

Huawei CloudEngine S12700E Series Switch

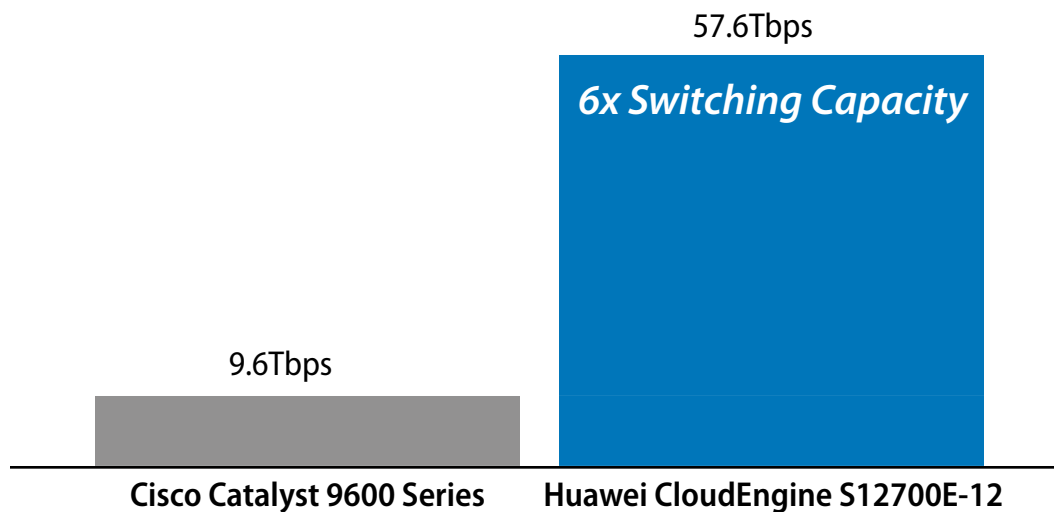
Performance Evaluation

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.

2. Cisco Catalyst 9600 series switches' currently usable switching capacity is specified in the product data sheet for the only available model Cisco Catalyst 9606R chassis with the only available supervisor Cisco Catalyst 9600 Series Supervisor Engine 1 (<https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-9600-series-switches/nb-06-cat9600-series-data-sheet-cte-en.html>).

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

Figure 1



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.

Huawei Technologies, Co., Ltd



CloudEngine S12700E Series Core Switch

Performance Evaluation

Tested June 2019

Huawei CloudEngine S12700E-12 Switch

- The CloudEngine S12700E-12 switch under test used:
- Twelve LST7C24HX6S0 24x 100GbE Ports Line Cards
- Two LST7MPUE0000 Main Processing Units (MPU)
- Four LST7SFUMX100 Switch Fabric Units (SFU)



Source: Tolly, June 2019

Figure 2





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.

Visit Tolly on the Internet at: <http://www.tolly.com>

Test Equipment Summary Equipment belongs to Huawei

Vendor	Product	Web
Huawei	CloudEngine S12700E-12 Switch Chassis VRP software, Version 5.170 (S12700E V200R019C00)	 HUAWEI https://e.huawei.com
Spirent	TestCenter	 https://www.spirent.com

Terms of Usage

This document is provided, free-of-charge, to help you understand whether a given product, technology or service merits additional investigation for your particular needs. Any decision to purchase a product must be based on your own assessment of suitability based on your needs. The document should never be used as a substitute for advice from a qualified IT or business professional. This evaluation was focused on illustrating specific features and/or performance of the product(s) and was conducted under controlled, laboratory conditions. Certain tests may have been tailored to reflect performance under ideal conditions; performance may vary under real-world conditions. Users should run tests based on their own real-world scenarios to validate performance for their own networks.

Reasonable efforts were made to ensure the accuracy of the data contained herein but errors and/or oversights can occur. The test/audit documented herein may also rely on various test tools the accuracy of which is beyond our control. Furthermore, the document relies on certain representations by the sponsor that are beyond our control to verify. Among these is that the software/hardware tested is production or production track and is, or will be, available in equivalent or better form to commercial customers. Accordingly, this document is provided "as is", and Tolly Enterprises, LLC (Tolly) gives no warranty, representation or undertaking, whether express or implied, and accepts no legal responsibility, whether direct or indirect, for the accuracy, completeness, usefulness or suitability of any information contained herein. By reviewing this document, you agree that your use of any information contained herein is at your own risk, and you accept all risks and responsibility for losses, damages, costs and other consequences resulting directly or indirectly from any information or material available on it. Tolly is not responsible for, and you agree to hold Tolly and its related affiliates harmless from any loss, harm, injury or damage resulting from or arising out of your use of or reliance on any of the information provided herein.

Tolly makes no claim as to whether any product or company described herein is suitable for investment. You should obtain your own independent professional advice, whether legal, accounting or otherwise, before proceeding with any investment or project related to any information, products or companies described herein. When foreign translations exist, the English document is considered authoritative. To assure accuracy, only use documents downloaded directly from Tolly.com. No part of any document may be reproduced, in whole or in part, without the specific written permission of Tolly. All trademarks used in the document are owned by their respective owners. You agree not to use any trademark in or as the whole or part of your own trademarks in connection with any activities, products or services which are not ours, or in a manner which may be confusing, misleading or deceptive or in a manner that disparages us or our information, projects or developments.