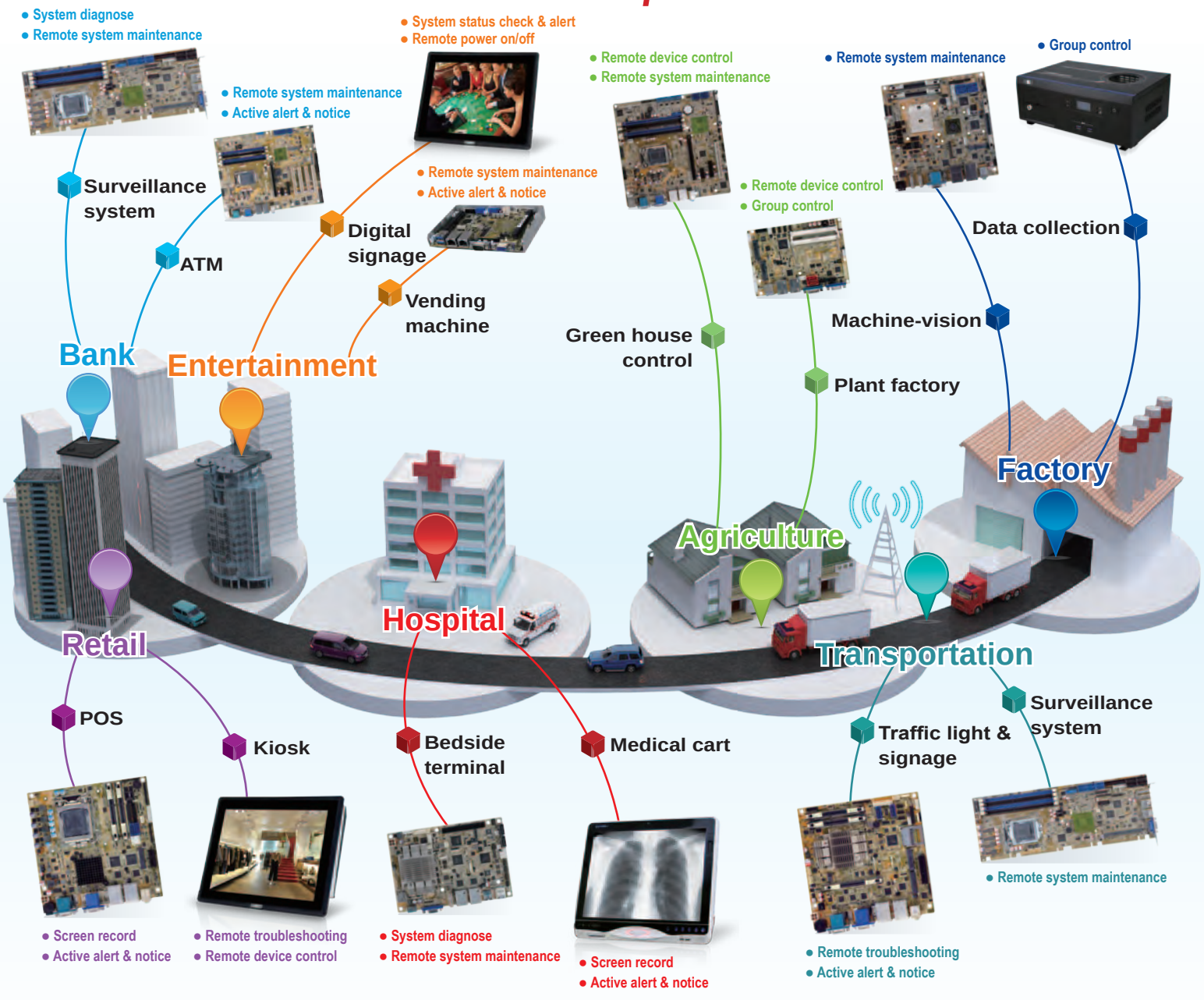
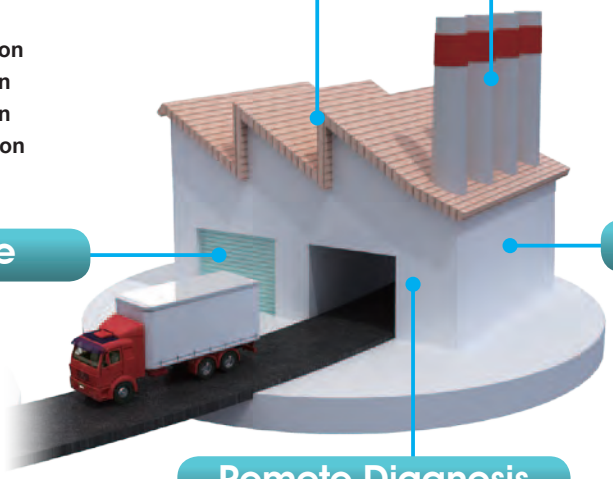
IEI Remote Intelligent System

Compliant with IPMI version 2.0



iRIS for Intelligent Remote Control Management



Equipment Upgrade

- Online Upgrade
- Remote Instruction
- Updated Function
- Legacy Extension
- Remote Calibration

Equipment Reliability

- Safety Production
- Stable Operation
- Effectiveness Enhancement

Alert Service

- Real-time Agility
- Active Alert & Notice
- Quick Response

Remote Maintenance

- Efficiency Reinforcement
- Global Maintenance
- Cost Effectiveness
- Lower Labor Demand

Remote Diagnosis

- Cloud Diagnosis
- Hardware Monitor
- System Health & Event Log

iRIS: IEI Remote Intelligent System IPMI 2.0 Compliant

◆ What is IPMI 2.0

The **I**ntelligent **P**latform **M**anagement **I**nterface (**IPMI**) is a standardized computer system interface used by system administrators for out-of-band management of computer systems and monitoring of their operation. It is a way to manage a computer that may be powered off or otherwise unresponsive by using a network connection to the hardware rather than to an operating system or login shell.

◆ Why choose IPMI 2.0

■ Well-known big companies announced IPMI in 1998

Cisco, Dell, HP, Intel®, and NEC Corporation announced IPMI v1.0 on September 16, 1998, v1.5 on March 1, 2001 and v2.0 on February 14, 2004.

■ IPMI is a very popular worldwide standard protocol in IT industry

The development of this interface specification was led by Intel® Corporation and is supported by more than 200 computer system vendors such as Intel, Dell, HP, Google, Amanzon, Cisco....etc.

◆ iRIS supports out-of-band management

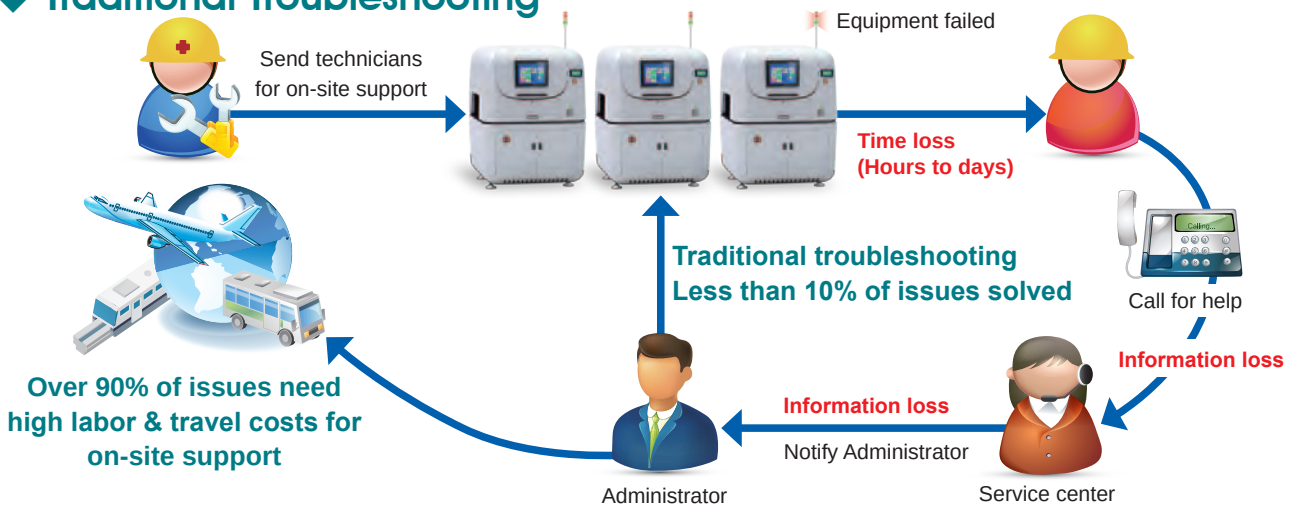
iRIS is compliant with IPMI 2.0 which supports out-of-band remote management to allow administrators to manage a system remotely in the absence of an operating system or of the system management software. Thus, IPMI functions can work in any of all scenarios such as:

1. **Before an OS has booted**
2. **When the system is powered down**
3. **After OS or system failure or BSOD**
4. **Cross Platform and OS independent**

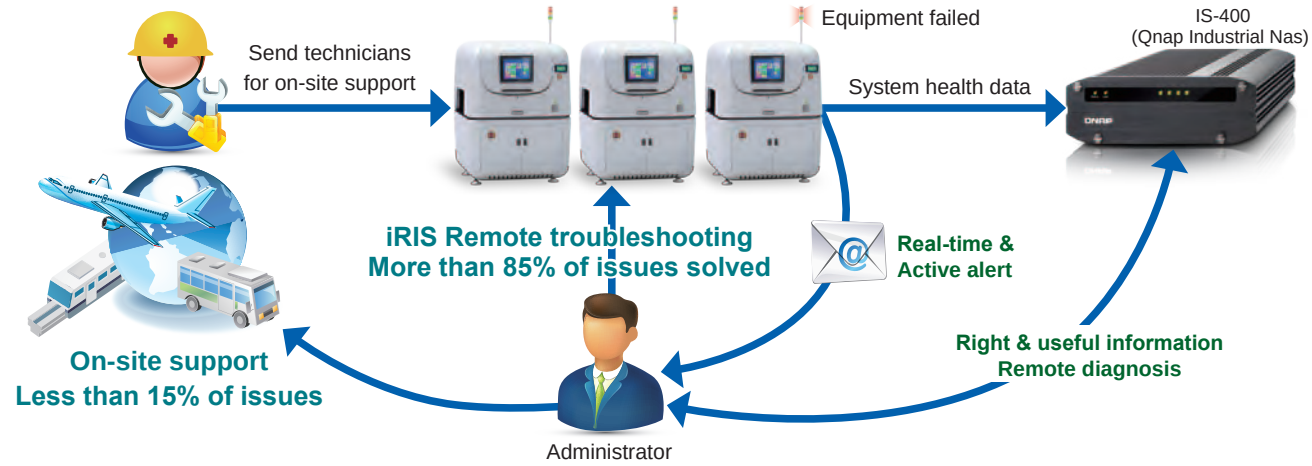
Using a worldwide standardized IPMI 2.0 interface and protocol allows IEI's iRIS technology assist administrator to remote monitor and manage all IEI iRIS supported disparate devices by group or individual via Internet communication.

iRIS Remote Diagnosis & Troubleshooting

◆ Traditional Troubleshooting



◆ iRIS Remote Diagnosis & Troubleshooting



Traditional troubleshooting

Slow Response – waste time
- Time loss between system failed and discovered.
- Loss of hours and days of productivity

Risky Production & Unstable Operation – uncertain productivity
- Information loss of the failed system
- Make wrong decisions
- Lower efficiency of traditional troubleshooting
- Increase Mean Time To Repair (MTTR)

Spend more labor & travel costs – waste money
- Traditional troubleshooting
- Over 80% of issues need high labor & travel costs for on-site support
- Even power management needs costly site visits

iRIS Remote troubleshooting

Quick Response – save time
- No time gap
- Real-time & active alert

Safe Production & Stable Operation – ensure productivity
- Right & useful information of the failed system
- Make right decisions by remote diagnosis
- Higher efficiency of iRIS remote troubleshooting
- Reduce Mean Time To Repair (MTTR)

Reduce labor & travel costs – save money
- iRIS remote diagnosis & troubleshooting
- Solve more than 80% of issues.
- Reduce total management costs
- Remote reboot and power on/off to avoid costly site visits

Assume 300 failures occur per year within 1,200 units

On-site support cost of traditional troubleshooting
➔ 300 services x 200 USD/ service x 90% = 54,000 USD

On-site support cost of iRIS remote diagnosis & troubleshooting
➔ 300 services x 200 USD/ service x 15% = 9,000 USD

Save 45,000 USD/ year, reducing 83% of on-site support cost

Using iRIS not only saves the on-site support cost but also saves time and ensures the uncountable productivity!

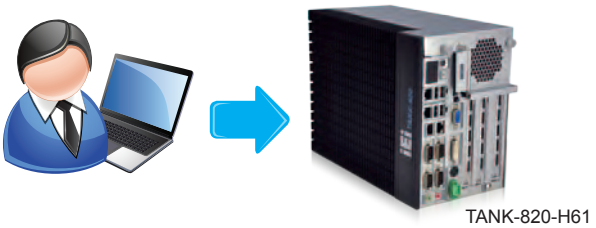
iRIS Key Features

iRIS Key Feature	Detailed Functions
System health monitor	• Hardware monitor • Health log • Even log
Remote system maintenance	• Remote BIOS update • Remote OS recovery • Remote KVM + One Key Recovery • Remote out-off-band backup
Active alert & notice	• Send instant system alerts via e-mail • Send instant system alerts via SMS • Send instant system alerts to management server
Remote device control	• Fan control • Remote KVM • Remote setting BIOS

iRIS Key Feature	Detailed Functions
Screen record	• Remote video streaming record • Event Trigger Setting & video record
Remote power control	• Reset Power • Power Off Server – Immediately • Power Off Server – Orderly • Power On Server • Power Cycle Server
Remote troubleshooting	• Remote software update • Remote OS installation & recovery • Remote KVM • Post code displayng
Diagnose before dispatch	• Health log analysis • Event log analysis
Group control	• Group control

Remote Power Control

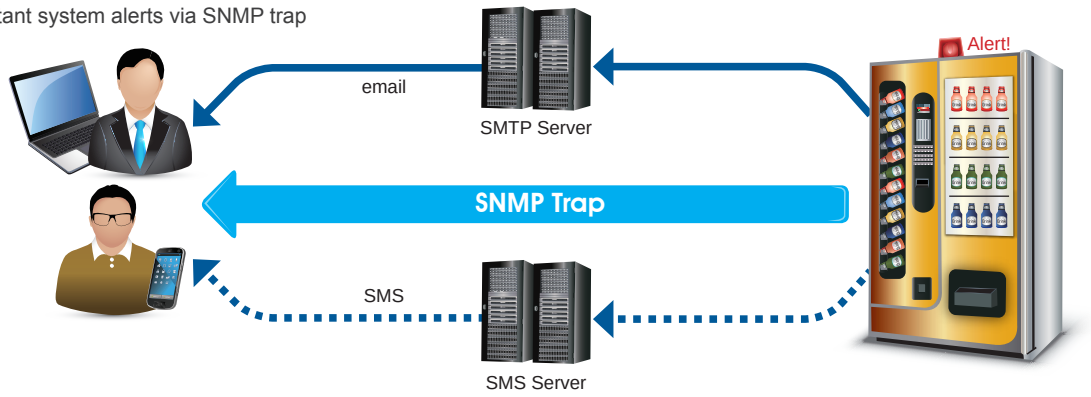
- Reset system
- Power off system – Immediately
- Power off system – Orderly
- Power on system
- Power cycle system



TANK-820-H61

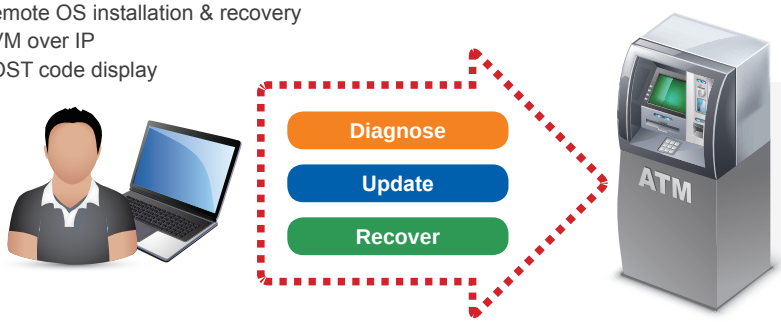
Active Alert & Notice

- Send instant system alerts via e-mail
- Send instant system alerts via SNMP trap



Remote Software Update

- Remote software update
- Remote OS installation & recovery
- KVM over IP
- POST code display



- **Diagnose:** Check system health, event log & POST code
- **Update:** Remote firmware update
- **Recover:** Remote OS installation & recovery

◆ Screen Record and Live Video Streaming

- Remote video streaming record
- Event trigger settings & video record

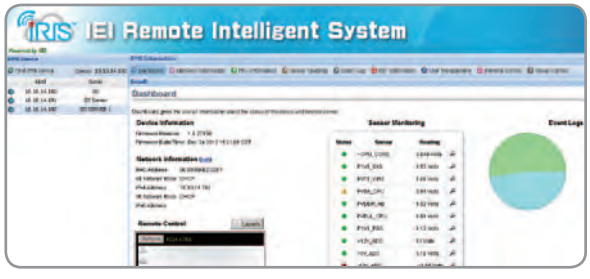
iRIS Central Control via QNAP NAS

IEI + QNAP create more possibility for you to manage in your Private Cloud Environment

1. **Gateway:** QNAP NAS supports firewall function to be a Security Gateway
2. **Control Center:** QNAP NAS provides a FREE iRIS Group Control APP
3. **Storage:** QNAP NAS offers huge storage for data & video record
4. **Analysis:** QNAP NAS processes big data to diagnose clients
5. **Virtual Machine Center:** QNAP NAS supports virtual machine function (Virtualization Station, QNAP NAS apps) offer you more than you can imagine.

◆ QNAP NAS App Center & QNAP iRIS App

App Center



iRIS App

QNAP NAS Virtualization Station

Execute multiple management applications s/w on different operating systems (eg. Windows, Linux, UNIX) at the same time.

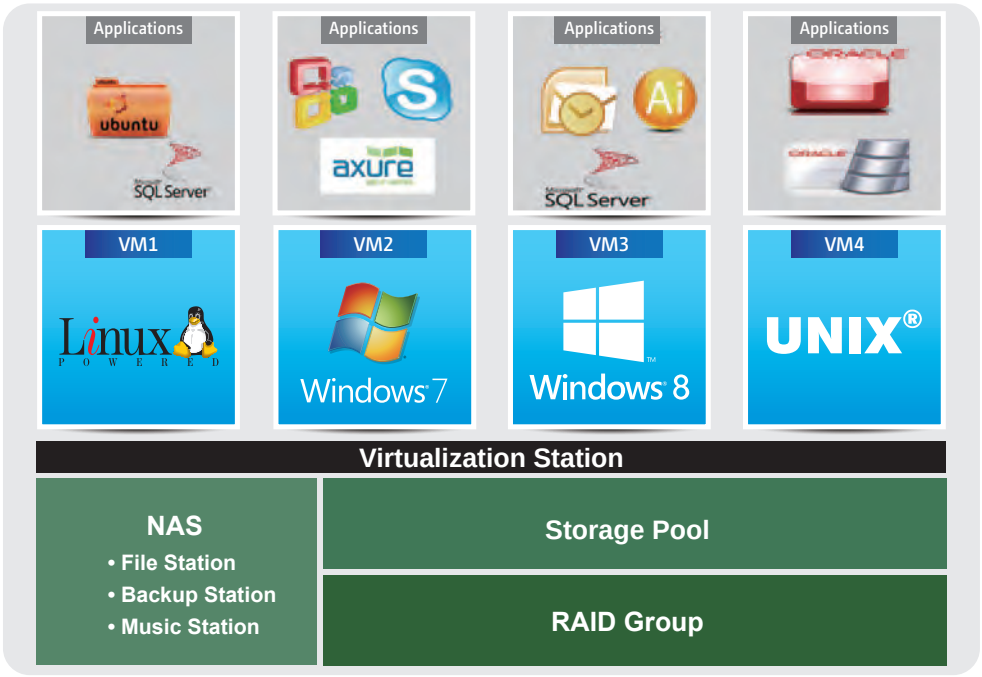
IS-400 Qnap Turbo NAS is virtualization-ready: VMware® vSphere™, Citrix® XenServer™, Microsoft® Hyper-V™

IS-400
(Qnap Industrial Nas)

Virtualization Station
(QNAP Nas Apps)

Main features:

- Improving productivity
- Enhance security
- Data visualization
- Save bandwidth
- Remote desktop operation



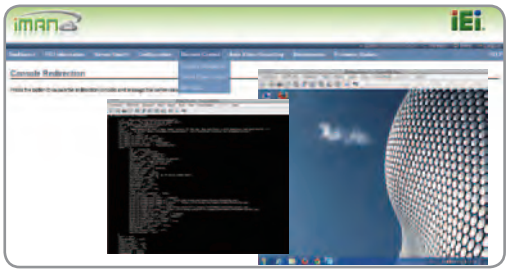
◆ Direct and operation on your NAS

- Specific file formats cannot be opened on the Turbo NAS, but QNAP "Virtualization Station" app makes it possible.
- built-in Virtualization Station app that Windows, Linux, Unix OS can be installed on, allowing users to execute any supported application by different OS platforms.

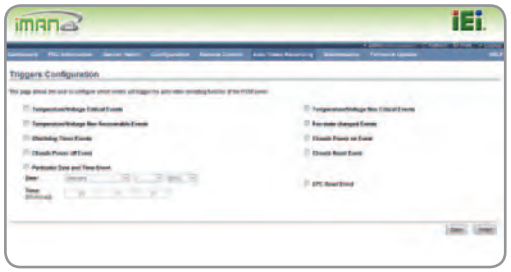
iRIS Web GUI

◆ iMAN: Web UI for Single Client Management for iRIS-2400 only

Dashboard



Remote control (KVM over IP)

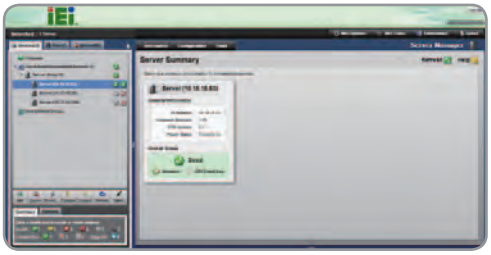


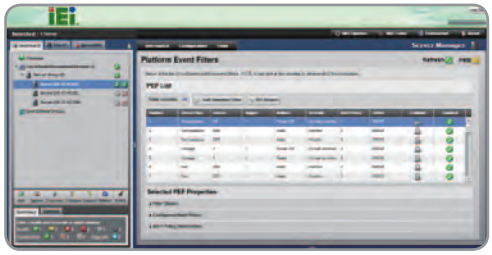
Evens trigger setting & video recording

BIOS & firmware update

◆ iXMS: IEI Group Server Management Tool for iRIS-2400/1010

■ iXMS: Utility for Group Client Management





■ IEI Provides Two Utilities

iMAN

- **Free** offer in each product with IPMI function
- Single server management
- OS independent

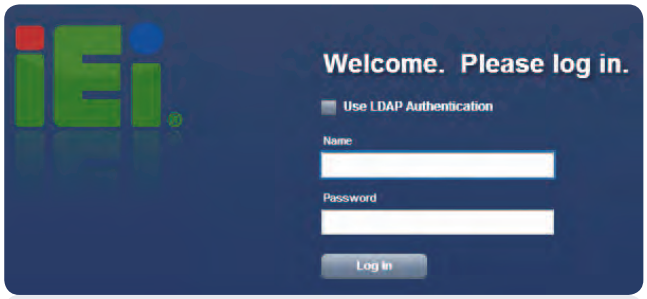
iXMS

- **License** for multiple nodes & group management usage
- Offer free PC-based trial version utility to control maximum 3 nodes.

(Download site: http://www.megarac.com/xms/)

■ iXMS Software Requirement

- **Supported Windows® operating system:**
  Windows® Vista SP1
  Windows® 7
  Windows® 8
  Windows® Server 2008 32-bit SP1
  Windows® Server 2008 R2 64-bit
- **Supported Linux operating system:**
  RHEL6 32/64-bit
  RHEL5 32/64-bit
  SLES11 32/64-bit
- **Browsers:**
  Internet Explorer 7 and above, Mozilla Firefox 3.5 and above, Google Chrome latest version



Smartphone App for iRIS

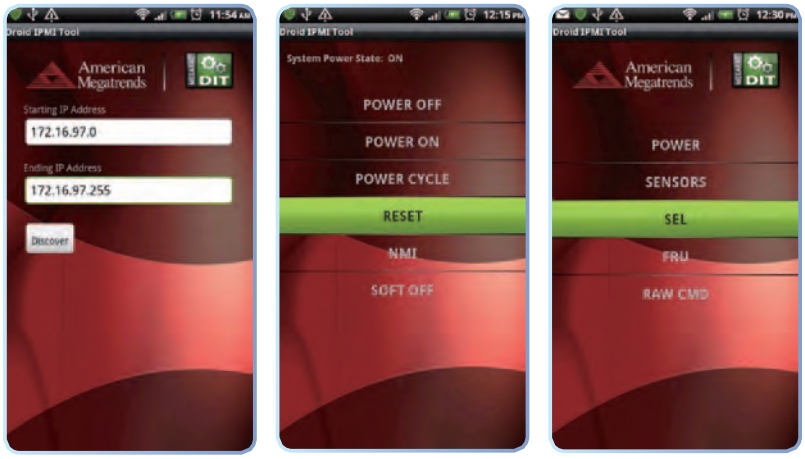
It's 3:30 AM. What are your devices doing?
Just use your cell phone or tablet to check your devices!
Control and monitor right from your Android & Apple phone or tablet

◆ MegaRAC® Droid IPMI Tool

MegaRAC® Droid IPMI Tool (DIT) is designed to bring server management to android mobile devices in a user-friendly manner. DIT lets you quickly scan the network and find all IPMI devices, gather their sensor reading and even allows you to power cycle the IPMI devices. DIT is a unique IPMI tool for Android.

■ Installation Instructions

1. Connect the phone to PC via USB
2. On the phone, enable USB Mass Storage (if not enabled by default)
3. Copy the apk file from PC to the phone
4. In Settings → Applications of the phone, make "Unknown sources" is checked to allow installation of non-Market applications
5. Download an app installer from Market "Easy Installer" is recommended
6. Run app installer and install Droid IPMI Tool (it should find the Droid IPMI Tool.apk automatically)



Requirements: Android 2.1 or later

MegaRAC® Droid IPMI Tool website :
https://www.megarac.com/xms/?page_id=429

◆ IPMI touch & IPMI light by yellowKompressor

Control and monitor IPMI-enabled devices remotely via industry standard IPMI-over-LAN protocol.

- Remote power control functions with graceful shutdown option
- Supports Temperature, Fan, Voltage, and Security sensor groups
- Detailed chassis and individual sensors information screens
- Control and monitor an unlimited number of servers
- Compatible with IPMI v1.5 and IPMI v2.0 protocols
- IPMI SDR cache for fast sensor status refresh
- Configurable network retry and timeout settings

Requirements: iOS 4.3 or later
Compatible with iPhone, iPad, and iPod touch.

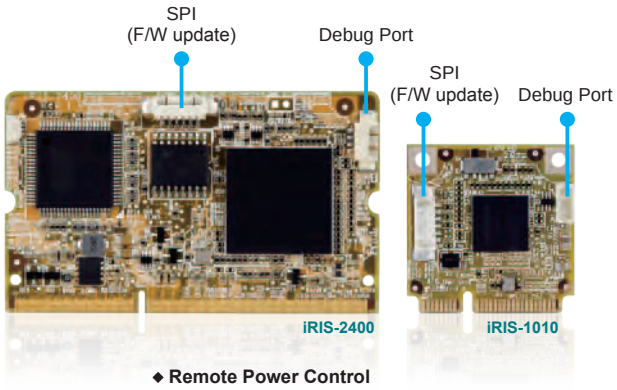
IPMI touch website
http://www.yellowkompressor.com/ipmi-touch/ipmi-touch/

Available on the iPhone App Store

iRIS Series

Specifications

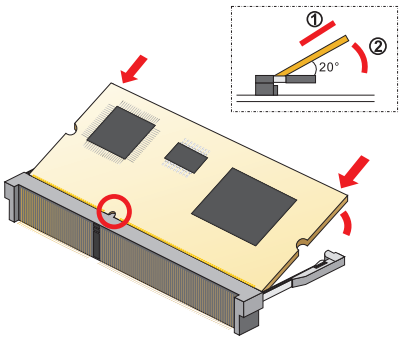
- **IPMI 2.0 Based Management**
  - » BMC stack with a full IPMI 2.0 implementation
  - » Customizable sensor management
- **OS Platform Independent**
- **Hardware Health Monitor**
  - » System/CPU temperature
  - » Fan speeds
  - » Voltage
  - » Chassis intrusion
  - » Power supply failed
  - » FRU (Field Replaceable Unit)
- **Event Log**
  - » BIOS event
  - » Hardware health monitor event
  - » Sensor readings
- **Notifications**
  - » Email alerts
  - » SNMP traps
- **LDAP Support**
  - » Direct LDAP support from the device
  - » Open LDAP (Generic LDAP) supported
- **Media Redirection**
  - » Simultaneous floppy, Hard disk or USB and CD or DVD redirection
  - » Efficient USB 2.0 based CD/DVD redirection with a typical speed of 20XCD
  - » Support for USB key
  - » Completely secured (Authenticated or Encrypted) remote KVM or virtual media



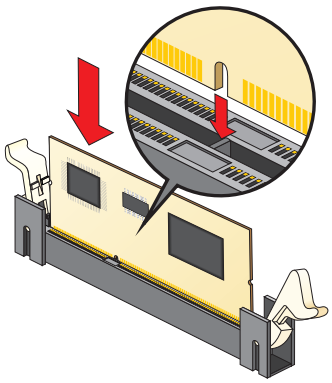
- **Remote Power Control**
  - » Remote power control
  - » Keyboard, Video & Mouse (KVM) over IP (iRIS-2400 only)
  - » Serial over LAN (SOL)
- **User Management**
  - » IPMI based user management
  - » Added security with SSL (HTTPS)
  - » Multiple user permission level
  - » Multiple user profiles
- **Web-based Configuration**
  - » Full configuration using web UI
  - » Fail-safe firmware upgrade
  - » Multi-language support in Web interface with English as the currently supported language

Easy to Install

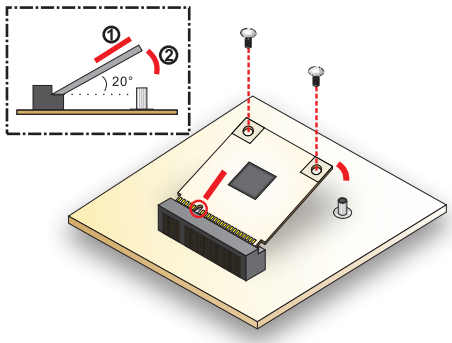
iRIS-2400 slot (90°)



iRIS-2400 slot (180°)



iRIS-1010 slot



iRIS Series

Intel® Haswell projects		
Project	**Form Factor**	**IPMI Solution**
SPCIE-C2260-i2	PICMG 1.3	iRIS-2400
PCIE-Q870-i2	PICMG 1.3	iRIS-2400
IMBA-C2260-i2	ATX	iRIS-2400
IMBA-Q870-i2	ATX	iRIS-2400
IMB-Q870-i2	microATX	iRIS-2400
IMB-H810-i2	microATX	iRIS-2400
KINO-DQM871-i1	Mini-ITX	iRIS-1010
NANO-QM871-i1	EPIC	iRIS-1010
WAFER-ULT-i1	3.5"	iRIS-1010
Intel® Bay Trail		
KINO-ABT-i2	Mini-ITX	iRIS-2400
NANO-BT-i1	EPIC	iRIS-1010
WAFER-BT-i1	3.5"	iRIS-1010

AMD R-series		
Project	**Form Factor**	**IPMI Solution**
KINO-DA750-i2	Mini-ITX	iRIS-2400
KINO-AA750-i2	Mini-ITX	iRIS-2400
AMD G-series		
KINO-KBN-i2	Mini-ITX	iRIS-2400
NANO-KBN-i1	EPIC	iRIS-1010
WAFER-KBN-i1	3.5"	iRIS-1010
Embedded Box		
IDS-200-i2	AMD R-series (A70)	iRIS-2400
TANK-6000-i2	Intel® Haswell (C226)	Onboard iRIS-2400

IPMI 2.0 Compliant