DTE
Adding Metadata

Layout of FDT

Header

Memory
Reservation Block

Structure Block

Strings Block

How Libfdt Adds Property
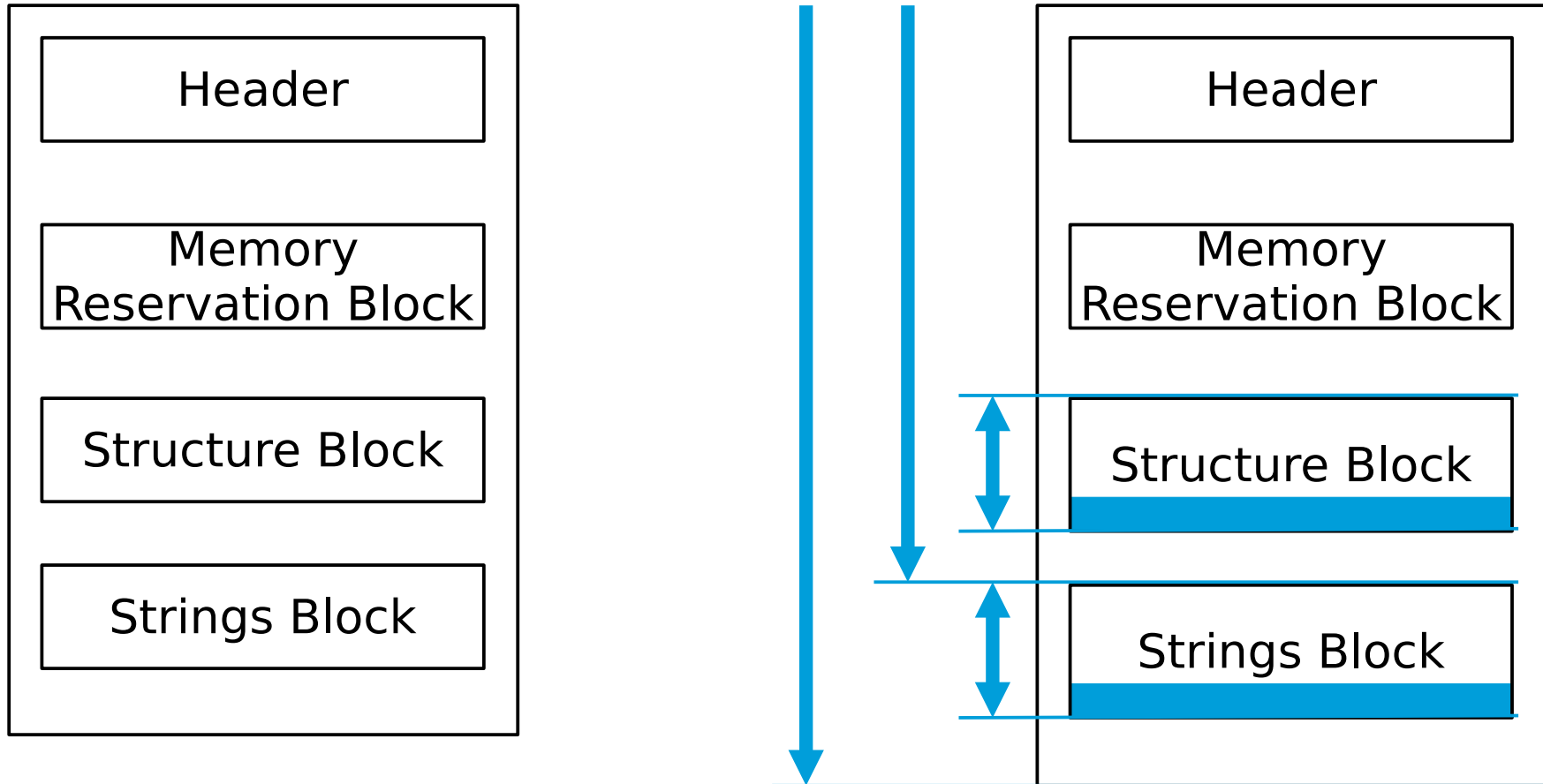
Sanest Place For Metadata

Header
Memory Reservation Block
Structure Block
Strings Block

Header
Metadata
Memory Reservation Block
Structure Block
Strings Block
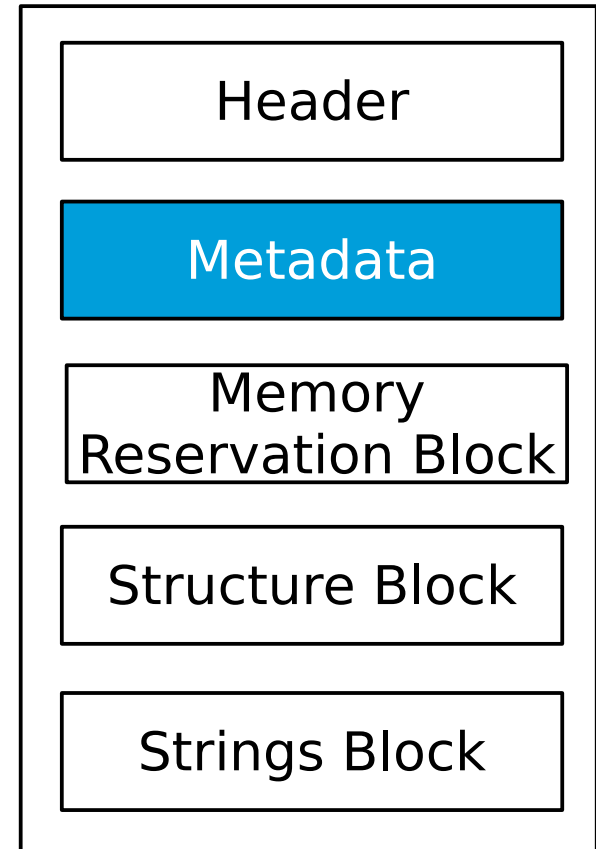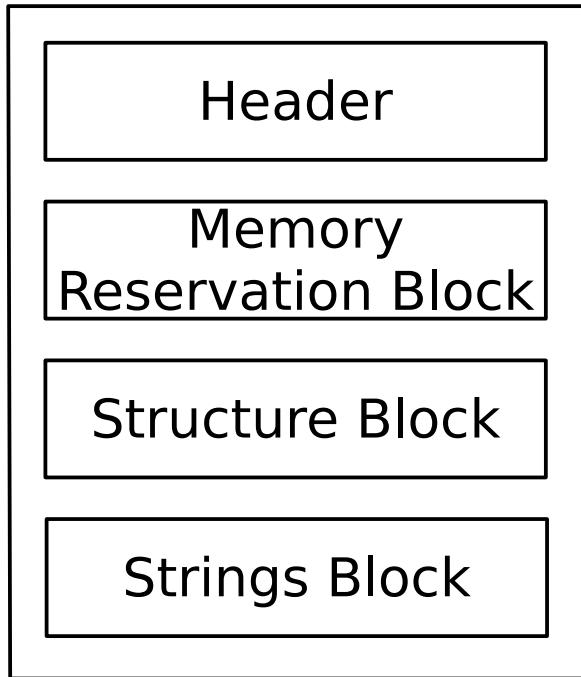
New Header Fields

```
struct fdt_header_new {
        uint32_t magic;
        uint32_t totalsize;
        uint32_t off_dt_struct;
        uint32_t off_dt_strings;
        uint32_t off_mem_rsvmap;
        uint32_t version;
        uint32_t last_comp_version; // = 18
        uint32_t boot_cpuid_phys;
        uint32_t size_dt_strings;
        uint32_t size_dt_struct;
        uint32_t off_meta_data;
        uint32_t size_meta_data;
};
```

Metadata As Linked List

```
struct metadata {
        uint32_t size; // 0 for last entry
        uint8_t guid[16];
        uint8_t data[];
};
```

Placement of Metadata

- Tested with
  U-Boot –> GRUB –> Linux
  using empty metadata block

Header
Metadata
Memory Reservation Block
Structure Block
Strings Block
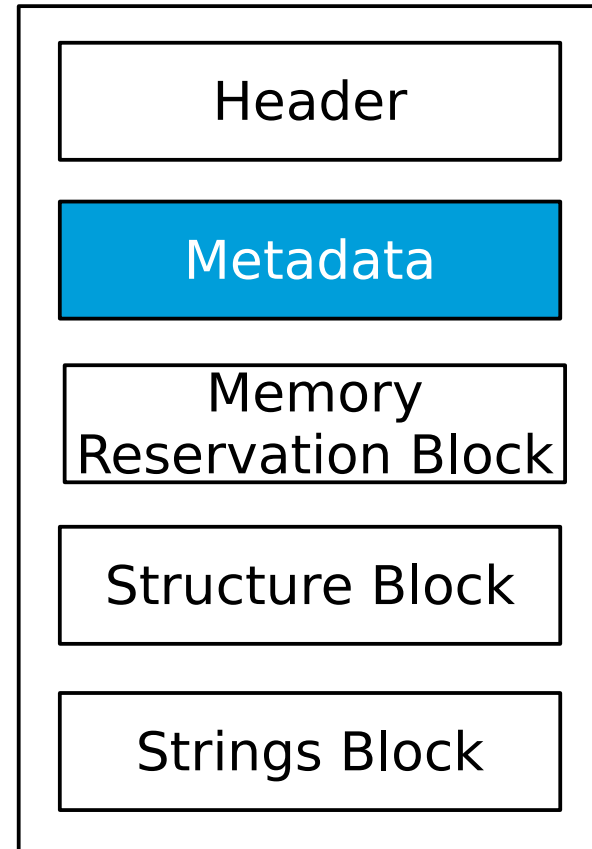
Adding Signatures and Checksums

- Add metadata fields with sizes and GUIDs
- Fill data area for signatures and checksums with zero
- Calculate signatures and checksums
- Fill in the signature and checksum data fields