Jim Basney

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Research Interests

Usable security for distributed systems. High performance distributed computing.

Education

Doctor of Philosophy in Computer Sciences, University of Wisconsin-Madison. August 2001.
   Dissertation Topic: Network and CPU Co-allocation in High Throughput Computing Environments
   Advisor: Professor Miron Livny

Master of Science in Computer Sciences, University of Wisconsin-Madison. May 1997.

Bachelor of Arts in Computer Science and English, Oberlin College. May 1995.

Professional Experience

Senior Research Scientist, National Center for Supercomputing Applications. July 2001 to Present.

Research Assistant, Condor Project, Department of Computer Sciences, University of Wisconsin-Madison. January 1996 to June 2001.

Teaching Assistant (Instructor), CS 302: Algebraic Language Programming in C++, Department of Computer Sciences, University of Wisconsin-Madison. Fall 1995.

Research Grants and Contracts

J. Basney, PI (with Randal Butler, co-PI, and Von Welch, former PI), *A Cyber Identity Infrastructure for National Science*, National Science Foundation (NSF) Office of Cyberinfrastructure (OCI). September 2009 to August 2012.

J. Basney, PI (with Randal Butler and Von Welch, co-PIs), *CILogon: Secure Access to National-Scale CyberInfrastructure*, National Science Foundation (NSF) Office of Cyberinfrastructure (OCI). June 2009 to May 2011.

J. Basney, PI (with Himanshu Khurana, co-PI), *Strong Authentication for Collaborative Environments*, Office of Naval Research (ONR) through the National Center for Advanced Secure Systems Research (NCASSR). January 2007 to December 2007.

J. Basney, co-PI (with Himanshu Khurana, PI), *Usable Secure Messaging over SMTP, XMPP, and HTTP*, ONR through NCASSR. January 2007 to December 2007.

J. Basney, co-PI (with Von Welch, PI), *Mithril: Adaptable Security for Survivability in Collaborative Computing Sites*, ONR through NCASSR. January 2006 to December 2006.

J. Basney, Senior Personnel (with Andrew Grimshaw, PI), *Dependable Grids*, National Science Foundation (NSF) Information Technology Research Program for National Priorities (ITR). October 2004 to September 2007.

J. Basney, PI, *Illinois Terrorism Task Force (ITTF) Credentialing Project*, Illinois Law Enforcement Alarm System (ILEAS). October 2004 to June 2007.

J. Basney, PI (with Himanshu Khurana, co-PI), *PKI Testbed*, ONR through NCASSR. June 2004 to December 2005.

J. Basney, PI, *Credential Management Services*, ONR through NCASSR. June 2004 to December 2005.

J. Basney, PI (with M. Humphrey, co-PI), *Integration of the MyProxy Online Credential Repository in the NSF Middleware Initiative Software Infrastructure*, National Science Foundation (NSF) Advanced Networking Infrastructure (ANI) Network Centric Middleware Services. July 2002 to June 2005.

J. Basney, PI, *PKI and CKM Scaling Study*, ONR through NCASSR. June 2003 to May 2004.

J. Basney, PI, *Information-Centric Security*, Navy Small Business Technology Transfer (STTR) Program through InfoAssure, Incorporated. July 2003 to October 2003.

Publications

J. Basney, V. Welch, and N. Wilkins-Diehr TeraGrid Science Gateway AAAA Model: Implementation and Lessons Learned. *TeraGrid Conference*, August 2010. (Best Paper: Gateways Track)

J. Basney, T. Fleury, and V. Welch. Federated Login to TeraGrid. *9th Symposium on Identity and Trust on the Internet (IDtrust 2010)*, April 2010.

M. Ahsant and J. Basney. Workflows in Dynamic and Restricted Delegation. *Journal of Information System Security (JISSec)*, Volume 5, Number 4 (2009), Pages 3-26, ISSN 1551-0123.

R. Bobba, J. Muggli, M. Pant, J. Basney, and H. Khurana. Usable secure mailing lists with untrusted servers. *In Proceedings of the 8th Symposium on Identity and Trust on the Internet*, April 2009.

H. Khurana, J. Basney, M. Bakht, M. Freemon, V. Welch, and R. Butler. Palantir: a framework for collaborative incident response and investigation. *In Proceedings of the 8th Symposium on Identity and Trust on the Internet]*, April 2009.

M. Ahsant and J. Basney. Workflows in Dynamic and Restricted Delegation. *Proceedings of the 4th International Conference on Availability, Reliability and Security (ARES/CISIS 2009)*, March 2009.

M. Ahsant, ET Gonzalez, and J. Basney. Security Credential Mapping in Grids. *Proceedings of the 4th International Conference on Availability, Reliability and Security (ARES/CISIS 2009)*, March 2009.

J. Basney, S. Martin, JP Navarro, M. Pierce, T. Scavo, L. Strand, T. Uram, N. Wilkins-Diehr, W. Wu, and C. Youn. The Problem Solving Environments of TeraGrid, Science Gateways, and the Intersection of the Two. *Fourth IEEE International Conference on eScience*, December 2008.

A. Lee, W. Winslett, J. Basney, and V. Welch. The Traust Authorization Service. *ACM Trans. Inf. Syst. Secur.*, 11, 1 (Feb. 2008), 1-33.

H. Khurana, R. Koleva, and Jim Basney. Performance of Cryptographic Protocols for High-Performance, High-Bandwidth, High-Latency Grid Systems. *3rd IEEE International Conference on e-Science and Grid Computing*, December 2007.

J. Rowanhill, G. Wasson, Z. Hill, J. Basney, Y. Kiryakov, J. Knight, A. Nguyen-Tuong, A. Grimshaw and M. Humphrey. Dynamic System-wide Reconfiguration of Grid Deployments in Response to Intrusion Detections. *High Performance Computation Conference (HPCC 2007)*, September 2007.

Z. Hill, J. Rowanhill, A. Nguyen-Tuong, J. Basney, G. Wasson, J. Knight and M. Humphrey. Meeting Virtual Organization Performance Goals through Adaptive Grid Reconfiguration. *8th IEEE/ACM International Conference on Grid Computing (Grid 2007)*, September 2007.

M. Ahsant, J. Basney, and L. Johnsson. Dynamic, Context-Aware, Least-Privilege Grid Delegation. *8th IEEE/ACM International Conference on Grid Computing (Grid 2007)*, Sept 2007.

J. Basney and P. Duda. Clustering the Reliable File Transfer Service. *TeraGrid Conference*, June 2007.

V. Welch, J. Barlow, J. Basney, D. Marcusiu, and N. Wilkins-Diehr. A AAAA model to support science gateways with community accounts. *Concurrency and Computation: Practice and Experience*, Volume 19, Issue 6, March 2007.

H. Khurana and J. Basney. On the Risks of IBE. *Proceedings of the International Workshop on Applied PKC (IWAP)*, Dalian, China, November 2006.

H. Khurana, J. Basney, V. Welch and R. Campbell. Operational Security Requirements for Large Collaborative Compute Infrastructures. *International Workshop on Trusted Collaboration (TrustCol), in conjunction with CollaborateCom*, Atlanta, November 2006.

T. Fleury, J. Basney, and V. Welch. Single Sign-On for Java Web Start Applications Using MyProxy. *Proceedings of the ACM Workshop on Secure Web Services (associated with the 13th ACM Conference on Computer and Communications Security)*, November 3, 2006.

M. Ahsant, J. Basney, O. Mulmo, A. Lee and L. Johnsson. Toward An On-demand Restricted Delegation Mechanism for Grids. *Proceedings of the 7th IEEE/ACM International Conference on Grid Computing*, Barcelona, September 28th-29th 2006.

J. Basney, P. Flanigan, J. Heo, H. Khurana, J. Muggli, M. Pant, A. Slagell and V. Welch. Mithril: Adaptable Security for Survivability in Collaborative Computing Sites. *Workshop on Enterprise Network Security (WENS), in conjunction with SecureComm*, September 2006.

R. Butler, M. Servilla, S. Gage, J. Basney, V. Welch, B. Baker, T. Fleury, P. Duda, D. Gehrig, M. Bletzinger, J. Tao, D. M. Freemon. CyberInfrastructure for the Analysis of Ecological Acoustic Sensor Data: A Use Case Study in Grid Deployment. *Challenges of Large Applications in Distributed Environments (CLADE 2006) Workshop (associated with the 15th International Symposium on High Performance Distributed Computing)*, Paris, France, June 19, 2006.

A. J. Lee, M. Winslett, J. Basney, and V. Welch. Traust: A Trust Negotiation-Based Authorization Service for Open Systems. *The Eleventh ACM Symposium on Access Control Models and Technologies (SACMAT)*, June 2006.

A. J. Lee, M. Winslett, J. Basney, and V. Welch. Traust: A Trust Negotiation Based Authorization Service (Demonstration Short Paper). *Fourth International Conference on Trust Management (iTrust 2006)*, May 2006.

T. Barton, J. Basney, T. Freeman, T. Scavo, F. Siebenlist, V. Welch, R. Ananthakrishnan, B. Baker, M. Goode, and K. Keahey. Identity Federation and Attribute-based Authorization through the Globus Toolkit, Shibboleth, Gridshib, and MyProxy. *5th Annual PKI R&D Workshop*, April 2006.

J. Rowanhill, Y. Kiryakov, J. Basney, D. Del Vecchio, G. Wasson, J. Knight, A. Nguyen-Tuong, A. Grimshaw and M. Humphrey. Toward Dependable and Survivable Grids: Use of ANDREA to Manage Large-Scale Globus Deployments. *University of Virginia Department of Computer Science Technical Report*, January 2006.

J. Basney. MyProxy Protocol. *Global Grid Forum Experimental Document GFD-E.54*, November 26, 2005.

D. Kouril and J. Basney. A Credential Renewal Service for Long-Running Jobs. *6th IEEE/ACM International Workshop on Grid Computing (Grid 2005)*, Seattle, WA, November 13-14, 2005.

B. Beckles, V. Welch, and J. Basney. Mechanisms for Increasing the Usability of Grid Security. *International Journal of Human Computer Studies, Special Issue on HCI Research in Privacy and Security*, Volume 63, Issues 1-2, July 2005, pages 74-101.

J. Basney, M. Humphrey, and V. Welch. The MyProxy Online Credential Repository. *Software: Practice and Experience*, Volume 35, Issue 9, July 2005, pages 801-816.

M. Humphrey, J. Basney, and J. Jokl. The case for using Bridge Certificate Authorities for Grid Computing. *Software: Practice and Experience*, Volume 35, Issue 9, July 2005, pages 817-826.

D. Del Vecchio, J. Basney, N. Nagaratnam, and M. Humphrey. CredEx: User-Centric Credential Selection and Management for Grid and Web Services. *Proceedings of the 2005 IEEE International Conference on Web Services (ICWS 2005)*, Orlando, FL, July 12-15, 2005.

J. Martin, J. Basney, and M. Humphrey. Extending Existing Campus Trust Relationships to the Grid through the Integration of Pubcookie and MyProxy. *2005 International Conference on Computational Science (ICCS 2005)*, Emory University, Atlanta, GA, May 22-25, 2005.

A. Grimshaw, M. Humphrey, J. Knight, A. Nguyen-Tuong, J. Rowanhill, G. Wasson, and J. Basney. The Development of Dependable and Survivable Grids. *2005 Workshop on Dynamic Data Driven Applications (associated with the 2005 International Conference on Computational Science)*, Emory University, Atlanta, GA, May 22-25, 2005.

H. Khurana, R. Bonilla, A. Slagell, R. Afandi, H. Hahm, and J. Basney. Scalable Group Key Management with Partially Trusted Controllers. *International Conference on Networking*, Reunion Island, April 2005.

J. Basney, S. Chetan, F. Qin, S. Song, X. Tu, and M. Humphrey. An OGSI CredentialManager Service. *Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force)*, Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

M. Ahsant, J. Basney, and O. Mulmo. Grid Delegation Protocol. *Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force)*, Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

J. Jokl, J. Basney, and M. Humphrey Experiences using Bridge CAs for Grids. *Proceedings of the Workshop on Grid Security Practice and Experience (UK e-Science Security Task Force)*, Oxford, 8-9 July 2004. Published as: University of York Department of Computer Science Technical Report YCS-2004-380.

J. Basney, W. Nejdl, D. Olmedilla, V. Welch, and M. Winslett. Negotiating Trust on the Grid. *2nd Workshop on Semantics in P2P and Grid Computing at the Thirteenth International World Wide Web Conference*, New York, May 2004.

M. Lorch, J. Basney, and D. Kafura. A Hardware-secured Credential Repository for Grid PKIs. *4th IEEE/ACM International Symposium on Cluster Computing and the Grid*, Chicago, Illinois, April 19-22, 2004.

J. Basney, W. Yurcik, R. Bonilla, and A. Slagell. The Credential Wallet: A Classification of Credential Repositories Highlighting MyProxy. *31st Research Conference on Communication, Information and Internet Policy (TPRC 2003)*, Arlington, Virginia, September 19-21, 2003.

D. Thain, J. Basney, S. Son, and M. Livny. The Kangaroo Approach to Data Movement on the Grid. *Proceedings of the Tenth IEEE Symposium on High Performance Distributed Computing*, San Francisco, California, August 7-9, 2001.

J. Basney, M. Livny, and P. Mazzanti. Utilizing Widely Distributed Computational Resources Efficiently with Execution Domains. *Computer Physics Communications*, Volume 140, 2001.

J. Basney and M. Livny. Managing Network Resources in Condor. *Proceedings of the Ninth IEEE International Symposium on High Performance Distributed Computing*, August 2000.

J. Basney, M. Livny, and P. Mazzanti. Harnessing the Capacity of Computational Grids for High Energy Physics. *Proceedings of the International Conference on Computing in High Energy and Nuclear Physics*, Padova, Italy, February 2000.

J. Basney and M. Livny. Improving Goodput by Co-scheduling CPU and Network Capacity. *International Journal of High Performance Computing Applications*, Volume 13(3), Fall 1999.

J. Basney and M. Livny. Deploying a High Throughput Computing Cluster. In Rajkumar Buyya, Editor, *High Performance Cluster Computing*, Volume 1, Chapter 5, Prentice Hall PTR, May 1999.

J. Basney, R. Raman, and M. Livny. High Throughput Monte Carlo. *Proceedings of the Ninth SIAM Conference on Parallel Processing for Scientific Computing*, San Antonio, Texas, March 1999.

M. Livny, J. Basney, R. Raman, and T. Tannenbaum. Mechanisms for High Throughput Computing. *Proceedings of the 21st SPEEDUP Workshop: Distributed Computing*, March 1997. In the *SPEEDUP Journal*, Volume 11(1), June 1997.

J. Basney, M. Livny, and T. Tannenbaum. High Throughput Computing with Condor. *HPCU News*, Volume 1(2), June 1997.

M. Litzkow, T. Tannenbaum, J. Basney, and M. Livny. Checkpoint and Migration of UNIX Processes in the Condor Distributed Processing System. University of Wisconsin-Madison Computer Sciences Technical Report #1346, April 1997.

Presentations

Federated Incident Response, InCommon Campus Authentication & Middlware Planning (CAMP), June 22, 2010.

CILogon Project Overview, CILogon Fall 2009 Workshop, September 29, 2009.

Leveraging the InCommon Federation to access the NSF TeraGrid, Internet2 Member Meeting, October 15, 2008.

TeraGrid Science Gateways: Scaling TeraGrid Access, Information Assurance for the Grid: Crossing boundaries between stakeholders, UK e-Science 2008 All Hands Meeting Workshop, September 10, 2008.

Building and Maintaining a Trustworthy Grid, University of Canterbury eResearch Symposium, August 4, 2008.

Federated Environments and Incident Response: The Worst of Both Worlds?, CAMP: Bridging Security and Identity Management, February 15, 2008.

MyProxy, OGF19 Software Forum, January 31, 2007.

MyProxy Introduction and Update, MyProxy in the Globus Toolkit for Developers, GridWorld 2006, September 12, 2006.

Managing Credentials on the TeraGrid with MyProxy, TeraGrid '06, June 14, 2006.

MyProxy: A Multi-Purpose Grid Authentication Service, Workshop on Computational Grids and Applications (WCGA), June 2, 2006.

Managing Credentials with MyProxy, SC05, November 12-18, 2005.

Integrating MyProxy with Site Authentication, Leveraging Site Infrastructure for Multi-Site Grids, Global Grid Forum 15 Workshop, October 3, 2005.

Using the MyProxy Online Credential Repository, Cyberinfrastructure Seminar Series, September 6, 2005.

MITHRIL: Adaptable Security for Survivability in Collaborative Computing Sites, NCASSR/TRECC Meeting, August 30, 2005.

Managing Security Credentials, NCSA Private Sector Program Annual Meeting, May 17, 2005.

Using the MyProxy Online Credential Repository, GlobusWORLD, February 9, 2005.

Using the MyProxy Online Credential Repository, LNCC Workshop on Computational Grids and Applications, February 1, 2005.

Credential Management Services and the PKI Testbed, NCASSR PNNL Visit, January 13, 2005.

The MyProxy Online Credential Repository, SC04, November 9, 2004.

Managing Grid Credentials, GRIDS Targeted Communities Workshop, July 1, 2004.

Opportunities for Homeland Security Partnerships, ITTF Secure Credentialing Subcommittee Meeting, February 27, 2004.

MyProxy NMI Integration, NSF SCI Division PI Meeting, February 19, 2004.

Middleware for Production Grids, LNCC Workshop on Computational Grids and Applications, February 3, 2004.

Deploying the TeraGrid PKI, Grid Forum Korea Winter Workshop, December 1, 2003.

GSI Credential Management with MyProxy, GGF8 Production Grid Management Research Group Workshop, June 26, 2003.

PKI and CKM Scaling Study, NCASSR Kick-off Meeting, July 11, 2003.

NCSA-IPG Collaboration Projects Overview. NASA IPG Workshop, February 6, 2003.

Credential Management in the Grid Security Infrastructure, GlobusWorld Grid Security Workshop, January 16, 2003.

Integration of the MyProxy Online Credential Repository into the NSF Middleware Initiative Software Infrastructure. NSF Middleware Initiative (NMI): Year Two Principle Investigator Planning Workshop, July 16, 2002.

GSI Online Credential Retrieval Requirements. Fourth Global Grid Forum Workshop, February 18, 2002.

MyProxy: An Online Credential Repository for the Grid. NCSA Condor-G Academy, August 27, 2001.

Service

National Science Foundation Funding Panel Review Member, 2004 and 2005.

Program Committee Member: ISWC 2004 Trust Workshop, DIVO 2004, MGC 2004, MGC 2005, HPDC-15, WASR 2006, Grid 2006, MGC 2006, GCE 2006, CCGrid 2007, AINA 2007, WWW 2007, 2007 IEEE TCSC Doctoral Symposium, Grid 2007, SC07, SECOVAL 2007, MGC 2007, AINA 2008, CCGrid 2008, IDtrust 2008, 2008 IEEE TCSC Doctoral Symposium, SC08, Grid 2008, MGC 2008, CCGrid 2009, MGC 2009, SC10, Grid 2010, MGC 2010, HPDC 2011, WGC-Sec 2011