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Ensemble and HealthShare HL7v2 Message Throughput

Executive Summary

InterSystems HealthShare/Æ and InterSystems Ensemble/Æ both provide a rapid integration and development platform with built-in capabilities for the high-speed processing of HL7 messages. For the purposes of HL7 v2 message routing the two products are equivalent in performance. For brevity, this document will just say Ensemble in many places but it should be taken to apply equally to both products.

We have recently completed a performance and scalability benchmark of Ensemble version 2015.1, focusing on HL7 version 2 messaging. This document describes the observed characteristics, and also provides general configuration and sizing guidelines for systems where Ensemble is used as an interface engine for HL7 v2 messaging.

The benchmark simulates workloads that have been designed to closely match live environments. The details of the simulation are described in the Workload Description and Methodology section. The tested workloads comprised HL7 v2 Patient Administration (ADT) and Observation Result (ORU) payloads and included transformations and re-routing.

Ensemble was demonstrated to sustain a throughput of over 200 million (total inbound plus outbound) messages per 10-hour day on the tested 28-core system with adequate headroom for further scaling. Throughout these tests, Ensemble was configured to preserve first-in/first-out order, and to fully persist messages and queues for each inbound and outbound message. By persisting the queues and messages, Ensemble provides data protection in the event of a system crash, and full search and resend capabilities for historic messages.

Further, configuration guidelines are discussed in the sections below, which will assist you in choosing an appropriate configuration and deployment to adequately meet your workload's performance and scalability requirements.

The results demonstrate that Ensemble is capable of satisfying extreme messaging needs on commodity hardware, potentially allowing a single small server to provide HL7 messaging support for an entire organization.

[#Ensemble](#) [#HL7](#) [#HealthShare](#)

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