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The European Space Agency: Charting the Galaxy with the Gaia Satellite and InterSystems Caché

Abstract

The European Space Agency (ESA) has chosen InterSystems Caché as the database technology for the AGIS astrometric solution that will be used to analyze the celestial data captured by the Gaia satellite.

The Gaia mission is to create an accurate phase-map of about a billion celestial objects. During the mission, the AGIS solution will iteratively refine the accuracy of Gaia's spatial observations, ultimately achieving accuracies that are on the order of 20 microarcseconds.

In preparation of the extreme data requirements for this project, InterSystems recently engaged in a proof-of-concept project which required 5 billion discrete Java objects of about 600 bytes each to be inserted in the Caché database within a span of 24 hours. Running on one 8-core Intel 64-bit processor with Red Hat Enterprise Linux 5.5, Caché successfully ingested all the data in 12 hours and 18 minutes, at an average insertion rate of 112,000 objects/second.

gaia-crunching-data-to-map-milky-way.pdf

#Caché

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