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层次式仿真运行支撑环境StarLink中的关键技术

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Abstract

A distributed RTI cannot be well adapted to large-scale simulations in a wide area network, especially on maintaining the consistency of the whole federation state. However a hierarchical RTI (runtime infrastructure) is very useful to reduce the computational cost of the large-scale simulations. This paper explains why the hierarchical simulation runtime infrastructure StarLink can be applied to the wide area network, and discusses three implementation techniques of StarLink, including CORBA based networking technique, multiple-threaded data transferring technique and XML based data exchanging technique. In addition, test methods for StarLink are discussed, and a new idea is put forward to test RTI's interface services using a common framework test program. StarLink can effectively provide a powerful technology support for the large-scale simulations.

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摘要

在广域网环境下,特别是在维护联盟状态信息的一致性方面,分布式RTI(runtime infrastructure)难以适应大规模仿真的应用需求,而层次式RTI则有效地降低了大规模仿真中的计算开销.论述了面向广域网的仿真运行支撑平台StarLink采用层次式体系结构的理由,并从3个方面介绍了

StarLink的实现技术,包括CORBA中间件技术、多线程技术以及基于XML格式的数据交互技术.最后,讨论了StarLink的测试方法,提出了基于“框架结构”的功能测试思想. StarLink为面向广域网的大规模仿真应用提供了强有力的技术支持.

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