Copy

Welcome

AIOS is the AI Agent Operating System, which embeds large language model (LLM) into the operating system and facilitates the development and deployment of LLM-based AI Agents. AIOS is designed to address problems (e.g., scheduling, context switch, memory management, storage management, tool management, Agent SDK management, etc.) during the development and deployment of LLM-based agents, towards a better AIOS-Agent ecosystem for agent developers and agent users. AIOS includes the AIOS Kernel and the AIOS SDK (Cerebrum). AIOS supports both Web UI and Terminal UI.

CRYP2NOVA

The overview of layered AIOS.

AIOS provides the AIOS kernel as an abstraction on top of the OS kernel. The kernel provides the core functions driven by AIOS system calls, to serve LLM-based agents. On top of the kernel layer, the AIOS SDK facilitates the development and deployment of agents.

Archived copy · cryp2nova.com

Different deployment modes of AIOS

Here are some key notations that are required to know before introducing the different modes of AIOS.

- **AHM (Agent Hub Machine)**: Central server that hosts the agent marketplace/repository where users can publish, download, and share agents. Acts as the distribution center for all agent-related resources.
- **AUM (Agent UI Machine)**: Client machine that provides user interface for interacting with agents. Can be any device from mobile phones to desktops that supports agent visualization and control.
- **ADM (Agent Development Machine)**: Development environment where agent developers write, debug and test their agents. Requires proper development tools and libraries.
- **ARM (Agent Running Machine)**: Execution environment where agents actually run and perform tasks. Needs adequate computational resources for agent operations.

The following parts introduce different modes of deploying AIOS.

Mode 1 (Local Kernel Mode)

CRYP2NOVA

Architecture of AIOS in Mode 1.

- Features:
  - For agent users: They can download agents from agent hub from Machine B and run agents on Machine A.

Archived copy · cryp2nova.com

- For agent developers: They can develop and test agents in Machine A and can upload agents to agent hub on Machine B.

Mode 2 (Remote Kernel Mode)

Architecture of AIOS in Mode 2.

- Features:
  - Remote use of agents: Agent users / developers can use agents on Machine B, which is different from the development and running machine (Machine A)
  - Benefit users who would like to use agents on resource-restricted machine (e.g., mobile device or edge device)

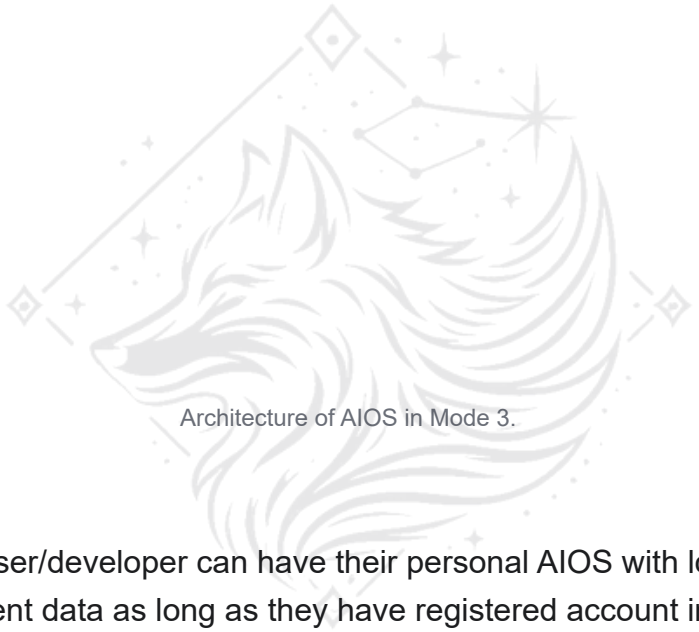
Mode 2.5 (Remote Kernel Dev Mode)

Architecture of AIOS in Mode 2.5.

Archived copy · cryp2nova.com

- Features:
  - Remote development of agents: Agent developers can develop their agents on Machine B while running and testing their agents in Machine A. Benefit developers who would like to develop agents on resource-restricted machine (e.g., mobile device or edge device)
- Critical technique:
  - Packaging and agent transmission on different machines for distributed agent development and testing

Mode 3 (Personal Remote Kernel Mode)



Architecture of AIOS in Mode 3.

- Features:
  - Each user/developer can have their personal AIOS with long-term persistent data as long as they have registered account in the AIOS ecosystem
  - Their personal data can be synced to different machines with the same account
- Critical techniques:
  - User account registration and verification mechanism
  - Persistent personal data storage for each user's AIOS
  - Synchronization for different AIOS instances on different devices within the same account
  - Data privacy mechanism

Archived copy · cryp2nova.com

Mode 4 (Personal Remote Virtual Kernel Mode)

Architecture of AIOS in Mode 4.

- Features:
  - Different user/developer’s personal AIOS kernels can co-exist in the same physical machine through virtualization
- Critical techniques:
  - Virtualization of different AIOS kernel instances in the same machine
  - Scheduling and resource allocation mechanism for different virtual machines located in the same machine

Next
Installation

Last updated 1 year ago

CRYP2NOVA

Archived copy · cryp2nova.com