Executive Summary

Huawei CloudEngine S12700E series switches are flagship core switches in Huawei’s campus network solution. By building an intelligent campus core, these feature-rich switches help users head towards a service experience-centric smart and intelligent campus network.

Tolly engineers verified that the Huawei CloudEngine S12700E-12 switch chassis provided up to 57.6Tbps switching capacity and 4.8Tbps per slot bandwidth using 288*100GbE ports. The CloudEngine S12700E-12’s switching capacity is six times the switching capacity of Cisco’s latest flagship Catalyst 9600 series switches.

Switching Capacity of the Chassis Switch
(as reported by Spirent TestCenter 4.93)

Notes: 1. Huawei CloudEngine S12700E-12’s result has been verified by Tolly.
3. As defined by the industry, the switching capacity = 2*throughput. For example, Huawei CloudEngine S12700E-12’s fabric supported 100% bidirectional line-rate forwarding with 288x 100GbE ports. Thus, the CloudEngine S12700E-12’s switching capacity = 2*288*100Gbps = 57600Gbps = 57.6Tbps.

Source: Tolly, June 2019
Test Information

The Huawei CloudEngine S12700E-12's switching capacity and per slot bandwidth were verified by Tolly engineers. The test used one CloudEngine S12700E-12 chassis, twelve 24x 100GbE ports line cards, two Main Processing Units (MPUs) and four Switch Fabric Units (SFUs). See Figure 2 for details.

The test used the RFC2544 wizard in the Spirent TestCenter with a snake topology across all 288x 100GbE ports on the Huawei CloudEngine S12700E-12 switch. All traffic was forwarded by the switch fabric.

Engineers ran three iterations of the test with one minute per iteration. There was no frame loss in any of the iterations. The test used 100% line-rate Layer 2 traffic with 512-byte frame size.

As defined by the industry, when each slot of the switch supported one 24x 100GbE ports line card with 100% line-rate forwarding by the switch fabric, the bandwidth per slot = 4.8Tbps. Please see Figure 1's note 3 for the definition of switching capacity. Cisco's data sheet used the same definitions.
About Tolly

The Tolly Group companies have been delivering world-class ICT services for 30 years. Tolly is a leading global provider of third-party validation services for vendors of ICT products, components and services.

You can reach the company by E-mail at sales@tolly.com, or by telephone at +1 561.391.5610.

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Test Equipment Summary

Equipment belongs to Huawei

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<thead>
<tr>
<th>Vendor</th>
<th>Product</th>
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<tr>
<td>Huawei</td>
<td>CloudEngine S12700E-12 Switch Chassis VRP software, Version 5.170 (S12700E V200R019C00)</td>
<td><a href="https://e.huawei.com">https://e.huawei.com</a></td>
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<tr>
<td>Spirent</td>
<td>TestCenter</td>
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