

A Review On Security In Grid Computing

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Abstract

A Grid computing system is a geographically distributed environment with autonomous domains that share resources amongst themselves. One primary goal of such a Grid environment is to encourage domain-to-domain interactions and increase the confidence of domains to use or share resources without losing control over their own resources and ensuring confidentiality for others. A comprehensive set of Grid Computing usage scenarios are presented and analyzed with regard to security requirements such as authentication, authorization, integrity and confidentiality. Grid security is enforced through trust update, propagation and integration across sites. Trusted Grid Computing demands robust resource allocation with security assurance at all resource sites. A Secure Grid Outsourcing (SeGO) system is designed for secure scheduling a large number of autonomous and indivisible jobs to Grid sites. There is also a paper which analyzes the unique security requirements of large-scale Grid Computing and develops a security policy and a corresponding security architecture. These show a broader goal to increase the awareness of security issues in Grid Computing.

1. Introduction

Grid computing is the combination of computer resources from multiple administrative domains applied to a common task, usually to a scientific, technical or business problem that requires a great number of computer processing cycles or the need to process large amounts of data. One of the main strategies of grid computing is using software to divide and apportion pieces of a program among several computers, sometimes up to many thousands. Grid computing is distributed, large-scale cluster computing, as well as a form of network distributed parallel processing. The size of grid computing may vary from being small confined to a network of computer workstations within a corporation, for example, to being large public collaboration across many companies and networks. The notion of a confined grid may also be known as an intra-nodes

cooperation whilst the notion of a larger, wider grid may thus refer to an inter-nodes cooperation. This inter or intra nodes cooperation across cyber based collaborative organizations are also known as "Virtual Organizations".

It is a form of distributed computing whereby a "super and virtual computer" is composed of a cluster of networked loosely coupled computers acting in concert to perform very large tasks. This technology has been applied to computationally intensive scientific, mathematical, and academic problems through volunteer computing, and it is used in commercial enterprises for such diverse applications as drug discovery, economic forecasting, seismic analysis, and back-office data processing in support of e-commerce and Web services. What distinguishes grid computing from conventional cluster computing systems is that grids tend to be more loosely coupled, heterogeneous and geographically dispersed. Furthermore, while a computing grid may be dedicated to a specialised application, it is often constructed with the aid of general purpose grid software libraries and middleware.

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2. Background

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3. Grid Computing Security

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4. Issues And Challenges

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5. Overcome The Issues And Challenges

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6. Conclusion

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Acknowledgment

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