Curriculum Vitae

Scott Nolin
Head of Technical Computing
Space Science and Engineering Center, University of Wisconsin-Madison

Work Experience

2018

Principal Investigator, S4. This 1.5 million dollar grant replaces and upgrades the S4 system to allow satellite data assimilation experiments with the FV3GFS numerical weather prediction (NWP) suite and continue other research activities.

2013-present

Technical Lead and Project Manager, SSEC High Performance Storage System (SHPS) .
This project provides a shared high performance storage system for the Center. The design of this system is unique in providing an expandable shared-use very high performance storage system given constraints of multiple separate funding sources. The system is in its third iteration in 2018.

2013-present

Technical Lead, High Performance Satellite Data Archive. This builds on the Lustre on ZFS Proof of Concept to provide an operational high performance data store of satellite data, including the entire geostationary satellite record over the continental United States and multiple other satellite records. The archive is uniquely beneficial for SSEC research in allowing cluster processing of large amounts of satellite data directly.

2013

Principal Investigator, Lustre on ZFS Proof of Concept project. This project is a proof of concept and design validation for ZFS as a backend to Lustre in production. Data integrity features in particular are important for the Center's large data archive. The project was funded with a $49,000 hardware grant from Dell.

2013

Co-Investigator, S4 Upgrade. This one million dollar upgrade allows the S4 system to run satellite data assimilation experiments with the GSI/GFS numerical weather prediction (NWP) suite at T1148 model resolution, a critical capability for the S4 research mission.

2011-present

Technical lead, Supercomputer for Satellite Simulations and data assimilation Studies (S4). The S4 system at SSEC supports NOAA NESDIS and JCSDA research, development, and system integration activities related to satellite data assimilation experiments an Observing System Simulation experiments for new sensors. The system also provides dedicated resources for UW SSEC use outside of NESDIS and JCSDA research. Duties include leading design, implementation, and ongoing support for the system. Provided critical in depth performance analysis to prove system met performance expectations running the GSI/GFS suite.

2006-present

Technical lead and Project Manager, SSEC Science Cluster. This project enables researchers and groups of any size to increase the value of their grant funding by participating in a shared use high performance compute cluster with access to large storage resources at SSEC.

2001-present

Head of SSEC Technical Computing group. Responsibilities include leading a team of 4 full time staff and 6 students providing support for all computing at SSEC. This includes understanding and providing solutions for varied systems such as desktops, infrastructure servers, networks, satellite data ingest and product publication, high performance data archives, and high performance computing clusters. Responsible for computing policies, technical planning, and implementation for SSEC and Center projects.

1997-2001

Joined University of Wisconsin Space Science and Engineering Center as system administrator for the Technical Computing group. Responsibilities included desktop and administrative computing systems. Planned and implemented long term strategy to unify SSEC Email infrastructure and move to standards based systems. Replaced administrative and desktop token ring network with Ethernet and unified Center network design. Responsible for management for student workers starting in 2000.

1994-1997

Technology Coordinator, Jefferson Davis Middle School. Technology planning, budgeting, purchasing, administration and grant writing for a school of approximately 1000 students and 90 staff. Responsible for installation and maintenance of multiple computer labs, networks, classroom, and administrative systems. Won and administered grants for classroom technology. Replaced and expanded the school telephone system to provide service to all classrooms while reducing the yearly cost.

Education

University of Florida, Gainesville, FL
Bachelor of Science in Computer Engineering, 1993

Publications and Conference Reports

Nolin, Scott; *Comprehensive Toolkit for Linux System Management*, Madison WI, 22 June, 2017. IT Professionals Conference 2017

Nolin, Scott and Barnet, Steve; *Protecting Systems with One Time Passwords*, Madison, WI, 22 June 2017. IT Professionals Conference 2017

Boukabara, S. A.; S. Lord; S. Goodman; T. Zhu; B. Pierce; R. Atlas; L. Cururull; M. Zupanski; M. Zhang; I. Moradi; J. A. Otkin; D. Santek; B. Hoover; Z. Pu; X. Zhan; C. Hain; E. Kalnay; D. Hotta; S. Nolin; E. Bayler; A. Mehra; S. Casey; D. Lindsey; K. Kumar; A. Powell; J. Xu; T. Greenwald; J. Zajic; J. Li; J. Li; B. Li; J. Liu; L. Fang; and P. Wang; *S4: An O2R/R2O Infrastructure for Optimizing Satellite Data Utilization in NOAA Numerical Modeling Systems, A Step Toward Bridging the Gap Between Research and Operations.* Bull. Am. Meteorol. Soc. (December 2016)

Nolin, Scott and Wagner, Andrew; *Lustre Metrics: New Techniques for Monitoring Lustre*, Denver, CO, 13-15 April 2015. Lustre User Group Conference

Nolin, Scott; *SSEC Storage Systems*, 20 November 2013. SC13 Dell Panel: Solving the Data Deluge

Nolin, Scott; *Lustre on ZFS at SSEC* , Paris, France, 16-17 September 2013. Lustre Administrators and Developers Workshop

Boukabara, Sid Ahmed; Riishojgaard, L. P.; Yoe, J. G.; Devaliere, E. M.; Pratt, A.; Garrett, K. J.; Jung, J. A.; Nolin, S. and Sinno, S; *S4 and JIBB: Building the infrastructure for an effective O2R and a streamlined R2O. Special Symposium on the Joint Center for Satellite Data Assimilation,* Austin, TX, 6-10 January 2013. American Meteorological Society