

MICHIGAN STATE

UNIVERSITY

Beta Presentation

Connected Vehicle Protocol Test Harness

The Capstone Experience

Team Ford

Alex Bergman

Ryan Bruns

Eric Coldwell

Weilong Li

Usman Majeed

Department of Computer Science and Engineering

Michigan State University

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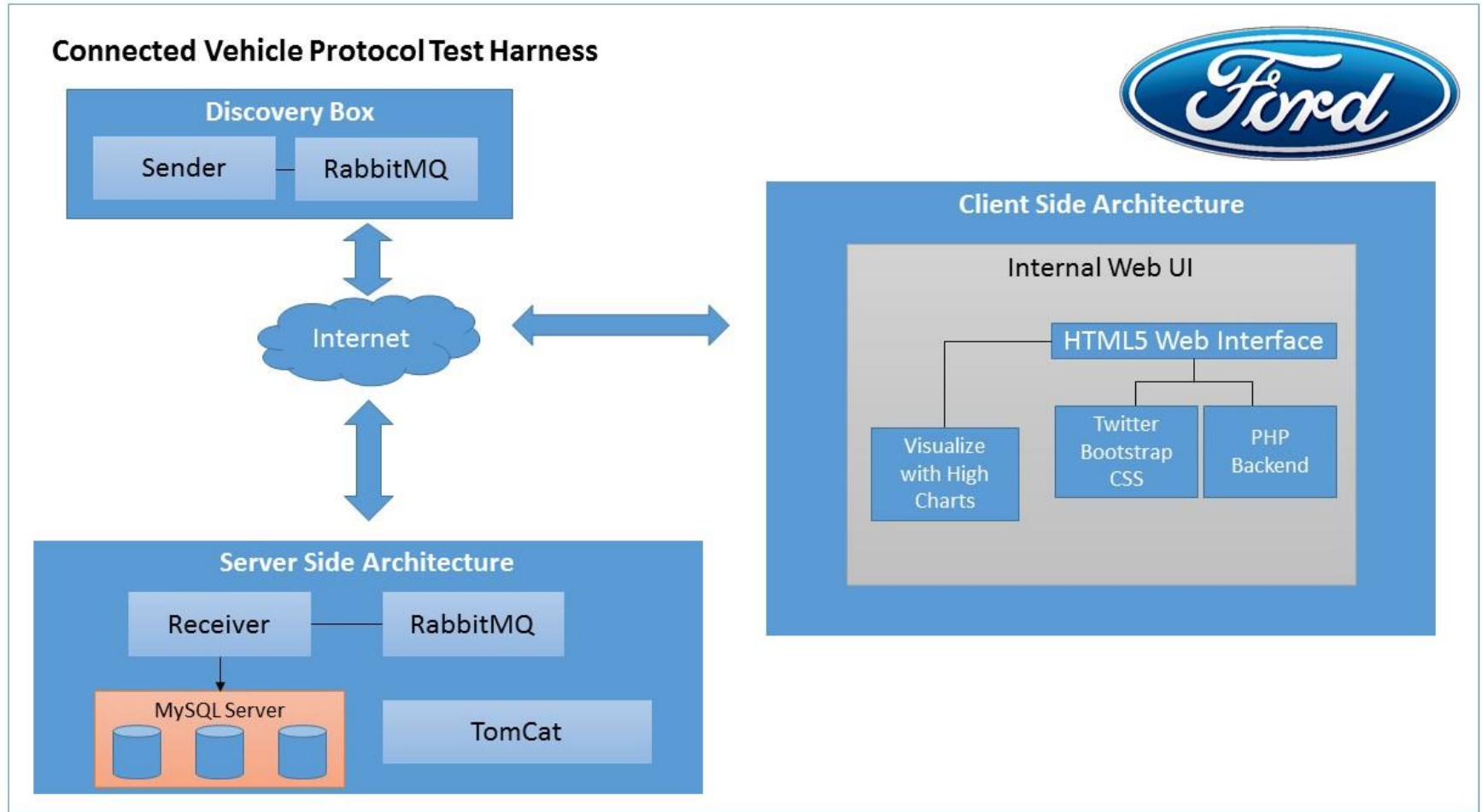
*From Students...
...to Professionals*

Project Overview

- Variety of Messaging Protocols
- Using the Discovery Box talk to a server
- Performance benchmark
- Test results viewed with a web interface
- Why is our project important?
 - Protocol Efficiency/Reliability
 - Protocol Ease of Use



System Architecture

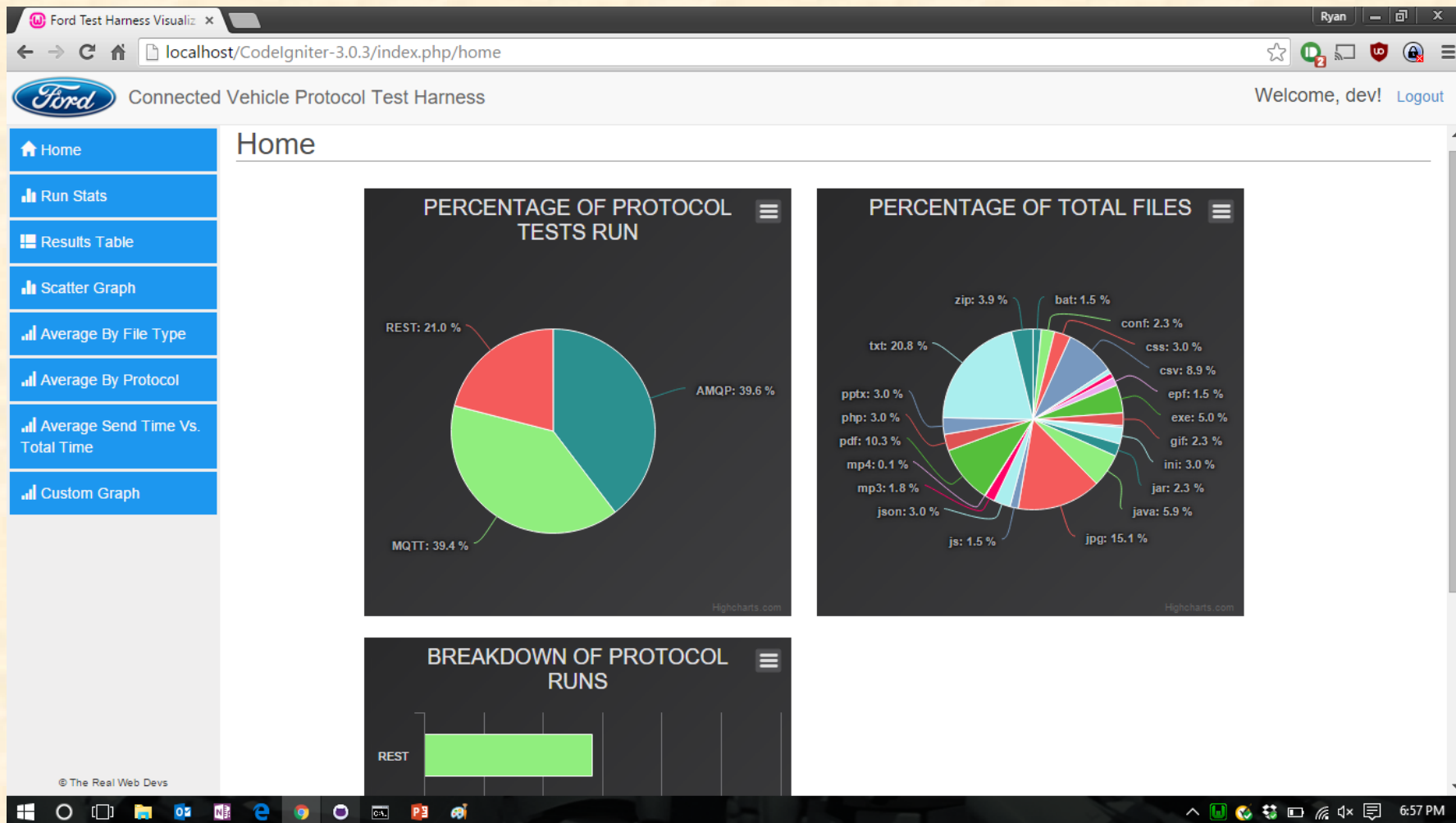


Discovery Box GUI

The screenshot displays the 'Connected Vehicle Protocol Test Harness' GUI. At the top, there are input fields for 'AMQP SERVER IP:' (35.9.22.101) and 'MQTT SERVER IP:' (35.9.22.101). Below this is the 'Rest Files' section with a checkbox for 'Rest', a 'Download Files' dropdown set to 'batmeter.dll', and a 'Test Runs' dropdown set to '50'. The 'Send Protocols' section is divided into three panels: MQTT, AMQP, and REST. The MQTT panel has a checked checkbox, 'Effects' set to 'Normal', 'Chunk Size' set to '16KB', 'Encryption' set to 'AES', and 'Test Runs' set to '5'. The AMQP panel has a checked checkbox, 'Effects' set to 'Normal', 'Chunk Size' set to '16KB', 'Encryption' set to 'None', and 'Test Runs' set to '5'. A 'Run Test(s)' button is centered below these panels. At the bottom, three result panels are shown: 'REST Results' (Run 20 of 50, Running Time: 754.26 second(s), Average Download Time: 37.71 seconds(s), Protocol: REST, File Size: 2010KB, Time: 37.158 second(s)), 'AMQP Results' (Run 5 of 5, Average Speed: 12824.29 KB/s, Average Send Time: 0.08 second(s), Running Time: 60.22 second(s), Protocol: AMQP, Encrypted with: None, File Size: 1066KB, Package Size: 16KB, Packages Sent: 67, Packages Resent: 0, Total Time: 14.591 second(s), Sending Time: 0.083 second(s), Speed: 12843.37 KB/s), and 'MQTT Results' (Run 5 of 5, Average Speed: 8064.937 KB/s, Average Send Time: 0.172 second(s), Running Time: 205.007 second(s), Protocol: MQTT, Encrypted with: AES, File Size: 1066KB, Package Size: 16KB, Packages Sent: 67, Packages Resent: 0, Total Time: 28.231 second(s), Sending Time: 0.154 second(s), Speed: 6922.08 KB/s).



Home Page



Results Table

Results Table

Show entries Search:

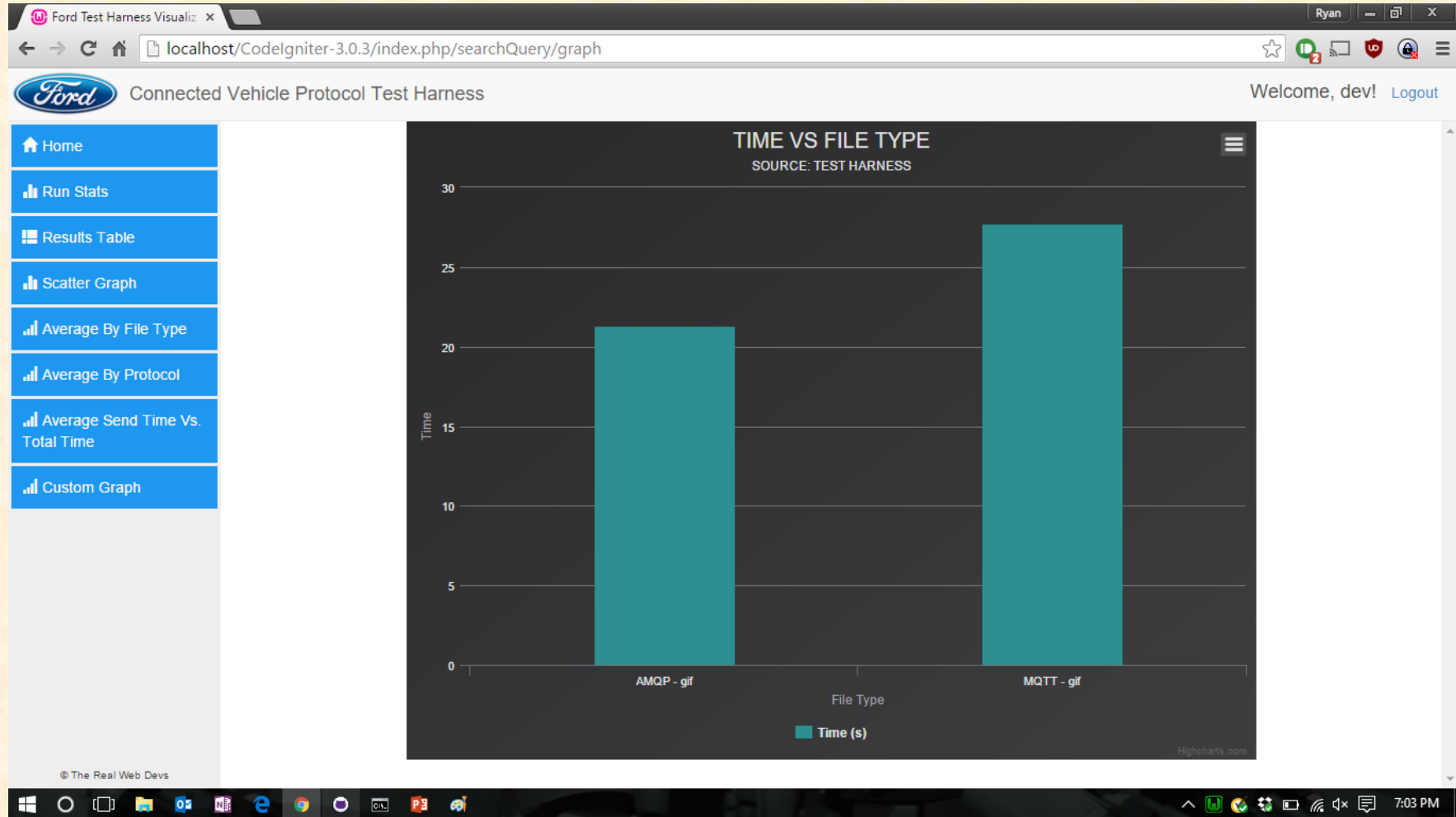
Protocol	File Type	Encryption Used	Channel Effect	File size (kB)	Packet size (kB)	Packets sent	Total Time (sec)	Sending Time (sec)	TimeStamp
AMQP	pdf	AES	Normal	6924	512	15	61.631	1.18	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	59.848	0.767	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	56.76	0.754	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	61.882	0.83	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	77.061	1.019	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	93.758	1.527	2015-11-12 20:14:13
AMQP	gif	None	Normal	1076	128	10	20.303	0.092	2015-11-12 20:14:13
AMQP	gif	None	Normal	1076	128	10	19.466	0.137	2015-11-12 20:14:13
AMQP	gif	None	Normal	1076	128	10	23.861	0.156	2015-11-12 20:14:13
AMQP	pdf	AES	Normal	6924	512	15	111.213	1.404	2015-11-12 20:14:13

Showing 1 to 10 of 3,465 entries Previous **1** 2 3 4 5 ... 347 Next

[Download Table](#)



Custom Graph



What's left to do?

- Code cleanup
- Final Ford Documentation
- Project Video
- Design Day

