
CAPSTONE PROJECT

TRAVEL PLANNER AGENT

Presented By:

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OUTLINE

- **Problem Statement**
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Deployment**
- **Result Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- The Challenge - A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently and intelligently. It uses real-time data to suggest destinations, build itineraries, and recommend transport and accommodation options. By understanding user preferences, budgets, and constraints, it tailors personalized travel plans. Integrated with maps, weather updates, and local guides, it ensures a smooth travel experience. The agent can also manage bookings, alert users to changes, and optimize schedules on the go. This smart assistant transforms complex travel planning into a seamless, enjoyable process.

PROPOSED SOLUTION

- Proposed Solution: Travel Planner Agent using IBM AI Cloud & Granite model
- **1. User Interaction & Input Collection**
- Use IBM Watson Assistant to interact with users via chat/voice
- Collect preferences: destination types, budget, travel dates, interests
- Capture constraints: dietary, accessibility, visa, language, etc.
- **2. Real-time Data Integration**
- Integrate with:
 - Google,duck duck go to serach for events hotels and flights
 - Weather updates tool for aether updates
 - Use IBM App Connect or API Gateway for secure and scalable API handling
- **3. Personalized Itinerary Generation**
- Use Granite LLMs to generate customized travel plans
- Suggest optimized travel routes and times
- Recommend activities, restaurants, and accommodations based on user profile

PROPOSED SOLUTION

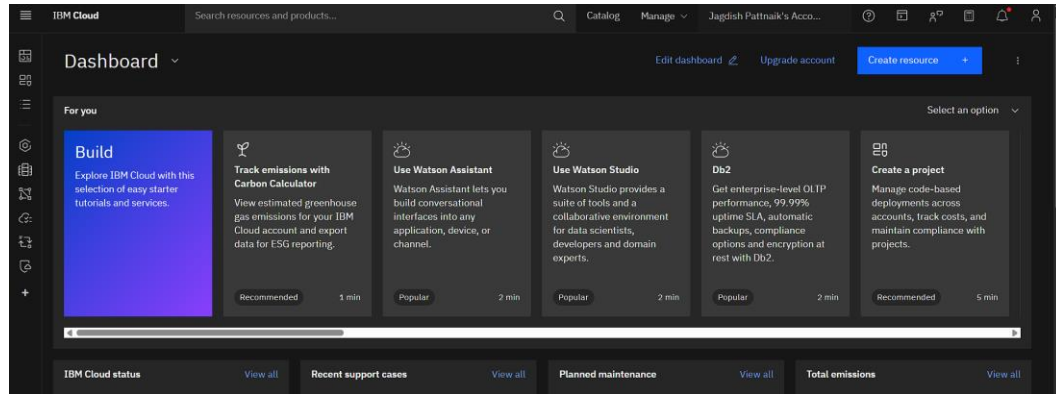
- Proposed Solution: Travel Planner Agent using IBM AI Cloud & Granite
- 4 Natural Language Understanding (NLU) with Granite
- Use IBM Granite foundation models to:
 - Understand complex user queries
 - Extract entities like locations, dates, preferences
- 5 Real-Time Test and optimization
- Use deployment environment to test
 - Re-plan in case of cancellations or disruptions
 - Offer alternatives using AI logic and available data
- 6. Deployment & Scalability
- Host on IBM Cloud Kubernetes or Code Engine for auto-scaling
- Use IBM Monitoring & Logging for performance tracking
- Enable multi-device access (Web, Mobile)

SYSTEM APPROACH

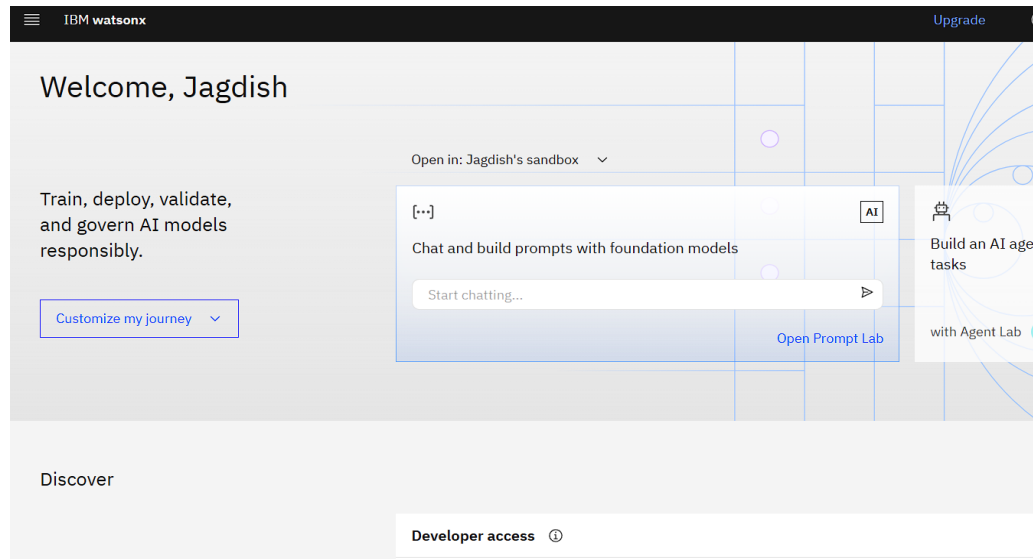
.System requirements

- IBM CLOUD SERVICES
- IBM WATSON X RUN TIME SERVICES
- IBM WATSON X AI/ML SERVICES
- IBM GRANAITE MODELS

RESULT AND STEPS

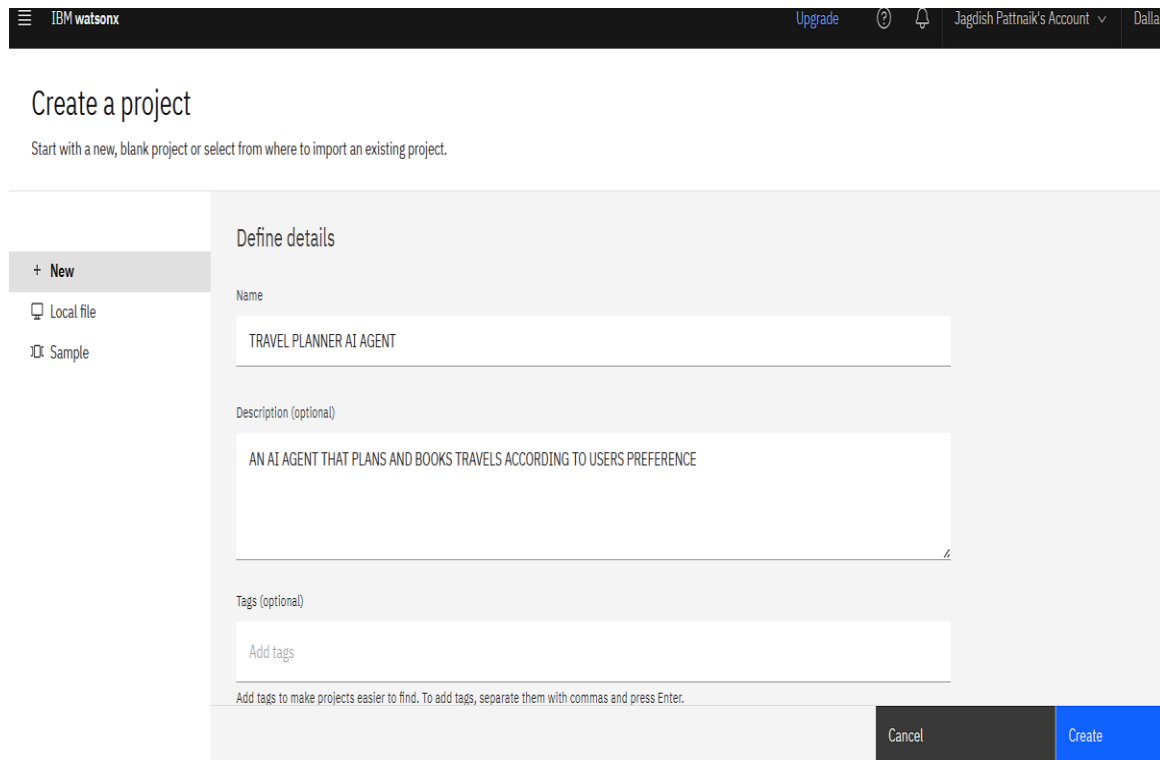


SIGN IN IBM CLOUD PORTAL



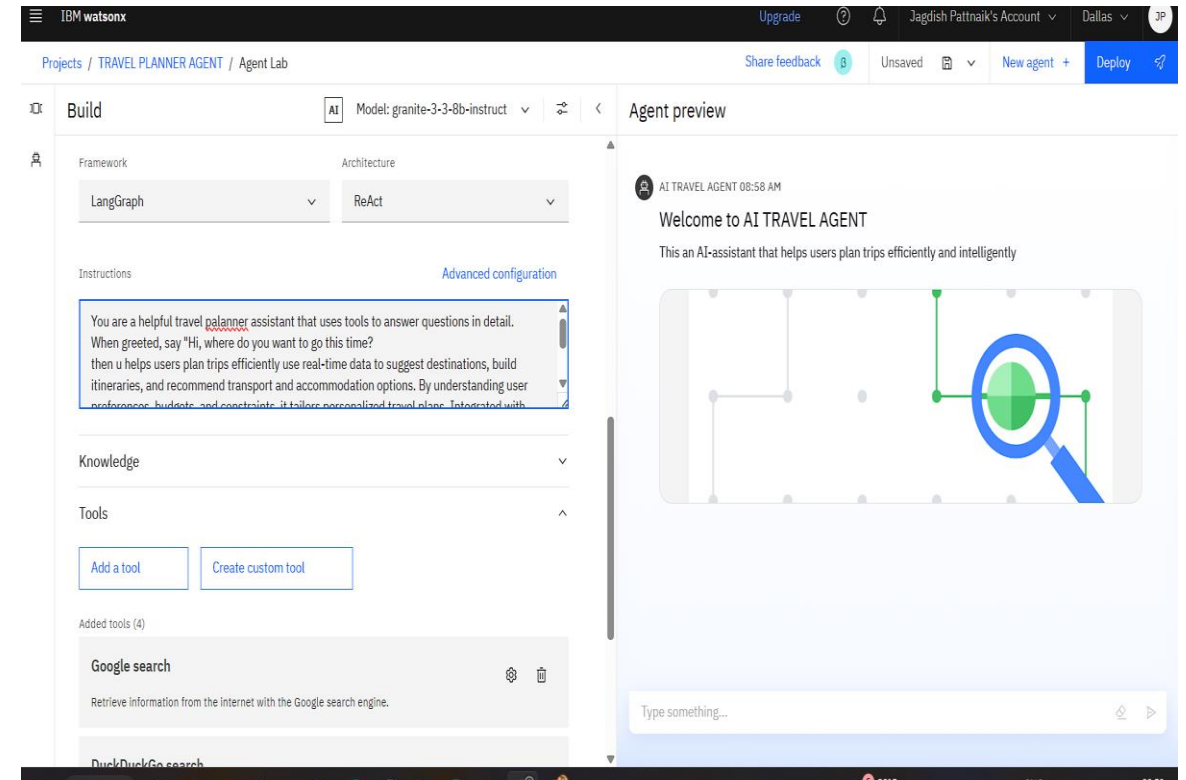
THEN NAVIGATE TO WATSONX AI PORTAL AND CREATE RESOURCE

RESULT-STEPS



The screenshot shows the 'Create a project' interface in IBM watsonx. The header bar includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Jagdish Pattnaik's Account' in 'Dallas'. The main heading is 'Create a project' with a subtext: 'Start with a new, blank project or select from where to import an existing project.' On the left, there is a sidebar with a '+ New' button and two options: 'Local file' and 'Sample'. The main area is titled 'Define details' and contains three text input fields: 'Name' (filled with 'TRAVEL PLANNER AI AGENT'), 'Description (optional)' (filled with 'AN AI AGENT THAT PLANS AND BOOKS TRAVELS ACCORDING TO USERS PREFERENCE'), and 'Tags (optional)' (with an 'Add tags' button). At the bottom right, there are 'Cancel' and 'Create' buttons.

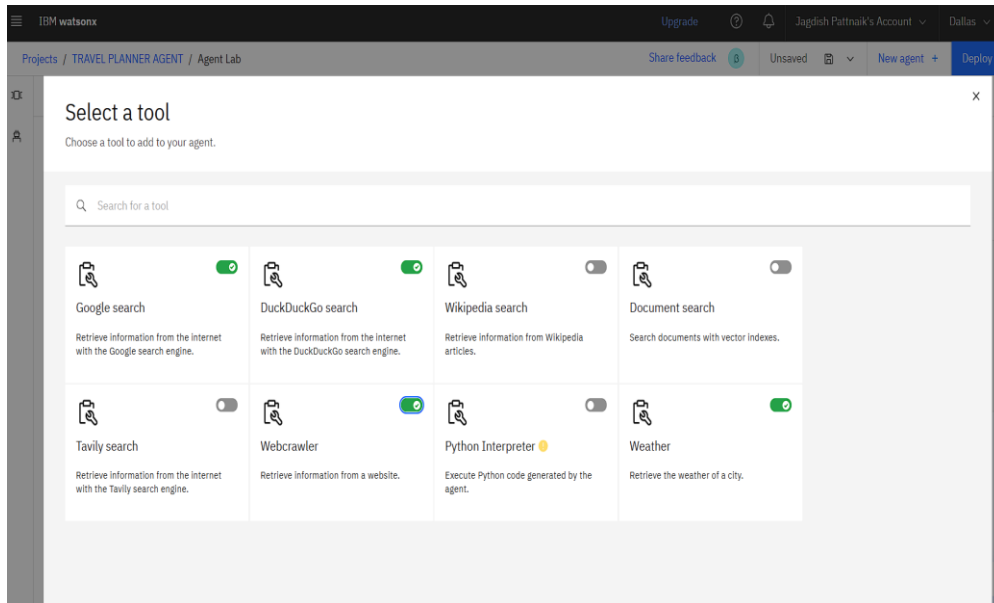
NEW AI AGENT IS CREATED AND CONFRIGURATION



The screenshot shows the 'Build' configuration page for the 'TRAVEL PLANNER AGENT' in IBM watsonx. The header bar is similar to the previous screenshot. The breadcrumb trail is 'Projects / TRAVEL PLANNER AGENT / Agent Lab'. The page has a 'Share feedback' button, an 'Unsaved' indicator, and buttons for 'New agent' and 'Deploy'. The main content is divided into two panels. The left panel, titled 'Build', shows the 'AI' model selected, with 'LangGraph' as the framework and 'ReAct' as the architecture. The 'Instructions' field is highlighted with a blue box and contains the text: 'You are a helpful travel palanner assistant that uses tools to answer questions in detail. When greeted, say 'Hi, where do you want to go this time?' then u helps users plan trips efficiently use real-time data to suggest destinations, build itineraries, and recommend transport and accommodation options. By understanding user performance, budget, and constraints, it tailor personalized travel plans. Interacted with...'. Below this are sections for 'Knowledge' and 'Tools', with buttons for 'Add a tool' and 'Create custom tool'. The 'Added tools (4)' section lists 'Google search' with a description: 'Retrieve information from the internet with the Google search engine.' The right panel, titled 'Agent preview', shows a chat interface with a welcome message: 'Welcome to AI TRAVEL AGENT. This an AI-assistant that helps users plan trips efficiently and intelligently.' Below the message is a diagram of a travel itinerary and a search bar with the placeholder text 'Type something...'. At the bottom, there is a 'DuckDuckGo search' bar.

GRANITE MODEL SELECTED AND INSTRUCTIONS GIVEN

RESULT



TOOLS USED IN AI AGENT

RESULT

Agent preview

- JP** You: 08:58 AM
hi
- AI TRAVEL AGENT** 08:58 AM
Hi, where do you want to go this time?
► **How did I get this answer?**
- JP** You: 09:00 AM
puri odisha
- AI TRAVEL AGENT** 09:00 AM
Great choice! Puri is a beautiful city in Odisha, known for its stunning beaches and the famous Jagannath Temple. To help you plan your trip, could you please provide me with the following details:
1. How many days do you plan to spend in Puri?
 2. What's your approximate budget per day?
 3. Are there any specific activities or attractions you're interested in?
 4. How many people will be traveling with you?
 5. Do you have any dietary restrictions or preferences?

Type something...

Agent preview

- JP** You: 09:02 AM
1.10 days 2.4000 inr 3.go to jagannath temple ,lokanath temple and bata mangala temple and sirluli hanuman temple near puri and beach and naerby local attractions 4.4 people.veg dieatery
- AI TRAVEL AGENT** 09:05 AM
Thanks for the details! Here's a preliminary plan for your 10-day trip to Puri, Odisha, keeping in mind your preferences and budget:
- Accommodation:**
- Suggest staying at a budget-friendly hotel or guesthouse near the beach, such as "Hotel Sea Beach" or "Puri Beach View Inn," which offer comfortable rooms at around 1,000 INR per night.
- Transport:**
- From Bhubaneswar Airport/Railway Station to Puri, you can take a taxi or a state transport bus (around 300 INR).
 - For local travel within Puri, use auto-rickshines or hire a local taxi for day trips.
- Itinerary:**
- Day 1:**

Type something...

SAMPLE QUERY FOR USER ASKING TO GO PURI ODISA VEG FOOD ITENARY WITH VISIT TO TEMPLES

RESULT

Agent preview

Day 4:

- Free day for relaxation, shopping, or further exploration of Puri Beach and markets.
- Enjoy local Odissi dance performances in the evening.

Day 5:

- Morning: Visit the Sun Temple (Konark) - approximately 30 km from Puri, can be covered in a half-day trip.
- Return to Puri and relax.

Day 6-10:

- Enjoy beach activities, rejuvenating spa sessions, and local cuisine.
- Explore more temples and historical sites around Puri, such as the Raghurajpur village known for its artists.

Vegetarian Restaurants:

- "Mayura," "Ananda Bazaar," and "Shanti" are popular vegetarian restaurants in Puri serving a variety of Odisha-style dishes.

Weather Update:

Type something...

Agent preview



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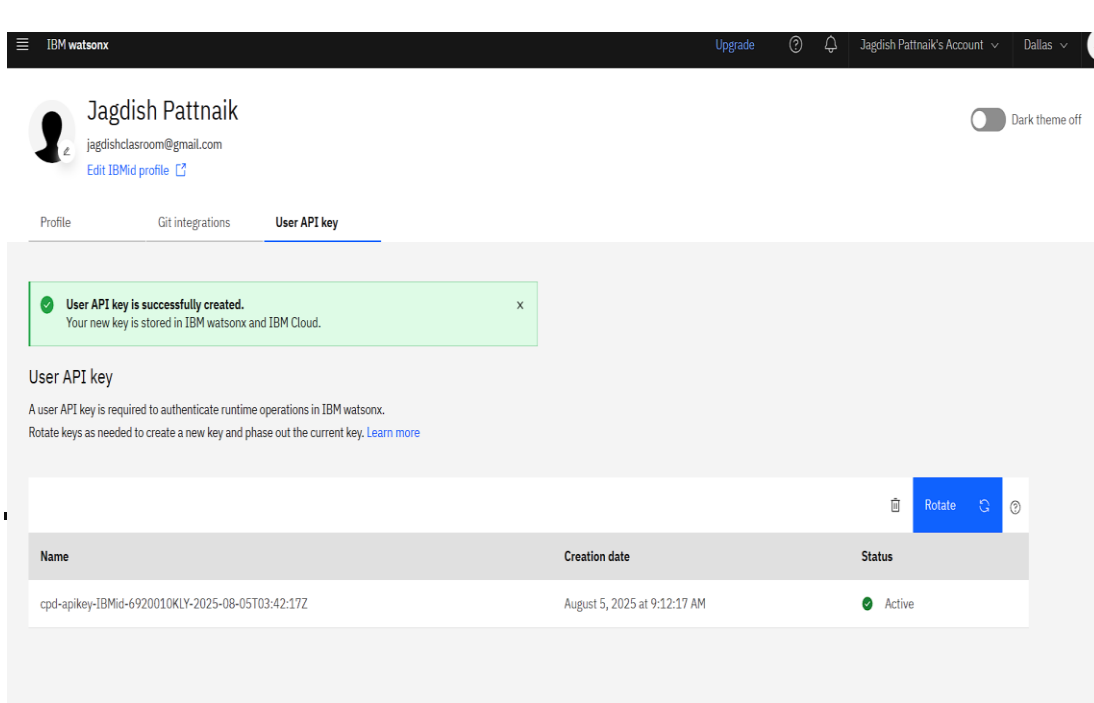
Itinerary:

Day 1:

Type something...

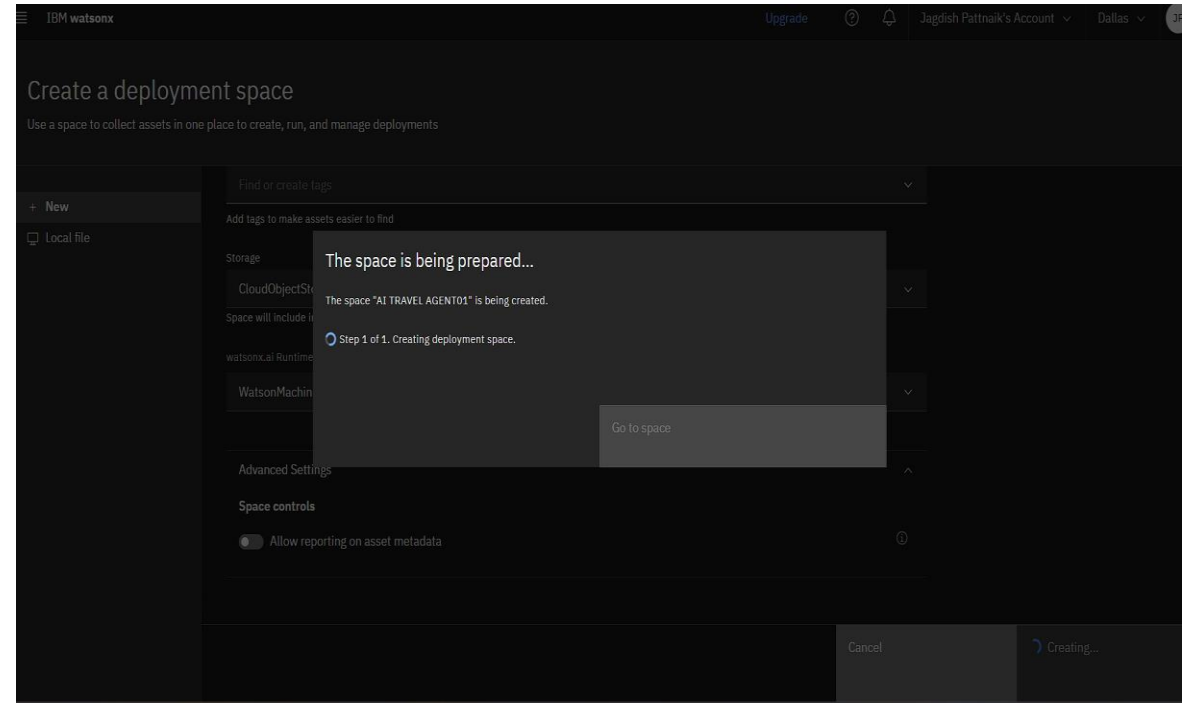
SAMPLE QUERY FOR USER ASKING TO GO PURI ODISA VEG FOOD ITENARY WITH VISIT TO TEMPLES

RESULT -DEPLOYMENT



The screenshot shows the IBM watsonx user interface. At the top, there's a navigation bar with 'IBM watsonx', 'Upgrade', a help icon, a notification bell, and the user's account 'Jagdish Pattnaik's Account' with a location dropdown 'Dallas'. Below the navigation bar, the user's profile is displayed with a profile picture, name 'Jagdish Pattnaik', email 'jagdishclasroom@gmail.com', and a link to 'Edit IBMid profile'. A 'Dark theme off' toggle is also visible. The main content area has three tabs: 'Profile', 'Git integrations', and 'User API key'. The 'User API key' tab is active, showing a green success message: 'User API key is successfully created. Your new key is stored in IBM watsonx and IBM Cloud.' Below this, there's a section titled 'User API key' with a description: 'A user API key is required to authenticate runtime operations in IBM watsonx. Rotate keys as needed to create a new key and phase out the current key. [Learn more](#)'. At the bottom, there's a table with one row of API key data.

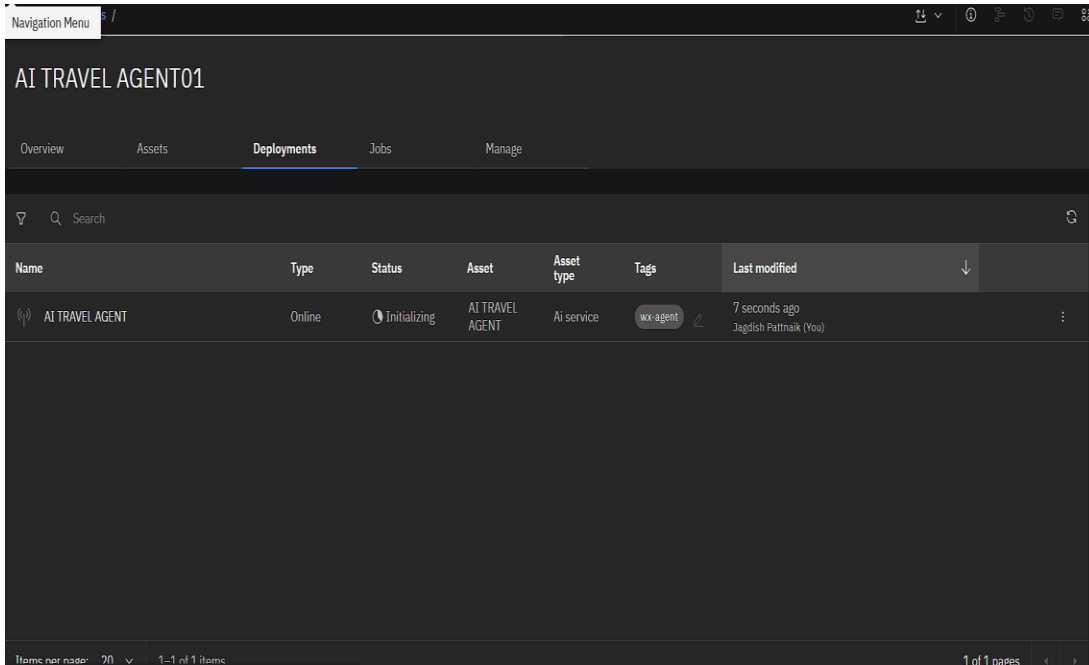
Name	Creation date	Status
cpd-apikey-IBMId-6920010KLY-2025-08-05T03:42:17Z	August 5, 2025 at 9:12:17 AM	Active



The screenshot shows the 'Create a deployment space' dialog in the IBM watsonx interface. The dialog has a title 'Create a deployment space' and a subtitle 'Use a space to collect assets in one place to create, run, and manage deployments'. On the left, there's a sidebar with '+ New' and 'Local file'. The main area has a 'Find or create tags' dropdown, followed by 'Add tags to make assets easier to find'. Below this, there's a 'Storage' section with 'CloudObjectStorage' selected. The 'Space will include' section shows 'Step 1 of 1. Creating deployment space.' with a 'Go to space' button. The 'Advanced Settings' section has a 'Space controls' section with a toggle for 'Allow reporting on asset metadata'. At the bottom, there are 'Cancel' and 'Creating...' buttons.

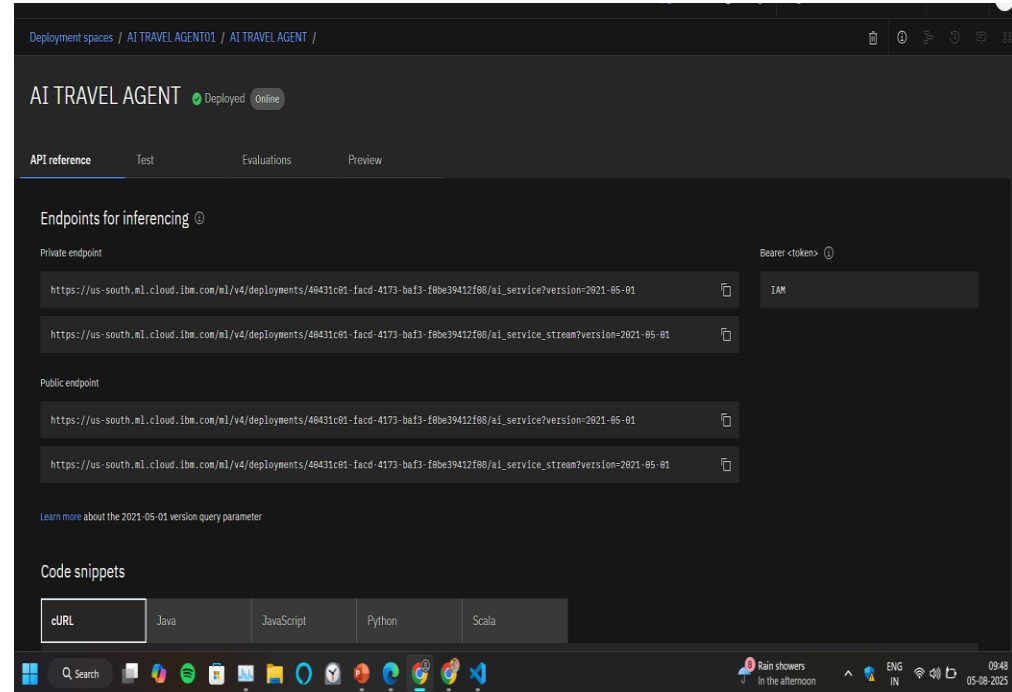
PROJECT IS SAVED AND DEPLOYMENT SPACE IS CREATED

RESULT DEPLOYMENT



The screenshot shows the 'AI TRAVEL AGENT01' deployment page in the Azure portal. The 'Deployments' tab is selected, showing a table with one deployment: 'AI TRAVEL AGENT'. The deployment is 'Online' and 'Initializing'. The asset is 'AI TRAVEL AGENT' and the asset type is 'Ai service'. The tags include 'wx-agent'. The last modified time is '7 seconds ago' by 'Jagdish Pattnaik (You)'. The table has columns for Name, Type, Status, Asset, Asset type, Tags, and Last modified.

Name	Type	Status	Asset	Asset type	Tags	Last modified
AI TRAVEL AGENT	Online	Initializing	AI TRAVEL AGENT	Ai service	wx-agent	7 seconds ago Jagdish Pattnaik (You)



The screenshot shows the 'AI TRAVEL AGENT' deployment page in the Azure portal, specifically the 'Endpoints for inference' section. The deployment is 'Deployed' and 'Online'. The 'API reference' tab is selected. The section displays two endpoints: a 'Private endpoint' and a 'Public endpoint'. The private endpoint is 'https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service?version=2021-05-01' and the public endpoint is 'https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service_stream?version=2021-05-01'. The 'Code snippets' section is also visible, with tabs for cURL, Java, JavaScript, Python, and Scala.

Endpoints for inference ①

Private endpoint

Bearer <token> ①

https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service_stream?version=2021-05-01

Public endpoint

https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service?version=2021-05-01

https://us-south.ml.cloud.ibm.com/v4/deployments/48431c01-facd-4173-baf3-f0be39412f88/ai_service_stream?version=2021-05-01

Learn more about the 2021-05-01 version query parameter

Code snippets

cURL Java JavaScript Python Scala

PROJECT IS DEPLOYED SUCESSFULLY AND IS LIVE

RESULT-SAMPLE OUTPUT

Agent preview

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► How did I get this answer?

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Itinerary:

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CONCLUSION

- OUR AI AGENT IS SUCEFULLY CREATED WITH IBM GRANITE MODEL BY UNDERSTANDING USER PREFERENCES, BUDGETS, AND CONSTRAINTS, IT TAILORS PERSONALIZED TRAVEL PLANS. INTEGRATED WITH MAPS, WEATHER UPDATES, AND LOCAL GUIDES, IT ENSURES A SMOOTH TRAVEL EXPERIENCE. THE AGENT CAN ALSO MANAGE BOOKINGS, ALERT USERS TO CHANGES, AND OPTIMIZE SCHEDULES ON THE GO. THIS SMART ASSISTANT TRANSFORMS COMPLEX TRAVEL PLANNING INTO A SEAMLESS, ENJOYABLE PROCESS

FUTURE SCOPE

A Travel Planner Agent is an AI-powered assistant that helps users plan trips efficiently and intelligently. It uses real-time data to suggest destinations, build itineraries, and recommend transport and accommodation options. By understanding user preferences, budgets, and constraints, it tailors personalized travel plans. Integrated with maps, weather updates, and local guides, it ensures a smooth travel experience. The agent can also manage bookings, alert users to changes, and optimize schedules on the go. This smart assistant transforms complex travel planning into a seamless, enjoyable process and can be scaled later on

REFERENCES

- cloud.ibm.com
- IBM Watson x services
- IBM ai lab beta services

IBM CERTIFICATIONS

- Screenshot/ credly certificate(getting started with AI)



IBM CERTIFICATIONS

- Screenshot/ credly certificate(Journey to Cloud)



IBM CERTIFICATIONS

- Screenshot/ credly certificate(RAG Lab)





THANK YOU