



## TI Connect™ CE Software

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# What's New

## *What's New in TI Connect™ CE Software*

### TI Connect™ CE

- Explorer Workspace

#### [Send or Convert a Python AppVar to the Computer \(\\*.py or \\*.8xv\)](#)

- A Python program (PY AppVar) will save from the CE to a computer as \*.py file. Open the \*.py file in a text editor to view or edit the file for the CE Python experience. As in previous releases, TI-SmartView™ CE and TI Connect™ CE Explorer will send/convert \*.py files to the calculator file type, PY AppVar. There is no need to save the CE PY AppVar on your computer.

#### [Convert an image for use in the Python App with the ti\\_image Add-On module](#)

- When sending an image from a computer to a connected CE, an additional image conversion option is available to convert and send the correct Python image AppVar format to the CE. Then, using the Python App, import the ti\_image Add-On module to use the image in your program.

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Always update with the latest CE Bundle at:

- [education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)
- [education.ti.com/84cetupdate](http://education.ti.com/84cetupdate)

# Introduction to the TI Connect™ CE Software

The TI Connect™ CE software makes exchanging information between your graphing calculator and your computer quick and easy.

## **Supported TI Graphing Calculators**

Supports any TI-8x graphing calculator with a USB port, which include:

- TI-84 Plus CE Python\* and TI-84 Plus CE
- TI-84 Plus CE-T *Python Edition*\* and TI-84 Plus CE-T
- TI 84 Plus C Silver Edition
- TI-84 Plus
- TI-84 Plus T
- TI-83 Premium CE *Edition Python* and TI-83 Premium CE
- TI-83 Plus.fr
- TI-82 Advanced
- TI-82 Advanced Edition Python with Python82 App

**\*Note:** TI-84 Plus CE family calculators will display as TI-84 Plus CE.

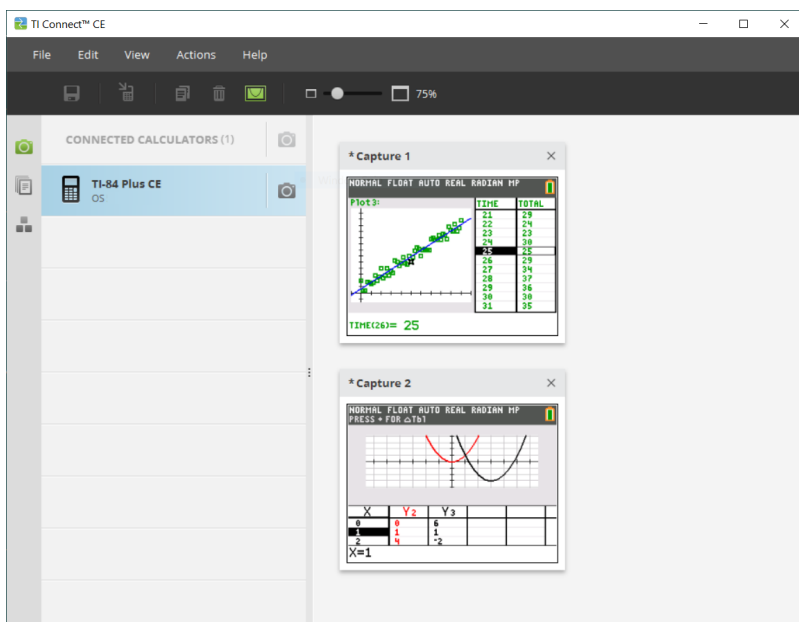
**Note:** Use TI Connect™ 4.0 which supports calculators with an I/O port only:

- TI-83 Plus
- TI-89 Titanium
- Voyage™ 200
- TI-73 Explorer™

**Note:** TI Connect™ CE does not support connectivity with the TI-Nspire™ family.

# Using the TI Connect™ CE Software

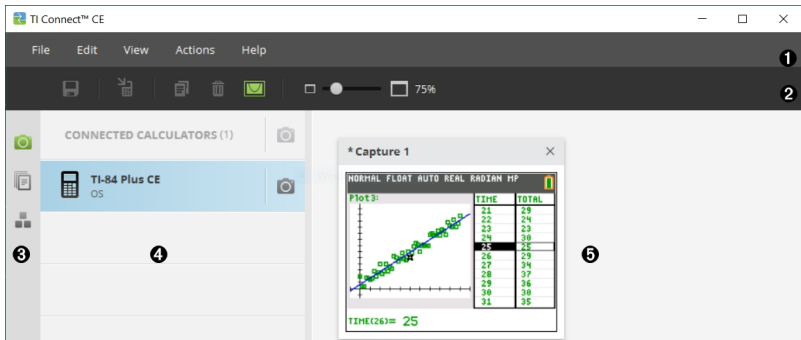
The TI Connect™ CE software contains tools you can use to exchange information between your calculator and your computer.



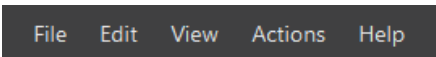
The TI Connect™ CE software includes three workspaces:

- **Screen Capture:** allows you to manage screen captures
- **Calculator Explorer:** allows you to manage calculator content
- **Program Editor:** allows you to manage TI Basic programs

## Parts of the TI Connect™ CE Software



- 1 **Menu Bar** - Use these menus to manage calculator files and screens to view calculator information, and to get help.



- 2 **Toolbar** - Use these icons to manage computer files and screens.

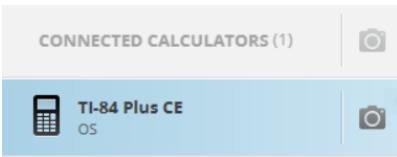


- 3 **Workspace Panel**- Use this panel to select workspaces (Screen Capture, Calculator Explorer, and Program Editor).



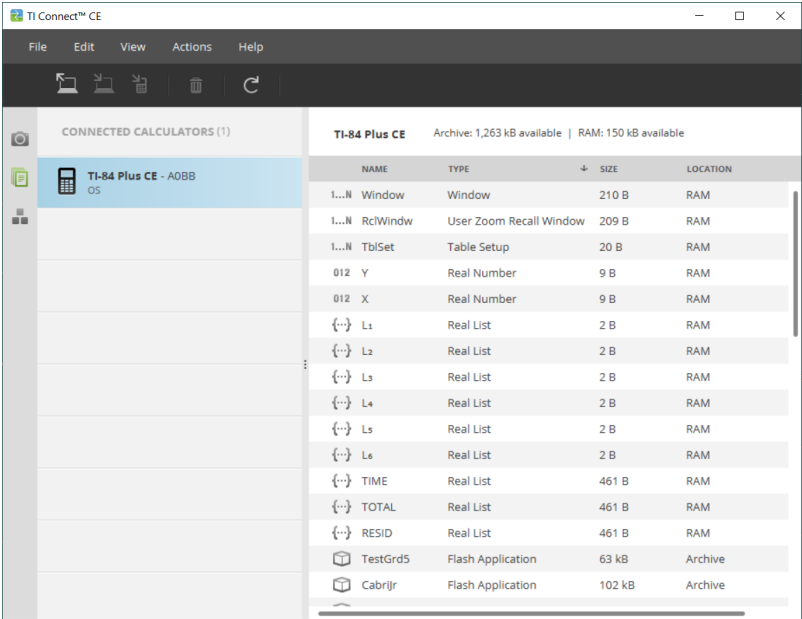
- 4 **Calculator List Panel** - Use this list to view all connected calculators and to select one calculator for display.





5

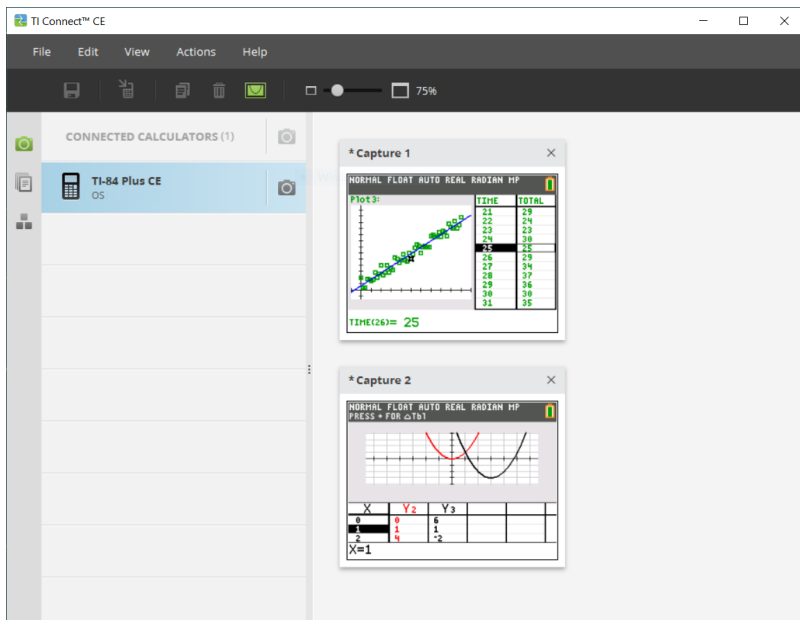
**Content Panel** - Use this panel to view and manage the calculator files and screen on connected calculator(s).



**Note:** You can complete most of the actions in these menus by dragging and dropping items to your connected calculator or computer.

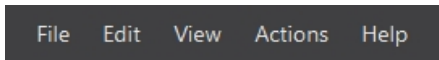
# Using the Screen Capture Workspace

The Screen Capture workspace allows you to manage calculator screen captures.



## Parts of the Screen Capture Workspace

**Menu Bar** - Use these menus to manage files and images, to view calculator information, and to get help.



**Note:** You can complete most of the actions in these menus by dragging and dropping items from the Content Panel.

**Toolbar** - Click these icons to save, send, copy, delete, and resize files.



- 
- ① Save a file to the computer.

---

  - ② Send a file to a calculator.

---

  - ③ Copy a file.

---

  - ④ Delete a file.

---

  - ⑤ Add or remove a border from all captured screens.

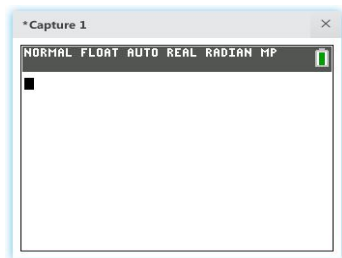
---

  - ⑥ Change the size of all captured screens.

---

  - ⑦ View the screen capture size.
- 

**Content Panel** - View screen captures in the Content Panel.





## Capturing and Using Screens

In the Screen Capture workspace, you can capture and view screens from your calculator.

## Before you Begin

Connect the calculator to the computer and make sure it appears in the Calculator List Panel.

### To Capture Calculator Screens

1. On the TI Connect™ CE software Workspace Panel, click the **Screen Capture** workspace.
2. Display the screen on your calculator that you want to capture.
3. Click  next to the desired calculator in the Calculator List Panel.
  - If more than one calculator is connected, click on  next to **CONNECTED CALCULATORS** to capture screens from all calculators.

### *Dragging and Dropping Screen Captures to Computer Applications*

Using the Screen Capture workspace, you can drag and drop captured screens into many computer applications. This feature lets you use calculator screens in your documents.

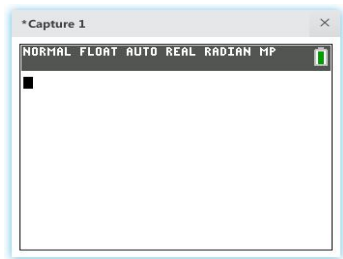
#### To drag and drop screens into computer applications

1. Open or capture the screen.
2. Drag and drop the screen to an open document or presentation computer software application.

**Note:** You may also use **Edit>Copy>Paste** into an open document or presenter computer software application.

### *Saving Calculator Screens as Files*

The Screen Capture workspace lets you save captured or existing images from your calculator as a PNG.



**Note:** The asterisk at the beginning of an image name indicates that the image is not saved.

#### To save an existing screen

1. Click the captured screen in the Content Panel.

2. Click .

### To save multiple screens

1. Click **Edit > Select All**.

2. Click .

### To rename a screen capture


1. Place your cursor at the beginning of the screen name field.  
Ex: Capture 1.
2. Double-click the name to select it.
3. Type in a new name for the computer file.

### To save a new screen capture as a PNG file

1. Click the image.

2. Click .

3. Navigate to a desired save location.
4. Use the default file name or type a new file name.

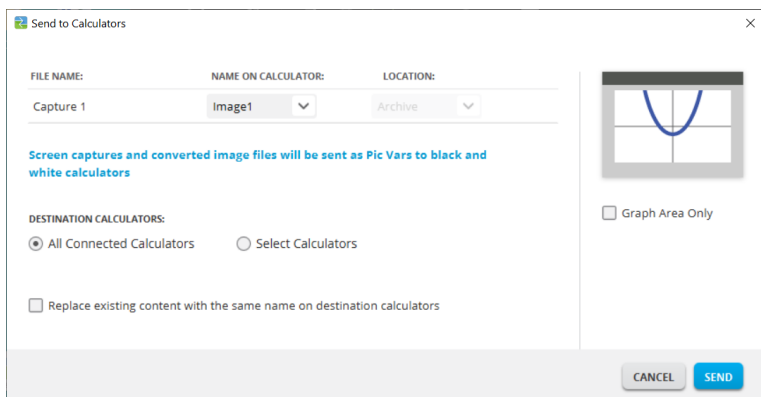
5. Click .

### To send screen captures to connected calculators

This Screen Capture only feature provides a way to take a screen capture of a graph on the high resolution calculators, crop to the graph area and then convert only the graph area to a Background Image. Check **Graph Area Only** to create this type of Background Image.

1. If you have not already done so, capture the screen.
2. Click the screen capture to select it.

3. Click .



- **FILE NAME:** This may differ from the **NAME ON CALCULATOR** depending on what you named the screen capture on your computer.
- **NAME ON CALCULATOR:** select the background image (it should be the default, but you may change the background image name using this menu).

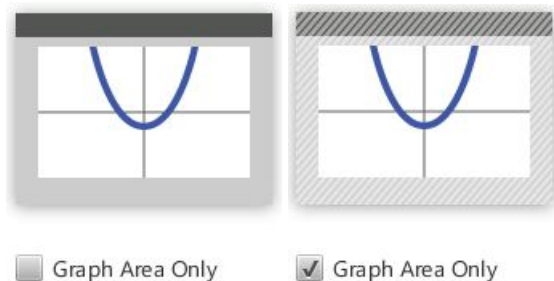
**Note:** Screen captures and converted image files will be sent as Pic Vars to gray scale calculators.

- **GRAPH AREA ONLY:** In the right panel, select whether you want to send just the graph area, or the entire screen. When sending a screen capture back to a calculator, it is best to send the graph area only.

### Cropping an Image

A screen capture of the graph area includes the full screen of the TI-84 Plus CE, status bar, graph border, and the graph area.

TI Connect™ CE software allows you to crop the image to a Graph Area Only size to create a Background Image Var. You can crop a screen to Graph Area only in the Send to in the Send to Calculators dialog box.



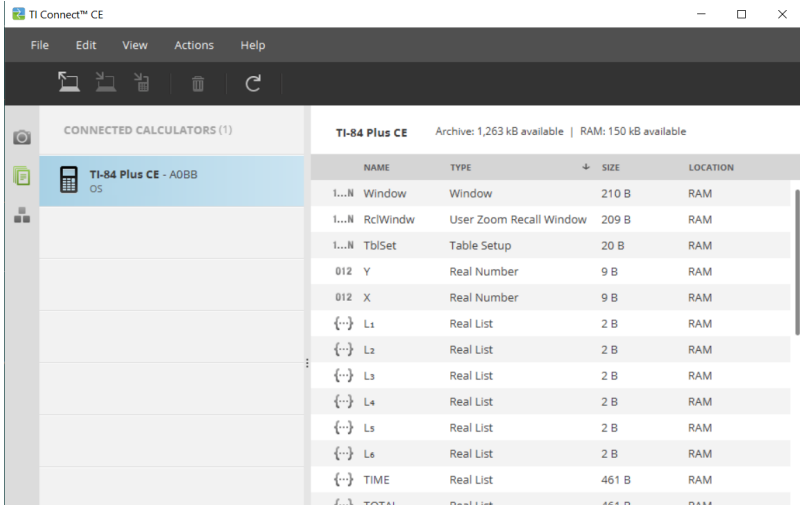
- **DESTINATION CALCULATORS:** Select whether you want to send the image to all connected calculators, or just selected calculators (from a check list).

### **To send files to multiple calculators**

1. Select the **Select Calculators** button on the dialog box.
2. Check the boxes to next to the calculators you want to select.
3. Click **Send**.

# Using the Calculator Explorer Workspace

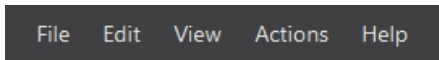
Calculator Explorer workspace allows you to manage calculator content.





## Parts of the Calculator Explorer Main Workspace

**Menu Bar** - Use these menus to manage files and images, to view calculator information, and to get help.



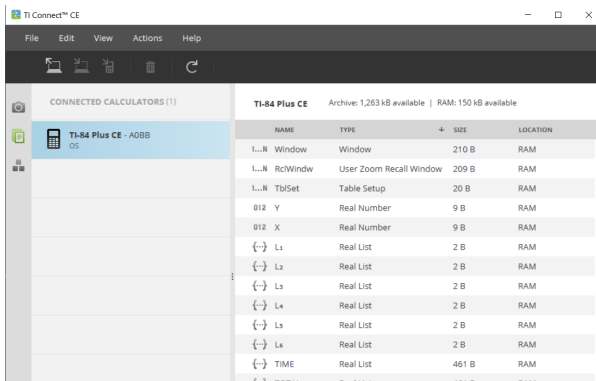
**Note:** You can complete most of the actions in these menus by dragging and dropping items from the Content Panel.

**Toolbar** - Click these icons to add, transfer, or delete files from your calculator.



- 1 Add content from your computer.
- 2 Send selected content to your computer.
- 3 Send selected content to another connected calculator.
- 4 Delete the selected file.
- 5 Refresh the view of a connected calculator's contents.

**Content Panel** - Select files you want to manage from this panel.



## Selecting a Connected Calculator

The TI Connect™ CE software allows you to simultaneously connect multiple calculators. Click on the calculator you want to work with to select it. The selected calculator becomes the default calculator for all TI Connect™ CE software actions.

### Before you Begin

Connect the calculator to the computer and make sure it appears in the Calculator List Panel.

### Copying Calculator Files to the Computer

You can copy most data, files, and programs from your calculator to your computer as a content backup, to send to others, or to free up calculator memory.

Warning: Do not disconnect the cable during a transfer.

#### To copy a file from the calculator to the computer

1. Click on the file name to select it.
2. Drag and drop the file into a folder on your computer or onto your desktop.

Warning: Do not disconnect the cable during a transfer.

#### To copy all files from the calculator to the computer as a content backup


1. Select **Edit**
2. Select **All**
3. Drag and drop the file(s) into a folder on your computer or onto your desktop.

**Note:** There is no auto backup feature in TI Connect™ CE.

### Copying File(s) from the Computer to Connected Calculators

Warning: Do not disconnect the cable during a transfer.

#### To copy file(s) from the computer to the calculator

1. Navigate to the desired file(s) on your computer.
2. Drag the file(s) to the Calculator List Panel and hover over the desired calculator.
3. Release the mouse button when you see  **Copy**.
4. Select a file name from the drop-down menu. This will be the name of the file on your calculator.
5. Click **Send**.

## Sending Files Between Connected Calculators

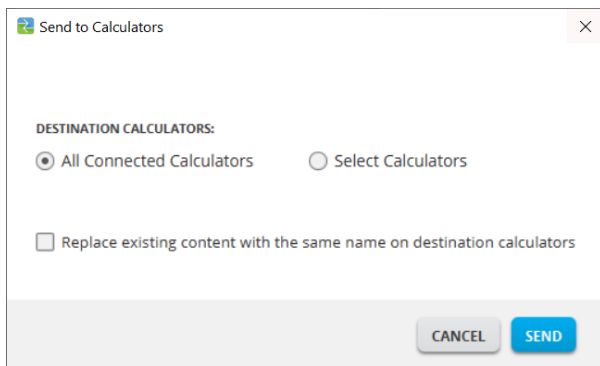
You can send compatible files between connected calculators with TI Connect™ CE software.

Warning: Do not disconnect the cable during a transfer.

### To send files to connected calculators

1. Click the file(s) in the Content Panel to select it.

2. Click .



- **DESTINATION CALCULATORS:** Select whether you want to send the file to all connected calculators, or just selected calculators (from a check list).

### To send files to select calculators

1. Select the **Select Calculators** button on the dialog box.
2. Check the boxes next to the calculators you want to select.
3. Click **Send**.

## **Converting and Sending Background Images for use in the CE Graph Area**

The TI-84 Plus CE can display Background Image Vars and Pic Vars. These variables display in the graph area.

**Note:** All information on background images also applies to all CE graphing calculators, TI-84 Plus C Silver Edition and the TI-82 Advanced Edition Python.

### **Working with Background Images**

The TI Connect™ CE software automatically converts any image you send to a connected calculator into a Background Image Var. Your image may display differently in the graph area than you expect given the conversion to the pixel dimensions of 83 x 133.

**Note:** For best results, please edit your image to be proportional to 83 x 133 pixels prior to the conversion to 83 x 133 pixels.

**Tip!** Try to convert your image as described below. If the conversion is not as you expect, scale your picture similar to the graph area where Background Image Vars are displaying on the CE.

- Take a screen capture of the graph screen at 100% scale using Screen Capture Workspace. This screen capture can be either in Full or Graph-Table mode. You will use this to scale your image to a smaller size to fit the size of the graph area.
- Use a favorite presentation software and display both the screen capture and your picture.
- Drag (size) your picture to a smaller size and to the proportion of the graph area.
- Use a snipping tool to snip the new smaller image. Save that image to your computer.
- Use this smaller, proportional picture to convert to an Image Var following the next steps below.

**Reminder!** Preserve your original picture file by using a different computer file name of your smaller picture.

The conversion to the Background Image Var uses 16-bit color.

You can also upload a Background Image Var into the TI-84 Plus CE emulator view in TI-SmartView™ CE software.


On the TI-84 Plus CE, a Background Image Var displays as the background in the graph area only. A background image will display scaled for the MODE screen settings of Full, Horizontal, and Graph-Table. This preserves any mathematical modeling done on a background. You cannot edit a background image while working on the TI-84 Plus CE. Background images run from and are stored in Archive memory.

## Send a Background Image for use in the CE Graph Area

You can send a background image and display it in the graph area of the TI-84 Plus CE.

**Note:** All information on background images also applies to the TI-84 Plus CE-T, TI-84 Plus C Silver Edition, and the TI-83 Premium CE.



1. Open the TI Connect™ CE software.
2. Choose the Calculator Explorer workspace.
3. Connect the TI-84 Plus CE to the computer using the cable.
4. Turn on the TI-84 Plus CE.
5. Choose the image you want to convert.
6. Drag the picture to the Calculator List Panel and hover over the desired calculator.
7. Release the mouse button when you see  Copy .
8. Select an Image# name from the drop-down menu (Image0 - Image9). This will be the name of the image on the TI-84 Plus CE.

**Note:** The Image# name you choose becomes the image name on your calculator. Note this Image# name (or make it part of the file name on your computer) for identification when you want to send or share this file.

**WARNING:** Pre-loaded images are stored in Image1 - Image5. Use other Image# to avoid overwriting the pre-loaded images.

9. Click **Send**.

**Note:** Rename the computer file so you can identify your Image Var later (bridge, fountain, etc.) The Image# internal calculator var name will not be changed.

**Note:** To save the background image to your computer, drag the Image# from the Calculator Explorer to your desktop or to the folder where you want to save it.

- To display your new background image in the graph area of the TI-84 Plus CE, press **[2nd] [format]** change the **Background** setting to the Image# you just sent to the calculator (example: Image5), and press **[graph]**.

**Note:** From the graph screen on the calculator, you can also change the Background using **[draw]; BACKGROUND; 1:BackgroundOn** interactive command.

## Data Import

The Data Import feature lets you convert/send spreadsheet data saved as csv data files to the calculator as calculator list(s) or matrix file.

Access the Data Import feature from Calculator Explorer Workspace.

### Highlights:

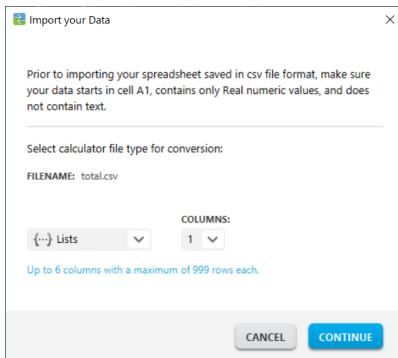
- Create (or download) a spreadsheet of data.
- Prior to import, edit data in your spreadsheet software to only allowed calculator numeric formats (specified below) for the import to a calculator file.

### About the spreadsheet

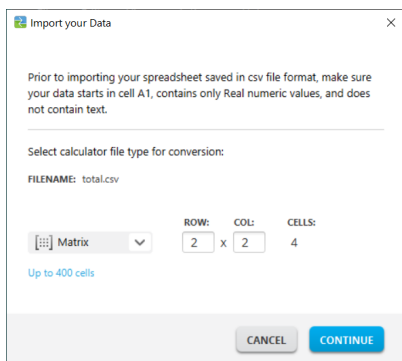
- **Only one spreadsheet** saved as a CSV (Comma Delimited) (\*.csv) file will be imported via Calculator Explorer workspace at a time.
- Spreadsheet (csv) file can be dragged into Calculator Explorer or imported via **Actions > Import Data (.csv) to List/Matrix...** menu.
- Up to 6 calculator lists or 1 matrix from the spreadsheet data will send to the connected calculator.

### Rules for preparing the spreadsheet for import:

- All cells must contain Real Number data as experienced on the calculator and no text.
  - Complex numbers are not supported for data import.
- Data must start in cell A1
- List(s) Import: If calculator lists are desired:



- Only six spreadsheet columns A-F will be imported
  - Columns can be of length up to 999 cells.
  - The first empty cell in a column will be interpreted as the end of the data for that list import
- Matrix Import: if calculator matrix is desired:



- Only one matrix can be imported from a spreadsheet file.
  - Up to 400 cells can be imported. (Example: row x col: 10 x 5 = 50 cells from row range 1-10, columns A-E.)
  - Dimension of matrix of the form (row x column) will be requested during the import experience in Calculator Explorer.
  - Any empty cell within the specified matrix dimension will be interpreted as 0.
- Do not have data in the spreadsheet outside of the allowed sizes for list(s) or matrix as described above. Otherwise, the file will be invalid when a data import to Calculator Explorer is attempted.


### **To save calculator list(s) or matrix files**

- To save calculator files created to the computer, after import/send to calculator, drag the list(s) or matrix file from Calculator Explorer to the desired computer location.

## ***Deleting Calculator Files***

You can delete data, files, and programs from your calculator.

### **To delete files from the calculator**

1. Click on the file in the Content Panel you want to delete.
2. Press .

## ***Quit Exam Mode Setting on Connected CE Calculators***

Quit the exam mode setting on your CE by connecting CE calculator(s) to the computer and selecting

- **Actions > Quit Exam Mode on Connected CE Calculators** in TI Connect™ CE.

Always update with the latest CE Bundle at:

- [education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)
- [education.ti.com/84cetupdate](http://education.ti.com/84cetupdate)



## Converting and Sending Python Programs

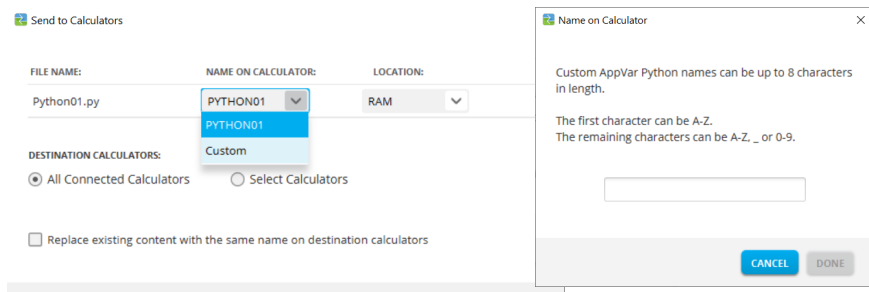
### Convert a Python Program to use with the Python App

A Python program (\*.py) from your computer will convert to the calculator Python AppVar when you send the file to your CE Python enabled calculator using TI Connect™ CE. Then, using the appropriate Python App for your calculator, you will be able to edit and run your Python program.

**Reminder:** For any computer/TI-Python experience: After creating a Python program in a Python development environment on the computer, please validate your program runs on the calculator/emulator in the TI-Python experience. Modify the program as needed.

See [Python App e-Guide](#) for details on TI-Python.

When you send your \*.py program file(s) using [Send to Calculators](#), the action is similar to sending any other file to the calculator.



**FILE NAME:** Displays the computer file name of your \*.py file(s).

**Note:** This may differ from the **NAME ON CALCULATOR** depending on what you named the Python program on your computer.

#### NAME ON CALCULATOR:

- If the computer file name follows the Python AppVar naming rules, then the Python AppVar calculator name populates with the computer file name. Naming rules are shown on the screen above.
  - Lower case will automatically change to upper case letters.
- If the computer file name does not follow the Python AppVar naming rules, then the **NAME ON CALCULATOR** populates with PYTHON01, PYTHON02, etc.
- Change the **NAME ON CALCULATOR** using the Custom naming option in the pull down. You must follow the naming rules for the Python AppVar.

#### LOCATION:

- Choose to send the Python AppVar to the calculator's RAM or Archive memory.
  - The default is RAM.

- The Python App will only edit and run Python AppVars in RAM.
- Store Python AppVars in Archive memory on the calculator when you
  - do not have enough memory in the Python App experience as stated in the App.
  - do not wish to see the Python AppVars load into the Python experience until a later time when you move them from Archive to RAM on the calculator.

**Note:** To move a Python AppVar between RAM and Archive memory on your CE

Press **[2nd]** **[mem]** 2:Mem Management/Delete... > B:Var App...

Press **[enter]** on each AppVar to toggle from RAM to Archive (denoted by \*).

### DESTINATION CALCULATORS:

- ▶ Select whether you want to send the program to all connected calculators, or just selected calculators (from a check list).

### Which AppVar is a Python AppVar?

You will be able to identify your Python AppVars as follows.

In TI Connect CE Calculator Explorer, the Python AppVar will display as “AppVar Python.” Here, SCRIPT1 and VABSOLUE are Python AppVars.

GRAPH	AppVar Python
HELLO	AppVar Python
LINREGR	AppVar Python

**Note:** The Python AppVar will send to other 8x family calculators but will not be accessible on those calculators.

Press **[2nd]** **[mem]** 2:Mem Management/Delete... > B:Var App... will display PY at the right of the screen.

NORMAL	FLGAT	AUTO	REAL	RADIAN	MP
RAM FREE			148459		
ARC FREE			1321K		
▶ GRAPH			995		PY
HELLO			278		PY
▶KEYS88G			523		PY
LINREGR			662		PY
▶PRINT			67		PY
PYTHON01			143		PY
▶ROVER			382		PY
▶SALEPRC			235		PY

## Send or Convert a Python AppVar to the Computer (\*.py or \*.8xv)

You can send a Python program from your calculator to your computer as a Python program (\*.py) or a Python AppVar (\*.8xv).

### • Option 1: Drag and Drop

- Drag and drop a Python Program (PY AppVar) from a connected CE calculator to the computer. Program will save with the \*.py extension and will be available to edit in a text file. As previously mentioned, sending a \*.py file to a CE Python enabled calculator or emulator will convert to the correct PY AppVar file for use in the Python App.

### • Option 2: Actions > Send to Computer

- Send to computer with option to send as a Python program (\*.py or \*.8xv):
  - Select a Python AppVar in Calculator Explorer.
  - Select Actions>Send to Computer.
  - By default, the file will save as \*.py. If needed, select the \*.8xv extension in the pull down to save the PY AppVar to your computer. Note that the PY AppVar cannot be edited as a text file on your computer. Recommend to save as \*.py for flexible use of your CE Python program on your computer. Again, \*.py programs convert to the correct CE file format when sending to a connected calculator or to a TI-SmartView Python enabled emulator.

#### Note:

- After converting a Python AppVar back to a \*.py computer file, please check the syntax, spacing, line breaks, and Python specific items in your computer Python software. Make necessary modifications specific to the version of Python you are using on the computer. Python versions vary.
- When saving the conversion to \*.py back to your computer, it is best to save the program to a new \*.py name on your computer to avoid overwriting your original \*.py program.

## Convert an image for use in the Python App with the ti\_image Add-On module

The ti\_image Add-On module is available in the latest CE Bundle update.

- [education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)
- [education.ti.com/84cetupdate](http://education.ti.com/84cetupdate)

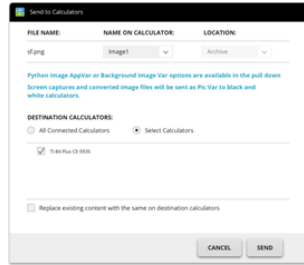
For more information on using ti\_image and the Python App, please see

- [Python App eGuide](#) for details on TI-Python.

The ti\_image Add-On module offers a method “load\_image(“name”). The argument “name” is the calculator name of an image you will convert to a specific AppVar for use in the Python App.

**Note:** The image conversion for the CE Python experience is different from the [CE OS Background Image conversion](#) used in the OS graph area . While the steps are similar in the Explorer Workspace, please read the prompts for the best outcome.

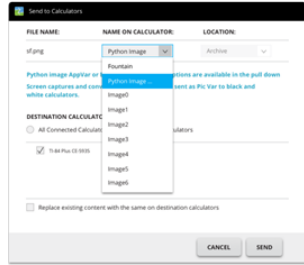
1. Drag your image (\*.png) to the connected calculator in the Explorer Workspace.



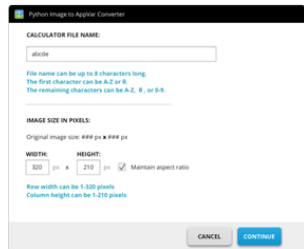
2. For a Python image format, please pull down NAME ON CALCULATOR and select Python Image... .

**Notes:**

- Image0 – Image9 are reserved for the OS Background Image Vars.
- You will create a unique name for your Python image AppVar.
- If you are changing a Python image name, you will see the previous name in the pull down. Select Python Image... to change the current name as well.



3. Enter a CALCULATOR FILE NAME following the naming rules provided. Remember the calculator name of your image for use in the Python App ti\_image Add-On module method load\_image("name").



4. IMAGE SIZE IN PIXELS: Enter the WIDTH and HEIGHT for the converted image.
  - a) The original image size in pixels is provided. Note the pixel ranges for Row width and Column height provided to avoid sizing errors.
  - b) Check the box to maintain the aspect ratio of your original image.
  - c) Select CONTINUE. The image will convert to the AppVar format.
  - d) The Send to Calculator dialog will display. SEND to a CE Python enabled calculator. See the [Python e-Guide](#) for more details on

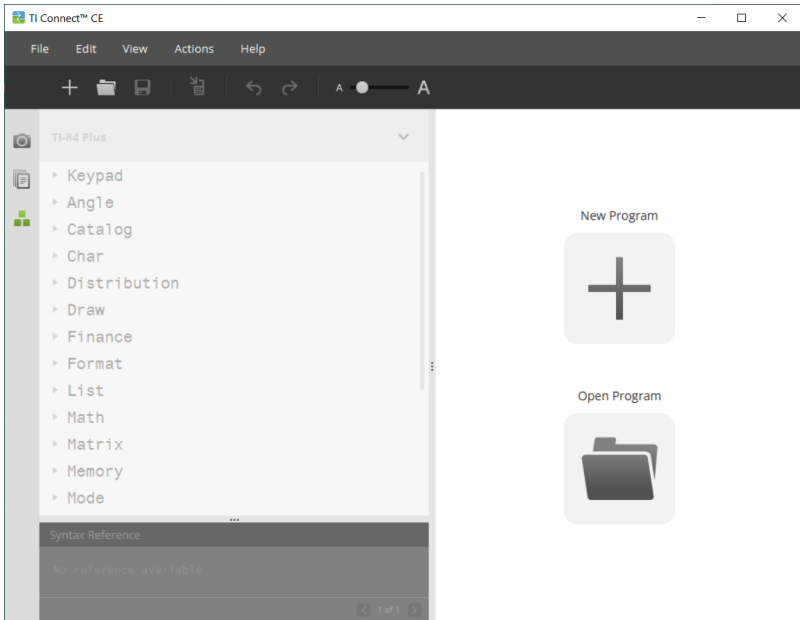
ti\_image Add-On module.

**Reminder:** For any computer/TI-Python experience: After creating a Python program in a Python development environment on the computer, please validate your program runs on the calculator/emulator in the TI-Python experience. Modify the program as needed.

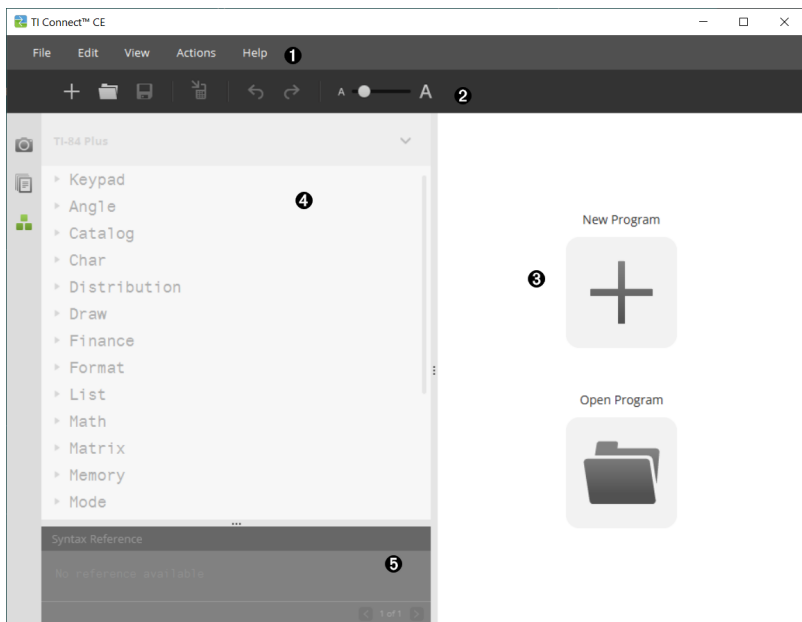
See [Python App e-Guide](#) for details on TI-Python.

# Using the Program Editor Workspace

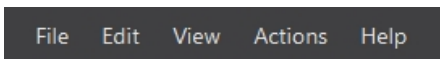
The Program Editor Workspace allows you to work with TI Basic programs.



## Parts of the TI-Basic Program Editor Workspace



- 1** **Menu Bar** - Use these menus to manage files and programs, and to get help.



**Note:** In the Program Editor Workspace, you can only drag and drop programs to the Content Panel.

- 2** **Toolbar** - Click these icons to **Create new program**, **Open program**, **Save program to computer**, **Send program to connected calculator(s)**, **Undo**, or **Redo** and **Font Size Slider**.



- 1** Create new program.
- 2** Open program.
- 3** Save program to computer.

---

④ Send program to connected calculator(s).

---

⑤ Undo or Redo.

---

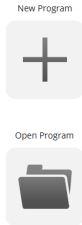
⑥ Font Size Slider to increase or decrease the size of text in:

- Catalog Panel
- Program Editor

---

---

③ **Content Panel** - Use this panel to create, view, and edit programs.

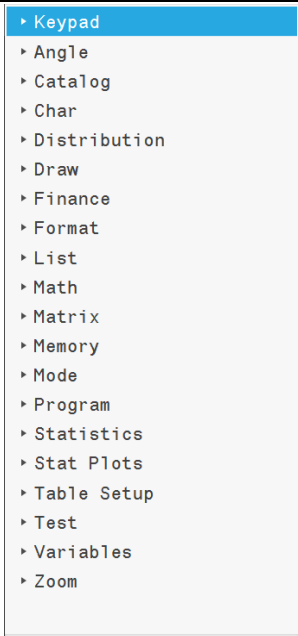


---

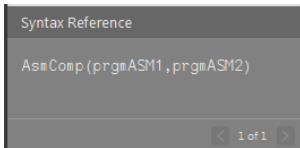
④ **Catalog Panel** - Use this panel to select your calculator type and then choose from the catalog tree list (by category) to create programs.

---





- 5** **Syntax Reference Panel** - Use this panel to view the proper syntax of each command along with required and optional arguments.



## Creating a New Program

When no programs are open, the Content Panel displays only the New Program and Open Program icons.

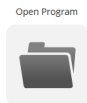
### To create a new program

- ▶ Click the **New Program** icon.



### To open an existing program

1. Click the **Open Program** icon.
2. Navigate to the appropriate folder.
3. Click **Open**.



## ***Editing a Var Name***

New program names are PROG##. The numbers run in sequence, ex: PROG01, PROG02.

### **To change the program name**

- ▶ Click inside the **Var Name** box and type in a new name up to 8 letters or numbers (first cannot be a number.)

VAR NAME:

PROG01

## ***Protecting Your Program***

TI Connect™ CE software allows you to protect your program from being edited after the program is sent to a connected calculator.


### **To protect your program**

- ▶ Click the check box next to the lock icon.  

## ***Saving a Program to Your Computer***

The asterisk at the beginning of a program name indicates that the program is not saved.

### **To save a program**

1. Click .
2. Navigate to the appropriate folder.
3. Click **Save**.

## ***Closing a Program***

### **To close a program**

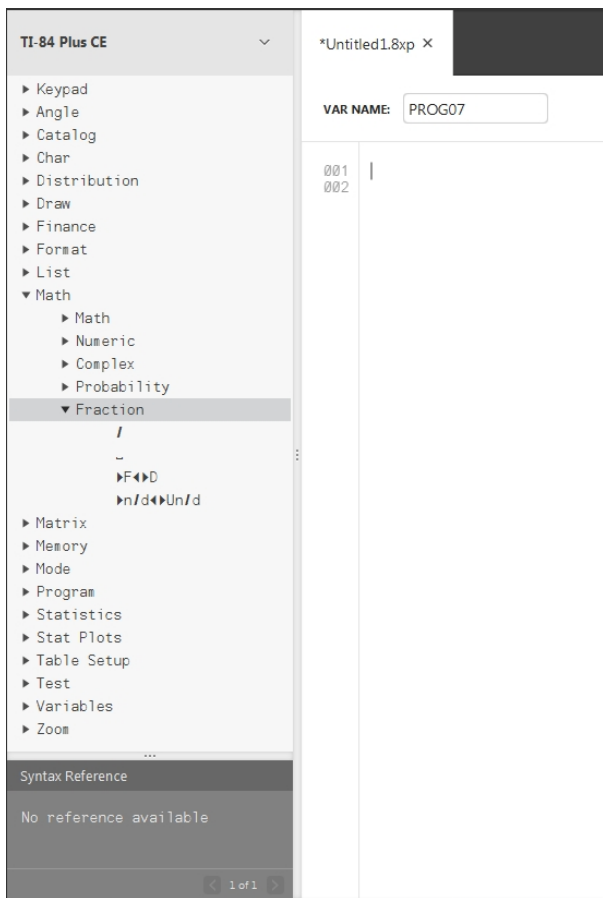
- ▶ Click the **x** by the program name.

## Using the Catalog Panel

The Catalog Panel contains a list of calculator commands, functions, variables, and symbols you can use to create programs.

### To expand or collapse a Catalog level

- ▶ Click the triangle beside each Catalog entry.



### To place a Catalog entry in the Content Panel

- ▶ Drag and drop the Catalog entry into the Content Panel. This places the cursor in the program editor command line after the item is dropped.

-OR-

- ▶ Double-click the Catalog entry. This pastes the item to the program editor and the focus remains in the Catalog Panel to select another item. Click back at the end of the command line to continue typing in the editor.

### To avoid Syntax errors

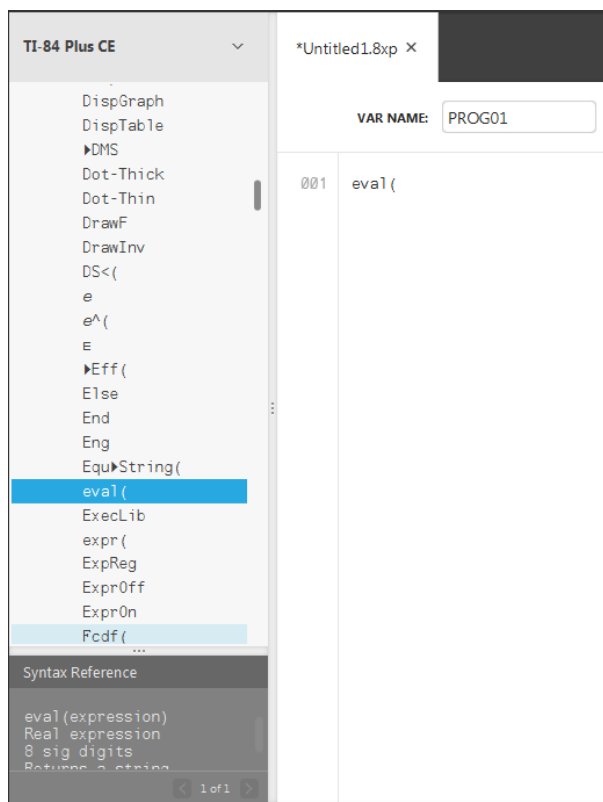
Use the catalog of commands and symbols to paste to the editor to avoid syntax errors due to the incorrect use of upper and lower case in commands.

#### Example:

Did you type Eval( or eval(?

Did you type sin( or Sin(?

The catalog tree list pastes the correct case and space formatting.



### Extra Space Syntax Errors

#### Running a Program on a Calculator

Extra spaces can cause a Syntax error when a program is runs on the calculator.

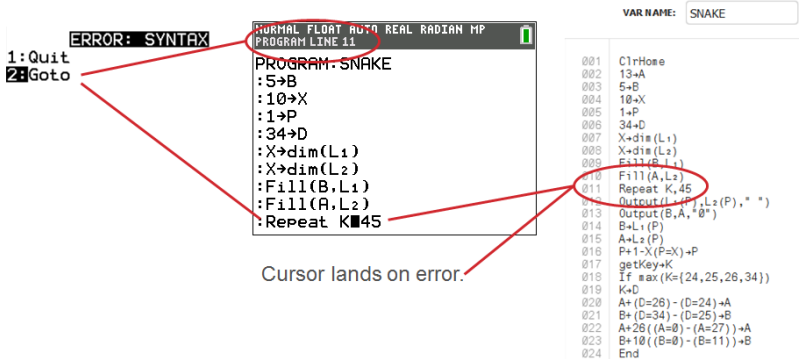
## Where are the extra spaces?

You can see extra spaces in your program using TI Connect™ CE Program Editor by selecting the entire program. Extra spaces at the end of command lines should be deleted prior to sending the program to the calculator.

```
VAR NAME: SNAKE

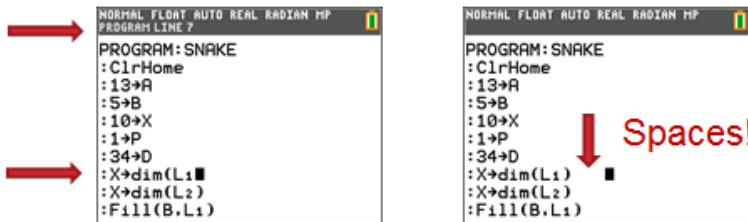
001 C1rHose
002 13→A
003 5→B
004 10→X
005 1→P
006 34→D
007 X→dim(L1)
008 X→dim(L2)
009 Fill(B,L1)
010 Fill(A,L2)
011 Repeat K=45
012 Output(L1(P),L2(P),* *)
013 Output(B,A,"0")
014 B→L1(P)
015 A→L2(P)
016 P+1-X(P=X)→P
017 getKey→K
018 If max(K={24,25,26,34})
019 K→D
020 A+(D=26)-(D=24)→A
021 B+(D=34)-(D=25)→B
022 A+28((A=0)-(A=27))→A
023 B+10((B=0)-(B=11))→B
024 End
025
```

When the program runs in the calculator, if there are extra spaces, selecting **Goto** from the syntax error screen will place the cursor on the program line where the error occurred. Check the line for correct syntax and extra spaces at the end of the command line.



- Move cursor to the end of that command line.
- Carefully delete extra spaces.

**Note:** There is no undo on the calculator.



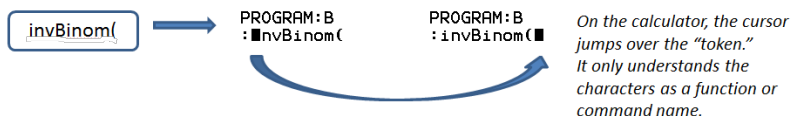
## When Do Commands Become Calculator Commands (Tokens)?

The commands do not become calculator commands (tokens) until the program is sent to the calculator.

If there is an error when your program sends to the calculator or runs on the calculator, check to see if every command in the calculator program edit mode is actually a command token.

### How Do You Know?

When a command is a token on the calculator, the cursor will be on the first character and then jump over the command as a token. If the cursor moves letter-by-letter through a command, that command did not get converted. Delete and paste the command from the calculator.



**Reminder:** When entering a program directly on the calculator, the command or function pastes completely as a token.

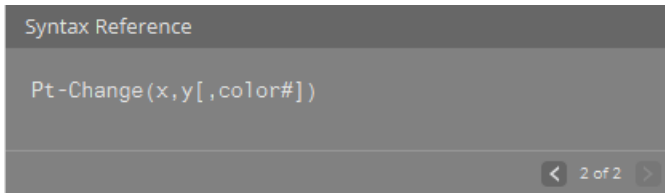
**Warning:** Some calculator commands such as **LEFT**, **CENTER**, **RIGHT**, **FRAC**, are words you might use in a string. If a word you use in a string is the same as a calculator command, your word will become a calculator token and may give errors in your program. Avoid using words or parts of words that are the same as a TI-Basic command to avoid unintentional tokenization to a command.

**Warning:** The language setting of TI Connect™ CE determines how the text is interpreted as a command token for the calculator. Opening programs and sending back to the calculator with TI Connect™ CE in different languages may result in:

- undesired command tokens and/or
- syntax errors

## ***Using the Syntax Reference Panel***

The Syntax Reference Panel displays the syntax of each Catalog entry, including required and optional arguments.



## ***HUB menu for TI-Innovator™ and TI-Innovator™ Rover***

Program Editor supports the TI-Innovator™ HUB menu for TI-Innovator™ and TI-Innovator™ Rover commands. The HUB menu is located in the Program menu in the catalog tree. This HUB menu addition to the TI Connect™ CE Program Editor is the same HUB menu experience as when the Hub App is loaded on the CE calculator. Please always use the latest versions of the CE OS and CE Hub App.

**Note:** If the Program Editor HUB menu does not contain some of the latest HUB commands, please type in the commands in the Program Editor as needed.

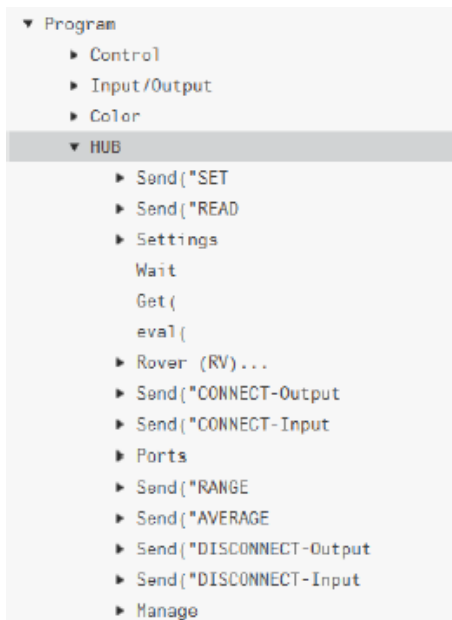
Always update with the latest CE Bundle at:

- [education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)
- [education.ti.com/84cetupdate](http://education.ti.com/84cetupdate)



## See Also:

Using the Catalog Panel  
Sending a Program to a  
Calculator




## Sending a Program to a Calculator

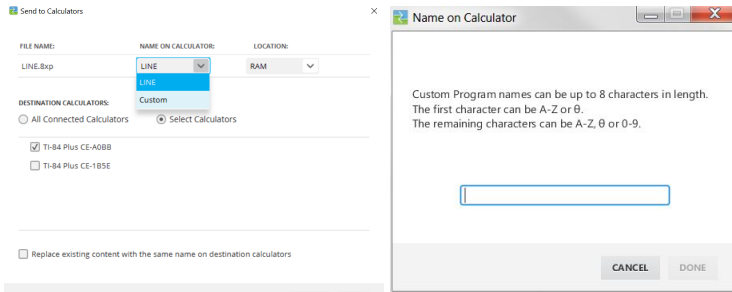
You can send a program to a connected calculator.

### To send a program to a connected calculator

1. If you have not already done so, save the program.



2. Click .
- **FILE NAME:** This may differ from the **NAME ON CALCULATOR** depending on what you named the program on your computer.
  - **NAME ON CALCULATOR:** select the program name (it should be the default, but you may change the program name by clicking **Custom**).



- **LOCATION:** Choose whether you save the program in the calculator's RAM or Archive.
- **DESTINATION CALCULATORS:** Select whether you want to send the program to all connected calculators, or just selected calculators (from a check list).

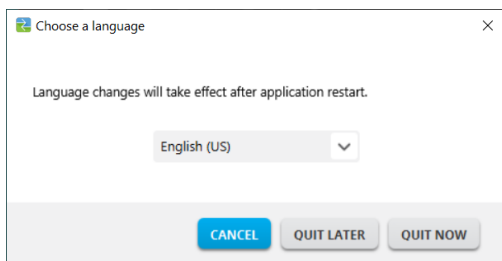
### To send programs to multiple calculators

1. Select the **Select Calculators** button on the dialog box.
2. Check the boxes to next to the calculators you want to select.
3. Click **Send**.

### Language Settings

If you wish to develop a TI-Basic program in a language different than your computer OS language setting, you can re-launch TI Connect™ CE in another language.

1. Select **File > Change Language**.
2. Select the language change after restart of the application.



- **QUIT LATER** - Retains the language selected and TI Connect™ CE will launch in this selected language the next time TI Connect™ CE is launched.
- **QUIT NOW** - Closes the software app. TI Connect™ CE will launch in this selected language the next time TI Connect™ CE is launched.
- **CANCEL** - No language change. Computer OS language will be the default.

# Maintaining Your Calculator

## Updating Your Calculator

### TI CE Bundle file – use one computer file to update your CE calculator!

Update your connected CE calculator(s) in one step using TI Connect(TM) CE and the TI CE Bundle.

Always update with the latest CE Bundle at:

- [education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)
- [education.ti.com/84cetupdate](http://education.ti.com/84cetupdate)

Connect your CE calculator(s) to TI Connect™ CE. Drag the appropriate TI CE Bundle to Calculator Explorer.

TI Connect™ CE will update your CE OS, any CE Apps that need to be updated or are missing from your calculator(s) and also load the 5 pre-loaded Image Vars to Image1 – Image5. The process cannot be stopped so make sure to save off (drag off) any of your favorite calculator files using TI Connect™ CE Calculator Explorer. You can drag your favorite calculator files back to your calculator after the new TI CE Bundle process completes.

Drag the CE Bundle to Calculator Explorer. Please wait until the complete process finishes. Do not pull the cable during any file transfer. Expect the CE calculator to reboot prior to the Image Var and Apps transfer. Expect the CE calculator to defragment (rearrange memory) at some time during the process. Messages display when transfers take place on the TI Connect CE window.

**Note:** The TI CE Bundle contains all the latest files you need to update or restore your CE calculator(s) as though you just bought your calculator and provides a fast way to update your class set CE calculator(s).

**Important:** If the CE calculator screen says "**Waiting...**" the calculator has lost the OS. This can happen if a cable is pulled from the calculator or computer during a file transfer. If connected, disconnect and reconnect the CE to the computer. Drag the CE Bundle to Calculator Explorer.

**Reminder:** Wait until the complete process finishes. Do not pull the cable during any file transfer. Expect the CE calculator to reboot prior to the Image Var and Apps transfer. Expect the CE calculator to defragment (rearrange memory) at some time during the process. Messages display when transfers take place on the TI Connect™ CE window.

You may repeat this process and the CE Bundle will transfer the files again. Do not pull the cable during any file transfer.

### See Also:

Sending Files Between Connected Calculators

## Updating TI-84 Plus Calculators

TI Connect™ CE software lets you download operating systems for graphing calculators.

### Before you begin

- Backup your calculator files.
- Make sure your calculator is turned on and securely connected to the computer.
- If you have multiple calculators connected with USB computer cables, OS transfers can occur to specific calculators.

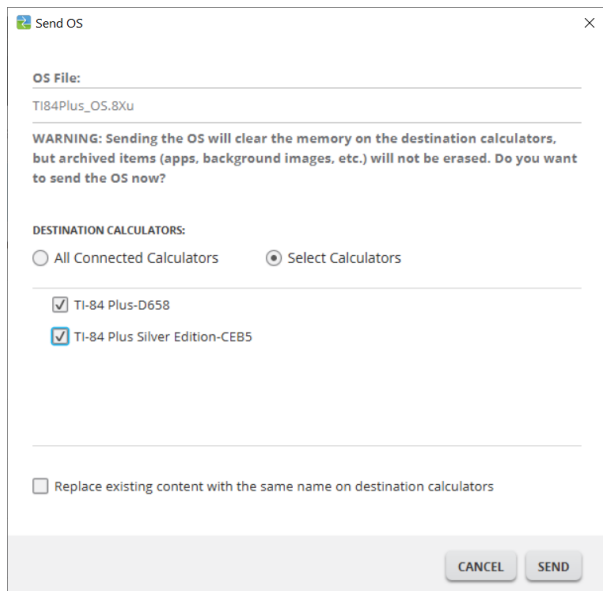
This can be done by selecting the specific calculators in the Send dialog.

Warning: Do not disconnect the cable during a transfer.

### To update graphing calculator operating systems

1. Click **Actions > Send OS**.
2. Navigate to the correct OS file for your model of calculator stored on your computer.
3. Click **Open..**

The Send OS dialog box opens.



4. Select from **Destination Calculators**:

DESTINATION CALCULATORS:

All Connected Calculators

Select Calculators

---

TI-84 Plus-D658

TI-84 Plus Silver Edition-CEB5

5. Press Send

SEND

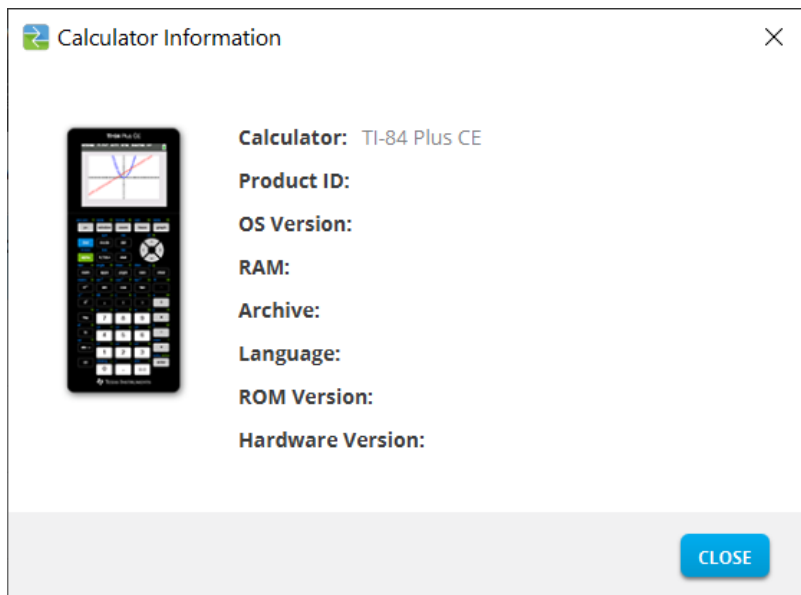
## Getting Calculator Information

TI Connect™ CE software allows you to get information about your calculator's type, product ID, OS Version, RAM, Archive, Language, ROM Version, and Hardware Version.

**Note:** Calculator Information is available only from the Calculator Explorer Workspace.

### To view calculator information

- ▶ Click **View > Calculator Information**.



## Compatibility with Graphing Calculators

Please refer to the TI-84 Plus CE Getting Started Guide for compatibility with graphing calculators.

Apps, Operating Systems and some data files with unsupported numeric types do not share between models.

TI-Basic programs may need to be modified to correctly display on the higher resolution color screen models.

# General Information

## ***Online Help***

[education.ti.com/eguide](http://education.ti.com/eguide)

Select your country for more product information.

## ***Contact TI Support***

[education.ti.com/ti-cares](http://education.ti.com/ti-cares)

Select your country for technical and other support resources.

## ***Service and Warranty Information***

[education.ti.com/warranty](http://education.ti.com/warranty)

Select your country for information about the length and terms of the warranty or about product service.

Limited Warranty. This warranty does not affect your statutory rights.

## ***Updates***

[education.ti.com/84ceupdate](http://education.ti.com/84ceupdate)