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Group – 11 : Capstone Project NextGen Cloud

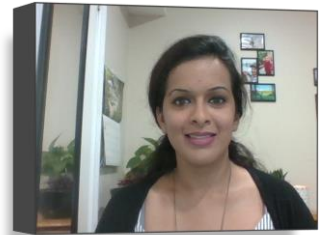
Group Members :

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Amazon Web Services

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 175 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

Developed by Amazon, there are now over 165 different services, ranging from databases to machine learning tools

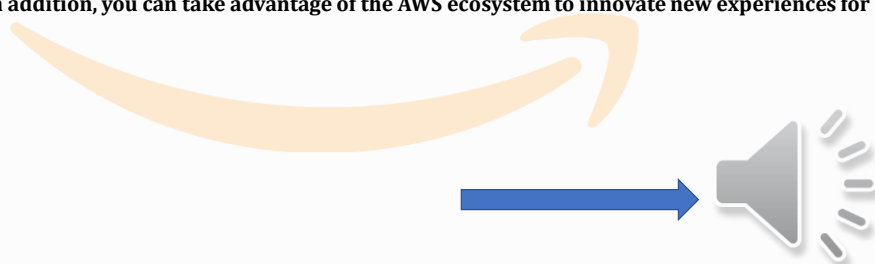




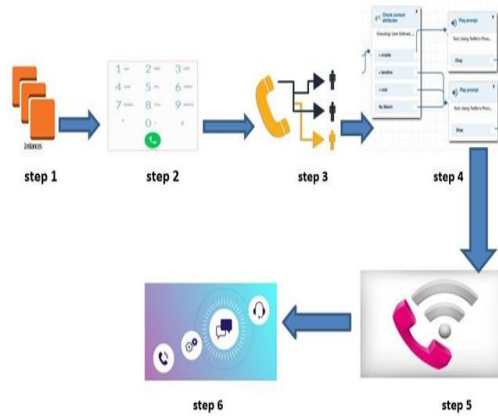
Amazon Connect

Amazon Connect is an omnichannel cloud contact center. You can [set up a contact center in](#) a few steps, add agents who are located anywhere, and start engaging with your customers.

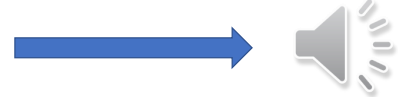
You can create personalized experiences for your customers using omnichannel communications. For example, you can [dynamically offer chat and voice contact](#), based on such factors as customer preference and estimated wait times. Agents, meanwhile, conveniently handle all customers from just [one interface](#). Amazon Connect is an open platform that you can integrate with other enterprise applications, such as [Salesforce](#). In addition, you can take advantage of the AWS ecosystem to innovate new experiences for your customers



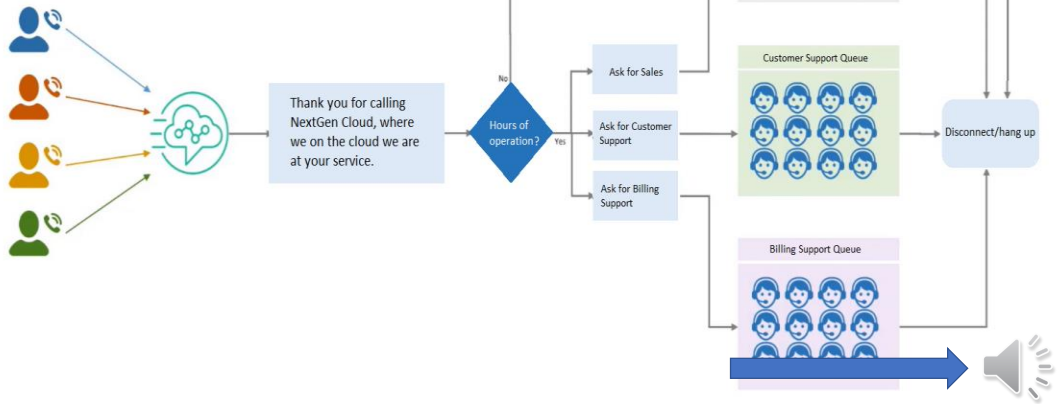
Blueprint of NextGen Cloud



- **Step 1** Creation of Instances
- **Step 2** Setting up phone numbers
- **Step 3** Setting up routing
- **Step 4** Creation of contact
- **Step 5** User creation and allocating phone #
- **Step 6** Testing and deployment



Setup a Call Center





NextGen Cloud Setup

- Sign up for AWS account
- Provision an Instance
- Set up Amazon Connect



Sign in

- ☒ **Root user**
Account owner that performs tasks requiring unrestricted access. [Learn more](#)
- ☐ **IAM user**
User within an account that performs daily tasks. [Learn more](#)

Root user email address

username@example.com

Next

New to AWS?

Create a new AWS account

Amazon Connect resource configuration

Get up and running in a few easy steps.

Step 1: Identity management

- [Step 2: Administrator](#)
- [Step 3: Telephony options](#)
- [Step 4: Data storage](#)
- [Step 5: Review and create](#)

Identity management

Amazon Connect can be configured to manage your users directly or to leverage an existing directory. This cannot be changed once your instance is created. [Learn more](#)

- ☒ **Store users within Amazon Connect**
Users will be created and managed by you within Amazon Connect. Note: you will not be able to share users with other applications.

Access URL: <https://nextgenservices> .awsapps.com/connecthome

- ☐ **Link to an existing directory**
Amazon Connect will leverage an existing directory. You create users within the directory and then add and configure them within Amazon Connect. Note: you can only associate a directory with a single Amazon Connect instance. [Learn more](#)

- ☐ **SAML 2.0-based authentication**
AWS supports identity federation with SAML 2.0 (Security Assertion Markup Language 2.0), an open standard that many identity providers (IdPs) use. This feature enables federated single sign-on (SSO), so users can log into the AWS Management Console or call the AWS APIs without you having to create an IAM user for everyone in your organization. [Learn more](#)

[Cancel](#) [Previous](#) [Next step](#)

Amazon Connect virtual contact center instances

Select a virtual contact center instance to manage its directory, administrator(s), telephony options, data storage, and advanced features.

[Add an instance](#) [Remove](#)

Instance Alias	Access URL	Channels	Create Date	Status
<input type="checkbox"/> nextgenservices	https://nextgenservices.awsapps.com			Active



Amazon Connect Admin Dashboard

The screenshot displays the Amazon Connect Admin Dashboard interface. On the left, a sidebar contains navigation icons. The main content area is titled 'Dashboard' and includes a 'Configuration guide' section with seven steps: 1. Explore your channels of communication, 2. Set hours of operations, 3. Create queues, 4. Create prompts, 5. Create contact flows, 6. Create routing profiles, and 7. Configure users. Three panels are overlaid on the dashboard: 'Metrics and quality' (containing Real-time metrics, Historical metrics, Contact search, Rules, Login/Logout report, and Saved reports), 'Routing' (containing Phone numbers, Contact flows, Prompts, Queues, Hours of operation, and Quick connects), and 'Users' (containing User management, Routing profiles, Agent status, Security profiles, and Agent hierarchy). Each panel has a blue arrow pointing left towards the 'Next Steps' section. A large blue arrow points from the 'Next Steps' section to a speaker icon.

Metrics and quality

- Real-time metrics
- Historical metrics
- Contact search
- Rules
- Login/Logout report
- Saved reports

Routing

- Phone numbers
- Contact flows
- Prompts
- Queues
- Hours of operation
- Quick connects

Users

- User management
- Routing profiles
- Agent status
- Security profiles
- Agent hierarchy

Next Steps

Once you've completed steps above, you can explore setting optional quick connects for queues, and define security profiles, agent status, and agent hierarchy.

Setting Hours of Operation

- Set the **Hours of operation** for a queue
- Choose **Routing** and **Office Hours**
- **Time zone**, select a value
- For Adding new, **set new hours**
- We can specify these the **hours of operation** when we **create a queue**, and check them in the **Check hours of operation** block

Amazon Connect

Hours of operation

Successfully saved operating hours!

Name
NextGen Office Hours

Description
open hours
262 of 255 characters remaining

Time zone:
America/New_York

Day	Start	End
<input type="checkbox"/> Sunday	09:00 AM	06:00 PM
<input type="checkbox"/> Monday	09:00 AM	06:00 PM
<input type="checkbox"/> Tuesday	09:00 AM	06:00 PM
<input type="checkbox"/> Wednesday	09:00 AM	06:00 PM
<input type="checkbox"/> Thursday	09:00 AM	06:00 PM
<input type="checkbox"/> Friday	09:00 AM	06:00 PM
<input type="checkbox"/> Saturday	09:00 AM	06:00 PM

Check hours of operation

Checks the hours of operation, then branches based on whether it is in hours or out of hours. [Learn more](#)

Parameters:

☒ Specific hours (optional). If not specified, hours are checked.

Search for hours of operation

Basic Hours

User Management

<input type="checkbox"/> Login name	Name	Routing profile	Security profile
<input type="checkbox"/> manpreet	Kaur, Manpreet	Billing Query Routing Pro...	QualityAnalyst Agent-Inbound CallCenterManager...
<input type="checkbox"/> Megha	Navin, Megha	Billing Query Routing Pro...	QualityAnalyst Agent-Inbound Agent-Outbound
<input type="checkbox"/> Mkadmin	Kaur, Manpreet	Basic Routing Profile	Agent-Inbound Agent-Outbound Admin
<input type="checkbox"/> Navdeep	Kaur, Navdeep	Customer Service Sales Ro...	Agent-Inbound Agent-Outbound
<input type="checkbox"/> Sumanth	Mohan, Sumanth	Sales Routing Profile - Voice	Agent-Inbound Agent-Outbound Admin

- ☐ The user management profile is nothing but **managing the agents, assigning managers, quality analysis**
- ☐ API to make **changes to routing profiles** assigned to users, which lets you e... agents to busier queues during periods of **high call volume**
- ☐ For NextGen, 5 user profiles have been created



Routing Profiles

Amazon Connect

Routing profiles

Name: Billing Query Routing Profile - Voice

Description: This profile will handle Billing Queries

Set channels and concurrency

Defines which channels agents can handle in the CCP

Note: If all channels are selected, agents will have access to only one channel at a time for inbound contacts. [Learn more](#)

☒ Voice

☒ Chat

Maximum chats (per agent): 1

Routing profile queues

If no queue is added, the agent will only be able to make outbound calls. At least one queue is needed for inbound calls, and must not be a duplicate.

Name	Channels	Priority	Delay (in seconds)
Billing Info	Voice Chat	1	0

- Amazon Connect uses routing profiles to allow you to manage your contact center at scale
- For NextGen Cloud- Sales Queue, Customer Care Queue and the Billing Queue have all been added to the Routing profile



Managing Security Profiles

- Contains permissions needed to access the **Contact Control Panel (CCP)**.
- Helps to manage **who can access the Amazon Connect dashboard** and **Contact Control Panel (CCP)**, and **who can perform specific tasks**.

Contact Control Panel (CCP) ⓘ

Type	Access
Access Contact Control Panel	<input checked="" type="checkbox"/>
Make outbound calls	<input type="checkbox"/>

Contact Control Panel (CCP) ⓘ

Type	Access
Access Contact Control Panel	<input checked="" type="checkbox"/>
Make outbound calls	<input checked="" type="checkbox"/>



Contact Flow

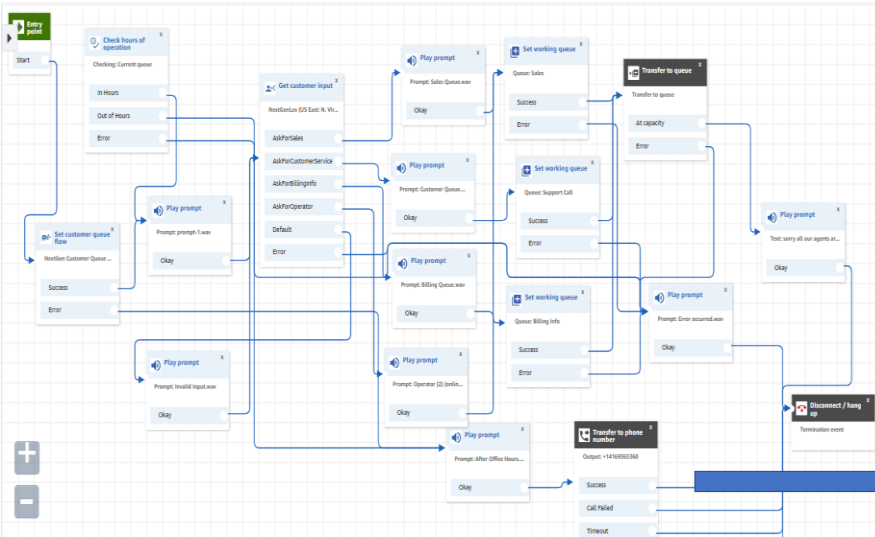
Types of Contact Flow

- ☐ Contact flow (Generic)
- ☐ Customer queue flow
- ☐ Customer hold flow
- ☐ Customer whisper flow
- ☐ Outbound whisper flow
- ☐ Agent hold flow
- ☐ Agent whisper flow
- ☐ Transfer to agent flow
- ☐ Transfer to queue flow



Block	Contact Flow	Customer Queue Flow	Customer Hold Flow	Customer Whisper Flow	Outbound Whisper Flow	Agent Hold Flow	Agent Whisper Flow	Transfer to Agent Flow	Transfer to Queue Flow
Play Prompt	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Get Customer Input	Yes	Yes	No	No	No	No	No	Yes	Yes
Store Customer Input	Yes	Yes	No	No	No	No	No	Yes	Yes
Loop Prompts	No	Yes	Yes	No	No	Yes	No	No	No
Hold customer or agent	Yes	No	No	No	No	No	No	Yes	Yes
Call Phone Number	No	No	No	No	Yes	No	No	No	No
Start Media Streaming	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Stop media streaming	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Set working queue	Yes	No	No	No	No	No	No	Yes	Yes
Set Contact Attributes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Change routing priority/age	Yes	Yes	No	No	No	No	No	Yes	Yes
Set logging behavior	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Set call recording behavior	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Set hold flow	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Set customer queue flow	Yes	No	No	No	No	No	No	Yes	Yes
Set whisper flow	Yes	Yes	No	No	No	No	No	Yes	Yes
Set disconnect flow	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Set Callback number	Yes	Yes	No	No	No	No	No	Yes	Yes
Set voice	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Get Queue metrics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Check Queue status	Yes	Yes	No	No	No	No	No	Yes	Yes
Check Staffing	Yes	Yes	No	No	No	No	No	Yes	Yes
Check hours of operation	Yes	Yes	No	No	No	No	No	Yes	Yes
Check contact attributes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distribute by percentage	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Loop	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wait	Yes	Yes	No	No	No	No	No	No	No
Invoke AWS Lambda function	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Disconnect/hangup	Yes	Yes	No	No	No	No	No	Yes	Yes
End flow/Resume	No	Yes	No	Yes	Yes	No	Yes	No	No
Transfer to Agent	No	No	No	No	No	No	No	Yes	Yes
Transfer to flow	Yes	No	No	No	No	No	No	Yes	Yes

NextGen Inbound Contact Flow



Set working queue

Check hours of operation

Transfer to queue

Play prompt

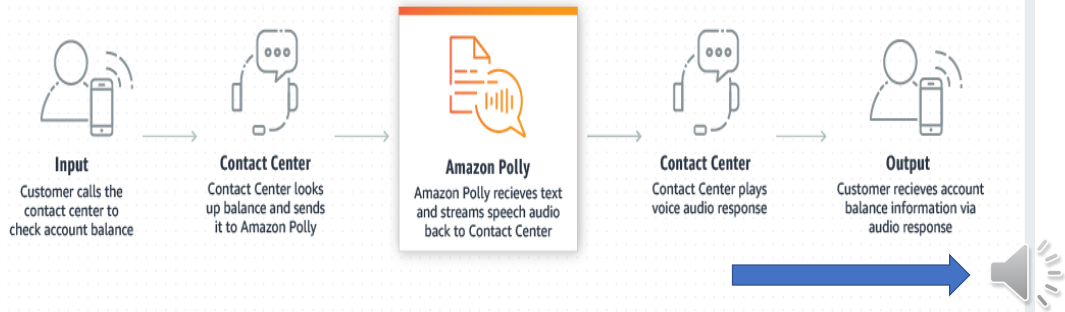
Disconnect/hang up



Amazon Polly

With Amazon Polly, **NextGen Cloud** center can engage customers with **natural sounding voices**

- Wide Selection of **Voices and Languages**
- Optimize Your **Streaming Audio**
- Adjust Speaking **Style, Speech Rate, Pitch, and Loudness**
- **Conversational** Speaking Style
- **Speech Synthesis** via API, Console, or Command Line



Amazon Polly

Plain textSSML

Hello and thank you for calling NextGen Cloud, where we are on the cloud we are at your service. .If you know the extension of the party you are trying to reach you may dial at any time

Plain textSSML

< speak>Hello and thank you for calling< prosody pitch="high" rate="-.25%"> Nextgen </prosody>Cloud< break time="500ms"/>where we are on the cloud< break time="100ms"/> we are at your service. < break time="500ms"/>If you know the extension of the party you are trying to reach< break time="100ms"/> you may dial at any time</ speak>

Engine
☒ Standard
☐ Neural

Language and Region
English, US

Voice
☐ Salli, Female
☒ Joanna, Female
☐ Ivy, Female
☐ Kendra, Female
☐ Kimberly, Female
☐ Kevin, Male
☐ Matthew, Male
☐ Justin, Male

Listen to speech
Download MP3
Sample rate: 22050Hz
Change file format
Synthesize to S3
Change S3 task settings

Create new prompt

Search for prompt by name

▼ Prompt name

▼ After Office Hours.wav
Prompt ID: amzn1.alexconnect.us-east-1:586731164793:instance/625571f5-3a21-4d1a-977f-5e6be0896583/prompt/11a7519b-06f3-44f6-9c1b-45d26312b014

▼ Agents Busy.wav

▼ Billing Queue.wav
Prompt ID: amzn1.alexconnect.us-east-1:586731164793:instance/625571f5-3a21-4d1a-977f-5e6be0896583/prompt/6234e0b6-f953-480f-987f-2374809ba1ab

▼ Customer Queue.wav
Prompt ID: amzn1.alexconnect.us-east-1:586731164793:instance/625571f5-3a21-4d1a-977f-5e6be0896583/prompt/04613971-041c-4b24-9509-8b6cd949096d

▼ Customer Hold.wav
Prompt ID: amzn1.alexconnect.us-east-1:586731164793:instance/625571f5-3a21-4d1a-977f-5e6be0896583/prompt/621eeba5-69f9-42fe-bccc-51634e280f93

Play prompt

Delivers an audio or chat message. Learn more

Prompt
☒ Select from the prompt library (audio)
☒ Select a prompt

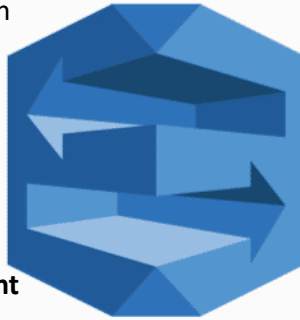
Audio prompt
After Office Hours.wav

☐ Select dynamically
☐ Text-to-speech or chat text

PlayDownloadEditRemove

Amazon Lex

- ❑ **High quality speech** recognition and **natural language** understanding
- ❑ **Multi-turn** conversations
- ❑ **Utility Prompts**
- ❑ **One-click Deployment** to Multiple Platforms
- ❑ **Powerful Lifecycle Management** Capabilities
- ❑ **8 kHz Telephony** Audio Support



Supported programming languages

- Python
- .NET
- Node.js
- PHP
- Ruby
- Go
- C++
- Java



Lex bot for Auto Speech Recognition

Bot name: NextGenLex

Description: No description provided

Language: English (US)

Output voice: Joanna

Session timeout: 5 min

Sentiment analysis: ☐ Yes ☒ No

IBM role: AWSRoleForLexBots
Automatically created on your behalf

COPPA: Please indicate if your use of this bot is subject to the Children's Online Privacy Protection Act (COPPA). [Learn more](#)
☐ Yes ☒ No

Advanced options: Enable accuracy improvements and advanced features. You will need to rebuild your bot after making a selection. [Learn more](#)
☐ Yes ☒ No

Confidence score threshold: 0.4 (default)

Publish Date: Jul 21 2020 at 10:49 AM

Created Date: Jul 11 2020 at 10:29 AM

Intents

AskForBillingInfo
AskForCustomerService
AskForOperator
AskForRepeat
AskForSales

> Test bot (Latest)

Ready. Build complete.

can i have a bill support

Intent AskForBillingInfo is ReadyForFulfillment.

I have issue with my bill

Intent AskForBillingInfo is ReadyForFulfillment.

Clear chat history

Chat with your bot...

AskForBillingInfo Latest

Sample utterances

e.g. I would like to book a flight.

i have a billing query

billing query

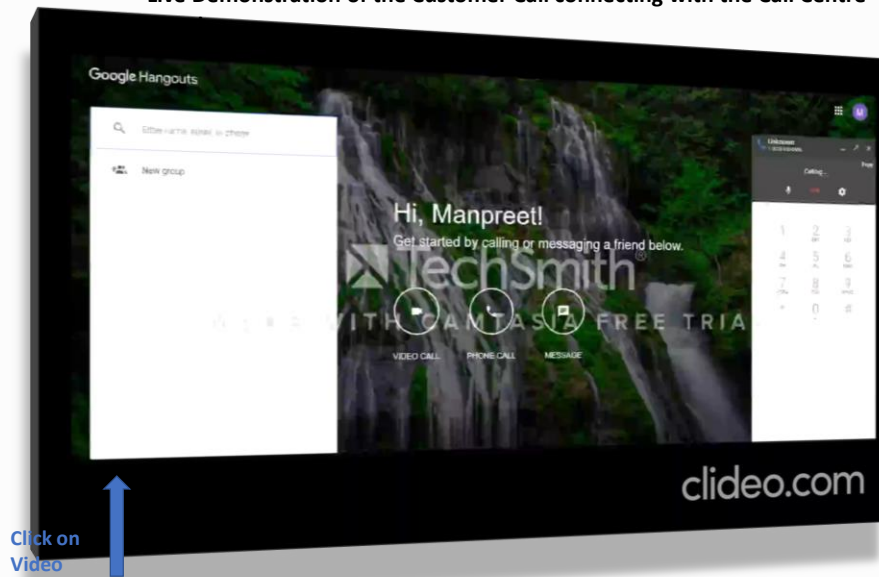
billing assistance

billing support

bill support

billing executive

Live Demonstration of the Customer Call connecting with the Call Centre



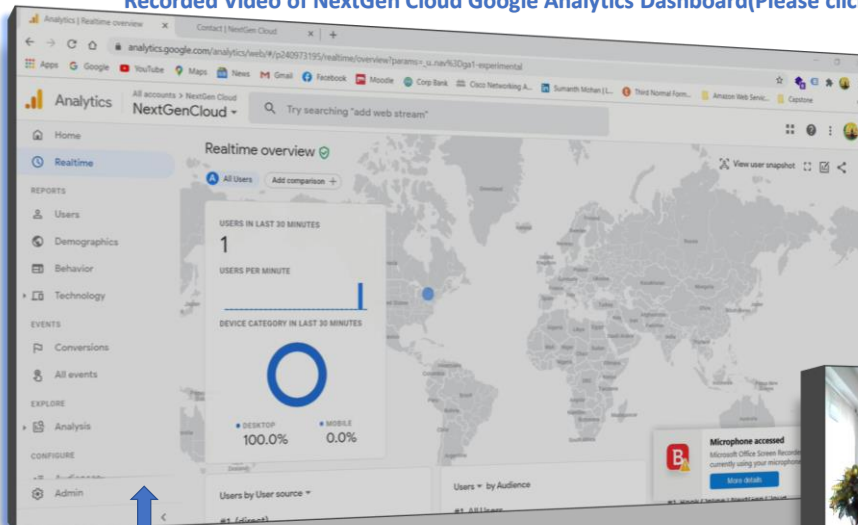
Google Analytics

Note : Please click on the picture and play button to listen to audio.

- ❑ Google Analytics is a web analytics service offered by Google that tracks and reports website traffic. We can track and plan our business model based on the plethora of details we get on the Google Analytics dashboard including tracking down the country, city of the user visiting our website
- ❑ The below screenshot demonstrates the various options we have on our Google Analytics dashboard.



Recorded Video of NextGen Cloud Google Analytics Dashboard(Please click play button)



Click on
Video



Google Tag Management

- ❑ Google Tag Manager is a tool that allows us to manage and deploy marketing tags (snippets of code or tracking pixels) on your website (or mobile app) without having to modify the code.

Why did we need the GTM on NextGen Cloud?

- ❑ One of the Primary Reasons we Implemented the Google Tag Management on both our website and application was to detect and update real time traffic coming into our website and application. This is part of our business model to get more users to Join the NextGen Cloud Platform and for potential business expansion.

Note : Please click on the picture and play button to listen to audio



NextGen Cloud Website

❑ The Website <https://www.nextgencloud.xyz/> has been Implemented on the Google Tag Manager (GTM) and we are now tracking Website traffic on Google Analytics (GA). We have Implemented two tags on the website, one the Global Tag and one is the conversion Tag.

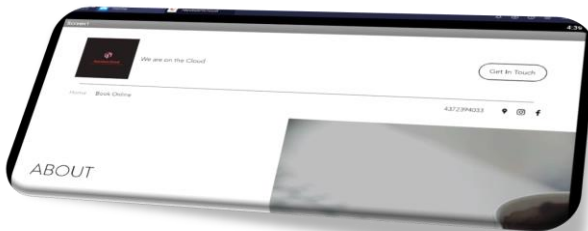
❑ Below is the Logo of NextGen Cloud with the tagline “We are on the cloud; we are at your service”



Note : Please click on the picture and play button to listen to audio

NextGen Cloud Application

- ❑ In an Era of Omni-channel operations it is important to enable access to users across plethora of platforms. The NextGen Cloud is about ensuring the customer has a very good experience after visiting our plethora of platforms. One such platform which we have extensively worked to develop is the NextGen Cloud Application.
- ❑ As discussed on our weekly reports, we have performed the various operations of developing an application and have demonstrated it on an android platform called – Blue stacks as seen in the below



Note : Please click on the picture and play button to listen to audio



Below is a screenshot of the various testing Methodology we have followed for the Next Gen Cloud application.



Note : Please click on the picture and play button to listen to audio

Conclusion

❑ Below is the screenshot of the Lambton College Capstone Project for the Cloud Computing program . Keeping the program needs, business prospects as well as cloud based performance, the NextGen Cloud Intends to address each of these scenarios.

CBD-3384: Cloud Computing Capstone Project

Employers expect candidates to have experience with teamwork in project environments. In this course students (1) work on concrete goals in a small team; (2) develop a cloud based data solution application based on pre-set requirements; and (3) manage deadlines, milestones and deliverables with a client. Students build a complete, deliverable product and present it to the client in a professional manner. The overall product is judged in a competition setting and students are given the chance to win awards. The design must be supported by documented market research, a marketing plan and a business plan.

hjan suq a puzhuaz hjan
geajin unat pe anbbouet pl qocunewet unatq unawet a unawet
qocunewet unatq unawet unatq unawet unatq unawet unatq unawet

Note : Please click on the picture and play button to listen to audio



Future Work

We are committed to carrying the Capstone project beyond the scope of term 3. This Project has given us hands-on experience about plethora of cloud services and has Enabled us to use the knowledge we have gained and transform us into Confident and skillful professionals in the Information technology domain. We as a Team are keen to carry forward this Project:

- ❑ The Team at NextGen Cloud is passionate about cloud computing and would like to deploy the NextGen Cloud across multiple cloud platforms including Microsoft Azure, Google Cloud Platform (GCP), Oracle cloud and IBM Cloud.
- ❑ Due to our Omni-Channel presence, we are willing to try multiple analytics across different cloud platforms.

Note : Please click on the picture and play button to listen to audio





Note : Please click on the picture and play button to listen to audio

