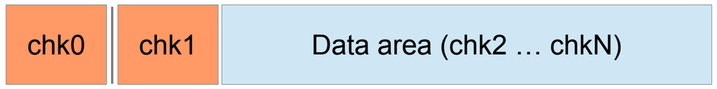
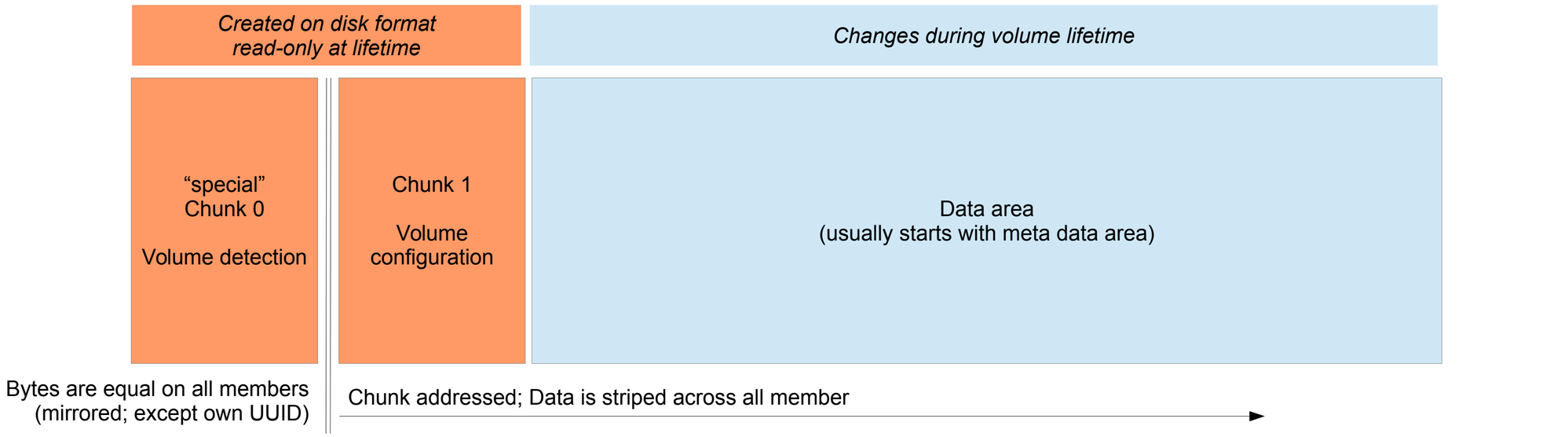
SHFS (Simple Hash FS)



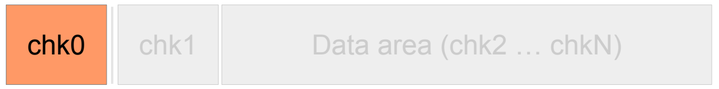


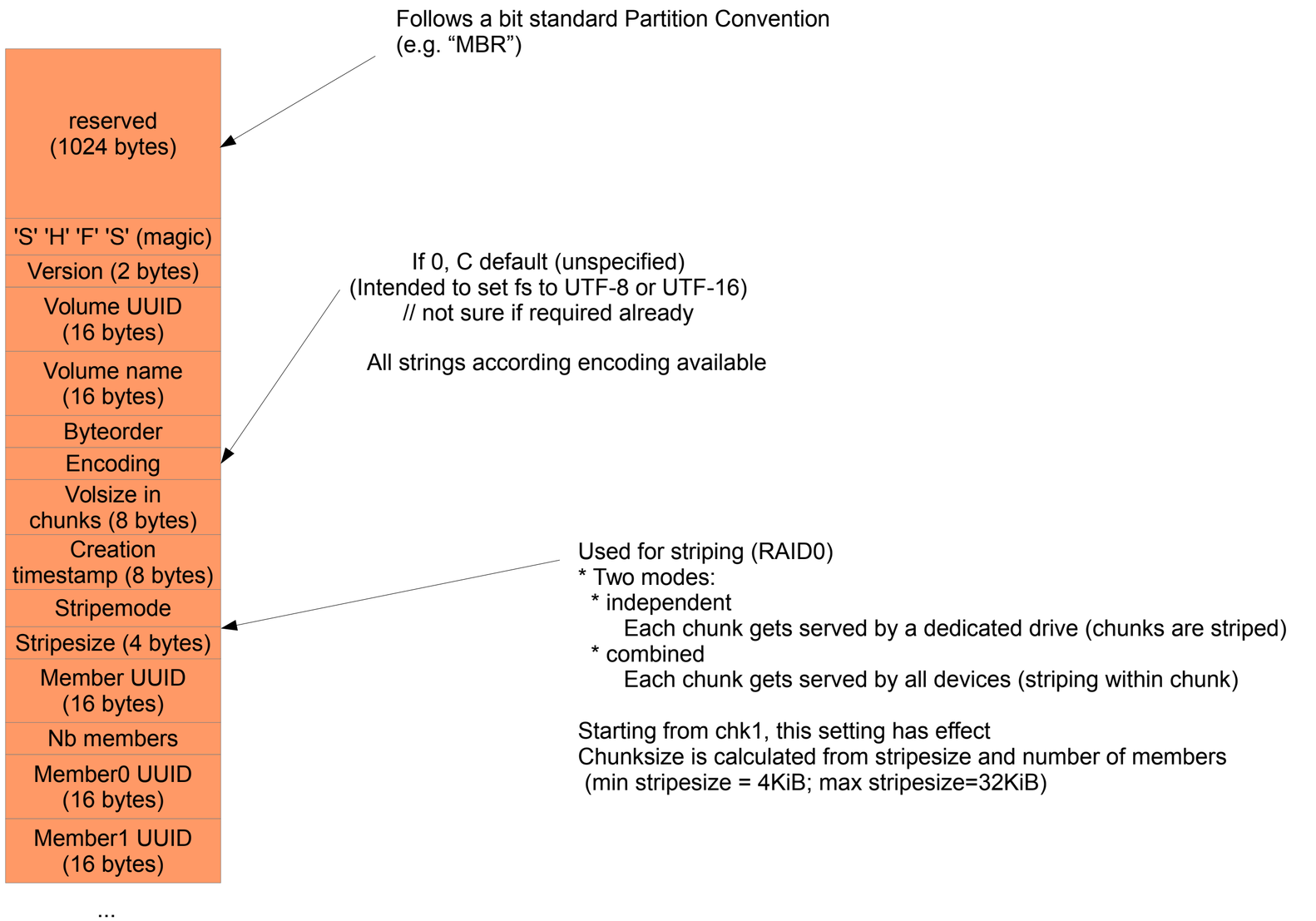
Chunk 0: Also considered as “invalid” SHFS address
Only used for volume detection
Chunk 1: Stores volume configuration (e.g., size and location of metadata area (hash table))

Chunk 2...n: Volume data area

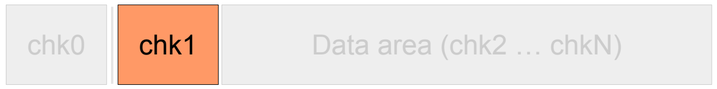
Minimum chunksize/stripesize is 4KB

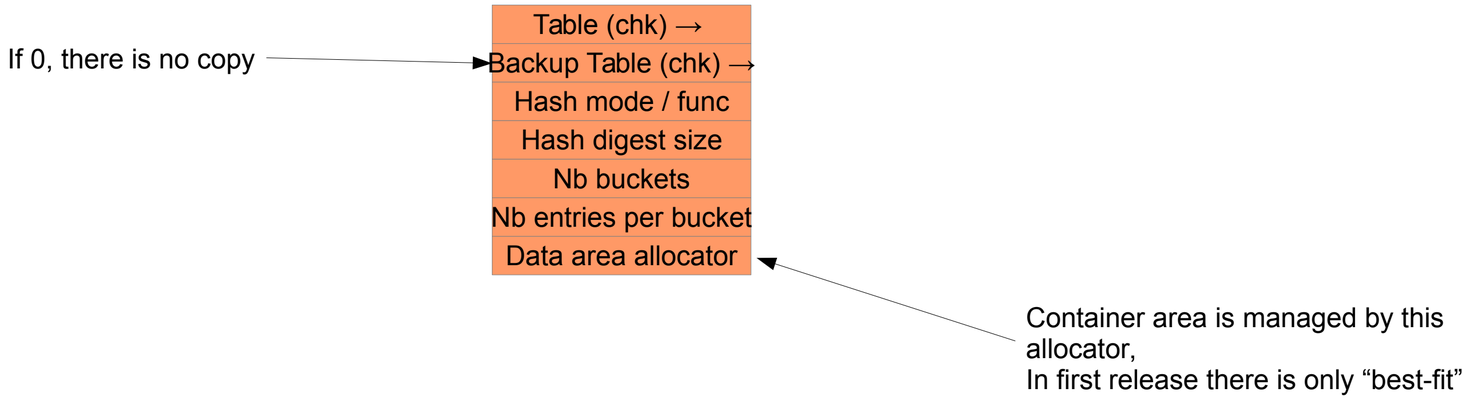
SHFS (Simple Hash FS)



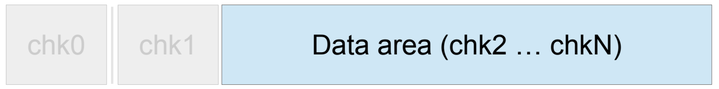


SHFS (Simple Hash FS)



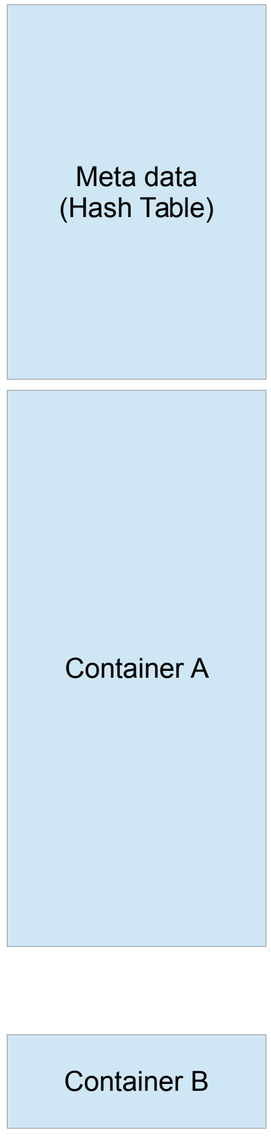


SHFS (Simple Hash FS)

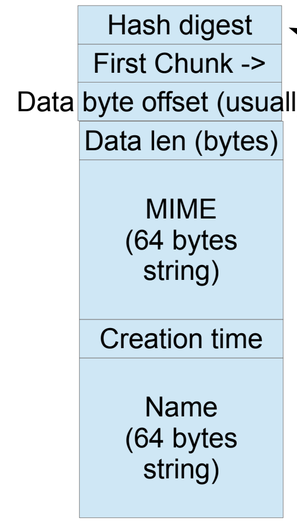


- Access of files (containers) via hash digest or name (if support is enabled, but linear search, but can simulate standard filenames)
- Containers have just keep file contents (no meta data)

HashFS table is permanently kept and handled in memory (read during load, write on unload)
→ Since table is fixed size and entries are preallocated, Volume has just a “dump” of hash table (linear read-in during hash table linkage on mount)



Entry (meta data) within Hash table:



If 0, entry is empty (unused)

If invalid, handled as empty but big WARNING (e.g. last < first, out of disk range or first < first possible chunk; important for read in)

Store content:

1. Create container of target size
   - Contigious memory is searched according to allocator
2. Calculate hash digest
3. Add entry to HashFS Table
   - Add entry to bucket
4. Write data into container

Delete content:

1. Delete hash table entry