

*presented by*



tianocore



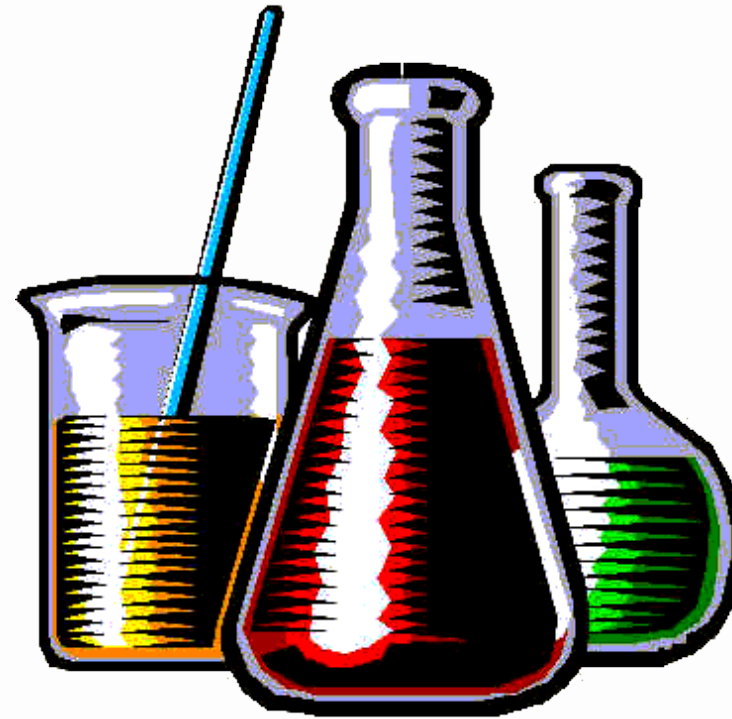
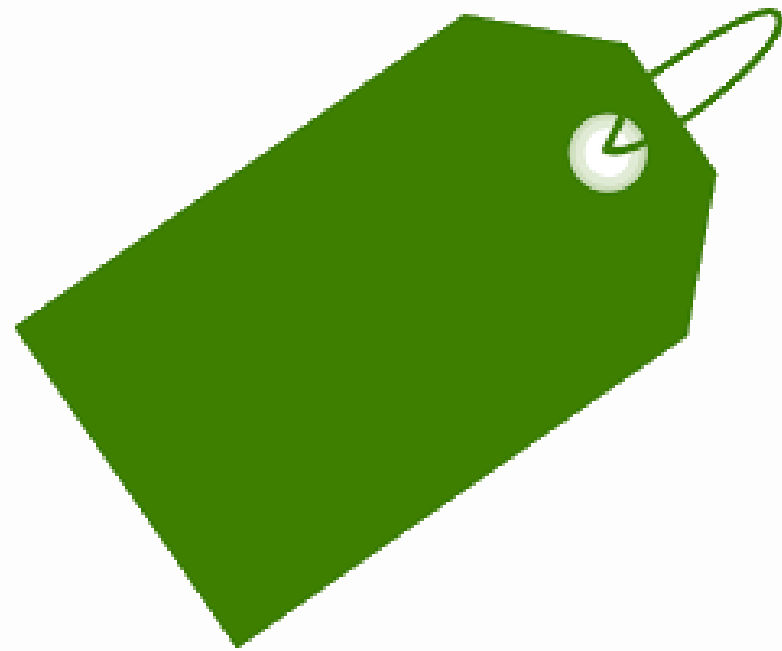
# TianoCore Updates: Tags, Testing & Platforms

Fall 2018 UEFI Plugfest

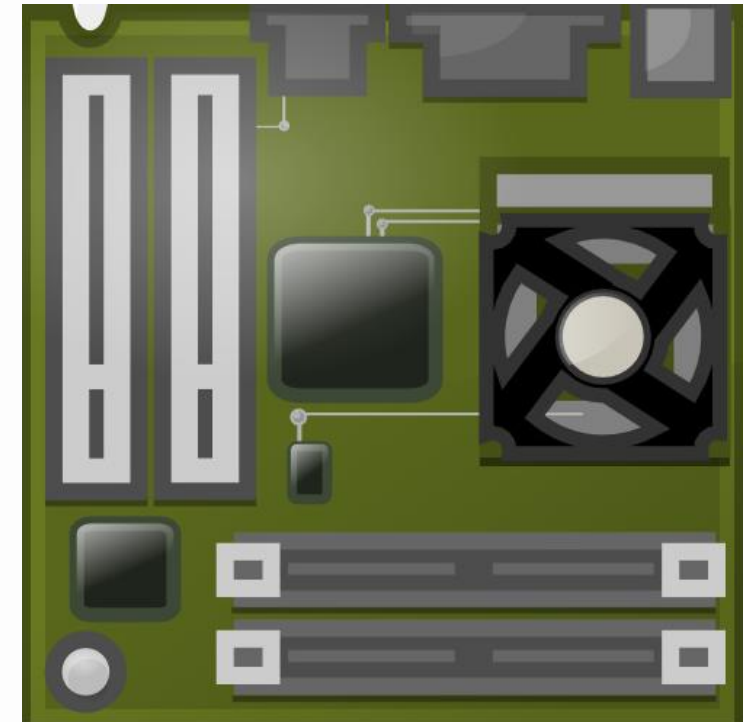
October 15 – 19, 2018

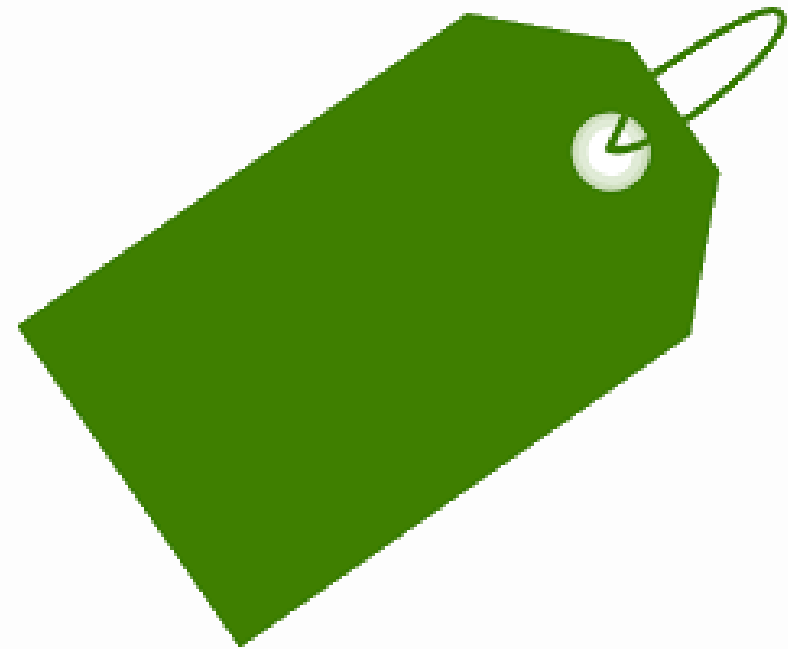
Presented by Brian Richardson & Leif Lindholm

# Tags, Testing & Platforms: What's New?



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## TianoCore Updates: Tags, Testing & Platforms

# Tags

# Tags



- Now releasing 'stable tag' every quarter
  - Increase cadence for EDK II 'core' updates
  - More frequent than UDK20xx release cycle
- Created from `edk2/master` based on validation with various platforms

EDK = EFI Development Kit  
UDK = UEFI Development Kit



# Stable Tags in EDK II

`edk2-stable`<4 digit year><2 digit month>

- [edk2-stable201808](#)

Public Roadmap, based on issues and feature requests at [bugzilla.tianocore.org](http://bugzilla.tianocore.org)

- [EDK II Release Planning](#) (TianoCore wiki)

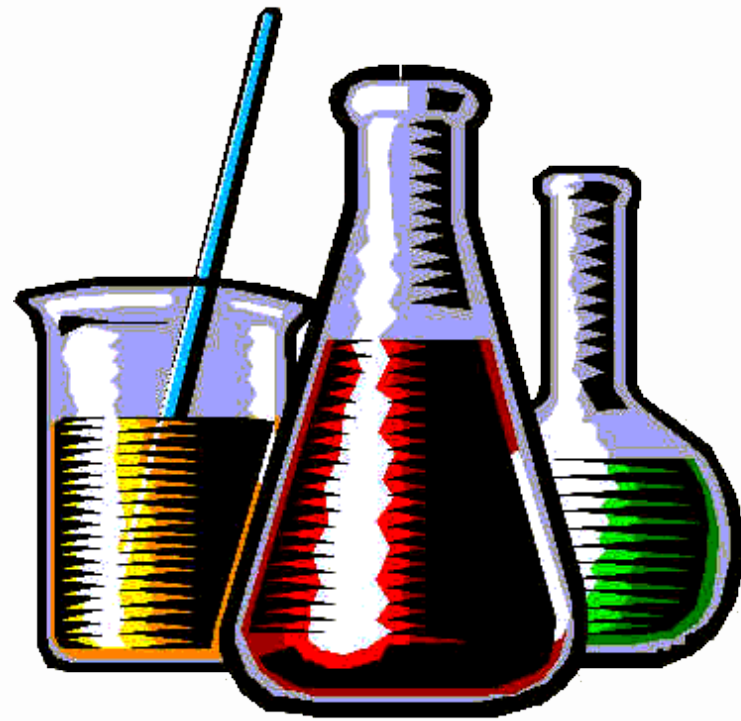
# edk2-stable201811 tag planning



## Proposed Features

- [SMBIOS 3.2.0 support](#)
- [32bit subnet mask support for IP4 PXE](#)
- [Non-stop mode for Heap Guard and Null Pointer Detection](#)
- [PEI Stack Guard](#)

Date	Description
2018-08-15	Beginning of development
2018-11-01	<a href="#"><u>Soft Feature Freeze</u></a>
2018-11-08	<a href="#"><u>Hard Feature Freeze</u></a>
2018-11-15	Release



TianoCore Updates: Tags, Testing & Platforms

# Testing

# Testing



- The 'MicroPython Test Framework for UEFI' is now in **edk2-staging**
- MicroPython is a Python\* 3 variant with optimizations for microcontrollers
- Introduced at Spring 2018 UEFI Plugfest in Seattle



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# Why go Micro(Python)?

- UEFI has a CPython\* 2.7 port, but not widely used...
  - Poor performance & large footprint
  - No direct access to firmware/hardware resources
  - Limited usage with UEFI Shell dependencies
- [MicroPython](#) is a lean and efficient implementation of Python 3 for constrained environments
- Python 2.7 will EOL in 2020

# Features of MicroPython on UEFI



- Provides scripts with access to resources:
  - UEFI & EFI Development Kit II (EDK II) interfaces
  - Hardware-level access
  - Interpreter and Native Interface
  - Automates human interaction (shell & setup menu)
- Use Cases: unit/manufacturing tests, legacy migration
- *Note: There are small differences between MicroPython and Python 3 behavior ([documented on website](#))*

# MicroPython Test Framework for UEFI

*Released to edk2-staging branch in August 2018*



<https://github.com/tianocore/edk2-staging/tree/MicroPythonTestFramework>

- **MicroPythonPkg** - MicroPython Interpreter for UEFI
- **MpyTestFrameworkPkg** - Test Framework for UEFI
- **MpyTestCasePkg** - Repo for test cases

```
$ git clone https://github.com/tianocore/edk2-staging
$ cd edk2-staging
$ git checkout MicroPythonTestFramework
$ git submodule update --init --recursive
```

# Current Status & Future Work



Code is in staging branch for community evaluation

## Next Steps:

- Create Branches for MicroPython Engine and Framework
  - Engine will keep MIT License, contribute back to [micropython.org](https://micropython.org)
  - Test Framework will move to master branch (BSD license)
- Optimize and Extend MicroPython Engine
  - Increase the number of default libraries and reference scripts
  - Remove dependency on StdLib (reduce size)



TianoCore Updates: Tags, Testing & Platforms

# Platforms

# Platforms



- Existing EDK II platform support migrated from OpenPlatformPkg (now disbanded)
- Platform support now adopted by TianoCore
  - edk2-platforms & edk2-non-osd repos
- Remaining hardware platform support in EDK II scheduled for migration
  - EDK II retains virtual platforms, industry standard drivers, and de-facto standards

# edk2-platforms

<https://github.com/tianocore/edk2-platforms>

(open source components only)

- **master** holds all platforms actively tracking edk2 master
- **devel** hold ports in the process of upstreaming  
(where this is expected to be a slow task)
- **stable** tracks specific UDK releases
- Also holds any new open source device drivers



EDK II sample platform branches and tags

501 commits 8 branches 0 releases 31 contributors BSD-2-Clause

Branch: master New pull request Create new file Upload files Find file Clone or download

Switch branches/tags

Branches Tags

- about
- devel-IntelAtomProcessorE3900
- devel-MinPlatform
- devel-MinnowBoardMax-UDK2017
- devel-OpenPlatformPkg
- devel-dynamicctables
- ✓ master
- pentium-celeron-n-udk2015

.../D0x: Update version string to 18.08	Latest commit 8c3914c on Jul 24
...silicon/D0x: Update version string to 18.08	17 days ago
...silicon/setup: Enable/disable SMMU	17 days ago
...ons.txt: update to latest version from EDK2	a year ago
...core required text files	a year ago
...rs.txt: Add Ard Biesheuvel	a year ago
...d: Remove Tabs	3 months ago

...ly maintained against the [edk2](#) master branch.

...k2-platforms repository, and the process under which *stable* and *devel* branches can be

added for individual platforms, please see [the introduction on the about branch](#).







# edk2-non-osi

- `OpenPlatformPkg` permitted inclusion of binary only components
  - `edk2-platforms` does not
- <https://github.com/tianocore/edk2-non-osi>
  - All binary-only (or ‘dubiously licensed’) modules are confined to `edk2-non-osi`
  - No default license - each subtree must specify

# Platforms Already Included



- AMD Seattle
  - Overdrive, Overdrive 1000
  - Cello
- Arm
  - Juno\*, Versatile Express\*
- Marvell
  - Armada\* 70x0
- Hisilicon
  - D02, D03, D05
  - HiKey\*, HiKey960\*
- Intel
  - MinPlatform for UEFI
    - Kaby Lake (Intel client CRB)
    - Microsoft Mt. Olympus (OCP)
  - Intel Atom® E3900 processor family (Leaf Hill & UP Squared)
  - MinnowBoard Max/Turbot
- Socionext
  - SynQuacer\* (EVB + 96boards)
- Device drivers
  - ChaosKey\* (USB RNG)

CRB = Customer Reference Board

OCP = Open Compute Platform



# Upcoming Platforms

Marvell Armada 80x0 (MacchiatoBin)

Migrate hardware platforms in edk2 master

- BeagleBoard, Intel<sup>®</sup> Quark (Galileo)

Device drivers: 96boards mezzanine support



# Linaro UEFI-Tools

- <https://git.linaro.org/uefi/uefi-tools.git> updated to support new structure
  - But to avoid flag-day type changeover, the new build structure is supported by a new front-end script - `edk2-build.sh` - and a new default configuration file - `edk2-platforms.config`.
  - More flexibility with build environment, but also requires explicitly pointing out `edk2` (`-e`), `edk2-platforms` (`-p`) and `edk2-non-osi` (`-n`) directories if not present in working directory.
- `edk2-build.sh -e ../edk2 -p ../edk2-platforms -n ../edk2-non-osi juno`
- `edk2-build.sh` supports specifying target architecture as part of the build target: `chaoskey:ARM chaoskey:AARCH64`



# The Short-Short Version

**aka "How to build a big pile of firmware"**

```
git clone https://github.com/tianocore/edk2  
git clone https://github.com/tianocore/edk2-platforms  
git clone https://github.com/tianocore/edk2-non-os  
git clone https://git.linaro.org/uefi/uefi-tools.git  
./uefi-tools/edk2-build.sh -b DEBUG -b RELEASE all
```



# Call to Action

There are many new TianoCore activities...

- Stable tags every three months
- MicroPython Test Framework for UEFI
- Open source platform implementations

Please review & comment!

Thanks for attending the Fall 2018  
UEFI Seminar and Plugfest

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

*presented by*



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