



# Zone Size Considerations

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# Zone Size

## *Background*

The concept of a “Zone” was initially a logical construct to support SMR drives

- Provides the host a mechanism to interact with HDDs with SMR (Shingled-magnetic Recording) – Host-managed SMR, Host-aware SMR
- Initial de facto zone size chosen was 256MiB for all zones (CMR, SMR, SOBR, etc.)
  - Reasonable storage chunk for customers
  - Met supplier constraints/desires
  - Industry agreement – not required by spec (ZAC, ZBC)
  - Single zone-size simplified deployment of new technologies

### Zone Definition evolution

- SMR construct → Zone → A set of LBAs with a common set of access “rules” → Zone-Block Constructs  
*Zones are a logical construct (i.e., Device and HW architecture agnostic)*

We are now defining 3rd Generation of zoning

# Zone Size Considerations

*Problem: Architectures continue to evolve*

Recommendation: The industry currently has a single zone size (256MiB); should we consider an additional zone size?

- A single zone size has enabled a robust ecosystem
- Storage devices are increasing in capacity, becoming more complex, and tend to optimize to larger zone sizes
- Concept of zones transcends interfaces and back-end architectures
- Host implementations prefer a common framework

Things to think about

- Current & Future Architectures (e.g., multi-actuator, HDDs on NVMe)
- Interfaces, stack convergence, zone definitions
- Host utilization scenarios that use zone-block devices (SSDs, HDDs).

# Zone Size

## Interfaces, stack convergence, zone definitions

- Multiple device architectures being deployed across multiple interfaces
- Customers prefer common stacks for deploying storage
- Zone definitions, accordingly, should be consistent across architectures (interfaces, devices, etc.)

*Next Steps: Recommend an subcommittee to continue discussions on Zone size & (possibly) definitions)*