



ICE Communications Overview

Abstract:

ICE is a centralised service which uses remote agents to communicate with a client building's BMS. This architectural model requires certain components and resources to be made available by the host building. This document will outline the requirements of ICE in relation to IT systems and will also detail the communications protocols and methodologies used by ICE.

ICE overview

ICE can be thought of as a service orientated solution and as such depends on IT infrastructure and IP networks to function.

It consists of a set of centralized servers based components which communicate with a number of remote agents located in the client building. The server components handle data analysis, decision-making and data warehousing tasks. The remote agents act as an interface to the client building's BMS infrastructure providing ICE with the ability to collect data and control a large number of heterogeneous BMSs.

Communication between ICE and the remote agents is the aspect most relevant to a clients IT network. In order to achieve a robust, secure and ubiquitous communication channel between ICE and its remote agents, a collection of standardised internet technologies are used.

The base communication protocol used for ICE is HTTP. ICE uses standard HTTP to transmit and receive XML encoded message packets (similar to SOAP). These two technologies provide the foundation for the full ICE communications stack. On networks where data encryption and security is a must – ICE can also leverage SSL encryption algorithms to provide enterprise levels of data security.

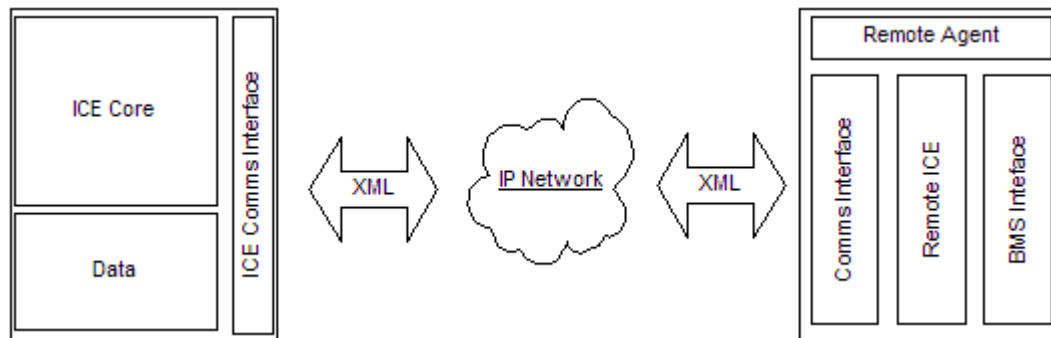


fig 1 - Comms model

Communication methods

As ICE is a partially distributed, it requires communication channels between its disparate components. This is most evident between the server based components (ICE Core) and the remote agents. As the agents are located on site in the client building, a method of communication suitable for ICE is required. This is usually provided by one of the following:

- Fixed IP ADSL
- Fixed IP Leased Line
- Wirelessly via the Lightwave APN.

ADSL / Leased Line

These two methods account for the majority of Lightwave clients. A fixed IP address is provided either over business ADSL or a pre-existing leased line. ICE needs IP connectivity in both directions. ICE must be able to communicate to the remote agents in order to make control decisions and also needs to collect data from the agents. Lightwave can provide the support and expertise to fully secure the IP connection if required.

Lightwave APN

If an ADSL or leased line is not a viable option, Lightwave can provide communications using its own private 3G APN. This wireless solution operates over current 3G networks. It is completely secure as it is only accessible via Lightwave internal networks.