



# Pick the Right Flash Storage Beyond the Feature Checklists

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# What is Flash all About?

- Performance is obvious
- It's really about opportunity
  - New array architectures
  - New capabilities
  - New ways of deploying applications
- You have to be open to rethinking your dogma

# Evaluating All-Flash Arrays

- 400HP
- 0-60 in 4.2 seconds
- 0.9 lateral Gs
- 60-0 in 110 feet
- \$100,000

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# Evaluating All-Flash Arrays



Bolt-on performance



Integrated, well-engineered,  
revolutionary product

# The fallacy of checklists

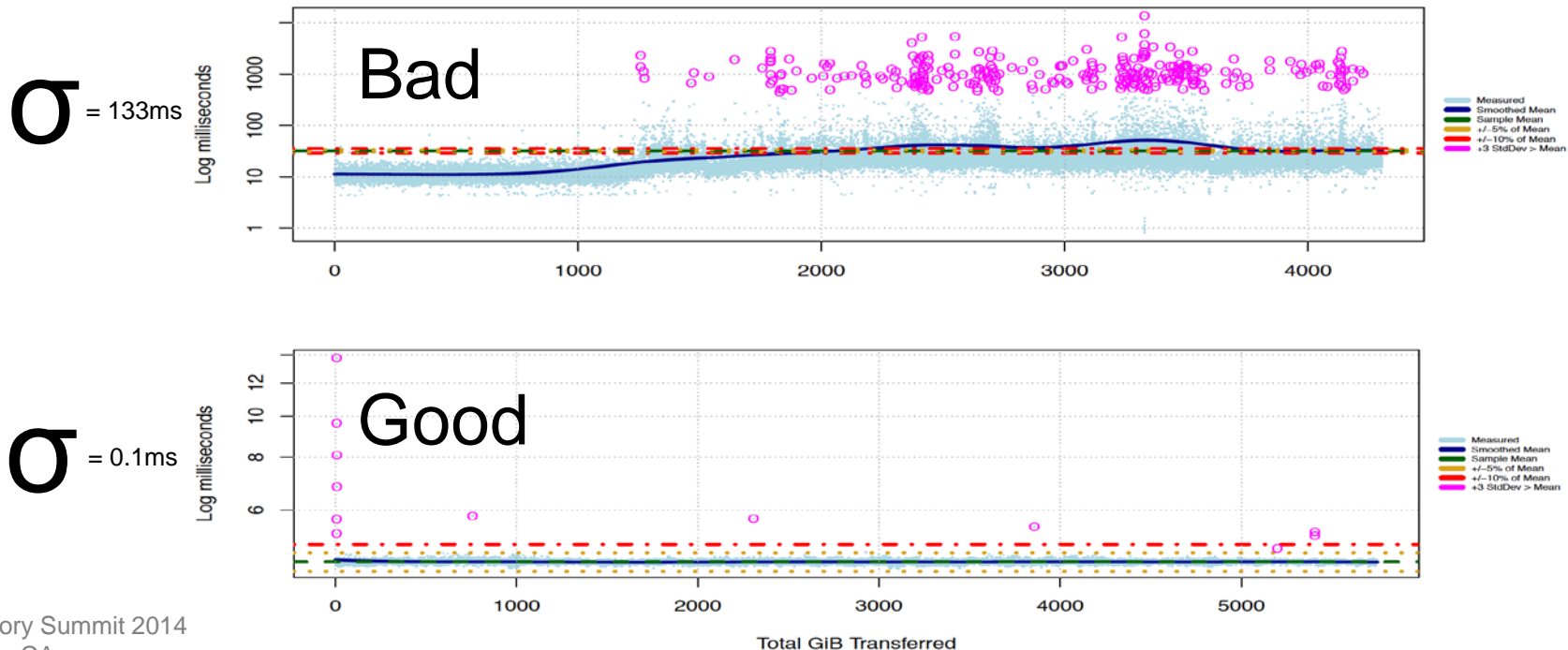
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- <1ms latency
- Data Reduction
- Snapshots
- Scalable

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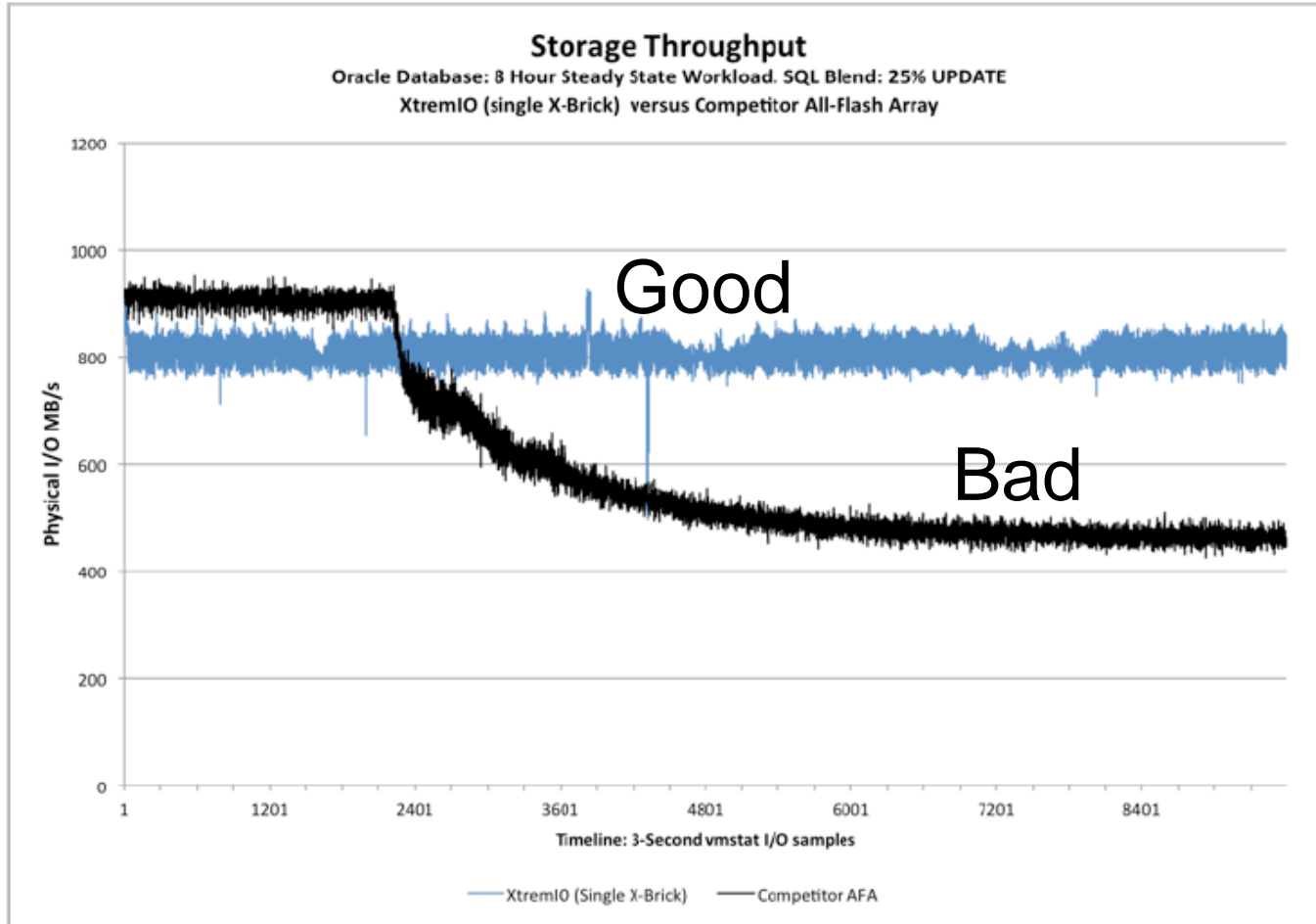


# Evaluating Flash Array Performance

- Pre-condition & pre-fill
- Use mixed workloads
- Soak test
- Engage data services



# Evaluating Flash Array Performance

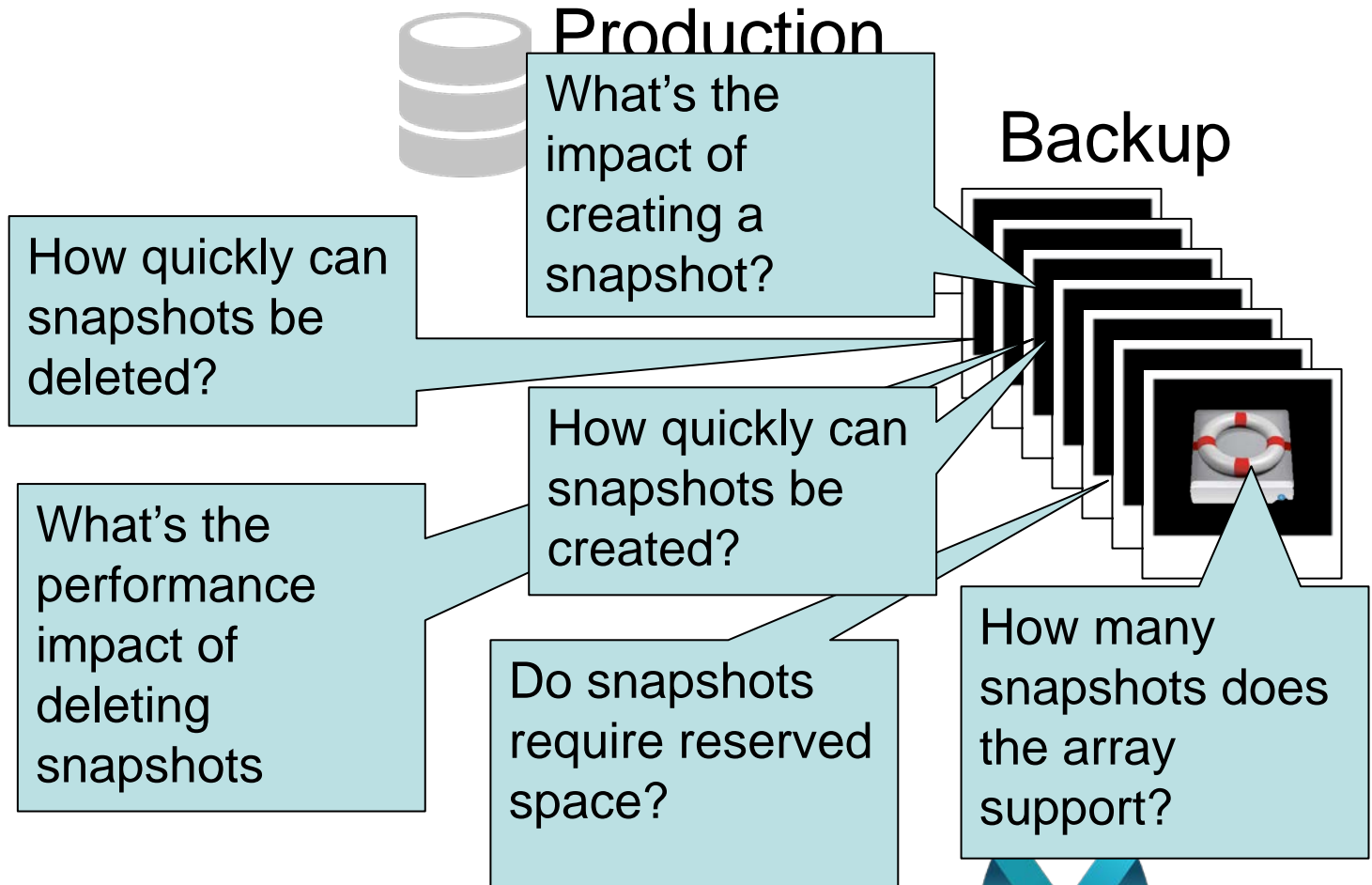


## Key questions about data reduction

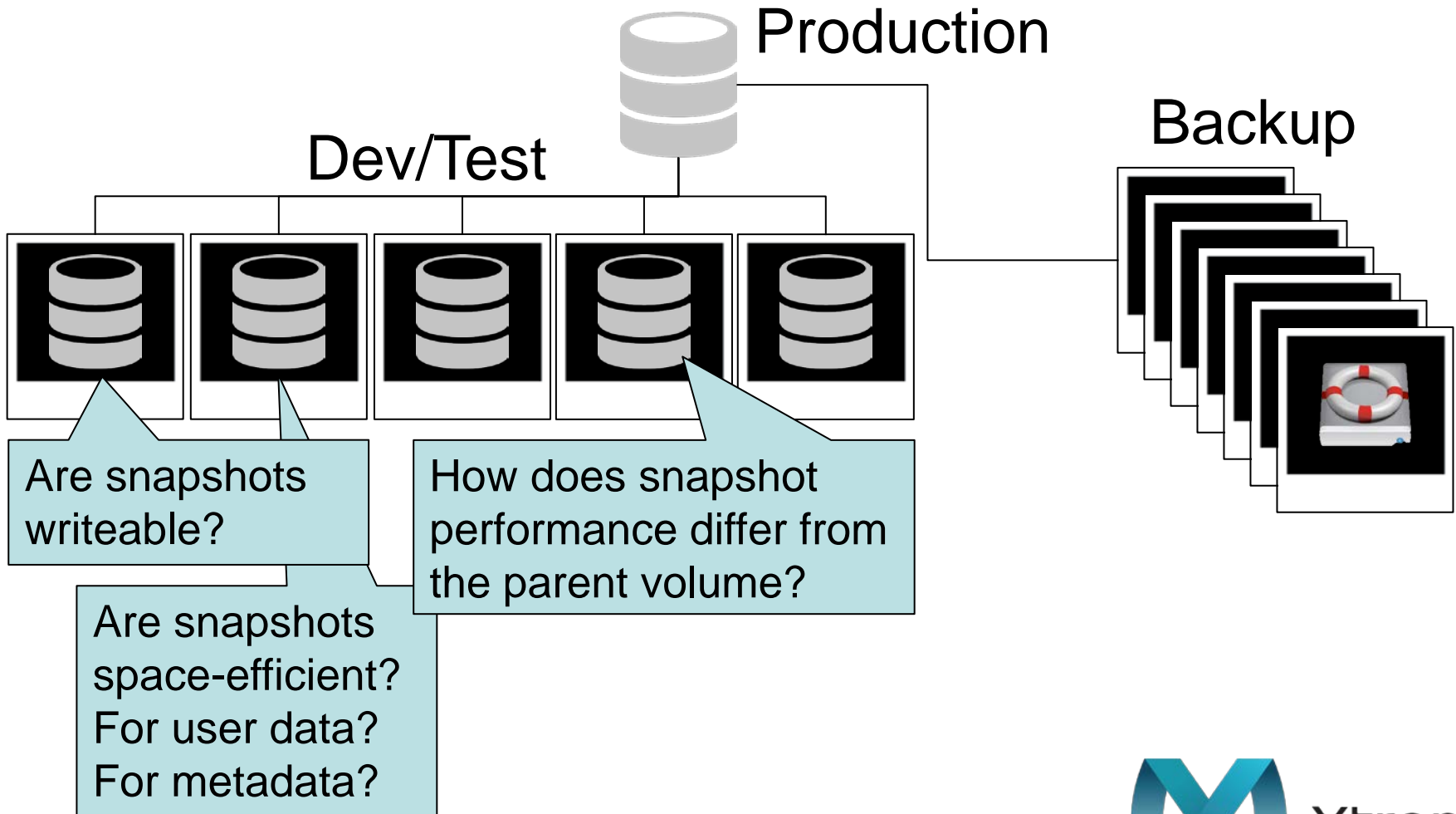
- Does a duplicate ever touch the flash?
- Are extra I/Os incurred to determine matches?
- Does data ever get rewritten or moved?
- Is it always on?
- Is it always full speed?
- Is it global across volumes?
- Does it match all history of data on the array?
- Are there reference count limits?
- Is it balanced across all array controller CPUs?



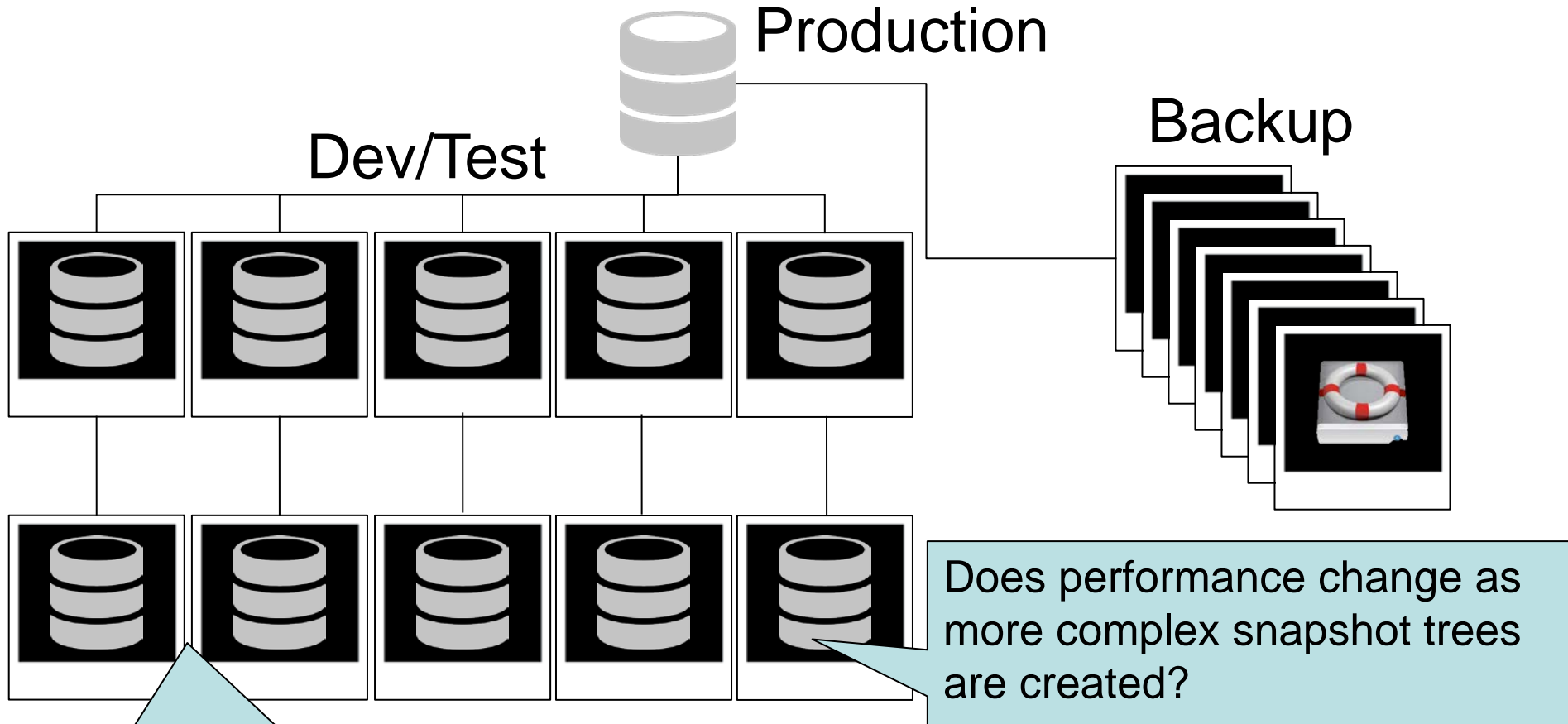
# Key questions about snapshots



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Are advanced topologies (e.g. snapshots of snapshots) supported?

## Key questions about scalability

- How many controllers are there?
- Are all controllers active processing I/O and data services all the time and in balance?
- How is internode communication handled?
- Do both capacity and performance scale?
- Are LUNs pinned to specific controllers?

# Are they the same?

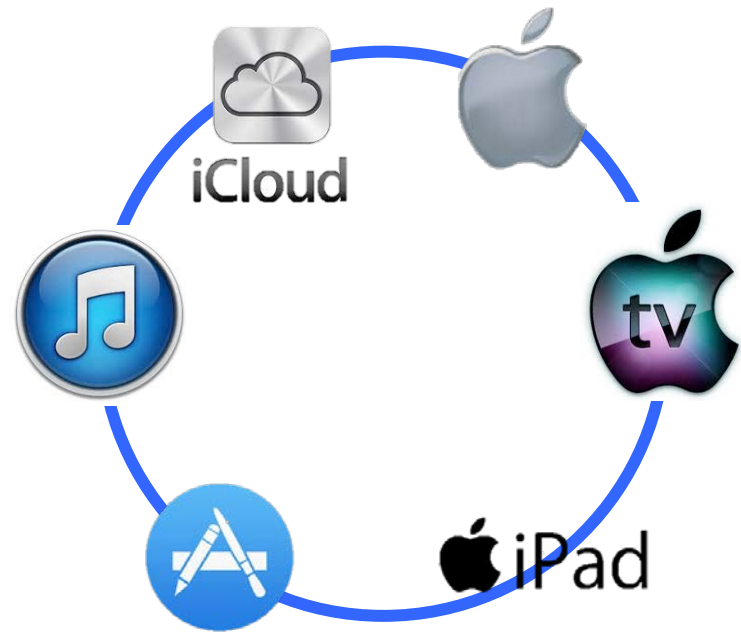


Smartphone



iPhone

## Ecosystem Matters



- Flash array designs vary widely
- Things that sounds the same aren't
- If you're only thinking of flash arrays for performance you're missing much of their value
- Educate yourself and make informed decisions
- Don't be fooled by hype or hero numbers
- Look for true innovation
- Test, test, test

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