

Multi Region API

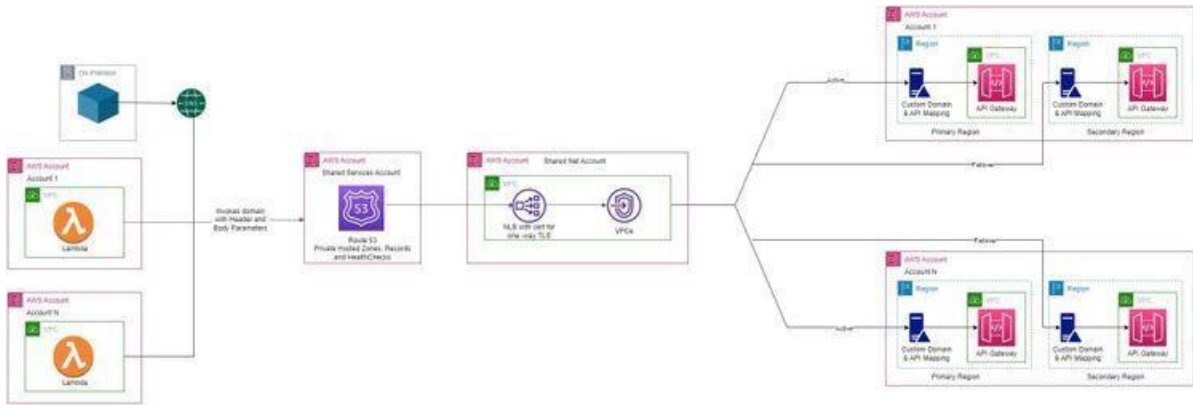
ONLY AVAILABLE FOR NEW BIAN DOMAIN ACCOUNTS

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Overview

Private APIs are mapped to a specific VPC, these APIs are accessed within the VPC. To invoke the API one has to use a VPC endpoint link and pass the x-apigw-id of API in header and then access it, this makes the pattern difficult to manage.

AWS API gateway gives us the flexibility to host a specific domain and map the API gateway's to it using Custom domain feature. This domain becomes access point for all the users/applications trying to invoke a specific API. *Custom domain names* are simpler and more intuitive URLs that you can provide to your API users/applications. Custom domains are supported for Public API and to use it for Private API we would require to configure it via Route53 as explained in below diagram.



This setup also helps create a multi-region setup for API gateway which provides high availability in case of region failures, AZ failure, low latency, secure and scalable.

Resources

Shared Services Account Resources

Environment	Route 53 Record Name	Routing Policy	Differentiator	Region	Route Traffic to Target NLB (deployed in shared network account)	Route 53 Healthcheck Name	CloudWatch alarm for Healthcheck
dev	ent-dev.bussup.api.devhcloud.bmogc.net	Failover	Primary	us-east-1	nlb-edbs1-ue1-dev-api-ingr-dcf87f073a0a4cb3.elb.us-east-1.amazonaws.com	edbs1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:edbs1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.bussup.api.devhcloud.bmogc.net	Failover	Secondary	ca-central-1	nlb-edbs1-cc1-dev-api-ingr-69dcc8d122447e99.elb.ca-central-1.amazonaws.com	edbs1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:edbs1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.opexec.api.devhcloud.bmogc.net	Failover	Primary	us-east-1	nlb-edoe1-ue1-dev-api-ingr-086cc6d341416340.elb.us-east-1.amazonaws.com	edoe1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:edoe1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.opexec.api.devhcloud.bmogc.net	Failover	Secondary	ca-central-1	nlb-edoe1-cc1-dev-api-ingr-clce94810daf0d1a.elb.ca-central-1.amazonaws.com	edoe1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:edoe1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.riskcomp.api.devhcloud.bmogc.net	Failover	Primary	us-east-1	nlb-edrc1-ue1-dev-api-ingr-133eb27908e87bb6.elb.us-east-1.amazonaws.com	edrc1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:edrc1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.riskcomp.api.devhcloud.bmogc.net	Failover	Secondary	ca-central-1	nlb-edrc1-cc1-dev-api-ingr-3922183b4da21a44.elb.ca-central-1.amazonaws.com	edrc1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:edrc1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.refdata.api.devhcloud.bmogc.net	Failover	Primary	us-east-1	nlb-edrd1-ue1-dev-api-ingr-80717e981f74fe9e.elb.us-east-1.amazonaws.com	edrd1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:edrd1-ue1-shr01-ent-multiregion-healthcheck-error-alarm

	ent-dev.refdata.api.devhcloud.bmogc.net	Failover	Secondary	ca-central-1	nlb-edrd1-cc1-dev-api-ingr-349f6e9fd9dfd5b7.elb.ca-central-1.amazonaws.com	edrd1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:edrd1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.salesserv.api.devhcloud.bmogc.net	Failover	Primary	us-east-1	nlb-edss1-ue1-dev-api-ingr-6920955832a888fa.elb.us-east-1.amazonaws.com	edss1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:edss1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-dev.salesserv.api.devhcloud.bmogc.net	Failover	Secondary	ca-central-1	nlb-edss1-cc1-dev-api-ingr-8641b59451f95efa.elb.ca-central-1.amazonaws.com	edss1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:edss1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
tst	ent-tst.bussup.api.devhcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-etbs1-cc1-tst-api-ingr-ce1944128aaald0b.elb.ca-central-1.amazonaws.com	etbs1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:etbs1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.bussup.api.devhcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-etbs1-ue1-tst-api-ingr-d7e54f31fa5eacc9.elb.us-east-1.amazonaws.com	etbs1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:etbs1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.opexec.api.devhcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-etoel-cc1-tst-api-ingr-1a5fd464366ff62a.elb.ca-central-1.amazonaws.com	etoel-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:etoel-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.opexec.api.devhcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-etoel-ue1-tst-api-ingr-a701585c8db233a2.elb.us-east-1.amazonaws.com	etoel-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:etoel-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.riskcomp.api.devhcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-etrc1-cc1-tst-api-ingr-198551698e0065ef.elb.ca-central-1.amazonaws.com	etrc1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:etrc1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.riskcomp.api.devhcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-etrc1-ue1-tst-api-ingr-f05147f0e099245d.elb.us-east-1.amazonaws.com	etrc1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:etrc1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.refdata.api.devhcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-etrd1-cc1-tst-api-ingr-7ed065b8e764a565.elb.ca-central-1.amazonaws.com	etrd1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:etrd1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.refdata.api.devhcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-etrd1-ue1-tst-api-ingr-ffffba07eeb01d63.elb.us-east-1.amazonaws.com	etrd1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:etrd1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.salesserv.api.devhcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-etss1-cc1-tst-api-ingr-0ceaba81506ebe43.elb.ca-central-1.amazonaws.com	etss1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:etss1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent-tst.salesserv.api.devhcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-etss1-ue1-tst-api-ingr-6c6f566c6084dd50.elb.us-east-1.amazonaws.com	etss1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:etss1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
prd	ent.bussup.api.hcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-epbs1-cc1-prd-api-ingr-b53b986563c943a1.elb.ca-central-1.amazonaws.com	epbs1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:epbs1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.bussup.api.hcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-epbs1-ue1-prd-api-ingr-23a89ef617fc361d.elb.us-east-1.amazonaws.com	epbs1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:epbs1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.opexec.api.hcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-epoel-cc1-prd-api-ingr-c8d8f3bd745e4c52.elb.ca-central-1.amazonaws.com	epoel-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:epoel-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.opexec.api.hcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-epoel-ue1-prd-api-ingr-372a50c6dfb7689d.elb.us-east-1.amazonaws.com	epoel-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:epoel-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.riskcomp.api.hcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-eprc1-cc1-prd-api-ingr-bd65el6db76f61d7.elb.ca-central-1.amazonaws.com	eprc1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:eprc1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.riskcomp.api.hcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-eprc1-ue1-prd-api-ingr-229a377352dcd1ab.elb.us-east-1.amazonaws.com	eprc1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:eprc1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.refdata.api.hcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-eprd1-cc1-prd-api-ingr-7429968662094cf4.elb.ca-central-1.amazonaws.com	eprd1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:eprd1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.refdata.api.hcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-eprd1-ue1-prd-api-ingr-cd6043f0e7da6aa4.elb.us-east-1.amazonaws.com	eprd1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:eprd1-ue1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.salesserv.api.hcloud.bmogc.net	Failover	Primary	ca-central-1	nlb-epss1-cc1-prd-api-ingr-01c4906f84e3ec9b.elb.ca-central-1.amazonaws.com	epss1-cc1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:ca-central-1:111343967408:alarm:epss1-cc1-shr01-ent-multiregion-healthcheck-error-alarm
	ent.salesserv.api.hcloud.bmogc.net	Failover	Secondary	us-east-1	nlb-epss1-ue1-prd-api-ingr-b33f7256ccf779e0.elb.us-east-1.amazonaws.com	epss1-ue1-shr01-ent-multiregion-healthcheck	arn:aws:cloudwatch:us-east-1:111343967408:alarm:epss1-ue1-shr01-ent-multiregion-healthcheck-error-alarm

Healthcheck setup

The healthcheck base setup is made in shared services account. Cloudwatch Event is created per account i.e new bian domain accounts and per region i.e us-east-1 and ca-central-1.

- Cloudwatch Event gets triggered every 5 min which targets a lambda function present in shared services account for particular account.
- Total 3 different targets are triggered pointing 3 different AZ's i.e 1 API gateway pointing to 3 different Lambda based on different paths.
- Analysis of region and availability zone can be done on this setup basis using Cloudwatch alarm.
- Cloudwatch alarm provides metrics for success and failure.
- In case of errors an SNS topic gets invoked which will alert the engineering team.
- This alarm is then used by Route53 which evaluates the result and can then point to Primary/Failover targets respectively.

Shared Network Account Resources

Account	Region	Shared Network Ingress NLBs	Ports opened (on NLB TG)	NLB TG routes to below VPC Endpoint
esnd1	us-east-1	nlb-edbs1-ue1-dev-api-ingr-dcf87f073a0a4cb3.elb.us-east-1.amazonaws.com	443	vpce-0e7c8b6e55f25c289-nbngx50q.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-edbs1-cc1-dev-api-ingr-69dcc8d122447e99.elb.ca-central-1.amazonaws.com	443	vpce-0e43f5621d547abf8-y9xbeb47.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-edoe1-ue1-dev-api-ingr-086cc6d341416340.elb.us-east-1.amazonaws.com	443	vpce-0e7c8b6e55f25c289-nbngx50q.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-edoe1-cc1-dev-api-ingr-c1ce94810daf0d1a.elb.ca-central-1.amazonaws.com	443	vpce-0e43f5621d547abf8-y9xbeb47.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-edrc1-ue1-dev-api-ingr-133eb27908e87bb6.elb.us-east-1.amazonaws.com	443	vpce-0e7c8b6e55f25c289-nbngx50q.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-edrc1-cc1-dev-api-ingr-3922183b4da21a44.elb.ca-central-1.amazonaws.com	443	vpce-0e43f5621d547abf8-y9xbeb47.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-edrd1-ue1-dev-api-ingr-80717e981f74fe9e.elb.us-east-1.amazonaws.com	443	vpce-0e7c8b6e55f25c289-nbngx50q.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-edrd1-cc1-dev-api-ingr-349f6e9fd9dfd5b7.elb.ca-central-1.amazonaws.com	443	vpce-0e43f5621d547abf8-y9xbeb47.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-edss1-ue1-dev-api-ingr-6920955832a888fa.elb.us-east-1.amazonaws.com	443	vpce-0e7c8b6e55f25c289-nbngx50q.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-edss1-cc1-dev-api-ingr-8641b59451f95efa.elb.ca-central-1.amazonaws.com	443	vpce-0e43f5621d547abf8-y9xbeb47.execute-api.ca-central-1.vpce.amazonaws.com
esnd1	ca-central-1	nlb-etbs1-cc1-tst-api-ingr-ce1944128aaald0b.elb.ca-central-1.amazonaws.com	443	vpce-0b8503683d96351bf-4flfppon.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-etbs1-ue1-tst-api-ingr-d7e54f31fa5eacc9.elb.us-east-1.amazonaws.com	443	vpce-023cce5cbc40b23ff-qoqad06k.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-etoel-cc1-tst-api-ingr-1a5fd464366ff62a.elb.ca-central-1.amazonaws.com	443	vpce-0b8503683d96351bf-4flfppon.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-etoel-ue1-tst-api-ingr-a701585c8db233a2.elb.us-east-1.amazonaws.com	443	vpce-023cce5cbc40b23ff-qoqad06k.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-etrc1-cc1-tst-api-ingr-198551698e0065ef.elb.ca-central-1.amazonaws.com	443	vpce-0b8503683d96351bf-4flfppon.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-etrc1-ue1-tst-api-ingr-f05147f0e099245d.elb.us-east-1.amazonaws.com	443	vpce-023cce5cbc40b23ff-qoqad06k.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-etrd1-cc1-tst-api-ingr-7ed065b8e764a565.elb.ca-central-1.amazonaws.com	443	vpce-0b8503683d96351bf-4flfppon.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-etrd1-ue1-tst-api-ingr-ffffba07eeb01d63.elb.us-east-1.amazonaws.com	443	vpce-023cce5cbc40b23ff-qoqad06k.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-etss1-cc1-tst-api-ingr-0ceaba81506ebe43.elb.ca-central-1.amazonaws.com	443	vpce-0b8503683d96351bf-4flfppon.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-etss1-ue1-tst-api-ingr-6c6f566c6084dd50.elb.us-east-1.amazonaws.com	443	vpce-023cce5cbc40b23ff-qoqad06k.execute-api.us-east-1.vpce.amazonaws.com
esnp1	ca-central-1	nlb-epbs1-cc1-prd-api-ingr-b53b986563c943a1.elb.ca-central-1.amazonaws.com	443	vpce-02bd73ea2e09ba68b-bi2zztnw.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-epbs1-ue1-prd-api-ingr-23a89ef617fc361d.elb.us-east-1.amazonaws.com	443	vpce-0f12221fa5789f93a-lmq4lbk6.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-epoe1-cc1-prd-api-ingr-c8d8f3bd745e4c52.elb.ca-central-1.amazonaws.com	443	vpce-02bd73ea2e09ba68b-bi2zztnw.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-epoe1-ue1-prd-api-ingr-372a50c6dfb7689d.elb.us-east-1.amazonaws.com	443	vpce-0f12221fa5789f93a-lmq4lbk6.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-eprc1-cc1-prd-api-ingr-bd65e16db76f61d7.elb.ca-central-1.amazonaws.com	443	vpce-02bd73ea2e09ba68b-bi2zztnw.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-eprc1-ue1-prd-api-ingr-229a377352dcd1ab.elb.us-east-1.amazonaws.com	443	vpce-0f12221fa5789f93a-lmq4lbk6.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-eprd1-cc1-prd-api-ingr-7429968662094cf4.elb.ca-central-1.amazonaws.com	443	vpce-02bd73ea2e09ba68b-bi2zztnw.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-eprd1-ue1-prd-api-ingr-cd6043f0e7da6aa4.elb.us-east-1.amazonaws.com	443	vpce-0f12221fa5789f93a-lmq4lbk6.execute-api.us-east-1.vpce.amazonaws.com
	ca-central-1	nlb-epss1-cc1-prd-api-ingr-01c4906f84e3ec9b.elb.ca-central-1.amazonaws.com	443	vpce-02bd73ea2e09ba68b-bi2zztnw.execute-api.ca-central-1.vpce.amazonaws.com
	us-east-1	nlb-epss1-ue1-prd-api-ingr-b33f7256ccf779e0.elb.us-east-1.amazonaws.com	443	vpce-0f12221fa5789f93a-lmq4lbk6.execute-api.us-east-1.vpce.amazonaws.com

For more info: [Shared Resources for Multi-Account](#)

DEV/TST/PRD Account Resources

Environment	Account	Region	Custom Domain Name	Shared Network Resource	New account SSM Parameters to be used under API Resource Policy	Values
dev	edbs1	ue1	ent-dev.bussup.api.devhcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0710612229e3d71e2
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0e7c8b6e55f25c289
		cc1	ent-dev.bussup.api.devhcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-01fb736ede2bb66fc

[illegible]

			ent-tst.salesserv.api.devhcloud.bmogc.net	VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-023cce5cbc40b23ff
		cc1	ent-tst.salesserv.api.devhcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-098c0286fa0a751cd
prd	epbs1	ue1	ent.bussup.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0b37c4b577a50b9f6
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0f12221fa5789f93a
		cc1	ent.bussup.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-088e4ca2f1828dd6c
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-02bd73ea2e09ba68b
	epoe1	ue1	ent.opexec.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0b37c4b577a50b9f6
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0f12221fa5789f93a
		cc1	ent.opexec.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-088e4ca2f1828dd6c
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-02bd73ea2e09ba68b
	eprc1	ue1	ent.riskcomp.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0b37c4b577a50b9f6
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0f12221fa5789f93a
		cc1	ent.riskcomp.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-088e4ca2f1828dd6c
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-02bd73ea2e09ba68b
	eprd1	ue1	ent.refdata.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0b37c4b577a50b9f6
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0f12221fa5789f93a
		cc1	ent.refdata.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-088e4ca2f1828dd6c
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-02bd73ea2e09ba68b
	epss1	ue1	ent.salesserv.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-0b37c4b577a50b9f6
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-0f12221fa5789f93a
		cc1	ent.salesserv.api.hcloud.bmogc.net	VPC Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/vpc/vpc-netres-01	vpc-088e4ca2f1828dd6c
				VPC Endpoint Id	/ceng/\${accountShortCode}/shared/\${environment}/\${regionShortCode}/infra/ntwrk/endpoint/execute-api	vpce-02bd73ea2e09ba68b

Firewall Rules Request

Firewall request details can be found here:

- For non-prod NLBs
 - REQ1739910
 - REQ1739890
- For prod NLBs
 - REQ1739869



Multi-Account-F...m-prod-PRD.docx Multi-Account-F...n-prod-TST.docx Multi-Account-F...n-prod-DEV.docx

Custom Domain

Created by Engineering team

[BMO CDK Supported Modules](#)

[@bmo-cdk/apigateway#%40bmocdk/apigateway-classBMOCustomDomainConstruct](#)

CDK - Custom Domain

- **AWS Limits custom domain name creation upto 120 per account per region**

```
const customdomain = new BMOCustomDomainConstruct(this, 'MyTestCustomDomainConstruct',{
  domainName: '<domainname>',
  regionalCertificateArn: '<certificate-arn>',
  endpointConfigurationType: ['REGIONAL'],
  exceptionCode:['E056'], --Repo permission to execute the exception should also be allowed
  tags: {
    "Cost_Center": "<CostCenter>",
    "AppCatID": "<AppCatID>",
    "Support-Team": "RUN_ENG_CLOUD_PLATFORM_SUPPORT", // for CIO - RUN_ENG_CLOUD_PLATFORM_SUPPORT, Cloud teams - BLD_ENG_CLOUD_ADOPTION / BLD_ENG_CLOUD_ORCHESTRATION / RUN_CLOUD_OPERATIONS /
    BLD_ENG_CLOUD_PLATFORM
    "Environment": "SBX",
    "Description": "test",
    "ServiceName": `${ServiceName}`,
    "Stage": "<Stage>"
  }
});
```

Create API-Mapping

[BMO CDK Supported Modules](#)

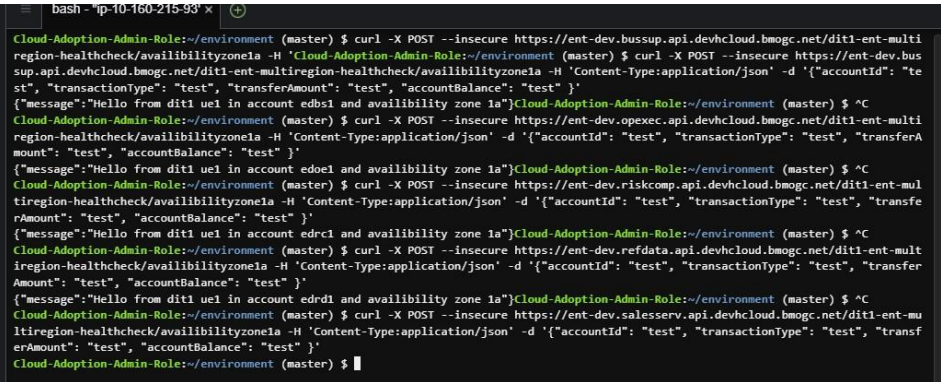
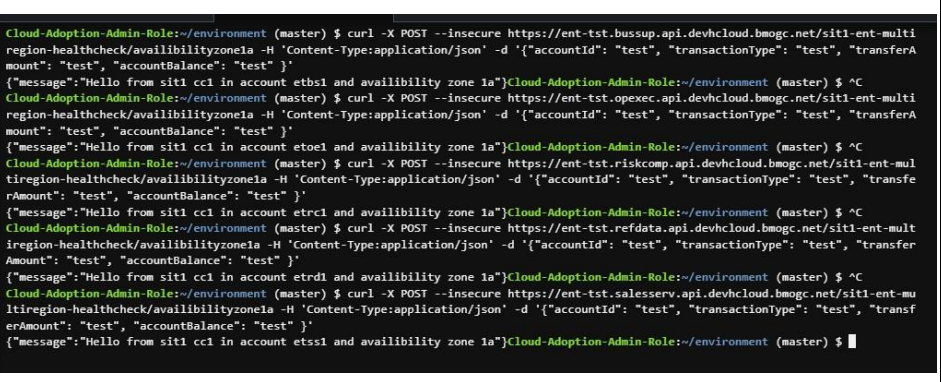

[@bmo-cdk/apigateway#%40bmocdk/apigateway-classBMOAPIMappingConstruct](#)

CDK - API Mapping

```
new BMOAPIMappingConstruct(this, 'MyApiMapping', {
  domainName: '<DomainName>',
  apiServiceName: `${ServiceName}`,
  restApiId: '<APIID>',
  stage: `${Stage}`
});
```

Testing

- To Test invoke the custom domain url - [https://<DOMAIN URL>/<API-PATH-AS-IN-MAPPING>/<API-RESOURCE-PATH>](#)
 - Sample - [https://digital-core-prod.api.hcloud.bmogc.net/prod/tie-hc-cdk-multiregion-healthcheck/availabilityzone1a](#)
Sample CURL command - curl -X POST --insecure [https://digital-core-prod.api.hcloud.bmogc.net/prod/tie-hc-cdk-multiregion-healthcheck/availabilityzone1a](#) -H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }'
 - Sample CURL command - curl -X POST --insecure [https://ent-dev.refdata.api.devhcloud.bmogc.net/dit1-test-api-deploy/something](#) -H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }' {"message":"Hello from dit1 ue1 in edrd1"}

MultiRegion API Deployment using custom domains and new shared net NLBs	https://github.com/BMO-Prod/CENG_enterprise-multiregion-healthcheck_TU5880/pull/1 curl -X POST --insecure https://ent-dev.bussup.api.devhcloud.bmogc.net/dit1-ent-multiregion-healthcheck/availabilityzone1a -H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }'	https://github.com/BMO-Prod/CENG_enterprise-multiregion-healthcheck_TU5880/pull/4 curl -X POST --insecure https://ent-tst.bussup.api.devhcloud.bmogc.net/sit1-ent-multiregion-healthcheck/availabilityzone1a -H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }'	https://github.com/BMO-Prod/CENG_enterprise-multiregion-healthcheck_TU5880/pull/7 curl -X POST --insecure https://ent.bussup.api.hcloud.bmogc.net/prd-ent-multiregion-healthcheck/availabilityzone1a -H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }'
	Response: {"message": "Hello from dit1 ue1 in account edbs1 and availability zone 1a"} All dev accounts tests via custom domain -	Response: {"message": "Hello from sit1 cc1 in account etbs1 and availability zone 1a"} All tst accounts tests via custom domain -	Response: {"message": "Hello from prd cc1 in account epbs1 and availability zone 1a"} All prd accounts tests via custom domain -
			

Failover Testing

- First check the command trigger to custom domain url on successful trigger check the failover.
- To check the failover, one need to add the target IP's to the one which are not used - us-east-1, this will make the targets of ue1 unheathly and then the route will start pointing to ca1 region. (Target IP's to create the failover scenario - Check in network interface the available IP's not mapped to VPC)

Developer Guide

Note: We don't have common SSM created for Custom Domain names to access either old or new centralized NLB in new accounts. Please use a switch case to differentiate between environments.

For example,

```
switch(environment){
  case 'dev':
    domainName = 'ent-dev.salesserv.api.devhcloud.bmogc.net';
    break;
  case 'tst':
    domainName = 'ent-tst.salesserv.api.devhcloud.bmogc.net';
    break;
  case 'prd':
    domainName = 'ent.salesserv.api.hcloud.bmogc.net';
    break;
}
const apimapping= new BMOAPIMappingConstruct(this, 'MyApiMapping', {
  domainName: `${domainName}`,
  apiServiceName: `${ServiceName}`,
  restApiId: apiId,
  stage: `${Stage}`
});
```

Resource Repositories

Enterprise Business Domain

Custom Domains - https://github.com/BMO-Prod/CENG_enterprise-custom-domains_TU9756

Multi Region HealthCheck - https://github.com/BMO-Prod/CENG_enterprise-multiregion-healthcheck_TU5880

Healthcheck Failover (WIP)

Short term:

- Disable failover - Atta, Zuha/Patel, Aditi1 can you please work with platform team to do this in all environment? and document this in our confluence
- Introduce manual failover after automated notification through ServiceNow
 - Target date would be before DigitalCore starts using multi-region - right now they're APIs are single region, so we have a bit of time but we don't want to put this off
 - Jignesh will setup a call with us next week to go over this. We will work on a PoC for this and later implement something here (we will add this to the planned items in Q3, we will have to shift some other items to make room for this)

Long term:

- Plan a pattern for service-specific failover
- Enable a view of which services are enabled with multi-region

AWS Suggested - This is the manual failover AWS suggested: [https://urldefense.com/v3/https://aws.amazon.com/blogs/networking-and-content-delivery/creating-disaster-recovery-mechanisms-using-amazon-route-53/;!!O9INpA!!Kp_rFCVDxiBQRIYg9Vc-14-34R7rcOrNqytMph6aWtzP5r1nVGUgVU5nwMSRiyDkVpHErn-RSrmUmZGZ14wZQ\\$](https://urldefense.com/v3/https://aws.amazon.com/blogs/networking-and-content-delivery/creating-disaster-recovery-mechanisms-using-amazon-route-53/;!!O9INpA!!Kp_rFCVDxiBQRIYg9Vc-14-34R7rcOrNqytMph6aWtzP5r1nVGUgVU5nwMSRiyDkVpHErn-RSrmUmZGZ14wZQ$)

Disabling Healthcheck

[SERVERLESS-5297](#) - Getting issue details... STATUS

Testing done on old account dev healthcheck (not in use)

- Set prop Disabled as true under HealthCheck Config https://docs.aws.amazon.com/Route53/latest/APIReference/API_HealthCheckConfig.html . To be done manually via console since this is an api call and not available under cfn resource prop. <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-route53-healthcheck-healthcheckconfig.html>

	Name	Status
<input type="checkbox"/>	dev-ue1-tie-hc-cdk-multiregion-h...	<div><div>a day ago18 minutes ago</div><div>Healthy</div></div>
<input checked="" type="checkbox"/>	dev-ca1-tie-hc-cdk-multiregion-h...	<div><div>a day ago14 minutes ago</div><div>Healthy</div></div>

InfoMonitoringAlarmsTagsHealth checkersLatency

status is **unhealthy**

When the alarm is in the OK state, the status is **healthy**

When the alarm is in the ALARM state, the status is **unhealthy**

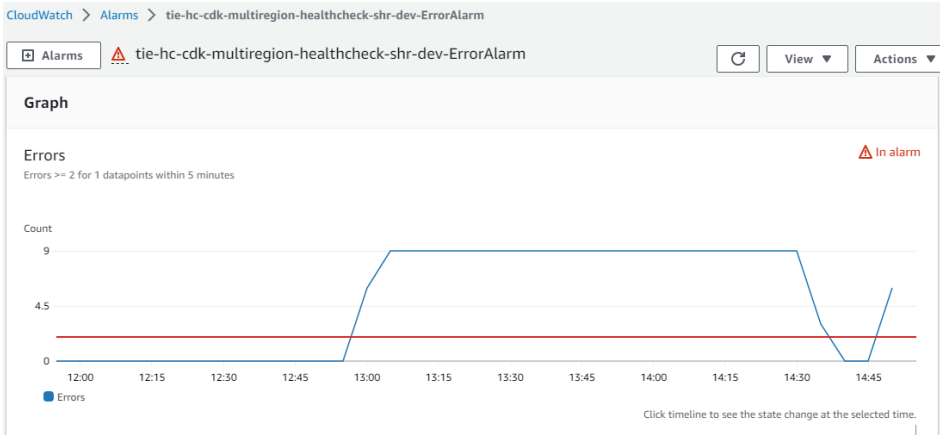
Invert health check statusNo

Disable health check statusYes

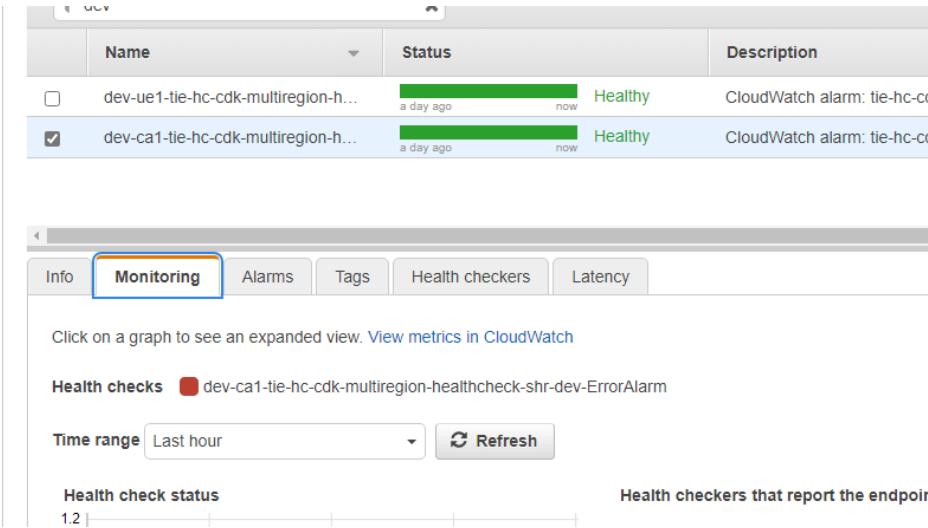
- Hit API via custom domain , goes to primary region ca l

```
Cloud-Serverless-Admin-Rule:~/environment $ curl -X POST --insecure https://digital-core-dev-api.devcloud.bmgc.net/dev/tie-hc-cdk-multiregion-healthcheck/aval
ibilityzoneId-H 'Content-Type:application/json' -d '{"accountId": "test", "transactionType": "test", "transferAmount": "test", "accountBalance": "test" }'
{"message": "Hello from dev-ca-central-1a"}Cloud-Serverless-Admin-Rule:~/environment $
```

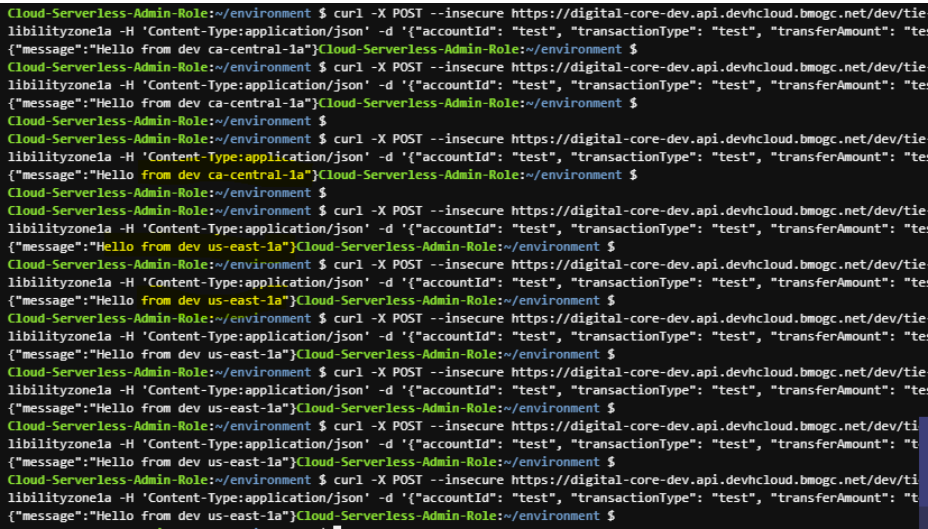
- In the background, destabilize nlb target ips to trigger healthcheck error alarm



- Route 53 Healthcheck shows healthy since we enabled disable healthcheck



- But the request was going to secondary region ue1 i.e. failover happening



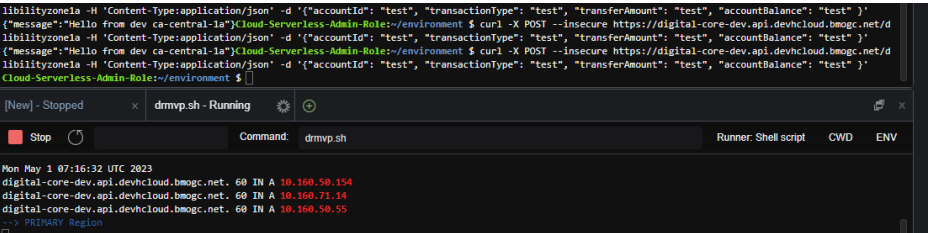
- This is because under the record set prop "Evaluate target health" is set to Yes (it checks the target health i.e. nlb target health)

Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (se...	Health ...	Evalu...	Re
digital-cor...	A	Fallover	Primary	Yes	nlb-api-ingress-ue1-shr...	-	b9658916...	Yes	Pri
digital-cor...	A	Fallover	Secondary	Yes	nlb-api-ingress-ca1-shr...	-	6d572b35...	Yes	Sec

- This means that both the route53 healthcheck + this target health check can cause the failover. In this case since we don't want any failover to happen , we would need to set prop "Evaluate target health" to "No"

<input checked="" type="checkbox"/>	digital-cor...	A	Fallover	Primary	Yes	nlb-api-ingress-ca1-shr...	-	92d78084...	No
<input checked="" type="checkbox"/>	digital-cor...	A	Fallover	Secondary	Yes	nlb-api-ingress-ue1-shr...	-	0950f6ac...	No

- Once that's done, the request will go to primary region only i.e. no failover will happen



✓ Verification of disabling healthcheck for Enterprise Business Domain

Change Requests:

- Non-prod : https://bmgc.service-now.com/nav_to.do?uri=change_request.do?sys_id=f8a0ec6147e2a51061589ed7536d43af
- Prod : https://bmgc.service-now.com/nav_to.do?uri=change_request.do?sys_id=8238f82d4722e51061589ed7536d43ad

Verification done:

- Non-prod : https://bmgc.service-now.com/nav_to.do?uri=change_task.do?sys_id=d120f0ad47eaa51061589ed7536d43ca
- Prod : https://bmgc.service-now.com/nav_to.do?uri=change_task.do?sys_id=6aef70a947a6e51061589ed7536d4383

References

<https://georgemao.medium.com/enabling-private-apis-with-custom-domain-names-aws-api-gateway-df1b62b0ba7c>