



## The Border Patrol Foundation (BPF) leaps ahead by providing benefits using Mobile Apps deployed on AWS cloud implemented by TCI

The Border Patrol Foundation offers its members online and mobile services for communications. BPF had a limited ability to deliver membership engagement options to a potential pool of 22,000+ Border Patrol Agents and their families.

This functionality was developed and implemented by TCI. BPF members can register for fundraising events and volunteer opportunities utilizing mobile and web apps built on TCI MobileConnect platform. In addition, users can donate and access informational media such as events and directories. This capability and modernization is delivered using Amazon Web Services (AWS). BPF benefits from scalable and secure cloud offerings from AWS using Elastic beanstalk, Cloudfront, EC2, S3, and RDS services.

### How TCI helped BPF deliver success

BPF needed a scalable, secure, configurable, and easy to maintain environment for the benefit of members. BPF worked with TCI to develop requirements to benefit members. TCI customized its mobile platform to deliver these requirements for BPF. 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
- Some configurations were difficult to perform
  - o 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 BPF leveraged the capabilities of AWS. The needed capabilities were easily obtained by a combination of offerings from AWS. AWS provided easy deployments, configuration management, scalability, redundancy, security, and near instant delivery. TCI focused effort on Agile and DevOps methods hosted on AWS for rapid delivery of functionality.

## Benefits to BPF

TCI Mobile Solution provided a significant capability to BPF by enabling additional channel to communicate via mobile application, such as:

- Streamlined member engagement - resulting in improved donor participation, thus increasing benefits to Border Patrol agents in times of need
- BPF-branded Mobile App for conducting secure transactions beyond basic information dissemination
- Ability to track volunteer contributions
- Highly scalable services

## Technical Benefits

TCI technical staff shortened the configuration and deployment time using AWS. This time savings meant that TCI developers could focus on BPF functionality rather than operational tasks.

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

## Lessons Learned

TCI and BPF benefitted from the rapid delivery of web and mobile apps 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, in addition to the following:

- Scaling Limits in storage and CPU/compute power were resolved in addition to simplified implementation
- 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 result.
  - 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 in a very efficient manner.

## Reference Architectural Diagram

