UEFI Basic Tutorial (15) - Get UEFI MemoryMap

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摘要 This article introduces a C code for obtaining EFI memory map, which repeatedly calls GetMemoryMap function until the complete memory map information is successfully obtained. The code shows how to check memory types such as reserved memory and loader code, and counts the number of different types of memory pages.

The summary is generated in C Know , supported by DeepSeek-R1 full version, go to experience>

1. Write source code

AI generated projects 登录复制

```
EfiMemoryMapSize = 0;
EfiMemoryMap = NULL;
Status = gBS->GetMemoryMap (
                &EfiMemoryMapSize,
                EfiMemoryMap,
                &EfiMapKey,
                &EfiDescriptorSize,
                &EfiDescriptorVersion
                );
ASSERT (Status == EFI_BUFFER_TOO_SMALL);
do {

  EfiMemoryMap = AllocatePool (EfiMemoryMapSize);
  if (EfiMemoryMap == NULL){
    DEBUG ((EFI_D_ERROR, "ERROR!! Null Pointer returned by AllocatePool ()\n"));
    ASSERT_EFI_ERROR (EFI_OUT_OF_RESOURCES);
    return Status;
  }
  Status = gBS->GetMemoryMap (
                  &EfiMemoryMapSize,
                  EfiMemoryMap,
                  &EfiMapKey,
                  &EfiDescriptorSize,
                  &EfiDescriptorVersion
                  );
  if (EFI_ERROR(Status)) {
    FreePool (EfiMemoryMap);
  }
} while (Status == EFI_BUFFER_TOO_SMALL);

DEBUG((DEBUG_ERROR | DEBUG_PAGE,"[CSDN] EfiMemoryMapSize=0x%x EfiDescriptorSize=0x%x EfiMemoryMap=0x%x \n", EfiMemoryMapSize, EfiDescriptorSize, (UINTN)EfiMemoryMap));

```

```
    EfiMemoryMapEnd = (EFI_MEMORY_DESCRIPTOR *)((UINT8 *)EfiMemoryMap + EfiMemoryMapSize);
    EfiEntry = EfiMemoryMap;

    DEBUG((DEBUG_ERROR | DEBUG_PAGE,"=========================%S============================== Start\n", L"CSDN MemMap"));

    while (EfiEntry < EfiMemoryMapEnd) {

        if (EfiEntry->Type == EfiReservedMemoryType){
            DEBUG((DEBUG_ERROR | DEBUG_PAGE, "[CSDN] EfiReservedMemoryType  %3d %16lx pn %16lx \n", EfiEntry->Type, EfiEntry->PhysicalStart, EfiEntry->NumberOfPages));
            ReservedMemoryTypePage = ReservedMemoryTypePage + EfiEntry->NumberOfPages;
        }else if (EfiEntry->Type == EfiLoaderCode){
            DEBUG((DEBUG_ERROR | DEBUG_PAGE, "[CSDN] EfiLoaderCode  %3d %16lx pn %16lx \n", EfiEntry->Type, EfiEntry->PhysicalStart, EfiEntry->NumberOfPages));
            LoaderCodePage = LoaderCodePage + EfiEntry->NumberOfPages;
      }
```

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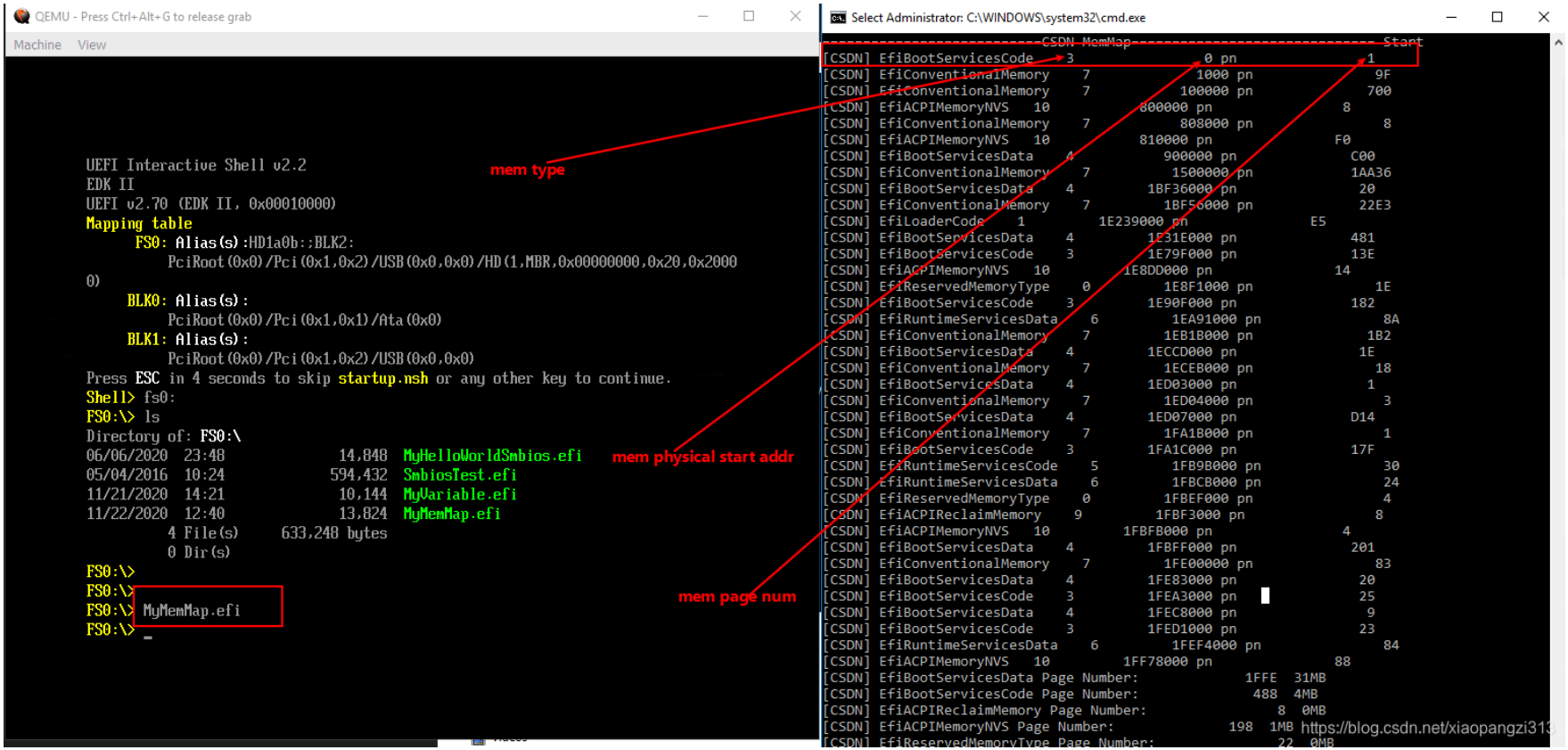
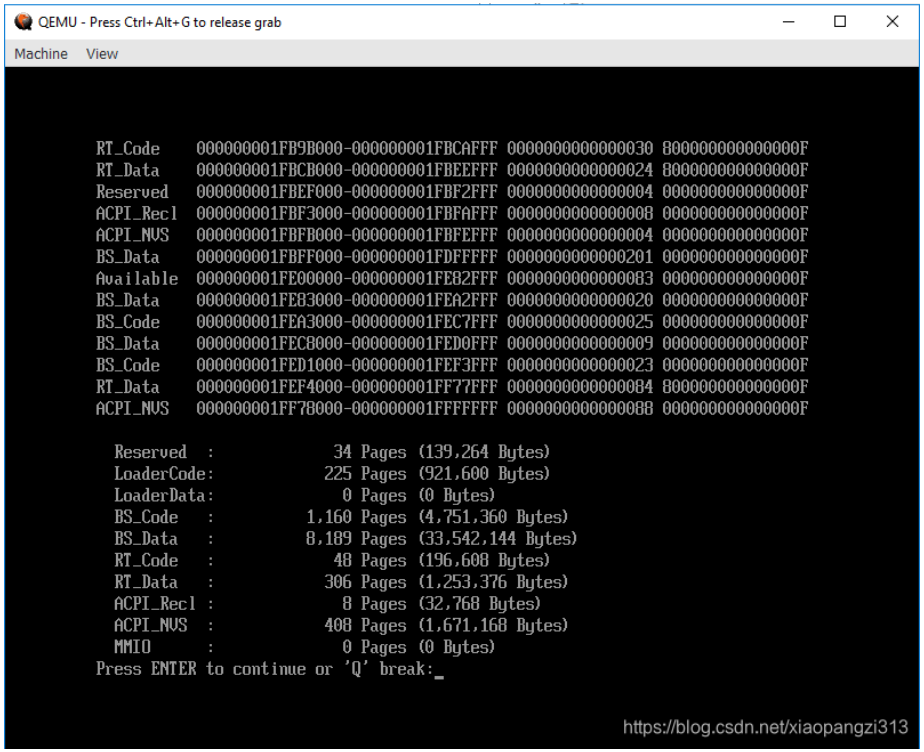
2. 编译 Generate EFI file & 运行



This is a memmap dump demo. You can use this demo to get the current BIOS mem region allocation. You can also use the built-in memmap command in the shell to view the current memory map.



Mem map DEMO source code