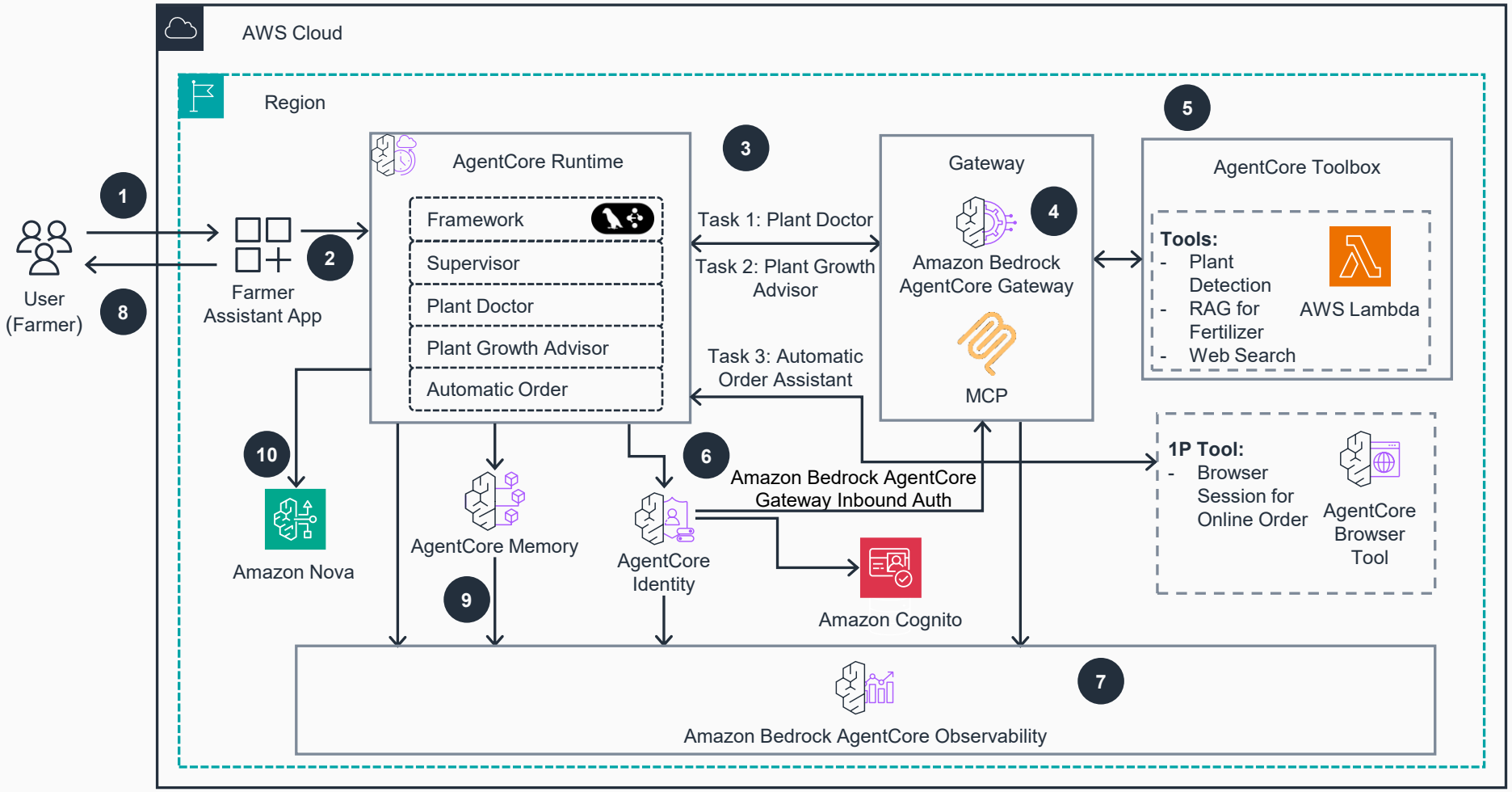
Guidance for Farm Management AI Agent on AWS

This architecture diagram illustrates how to build a multi-agent solution using Amazon Bedrock AgentCore for Farm Management on AWS. It can help identify plants' current state based on the uploaded image and provide pointed advice considering the plant type, weather, and soil condition. It also uses a browser session to make an automated order of fertilizer with confirmation from the user. This slide shows steps 1-8.



1. User (Farmer) uploads image of a plant to Farmer Assistant App to analyze the plant health and get recommendations to improve its growth. User can also use the app to ask general purpose questions related to farming and order fertilizer from Amazon.com.
2. The Farmer Assistant App interacts with the **Amazon Bedrock AgentCore** Runtime as backend entry point, which enables multi-agent orchestration to help the farmer achieve their goals.
3. **Amazon Bedrock AgentCore** Runtime hosts three agents (Plant Doctor, Plant Growth Advisor and Automatic Order).
4. **Amazon Bedrock AgentCore** Gateway hosts the MCP servers with required tools. **AWS Lambda** functions host the business logic of tools. The tools include vector database calls, web searches, and browser session for ordering the required material for plants.
5. **AWS Lambda** functions implement specialized tools including Plant Detection for analyzing uploaded images, RAG for Fertilizer to provide context-aware recommendations, and Web Search for retrieving current information. **Amazon Bedrock AgentCore** Browser Tool enables automated fertilizer ordering through browser sessions.
6. **Amazon Bedrock AgentCore** Identity is used as oAuth 2.0 server for ingress and egress authentication flows with Amazon Bedrock AgentCore Gateway.
7. **Amazon Bedrock AgentCore** Observability powers the agent security and traceability.
8. The supervisor agent manages all user interactions with the Plant Doctor and the Growth Advisor, and providing confirmation on order placement and tracking link.

Reviewed for technical accuracy November 11, 2025

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AWS Reference Architecture

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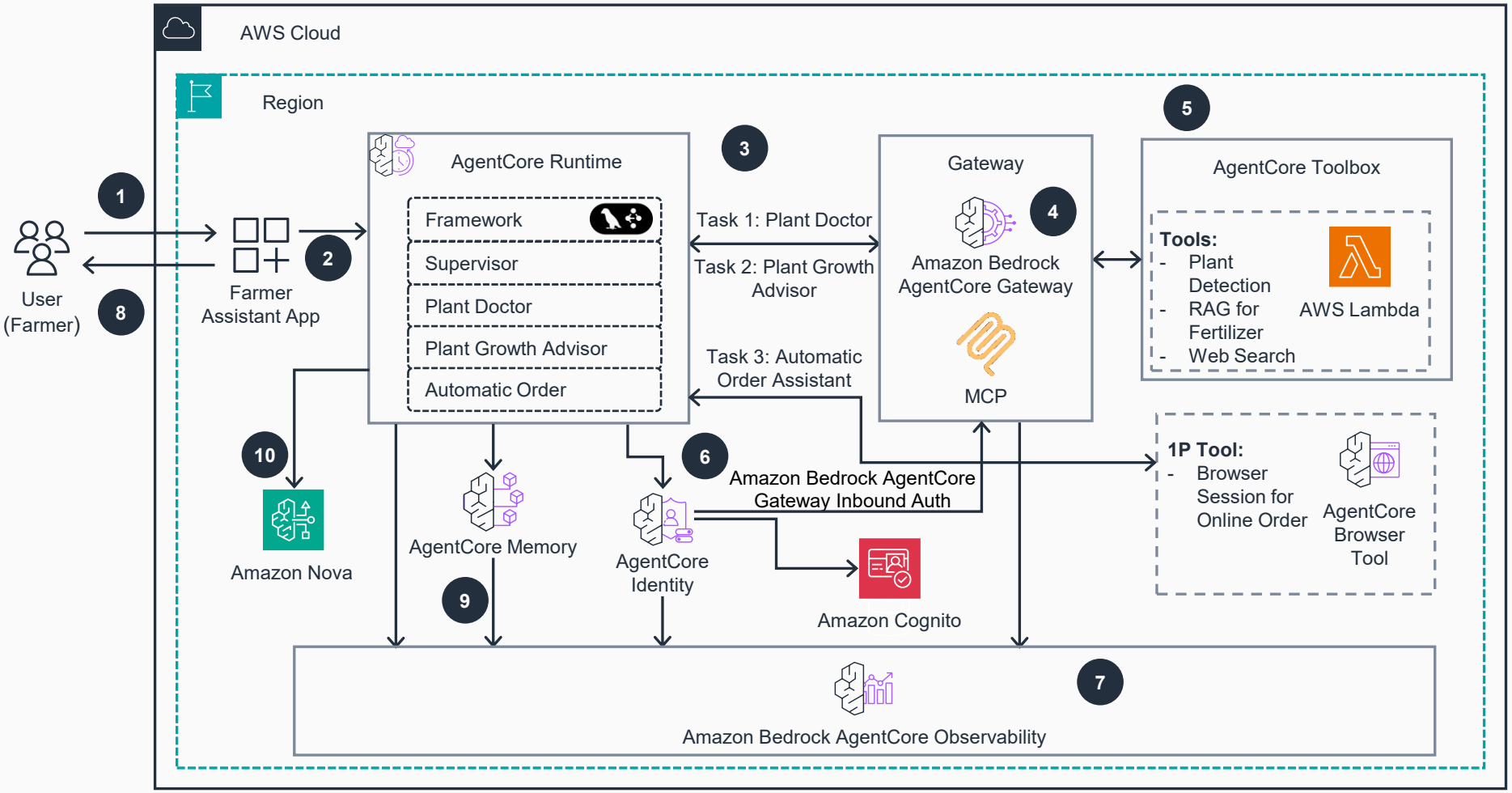

9 **Amazon Bedrock AgentCore** Memory stores the conversation with the user and refers back to chat history in subsequent chats.

10 All AI agents leverage **Amazon Nova** Foundation Models.

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