

n. Set up or used continuous monitoring

Continuous monitoring is an importance aspect of ensuring high performance and availability for our application. BE usually attempts to utilize the monitoring tools and technologies available from our customers for the efficient and integrated management experiences when possible. Given this application is a prototype and deployed in an isolated environment we opted to use the robust capabilities of AWS.

Specifically, we utilized AWS CloudWatch to provide continuous monitoring of our prototype environment. The CloudWatch service monitors EC2 & Elastic Beanstalk resources and applications in real-time including a log collection service that tracks system and program logs that can be used to identify application errors and security issues. Monitoring rules were set to push notifications to the team based on a custom ruleset.

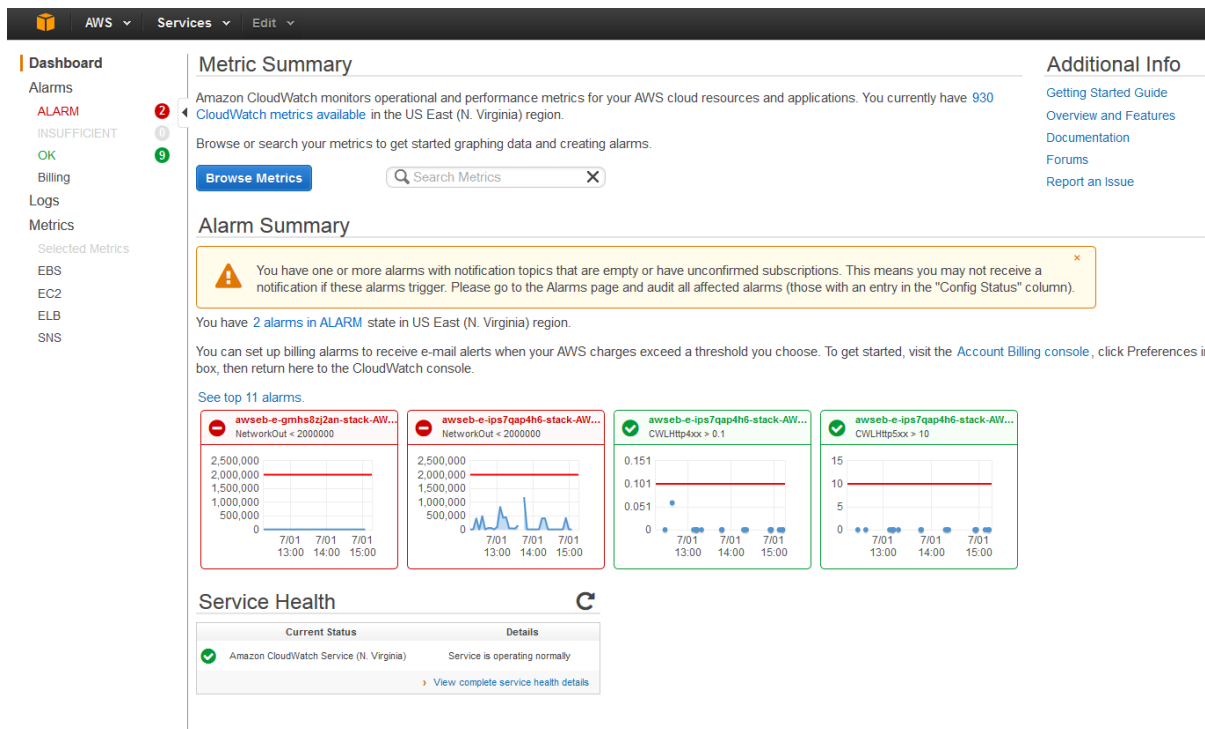


Figure 1. AWS Alarms

Dashboard	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /app/shared/header.html HTTP/1.1" 200 1444 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
Alarms	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /favicon.ico HTTP/1.1" 200 1150 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
ALARM	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /app/shared/footer.html HTTP/1.1" 200 1001 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
INSUFFICIENT	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /favicon.ico HTTP/1.1" 304 0 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
OK	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /favicon.ico HTTP/1.1" 304 0 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
Billing	172.31.62.5 - [01/Jul/2015:17:11:47 +0000] "GET /app/search/search.html HTTP/1.1" 200 8939 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
Logs	172.31.62.5 - [01/Jul/2015:17:11:48 +0000] "GET /api/version HTTP/1.1" 200 48 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
Metrics	172.31.62.5 - [01/Jul/2015:17:11:48 +0000] "GET /images/logo.png HTTP/1.1" 200 2900 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
Selected Metrics	172.31.62.5 - [01/Jul/2015:17:11:49 +0000] "GET /images/logo.png HTTP/1.1" 304 0 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
EBS	172.31.62.5 - [01/Jul/2015:17:11:49 +0000] "GET /api/version HTTP/1.1" 304 0 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
EC2	172.31.62.5 - [01/Jul/2015:17:11:49 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 528 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
ELB	172.31.62.5 - [01/Jul/2015:17:11:49 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 528 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
SNS	172.31.62.5 - [01/Jul/2015:17:12:05 +0000] "GET /api/version HTTP/1.1" 200 48 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:05 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 72 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:05 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 72 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:05 +0000] "GET /favicon.ico HTTP/1.1" 200 1150 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:21 +0000] "GET /api/version HTTP/1.1" 200 48 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:21 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 4986 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:21 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 1150 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:26 +0000] "GET /api/version HTTP/1.1" 200 48 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:26 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 4986 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:12:26 +0000] "GET /api/drugs/brand_name=advililimit=10max_age=200min_age=0search_type=recallskip=0 HTTP/1.1" 200 1150 "-" "Mozilla/5.0 (Windows NT 6.3; WOW64; rv:38.0) Gecko/20100101 Firefox/38.0" "38.104.237.236"
	172.31.62.5 - [01/Jul/2015:17:13:05 +0000] "GET / HTTP/1.1" 200 834 "-" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"
	172.31.62.5 - [01/Jul/2015:17:13:05 +0000] "GET /lib/third-party.css HTTP/1.1" 200 155844 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"
	172.31.62.5 - [01/Jul/2015:17:13:05 +0000] "GET /lib/webapp.js HTTP/1.1" 200 16388 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"
	172.31.62.5 - [01/Jul/2015:17:13:05 +0000] "GET /lib/webapp.js HTTP/1.1" 200 16388 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"
	172.31.62.5 - [01/Jul/2015:17:13:07 +0000] "GET /app/shared/footer.html HTTP/1.1" 200 1444 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"
	172.31.62.5 - [01/Jul/2015:17:13:07 +0000] "GET /app/shared/footer.html HTTP/1.1" 200 1001 "https://be-safe.buchanan-edwards.com/" "Mozilla/5.0 (iPhone; CPU iPhone OS 7_1_1 like Mac OS X) AppleWebKit/537.51.2 (KHTML, like Gecko) Version/7.0 Mobile/11D201 Safari/9537.53" "70.106.255.106"

Figure 2. AWS Alarm details

Before moving a prototype application to production, BE would work with the DevOps/Operations team to determine the most appropriate way to monitor the application to include performance and security.

Alarms

Alarms were set up for each of the basic monitoring settings. Thresholds were configured for each setting, and if the threshold was breached, an email would be sent to the dev team describing which alarm had been activated.

Below we have an example of the Latency Alarm being activated and displayed to the team.

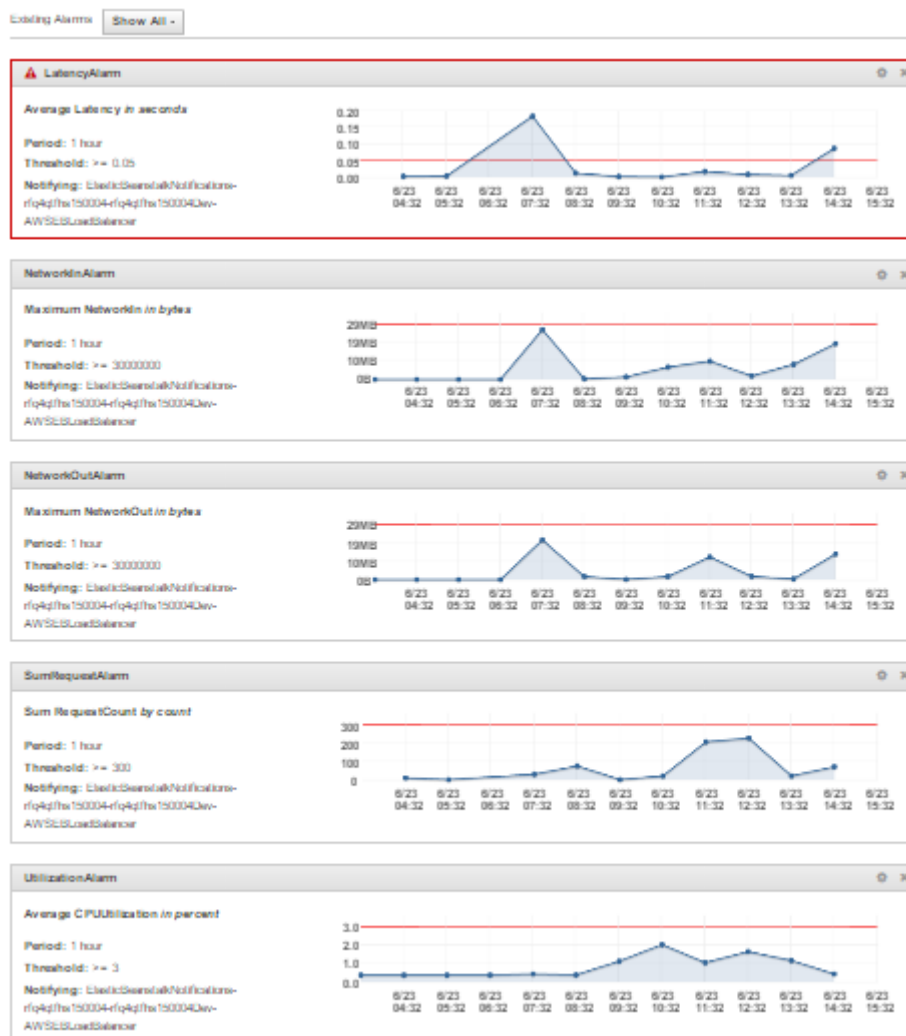


Figure 3. Latency Alarm Activation