KontronOS for Avionics

KontronOS Avionics

docker

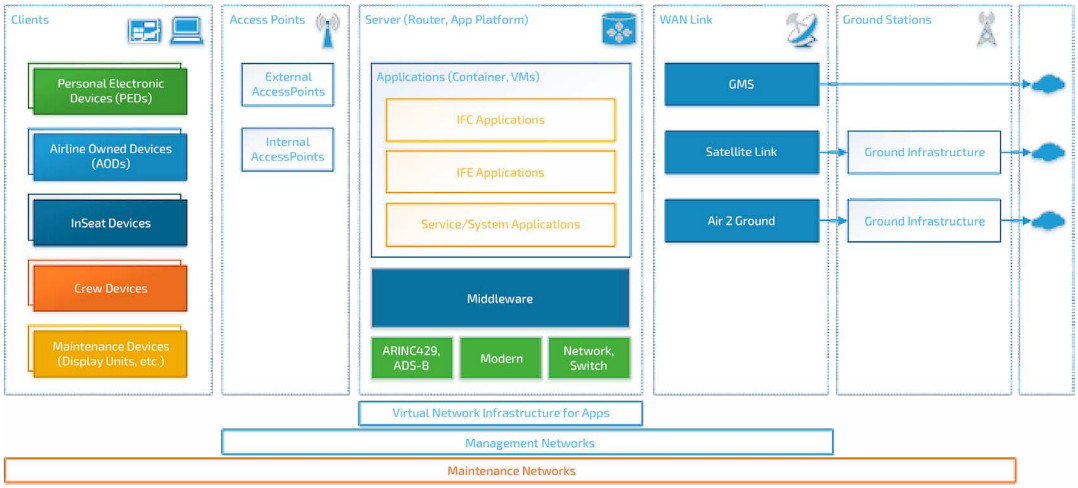
KVM

- KontronOS for Avionics (KOSA) is a middleware solution designed to make porting applications, seamless, quick, and easy
- Same applications & configurations are supported on all Kontron avionics hardware (hardware agnostic)
- Supports virtual machines (VMs) and containers
- Flexible and highly scalable for all application needs
- With Kontron Device Management for Avionics, KOSA supports a full fleet management solution. This includes OTA telemetry data, remote management, installation and updates of field-loadable software and content updates.

kontron
The Power of IoT

High Level Architecture

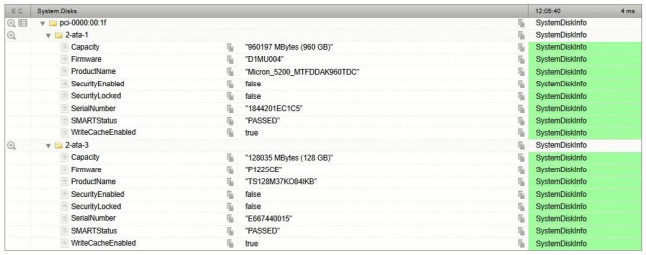
- KOSA has been engineered with scalability in mind, offering configurable modules that allow formation of complex networking and support for various hardware deployment.

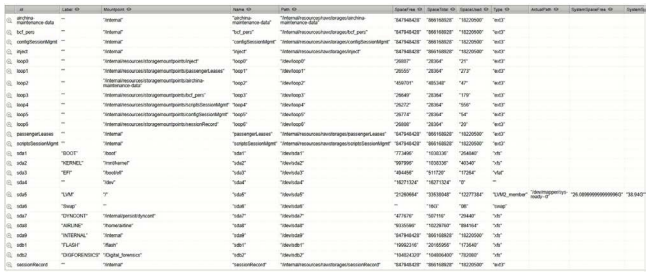


Product Overview

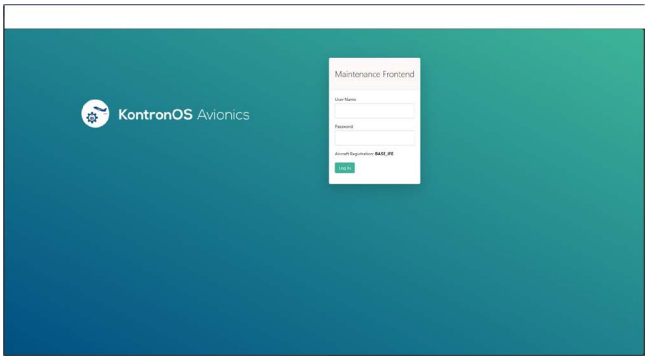
- KOSA is a highly flexible OS giving you the capability to integrate, maintain, operate & monitor any user defined application required to support your avionics business model.
  - Easy integration of your application either containerised or as virtual machine
  - Supports compute, networking (cellular, WiFi, wired, SATCOM, A2G) and storage resources via a highly sophisticated & configurable resource manager
  - Designed to guarantee system and data integrity for all hosted applications in case of sudden power loss for maximized uptime.
  - Monitoring and management of LRUs (e.g. SATCOM modems, Wi-Fi)
  - Broad range of system applications to support many different usage scenarios
    - Typical scenarios are session management for IFC, SNMP for monitoring of SATCOM modems, firewall for security, DHCP/DNS for connected client devices and many more.
- Highly configurable and scalable middleware solution
  - Hardware abstraction for easy and secure access to low level hardware
  - Decoding and translation of ARINC429, ARINC664 and ADS-B data
  - Centralized logging functionality via the middleware
  - Various management interfaces, including REST, ZeroMQ and SNMP
- Supports stand alone (IFE), partially connected (IFE) and connected (IFC) installations
- Provisioning process designed to support large fleet installations with multiple different aircraft configurations
- Highly configurable maintenance frontend interface for quick and easy system health checks and maintenance tasks
- Can be used together with Kontron Device Management for Avionics to enable remote management and updates

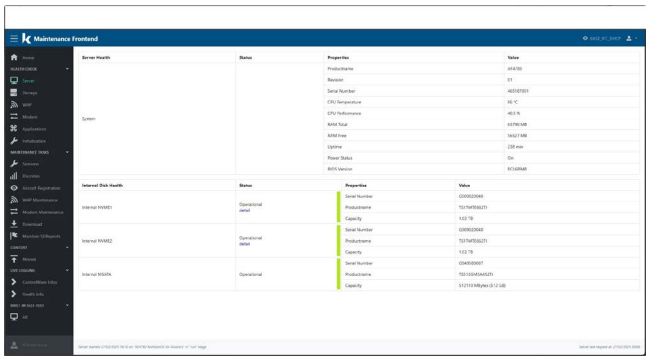
Example REST API Client Interface with tree and table view

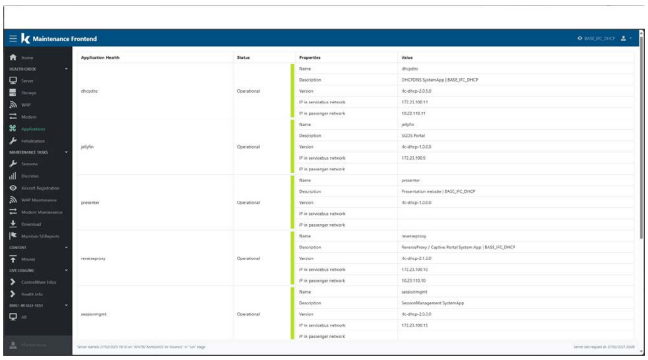


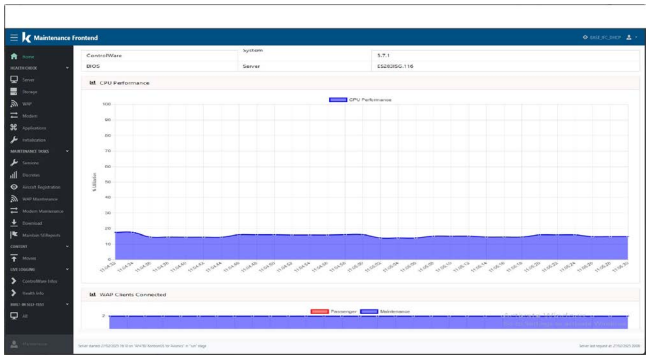


Example Maintenance Frontend Screenshots









Example Use Cases

With KOSA, integrators and content developers can seamlessly develop and deploy In-Flight Solutions such as:

- Entertainment Content Delivery:
  - **Movies, TV Shows, and Music:** Passengers can access a variety of films, TV series, music, and audio books, helping make long flights more enjoyable.
  - **Gaming:** Interactive games or mobile app-based gaming can be offered to passengers, catering to different age groups.
  - **Interactive Media:** Some advanced IFE systems offer interactive features like touchscreen controls, on-demand content, or even virtual reality (VR) for more immersive experiences.

- Passenger Engagement and Comfort:
  - **Personalised Content:** Passengers can create customized profiles to receive content suggestions tailored to their preferences, like preferred genres, languages, or media types.
  - **Seatback Screens & Personal Devices:** Passengers can enjoy entertainment via seatback screens or their own devices, with content streamed directly from the aircraft's IFE system.
  - **Kids and Family Content:** Tailored content for children, including educational videos, games, and cartoons to keep younger passengers entertained.

- Safety and Informational Features:
  - **Interactive Safety Briefings:** Modern IFE systems can display engaging and interactive safety videos that ensure passengers understand emergency procedures.
  - **Real-Time Flight Information:** Passengers can track the flight's progress, weather conditions, and arrival times through the IFE system, offering a more informed journey.

- Advertising and Brand Promotion:
  - **In-Flight Advertising:** IFE systems can serve as a platform for advertising, either through video ads or banners, allowing airlines and partners to promote products, services, and duty-free shopping.
  - **Sponsored Content:** Content such as movies, games, or documentaries can be sponsored, creating additional revenue opportunities for airlines.

- **E-commerce:** Airlines can provide passengers with the ability to shop for duty-free products, food, and services via in-flight apps.

- **Smart Cabin Solutions:** Airlines can introduce smart cabin solutions by integrating IoT technology, enabling real-time monitoring of passenger comfort, seat occupancy, and cabin conditions. This connectivity allows for personalized services, efficient maintenance, and enhanced safety.

- Internet Access over A2G or Satellite Connectivity:
  - **Wi-Fi Connectivity:** Passengers can access the internet to browse websites, check emails, and use social media apps, similar to regular internet use on the ground.
  - **Messaging Apps:** Allows passengers to use messaging services (like WhatsApp, iMessage, or Facebook Messenger) during flight.
  - **Streaming and Video Calls:** Enables video streaming from platforms like Netflix or YouTube, as well as video calling capabilities (such as Zoom, Skype, or FaceTime) depending on the bandwidth available.
  - **Fleet Management:** Allows for seamless communication between aircraft and ground operations for updates (with use of Kontron Device Management for Avionics).

Extended Feature Offering

- Aside to the base offering, the following additional features are offered as extended feature sets depending on the targeted use case
  - Forensic Logging (Keeping track of sessions, connected clients and storage of historical data for a duration of 100 Days)
  - DPI (Deep Packet Inspection)

Extended Feature Offering

- KOSA Software configuration support (6 months / 12 months)
- KOSA Software Assurance (Yearly Contract minimum term)
- KOSA Software Customization Support (NRE Based)

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