

WebQoE: Understanding Application performance in WiFi networks

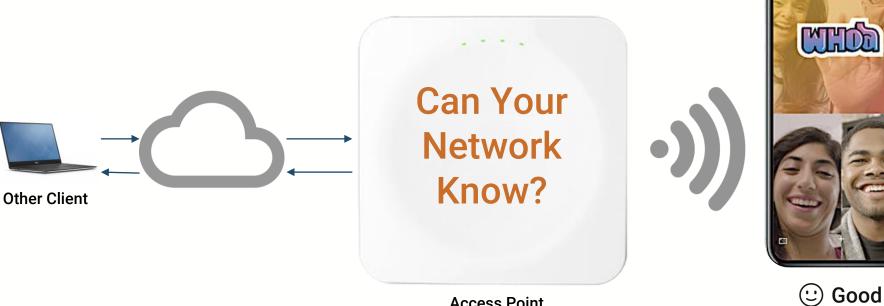
#WiFi-KS, 2021

Rikith Reddy

Software Engineer Arista Networks

rikith.reddy@arista.com

Why Application QoE Important?

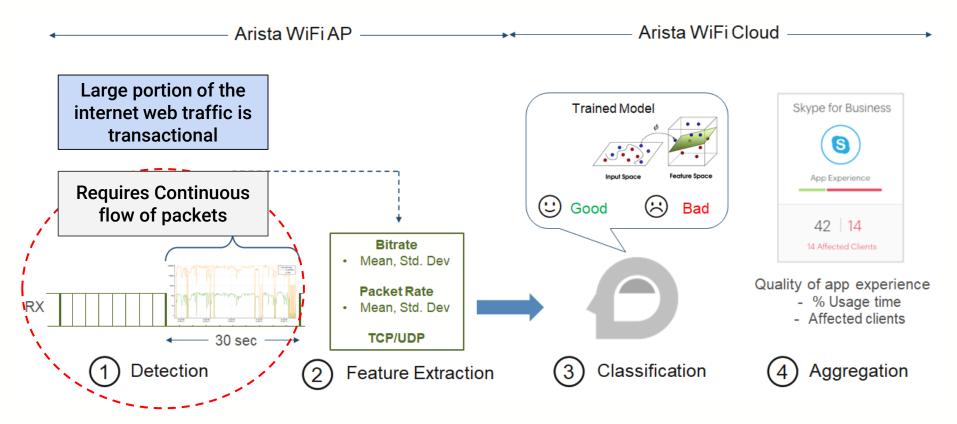


Access Point

ARISTA

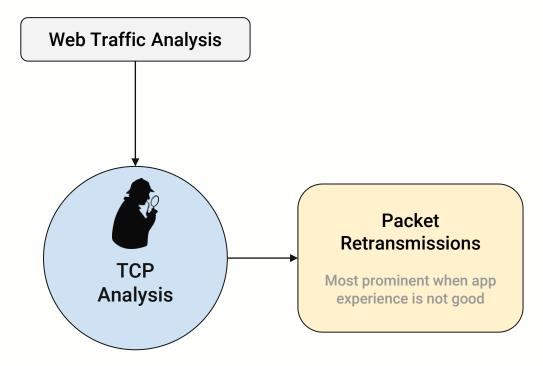
or Bad?

Solution For VoIP & Video Conferencing Applications



ARISTA

WebQoE: Short Summary





Detect packet retransmission events

Simulate TCP state machine

Compute the wait time, due to packet loss

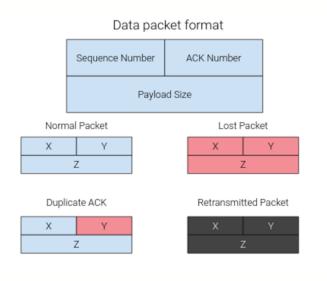


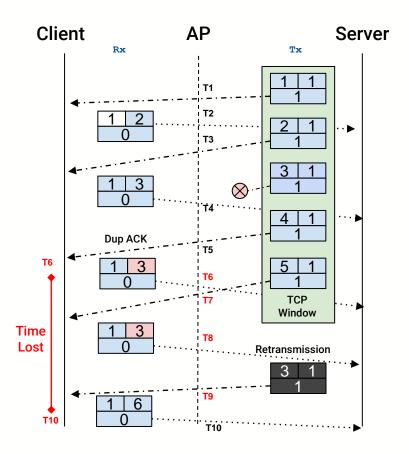


The WebQoE Algorithm



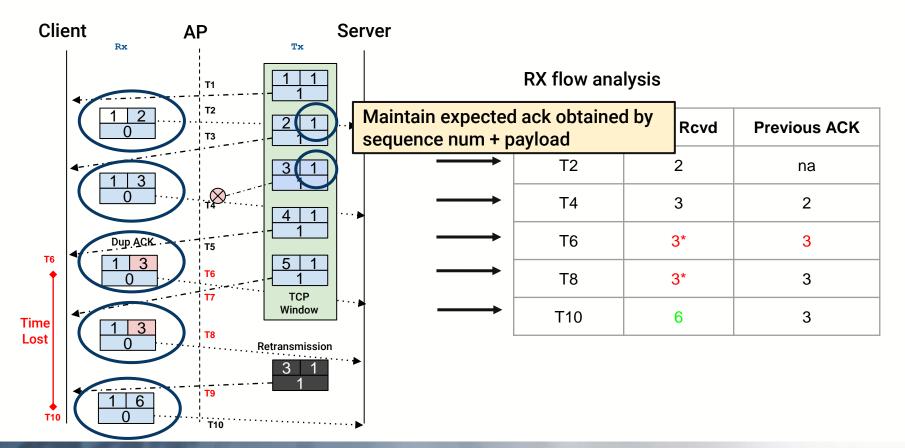
WebQoE Core Logic



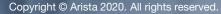




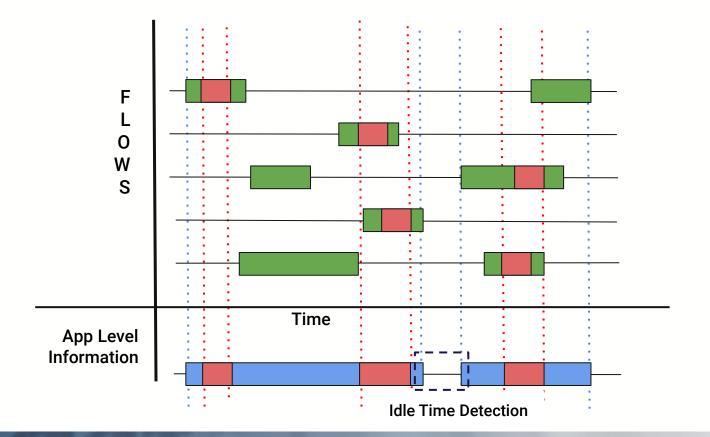
State On The AP



ARISTA



Application Level Inferencing



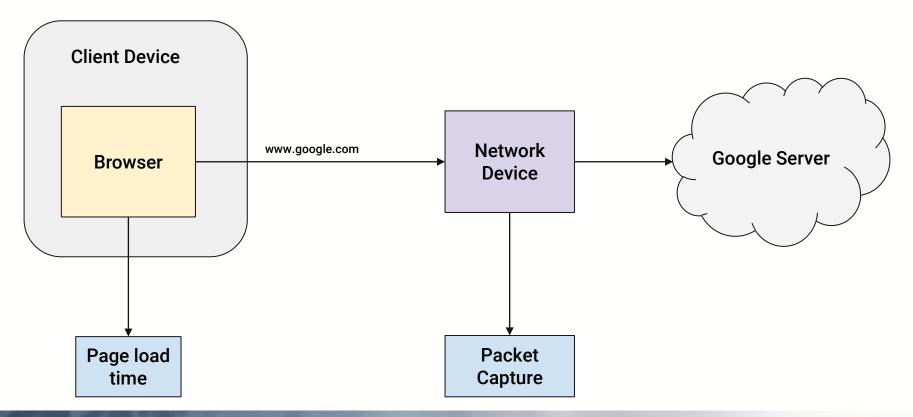




Results

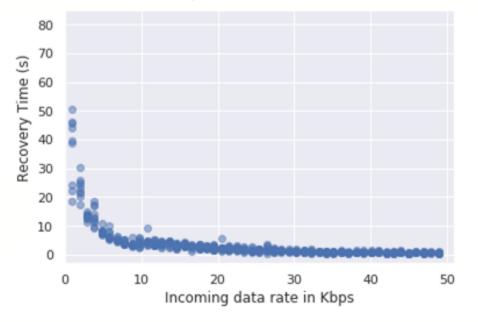


Test Setup



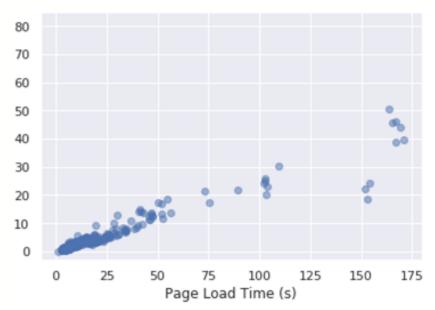


Bandwidth Variation



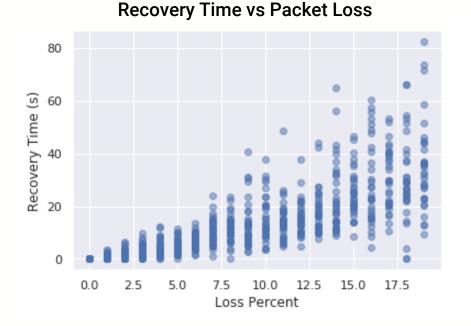
Recovery Time vs Bandwidth

Recovery Time vs Page Load

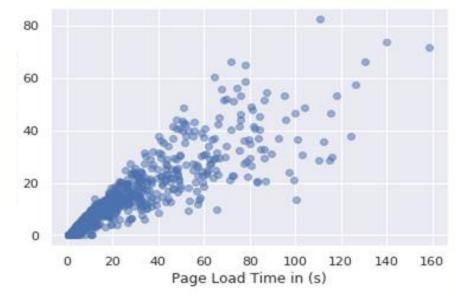




Induced Packet Drops

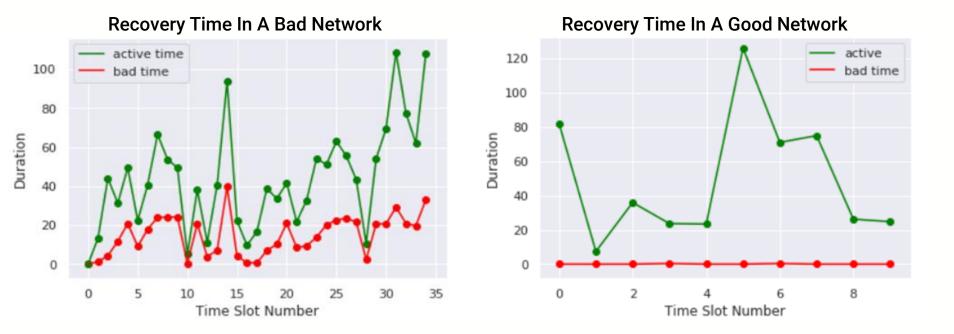


Recovery Time vs Page Load





Performance

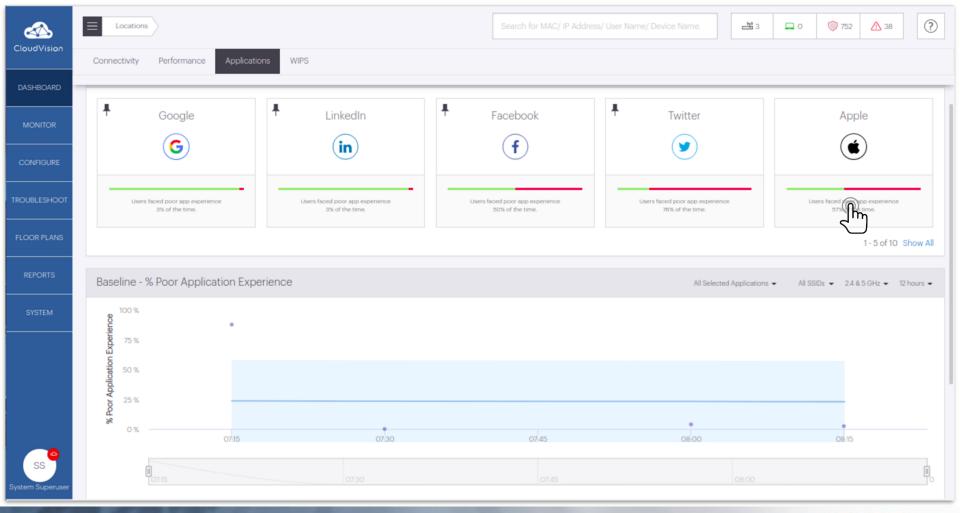






WebQoE In Action





ARISTA

	Locations			Search for I	MAC/ IP Address/ User Nam	e/ Device Name	≚ 3 ♀	752 🛆 38 🕐
	Apps Dashboard > Application Expe	erience Apple -						
DASHBOARD								2
CONFIGURE	Apple							
TROUBLESHOOT	07/15		07.30			07.45		0
FLOOR PLANS								
REPORTS	Clients using this Appli	Cation -	And factor Decisions	a			00 0 000	er den over
SYSTEM	Name	User Name	Application Experience	Recently Associated SSID	Vendor	Operating System	Location	Application Usage Tim
	E LAP-539			#webgoe#old2	Intel	Microsoft Windows 10	//Locations/Staging Area	2 min 22 sec
	E LAP-539	** : ** :		#webqoe#old2 #webqoe#old2	Intel Marconi	Microsoft Windows 10	//Locations/Staging Area //Locations/Staging Area	
	U based							3 sec
	8 Marconi_00:00:00			#webqoe#old2	Marconi		//Locations/Staging Area	3 sec 2 sec
	Marconi_00:00:00 Marconi_00:00:01			#webqoe#old2 #webqoe#old2	Marconi Marconi	ан. 	//Locations/Staging Area //Locations/Staging Area	3 sec 2 sec 5 sec
	8 Marconi_00:00:00 8 Marconi_00:00:01 8 Marconi_00:00:02	 tejas_name_vlan:3018		#webqoe#old2 #webqoe#old2 #webqoe#old2	Marconi Marconi Marconi	**	//Locations/Staging Area //Locations/Staging Area //Locations/Staging Area	3 sec 2 sec 5 sec 4 sec
	0 Marconi_00:00:00 0 Marconi_00:00:01 0 Marconi_00:00:02 0 Marconi_00:00:03			#webqoe#old2 #webqoe#old2 #webqoe#old2 #webqoe#old2	Marconi Marconi Marconi Marconi	** ** **	//Locations/Staging Area //Locations/Staging Area //Locations/Staging Area //Locations/Staging Area	3 sec 2 sec 5 sec 4 sec 4 sec
System Superuser	0 Marconi_00:00:00 0 Marconi_00:00:01 0 Marconi_00:00:02 0 Marconi_00:00:03 0 Marconi_00:00:04	 tejas_name_vlan:3018 		#webqoe#old2 #webqoe#old2 #webqoe#old2 #webqoe#old2 #webqoe#old2	Marconi Marconi Marconi Marconi Marconi	** ** ** **	//Locations/Staging Area //Locations/Staging Area //Locations/Staging Area //Locations/Staging Area //Locations/Staging Area	3 sec 2 sec 5 sec 4 sec 4 sec 6 sec



Thanks!

Questions?



