NetApp Knowledge Base

How do Unaligned Writes affect a volume on Element software?

https://kb-stage.netapp.com/on-prem/solidfire/Element_OS_Kbs/How_do_Unaligned_Writes_affect_a_…
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Applies to

NetApp Element software

Answer

- **Why do we see unaligned writes to volumes without data?**
  - These volumes are being written to and are not empty. We can see non-zero blocks and constant 1-2kb/s writes on each volume. Any write can be unaligned so we will see unaligned writes to any volume that has been written to.

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- **What causes unaligned writes?**
  - The unaligned write counter increments when either a 512-byte read or a write does not end on the 4k block size boundary. False positives can also be logged when blocks smaller than 4k are sent.
  - In the event the volume is showing a small number (typically less than 5% of the block written) of increments, then this is likely due to false positives.

- **What actions need to be taken to stop the unaligned writes?**
  - No actions need to be taken to stop the unaligned writes. There will always be unaligned writes when writing to SolidFire. There are 3rd party tools available that will re-align writes but these come with their own risks and are not supported by NetApp.

- **What will be the impact of such unaligned writes?**
  - In Element Software 9.3 we significantly improved performance for unaligned writes. Since this release, we have no evidence of noticeable performance issues caused by unaligned writes.

- **Will it cause any performance degradation?**
  - Unaligned writes are not as ideal as aligned writes and may require additional I/O but the impact to performance on SolidFire is negligible on Element Software 9.3+. If performance issues are encountered, contact NetApp Support to take a closer look. Most performance issues involve QoS, hardware, network, or host configuration and unaligned writes have not been a common cause for performance escalations.

Additional Information

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