Differences distinguish integration, convergence and hyper-convergence in data center IT systems.

TECHNOLOGY	WHAT IS IT?	BENEFIT TO DATA CENTERS	LIMITATIONS TO THIS APPROACH	EXAMPLES
Integration	▪ Integration is making disparate things work together, including servers, network gear, storage systems and other devices purchased from a variety of vendors.	▪ Solves the traditional enterprise computing dilemma where IT architects and administrators assemble, connect, configure and optimize IT equipment and software.	▪ Equipment and software do not natively work together, so the integration process can be costly or time-consuming—or both. ▪ Each new addition to the data center requires additional work.	▪ Integration is performed by consultants, value-added resellers and IT integrators.
Converged infrastructure	▪ A vendor pre-assembles and integrates essential compute, storage and network gear into a single product offering with a common physical enclosure.	▪ Accelerates and simplifies data center deployment with fewer errors. ▪ Can boost performance and resource utilization. A common management interface and no trial-and-error tuning. ▪ Single-vendor service and support.	▪ While the vendor handles integration, users still pay for proprietary hardware and management software. ▪ Vendors may update CI boxes' feature sets at a slower rate than their other products.	▪ Dell Active System. ▪ Hitachi Unified Compute Platform. ▪ HP ConvergedSystem. ▪ IBM Flex System. ▪ NetApp FlexPod. ▪ Oracle Virtual Compute Appliance.
Hyper-converged infrastructure	▪ A converged infrastructure with a software-based and driven architecture that vendors run with white box servers and other generic hardware.	▪ Users experience seamless management and expansion of various compute, storage and network devices. ▪ Numerous services integrated such as backup, data deduplication, WAN acceleration, and SSD storage and cache.	▪ Capacity is expanded simply by adding more boxes, but data centers lose the choice of different vendors' management software or hardware that best suits an application.	▪ VMware EVO:RAIL. ▪ SimpliVity OmniCube and OmniStack. ▪ Nutanix NX with Acropolis and Prism. ▪ Maxta MxSP and MaxDeploy. ▪ Scale Computing HC3 and HC appliance.

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