

Software Framework for Time Sensitive Networking (TSN)

Overview

Capgemini Engineering’s software framework for Time Sensitive Networking (TSN) addresses the need of OEMs and NEPs who want include TSN standard capabilities in their networking element products rapidly. The software allows users to focus on advanced switch features and overall network solutioning, by removing the barriers in assembling standard TSN software requirements.

The truly hardware agnostic and platform agnostic architecture, proven over years in the market, provides a reliable and stable framework to build Ethernet switching platforms for use in time sensitive and mission critical networks such as those for aerospace, automotive, industrial, naval, military, space and other such applications.

The software works on most off-the-shelf CPUs including ARM, MIPS, PowerPC and x86 architecture. The software has a comprehensive set of features including the following.

Function	Standard
Frame pre-emption	802.1Qbu
Interspersing express traffic	802.3br
Time aware scheduling	802.1Qbv
Stream reservation	802.1Qat
Stream reservation extensions	802.1Qcc
Per-stream filtering and policing	802.Qci
Cyclic queuing and forwarding	802.Qch
Asynchronous traffic shaping	802.1Qcr
Link local registration	802.1CS
Timing and synchronization profiles	802.1AS rev
Path control and reservation	802.1QCa
Forwarding and queuing for time sensitive streams	802.1 Qav
Frame replication and elimination	802.1Qcb
Resource allocation	802.1Qdd
Link local registration	802.1CS

The software is available by itself, or as a part of Capgemini Engineering’s ISS (Intelligent Switch Solution), software framework for routers, switches and other similar network elements. (<https://prod.ucwe.capgemini.com/se-en/wp-content/uploads/sites/20/2023/11/CapGeminiIssFeatureSheet.docx>)

Licensing: Capgemini Engineering’s flexible business models offer a range of licensing options to suit different needs of clients to integrate and deploy the software in their networking products.

Benefits: The software framework reduces the time to market for NEPs and OEMs who wish to incorporate various TSN functionality into their Ethernet switching devices.

