

Zebra RAM Extend (formerly known as “RAM on Disk”)

1. What is Zebra RAM Extend?

“RAM Extend” is a Zebra enterprise feature that extends memory by using a portion of device’s flash storage. It lets a device administrator designate a portion of the device's flash storage as an extended area for RAM, boosting RAM available to apps. RAM Extend offloads memory pages that are not actively needed, freeing physical RAM for active foreground applications.

Administrators can enable/disable the feature and can choose the extended RAM size using Zebra StageNow and Power Manager or through an EMM with OEMConfig Powered by MX.

2. Benefits

Zebra RAM Extend is valuable in high-demand memory scenarios where applications are “thrashing,” rapidly swapping in and out of active memory due to the workflow of rapidly sequencing applications. Normally under these conditions, the system slows down because it is forced to constantly kill background applications and then reload them from scratch, causing user-facing performance delays. RAM Extend directly alleviates this by keeping those applications alive by storing their pages in flash memory, freeing RAM for more applications. Additionally, it acts as a vital safeguard for future needs if RAM requirements increase due to new OS updates or expanding demands -- available when the customer needs it.

3. Other Considerations

- Storage capacity reduction: The configured RAM Extend size (1–12GB) reduces storage space available for apps, data, and media.
- Slight delay when resuming background apps: Because inactive applications are saved to internal flash storage rather than physical RAM, you may notice a brief delay when switching back to an idle app. This is most noticeable when rapidly switching between several heavy applications under peak loads.
- Enabling, disabling, or resizing RAM Extend triggers an automatic device reboot (~10 seconds after the configuration is applied) to repartition the flash storage. Zebra does not recommend applying these changes during active shifts.
- Flash wear considerations: Utilizing flash storage as extended memory generates additional write cycles over time. This impact is workload-dependent and driven primarily by how frequently device users switch between apps and the resulting load exerted on the device. Contact your Zebra representative if further guidance is needed.