Advantages of Cloud Monitoring of Environmental Conditions

Cloud computing is the latest advancement in the remote monitoring of environmental conditions. A cloud-based system makes it possible to share data from one location, and be accessible to local client devices over a network and the Internet.

With cloud computing, there is a substantial workload shift. The local devices no longer need to run resource intensive software applications in order to access data. Also, devices connected to the cloud don't require as much hardware to access data as devices with applications running locally.

A cloud-based system uses a standard web browser and can access any web-enabled email service such as Gmail, Hotmail or Yahoo!, or online storage services such as iCloud or Microsoft One Drive.

How it works with The Sensaphone Cloud

The Sensaphone cloud (https://www.sensaphone.net) is a server that processes alarm requests, stores data and event log information. The Sensaphone cloud interfaces with Sensaphone client devices, making it fast and easy to manage and scale devices from any Internet device, such as a tablet, computer, smartphone or laptop.

Users need to register with Sensaphone.net to access the client devices that are associated with their account. The primary account holder is the administrator who can create additional users with full or limited access to specified client devices. All users receive a personalized email login with custom passwords, and can manage any devices within their account.

Client-to-Cloud Communication

Each Sensaphone device is an HTTP client to the sensaphone.net server. The client device initiates communication by opening an encrypted SSL communication session on Port 443 using hypertext protocol RFC 2616.

When establishing a new connection to the server, users must send a specific crafted challenge HTTP Header, and the server must respond with a similar response. This process grants each participant proof of identity.

Device Connectivity

Client devices need to obtain a Dynamic Host Configuration Protocol (DHCP) address when plugged into their local area network (LAN). The device will then attempt to connect outbound to the sensaphone.net server. The online LED on the device will light up when connectivity to the server has been successfully established.

Benefits of Cloud Monitoring

Cost-Savings – With cloud monitoring, fewer system support calls to the end users are required, which reduces operational expenses and overall IT resources. In addition, cloud monitoring has fewer demanding hardware requirements on the computers that are used to manage the monitoring systems.

Manageability – Several locations can be monitored from one common user interface. This means that in an alarm situation, personnel can respond faster. They can also more easily manage multiple locations.

Reliability – Cloud servers like sensaphone.net are built from server clusters, which are a group of servers

running the application that manages user accounts. Cloud servers provide higher availability, reliability and scalability over a single server. These clusters are distributed across multiple locations for true redundancy to prevent site failures and downtime caused by natural disasters, power failures or connectivity outages. In addition, hardware failure on a single server will not affect the site's ability to process data.

Maintenance Free – Cloud service providers maintain the system maintenance of the servers. Firmware updates to the client devices can be configured for automatic or manual installation depending on the users' requirements.

Mobile Accessible – Cloud monitoring provides real-time data and status from any device connected to an Internet, cellular or Wi-Fi connection.

Supervised connection – Clients must establish connection to the sensaphone.net server and send a heartbeat packet every 15 seconds to indicate their connectivity. If this connection is lost for a minimum of 30 minutes, an offline alarm can be configured within the server to notify of a site disruption alarm. The offline timeout is configurable by the end user. Supervised connections are vital to any monitoring system that can be affected by mass power or network outages, theft or natural disasters.

Security – Passwords and all data to the site is SSL encrypted. Database access is heavily protected by firewalls, permission restrictions and physical isolation.

Hybrid Cloud API Architecture

Sensaphone.net application programming interface (API) is a resource for proprietary products (such as mobile applications) and third-party clients. It uses representational state transfer (REST) architecture over HTTPS using JavaScript Object Notation (JSON) as the data format. HTTP is not supported. The service can be accessed in one of two modes: Uniform Resource Identifier (URI) mode and JSON mode.

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