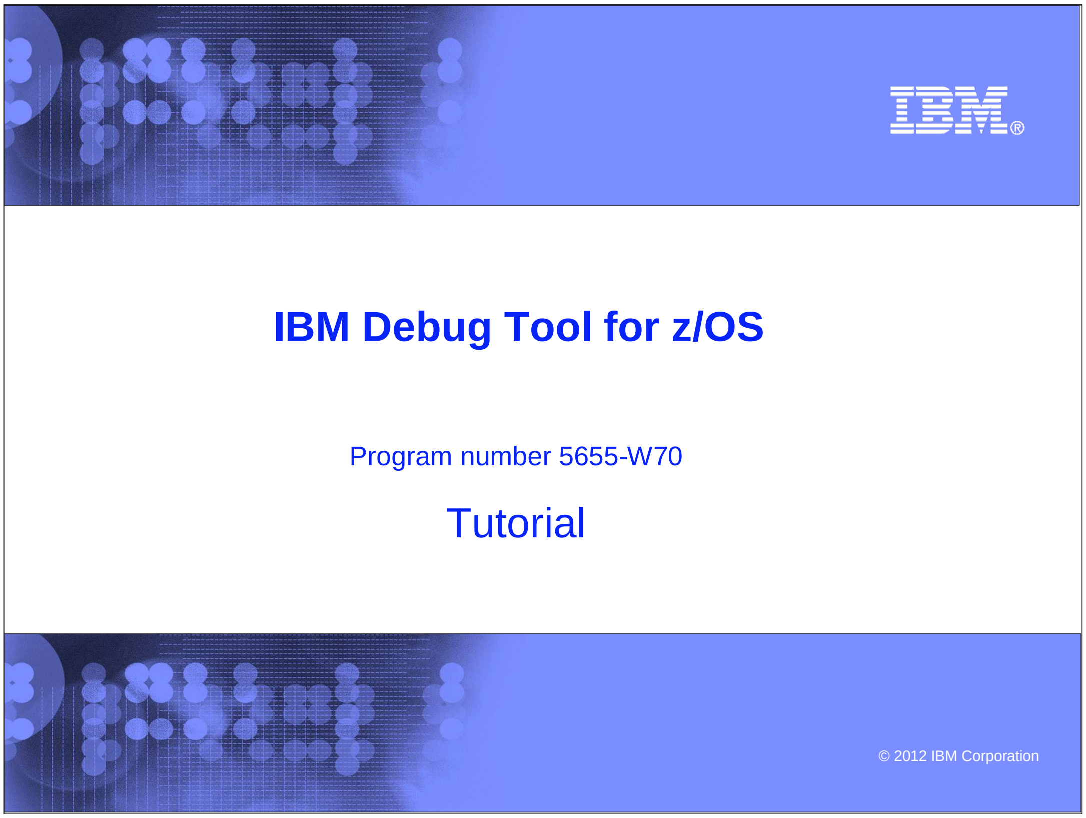
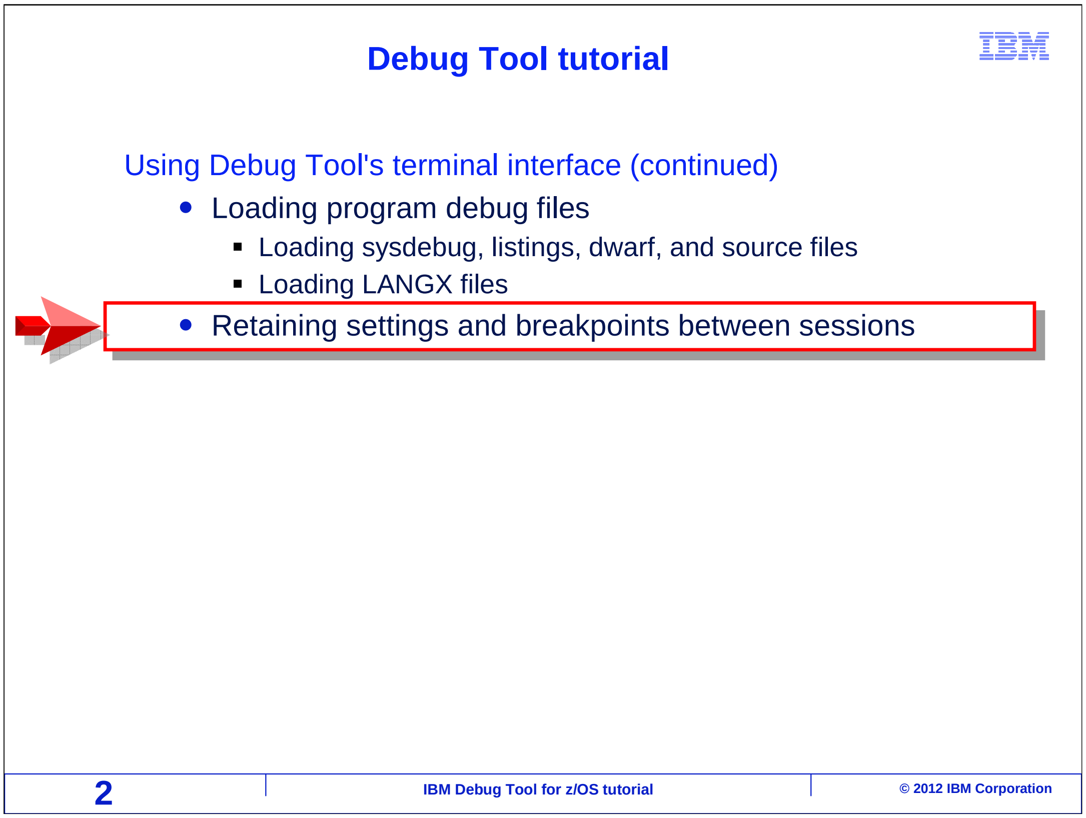


IBM Debug Tool for z/OS

Program number 5655-W70

Tutorial

This is the tutorial for IBM Debug Tool for z/OS®, one of the IBM zSeries® problem determination tools.

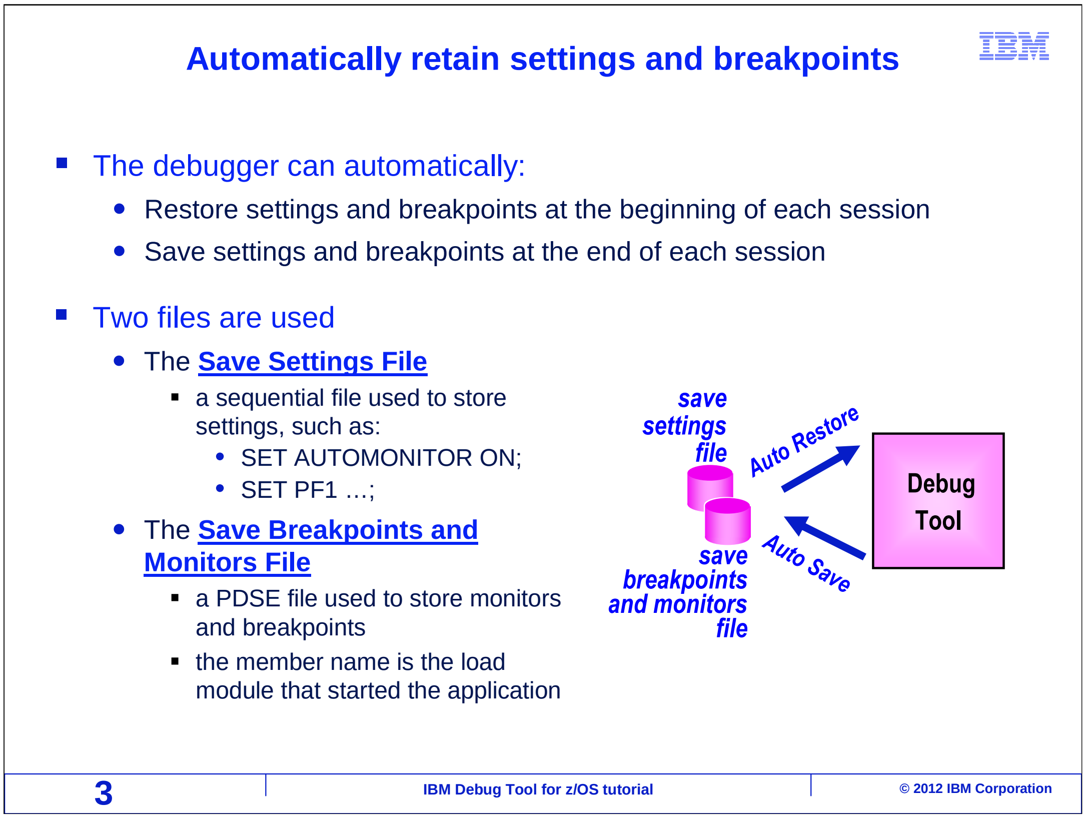


Debug Tool tutorial

Using Debug Tool's terminal interface (continued)

- Loading program debug files
  - Loading sysdebug, listings, dwarf, and source files
  - Loading LANGX files
- Retaining settings and breakpoints between sessions

In this section, you will learn how you can make Debug Tool automatically retain your settings, monitors, and breakpoints when you are using the terminal interface.



Automatically retain settings and breakpoints

- The debugger can automatically:
  - Restore settings and breakpoints at the beginning of each session
  - Save settings and breakpoints at the end of each session
- Two files are used
  - The **Save Settings File**
    - a sequential file used to store settings, such as:
      - SET AUTOMONITOR ON;
      - SET PF1 …;
  - The **Save Breakpoints and Monitors File**
    - a PDSE file used to store monitors and breakpoints
    - the member name is the load module that started the application

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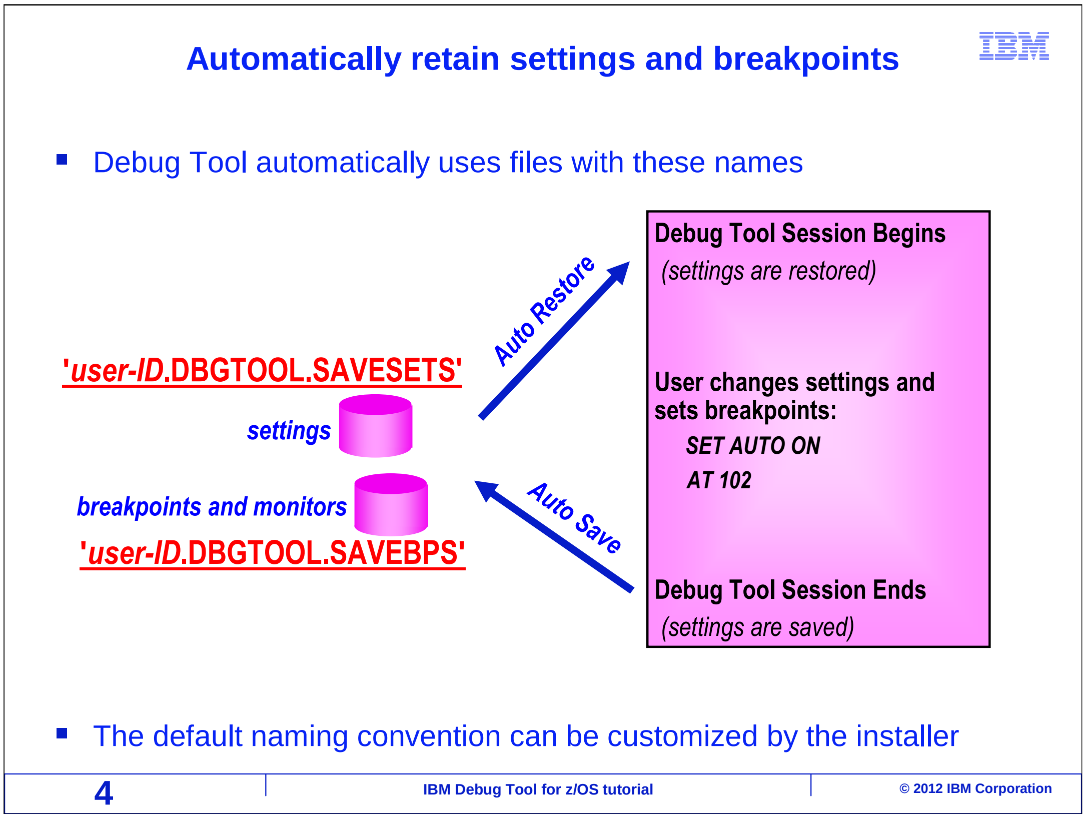
By default, when you are using the terminal interface, the debugger does not retain your settings and breakpoints between sessions. For example, say that you are debugging a program, and you turn on the auto monitor by entering the command “SET AUTO ON”. The auto monitor stays on for the rest of the session. But then, you Quit from the debugger, and after a while start a new session. The auto monitor will be off again, because your settings were reset to the defaults.

However, you can make the debugger automatically restore settings and breakpoints at the beginning of each session, and save settings and breakpoints at the end of each session. That way, your settings are permanent from session to session.

Two files are used. First, a “save settings file” is a sequential file that keeps settings, such as the auto monitor or function keys. Second, a “Save breakpoints and Monitors” library is used to keep your breakpoints and monitors. Unique members are kept for each main program, so each application can have it’s own set of breakpoints and monitors.



Automatically retain settings and breakpoints

- Debug Tool automatically uses files with these names

'*user-ID*.DBGTOOL.SAVESETS'

settings

breakpoints and monitors

'*user-ID*.DBGTOOL.SAVEBPS'

Debug Tool Session Begins
(settings are restored)

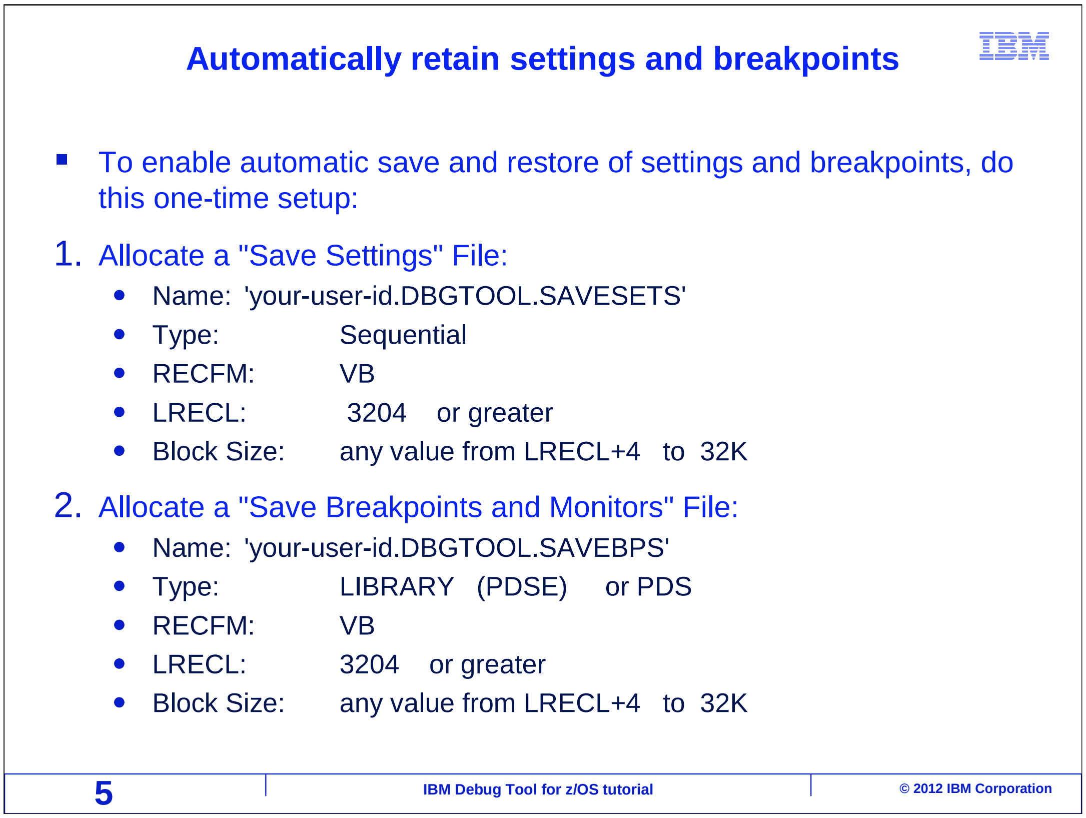
User changes settings and sets breakpoints:
SET AUTO ON
AT 102

Debug Tool Session Ends
(settings are saved)

- The default naming convention can be customized by the installer

By default, the debugger automatically uses files with the naming convention: user-ID.DBGTOOL.SAVESETS for the settings file, and user-ID.DBGTOOL.SAVEBPS for the breakpoints and monitors library. When the debugger starts, it can automatically look for files with these names, and if it finds them, it can restore the settings. When it ends, it can automatically write the current settings back to the files.

As an installation option, the person who installs Debug Tool can change this naming convention. Use files with these names unless you have been instructed otherwise by the installer.



Automatically retain settings and breakpoints

- To enable automatic save and restore of settings and breakpoints, do this one-time setup:

1. Allocate a "Save Settings" File:
   - Name: 'your-user-id.DBGTOOL.SAVESETS'
   - Type: Sequential
   - RECFM: VB
   - LRECL: 3204 or greater
   - Block Size: any value from LRECL+4 to 32K
2. Allocate a "Save Breakpoints and Monitors" File:
   - Name: 'your-user-id.DBGTOOL.SAVEBPS'
   - Type: LIBRARY (PDSE) or PDS
   - RECFM: VB
   - LRECL: 3204 or greater
   - Block Size: any value from LRECL+4 to 32K

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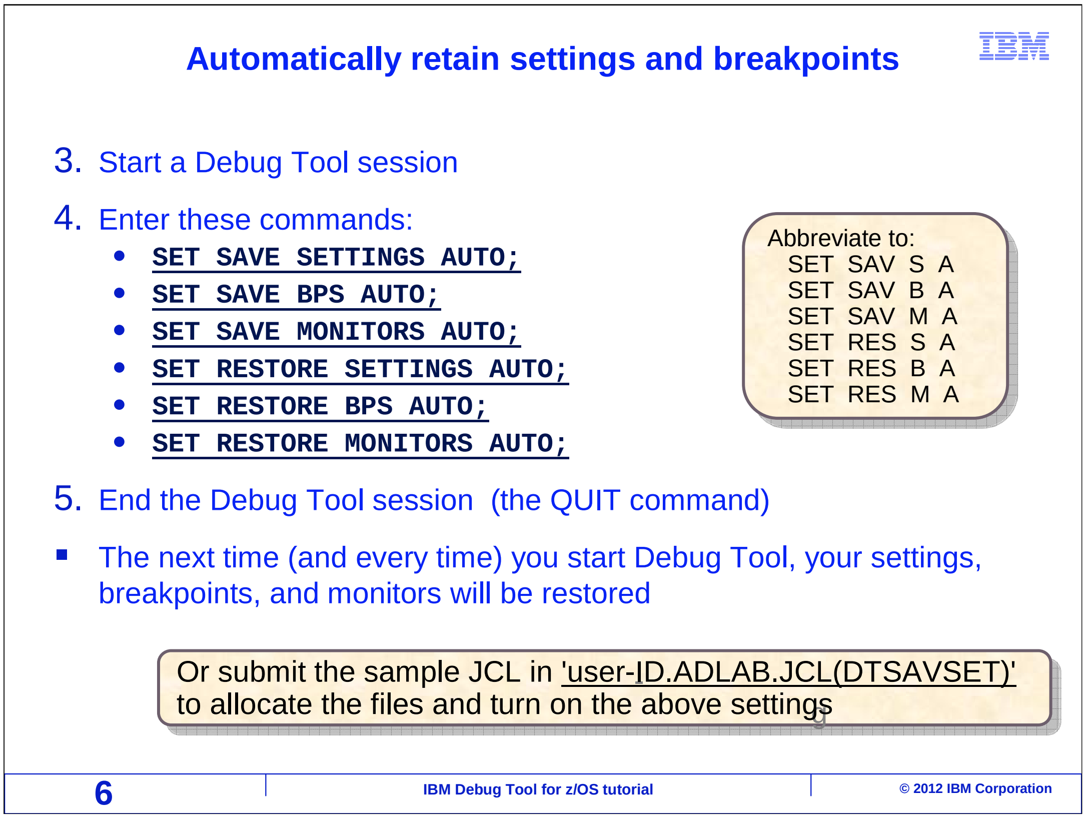
Here is how you configure the debugger to automatically save and restore your settings, breakpoints, and monitors. First, create your Save Settings file. Allocate it as a sequential file with a record format of VB (variable length blocked records), and a record length of 3204 or greater. The block size can be anything from the record length + 4 through 32K.

Then create your Save Breakpoints and Monitors file. Allocate it as a PDSE file with a record format of VB, and a record length of 3204 or greater. The block size can be anything from the record length + 4 through 32K. It will work if you make it a PDS, but it is better to make it a PDSE library.



Automatically retain settings and breakpoints

3. Start a Debug Tool session

4. Enter these commands:
   - **SET SAVE SETTINGS AUTO;**
   - **SET SAVE BPS AUTO;**
   - **SET SAVE MONITORS AUTO;**
   - **SET RESTORE SETTINGS AUTO;**
   - **SET RESTORE BPS AUTO;**
   - **SET RESTORE MONITORS AUTO;**

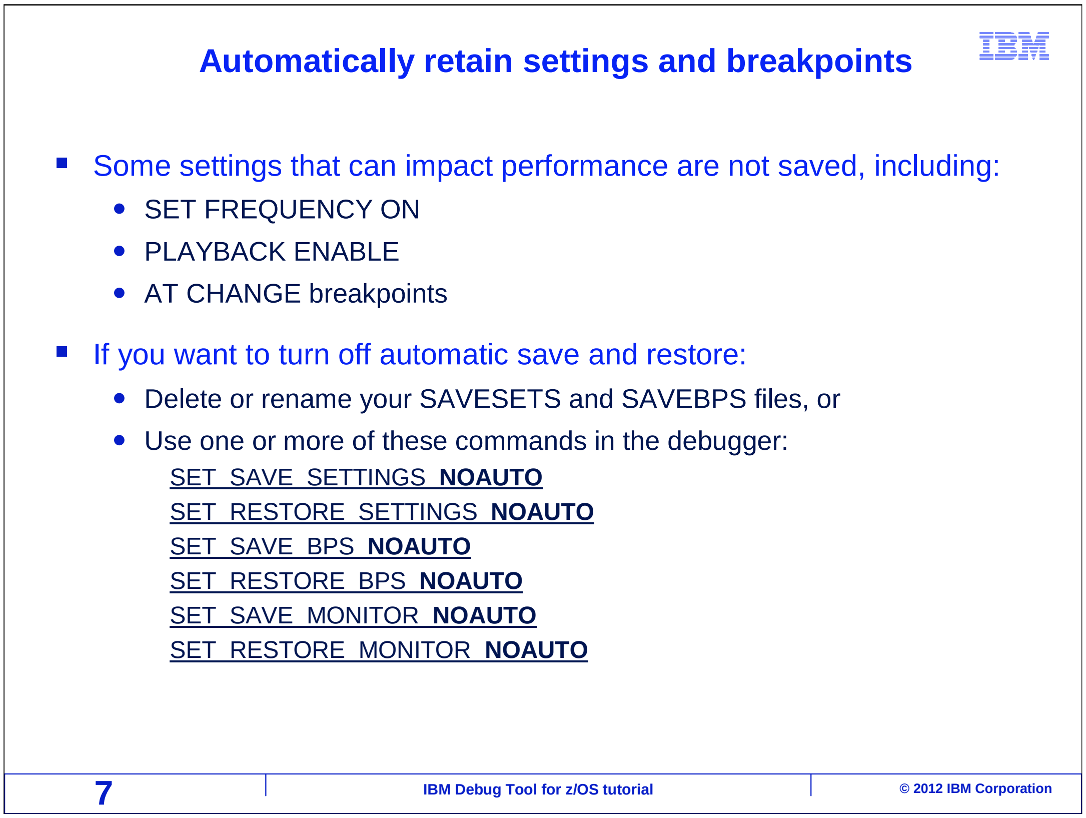
Abbreviate to:
SET SAV S A
SET SAV B A
SET SAV M A
SET RES S A
SET RES B A
SET RES M A

5. End the Debug Tool session (the QUIT command)

- The next time (and every time) you start Debug Tool, your settings, breakpoints, and monitors will be restored

Or submit the sample JCL in 'user-ID.ADLAB.JCL(DTSAVSET)' to allocate the files and turn on the above settings

Next, start a debugging session with any application. After it starts, enter the commands shown here. “SET SAVE” commands specify that the debugger should automatically save settings at the end of each session. “SET RESTORE” commands tell the debugger to automatically restore settings at the beginning of each session. After entering these commands, Quit from the debugger, and you are done. Then next time, and every time you use the debugger, your settings, breakpoints, and monitors will be restored and saved.



Automatically retain settings and breakpoints

- Some settings that can impact performance are not saved, including:
  - SET FREQUENCY ON
  - PLAYBACK ENABLE
  - AT CHANGE breakpoints
- If you want to turn off automatic save and restore:
  - Delete or rename your SAVESETS and SAVEBPS files, or
  - Use one or more of these commands in the debugger:

    SET SAVE SETTINGS **NOAUTO**
    SET RESTORE SETTINGS **NOAUTO**
    SET SAVE BPS **NOAUTO**
    SET RESTORE BPS **NOAUTO**
    SET SAVE MONITOR **NOAUTO**
    SET RESTORE MONITOR **NOAUTO**

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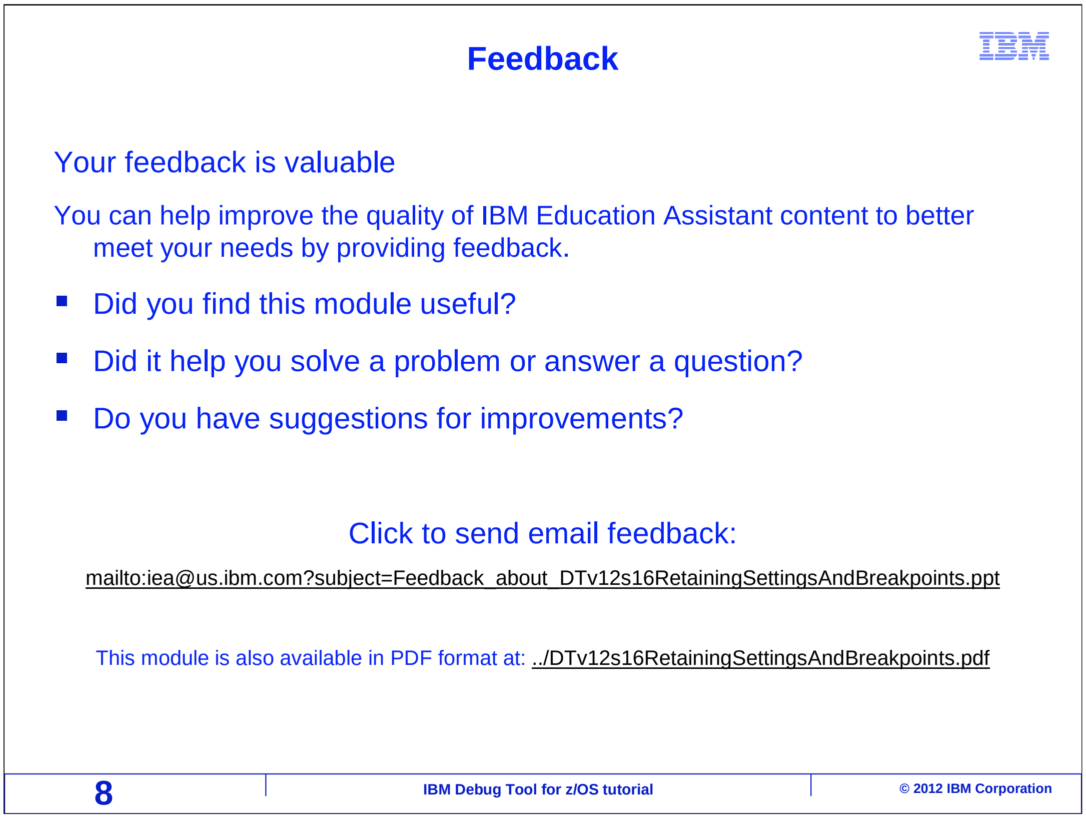
If at a later point you decide that you do not want to automatically save and restore, there are a couple of ways to turn it off. If you delete or rename your Save Settings File, the debugger will not be able to find it to restore your settings. Or the commands “SET SAVE SETTINGS NOAUTO” and “SET RESTORE SETTINGS NOAUTO” will turn it off.

You can have the debugger retain settings, but not breakpoints or monitors. Commands such as SET RESTORE BPS NOAUTO and SET RESTORE MONITOR NOAUTO selectively turns off automatic retention of breakpoints or monitors.

That is the end of this section, automatically saving and restoring settings, breakpoints, and monitors when you are using the terminal interface.



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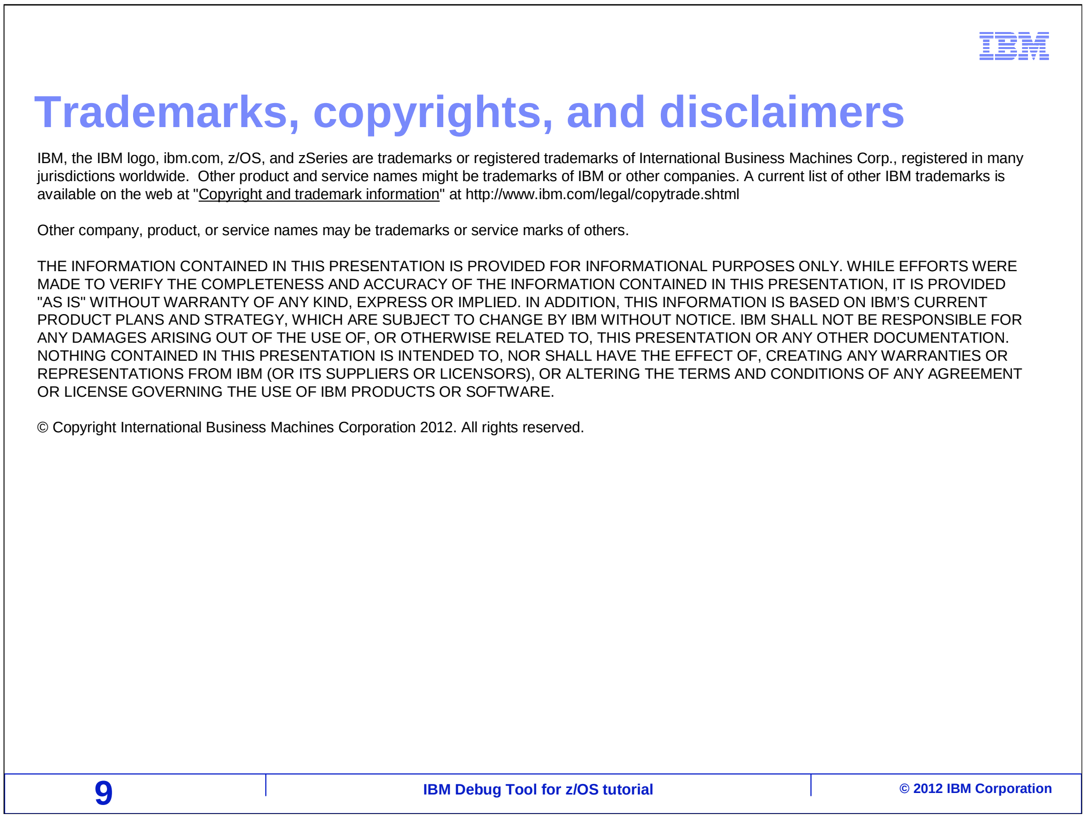

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