

The Racks They Are A' Changing

Written by Bob Snyder
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How much do we take for granted the humble rack, that server “furniture” that allows us to add in all our AV kit to the network.

And these racks are changing!

Increasing server depths, more cabling within cabinets, the need for airflow management, and the desire to maximize floor space within data centers are driving larger racks and enclosures.

Heights of enclosures are rapidly growing, with shipments of 48U racks forecast to grow an average of 15% annually over the next five years, compared to a projected average growth rate of 5% for the standard size of 42U, according to a new study from

IMS Research

, now part of IHS.

The movement to taller enclosures is driven by customer desire to maximize floor space to limit the need for data center build outs. Currently, 42U (1U = 1.75”) height cabinets account for nearly two-thirds of all enclosure shipments globally, but this share will decline as shipments of taller racks increase.

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Liz Cruz, analyst with IMS Research, suggests “The growth may be limited to 45U and 48U racks, given the logistical limitations associated with racks of 51/52U or higher. Transporting and moving in racks of this size is made difficult by truck height restrictions and doorway openings to most data centers. 48U cabinets may prove to be the practical limit to enclosure sizes for this generation.”

In terms of width, the current standard is 600mm. Going forward though, shipments of 750-800mm wide cabinets will grow at nearly twice the rate of 600mm cabinets. In terms of depth, the 1100mm category currently accounts for the greatest share, but 1200mm will grow faster than any other depth in percentage terms.

Two of the factors driving width and depth, greater numbers of cables within the enclosure and more heat being generated, are both caused by greater computing densities at the rack level. With the advent of ultra-thin blade servers, a tremendous amount of computing power can be packed into a rack enclosure, requiring more space to manage cables and airflow.

Cruz concludes, “Growth in power densities are not expected to level out any time in the near future, which means neither will enclosure sizes.”

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