

Integrating custom debugger in modern hosted/web IDE using Debug Adapter Protocol

Andrea Zaccaro
Iurii Shchekochikhin

21/10/2019 - Eclipse Che & Theia Contributor Summit



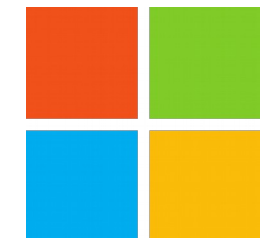
We are... Broadcom



- Mainframe SW solutions & semiconductor technology leader
- We are part of Che4Z open source project under Eclipse Foundation

We are... Broadcom

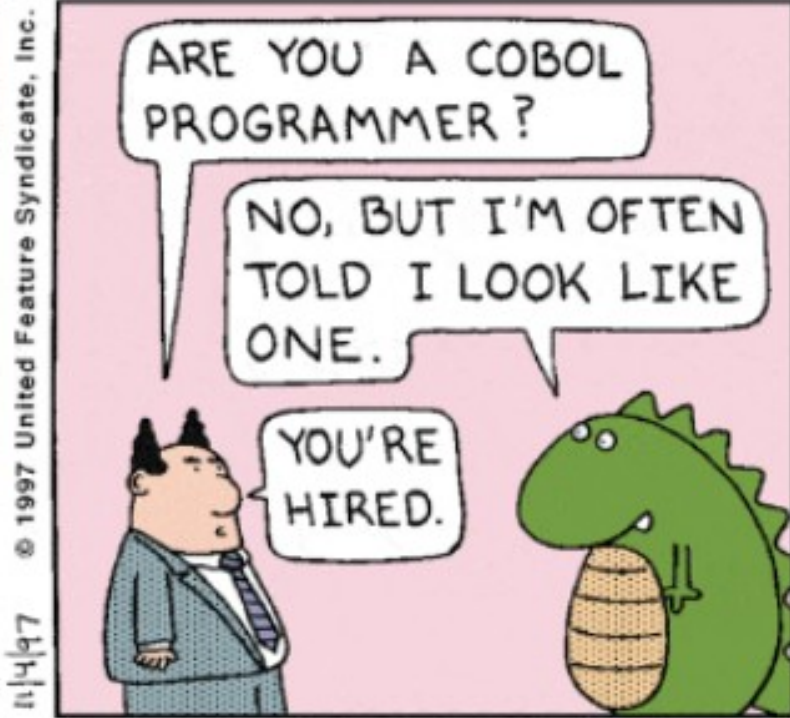
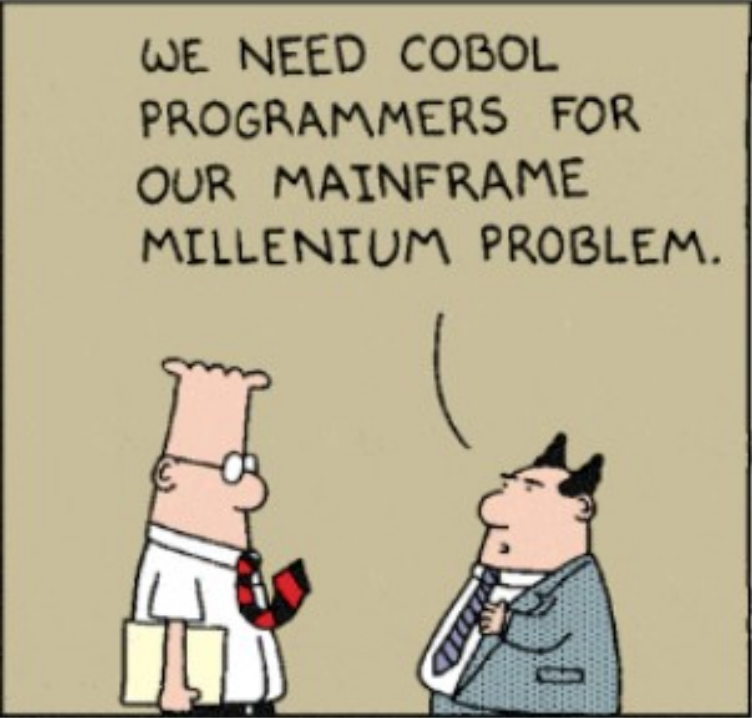
- 3+2 projects available on public Github
 - [COBOL Language Support](#)
 - [z/Os Resouce explorer](#)
 - Explorer for Endeavor - soon
 - debug adapter for remote cobol debugging - soon (**this topic!!**)
- A public pipeline in Jenkins
 - [Cobol Language Support pipeline](#)
 - [Z/Os Resource explorer](#)
- ...and present on VSC Marketplace
<https://marketplace.visualstudio.com/publishers/broadcomMFD>



We are... Broadcom

- Modernize the development experience for Cobol developers on MF
 - provide content assist during the development/maintenance of cobol code on modern/web IDE
 - navigate the dataset explorer and grab resource from MF easily
 - **debug cobol code using expanded listing and cooperate with our solution for remote debugging (THIS TOPIC!)**

Meanwhile..



www.unitedmedia.com
S. Adams

11/4/97 © 1997 United Feature Syndicate, Inc.

Back to the challenge!

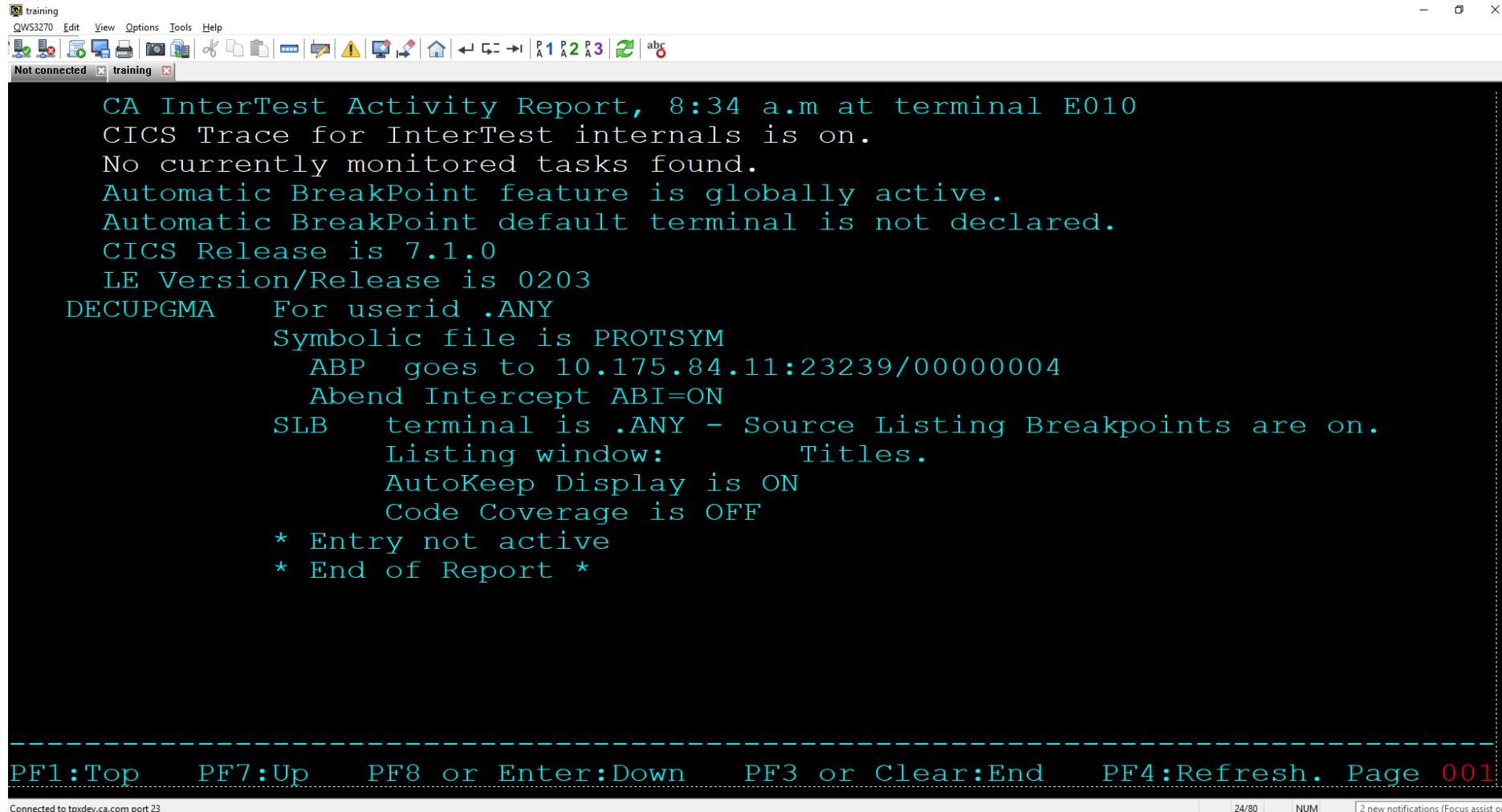
- Write COBOL programs require experience and a good level of skill set mainframe oriented
- Debug COBOL code is fundamental as all the others programming languages
- Broadcom have its solution for debug COBOL files called **CA InterTest™ for CICS**
- Bring Intertest debugging capability in the new IDE era is our mission



CICS (Customer Information Control System)

- CICS is an application server running on IBM Z mainframe
- Support multiple programming languages as Java, COBOL, PL/I, C, PHP...
- Used by organizations that have to deal with mission critical applications
 - i.e. stock trading, credit card and so on..
 - Downtime measured as ~100K\$ lost revenue
 - **most of the ATMs transactions run on MF!**

CA InterTest™ for CICS - how looks like..



The screenshot shows a terminal window titled "training" with a menu bar (QWS3270, Edit, View, Options, Tools, Help) and a toolbar. The main content is a CA InterTest Activity Report for CICS, displayed in cyan text on a black background. The report includes details about the terminal (E010), CICS Trace status, monitored tasks, BreakPoint settings, CICS Release (7.1.0), LE Version (0203), and various system parameters like DECUPGMA, Symbolic file, ABP, Abend Intercept, SLB, Listing window, AutoKeep Display, and Code Coverage. It also shows that the Entry is not active and ends with "End of Report". At the bottom, there is a dashed line and a footer with navigation instructions: "PF1:Top PF7:Up PF8 or Enter:Down PF3 or Clear:End PF4:Refresh. Page 001". The status bar at the very bottom indicates "Connected to tpxdev.ca.com port 23", "24/80", "NUM", and "2 new notifications (Focus assist on)".

```
CA InterTest Activity Report, 8:34 a.m at terminal E010
CICS Trace for InterTest internals is on.
No currently monitored tasks found.
Automatic BreakPoint feature is globally active.
Automatic BreakPoint default terminal is not declared.
CICS Release is 7.1.0
LE Version/Release is 0203
DECUPGMA   For userid .ANY
           Symbolic file is PROTSYM
           ABP   goes to 10.175.84.11:23239/00000004
           Abend Intercept ABI=ON
           SLB   terminal is .ANY - Source Listing Breakpoints are on.
           Listing window:      Titles.
           AutoKeep Display is ON
           Code Coverage is OFF
* Entry not active
* End of Report *
```

PF1:Top PF7:Up PF8 or Enter:Down PF3 or Clear:End PF4:Refresh. Page 001

The debug adapter protocol meets our needs!

- Modern IDEs and legacy “old-style” debug tools work together within the standard
- Write once – run everywhere (**where the protocol is supported!**)
- **YES** support cross clients – **NO** heavy customization hard to share/maintain

Challenges



Dialogue with remote debugger is sometimes... **complicated**

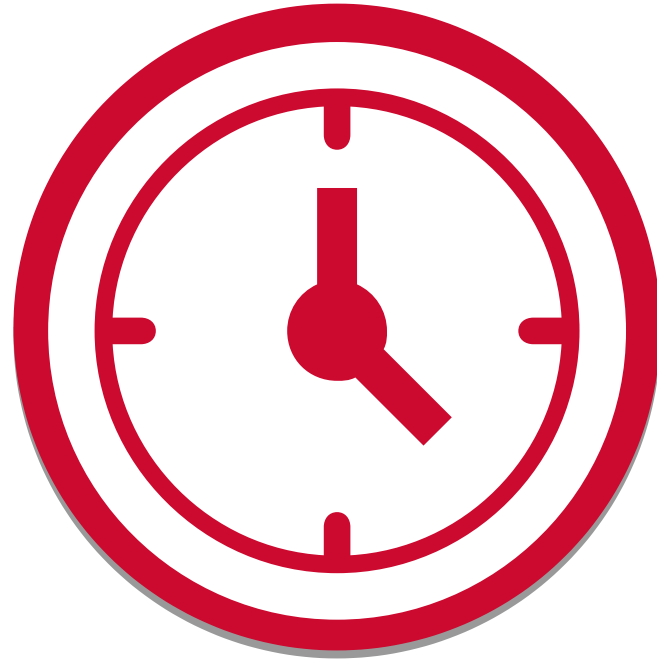


We'd like to make our solution bigger and stronger

- Functional test** automation in pipeline
- Release **often**, release **quickly**



Debugging is a developer experience, **we're looking forward for feedbacks!**



Demo time





Questions?



Getting in touch with us..

	GITHUB	SLACK+MAIL
CHE4Z-LSP		 <u>supportChe4z.pdl@broadcom.com</u>
CHE4Z-RESOURCE-EXPL.		

What's next?



- We'll be present in the upcoming EclipseCon 2019 - with a huge number of sessions we'd like to join
- Stop us at any time to share your feedback, ideas, areas of improvement!
- ... and we can help you to run our solution on your machine :)

Thank You





BROADCOM®

connecting everything®