

UEFI & EDK II TRAINING

EDK II BUILD SPECIFICATION FILES

tianocore.org

LESSON OBJECTIVE

- ★ Explain the Build components and build text files DSC, DEC, & FDF

EDK II BUILD TEXT FILES

EDK II File Extensions

- Located on tianocore.org project edk2

.DSC	- Platform Description
.DEC	- Package Declaration
.INF	- Module Definition <i>define a component</i>
.FDF	- Flash Description
.VFR	- Visual Forms Representation for User interface
.UNI	- Unicode String text files w/ ease of localization
.c & .h	- Source code files
.FD	- Final Flash Device Image
.FV	- Firmware Volume File

EDK II
Spec

Source

Output

BUILD DESCRIPTION FILE TYPES

EDK II
Spec

INF Files

DEC Files

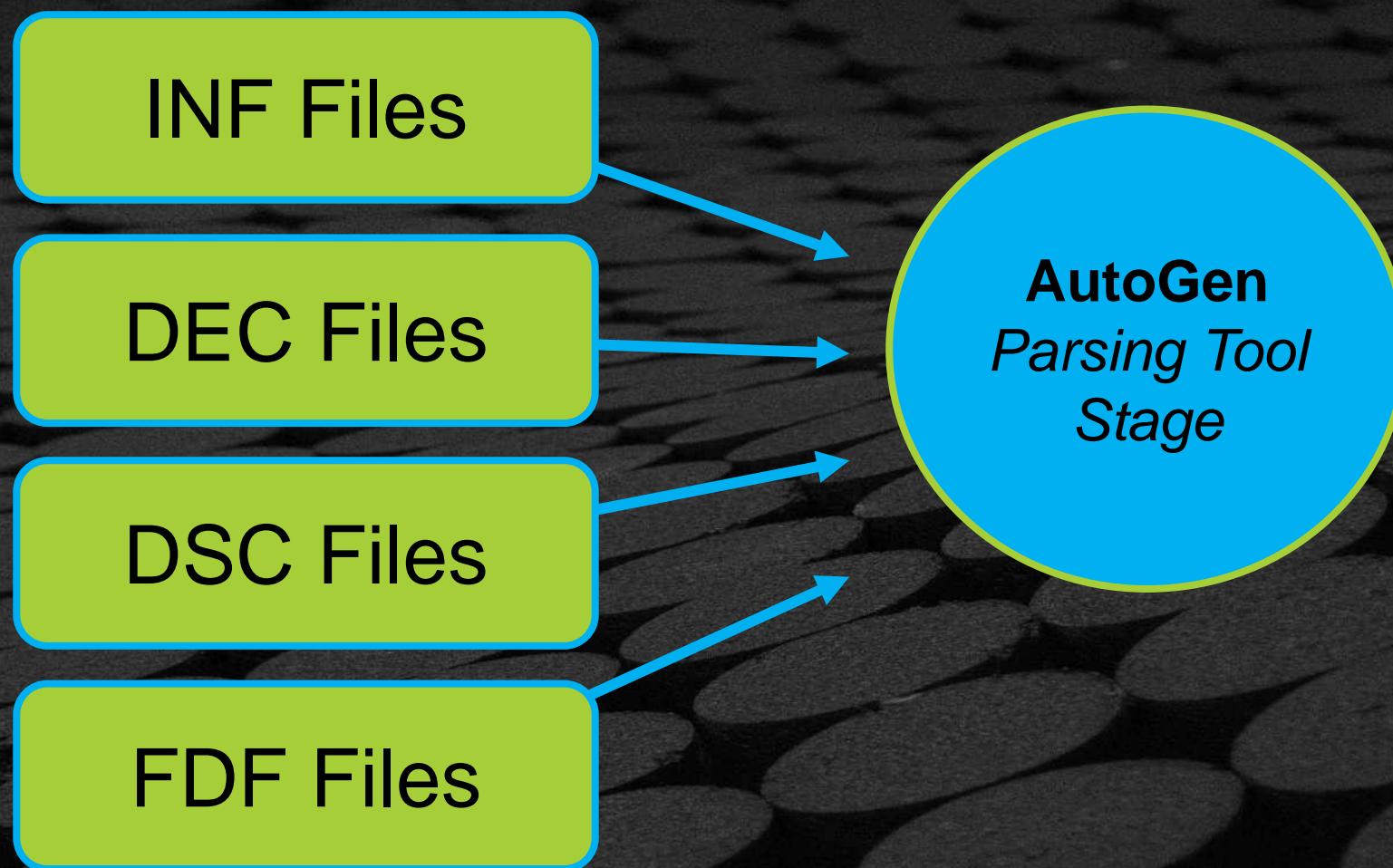
DSC Files

FDF Files

Wiki Link: [Build Description Files](#)
[Edk II Specifications](#)

BUILD DESCRIPTION FILE TYPES

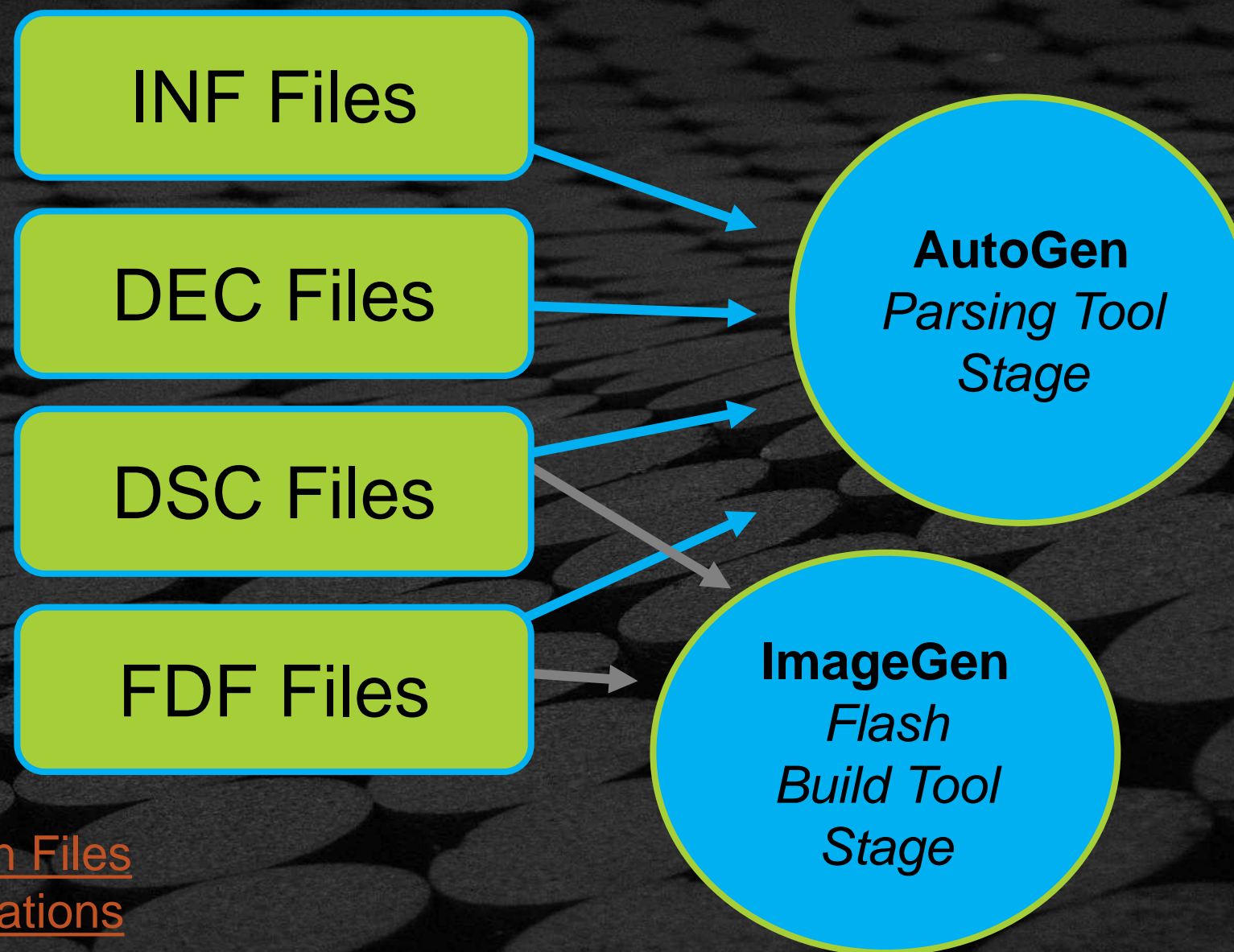
EDK II
Spec



Wiki Link: [Build Description Files](https://wiki.tianocore.org/EdkII/BuildDescriptionFiles/)
[Edk II Specifications](https://wiki.tianocore.org/EdkII/BuildDescriptionFiles/)

BUILD DESCRIPTION FILE TYPES

**EDK II
Spec**



Wiki Link: [Build Description Files
Edk II Specifications](https://wiki.tianocore.org/Build_Description_Files/Edk-II-Specifications)

PACKAGE DECLARATION FILE (DEC)

Syntax:

```
<DECfile> ::= <Defines>  
              Include  
              [<LibraryClass>]  
              [<Guids>]  
              [<Protocols>]  
              [<Ppis>]  
              [<Pcd>]  
              [<UserExtensions>]
```

Declare

EXAMPLE DEC FILE

```
[Defines]
  DEC_SPECIFICATION          = 0x00010005
  PACKAGE_NAME               = OvmfPkg
  PACKAGE_GUID               = 2daf5f34-50e5-4b9d-b8e3-5562334d87e5
  PACKAGE_VERSION            = 0.1

[Includes]
  Include

[LibraryClasses]
  ## @libraryclass  Loads and boots a Linux kernel image
  #
  LoadLinuxLib|Include/Library/LoadLinuxLib.h

[Guids]
  gUefiOvmfPkgTokenSpaceGuid = {0x93bb96af, 0xb9f2, 0x4eb8, {0x94, 0x62, 0xe0, 0xba, 0x74, 0x56, 0x42, 0x36}}
  gEfiXenInfoGuid            = {0xd3b46f3b, 0xd441, 0x1244, {0x9a, 0x12, 0x0, 0x12, 0x27, 0x3f, 0xc1, 0x4d}}

[Protocols]
  gVirtioDeviceProtocolGuid  = {0xfa920010, 0x6785, 0x4941, {0xb6, 0xec, 0x49, 0x8c, 0x57, 0x9f, 0x16, 0x0a}}
  gXenBusProtocolGuid        = {0x3d3ca290, 0xb9a5, 0x11e3, {0xb7, 0x5d, 0xb8, 0xac, 0x6f, 0x7d, 0x65, 0xe6}}

[PcdsFixedAtBuild]
  gUefiOvmfPkgTokenSpaceGuid.PcdOvmfPeiMemFvBase|0x0|UINT32|0
  gUefiOvmfPkgTokenSpaceGuid.PcdOvmfPeiMemFvSize|0x0|UINT32|1
```


EXAMPLE: DEC FILE DETAILS

https://gitpitch.com/tianocore-training/EDK_II_Build_Spec_Files_Pres/master#/6

PLATFORM DESCRIPTION FILE (DSC)

Syntax:

```
DSCfile ::= [<Header>]
           <Defines>
           [<SkuIds>]
           [<Libraries>]
           [<LibraryClasses>]
           [<Pcds>]
           [<Components>]
           [<UserExtensions>]
```

Description

PLATFORM DESCRIPTION FILE (DSC)

DSC file is the recipe for creating a package

Definitions for the package build

EDK libraries (for EDK Components)

EDK II Library Class Instance Mappings (for EDK II Modules)

EDK II PCD Entry Settings

EXAMPLE: DSC FILE

```
[Defines]
PLATFORM_NAME                = Ovmf
PLATFORM_GUID                = 5a9e7754-d81b-49ea-85ad-69eaa7b1539b
PLATFORM_VERSION              = 0.1
DSC_SPECIFICATION             = 0x00010005
OUTPUT_DIRECTORY              = Build/OvmfX64
SUPPORTED_ARCHITECTURES       = X64
BUILD_TARGETS                 = NOOPT|DEBUG|RELEASE
SKUID_IDENTIFIER              = DEFAULT
FLASH_DEFINITION               = OvmfPkg/OvmfPkgX64.fdf

#
# Defines for default states.  These can be changed on the command line.
# -D FLAG=VALUE
. . .
[BuildOptions.common.EDKII.DXE_RUNTIME_DRIVER]
GCC:*_*_*_DLINK_FLAGS = -z common-page-size=0x1000
XCODE:*_*_*_DLINK_FLAGS =
[LibraryClasses]
PcdLib|MdePkg/Library/BasePcdLibNull/BasePcdLibNull.inf
TimerLib|OvmfPkg/Library/AcpiTimerLib/BaseAcpiTimerLib.inf
```


EXAMPLE: DSC FILE DETAILS

https://gitpitch.com/tianocore-training/EDK_II_Build_Spec_Files_Pres/master#/9

FLASH DESCRIPTION FILE(FDF)

Syntax:

```
FDFfile ::= [<Header>]
           [<Defines>]
           <FD>
           <FV>
           [<Capsule>]
           [<VTF>]
           [<Rules>]
           [<OptionRom>]
           [<UserExtensions>]
```

Flash Layout

FLASH DESCRIPTION FILE(FDF)

Describes information about flash parts

Used to create firmware images, Option
ROM images or bootable images

Rules for combining binaries (Firmware
Image) built from a DSC file

FLASH DEVICE CONFIGURATION COMMON LAYOUT FILE (.FDF)

FV Recovery

Used to store SEC/PEI phase code

FLASH DEVICE CONFIGURATION COMMON LAYOUT FILE (.FDF)

FV Recovery

Used to store SEC/PEI phase code

FTW spare space

Fault Tolerant Write (FTW) regions

FTW working space

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FV Recovery

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Event Log

NVRAM storage for event logs

FLASH DEVICE CONFIGURATION COMMON LAYOUT FILE (.FDF)

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NVRAM storage for event logs

Microcode

CPU Microcode

FLASH DEVICE CONFIGURATION COMMON LAYOUT FILE (.FDF)

FV Recovery

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NVRAM storage for event logs

Microcode

CPU Microcode

Variable Region

Variables & platform settings

FLASH DEVICE CONFIGURATION COMMON LAYOUT FILE (.FDF)

FV Recovery

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FTW working space

Event Log

NVRAM storage for event logs

Microcode

CPU Microcode

Variable Region

Variables & platform settings

FV Main

Contains DXE phase drivers

EXAMPLE: FDF FILE

```
[Defines]
!include OvmfPkg.fdf.inc

#
# Build the variable store and the firmware code as one unified flash device
# image.
#
[FD.OVMF]
BaseAddress    = $(FW_BASE_ADDRESS)
Size           = $(FW_SIZE)
ErasePolarity  = 1
BlockSize      = $(BLOCK_SIZE)
NumBlocks      = $(FW_BLOCKS)

$(VARS_SIZE)|$(FVMAIN_SIZE)
FV = FVMAIN_COMPACT

$(SECFV_OFFSET)|$(SECFV_SIZE)
FV = SECFV
```


EXAMPLE: DEC FILE DETAILS

https://gitpitch.com/tianocore-training/EDK_II_Build_Spec_Files_Pres/master#/13

SUMMARY

- ✿ Explain the Build components and build text files DSC, DEC, & FDF

Questions?



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