


[Abstract](#)
[BROWSE](#)
[SEARCH](#)
[IEEE XPLORE GUIDE](#)
[SUPPORT](#)
[View Search Results](#) | [Previous Article](#) | [Next Article](#)
[e-mail](#) [printer friendly](#)

You are not logged in.

Guests may access Abstract records free of charge.

Login

Username

Password



[» Forgot your password?](#)

Please remember to log out when you have finished your session.

You must log in to access:

- Advanced or Author Search
- CrossRef Search
- AbstractPlus Records
- Full Text PDF
- Full Text HTML

Access this document

Full Text: [PDF](#) (287 KB)

[» Buy this document now](#)

[» Learn more about subscription options](#)

[» Learn more about purchasing articles and standards](#)

[Rights and Permissions>](#)

[» Learn More](#)

Download this citation

Available to subscribers and IEEE members.

DWDM-RAM: a data intensive Grid service architecture enabled by dynamic optical networks

Lavian, T. Mambretti, J. Cutrell, D. Cohen, H. Merrill, S. Durairaj, R. Daspit, P. Monga, I. Naiksatam, S. Figueira, S. Gutierrez, D. Hoang, D. Travostino, F.

Nortel Networks Labs.

This paper appears in: [Cluster Computing and the Grid, 2004. CCGrid 2004. IEEE International Symposium on](#)

Publication Date: 19-22 April 2004

On page(s): 762 - 764

ISSN:

ISBN: 0-7803-8430-x

Digital Object Identifier: 10.1109/CCGrid.2004.1336710

Current Version Published: 2004-09-27

Abstract

Next generation applications and architectures (for example, Grids) are driving radical changes in the nature of traffic, service models, technology, and cost, creating opportunities for an advanced communications infrastructure to tackle next generation data services. To take advantage of these trends and opportunities, research communities are creating new architectures, such as the Open Grid Service Architecture (OGSA), which are being implemented in new prototype advanced infrastructures. The DWDM-RAM project, funded by DARPA, is actively addressing the challenges of next generation applications. DWDM-RAM is an architecture for data-intensive services enabled by next generation dynamic optical networks. It develops and demonstrates a novel architecture for new data communication services, within the OGSA context, that allows for managing extremely large sets of distributed data. Novel features move network services beyond notions of the network as a managed resource, for example, by including capabilities for dynamic on-demand provisioning and advance scheduling. DWDM-RAM encapsulates optical network resources (Lambdas, lightpaths) into a Grid service and integrates their management within the Open Grid Service Architecture. Migration to emerging standards such as WS-Resource Framework (WS-RF) should be straightforward. In initial applications, DWDM-RAM targets specific data-intensive services such as rapid, massive data transfers used by large scale eScience applications, including: high-energy physics, geophysics, life science, bioinformatics, genomics, medical morphometry, tomography, microscopy imaging, astronomical and astrophysical imaging, complex modeling, and visualization.

Index Terms

Available to subscribers and IEEE members.

References

Available to subscribers and IEEE members.

Citing Documents

Available to subscribers and IEEE members.

[View Search Results](#) | [Previous Article](#) | [Next Article](#)
[Help](#) [Contact Us](#) [Privacy & Security](#) [IEEE.org](#)

© Copyright 2009 IEEE – All Rights Reserved

