



Supporting Security and Intelligence Operations with Grid Technology

How defense-related research and analysis can achieve improvements in efficiency, response time, and accuracy using secure, scalable high-performance compute grids from United Devices

Sample Application Areas

Grids can accelerate compute-intensive work in a wide variety of areas – here are just a few applications that lend themselves toward increased efficiency when implemented within a grid architecture:

- **Recognition and Matching:** *Face, fingerprint, DNA and image/pattern matching technologies can analyze more data more rapidly and can ensure higher-quality matches*
- **Information Extraction and Steganography:** *Monitoring public news sources for key content can happen faster, minimizing counter-intelligence response time*
- **Decryption:** *Encrypted file recovery time is exponentially reduced by increasing compute power for library and brute-force keyspace attacks*
- **Network Defense / Warfare:** *Stress & load testing and performance monitoring can reach unprecedented levels to ensure preparedness for attacks and/or heavy traffic*
- **High-Throughput Simulations:** *Warfare modeling and analysis technology can complete increased numbers of cases for improved critical decision-making*

Let United Devices help your organization investigate possible grid applications in your environment.

The Challenge: Balancing E-Government principles with Homeland Security's strategic requirements

In line with E-Government initiatives, government agencies are looking for ways to become more efficient and effective. In particular, agencies performing compute-intensive work need to maximize their resources to achieve results faster within budget constraints.

Adding to the complexity of this effort is the Homeland Security mission of enabling intelligence operations to happen faster and more accurately than ever before. As the available pool of data grows exponentially, the ability to respond quickly to calls for pinpoint analysis will be critical in contributing to the success of any defense and intelligence endeavor.

High-performance computing (HPC) power is needed for successful execution on many of these initiatives. However, HPC hardware is costly to acquire and maintain, and agencies are striving to make do with the resources already at their disposal. Simply put, the challenge that government agencies are facing today is finding **more efficient**, cost-effective ways to contribute **more effectively** to the security of the nation.

The Solution: United Devices grid technology improves productivity and accuracy in Homeland Defense and intelligence work

United Devices grid technology allows defense and intelligence organizations to get more out of their resources without sacrificing performance and key capabilities. Grid technology leverages existing compute infrastructure to harness HPC power for dramatic increases in speed, scope and quality of work. This enables organizations to:

- **Improve emergency responsiveness** by harnessing high-performance compute power to increase processing speed and get work done ahead of schedule
- **Handle larger amounts of critical data** so you can leverage, not suffer from, the growing information explosion
- **Eliminate compute redundancy** by removing the need to purchase additional high-performance hardware to do work that existing resources can perform
- **Manage with greater flexibility and control** as E-Government drives changes in the information infrastructure
- **Maximize utilization of resources** (including hardware and technical personnel) through reduced need for big iron maintenance / management



Customers and Partners

United Devices has more experience transforming IT environments with grid computing than any other company.

Our customers & partners include:

- U.S. Department of Defense
- USAMRIID
- MITRE
- IBM
- Intel
- Microsoft
- National Foundation for Cancer Research
- Novartis Pharmaceutical
- Sanofi-Synthelabo
- The University of Oxford
- Evotec OAI
- Accelrys
- The University of Texas Advanced Computing Center
- The American Diabetes Association

Security: Protecting data, applications, and systems from both internal and external compromise is mission-critical

Technologies that interact with government systems must exhibit the highest standards of data, application, system, and user integrity.

United Devices' grid infrastructure features **the most comprehensive security implementation** for grid solutions available. Our technology ensures that all critical application and data are secure, authenticated, and validated across every aspect of the grid. United Devices understands the critical nature of government data and has delivered industry leading security mechanisms across server, network and end-node facilities.

Specific security features include:

- **Secure runtime environment** to protect application execution from tampering and interception
- **Automatic Triple-DES encryption and compression** of data over the network and on disk
- **Configurable thresholds** to monitor and control the impact on devices
- **Non-invasive and invisible execution** on servers, clusters, desktop PCs and laptops
- **Digital signature validation** of executable code modules

"Intel said the software's security is 'robust end to end.' Barrett [CEO of Intel Corp] said he was going to allow it to be run inside his company."

*Mark Hall
ComputerWorld*

"We are deploying technology that will be applicable not only for finding a cure for smallpox, but in the future can be easily adapted for other challenges."

*Michael R. Nelson
Director for IBM's Internet Technology and Strategy*

About United Devices

United Devices is the global leader in secure grid solutions. The company's Grid MP™ platform is used to aggregate compute resources on a network to create a compute grid capable of running a wide range of high-performance computing applications in government research as well as a variety of commercial industries. The company's solutions are available as both enterprise and on-demand deployments. United Devices also operates the world's largest grid for grand-scale research, consisting of more than 2 million devices in over 220 countries.

For more information on United Devices grid technology, visit the United Devices Web site at www.ud.com.



12675 Research Blvd.
Building A
Austin, TX 78759
Ph.512.331.6016
Fx.512.331.6235
www.ud.com