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Description:

This item presents the proceedings of a 2001 NATO workshop on cluster computing, which had evolved during the 1990s, and in which the Department of Computer Science in Trinity College Dublin had been heavily involved. See elsewhere in this catalog for literature and hardware for cluster computing.

Interestingly the first paper is on Grid computing, in which the Department of Computer Science in Trinity College Dublin was also becoming heavily involved. Again, for literature and hardware on the world wide computing Grid, see elsewhere in this catalog.

Many thanks to Brian Coghlan for donating this item.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>
Click '*Accession Index*' (1st column listed) for related folder, or '*About*' for further guidance.
Some of the items below are more properly part of the other categories of this catalog, but are listed here for convenience.

Accession Index	Object with Identification
TCD-SCSS-V.20190910.002	Ed: Grigoras, D., Nicolau, A., Toursel, B., Folliot, B., Advanced Environments, Tools, and Applications for Cluster Computing, Proc.Nato Advanced Research Workshop, IWCC 2001, Mangala, Romania, Sep-2001, ISBN 3-540-43672-3, LNCS-2326, Springer, 2002.
TCD-SCSS-V.20190910.001	Ed: Foster, I., and Kesselman, C., The Grid: Blueprint for a New Computing Infrastructure, ISBN 978-1-55860-475-8, 1st edition, Morgan Kaufmann Publishers, San Francisco, 1999.
TCD-SCSS-V.20190910.003	Ed: Rivera, F.F., Bubak, M., Tato, A.G., Doallo, R., Grid Computing, Proc.1st European AcrossGrids Conference, Santiago de Compostelo, Spain, Feb-2003, ISBN 3-540-21048-2, LNCS-2970, Springer, 2004.
TCD-SCSS-V.20190910.004	Ed: Sloot, P.M.A., Hoekstra, A.G., Priol, T., Reinefeld, A., Bubak, M., Advances in Grid Computing, Proc.European Grid Conference, Amsterdam, The Netherlands, Feb-2005, ISBN 3-540-26918-5, LNCS-3470, Springer, 2005.
TCD-SCSS-V.20190910.005	Ed: Bubak, M., Noga, M., Turala, M., Proc.Cracow '02 Grid Workshop, proceedings of workshop in Cracow, Poland, Dec-2002, ISBN 83-915141-0-2, CYFRONET, 2003.
TCD-SCSS-V.20190910.006	Ed: Bubak, M., Noga, M., Turala, M., Proc.Cracow '03 Grid Workshop, proceedings of workshop in Cracow, Poland, Dec-2003, ISBN 83-915141-3-7, CYFRONET, 2004.
TCD-SCSS-V.20190910.007	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '04 Grid Workshop, proceedings of workshop in Cracow, Poland, Dec-2004, ISBN 83-915141-4-5, CYFRONET, 2005.
TCD-SCSS-V.20190910.008	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '05 Grid Workshop, proceedings of workshop in Cracow, Poland, Nov-2005, ISBN 83-915141-5-3, CYFRONET, 2006
TCD-SCSS-V.20190910.009	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '06 Grid Workshop, proceedings of workshop in Cracow, Poland, Dec-2006, Vol.1 ISBN 978-83-915141-7-X, Vol.2 ISBN 978-83-915141-8-4, CYFRONET.
TCD-SCSS-V.20190910.010	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '07 Grid Workshop, proceedings of workshop in Cracow, Poland, Oct-2007, ISBN 83-915141-9-1, CYFRONET, 2008.
TCD-SCSS-V.20190910.011	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '08 Grid Workshop, proceedings of workshop in Cracow, Poland, Oct-2008, ISBN 978-83-61433-00-2, CYFRONET, 2009.
TCD-SCSS-V.20190910.012	Ed: Bubak, M., Turala, M., Wiatr, K., Proc.Cracow '09 Grid Workshop, proceedings of workshop in Cracow, Poland, Oct-2009, ISBN 978-83-61433-01-9, CYFRONET, 2010.

References:

1. Wikipedia, *Computer cluster*, see:
https://en.wikipedia.org/wiki/Computer_cluster
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Dan Grigoras · Alex Nicolau
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Advanced Environments, Tools, and Applications for Cluster Computing

NATO Advanced Research Workshop, IWCC 2001
Mangalia, Romania, September 2001
Revised Papers



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Figure 1: Advanced Environments, Tools, and Applications for Cluster Computing, Front Cover

Lecture Notes in Computer Science
Edited by G. Goos, J. Hartmanis, and J. van Leeuwen

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With compliments,
Dr. Dan Zigan
UCC

Figure 2: Advanced Environments, Tools, and Applications for Cluster Computing, inside front cover

Dan Grigoras Alex Nicolau
Bernard Tournel Bertil Folliot (Eds.)

Advanced Environments, Tools, and Applications for Cluster Computing

NATO Advanced Research Workshop, IWCC 2001
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Figure 3: Advanced Environments, Tools, and Applications for Cluster Computing, Title Pages page 1

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