



U.S. AIR FORCE RESERVE COMMAND Network-Centric Emergency Notification Management System



“Recent hurricanes and other emergencies illustrated the need for a comprehensive alerting system. And to ensure compliance with Air Force Instructions 10-2501 (emergency management) and 10-218 (personnel accountability), we began searching for a single system that could meet the network alerting requirements. Products we’d used in the past took too long to operate, had scalability and security issues, and were too slow at getting the word out.”

– Colonel John Hayes,
CIO for AFRC

AFRC Deploys Centralized, Network-Centric Emergency Notification System to Reach All 76,000 Personnel Across the United States

The U.S. Air Force Reserve Command (AFRC) has over 76,000 personnel (active duty, reservists, individual mobilization augmentees, civilians and contractors) on 13 AFRC bases and 27 tenant locations across the United States. With such a large, dispersed and highly-mobile force, military commanders were faced with major challenges when attempting to reach their personnel in times of emergency using existing methods. AFRC decided to establish a command-wide emergency notification management system to support these needs and assure AFRC’s compliance with Air Force Instructions (AFIs) mandating rapid and personalized communications and personnel accountability.

This case study illustrates how AFRC deployed AtHoc IWSAlerts as a centralized, network-centric architecture to:

- Provide a single command-wide emergency notification system able to reach all personnel within minutes
- Create a unified and redundant multi-channel alerting system that includes PCs, mobile devices, telephones and sirens
- Serve the needs of individual wings by providing their own local alerting solution while implementing wing-level, NAF-level (Numbered Air Force) and command-level operating procedures

Executive Summary

Requirements

Command-wide Notification System for:

- Emergency Alerting
- Personnel Recall
- Personnel Accountability

Architectural compliance:

- Network-centric
- Enterprise-wide, centralized deployment
- Security and network compliance

Air Force Mandates

- AFI 10-2501 Emergency Management
- AFI 10-218 Personnel Accountability
- INOSC-compliant Architecture

Solution

- AtHoc IWSAlerts Enterprise Edition
- Centralized deployment behind the firewall
- MilPDS and CivPDS integration for personnel data management
- Desktop clients deployed to all PCs for alerting over IP
- Command-wide, shared pool of 200 phone lines
- Integration with Giant Voice over IP (planned)
- Failover site at an alternate data center (planned)

Results

- Deployment to 40 locations in less than six months
- Initial Operational Capability (IOC) achieved
- Integrated alerting – IP network, phone, text-messaging – standardized across command
- Standardized operating procedures across command
- Replaced local notification systems at AFRC headquarters and at 13 AFRC wing locations
- Reduced infrastructure and support costs by over 50%

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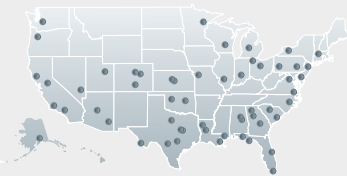


Customer Profile

The U.S. Air Force Reserve Command (AFRC) consists of 76,000 military and civilian personnel on more than 40 bases and tenant units located around the country. Approximately 46,000 AFRC personnel are reservists – trained civilians that can be recalled in times of emergency by the Air Force.

AFRC supports a wide array of missions, from transportation and special operations to training and communications.

AFRC Nationwide Presence



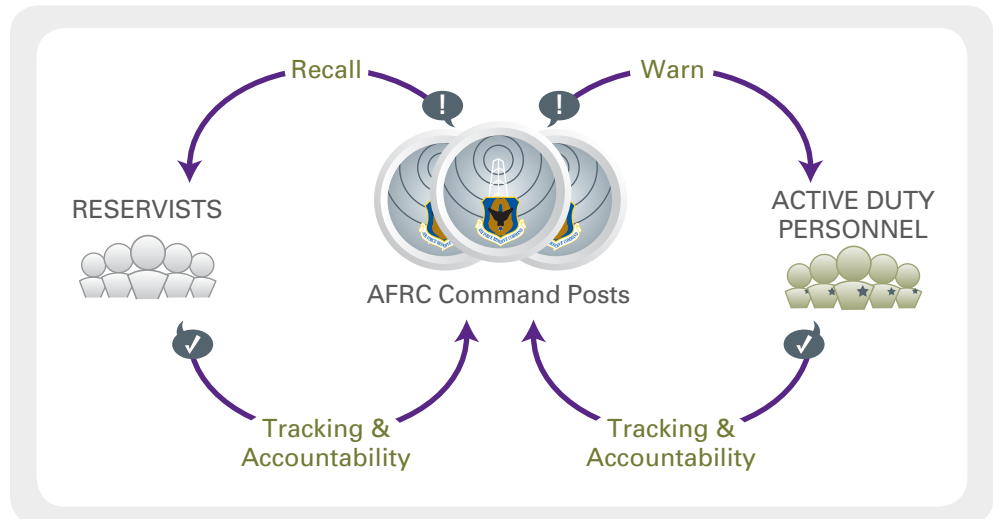
- 76,000 Reserve Personnel (including active duty, reserves, individual mobilization augmentees, civilians and contractors)
- 13 AFRC host bases
- 27 tenant wings at Air Force active duty bases

Challenge

The U.S. Air Force Reserve Command (AFRC) consists of over 76,000 personnel (active duty, reservists, individual mobilization augmentees, civilians and contractors) on 13 AFRC bases and 27 tenant locations across the United States. With roughly 10% of the Air Force's total personnel, the command's presence spans coast-to-coast – as well as to locations outside the continental United States. AFRC is keenly aware of its duty to protect its personnel, and the command sees emergency notification as a critical component of its rapid response and recall strategy.

AFRC's notification needs focused on three key areas:

- 1) **Emergency Alerting** – warning personnel in times of emergency with clear instructions for action and response
- 2) **Personnel Recall** – contacting off-base personnel, especially reservists, to summon back to base or to take other applicable action
- 3) **Personnel Accountability** – proactively contacting personnel to assess their condition and ability to perform their duties



Despite the importance of alerting personnel quickly, reaching all 76,000 people has historically taken days. Command posts would rely on paper contact lists and use time-consuming methods to communicate to personnel – including telephone rosters and verbal messages. To substantially reduce this time and to comply with two important Air Force regulations, AFRC began evaluating modern network-centric emergency notification solutions.

Air Force Instructions require that all Air Force installations deploy multi-channel, redundant alerting systems including sirens and telephony alerting systems. They also cite the speed and reach of the IP network as a desirable method to communicate with personnel. In addition, the Air Force’s personnel accountability instruction requires installations to track the status of personnel during emergencies.

Finally, AFRC required a proven and mission-tested system – one that has been used successfully across the Department of Defense (DoD), and specifically, within the Air Force. The selected system must have passed all the security and certification processes to run on the Air Force network in order to be deployable by AFRC.

After evaluating numerous market offerings, the command selected AtHoc IWSAlerts for its emergency notification needs. AtHoc IWSAlerts supported all of AFRC’s functional requirements, including its ability to unify multiple alerting channels, scale to reach the entire command and maintain a high level of security. AFRC’s decision was also based on the fact that AtHoc’s solution could be deployed in one central location and could serve the needs of the individual wings as well as the entire command.

AtHoc’s track record in the DoD also played a major role in the decision making. At the point of selection, AtHoc had already been deployed at several Air Force major commands as well as at multiple Navy and Army facilities. The system also possessed all the necessary security and network certifications.

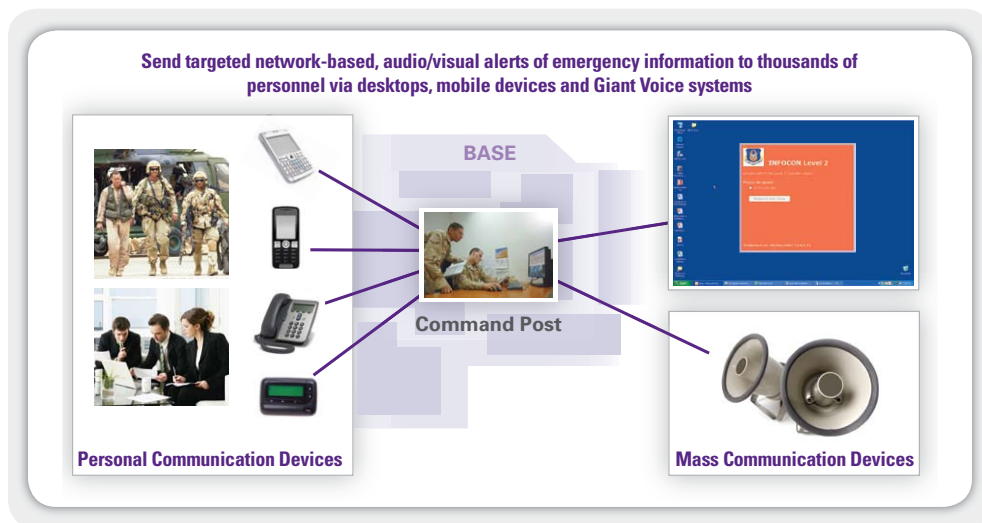
Solution Delivered

AtHoc IWSAlerts transformed AFRC’s existing IP network into a comprehensive, enterprise-wide emergency notification system. It integrates desktop alerting with other communication channels such as telephony and email, providing a single, unified console for managing, triggering and controlling the emergency notification process across all delivery devices.

Mandatory Air Force Instructions (AFI)

The office of the Secretary of the Air Force issued several mandatory AFIs requiring the use of emergency notification systems by all Air Force units:

- 1) AFI 10-2501, *Air Force Emergency Management Program Planning & Operations*, requires the use of an emergency notification system for FSTR (Full-Spectrum Threat Response) readiness, utilizing multiple means of communication, including IP networks, telephony, sirens (Giant Voice) and others.
- 2) AFI 10-218, *Personnel Accountability in Conjunction with Natural Disasters or National Emergencies*, requires the use of technology to achieve personnel notification, response tracking and reporting tools.



“Though we share similar emergency alerting needs with other Air Force commands, we also have unique requirements, including the need to call up reservists into active duty to assist in responding to emergencies. As we evaluated different solutions we needed to ensure the one we selected was comprehensive and able to reach people no matter where they are located, on or off base.”

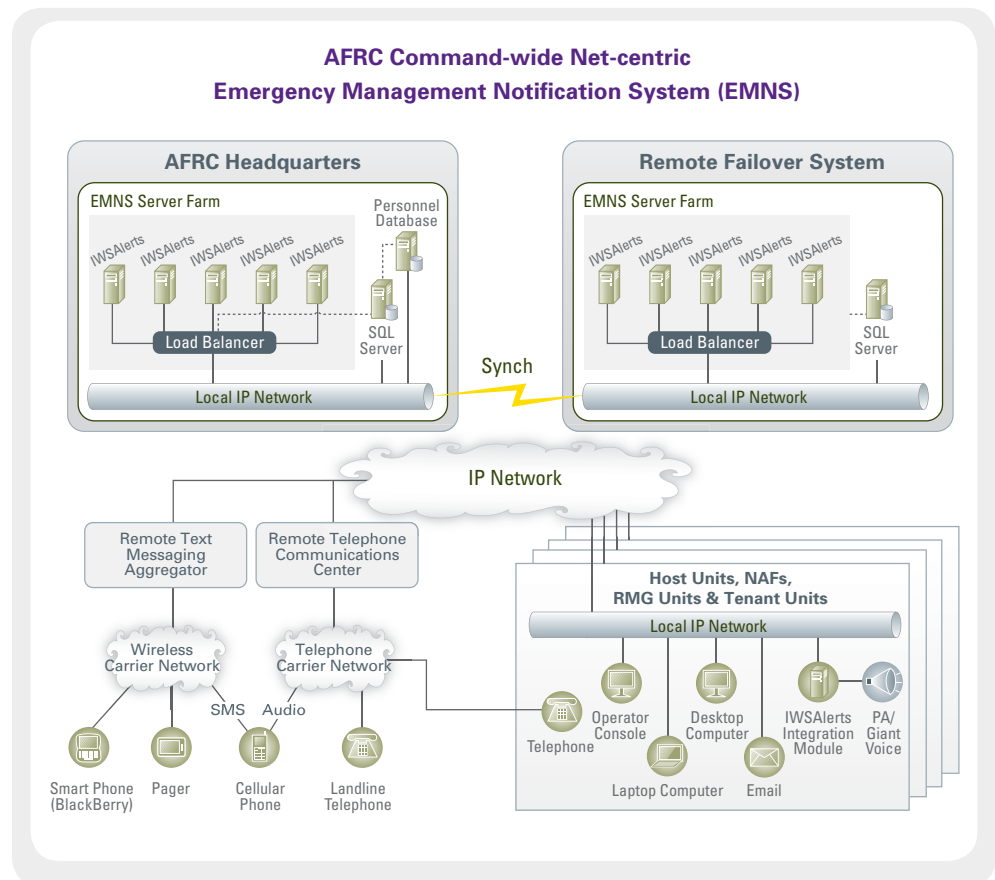
– Robert Tharp,
AFRC Program
Management Branch Chief

Environment

- AtHoc IWSAlerts Enterprise Edition
- Microsoft Windows Server 2003
- Microsoft SQL Server 2005
- Dell PowerEdge 1950 & 2950 Servers
- Cisco CSS 11501 Load Balancers

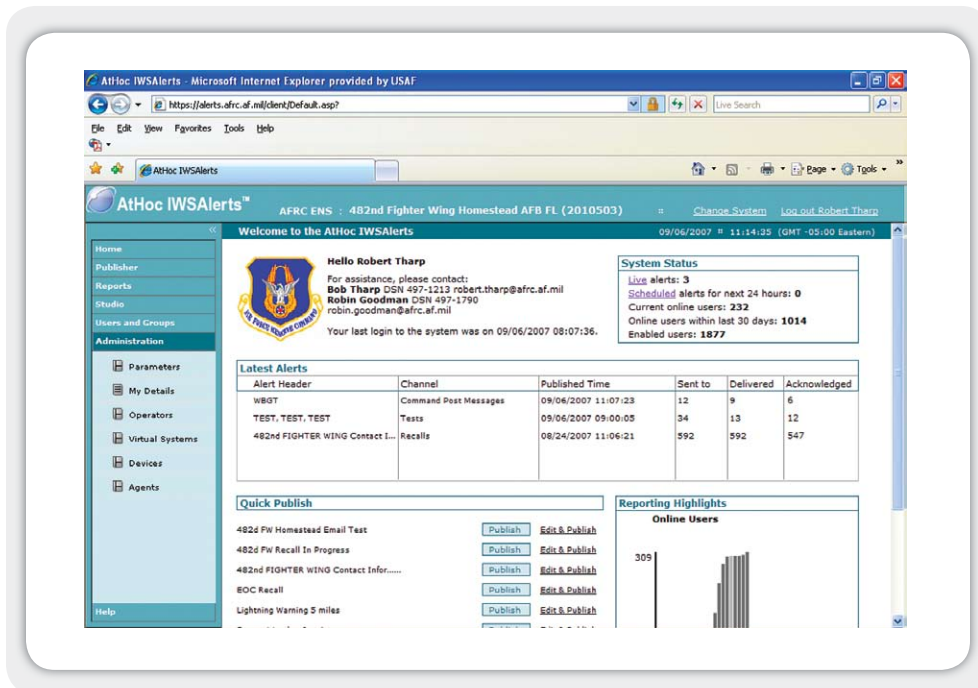
Rapid Deployment via Net-Centric, Enterprise-Wide Architecture

The system has been centrally deployed in an AFRC data center that supports the entire command. Due to this centralized approach, AFRC was able to rapidly deploy AtHoc IWSAlerts Enterprise Edition. AFRC headquarters configured and deployed the AtHoc IWSAlerts servers in six weeks, after which the system was rolled out to all 40 bases and tenants, and operator training was conducted across the command. At an average rate of two bases per week, Initial Operating Condition (IOC) for all wings was achieved, including deployment and training, ensuring the project was completed within the allocated budget.



Central Pool of Communication Resources Maximizes Use and Value

When an emergency occurs, emergency operators need to get information out to personnel as quickly as possible. Because AtHoc IWSAlerts provides a centralized pool of communication resources - including telephone lines - local operators have access to significantly more resources than with previous systems to support a more rapid response. By sharing communication resources across the command, significantly higher utilization is achieved.



“The system delivers alerts through a pop-up message on networked desktops; phone calls to home, work or mobile phones; and emails to work and home addresses. Notifications can range from force protection condition changes and anti-terror warnings, to natural disaster alerts for approaching tornados, hurricanes or other emergency situations.”

– Robert Tharp,
AFRC Program
Management Branch Chief

Managing All Notification Devices through an Integrated Console

AtHoc IWSAlerts now allows AFRC to quickly and effectively communicate a consistent yet individually-tailored alert through multiple devices, all integrated using the IP network. “The system delivers alerts through a pop-up message on networked desktops; phone calls to home, work or mobile phones; and emails to work and home addresses,” said Mr. Robert Tharp, AFRC Program Management Branch Chief. “Notifications can range from force protection condition changes and anti-terror warnings, to natural disaster alerts for approaching tornados, hurricanes or other emergency situations.”

Command post operators logging into their central AtHoc IWSAlerts console can trigger alerts through communication channels such as telephones, computers and mobile devices without having to trigger them separately, saving precious time. Alerts can be activated in seconds, reaching the full command population or individual wings or bases within minutes.

Response Tracking and Accountability

All acknowledgements and responses from every alerted recipient are tracked and reported. This allows operators to monitor responses in real time, providing rapid insight into the safety, well being and position of personnel.

“We can generate alerts that request responses, which the system will record,” said Mr. Tharp. “This capability allows us to capture basic personnel accountability. For example, when an alert is sent out, individuals are asked to respond. With their acknowledgment of the message, this data is recorded. This data is then added to the IWSAlerts alert database and can be used to see the results of the alert.”

Solution

- AtHoc IWSAlerts Enterprise Edition
- Centralized deployment behind the firewall
- MilPDS and CivPDS integration for personnel data management
- AFRC self-service updates
- Command-wide, shared pool of 200 phone lines
- Integration with Giant Voice over IP (planned)
- Failover site at an alternate data center (planned)

Automating Operating Procedures for Emergency Notification and Recall

The system comes with predefined DoD, Air Force and AFRC-developed emergency scenarios. This allows command post operators at any location with permission-based network access to select and run the relevant scenario or create a new one based on the specifics of the emergency to alert personnel either on or off base.

The scenarios outline the types of emergency situation, determine who should be alerted with what messages in response to the scenario, and it allows operators to preselect the best way to reach contacts. For example, in event of a fire, first responders will be alerted through multiple channels directing them toward the impacted location, and personnel located within the impacted building would be contacted and evacuated from the premises.

By planning and automating response procedures for emergency scenarios, AFRC avoids the possibility of having to come up with a plan in the midst of emergencies, dramatically reducing the likelihood of wasted time and errors.

Managing End Users' Contact Information

AtHoc IWSAlerts also addresses one of the biggest challenges of deploying a large-scale emergency alerting system – the management and accuracy of the user contact data.

AtHoc IWSAlerts provides a Personnel Data Integration Module, linking to multiple organizational user repositories in order to import and synchronize organizational structures, user data, attributes, contact details and distribution lists. AFRC staff exports information from the Military Personnel Data System (MilPDS) and the Civilian Personnel Data System (CivPDS) to update AFRC wing information, and this information is then imported into the Personnel Data Integration Module. This makes it much easier to keep wing information and group data current, dramatically reducing maintenance and ensuring up-to-date contact information.

In addition to integration with enterprise data sources, local operators with appropriate authorization can manage user information and create groups for local notification purposes. And with an AFRC self-service capability, end users (in real time) can also add or modify their own personal contact information through a network-connected, Web-based interface.

Meeting AFRC's Security Requirements

The AtHoc solution also addresses the stringent security requirements of the Air Force and AFRC. Deploying software on Air Force networks requires various certifications and approvals. AtHoc IWSAlerts already possessed the required certifications, including DITSCAP (Defense Information Technology System Certification and Accreditation Process) certification. The system also provides military-grade security, including password protection, encryption and integration with the Common Access Card (CAC) security system.

Redundancy and High Availability

In addition to the primary servers on which AtHoc IWSAlerts is deployed, a duplicate failover system is planned for a second remote location. If an emergency situation damages the primary system, the failover system will automatically be activated and become the new primary system providing uninterrupted service to operators.

By supporting a load-balanced configuration, the enterprise system can maintain high levels of performance and availability in the most intense situations, for example when all wings are concurrently activating alert scenarios.

Results and Benefits

Today there are more than 100 operators across the command – each able to use the system for their installation’s individual needs. One example is with the 931st Air Refueling Group in McConnell AFB, Kansas, who uses the system to alert the base populace during exercises and real-world events that affect force protection conditions. As another example, an operator at Lackland AFB, Texas who finds out about a pending storm can alert AFRC personnel on base with relevant information. If however the situation impacts multiple bases, an operator at headquarters located at Robins AFB can contact all impacted groups throughout the entire command.

Across the command, numerous benefits of implementing AtHoc IWSAlerts emerged, including:

Faster Emergency Response

When asked about AtHoc IWSAlerts, Stephen Hannan, the Air Reserve Personnel Center communication and information director responded, “It’s a great improvement to our former manual notifications. Prior to IWSAlerts, it could take us hours or even days to accomplish 100-percent notification. Now we can achieve positive contact in mere minutes.”

Command-wide Reach

The command-wide system allows AFRC to handle threats that span across bases and regions in a more effective and speedy manner. IWSAlerts can send predefined or custom emergency notifications to specific groups or the populace at large. The alerts can be sent to the entire population in minutes.

Improved Personnel Accountability Reporting

AtHoc IWSAlerts’ centralized architecture and response handling allows for a much faster process of reaching users and reporting back with accountability information, thereby providing military commanders with much improved visibility into the status of the force. Knowing the status of personnel and their whereabouts is critical information that is required by the personnel accountability instructions.

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Standardized Emergency Operating Procedures

As a result of having one centralized system used by the entire command, operating procedures and training are standardized. If operators change locations, or if they need to work at a different location temporarily, they will be completely familiar with the emergency notification system.

Standardizing the emergency notification system also promotes best practices command wide. Operators can share ideas about how best to respond to emergency scenarios and how they have configured and planned scenarios within AtHoc IWSAlerts.

Ensured Personnel Data Confidentiality and Network Security

A centrally-managed notification system, deployed behind the firewall, reduces the risk of compromising network security and protects personnel information. Protecting and maintaining one system with critical security updates is also much easier than protecting multiple separate systems. AtHoc IWSAlerts provides all the security certifications required to run on Air Force networks, and it integrates with security systems such as the Common Access Card.

Cost Savings

AFRC derived substantial cost savings from a central deployment of AtHoc IWSAlerts because of consolidating software licenses, hardware servers, professional engineering services, software maintenance and technical support. AtHoc IWSAlerts has already replaced 14 independent notification systems previously used throughout the command, reducing integration costs and dramatically decreasing complexity. In fact, AFRC expects to reduce its infrastructure and support requirements by more than 50% while achieving better performance.

Moving Forward

AtHoc IWSAlerts is currently used to launch alerts to computers, phones and mobile devices. In the near future, it will be integrated with the bases' Giant Voice systems to also manage and trigger alerts through this channel. AFRC also plans to deploy the AtHoc Weather Alerts Module which will allow automatic triggering of alerts based on certain weather conditions and business rules.

“The implementation has been a success,” concluded Mr. Tharp. “We have met Air Force requirements related to FSTR, supported personnel accountability processes, and more importantly, we’ve built a system that directly impacts the safety of AFRC personnel. We continue to look for new and innovative ways to use the system, and we hope to include additional data feeds and systems in the near future.”