTC Count
✓	Engine Control Module	No DTCs Stored	0
✗	Fuel Pump Control Module	Not Connected	
✓	Transmission Control Module	No DTCs Stored	0
✓	Electronic Brake Control Module	No DTCs Stored	0
✓	Parking Brake Control Module	No DTCs Stored	0
⚠	Multi-Axis Acceleration Sensor Module	DTCs Stored	1
✓	Power Steering Control Module	No DTCs Stored	0
✓	Steering Wheel Angle Sensor Module	No DTCs Stored	0
✗	Suspension Control Module	Not Connected	
✓	Body Control Module	No DTCs Stored	0
✓	Inflatable Restraint Sensing and Diagnostic Module	No DTCs Stored	0
✓	Passenger Presence Module	No DTCs Stored	0
✓	Instrument Cluster	No DTCs Stored	0
✗	Headlamp Control Module	Not Connected	
✓	Radio	No DTCs Stored	0
✗	Digital Radio Receiver Control Module	Not Connected	
✗	Telematic Vehicle Localization and Immobilization Control Module	Not Connected	
✗	Mobile Telephone Control Module	Not Connected	
✓	Telematics Communication Interface Control Module	No DTCs Stored	0
✓	HVAC Control Module	No DTCs Stored	0
✓	Seat Memory Control Module	No DTCs Stored	0
✗	Rear Seat Heating Control Module	Not Connected	

## Details Selection

If 'Details' was selected, a detailed DTC display screen appears.



Control Module (1), DTC (2), Symptom Byte (3), Description (4), Symptom Description (5), and Status Byte (6) are all displayed at the top of the chart. At the bottom of the chart Category (7) and Decoded Value (8) are shown. Back (9) returns you to the DTC display.



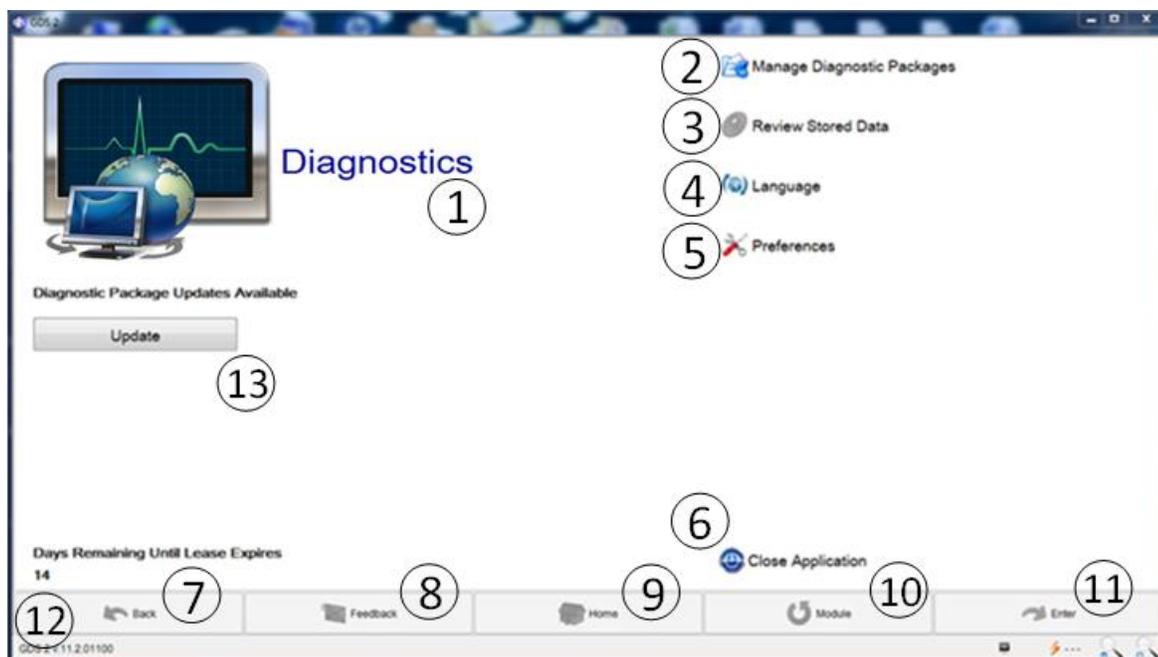
## Clear DTCs

If Clear DTCs (11) is selected, a DTC Display screen will appear.



Use Add (1) or Add All (2) to select the ECUs you want to clear. Some ECUs can only be cleared together, in which case they will be selected together. Select Remove (3) to start the process to clear the selected ECUs. Select Remove All (4) to start the process to clear all the ECUs. Select OK (5) to clear selected ECUs. Select Cancel (6) if you do not want to clear any ECUs at the current time. If OK is selected, a message to clear DTCs will appear. The deleted codes will disappear with the next refresh.

## Leave the DTC Application

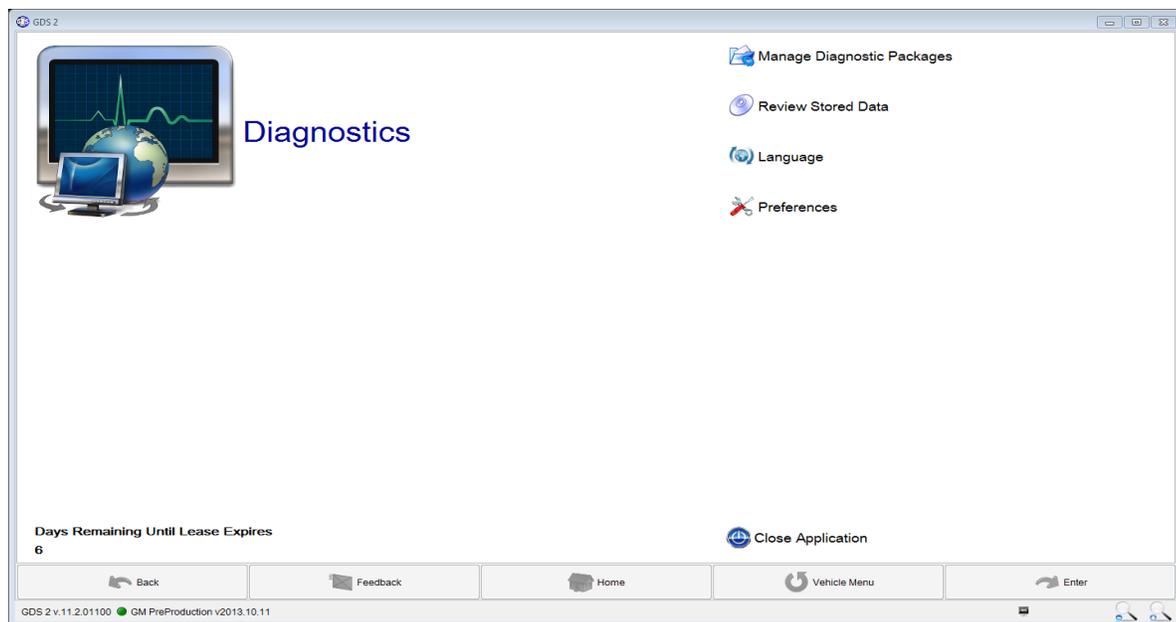


**Note:** Only the Close Application (6) selection allows you to completely leave the Diagnostic Application. It is not possible to exit GDS2 while diagnostic applications are being performed. To Exit GDS2, navigate back to the GDS2 Application page by selecting the Back (7) followed by Home (9) when it is available.

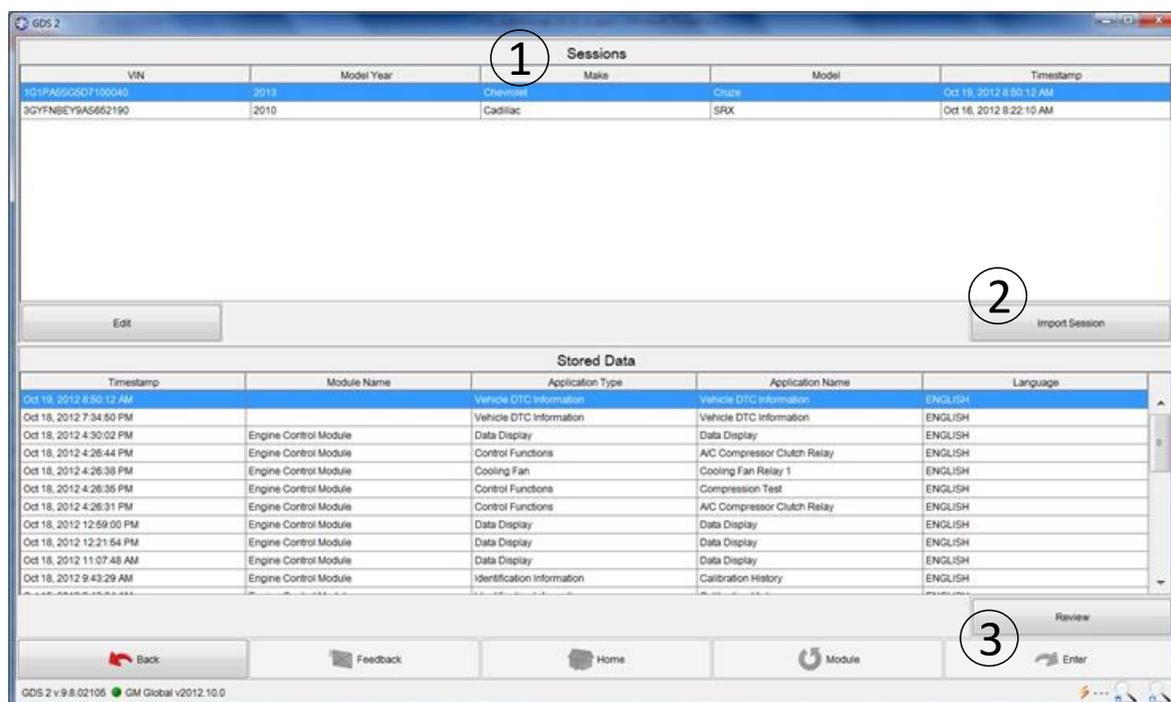
## GDS2 Stored Data (Snapshot)

In GDS2 there is no conventional snapshot as there has been in the past. GDS2 will save all of the past 20 VINs and diagnostic data for future viewing. While viewing live data, the user has the option to “tag” the data with bookmarks. To view previously stored data:

- Select 'Review Stored Data' from the GDS home screen.



- Select the VIN (1) for the vehicle you wish to view.
- Select Import Session (2) if you want to bring in a Snapshot file to view in GDS2. The Snapshot file will be sent to a directory for viewing in GDS2.
- Select Snapshot (3) to display the highlighted snapshot event.



## Configuration and Reset Functions

The configuration and reset functions are specific controller functions which need to be executed when system actuators are replaced or when they require a reset. For more details, refer to the applicable Service Manual of the system.

# Troubleshooting

## J2534 Interface Tool Connection Problems

If the J2534 Interface Tool connections are loose or not properly connected to the vehicle/computer, a loss of communications message will be displayed. Perform the following steps:

**Note:** MDI Manager Software cannot be in use when attempting to use GDS2.

- Make sure the MDI Manager Software is not running at the same time GDS2 is being used.
- Make sure the J2534 interface tool is properly connected to the vehicle and computer.
- Ensure sufficient voltage is available for proper function of the J2534 vehicle interface.
- Use a known “good USB cable” from another J2534 unit, if available. Confirm all connections and try again.
- Use a known “good J2534 DLC connection cable” from another J2534 unit, if available. Confirm all connections and try again.
- If the condition is still present, contact Customer Support.
- Make sure that the firewall does not block GDS2/J2534 interface tool communication.