HOB proposals
Information passing through boot phases (TF-A to U-boot/UEFI)

• Proposal 1: Always pass a pointer to the device tree blob through the GP register and capture the pointer to the HOB list as a property of a node that is uniquely identifiable by the downstream boot phase. This needs to define a device tree binding such that producer and consumer agree on the information passed.

• Proposal 2: Pass a pointer to a generic container through the GP register that can be interpreted appropriately by both boot loaders (i.e., producer and consumer of the boot info). This container can either be a dtb or a HOB list which can be simply inferred by checking for a magic header that indicates if the buffer appears to be a flattened device tree.

• Proposal 3: Pass a pointer to a HOB list with 32-bit tags and simple C structs. If needed, put a DT in the HOB list and add the info there. The DT can use the normal compatible string which is a proven solution to the identification problem.
Complete Boot Flow proposals

• Assuming proposal 1 in previous slide the boot flow will be different, to align with existing differences, among segments

• Client Segment:
  • TF-A creates HOB list and adds base address in NTFW Config DT node
  • U-boot parses and consumes/appends HOB list
  • U-boot appends HOB list address in NW Config DT node.
  • No major change

• Infra Segment:
  • TF-A creates HOB list and adds base address in NTFW Config DT node
  • UEFI parses and consumes/appends HOB list (UEFI's capability to parse DT?)
  • UEFI adds HOB list in System tables passed to Linux(along with ACPI/SMBIOS table)
  • Changes required in UEFI and Linux EFI stub
  • May need to reserve a GUID for HOB list
Identification of HOB list entries

- Use simple 64-bit tags. Reserve tag ranges for specific purposes.
- Another suggestion was to use a hybrid approach. Reserve a single tag ID for identifying/constructing a HOB structure that further leverages UUID based identifier. This way, the generic HOB list doesn't need to support UUIDs and can work with tags.
- Even we can distinguish among segments, tag only for Client platforms and Hybrid for Infra platforms.
Thank You
Danke
Gracias
谢谢
ありがとう
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Merci
감사합니다
धन्यवाद
شكراً
ধন্যবাদ
תודה