

DGP Case Study

Application:



Surveillance system



Environment Monitoring



Data Center



Kiosk



ATM



Smart Rack



Cell Site



Cable TV Station



Enterprise

Problem



Immediacy and cost of system maintenance:

The information system formed by the Internet mechanism is widely used in various environments, including various environmental image surveillance, mobile phone base stations, ATM cash machines, Kiosk interactive multimedia machines, etc.

The monitoring equipment consists of a series of devices based on the embedded system. When any one of the devices, such as a camera, router, player, server, etc., causes interruption of playback due to unknown factors, it must be maintained. The personnel will solve the problem on site. But in fact, most of the problems can be solved by power supply restart; therefore, maintenance personnel to the site to

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deal with, if only the power is restarted, it will be very resource and cost in the maintenance system; and when the system is scattered and huge, the cost is even greater.

Therefore, when a problem occurs in the monitoring system, the system can automatically restart for troubleshoot, and resume monitoring, which can save resources of the maintenance system and reduce maintenance costs. Therefore, the goal of maintenance management is to find an effective, fast and low-cost solution that enables the system to automatically resume operation.

Solution

Hardware:

Image

Model Number / Model Name / Description



IOT-TH-01 (NEMA) / IOT-TH-02 (IEC)

Intelligent Temperature and Humidity Sensor

Measure environmental temperature and humidity



IOT-IO-04

Intelligent 4 DI/DO Environment Manager

Use dry contacts to connect various sensors, such as magnetic reed access control, smoke, water, wind speed, proximity, etc



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NPD-1023J-02N1 (230V) / NPD-1511A-02N1 (115V) Intelligent Power Switch



In addition to active control, it can be set to respond to events and automatically reset the output power.



IOT-EM-01 (230V) / IOT-EM-02 (115V) Intelligent Integrated Environment Manager

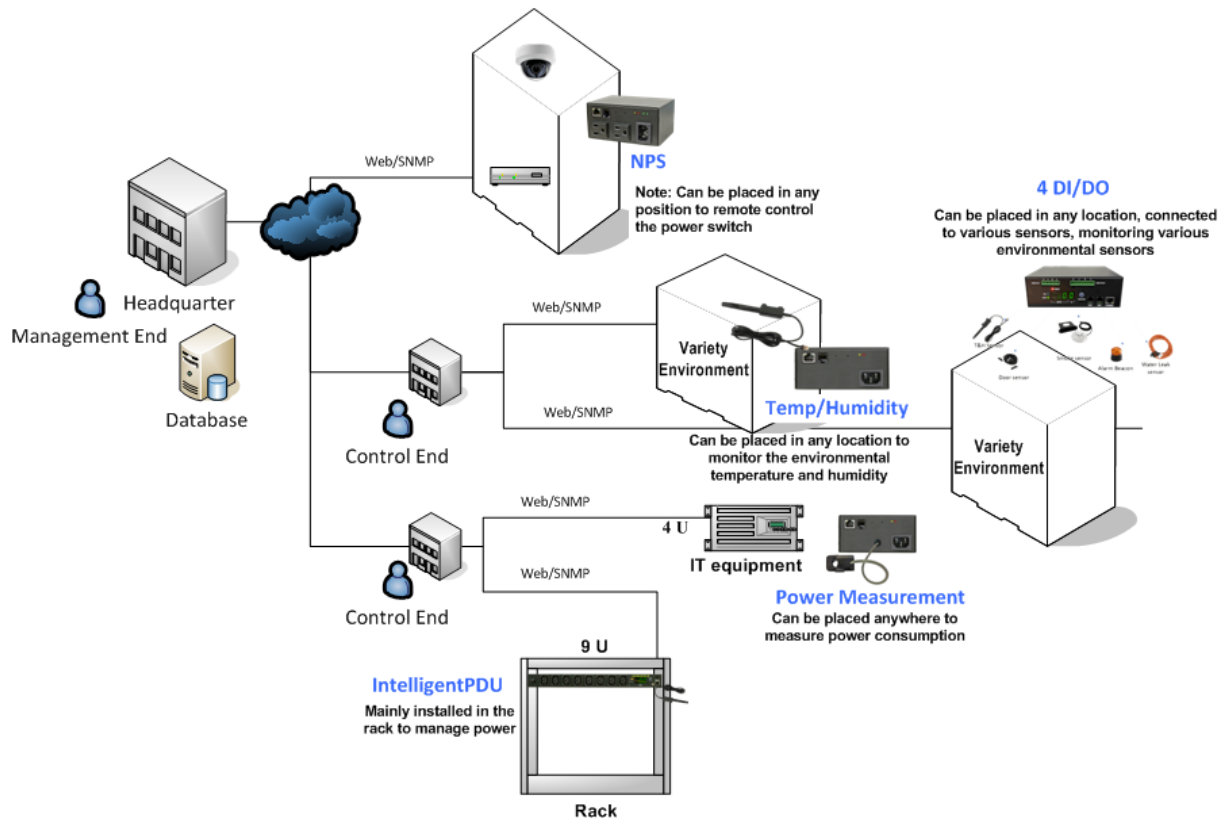


Integrate all functions, including temperature and humidity detection, DIDO connection, power monitoring and control in a single body, and provide an automated management mechanism.



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Diagram



User Interface:

1. Through the embedded system, all the conditions of the equipment can be monitored in real time through the webpage. It also supports SNMP communication protocol and can be integrated into the original monitoring system.

The web page is displayed as follows:


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PDU

Information Management Configuration
Overview Power System Event Log Data Log Chart

Status: Normal 

PDU Information

	Total kWh	0.351 kWh	
	Total PDU Current	0 Amp	 Normal
	Temperature(1)	N/A °C	
	Humidity(1)	N/A %	
	Temperature(2)	N/A °C	
	Humidity(2)	N/A %	

Power Monitor



ENV Monitor

Event Log

Date	Time	Event
2021/01/15	02:08:11	Web user [snmp] logged in from 192.168.0.19
2021/01/15	02:07:11	DO1 has been turned open by (Ping No Response)
2021/01/15	02:02:11	DO1 has been turned open by (Ping No Response)
2021/01/15	01:57:11	DO1 has been turned open by (Ping No Response)
2021/01/15	01:52:11	DO1 has been turned open by (Ping No Response)





Event List

Outlet Status

No.	Name	Status	Event	Ping	Sch
1	OutletA	 ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	OutletB	 ON			





Output Status

DI Information

No.	Name	Status
1	DI1	 Open
2	DI2	 Open
3	DI3	 Open
4	DI4	 Open

DI Status

DO Information

No.	Name	Status	Event	Ping	Schedule
1	DO1	 Open		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	DO2	 Open			
3	DO3	 Open			
4	DO4	 Open	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

DO Status

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Chart Filtering

Data Log Time Last From ~

Data Chart



Chart: It can display voltage · amp · temperature and humidity history chart

2. Provide scheduled output control, the manager can set any time, automatically switch output and DO.

The web page is displayed as follows:

Schedule List

No.	<input type="checkbox"/> <u>Item</u>	<u>Date</u>	<u>Time</u>	<u>Action</u>	<u>Enable</u>
1	<input type="checkbox"/> OutletA	Saturday	17:00	OFF/ON	<input checked="" type="checkbox"/>
2	<input type="checkbox"/> DO1	2021/01/15	23:00	Close/Open	<input checked="" type="checkbox"/>

1. Outlet A is scheduled to restart at 17:00 every Saturday
2. Specify DO1 to execute Close at 2021/01/15 23:00 and then open

3. Activate the PING signal and send it to the network device. PING once every minute. If the device does not respond within the set time, it will automatically execute the preset output or DO action.

The web page is displayed as follows:

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Ping Action List

Delete

No.	<input type="checkbox"/> Outlet	IP Address	Response Time	Action	Enable
01	<input type="checkbox"/> OutletA (1)	8.8.8.8	5 min(s)	OFF/ON	<input checked="" type="checkbox"/>
02	<input type="checkbox"/> DO1	192.168.1.1	5 min(s)	Open	<input checked="" type="checkbox"/>
03	<input type="checkbox"/> DO4	192.168.0.1	15 min(s)	Open/Close	<input checked="" type="checkbox"/>

1. PING 8.8.8.8, if there is no response within 5 minutes, Outlet A will restart the power
2. PING 192.168.1.1, if there is no response within 5 minutes, DO1 will open
3. PING 192.168.0.1, if there is no response within 15 minutes, DO4 will Open/Close

4. According to various sensors, including temperature and humidity, current and DI sensors, when the preset range is exceeded, the system will automatically perform the preset DO or power switch action for troubleshooting.
The web page is displayed as follows:

Event List

Delete

No.	<input type="checkbox"/> Event	Action	Enable
01	<input type="checkbox"/> Receive Trap Trap .1.3.6.1.4.1.17420.1.6 with Integer 1 From 192.168.0.1	OutletB (2) Delay 1 second(s) and turn OFF/ON	<input checked="" type="checkbox"/>
02	<input type="checkbox"/> Device over the overload threshold Occurs	DO4 Delay 1 second(s) and turn Close	<input checked="" type="checkbox"/>
03	<input type="checkbox"/> DI1 Open	DO4 Delay 1 second(s) and turn Close	<input checked="" type="checkbox"/>
04	<input type="checkbox"/> ENV (1) over the Temperature Overrun Occurs	OutletA (1) Delay 1 second(s) and turn ON	<input checked="" type="checkbox"/>

1. Receive Trap message 1.3.6.1.4.1.17420.1.6, the parameter is 1; after 1 second, Outlet B will restart power.
2. When the current exceeds the overload threshold, DO4 will close after 1 second.
3. When the DI status is Open, DO4 will close after 1 second.
4. When the temperature exceeds the upper limit, after 1 second, outlet A will turn off the power

- Set the threshold. When the detection parameter exceeds the threshold, the system will send an email or trap message to notify the administrator. The web page is displayed as follows:

Information
Management
Configuration

Control
Schedule
Ping Action
Event Action
Device
Threshold

Status: Normal ✔ 2021/01/15 03:06:47

Device Threshold Configuration

No.	Device	Below	Warning	Overload	
01	Current	<input type="text" value="0"/>	<input type="text" value="8"/>	<input type="text" value="10"/>	<input type="button" value="Apply"/>
	Voltage	<input type="text" value="180"/>	<input type="text" value="250"/>	<input type="text" value="262"/>	

Circuit Threshold Configuration

No.	Circuit Name	Below (Amp)	Warning (Amp)	Overload (Amp)	
01	PDU1	<input type="text" value="0"/>	<input type="text" value="8"/>	<input type="text" value="10"/>	<input type="button" value="Apply"/>
02	PDU2	<input type="text" value="0"/>	<input type="text" value="8"/>	<input type="text" value="10"/>	

ENV Threshold Configuration

No.	ENV	Temperature(°C)		Humidity(%)		
		Lower	Upper	Lower	Upper	
01	ENV 1	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="button" value="Apply"/>
02	ENV 2	<input type="text" value="0"/>	<input type="text" value="99"/>	<input type="text" value="0"/>	<input type="text" value="99"/>	

Benefit

We provide an industrial-grade intelligent management system. For ambient temperature and humidity, DIDO can be connected to sensors, power consumption monitoring, and automatic output control functions. The remote monitoring control and recording function can be realized through the network. When an incident occurs, it reduces the downtime of IT equipment and reduces maintenance manpower and costs.

- Real-time monitoring
- Planned maintenance
- Reduce downtime
- Reduce manpower maintenance costs
- Data record

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Products

Model Name	230V	115V
Intelligent Temperature and Humidity Sensor	IOT-TH-02	IOT-TH-01
Intelligent 4 DI/DO Environment Manager	IOT-IO-04	IOT-IO-04
Intelligent Power Switch	NPD-1023J-02N1	NPD-1511A-02N1
Intelligent Integrated Environment Manager	IOT-EM-01	IOT-EM-02

Please contact Digipower if you have any needs, we will be happy to help you.

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