



# The Future of Serverless in 2025 and Beyond

11TH WORKSHOP ON SERVERLESS COMPUTING

Julian Wood

Principal Serverless Developer Advocate

AWS

# About me

## Julian Wood

Developer Advocate – AWS Serverless

Recovering server“more” infrastructure engineer

Enterprises and startups

You can't scare me, I have twin girls!

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Serverless Land



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# Serverless has been ...



# Revolutionary



Amazon SQS



Amazon S3



Amazon EC2



Amazon SNS



Amazon DynamoDB



2006



2008



2010



2012



2014



2016



2017



AWS Lambda



Azure Functions



AWS Fargate



Cloudflare  
workers



Google  
Cloud  
Functions

# AWS Serverless spectrum

INCLUDES

AWS OFFERS A WIDE PORTFOLIO OF SERVERLESS SERVICES

## Compute



AWS  
Lambda



AWS  
Fargate



Amazon  
ECS



AWS App  
Runner

## Storage



Amazon  
S3



Amazon  
EFS

## Workflows and Integrations



Amazon  
EventBridge



AWS Step  
Functions



Amazon  
API Gateway



AWS  
AppSync



Amazon  
SQS



Amazon  
SNS



Amazon  
Kinesis

## Databases and Analytics



Amazon Aurora  
Serverless



Amazon  
DynamoDB



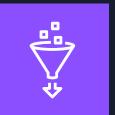
Amazon  
OpenSearch Service



Amazon  
Bedrock



Amazon  
QuickSight



AWS  
Glue



Amazon  
Redshift

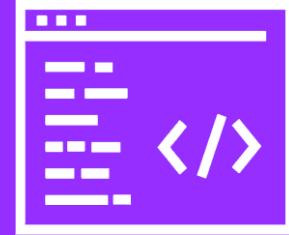
# Serverless is ...



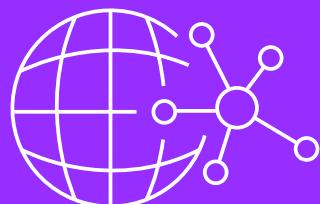
# Why Serverless



**Reduce Operational Overhead**



**Developer Experience**



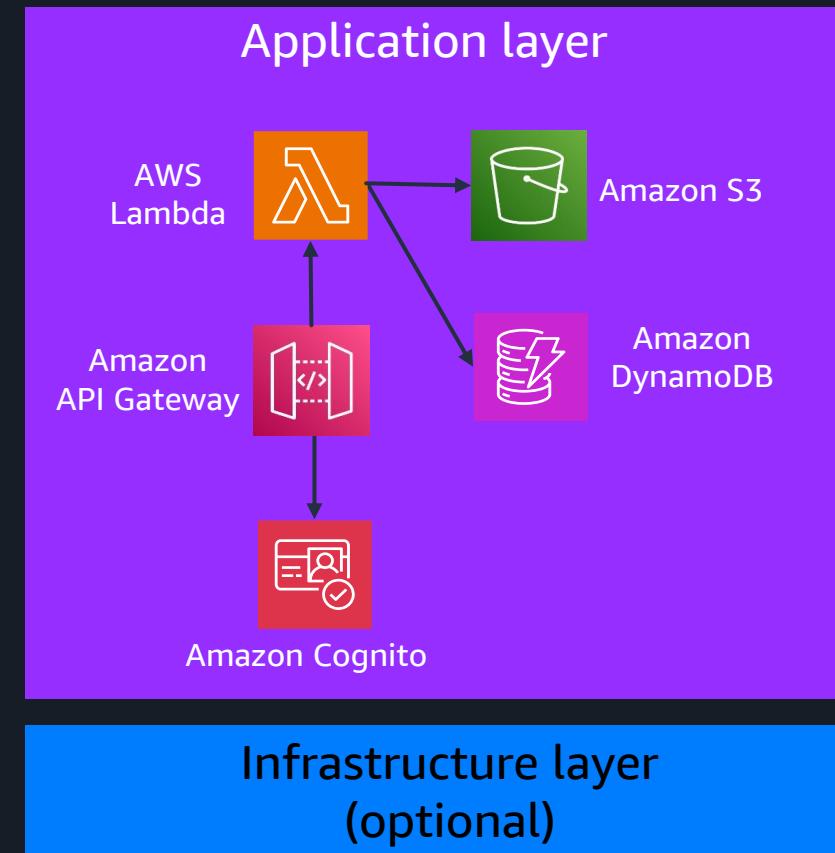
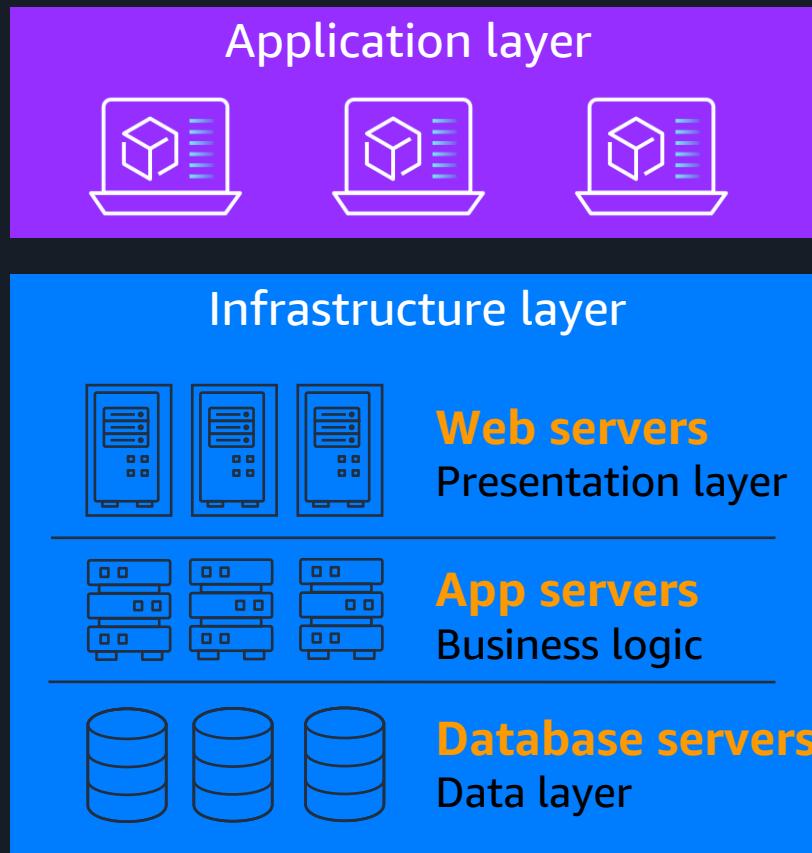
**Seamless Integrations**  
200+ AWS Services



**Performance at any scale**

# Why Serverless

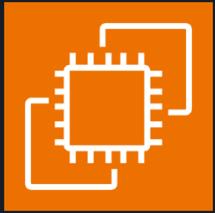
**Focus on business logic, not infrastructure management**



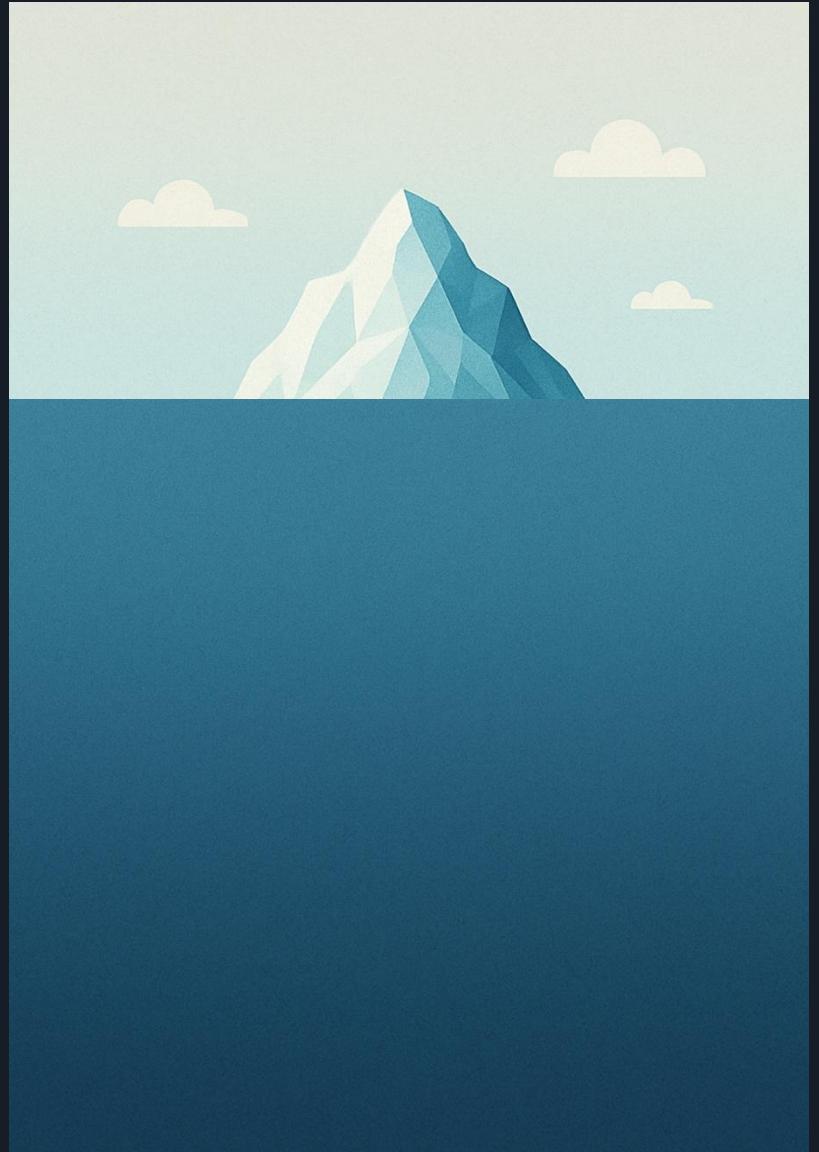
# The biggest secret of “serverless”



(and many other serverless services)

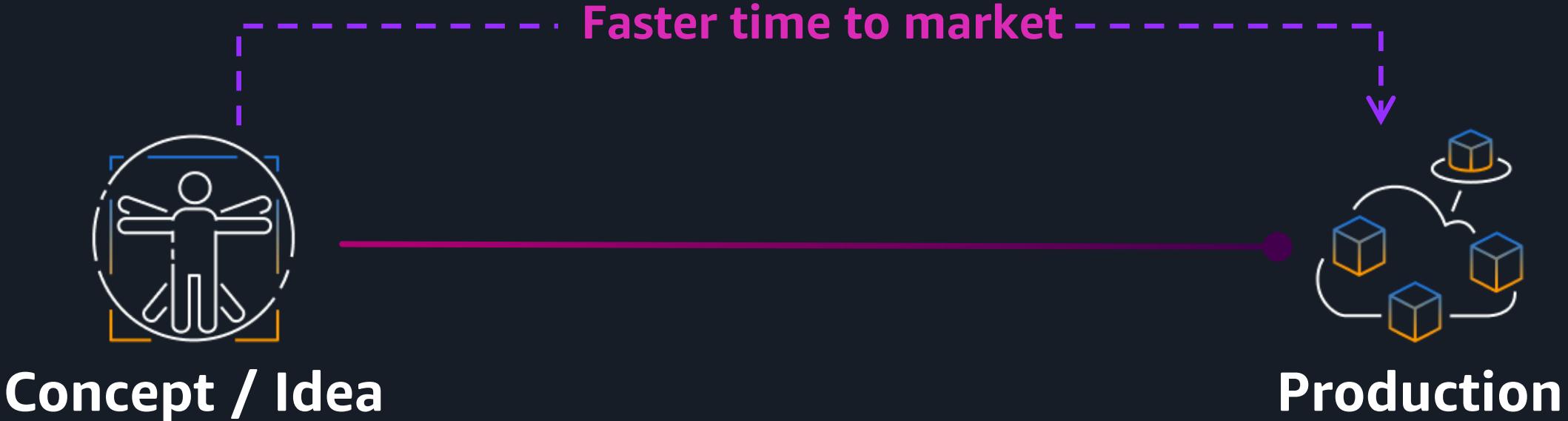


Hundreds of thousands of  
EC2 instances under-the-hood



# Why Serverless

A faster way to get to **customer value**



For you....

A faster way learn, explore,  
experiment, play, prove!



# Serverless is everywhere!

Aol.

AstraZeneca

affirm

ALERT LOGIC<sup>®</sup>  
Security Compliance Cloud

Amenity

AMGEN

App Annie

airbnb

BuzzFeed

AXA

Caltech

CapitalOne

chime

ClearDATA  
SECURE • HEALTHCARE • CLOUD

Allianz

Coca-Cola

COMCAST

AUTODESK

coursera

AIR CANADA

CyberAgent

CyberCube

datree.io

DOORDASH

edmunds

experian

Genesys

GoPro  
Be a HERO

inLearn

Expedia

GoDaddy

hulu

MONSANTO

HUMAN  
LONGEVITY,  
INC.

KAPLAN

KDDI

LG

komodohealth

INSIDER

movinga

instacart

Lamudi.lk

Lime

NETFLIX

mapbox

matomy

M

METEOR

MORNINGSTAR<sup>®</sup>

QMENTA

nab

nauto

NAVITIME

Nextdoor

PHILIPS

OASIS GAMES

Prezi

pairinge

PICNIC

okta

realtor.com<sup>®</sup>

Segment

RICOH

salesforce

sportsbet  
.com.au

shutterstock

shippable

SAMSUNG

SIEMENS

Sysco

TIBCO<sup>®</sup>

TRUECar

UBISOFT

Telefónica

Upserve

Travelex  
monetary

verizon<sup>®</sup>

VIACOM

ThermoFisher  
SCIENTIFIC

vend<sup>®</sup>

TUNE IN

VIZIO

Vanguard<sup>®</sup>

Workiva

WP

weever apps

zynga<sup>®</sup>

Trimble

WYNDHAM

zuora



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# Serverless and gen AI

1. Using AI to build (serverless) apps
2. Building AI (serverless) apps

# 1. Using AI to build (serverless) apps

# MCP



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# Model Context Protocol

The API for GenAI



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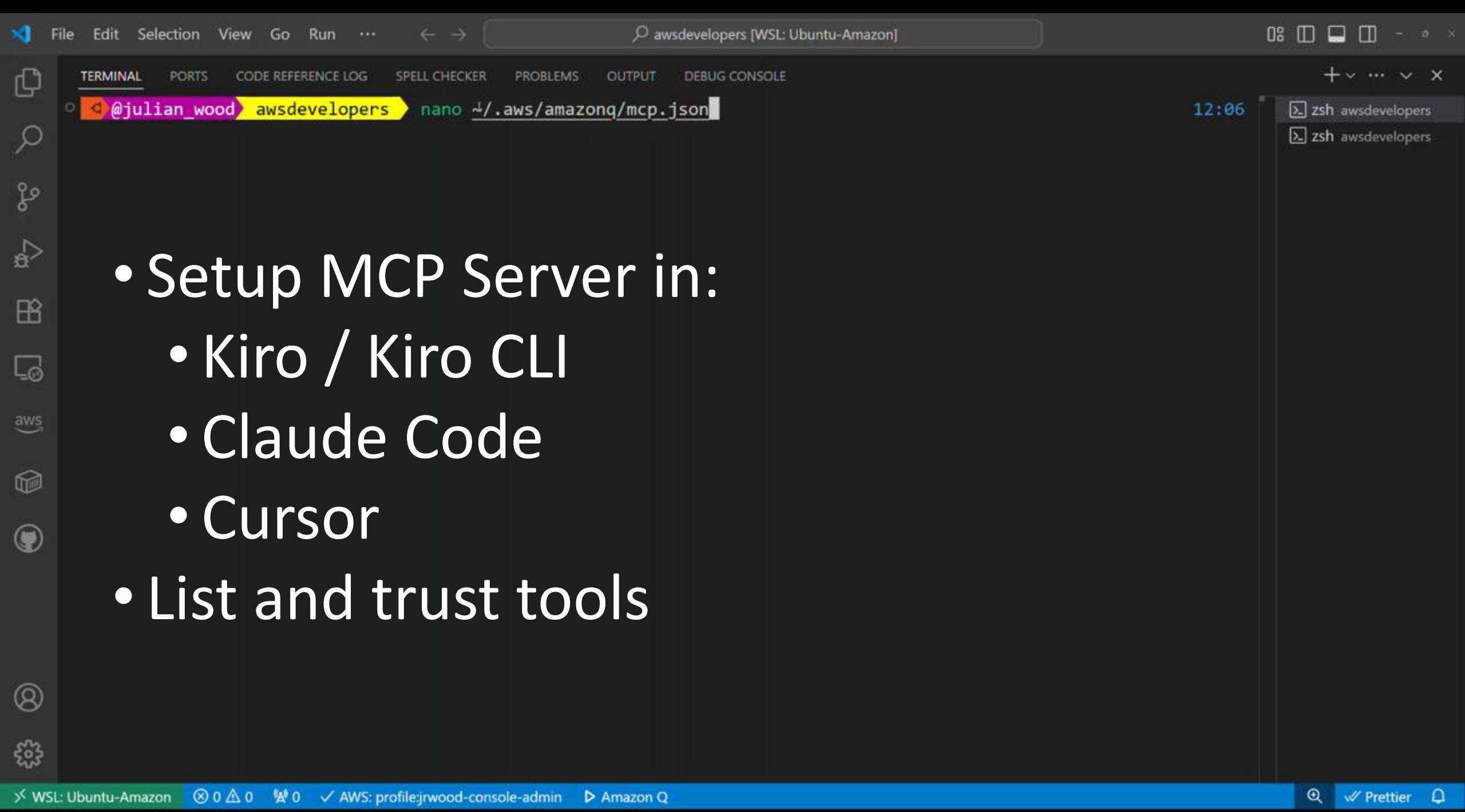
<ul style="list-style-type: none"> <li><a href="#">AWS KB Retrieval</a> - Re...</li> <li><a href="#">Brave Search</a> - Web a...</li> <li><a href="#">EverArt</a> - AI image gen...</li> <li><a href="#">Everything</a> - Reference...</li> <li><a href="#">Fetch</a> - Web content f...</li> <li><a href="#">Filesystem</a> - Secure fi...</li> <li><a href="#">Git</a> - Tools to read, sea...</li> <li><a href="#">GitHub</a> - Repository m...</li> <li><a href="#">GitLab</a> - GitLab API, et...</li> <li><a href="#">Google Drive</a> - File ac...</li> <li><a href="#">Google Maps</a> - Location...</li> <li><a href="#">Memory</a> - Knowledge...</li> <li><a href="#">PostgreSQL</a> - Read-only...</li> <li><a href="#">Puppeteer</a> - Browser a...</li> <li><a href="#">Redis</a> - Interact with R...</li> <li><a href="#">Sentry</a> - Retrieving an...</li> <li><a href="#">Sequential Thinking</a> - ...</li> <li><a href="#">Slack</a> - Channel mana...</li> <li><a href="#">Sqlite</a> - Database inter...</li> <li><a href="#">Time</a> - Time and timez...</li> </ul>	<ul style="list-style-type: none"> <li>⦿ <a href="#">21st.dev Magic</a> - Create...</li> <li>▲ <a href="#">Adfin</a> - The only platform...</li> <li>❖ <a href="#">AgentQL</a> - Enable AI age...</li> <li>▣ <a href="#">AgentRPC</a> - Connect to a...</li> <li>✿ <a href="#">Aiven</a> - Navigate your Aiv...</li> <li>✳ <a href="#">Apache IoTDB</a> - MCP Ser...</li> <li>▷ <a href="#">Apify</a> - Actors MCP Server...</li> <li>☁ <a href="#">APIMatic MCP</a> - APIMatic...</li> <li>▫ <a href="#">Astra DB</a> - Comprehensive...</li> <li>✓ <a href="#">Audience Insights</a> - Marke...</li> <li>▢ <a href="#">Axiom</a> - Query and analy...</li> <li>Ⓑ <a href="#">Bankless Onchain</a> - Que...</li> <li>■ <a href="#">BICScan</a> - Risk score / as...</li> <li>☒ <a href="#">Box</a> - Interact with the In...</li> <li>Ⓑ <a href="#">Browserbase</a> - Automate...</li> <li>✖ <a href="#">Chargebee</a> - MCP Server...</li> <li>✳ <a href="#">Chroma</a> - Embeddings, v...</li> <li>⌚ <a href="#">Chronulus AI</a> - Predict an...</li> </ul>	<ul style="list-style-type: none"> <li>⦿ <a href="#">CircleCI</a> - Enable AI Ag...</li> <li>■ <a href="#">ClickHouse</a> - Query yo...</li> <li>▲ <a href="#">Cloudflare</a> - Deploy, co...</li> <li>Workers/KV/R2/D1)</li> <li>⦿ <a href="#">Codacy</a> - Interact with...</li> <li>▣ <a href="#">CodeLogic</a> - Interact w...</li> <li>● <a href="#">Comet Opik</a> - Query ar...</li> <li>○ <a href="#">Convex</a> - Introspect an...</li> <li>▢ <a href="#">Dart</a> - Interact with tas...</li> <li>▢ <a href="#">DevHub</a> - Manage and...</li> <li>⦿ <a href="#">E2B</a> - Run code in secu...</li> <li>▢ <a href="#">EduBase</a> - Interact with...</li> <li>▢ <a href="#">Elasticsearch</a> - Query...</li> <li>▢ <a href="#">eSignatures</a> - Contrac...</li> <li>☒ <a href="#">Exa</a> - Search Engine m...</li> <li>⦿ <a href="#">FewSats</a> - Enable AI Ag...</li> <li>✳ <a href="#">Fibery</a> - Perform queri...</li> <li>▢ <a href="#">Financial Datasets</a> - S...</li> <li>🔥 <a href="#">Firecrawl</a> - Extract we...</li> <li>🔥 <a href="#">Fireproof</a> - Immutable...</li> </ul>	<ul style="list-style-type: none"> <li>⦿ <a href="#">Gitee</a> - Gitee API integr...</li> <li>go; <a href="#">gotoHuman</a> - Human-i...</li> <li>to your <a href="#">gotoHuman</a> inbox</li> <li>⦿ <a href="#">Grafana</a> - Search dash...</li> <li>⦿ <a href="#">Graphlit</a> - Ingest anyth...</li> <li>searchable <a href="#">Graphlit</a> proje...</li> <li>⦿ <a href="#">GreptimeDB</a> - Provides...</li> <li>GreptimeDB.</li> <li>⦿ <a href="#">Heroku</a> - Interact with...</li> <li>databases, and more.</li> <li>▣ <a href="#">Hologres</a> - Connect to...</li> <li>⚡ <a href="#">Hyperbrowser</a> - Hyper...</li> <li>effortless, scalable brows...</li> <li><a href="#">IBM wflows</a> - Tool platfo...</li> <li>➤ <a href="#">ForeverVM</a> - Run Python...</li> <li>☒ <a href="#">Inbox Zero</a> - AI persona...</li> <li>▢ <a href="#">Inkeep</a> - RAG Search o...</li> <li>▢ <a href="#">Integration App</a> - Inter...</li> <li>▢ <a href="#">JetBrains</a> - Work on yo...</li> <li>▢ <a href="#">Kagi Search</a> - Search t...</li> <li>▢ <a href="#">Keboola</a> - Build robust...</li> <li>⦿ <a href="#">Lara Translate</a> - MCP S...</li> <li>for language detection an...</li> <li>▢ <a href="#">Logfire</a> - Provides acc...</li> <li>▢ <a href="#">Langfuse Prompt Man...</a>...</li> </ul>	<ul style="list-style-type: none"> <li>⦿ <a href="#">Lingo.dev</a> - Make your...</li> <li>⦿ <a href="#">Mailgun</a> - Interact with...</li> <li>■ <a href="#">Make</a> - Turn your <a href="#">Ma...</a></li> <li>■ <a href="#">Meilisearch</a> - Interact &amp;</li> <li>■ <a href="#">Metoro</a> - Query and inte...</li> <li>▢ <a href="#">Milvus</a> - Search, Query...</li> <li>▢ <a href="#">Momento</a> - Momento C...</li> <li>any scale.</li> <li>▷ <a href="#">MotherDuck</a> - Query ar...</li> <li>▢ <a href="#">Needle</a> - Production-re...</li> <li>▷ <a href="#">Neo4j</a> - Neo4j graph da...</li> <li>memory</li> <li>▢ <a href="#">Neon</a> - Interact with the...</li> <li>☒ <a href="#">Notion</a> - This project im...</li> <li>▢ <a href="#">OceanBase</a> - MCP Serv...</li> <li>▢ <a href="#">Octagon</a> - Deliver real-t...</li> <li>▢ <a href="#">Oxylabs</a> - Scrape webs...</li> <li>data extraction.</li> <li>▢ <a href="#">Paddle</a> - Interact with th...</li> <li>▢ <a href="#">PayPal</a> - PayPal's officia...</li> <li>▢ <a href="#">Perplexity</a> - An MCP se...</li> <li>in conversational AI.</li> <li>▢ <a href="#">Qdrant</a> - Implement ser...</li> <li>▢ <a href="#">Ramp</a> - Interact with <a href="#">Ra...</a></li> <li>▢ <a href="#">Raygun</a> - Interact with yo...</li> </ul>	<ul style="list-style-type: none"> <li>⦿ <a href="#">Rember</a> - Create spa...</li> <li>▢ <a href="#">Riza logo Riza</a> - Arbit...</li> <li>▢ <a href="#">Search1API</a> - One API...</li> <li>▢ <a href="#">ScreenshotOne</a> - Ren...</li> <li>▢ <a href="#">Semgrep</a> - Enable AI...</li> <li>▢ <a href="#">SingleStore</a> - Interact...</li> <li>▢ <a href="#">StarRocks</a> - Interact w...</li> <li>▢ <a href="#">Stripe</a> - Interact with...</li> <li>▢ <a href="#">Tavily</a> - Search engine...</li> <li>▢ <a href="#">Thirdweb</a> - Read/write...</li> <li>transaction execution, p...</li> <li>▢ <a href="#">Tinybird</a> - Interact wi...</li> <li>▢ <a href="#">UnifAI</a> - Dynamically s...</li> <li>▢ <a href="#">Unstructured</a> - Set up...</li> <li>Platform</li> <li>▢ <a href="#">Vectorize</a> - Vectorize M...</li> <li>extraction and text chur...</li> <li>▢ <a href="#">Verodat</a> - Interact wit...</li> <li>▢ <a href="#">VeyraX</a> - Single tool t...</li> <li>▢ <a href="#">Xero</a> - Interact with th...</li> <li>▢ <a href="#">Zapier</a> - Connect you...</li> <li>▢ <a href="#">ZenML</a> - Interact with y...</li> </ul>
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# AWS Serverless MCP Server

- Serverless application lifecycle
- Web application deployment and management
- Observability
- Guidance, IaC templates, and deployment help

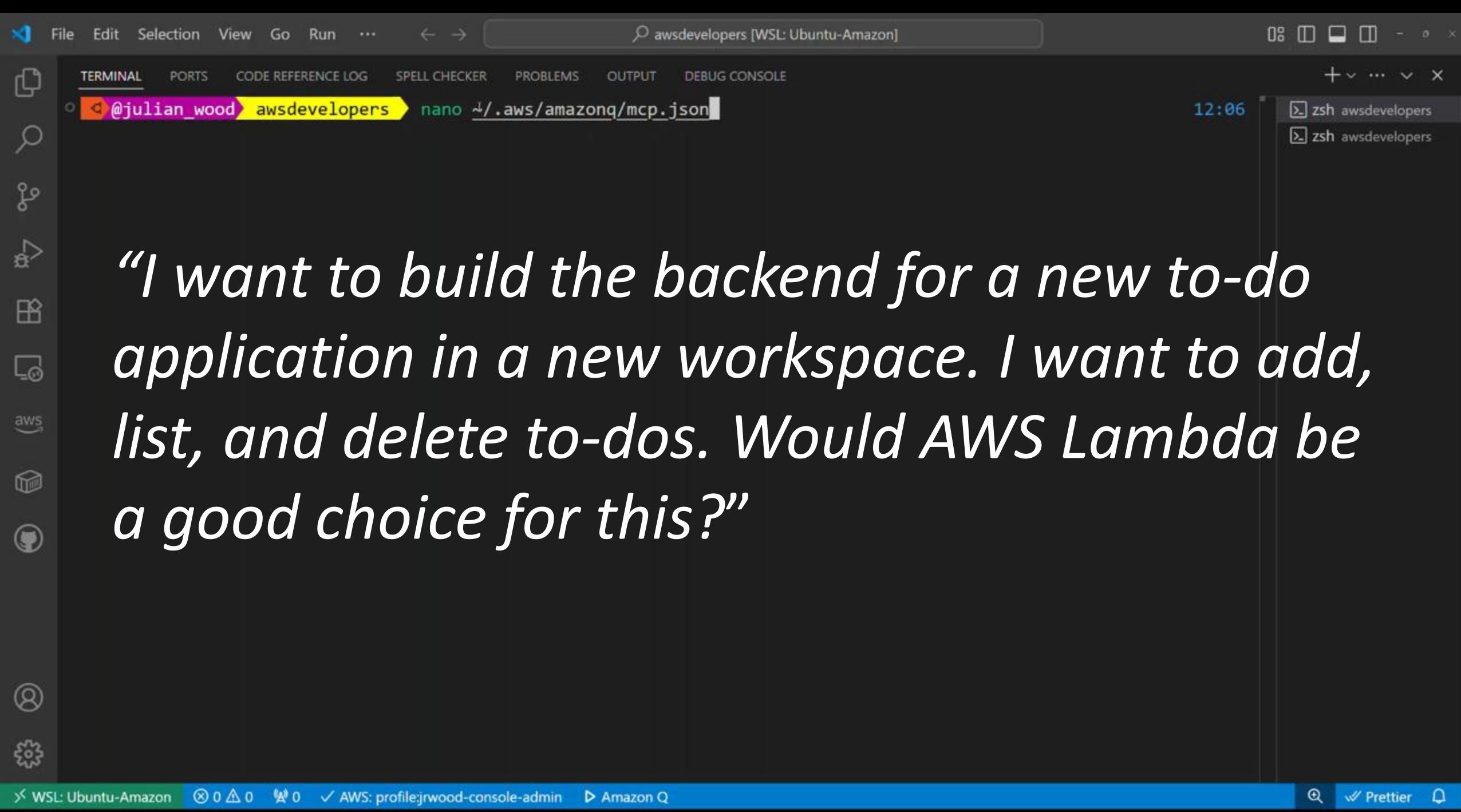




A screenshot of a dark-themed terminal window within a code editor interface. The terminal tab is active, showing a session for user `@julian_wood` in the `awsdevelopers` workspace. The command `nano ~/.aws/amazonq/mcp.json` is running, and the current time is 12:06. The status bar at the bottom shows the connection is via WSL: Ubuntu-Amazon, with AWS profile `jrwood-console-admin` selected, and tools like Prettier and Amazon Q are available.

```
File Edit Selection View Go Run ... ⏪ ⏩ awsdevelopers [WSL: Ubuntu-Amazon] 08 12:06 TERMINAL PORTS CODE REFERENCE LOG SPELL CHECKER PROBLEMS OUTPUT DEBUG CONSOLE + ... × @julian_wood awsdevelopers nano ~/.aws/amazonq/mcp.json zsh awsdevelopers zsh awsdevelopers
```

- Setup MCP Server in:
  - Kiro / Kiro CLI
  - Claude Code
  - Cursor
- List and trust tools



*“I want to build the backend for a new to-do application in a new workspace. I want to add, list, and delete to-dos. Would AWS Lambda be a good choice for this?”*

The screenshot shows a terminal window in the Visual Studio Code (VS Code) interface. The title bar indicates the workspace is "awsdevelopers [WSL: Ubuntu-Amazon]". The terminal tab is active, showing the command "use\_aws" followed by a list of AWS Lambda CLI commands and their trust status. Below this, a note about trusted tools and default settings is displayed, along with usage instructions and a warning message.

- use\_aws

awslabsaws\_serverless\_mcp (MCP):

- awslabsaws_serverless_mcp__configure_domain	trusted
- awslabsaws_serverless_mcp__deploy_serverless_app_help	trusted
- awslabsaws_serverless_mcp__deploy_webapp	trusted
- awslabsaws_serverless_mcp__describe_schema	trusted
- awslabsaws_serverless_mcp__get_iac_guidance	trusted
- awslabsaws_serverless_mcp__get_lambda_event_schemas	trusted
- awslabsaws_serverless_mcp__get_lambda_guidance	trusted
- awslabsaws_serverless_mcp__get_metrics	trusted
- awslabsaws_serverless_mcp__get_serverless_templates	trusted
- awslabsaws_serverless_mcp__list_registries	trusted
- awslabsaws_serverless_mcp__sam_build	trusted
- awslabsaws_serverless_mcp__sam_deploy	trusted
- awslabsaws_serverless_mcp__sam_init	trusted
- awslabsaws_serverless_mcp__sam_local_invoke	trusted
- awslabsaws_serverless_mcp__sam_logs	trusted
- awslabsaws_serverless_mcp__search_schema	trusted
- awslabsaws_serverless_mcp__update_webapp_frontend	trusted
- awslabsaws_serverless_mcp__webapp_deployment_help	trusted

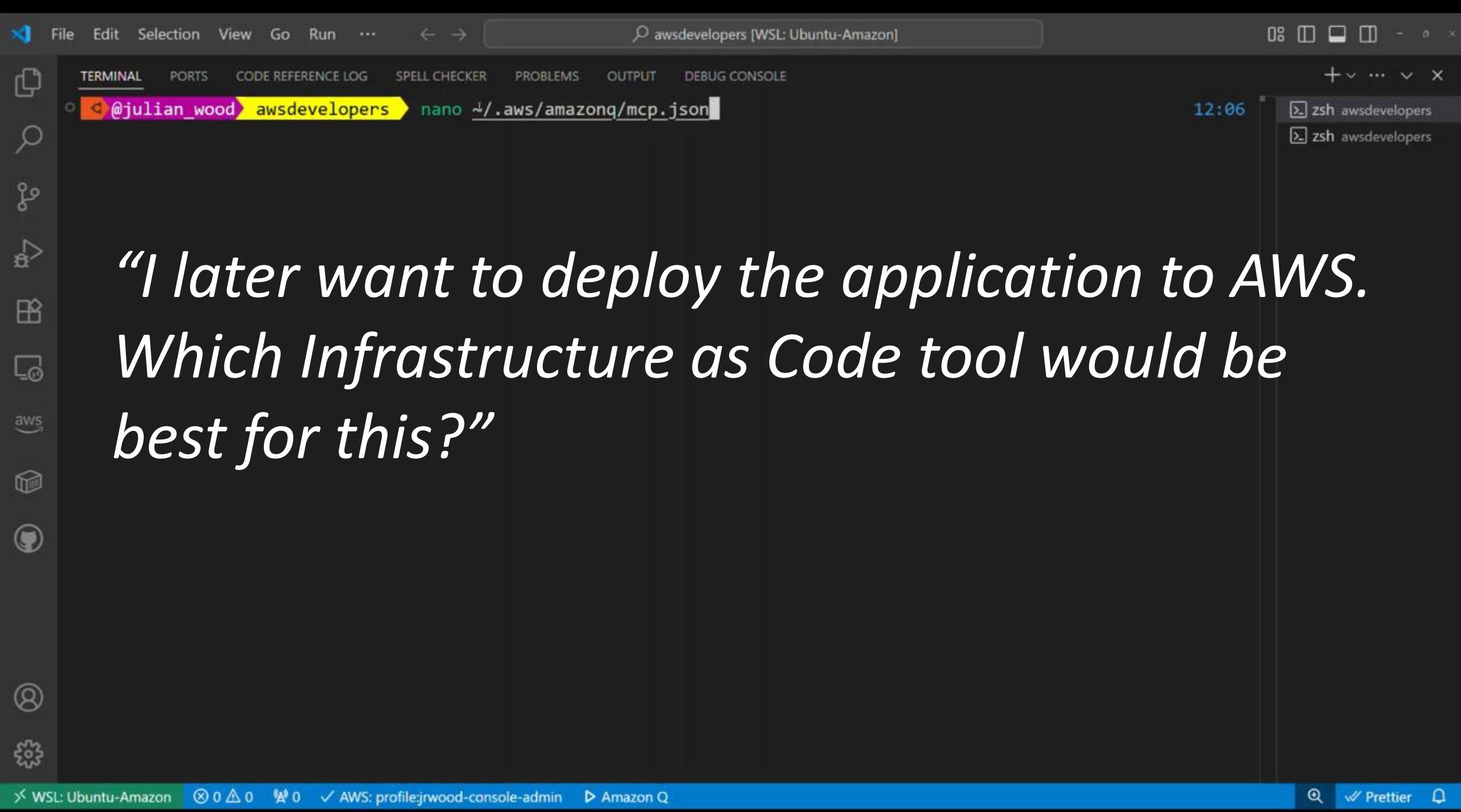
trusted

Trusted tools will run without confirmation.  
\* Default settings

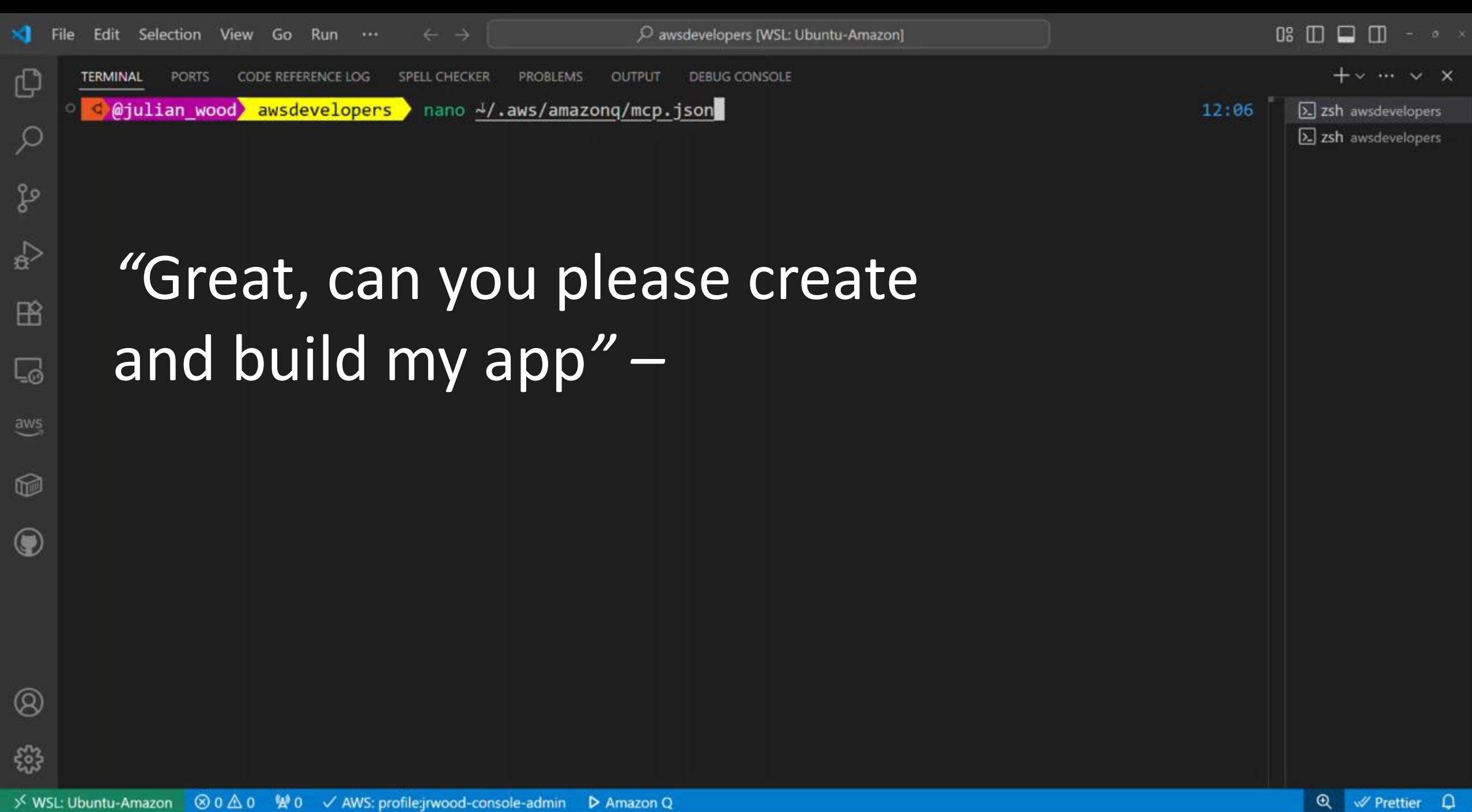
💡 Use `/tools help` to edit permissions.

❗ I want to build the backend for a new to-do list web application in a new workspace. I want to add, list, and delete to-dos. Would AWS Lambda be a good choice for this?

WSL: Ubuntu-Amazon

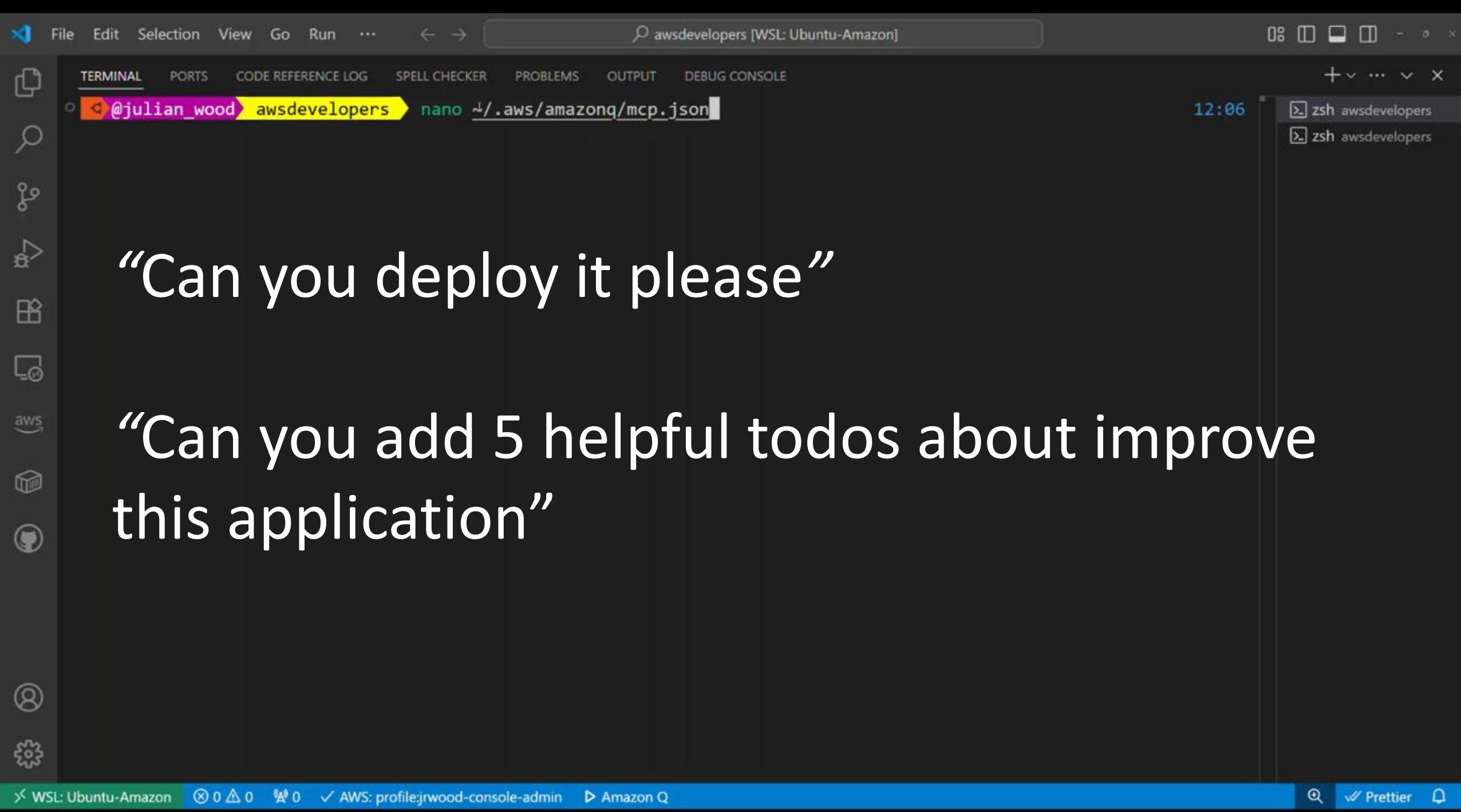


*“I later want to deploy the application to AWS.  
Which Infrastructure as Code tool would be  
best for this?”*



“Great, can you please create  
and build my app” –





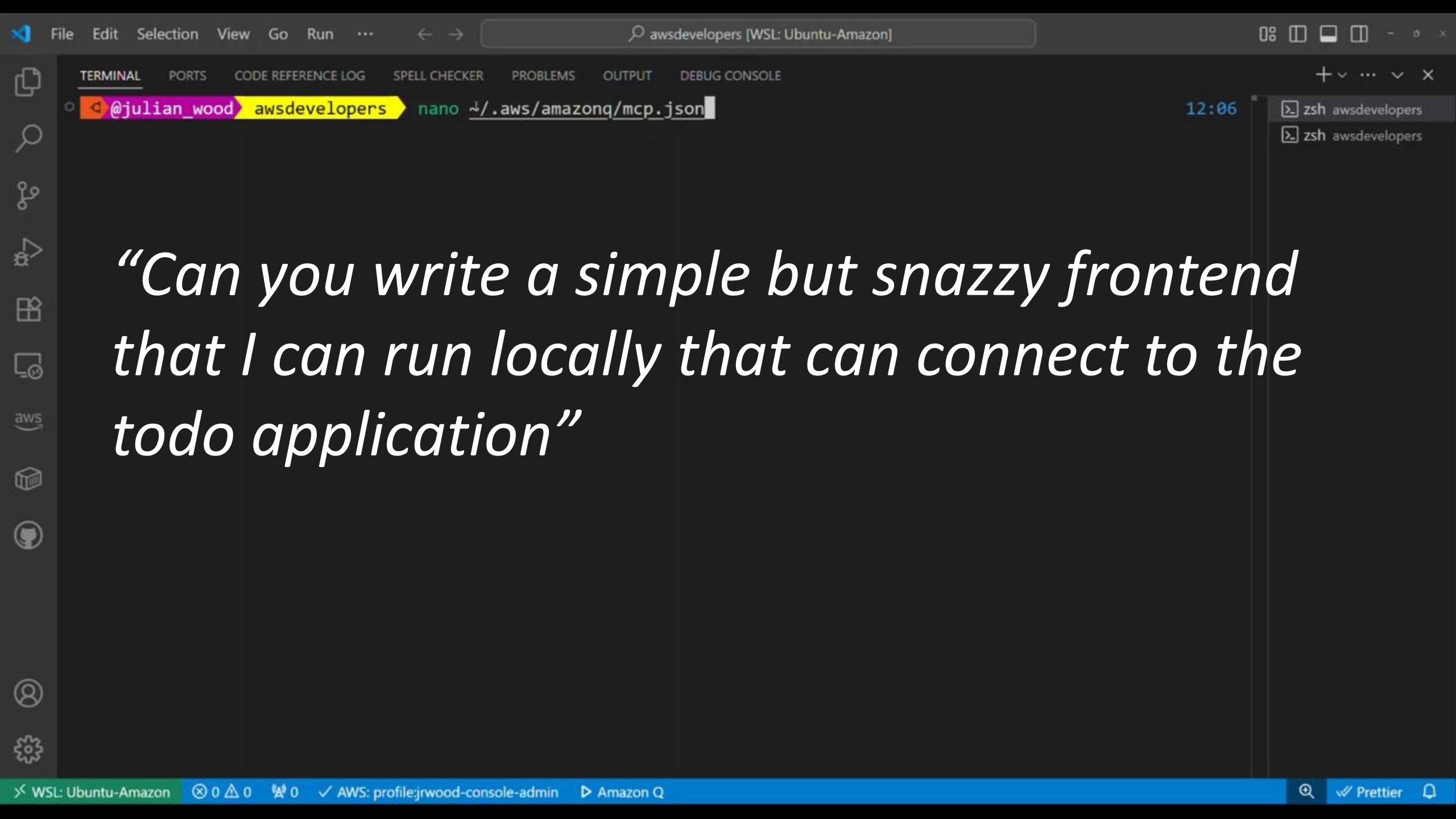
“Can you deploy it please”

“Can you add 5 helpful todos about improve  
this application”

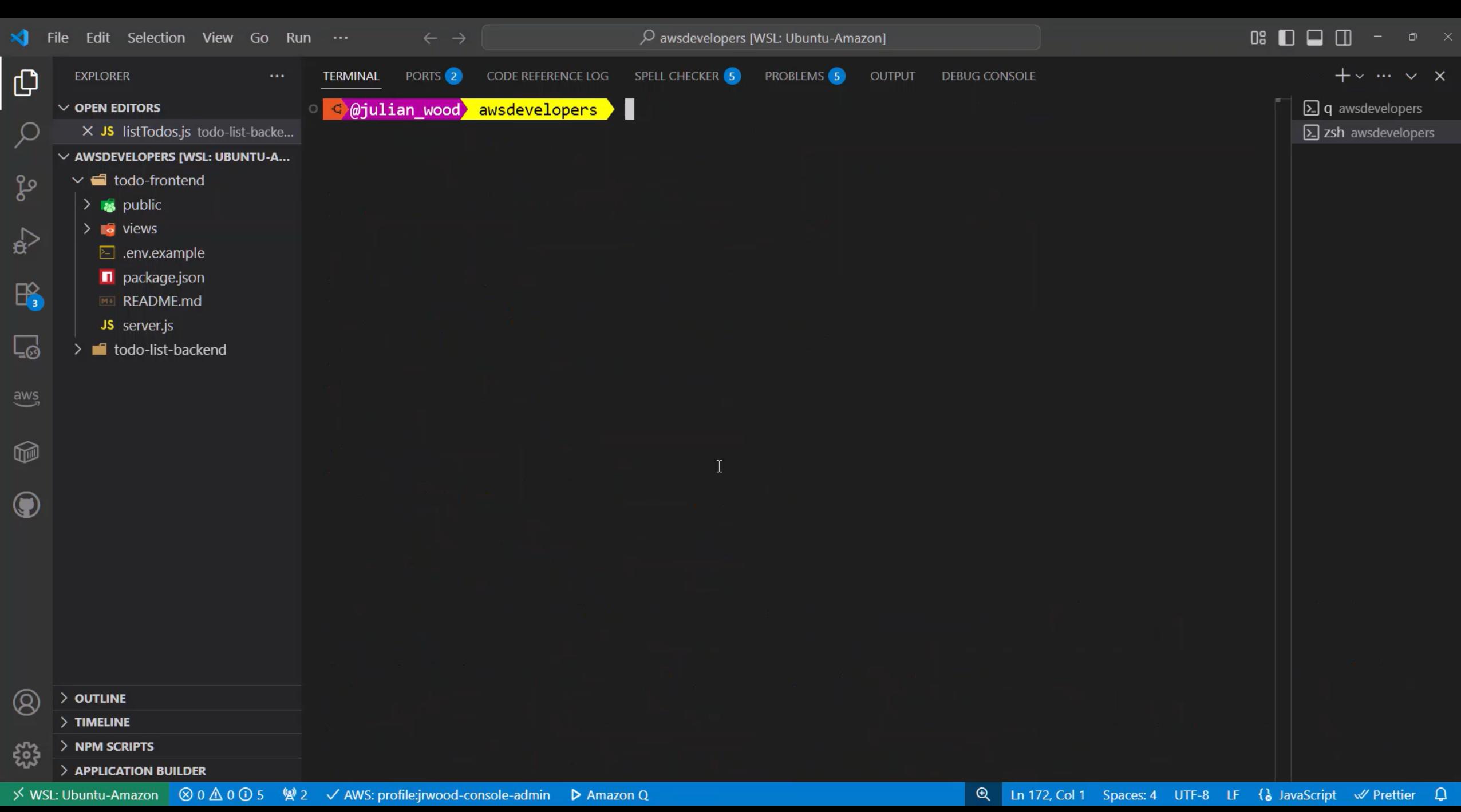
A screenshot of a terminal window in the Visual Studio Code interface. The title bar shows "awsdevelopers [WSL: Ubuntu-Amazon]". The menu bar includes File, Edit, Selection, View, Go, Run, etc. The top navigation bar has tabs for TERMINAL, PORTS, CODE REFERENCE LOG, SPELL CHECKER, PROBLEMS, OUTPUT, and DEBUG CONSOLE. The main area shows a terminal session with the command "nano ~/.aws/amazonq/mcp.json". The status bar at the bottom shows "WSL: Ubuntu-Amazon", connection icons, AWS profile information, and toolbars for Prettier and Amazon Q.

“Check the logs and metrics of the todo app for any issues.”

“Can you add good observability best practices using AWS Lambda Powertools.”

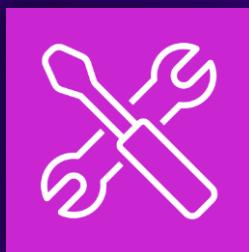


*“Can you write a simple but snazzy frontend that I can run locally that can connect to the todo application”*



# Public preview of AWS MCP Server

FULLY MANAGED REMOTE MODEL CONTEXT PROTOCOL (MCP) SERVER FOR API AND DOCS



[Documentation](#) > [AWS MCP Server](#) > User Guide

## What is the AWS MCP Server?

[PDF](#)  [RSS](#)  Focus mode

The AWS MCP Server is a fully managed remote Model Context Protocol (MCP) server that provides AI assistants and agents with secure, authenticated access to AWS services through natural language interactions. You can use the AWS MCP Server to perform complex, multi-step AWS tasks by combining real-time access to AWS documentation, syntactically correct API calls, and pre-built workflows called Agent SOPs that follow AWS best practices.

With the AWS MCP Server, you can ask AI assistants to provision infrastructure, troubleshoot issues, configure services, and manage AWS resources without needing to know specific API syntax or remember complex procedures. The server handles authentication through standard AWS Identity and Access Management (IAM) controls and provides comprehensive audit logging through AWS CloudTrail.

The AWS MCP Server consolidates capabilities from existing MCP servers (AWS Knowledge MCP and AWS API MCP) into a single, unified interface that reduces configuration complexity while improving AI agent effectiveness across multi-service AWS workflows.

**AWS MCP Server** consolidates capabilities from the existing *AWS API MCP* and *AWS Knowledge* servers into remotely accessible and fully managed *Model Context Protocol (MCP)* server, and a unified interface, providing access to documentation, executing AWS API calls, and following pre-built workflows called *Agent Standard Operating Procedures (SOPs)*, that guide AI agents through common tasks on *AWS*.

PP

Nov, 30th

re:Invent

US East  
(N. Virginia)



[AWS Announcement](#)



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# Serverless and AI

## 2. Building AI (serverless) apps



# GenAI is just another workload!

**Everything you know (and love)  
about serverless still applies.**

# All your serverless knowledge applies!

Less  
infrastructure  
to manage

Variable  
compute  
demands

Event-driven  
architecture

Elastic  
scaling

Pay-per-use  
economics

Cost  
optimization

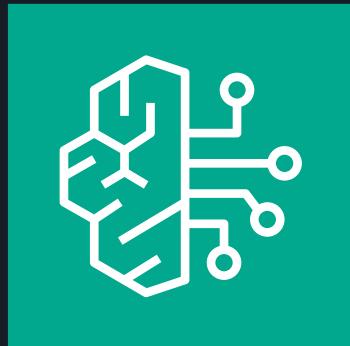
Observability

Failure  
handling

# The Serverless GenAI Foundation

## Amazon Bedrock is serverless:

- No infrastructure to manage
- Pay per API call (input/output tokens)
- Automatic scaling to demand
- Multiple model choices
- Enterprise security and compliance



## Key integration points:

### 🔧 Lambda/Fargate:

Agent / tools compute

### ⚙️ Step Functions:

Complex multi-step AI workflows

### 🚚 EventBridge:

AI event routing and response distribution

### 💾 DynamoDB:

Conversation state and context storage

### 📦 S3:

Knowledge base storage and model artifacts

# Agents vs Tools



**Agents**  
The orchestrators



**Tools**  
The executors



## Agents

### The orchestrators



## Agent characteristics:

### Call multiple tools to complete tasks

- Decision-making and planning
- Long-running conversations
- Stateful interactions

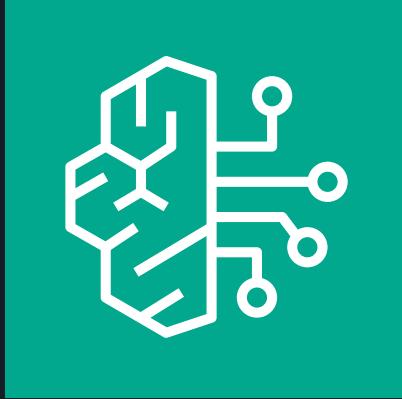
# Agent compute considerations



**Lambda**  
Short



**Fargate**  
Long



**Bedrock AgentCore  
Runtime**  
**Abstracts all of this**  
**Move up the stack**



# AgentCore Ecosystem

## Runtime

Managed agent execution environment

## Gateway

Transform existing APIs into agent tools

## Browser

Code Interpreter

Observability

## Memory

Persistent knowledge

## Identity

Secure authentication and access management

## **Any framework:**

CrewAI, LangGraph, LlamaIndex, OpenAI Agents SDK, Strands Agents

**Any protocols:** MCP, A2A



## The executors

### 🔧 Tool characteristics:

**Called by agents to perform actions**

- Existing functionality
- Self-describing
- Short-running operations
- Single-purpose functions
- Deterministic
- Stateless execution

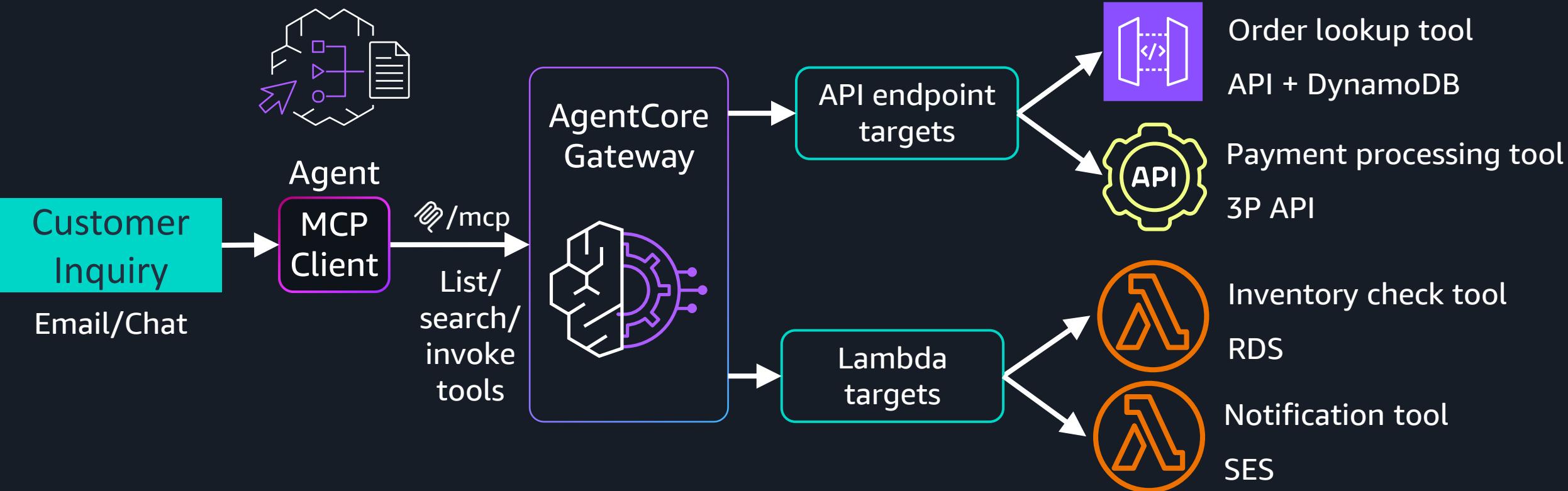


### Lambda is ideal for tools:

- Fast startup
- Connect to anything
- Secure execution environment
- Pay only for execution time



# Customer service AI agent



But I can't/won't do serverless,  
because....

Not for prod...

Can't scale...



 AWS Lambda

15+ trillion  
requests each  
month

Prime Day:  
1.7 trillion!

 Amazon ECS

3+ billion tasks  
launched each  
week

 AWS Step  
Functions

16000+ API  
actions

Billions of  
workflows daily

# Performance

- Cold starts
- Code/language optimizations
- Native compilation
- Platform features:
  - Provisioned Concurrency/Mode
  - SnapStart

# It's different...



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Is it?

Standard languages  
Standard SQL  
Standard observability  
Container images  
Web adapter



# AWS Lambda durable functions

MULTI-STEP RESUMABLE SERVERLESS FUNCTIONS POWERED BY LAMBDA AND STEP FUNCTIONS



GA

Function overview [Info](#)

Diagram [Template](#)

demo-durable-function-3

Layers (0)

+ Add trigger [+ Add destination](#)

Type Durable

Description -

Last modified 23 seconds ago

Function ARN arn:aws:lambda:...:function:demo-durable-function-3

Function URL [Info](#)

Code Test Monitor Durable executions - new Configuration Aliases Versions

Code source [Info](#)

Open in Visual Studio Code [Upload from](#)

EXPLORER

DEMO-DURABLE-FUNCTION-3

lambda\_function.py

lambda\_function.py

```
from aws_durable_execution_sdk_python.config import Duration
from aws_durable_execution_sdk_python.context import DurableContext, Step
from aws_durable_execution_sdk_python.execution import durable_execution

@durable_step
def my_step(step_context: StepContext, my_arg: int) -> str:
    step_context.logger.info("Hello from my_step")
    return f"from my_step: {my_arg}"

@durable_execution
def lambda_handler(event, context) -> dict:
    msg: str = context.step(my_step(123))

    context.wait(Duration.from_seconds(10))

    context.logger.info("Waited for 10 seconds without consuming CPU.")

    return {
        "statusCode": 200,
        "body": msg,
    }
```

DEPLOY Current

Deploy (F5)

Test (F6)

TEST EVENTS [NONE SELECTED]

+ Create new test event

Event ID	Event type	Durable operation	Start	Time from first event
1	ExecutionStarted	-	Nov 28, 2025, 13:42:07.351 (UTC-08:00)	-
2	StepStarted	validate_order	Nov 28, 2025, 13:42:10.298 (UTC-08:00)	2 secs 967 ms
3	StepSucceeded	validate_order	Nov 28, 2025, 13:42:10.298 (UTC-08:00)	2 secs 967 ms
4	CallbackStarted	awaiting_approval	Nov 28, 2025, 13:42:10.487 (UTC-08:00)	3 secs 156 ms
5	StepStarted	send_for_approval	Nov 28, 2025, 13:42:10.676 (UTC-08:00)	3 secs 347 ms
6	StepSucceeded	send_for_approval	Nov 28, 2025, 13:42:10.676 (UTC-08:00)	3 secs 347 ms
7	InvocationCompleted	-	Nov 28, 2025, 13:42:10.804 (UTC-08:00)	3 secs 473 ms
8	CallbackSucceeded	awaiting_approval	Nov 28, 2025, 13:44:45.206 (UTC-08:00)	2 mins 37 secs 87 ms
9	StepStarted	process_order	Nov 28, 2025, 13:44:45.906 (UTC-08:00)	2 mins 38 secs 57 ms
10	StepFailed	process_order	Nov 28, 2025, 13:44:45.906 (UTC-08:00)	2 mins 38 secs 57 ms
11	InvocationCompleted	-	Nov 28, 2025, 13:44:46.039 (UTC-08:00)	2 mins 38 secs 70 ms
12	StepStarted	process_order	Nov 28, 2025, 13:44:46.451 (UTC-08:00)	2 mins 48 secs 120 ms
13	StepSucceeded	process_order	Nov 28, 2025, 13:44:46.451 (UTC-08:00)	2 mins 48 secs 120 ms
14	InvocationCompleted	-	Nov 28, 2025, 13:44:46.587 (UTC-08:00)	2 mins 48 secs 256 ms
15	ExecutionSucceeded	-	Nov 28, 2025, 13:44:46.587 (UTC-08:00)	2 mins 48 secs 256 ms



AWS News Blog Post



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# Cost...



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# Serverless pricing

- Pay per value/use
- Capacity caps
- Budget alerts
- Savings plans (compute/database)
- Lambda managed instances

# Log cost reduction strategies

- Tiered pricing
- Structured logging and log levels
- Log retention
- Don't log what you don't need
- Archive to S3 or send to Firehose
- Monitor costs

*Cost = architecture*

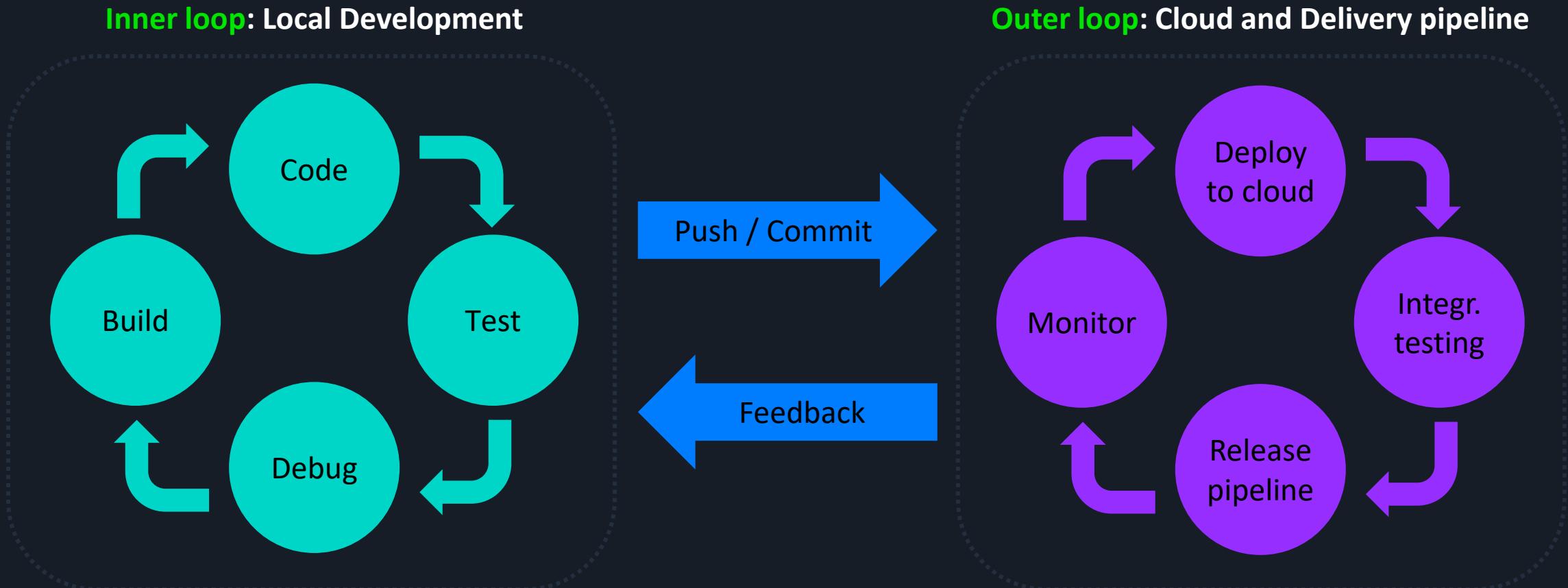
# Developer experience...



# Development Loop

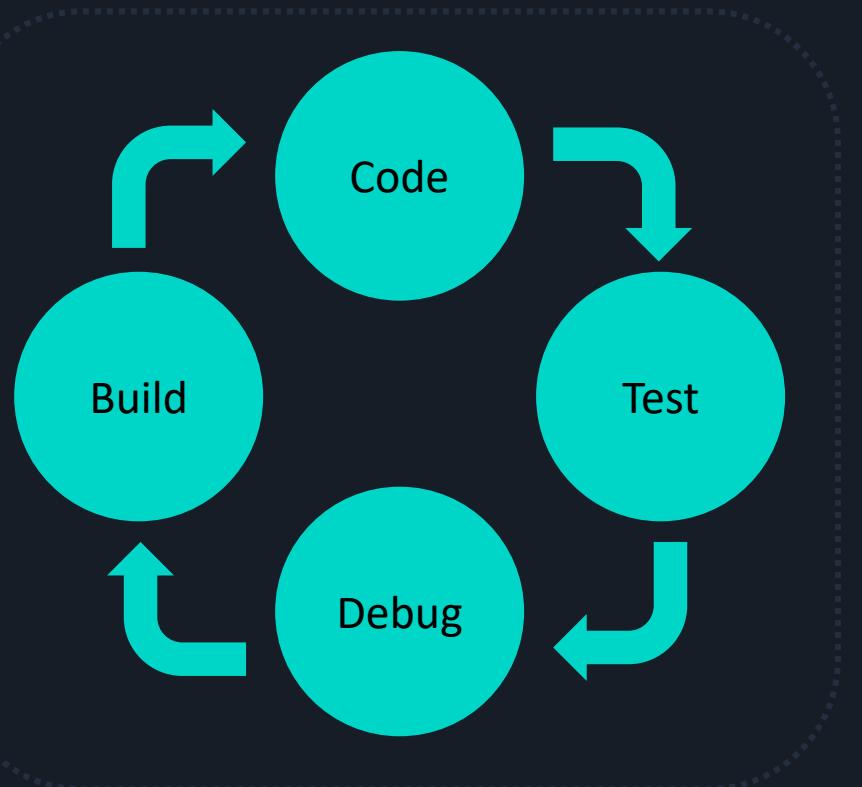


# Development Loop

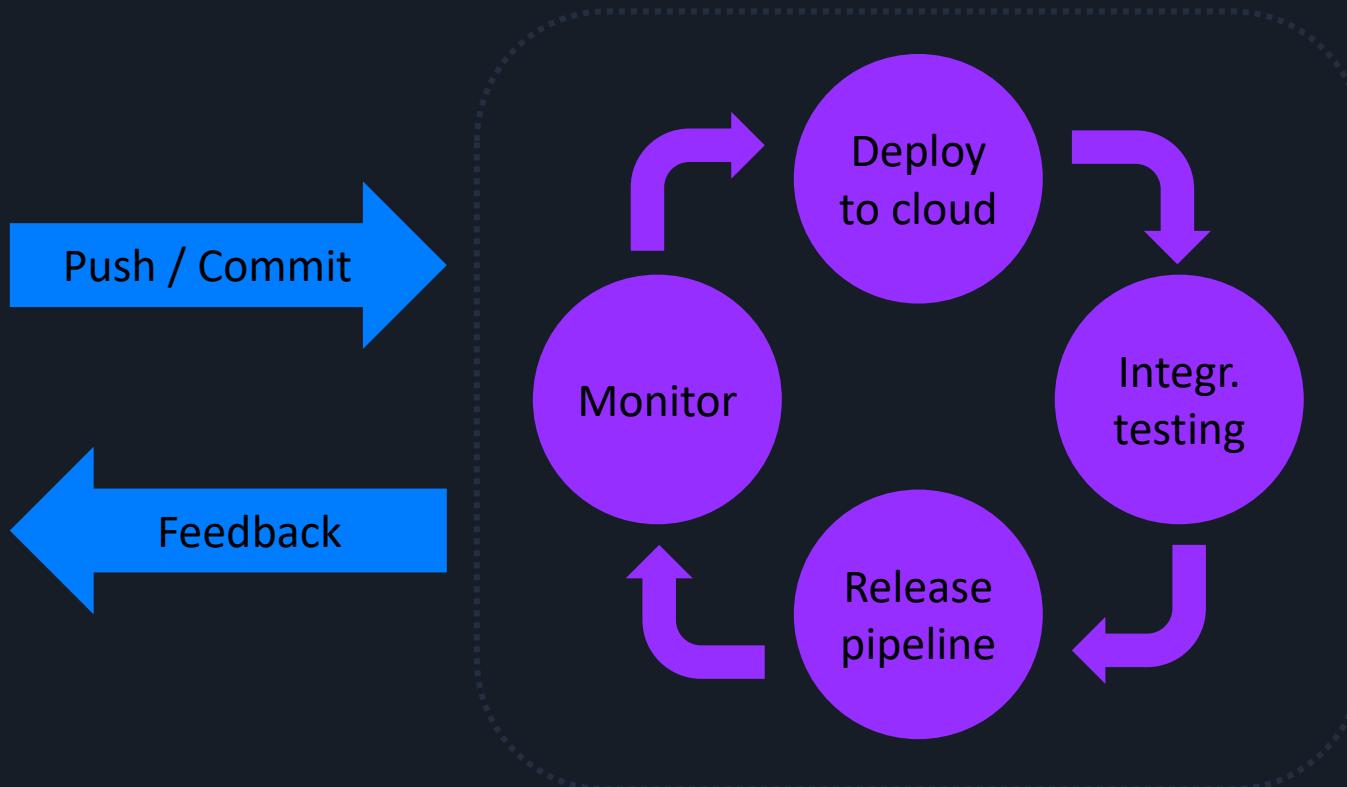


# Serverless Development Loop

Inner loop: Local Development



Outer loop: Cloud and Delivery pipeline



# Developer experience

- VSCode + clones integrations: Setup, init, patterns,
- Kiro
- MCP Servers
- Lambda console to IDE + debugging
- Step Functions: JSONNata, variables, Workflow Studio IDE
- Serverless websockets
- Latency improvements

AWS Toolkit for Visual Studio Code - LocalDemo

File Edit Selection View Go Run ... ← → 🔍 LocalDemo 00 00 00 00 - 0 X

AWS EXPLORER Europe (London) Lambda baseline-overrides-be3e-66n04 delete-name-tags-eu-west-2... Powershell-Lambda-internal rest-api-dev-HelloWorldFunc... rest-api-prod-HelloWorldFun... test1 TestPowerShellLayer Redshift S3 SageMaker AI Schemas APPLICATION BUILDER LocalDemo Stack: rest-api-dev (eu-west-2) HelloWorldFunction Runtime: python3.13 Handler: app.lambda\_handler CodeUri: hello\_world/ Environment: undefined arn:aws:lambda:eu-west-2:97...

template.yaml app.py 1 Preview README.md ...

hello\_world > app.py > lambda\_handler

```
def lambda_handler(event, context):
    Return doc: https://docs.aws.amazon.com/ap
    """
    try:
        ip = requests.get("http://checkip.amazonaws.com")
    except requests.RequestException as e:
        # Send some context about this error to Lambda
        print(e)
    raise e

    return {
        "statusCode": 200,
        "body": json.dumps({
            "message": "hello Lambda",
            "location": ip.text.replace("\n", "")
        })
}
```

Invoke Lambda rest-api-dev-HelloWorldFunction-jCPLF91XiD X

## Remote invoke configuration

Remote Invoke Function Name: rest-api-dev-HelloWorldFunction-jCPLF91XiD

Resource ARN arn:aws:lambda:eu-west-2:978558897928:function:rest-a HelloWorldFunction-jCPLF91XiD

Region eu-west-2

Runtime python3.13

Remote debugging  Remote debugging is not recommended for production environments. The AWS Toolkit function by deploying it with an additional layer to enable remote debugging. You can then used to step through the remote function invocation. [Learn more](#)

Payload  Local file  Inline  Remote saved events

File TERMINAL PORTS CODE REFERENCE LOG SPELL CHECKER PROBLEMS 3 OUTPUT ... Filter AWS Toolkit ...

REPORT RequestId: f29946e8-deca-4d03-890b-6b58f290451b Duration: 73.23 ms Billed Duration: 462 ms Memory Size: 128 MB Max Memory Used: 64 MB Init Duration: 388.02 ms

```
2025-09-03 11:09:37.348 [info]
2025-09-03 11:09:37.348 [info] Payload:
2025-09-03 11:09:37.348 [info] {"statusCode": 200, "body": "{\"message\": \"hello Lambda\", \"location\": \"18.171.167.107\"}"}
2025-09-03 11:09:37.348 [info]
```

0 △ 3 Template (LocalDemo) ✓ AWS: profile:jrwood-console-admin ▷ Amazon Q 🔍 Prettier

# Lock-in...



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# Lock-in

- Lock-in is really about switching costs
- Serverless reduces traditional lock-in
- What do you avoid building?
- Modern architectures help agility
- Serverless-specific portability
  
- Language/DB flexibility
- Your code/data/SQL

# Open source

- Integrations: OTEL/Kafka/Kubernetes/etc.
- Tooling: Frameworks/OCI/Powertools
- Firecracker
- Lambda roadmap

# The road ahead

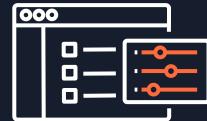
CONTINUED INVESTMENTS ACROSS THE SPECTRUM TO HELP YOU BECOME MORE PRODUCTIVE



AWS Well-Architected  
fundamentals



Developer  
experience



Improved  
controls  
over services



Simpler  
and broader  
integrations

# aws Builders Center

Claim your Builder ID



Go-to site for builders to connect with the AWS Community.

Get started for free

A screenshot of the AWS Builders Center website. The header features the AWS logo and the text "Builders Center". A large call-to-action button says "Start here. Go anywhere." with "Sign up" and "Learn more" buttons. To the right is a 3D grid visualization with colored blocks. Below the main area are sections for "Spotlight" (showing "Welcome, AWS Builders" and "Your Guide to Builder Center") and "Wishlist" (with a placeholder message: "Have an idea to share? Create, discuss, and vote for AWS product and feature improvements."). At the bottom are social sharing icons for LinkedIn, GitHub, and a thumbs-up icon.

# ServerlessLand.com

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This site brings together the latest information, blogs, videos, code, and learning resources for AWS Serverless. Learn to use and build apps that scale automatically on low-cost, fully-managed serverless architecture.

## Serverless Patterns Collection

Build integrations using infrastructure as code with [serverless patterns](#)



669 PATTERNS

AWS WAF —> AWS AppSync

AWS WAF ACL attached to Amazon AppSync GraphQL API [View Pattern →](#)

AWS WAF —> CloudFront —> S3 bucket

WAF to CloudFront to S3 [View Pattern →](#)

X-Ray —> AWS Lambda

Lambda function with X-Ray [View Pattern →](#)

# Thank you!

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 julianrwood