Andrew Barnes

A capable and passionate software developer, Andrew has over 8 years of experience building, designing, integrating and supporting high-volume, high-availability, fault-tolerant, national scale payments systems both in the UK and internationally. Andrew possesses a great enthusiasm for learning new (and old!) systems and technologies, both for his own enjoyment as well as to better understand the software development landscape, its history and its future.

Andrew utilises strong communication skills in his day to day work as well as to run internal KT sessions and external demos to senior level customers, both technical and non-technical.

Motivated to deliver high quality, maintainable, clean, robust and vulnerability free code and platforms which can be readily supported and continuously improved across a lifespan of many years if not decades. He prefers to do things correctly rather than quickly and endeavours to understand how and why things work, not just what works. He measures success not just by the robustness, impact and overall success of deliveries, but also the ease and ability with which engineers can maintain, improve, expand, innovate and test them.

Professional Experience

Java	Java 8, Spring, Springboot, Camel, SLF4J + cal10n, JUnit, Mockito, StAX/SAX, multi-threading & concurrency
Other languages, scripting	Regex, Oracle SQL, PL/SQL, JS, HTML, CSS, React, Redux, bash/sh, awk, sed, make, VBA
Tooling	IntelliJ, Maven, Git, Jenkins, GitHub, Gitlab, Bitbucket, Nexus, Artifactory, Sonar, Blackduck, Docker, VSCode, Postman
Linux Tools	Vim, tcpdump, nc/netcat, curl, grep, jq, find
Middleware, app. servers	Tomcat 8, IBM WAS, IBM MQ, RabbitMQ, JMS
Security	XML Signing, 3DES, AKDS, PKI, Payshield HSM, Luna HSM, HP Fortify, Threat Modelling, PCI-DSS
Protocols and standards	HTTP, REST, TCP/IP, ISO8583, ISO20022
Other experience	SCOBOL, COBOL, TAL, TACL, HP Nonstop/Tandem, Nonstop Java, Base24, XPNET, TSS

Personal Experience

Programming	NodeJS, Vue, Golang, Python, C, jQuery, Android (Java SDK, React Native), Bootstrap
Tooling	Kubernetes/Minikube, Docker Swarm, Coveralls, CirleCI, Heroku, Netlify, Keycloak, Nginx, Squidman, HAProxy

Employment

Lead Software Development Engineer Vocalink/Mastercard Mar 2017 - Present	Lead a distributed team (US and UK) which designed, delivered and integrated a general purpose, configuration driven, messaging and security gateway with the Immediate Payments System (IPS). Supported ~1000TPS per connection with multiple available channels (HTTP/REST, MQ, TCP/IP) and formats (20022, 8583, JSON). Provide technical leadership and drive best practices within the team around code quality, CI, design. Coordinate with other engineering leads, BAs and architects to ensure consistency across product and component integrations.

	Coordinate across engineering and other business areas to define and improve wider organisational practices.
	Personally built an ISO8583 over TCP/IP simulator from scratch including a UII with full 3DES key support which became the defacto TCP/IP 8583 simulator deployed into test environments.
	ISO20022, ISO8583, Java 8, Spring, Springboot, Camel, JDBC, StAX, SQL, shell scripting, Tomcat, IBM WAS, IBM MQ, RabbitMQ, Thales HSMs, PKI, 3DES, Git, GitHub, Atlassian, Jenkins, Sonar, Blackduck, HP Fortify, Bootstrap, JQuery
Senior Software Development Engineer Vocalink/Mastercard Mar 2017 - Dec 2018	Worked on the Immediate Payments System (IPS), a platform for orchestrating ACH payments using ISO20022 and the IPS gateway for customers. Delivered key changes around a system re-design to support cross product modularity and horizontal scaling to drive demanding throughput and SLAs. Resolved security vulnerabilities and performed an upgrade of all java libraries across the platform to meet compliance requirements. Delivered changes to support an HSM upgrade for one of our customers. Delivered a platform wide tooling update to create docker containers during builds allowing automated deployments of a full end to end system on local development environments and into AWS both for internal and customer use. ISO20022, Java 8, Spring, Springboot, JDBC, AspectJ, SQL, batch and shell scripting, React, Redux, SAX, IBM WAS, IBM MQ, RabbitMQ, Luna HSMs, PKI, Git, GitHub, Atlassian, Jenkins, Sonar, HP Fortify
Developer Vocalink Aug 2012 - Feb 2017	Delivered changes for ATM payments, Mobile Phone Top Ups (MPTU), customer web portal and internal systems integration. Main focus was implementing and driving DCC and FCD for ATM customers across UK and Europe, integrations with payments schemes (LINK, Mastercard, etc.) as well as settlement and reconciliation platforms for banks, independent ATM deployers, schemes and Telcos. ISO8583, SCOBOL, COBOL, TAL, HP Nonstop/Tandem, Base24, TSS, A98, Thales HSMs, 3DES, Java 5/6, Spring, JSP, Struts, Hibernate, SQL, PL/SQL, VBA, batch and shell scripting, WebLogic, Subversion, Atlassian

Other

Girls4Tech Mastercard 2017 - Present	(Volunteer) Mastercard's signature education program launched to drive the interest of young girls in STEM.
Take Initiative Mastercard 2017 - Present	A yearly group brainstorming/hackathon event designed to promote innovation in the payments industry. Has resulted in a patent submission to the EPO and another draft patent.
Kings Ski Club 2013 - Present	(Volunteer) Largest Ski and Snowboard dryslope competition in the UK
Hobbies	Snowboarding, bouldering, running (slowly!), wakeboarding, Arduino, CTFs, programming (https://github.com/andrewflbarnes)
Education	University of Bath - BSc Hons Mathematics