

The logo for 'Fingers digital' features the word 'Fingers' in a bold, italicized, black sans-serif font. A thin horizontal line is positioned above the 'i' in 'Fingers', with the word 'digital' in a smaller, black sans-serif font centered above it.

Fingers digital

SmartInn

Design and Process on

Google Cloud

Brief description

SmartInn got more than 200 locations that spread across North America and Asia. They have a website that contains a daily blog and social integration service initiative which shows customer reviews on the quality of SmartInn's services

Main features

- Responsive website with blog (multiple language support)
- Revision management enabled for service deployments
- Multiple language support for website
- Translation of customer reviews
- Increased velocity of service deployments
- New revision retains existing level of operational stability by deployment to a reduced user base

Roles of typical user

- | | | |
|------------|------------------|------------------|
| • Customer | • Developer lead | • Marketing lead |
| • Ops lead | • Product lead | |

User personas

Christy

Christy is a busy Site Engineer who likes to fully utilize the time at her disposal, she prefer to order food via online for herself and workers, often booked at specific times in a day. Customer feedback play a major role in the choice Christy makes. Christy likes to perform all operations from her phone

User personas

Sam

Sam is a student who likes to travel home to visit parents and also takes vacations twice yearly. His primary concern is cost, and he will always book the lowest price travel regardless of convenience. Sam has no loyalty and will use whichever retailer can provide the best deal.

User stories

Website remains responsive

As a product lead, **I want** to ensure the website remains responsive, **so that** customers face minimal wait times

User stories

Velocity of deployments

As a developer lead, **I want** to increase the velocity of service deployments.

User stories

System performance

As an ops lead, **I want** to ensure system stability is observed, **so the** system performance is not degraded through the deployment of new revisions.

User stories

Translation of reviews

As a manager, **I want** to ensure customers' reviews are translated, **so that** I can understand their pain point, server them better and build loyalty

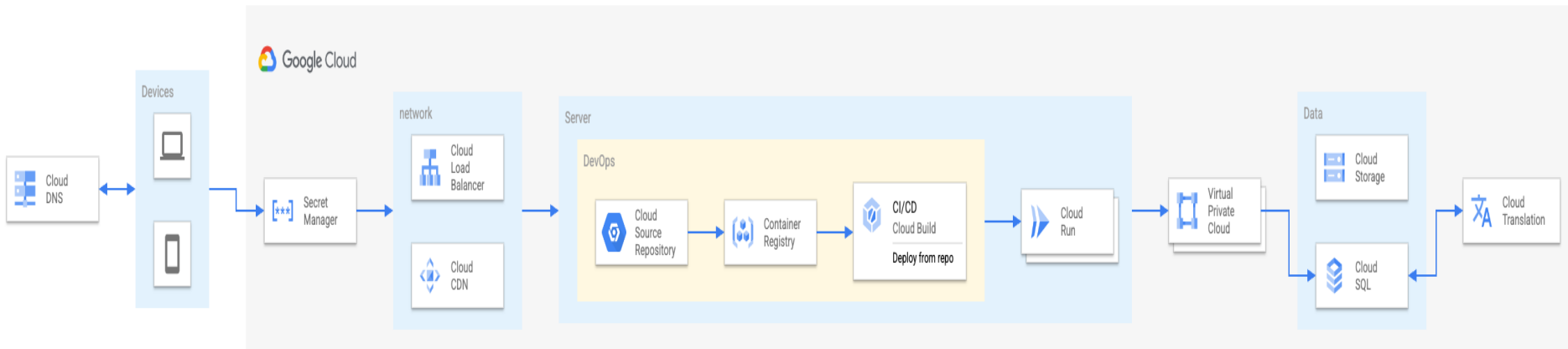
User stories

Website support multi-languages

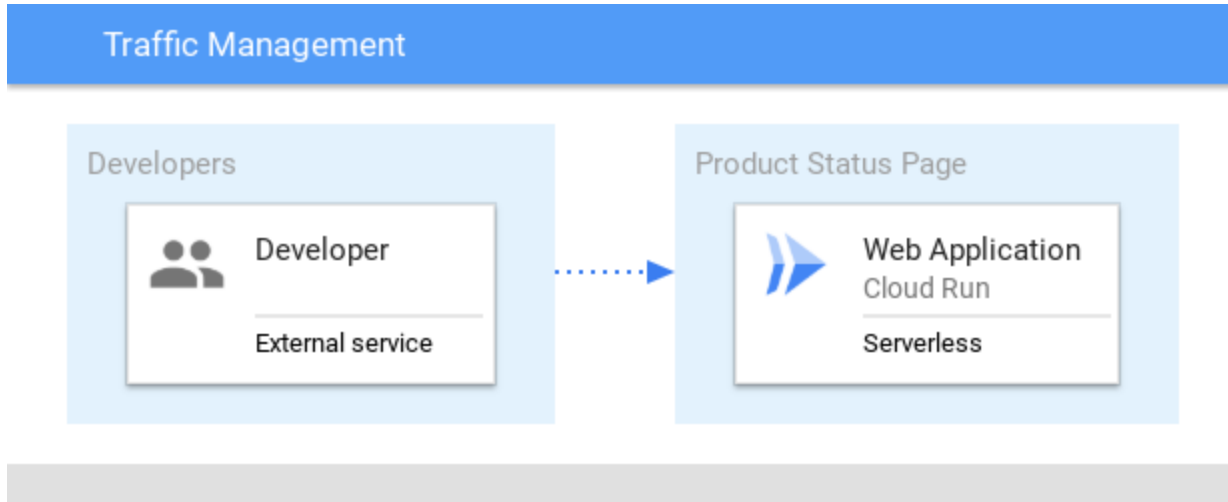
As a marketing lead, **I want** to ensure the website supports at least three languages, **so that** we can gain more visitors and blog readers and enhance our publicity

Architecture Overview

Backend



MVP Architecture





In the proposed solution, the product service is used to demonstrate how traffic migration and revision tagging can be used with Cloud Run.

Definition of Done

Ref	Definition of Done
1	User base are not impacted by the rollout of new features
2	Revision management enabled for service deployments
3	New revision retains existing level of operational stability by deployment to a reduced user base

Traffic migration versus revision tags

Feature	Description	
Revision Tags	<i>"Appropriate for use cases where a task producer needs to defer or control the execution timing of a specific webhook or remote procedure call."</i>	
Traffic Migration	"Cloud Run allows you to specify which revisions should receive traffic and to specify traffic percentages that are received by a revision.."	

Developing a minimal viable product (MVP)

To build an MVP the following activities are required:

- Configure the environment
- Test Revision Tags
- Test Traffic Migration
- Deploy a public service

Configure the environment

The screenshot shows the Google Cloud Run console. At the top, there's a navigation bar with 'Cloud Run' and 'Services' tabs. Below the navigation bar, there are buttons for 'CREATE SERVICE', 'CREATE JOB', and 'MANAGE CUSTOM DOMAINS'. A search bar is also present. The main content area shows a table of services. One service is listed: 'product-service' with a status of 'Just now'. To the right of the table, there's a panel with 'No services selected' and tabs for 'PERMISSIONS' and 'LABELS'. A message at the bottom of the panel says 'Please select at least one resource.'

<input type="checkbox"/>	<input type="radio"/>	Name ↑	Req/sec ?	Region	Authentication ?	Ingress ?	Recommendation	Last deployed
<input type="checkbox"/>	<input checked="" type="radio"/>	product-service	0	us-central1	Allow unauthenticated	All		Just now

Revision tags

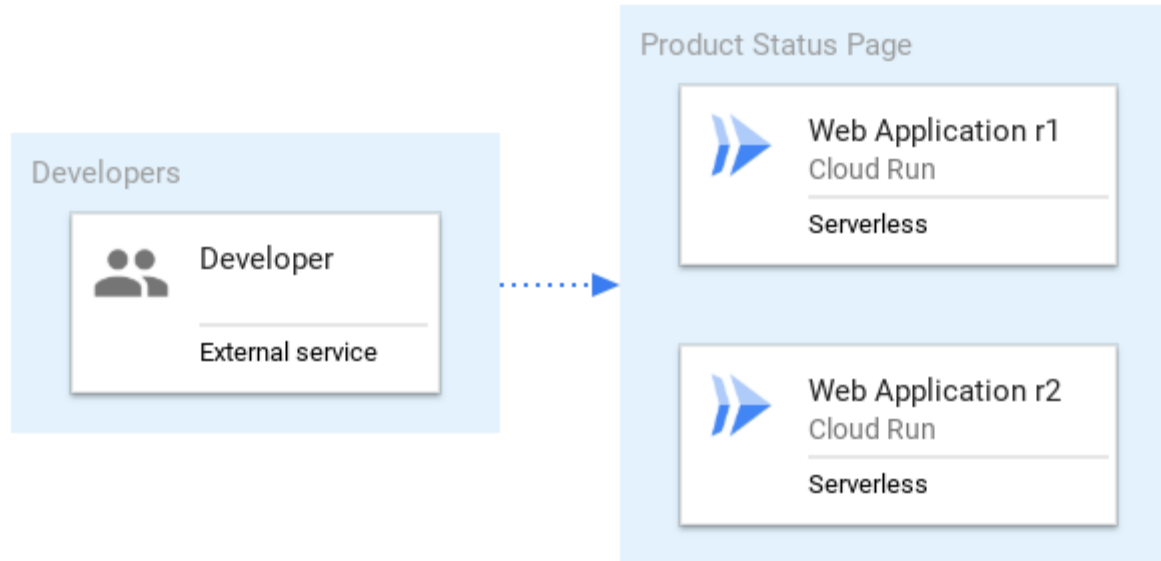
Each new Cloud Run revision can be assigned a tag. Doing this allows access to a URL without serving traffic. An approach like this can be useful to handle the traffic profile across multiple revisions

The main uses cases for revision tags are shown in the following table:

Use Case	Description
Integration testing	Run containers revisions during the development
Tagged revision migration	Migrate traffic to a tagged revision
Tagged revision rollback	Rollback to prior version based on tagged revision


Revised architecture


Traffic Management





Integration testing


Cloud Run provides the ability to deploy a new revision with redirecting traffic. A deployment of this kind is useful for integration testing of components.

 Cloud Run

 Service details


 EDIT & DEPLOY NEW REVISION


 SET UP CONTINUOUS DEPLOY

 product-service


Region: us-central1


URL: <https://product-service-t4y3uptxdq-uc.a.run.app>











METRICS SLOS LOGS **REVISIONS** NETWORKING SECURITY TRIGGERS INTEGRATIONS


Revisions  MANAGE TRAFFIC

 Filter Filter revisions





	Name	Traffic
	 product-service-00002-viow	0%
	 product-service-00001-cog	100%

 product-ser

Deployed by student-04-c2'

CONTAINERS VO

General

CPU allocation


Startup CPU boost


Concurrency


SmartInn


Revision migration


Deployed revisions to share the traffic profile. Migrated 50% of the traffic to the revision tag

 Cloud Run

 Service details

 EDIT & DEPLOY NEW REVISION

 S

 product-service

Region: us-central1

URL: <https://product-service-t4y3uptxdq-uc.a.run.app>

METRICS

SLOS

LOGS


REVISIONS


NETWORKING

SECURITY


TRIGGE


Revisions






 MANAGE TRAFFIC

 Filter

Filter revisions


 ?


 III


	Name	Traffic
 	product-service-00002-viw	50%
 	product-service-00001-cog	50%


Tagged revision rollback


In the event an issue is found, the traffic migration can be rolled back by resetting the percentage.

 Cloud Run

 Service details

 EDIT & DEPLOY NEW REVISION

 SE

 product-service

Region: us-central1

URL: <https://product-service-t4y3uptxdq-uc.a.run.app>

METRICS

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TRIGGER


Revisions












 MANAGE TRAFFIC

 Filter

Filter revisions





	Name	Traffic	Deployed ↓	Revision URLs (tags)	Actions
	 product-service-00002-viw	0%	10 minutes ago	test2  	
	 product-service-00001-cog	100%	21 minutes ago	test1  	

SmartInn

Traffic migration

Migration of traffic provides a simple mechanism on which to direct communication to a deployed service.

Cloud Run provides the ability to have multiple revisions to be deployed without a cost penalty.

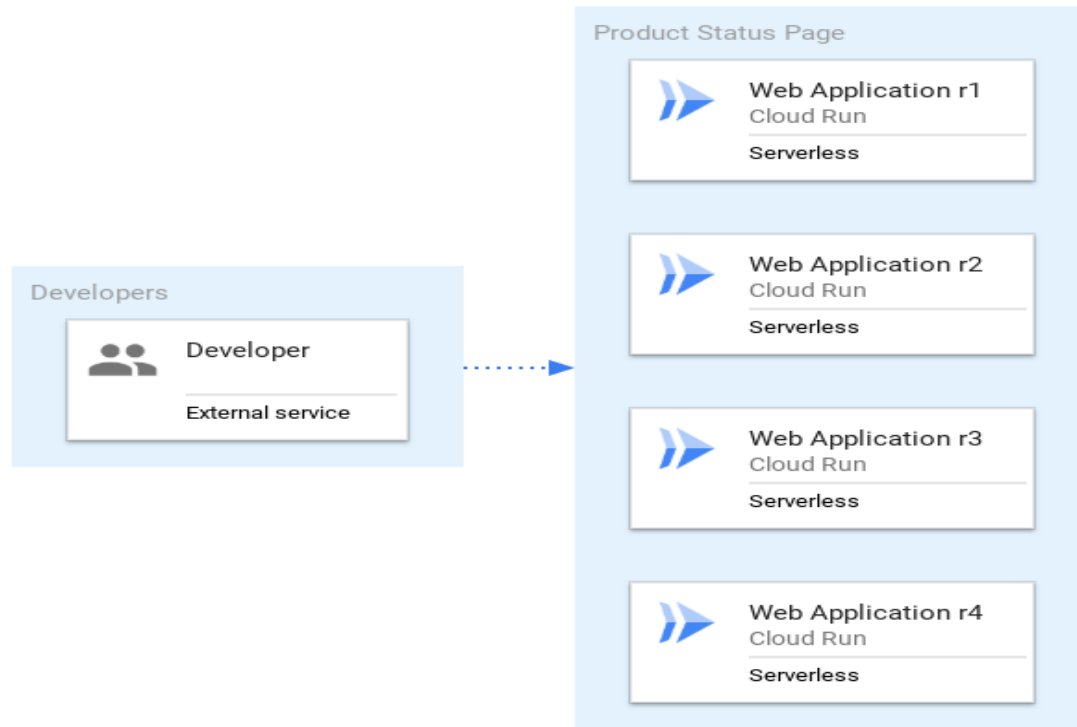
Cloud Run only charges where traffic is handled by the service.

The main use cases for traffic migration are shown in the following table:


Use Case	Description
Traffic migration	Enable traffic to be sent to the latest version of the deployed service
Traffic splitting	Perform a ratio traffic split between defined deployed services
Rollout migration	Deploy a service and gradually enable traffic at a predetermined time


Revised architecture


Traffic Management





Traffic migration - deploy a new version

 Cloud Run


 Service details




 EDIT & DEPLOY NEW REVISION




















 SE

 **product-service** Region: us-central1 URL: <https://product-service-t4y3uptxdq-uc.a.run.app>

METRICS SLOS LOGS **REVISIONS** NETWORKING SECURITY TRIGGER

Revisions  [MANAGE TRAFFIC](#)

 **Filter** Filter revisions  

	 Name	Traffic	Deployed ↓	Revision URLs (tags)	Actions
	 product-service-00006-vab	25%	3 minutes ago	test4 	
	 product-service-00005-cep	25%	4 minutes ago	test3 	
	 product-service-00002-viw	25%	15 minutes ago	test2  	
	 product-service-00001-cog	25%	27 minutes ago	test1 	

Traffic splitting - updated traffic between revisions

After reset, the service traffic profile now use the latest deployment as seen below:

Cloud Run
 Service details
 [EDIT & DEPLOY NEW REVISION](#)
 SE

product-service
 Region: us-central1
 URL: <https://product-service-t4y3uptxdq-uc.a.run.app>

METRICS
 SLOS
 LOGS
 REVISIONS
 NETWORKING
 SECURITY
 TRIGGER

Revisions
 [MANAGE TRAFFIC](#)

Filter Filter revisions

		Name	Traffic	Deployed ↓	Revision URLs (tags)	Actions
<input type="radio"/>		product-service-00006-vab	100%	6 minutes ago	test4	
<input type="radio"/>		product-service-00005-cep	0%	6 minutes ago	test3	
<input checked="" type="radio"/>		product-service-00002-viw	0%	18 minutes ago	test2	
<input type="radio"/>		product-service-00001-cog	0%	29 minutes ago	test1	

The solution now take advantage of Cloud Run traffic management.

SmartInn

Defining SLIs and SLOs

SLO	SLI
Available 99.95%	Fraction of 200 vs 500 HTTP responses from API endpoint measured per month
95% of requests will complete in under 200 ms	Time to last byte GET requests measured every 15 seconds aggregated per 5 minutes
Error rate of < 0.00001%	Upload errors measured as a percentage of bulk uploads per day by custom metric
Available 99.9%	Fraction of 200 vs 500 HTTP responses from API endpoint measured per month
95% of queries will complete in under 10s	Time to last byte GET requests measured every 60 seconds aggregated per 10 minutes

- The SLI describes what we are going to measure and how:
for example, the “Fraction of 200 vs 500 HTTP responses from API endpoint measured per month.” This example is a way of measuring availability.
- The SLO represents the goal we are trying to achieve for a given SLI.
For example, “Available 99.95%” of the time.”



“Customer centric and reliable infrastructure design”.

THANK YOU