Smart-AVI
SMART AUDIO VIDEO INNOVATION

IPDex™

IP-Based KVM & Server Management With OpenBMC

Manage any server from anywhere on your network, including BIOS, power, and hardware sensors. No software, VPN agent, or operating system is required on the target system.

Powered by OpenBMC, IPDex™ delivers full KVM-over-IP, remote power control, hardware sensor monitoring, virtual media, Serial over LAN, and Redfish REST API access through a dedicated management port on one compact hardware device.

Designed and Manufactured in the USA

FEATURES AND CAPABILITIES FOR REMOTE SERVER MANAGEMENT

Smart-AVI's IPDex™ delivers the out-of-band management depth of enterprise BMC platforms with the openness and security of OpenBMC — in a dedicated hardware appliance for any server, anywhere.

KVM over IP
Full keyboard, video & mouse control over the network from anywhere

BIOS and UEFI Access
Full control before OS boots and configure firmware remotely

Remote Power Control
Power on, off, cycle, reset, and NMI from any browser

Hardware Sensor Monitoring
CPU temp, fan RPM, voltages, power usage via IPMI 2.0

Virtual Media
Mount ISO or IMG over network deploy OS without physical media

OpenBMC Platform
Open-source, auditable, Linux Foundation, and no vendor lock-in

Redfish REST API
Modern HTTPS/JSON API for automation, scripting & integration

Serial over LAN (SOL)
Serial console access to host system over the network

Alerting & Event Logs
SNMP traps, email alerts, and IPMI SEL event logging

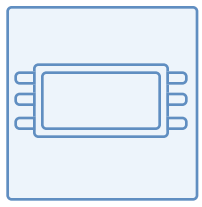
APPLICATIONS

- **Data Centers —** Manage rack servers remotely without dedicated crash carts or console infrastructure.
- **Remote / Branch Offices —** Full server management over WAN — BIOS, power, sensors, OS deployment.
- **Cloud & Hosting Infrastructure —** Out-of-band access to bare-metal servers independent of the host OS.
- **Disaster Recovery —** Recover crashed or corrupted systems remotely via BIOS, virtual media, and serial console.
- **Air-Gapped / Secure Environments —** Dedicated management NIC isolates BMC from the production network.

HOW IT WORKS

Connect IPDex™ to your network and to the target server's management port. Access full KVM, power control, sensor monitoring, virtual media, and serial console from any browser, no software installed anywhere.

1



Connect to the Target Server

Plug IPDex™ into the server's dedicated management port (or any available network interface). The OpenBMC firmware initialises immediately and is active as long as the server has power — even if the host is completely powered off, the OS has crashed, or the network stack has failed. The server requires no software, no OS, and no special configuration.

2

Connect to Your Network

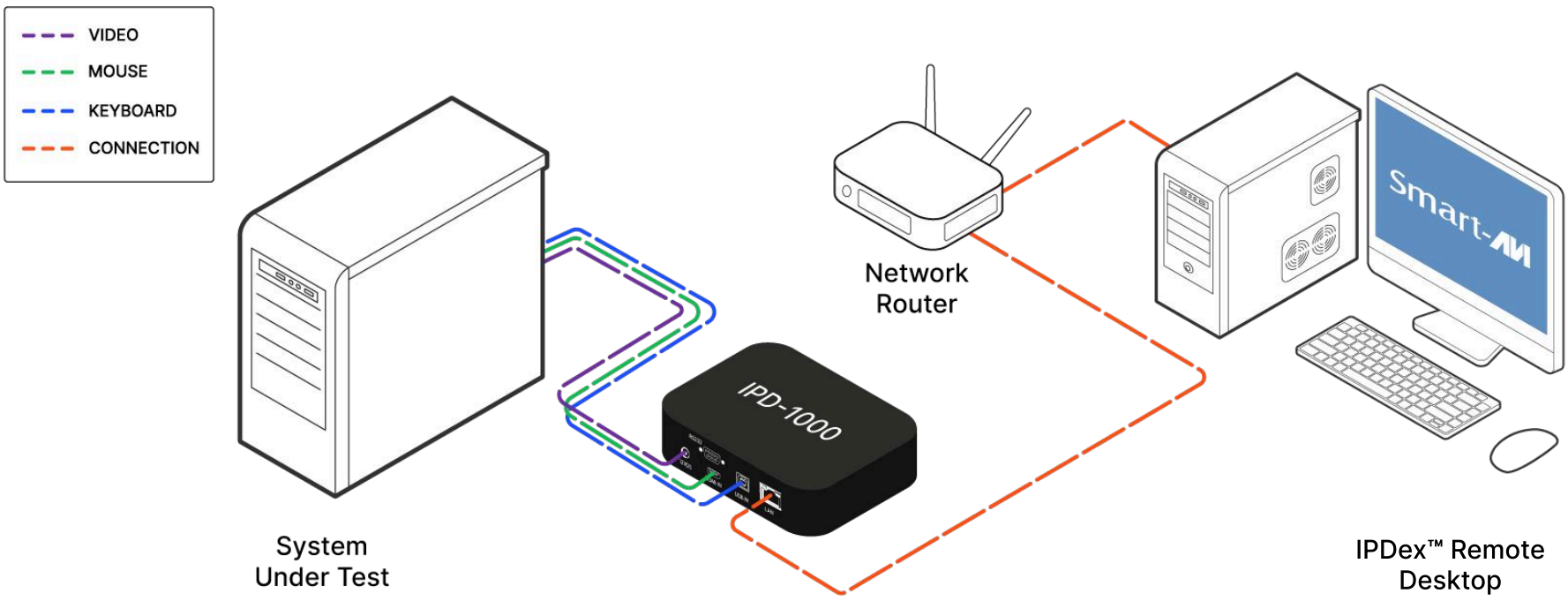
Connect IPDex™'s management NIC to your LAN or WAN switch. Access it from any browser via HTTPS on port 443. No client software, no VPN agent, no Java plugin required. The built-in web UI (BMCWeb), Redfish REST API (port 443), IPMI over LAN (UDP port 623), and SSH (port 22/2200) are all available immediately.

3

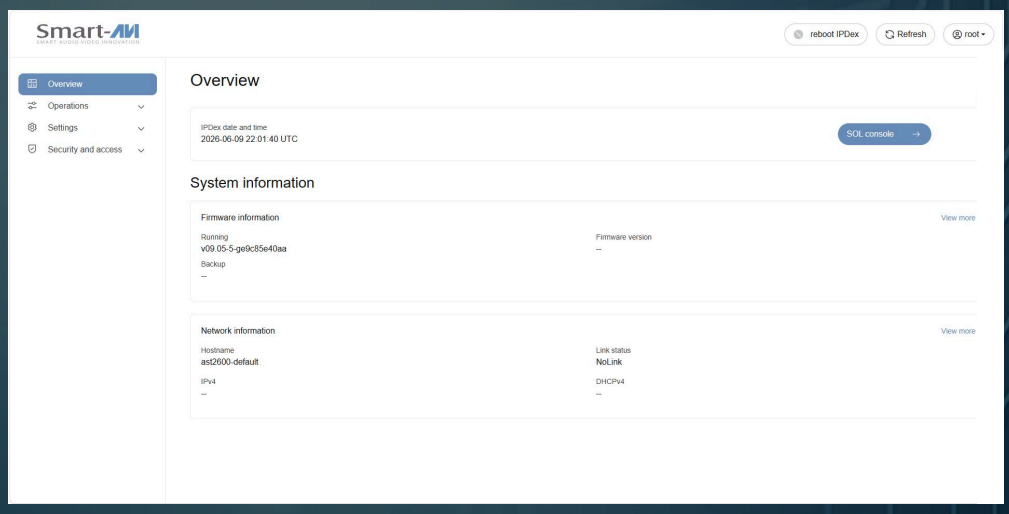
Take Full Out-of-Band Control

Launch the HTML5 KVM console to see and control the server screen. Power cycle, reset, or gracefully shut down the host. Mount an ISO as virtual media to deploy a new OS. Monitor CPU temperatures, fan speeds, and voltages. Set up SNMP or email alerts for critical events. Automate everything via the Redfish REST API.

APPLICATION DIAGRAM — CONNECTION OVERVIEW

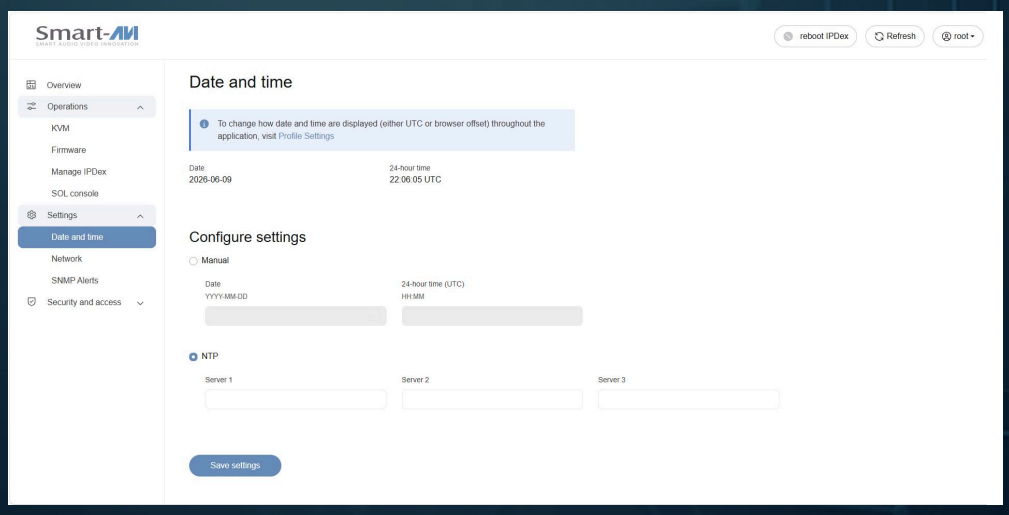


USER INTERFACE



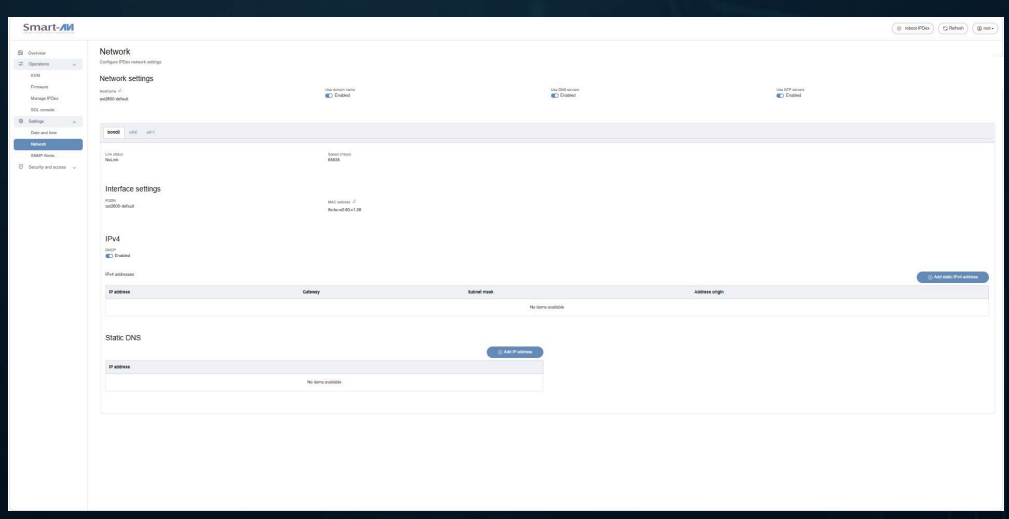
IPDex™ Overview Dashboard

Monitor IPDex system status from the web interface, including device time, firmware information, hostname, network status, IPv4 details, and link status.



Time and Remote Management Controls

Configure the system clock manually or through NTP, with quick access to reboot IPDex, refresh data, open the SOL console, and manage operations, settings, security, and access.



Remote Management Access

Quick controls allow administrators to reboot IPDex, refresh system data, access the SOL console, and manage operations, settings, security, and user access.

Connection Topology

Connections at a Glance	
Management NIC	Dedicated network port for IPDex™ BMC access, separate from host traffic
Client Access	Any browser via HTTPS, no software install on the client device
IPMI (UDP 623)	Out-of-band IPMI 2.0 for sensor data, power control, and SOL
SSH (port 22/2200)	Shell access to BMC and Serial over LAN to host console
Redfish (HTTPS 443)	REST/JSON API for automation and integration
SNMP / Email Alerts	Threshold-based alerts delivered to monitoring systems

Traffic over the management network:

- **KVM console:** live server screen delivered as HTML5 stream to the browser
- **Keyboard & mouse control:** forwarded from browser to server via BMC
- **Virtual media:** ISO/IMG streamed over network, attached as virtual USB/DVD
- **Sensor data:** CPU temp, fan RPM, voltages, power usage in real time
- **Power commands:** on/off/cycle/reset/NMI executed via IPMI or Redfish
- **Event logs:** IPMI SEL and Redfish event log with full audit trail

No software on target. No OS required. Powered by OpenBMC.

SPECIFICATIONS

KVM / Network	
Host Interface	Dedicated Management NIC
Client Access	Any modern browser (HTTPS) or SSH
KVM Protocol	HTML5 / H5Viewer (no Java required)
Virtual Media	ISO / IMG mount over network
IPMI Version	IPMI 2.0 (RMCP+)
Redfish API	HTTPS REST/JSON — DMTF standard
Serial over LAN	SOL via IPMI or SSH (port 2200)
Driver Required	None (browser-based)

OpenBMC	
Firmware	OpenBMC (Linux Foundation)
Web Server	BMCWeb (HTTPS port 443)
Protocols	IPMI 2.0, Redfish, SNMP, SSH
Sensor Support	IPMI 2.0 sensors (temp, fan, voltage, power)
Event Logging	IPMI SEL + Redfish event log

Power & Control	
Power On	Remote power-on via IPMI/Redfish
Power Off	Graceful shutdown or hard off
Power Cycle	Hard reset or graceful restart
NMI	Non-maskable interrupt for diagnostics
Chassis Intrusion	Monitored via BMC sensors

Power / Environment	
Power Input	12VDC External
Power Adapter	AC 100–240V, 50/60 Hz (included)
Operating Temp	0°C to +50°C
Storage Temp	–20°C to +60°C
Humidity	Up to 95% (no condensation)
Host OS Required	None — out-of-band hardware
Alerts	SNMP traps, email (SMTP)
Origin	Designed & Manufactured in USA

Part No: **IPDSK-100** IP-Based KVM & Server Management with OpenBMC. Includes: IPDEX™, PS12VDC-ADAPTER

WHY UPGRADE? IPDEX™ VS. SOFTWARE REMOTE ACCESS TOOLS

Software tools like AnyDesk or TeamViewer need a working OS, installed agent, and network connection. IPDex™ works at the hardware level, giving you access from power-on over the network, with no OS, VPN agent, or target-side software required.

Feature	IPDex™ (IPDESK-PRO)	Software Remote Tools
Works without a running OS	✓ Yes — hardware, out-of-band	✗ Requires OS + agent running
BIOS / pre-OS access	✓ Full access from power-on	✗ Not available
Remote power on / off	✓ Via IPMI / Redfish API	✗ Not available
Hardware sensor monitoring	✓ CPU temp, fans, voltages, power	✗ Not available
Virtual media (ISO mount)	✓ Network ISO/IMG mount	✗ Not available
Software agent on target	✗ None required	✗ Required on every target
Works if OS crashes	✓ Yes — fully out-of-band	✗ Connection lost
Works if network stack fails	✓ Yes — via dedicated mgmt NIC	✗ Connection lost
Serial over LAN (SOL)	✓ Full serial console access	✗ Not available
Redfish / IPMI API	✓ Standard REST + IPMI 2.0	✗ Proprietary API only
Open source firmware	✓ OpenBMC (Linux Foundation)	✗ Proprietary / closed
Security model	Dedicated mgmt NIC, no shared OS	Shared OS / software attack surface
Manufacturing	USA (Las Vegas, NV)	Various / overseas

Designed and Manufactured in the USA

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