The New PowerEdge T350

Built for Remote Environments with a 37% Smaller Chassis than T340

Tech Note by

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Summary

The Dell EMC PowerEdge T350 offers customers peak performance and enterprise features within a significantly smaller form factor – 37% smaller to be exact.

The sleek new chassis was intentionally designed for the powerful T350 tower by shrinking the unused space inside - right-sizing the box so it can reside in smaller spaces that SMB, Edge and ROBO customers intend to deploy it at.

This DfD was written to brief readers of the advantages brought to the PowerEdge T350, including improved performance, new features, and its smaller form factor.

Right-Sized for Deployment Anywhere

The new Dell EMC PowerEdge T350 chassis is **37%** smaller than its predecessor, the T340. This decision was pioneered by feedback from customer feedback and sales data, which consistently pointed to one clear consensus – *customers valued a smaller sized box.*

This value proposition pushed our development team to forego the option of leveraging the T550 chassis design (to reduce cost) and to focus on developing a right-sized T350 chassis to best accommodate customers outside of the datacenter. By shrinking unoccupied space within the server, the dimensions reduced from 17.45" x 8.6" x 23.19" (T340) to 14.6" x 6.9" x 22" (T350) – a *significant* decrease in volume. What's even more impressive is that no features or hardware support were removed to enable this change!

Figure 1 – Visual aid comparing the size of the T350 (left) and the T340 (right)

Right-sizing the mainstream T350 will be most advantageous to SMB customers deploying in remote offices, as this new, smaller solution is able to deliver higher performance technologies while in a quieter and more management-friendly enclosure. As explained in the next few paragraphs, many new features implemented onto the T350 will bring new levels of performance to SMB workloads like *collaboration, file sharing, database, mail/messaging and web hosting.*

Latest Hardware, New Features

Despite being 37% smaller, the PowerEdge T350 is packed with the latest hardware and new features to bring higher levels of performance, versatility, and optimization to your organization:

- The latest **Intel® Xeon® E-2300 Processors** offer a 19% increase of IPC (instructions per cycle) while also increasing IGP cores, L1 cache speed and L2 cache speed, allowing for up to **28% faster IO speeds** when compared to the Xeon® E-2200 processor family.
- Supported UDIMM speeds have increased by 20% to **3200 MT/s** and the max capacity per UDIMM has doubled from 16GB to **32GB**. Having more memory at faster speeds will significantly reduce data transfer times, resulting in increased productivity.
- Up to 8x 2.5" or 3.5" SATA/SAS drives can be hosted on the backplane. Additionally, up to **2x M.2 drives are now hot-swappable** with Dell Technologies BOSS-S2 card, allowing the server to keep running when a critical component swap is needed.
- Support for twenty lanes of **PCIe Gen4** will double I/O throughput from 8GT/s to **16GT/s**, effectively cutting transfer times in half for data traveling from storage to CPU.

In addition to the latest hardware and new feature support, customers will always get the high-quality enterprise features that the PowerEdge brand is known for, including:

- **iDRAC9** which provides administrators with an abundance of server operation information to a dashboard screen that can be remotely accessed and managed.
- **UEFI Secure Boot** which has better programmability, scalability, security, booting speeds, feature support and user-friendliness than legacy BIOS.
- **Redundant** fans, PSUs, and hard drives
- Storage controllers that support **HW RAID** for SATA, SAS and NVMe interfaces

Performance Improvements

Dell Technologies ran internal testing comparing the T350 and T340 SPECrate® 2017_int_base results, which measures the ability to process identical programs on each of its available threads in parallel (or throughput, in layman's terms). Both configurations were identical with the processor being the independent variable. The PowerEdge T350 used the latest Intel® Xeon® E-2300 processors while the older PowerEdge T340 used Intel® Xeon® E-2200 processors. As seen in Figure 2 below, each processor SKU from top bin to bottom bin observed a performance increase ranging from 14.8% to 32.3%. More information on these studies can be read here.

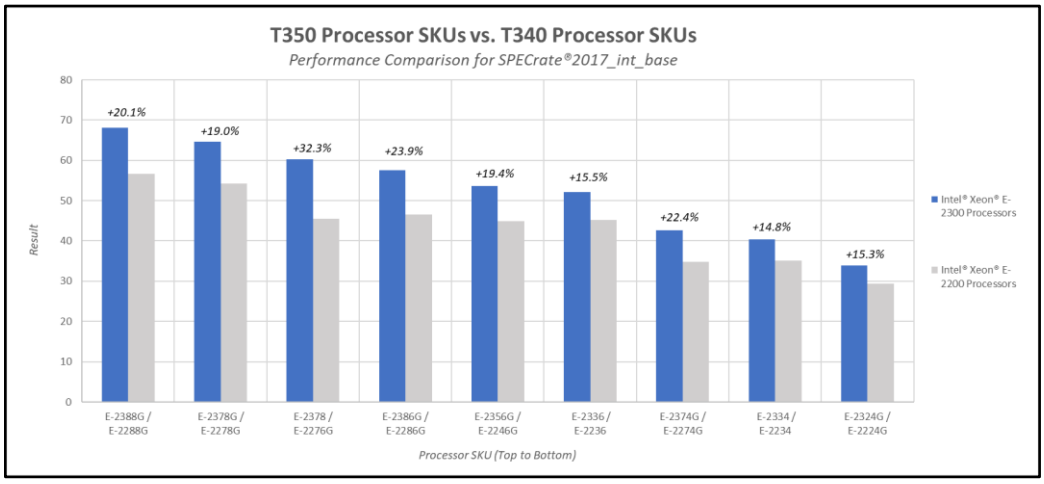

Figure 2 –SPECrate® 2017_int_base results for T350 CPUs (blue) vs. T340 CPUs (gray)

Dell Technologies also commissioned Grid Dynamics to carry out performance testing in retail and VDI environments to simulate tangible customer use-cases. Figure 3 below illustrates that, on average, the PowerEdge T350 performs I/O operations **36.1% faster** than the T340 for the same amount of video streams. Figure 4 below illustrates that, on average, the PowerEdge T350 speed of transaction commits for the same size database is **37% higher** than the T340. The scientific report can be read here and the executive summary can be read here.

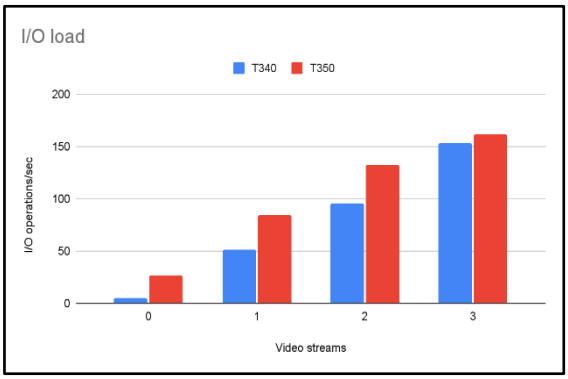

Figure 3 – I/O operations comparison for processing the same amount of video streams to simulate a retail environment

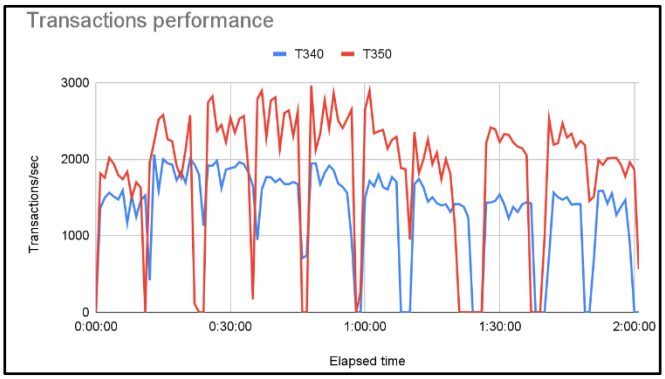

Figure 4 – Comparison of transactions committing speed

Conclusion

The Dell EMC PowerEdge T350 offers customers peak performance and new enterprise features within a right-sized form factor, so it can reside in smaller spaces to drive business growth where SMB, Edge and ROBO customers intend to deploy it at.

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