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## The Non-Commissioned Officers Association leaps ahead by providing benefits using AWS cloud services implemented by TCI

The **Non-commissioned Officers Association** offers its members online and mobile services for communications. NCOA had a limited ability to facilitate registration of new members when joining its advocacy base. The advocacy members are current or retired members of the U.S. military and offer insight from specific roles within the service to be a voice on Capitol Hill during the legislative process. TCI's mobile application automated and streamlined this registration process, allowing NCOA administrative staff to focus on other important non-profit operations. TCI also integrated with a tool, VoterVoice, allowing the advocates to communicate directly with elected officials using a native mobile format.

This functionality was developed and implemented by TCI. NCOA members can register for events and participate in surveys and other interactive features provided by VoterVoice. This capability and modernization is delivered using AWS services. NCOA benefits from scalable and secure cloud offerings from AWS using Elastic beanstalk, Cloudfront, EC2, S3, and RDS services.

### How TCI Helped NCOA deliver success

NCOA needed a scalable, secure, configurable, and easy to maintain environment for the benefit of their advocacy membership. Their strategy involved converting advocates to full paid members with easy to use interfaces aimed at frequent interactions and increased engagement. NCOA worked with TCI to develop requirements to benefit members. TCI customized the NCOA mobile platform to deliver these requirements in addition to capturing their advocate registrations. Initial development was performed in an environment that facilitated rapid code delivery with several tradeoffs for production capability. The final production environment would require all the benefits of Agile and Devops methods with scalable, secure, configurable, and easy to maintain environments. Some of the technical challenges to resolve included

- Scaling Limits in storage and CPU/compute power
- Security configuration that is aligned with Development Environments but not Production environments
- DBA work was performed by the Development team
- Technical debt rapidly increased as code was deployed
- Some configuration was difficult to perform

- Examples – Forcing SSL/HTTPS only, encrypting data in flight to database, performing fine-grained adjustment of firewall rules

In order to deliver a production ready state using the TCI developed software, TCI and NCOA leveraged the capabilities of AWS. The needed capabilities were easily obtained by a combination of offerings from AWS. AWS services provided easy deployments, scalability, redundancy, security, near instant delivery. TCI focused effort on Agile and Devops methods hosted on AWS for rapid delivery of functionality.

NCOA now benefits from the TCI design effort and AWS services.

**Members can:**

- Search for and view relevant legislation linked to VoterVoice through the NCOA app.
- Register for an NCOA advocacy membership and gain access to limited resources.
- Learn about the value of a full NCOA membership.
- Convert their membership from advocacy to full paid membership.
- Communicate with legislators via VoterVoice integration.
- View recent news, announcements and articles posted by NCOA leadership.

**Technical Benefits**

TCI technical staff evaluated the time to deployment & environment creation from initial processes to using AWS services and measured a 300% improvement. This time savings meant that TCI developers were able to focus on NCOA functionality rather than operational tasks.

TCI technical staff compared results of initial security audits before using AWS services to the benefits of AWS services and drastically reduced environment and infrastructure remediation efforts.

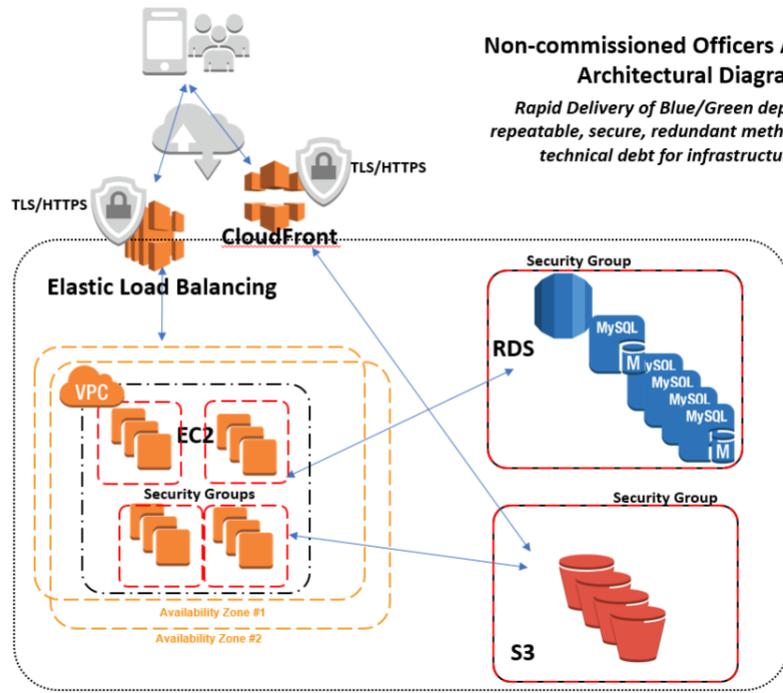
**Lessons Learned**

TCI and NCOA benefitted from the rapid delivery of Java code using the Elastic Beanstalk service as the core platform. Additional benefits and capabilities were gained using enhanced and complimentary services by AWS. These additional services provided secure transactions, redundancy, lowered the costs of database administration, and automated processes that were previously manual.

- Scaling Limits in storage and CPU/compute power were resolved as well as simple to implement
- Security configuration was performed that aligned to needed production best practices
- DBA work was transitioned to the AWS RDS service. Technical debt for database work was eliminated as a challenge.
- Configuration of needed services was completed. Items such as SSL/HTTPS were delivered as required, encrypting data in flight to database was completed, and necessary firewall rules were completed.

# Reference Architectural Diagram

-  Elastic Beanstalk
-  Cloud Watch
-  Trusted Advisor
-  Certificate Manager



## Non-commissioned Officers Association Architectural Diagram

*Rapid Delivery of Blue/Green deployments in a repeatable, secure, redundant method. Incurring low technical debt for infrastructure services.*