Principle

1. Modules under ***UefiCpuPkg/Universal*** provide function interfaces and linked with library in processor architectural packages **(referred as *ProcArchPkg*** below, **such as *IA32FamilyCpuPkg*, *RiscVPkg*, *ArmPkg*, etc.)**
2. Modules under ***UefiCpuPkg/Universal*** uses MDE base library for the processor specific access (such as Read IO and etc.)
3. No processor specific drivers under ***UefiCpuPkg.***
4. No processor specific libraries under ***UefiCpuPkg.***
5. ***ProcArchPkg*** provide library instances to modules under ***UefiCpuPkg***
6. No NULL lib instances under ***UefiCpuPkg***, ***ProcArchPkg*** must provide library instances for ***UefiCpuPkg.*** This makes sure the necessary library instances are provided.
7. Common libraries under ***UefiCpuPkg*/Library** which linked with processor architectural libraries is allowed. For example, BaseUefiCpuLib provides BaseUefiCpuId (). BaseUefiCpuId () linked with ***ProcArchPkg*** library.
8. Allow to use architectural sections in module's metafile. For example, use [Packages] architectural section to pull in specific ***ProcArchPkg*** in INF.
   (That is ***ProcArchPkg*** package listed in packages architectural sections)

UefiCpuPkg/ResetVector

Move reset vector to under ***ProcArchPkg.*** Each processor architectural package provides its own reset vector.

UefiCpuPkg/SecCore

- Linked with processor SEC startup library provided by ***ProcArchPkg***. Processor SEC startup function is declared in CONSTRUCTOR in INF and is invoked through ***ProcessLibraryConstructorList*** in ***SecStartUp*** ();
- Remove Intel processor stuff
- Linked with library provided by ***ProcArchPkg*** for initializing processor. For example, ***InitializeCPuExceptionHandlers.***

UefiCpuPkg/CpuDxe, install ***gEfiCpuArchProtocolGuid***

- Move CpuDxe to under ***UefiCpuPkg/Universal***
- Abstract processor specific stuff to ***ProcArchPkg***
- No processor architecture folder
- Invoke ***CpuArchInitializationLib*** in entry point, linked with library under ***ProcArchPkg*** for the processor specific initialization.
- Invoke extern functions provided by ***ProcArchPkg*** library for
  CpuFlushCpuDataCache,
  CpuEnableInterrupt,
  CpuDisableInterrupt,
  CpuGetInterruptState,
  CpuInit,
  CpuRegisterInterruptHandler,
  CpuGetTimerValue,
  CpuSetMemoryAttributes

UefiCpuPkg/CpuIo2Dxe install ***EFI_CPU_IO_PROTOCOL_ACCESS***

/CpuIo2Smm
/CpuI2Pei

- Replaced **EFI_SMM_CPU_IO2_PROTOCL** with **EFI_MM_CPU_IO_PROTOCOL**
- Move **CpuIo2Dxe** to under ***UefiCpuPkg/Universal***
- Process CPU I/O initialization (if required) through ***CpuIoInitialization*** external function declared in library located under ***ProcArchPkg.***
- All protocol functions invoke external functions which provided in library instance under ***ProcArchPkg***. Such as **EFI_CPU_IO_PROTOCOL_ACCESS Mem;**
  EFI_CPU_IO_PROTOCOL_ACCESS Io;
- No CPU arch folder (ex. remove ia32 x64)
- No IF/ELSE for Ia32/X64

UefiCpuPkg/CpuMpPei install **gEfiPeiMpServicesPpiGuid**

- Move **CpuMpPei** to under ***UefiCpuPkg/Universal***
- Initial CPU MP through ***CpuInitializMp*** external function provided in processor library instance located under ***ProcArchPkg.***
- No CPU arch folder (ex remove ia32 x64)

UefiCpuPkg/CpuS3DataDxe

- Move **CpuS3DataDxe** to under ***UefiCpuPkg/Universal***
- Invoke external function provided by processor library instance for
    1. Memory information (size and type) required for ACPI (ex. below 4G, below 1M, etc.).
    2. Invoke external function provided by processor library instance to initial ACPI NVS and other regions returned from step #1.
    3. Invoke external function provided by processor library instance when EndOfDxe event is triggered.

UefiCpuPkg/Include

- Clean up **UefiCpuPkg/Include/**, no processor specific header files.

UefiCpuPkg/Include/Library

- Move LocalApicLib to Intel ***ProcArchPkg***.
- Move MtrrLib to Intel ***ProcArchPkg***.
- Move Intel specific header files to Intel ***ProcArchPkg.***
- Only common header files for extern functions.

UefiCpuPkg/Include/Register

- Move out **UefiCpuPkg**. Provided by ***ProcArchPkg***.
- Move ***AcpiCpuData.h*** to under ***ProcArchPkg***.

UefiCpuPkg/Library

- Clean up **UefiCpuPkg/Library**, no processor specific library.
- Library under **UefiCpuPkg/Library** provide the common interfaces and linked with processor library instance located under ***ProcArchPkg.***

UefiCpuPkg/Universal/S3Resum2Pei

- Too much dependency of processor architecture, move it to ***ProcArchPkg***
- Install **EFI_PEI_S3_RESUME2_PPI**
- In **EFI_PEI_S3_RESUME_PPI_RESTORE_CONFIG2**, invokes external library function provided by ***ProcArchPkg.***

Change all "SMM" to "MM”

UefiCpuPkg/PiSmmCommunication

- Invoke external function to initialize SMM communication capability in entry point.
- Initial processor specific stuff by external function in the library provided by ***ProcArchPkg.***

UefiCpuPkg/PiSmmCpuDxeSmm

- Remove IA32/X64 code
- Invoke external function provided by processor library instance to initialize processor SMM (MM)
- Protocols Invoke external function provided by processor library instance located under ***ProcArchPkg***
  EFI_SMM_CPU_PROTOCOL
  EFI_MM_CPU_IO2_PROTOCOL
  EFI_MM_ MP_PROTOCOL
- EFI_SMM_CPU_SERVICE_PROTOCOL? (PI spec? Seems not. It’s intel only?)

UefiCpuPkg/Application

- No processor specific code, utilize BaseUefiCpuLib under ***UefiCpuPkg*** instead.