UEFI Open Source Community: tianocore.org update

Presented by Brian Richardson (Intel) and Leif Lindholm (Linaro)
Agenda

• Introduction
• Recent changes
• Plans for the future
• Summary / Q&A
UEFI Open Source Community: tianocore.org update

Introduction
Community supporting EDK II, an open source implementation of UEFI

**Mission**
- Improve contribution
- Increase code quality
- Provide regular updates and more end-to-end solutions

**Vision**
- A more active EDK II developer community
- A transparent decision making process based on community feedback
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Recent changes
Recent changes

- Governance
- Transition to github
- Staging branch workflow
- UEFI FAT license
- LLVM/Clang & GCC
- Bugzilla
Governance

• Tianocore Stewards
  – Andrew Fish – Apple
  – Leif Lindholm – Linaro
  – Michael Kinney – Intel

• Tianocore governance updated, licensing and distribution remains unchanged

• Broader input to grow the community
Transition to github

- Moved from SVN to github in Jan 2016
  - https://github.com/tianocore/
- Multiple repositories in use for EDK II, tools, non-OSI code, and new features
- Documentation will also transition to github (wiki & gitbooks)
Staging branch workflow

- Staging branches help keep the main edk2 branch focused on quality code
- Process details ...
  - [https://github.com/tianocore/edk2-staging](https://github.com/tianocore/edk2-staging)
    - Announce new branch via e-mail
    - Create an edk2-staging branch
    - Branch maintainers sync to edk2/master
    - Use edk2 review process to submit edk2-staging branch to edk2/master
As of March 2016, Microsoft removed the use clause from UEFI FAT sources
- **Very big deal** for Linux distros & Ovmf/Aavmf
- Increases UEFI adoption in virtual machines, which primarily shipped SeaBIOS

Now covered under 2-clause BSD with no field of use restriction

- [https://github.com/tianocore/edk2/tree/master/FatPkg](https://github.com/tianocore/edk2/tree/master/FatPkg)
- [https://github.com/tianocore/edk2/tree/master/FatBinPkg](https://github.com/tianocore/edk2/tree/master/FatBinPkg)
LLVM/Clang & GCC

• EDK II now enables link time optimization (LTO) for LLVM Clang 3.8 & GCC 5.3
  — Good example of community collaboration

• Enables a platform for code analysis tools
  — Example: http://clang-analyzer.llvm.org/

• Validated on Linux
## Binary Sizes vs VS2015

<table>
<thead>
<tr>
<th></th>
<th>Release Mode</th>
<th>GCC5</th>
<th>CLANG38</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EDK II OVMF x64</strong></td>
<td><strong>PEIFV</strong></td>
<td>26%</td>
<td>-15%</td>
</tr>
<tr>
<td></td>
<td><strong>DXEFV</strong></td>
<td>4%</td>
<td>-4%</td>
</tr>
<tr>
<td></td>
<td><strong>FvMainCompact</strong></td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Intel® Galileo IA32</strong></td>
<td><strong>FVRECOVERY</strong></td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td><strong>FVMAIN</strong></td>
<td>5%</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td><strong>FvMainCompact</strong></td>
<td>9%</td>
<td>15%</td>
</tr>
</tbody>
</table>
Bugzilla

- bugzilla.tianocore.org
  - EDK II/platform issues & feature requests
- Security issues follow a special process
  - Never use e-mail to discuss a security issue
  - Report issues under the “Tianocore Security Issues” product in Bugzilla
  - Never use e-mail to discuss a security issue
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Plans for the future
Plans for the future

• Improve website content & organization
• Add test framework & test cases for edk2
• Release management
  – Goal is to have labeled releases on a regular cadence (2-4 per year)
  – Features and cadence planned using community input
Release management

platform\textsubscript{n}  
platform fix  
platform fix  

staging\textsubscript{n}  
fix  
fix  

edk2  
fix  
fix  

Fixes  
Validation  
Release  

UDK

- Requirement/design reviews
- Implement/integrate features
- Validation
UDK2017 Feature Highlights

**UEFI 2.6 Features**
- eMMC/SD Stack
- MemoryAttributesTable
- IPv6 Http Boot
- RamDisk
- URI Configuration

**UEFI PI 1.4a Errata**

**EDK II Implementation**
- OpenSSL 1.0.2h
- Transition to NASM
- CPU MP initialization library
- Drivers
  - PiSmmCpuDxeSmm
  - SataController (generic)
  - PciHostBridgeDxe (generic)
  - LoadFileOnFv2
  - PciSioSerialDxe/SerialDxe

Coming in Q1 2017
Plans for the future (cont.)

• Open platforms
  – More example code for new developers
  – Implemented similarities as core libraries
  – Enable centralized validation
  – Provide greater visibility for impact of changes to core code
  – Details being discussed on edk2-devel (or grab the EDK II stewards for a focus session)
Summary

• TianoCore supports open source UEFI development using EDK II
• Recent improvements include a move to github and compiler optimizations
• Future improvements will improve code quality and open platform availability
Thanks for attending the UEFI US Fall Plugfest 2016

For more information on the Unified EFI Forum and UEFI Specifications, visit http://www.uefi.org