

# LDM Introduction

Logical Disk Manager (LDM) – complex partitioning format in Windows

allows to create

- Stripe set (RAID0)
- Mirror (RAID1)
- Stripe set with parity (RAID5)
- Span (JBOD)

LDM metadata

- Occupies hundreds of kilobytes
- Can be spread over several megabytes

# LDM metadata

## **PRIVHEAD (short for Private Header)**

occupies one sector and contains:

- signature
- physical disk GUID
- logical disk start

helps

- identify disks
- translate addresses in LDM metadata

## **Metadata base**

occupies several MB and consists of

- several blocks of different types

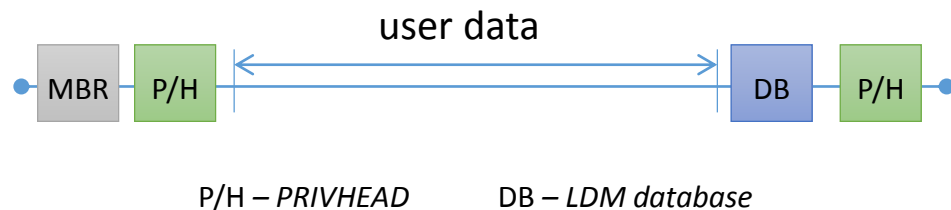
helps

- bind LDM objects

# LDM metadata layout

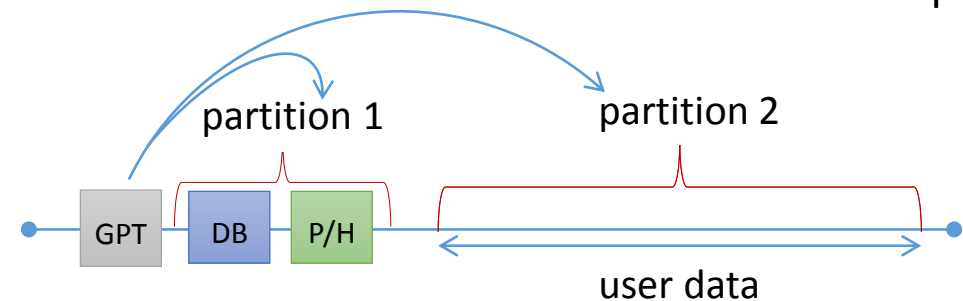
## on MBR disk

- Dynamic disk protective partition (0x42) in MBR
- PRIVHEAD in 6<sup>th</sup> sector
- Two more PRIVHEAD copies in the end of the disk
- LDM database in the end of the disk



## on GPT disk

- 2 partitions:
  1. for LDM metadata
  2. for user data
- partition with LDM metadata
  - located in the beginning of the disk (in first 8 MB)
  - contains LDM database and 2 PRIVHEAD copies



# LDM database elements

- Disk → describes a physical disk
- Partition → describes a region on a physical disk region on a disk
- Component → combines partitions into a striped array or JBOD RAID0, RAID5, span
- Volume → combines components into a RAID1 RAID1

# LDM recovery key points

- **No in-place repair**, copy data instead
- Bind LDM components manually
- Identify disks by PRIVHEADs
- Use filesystem boot sectors if PRIVHEADs are damaged
- VBLK blocks are the most useful