

Tracer® Ensemble® Cloud IT & Cyber Security Summary



What is Tracer® Ensemble® Cloud?

Tracer Ensemble is a graphical front end for managing buildings and Building Automation System (BAS) controllers on both single and multiple buildings at once. Users access Ensemble through a web interface. It runs as a Microsoft Windows® application and uses Microsoft SQL Server® for data storage. Ensemble Cloud is hosted in the Amazon Web Services® (AWS®) environment. Each customer is assigned their own virtual web and application server. If necessary, Tracer Ensemble installations can transition from an installation on AWS to an On-Premises Server and vice-versa.

Endpoint Security

Ensemble web-interface can be accessed using most modern web browsers. For access outside your facility, it is recommended to use Trane® Connect™ Remote Access over HTTPS. Trane Connect is an initial outbound-only connection via port 443 that uses WebSocket protocol to connect to the Ensemble server. Tracer Ensemble's web user authentication and authorization are managed in the Ensemble application or through an active directory server integration. Specific application-level permissions can be assigned to individual users to limit access and abilities. As an example, individual permissions can allow a user to view, edit, add, or delete data associated with specific equipment or specific buildings.

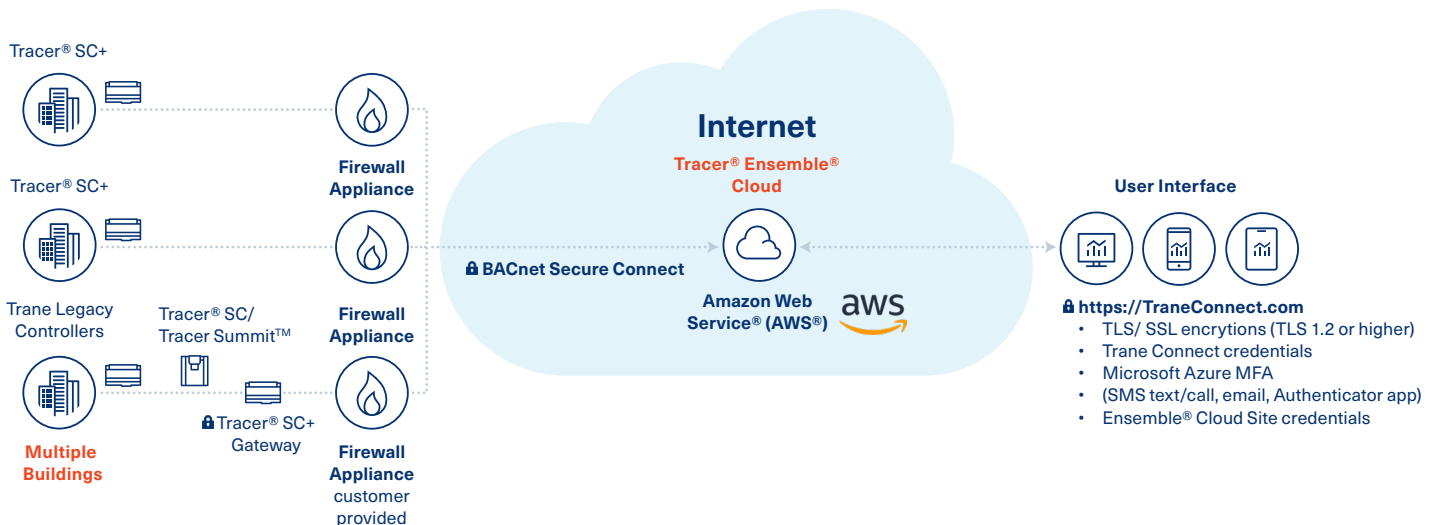
Network Security

The Ensemble Cloud server and BAS controllers must be connected securely with either an IPsec Tunnel or using BACnet Secure Connect (BACnet/SC).

Connection with BACnet/SC

BACnet/SC has become the prominent option for easy and speed of installation. BACnet/SC is an open protocol with native TLS based encryption and network certificates. The communication to Ensemble Cloud is configured by both the BAS controllers and Tracer Ensemble settings. Once configured, the active BACnet/SC ports are TCP 47808. Outbound-only traffic is required to establish the connection, so often IT intervention isn't required. In addition, BACnet/SC supports DHCP (static IPs are not required) , technicians can add buildings, and Tracer Ensemble can manage all the Certificates with built in functionality.

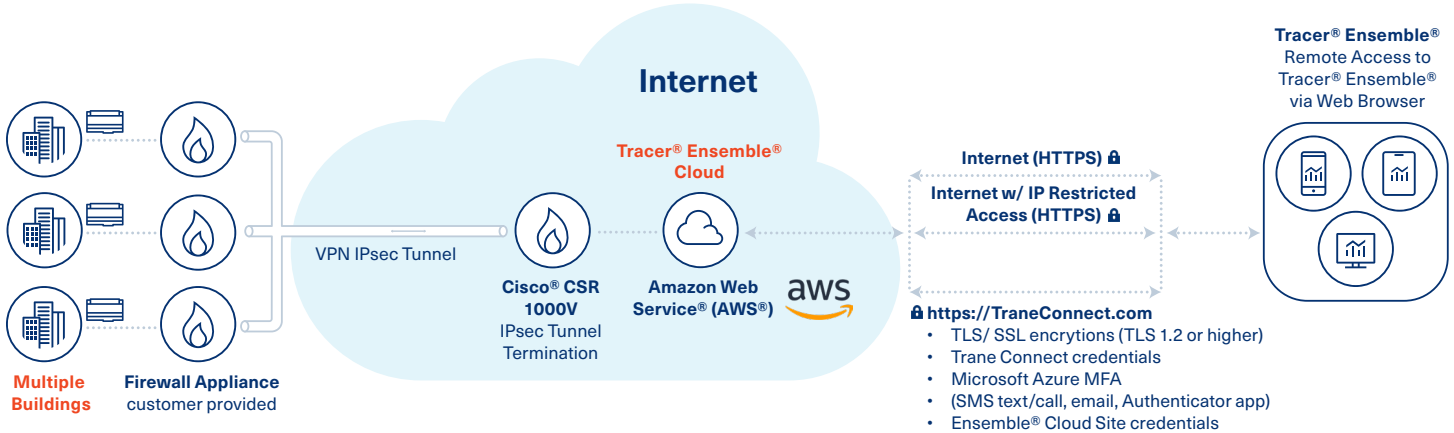
Tracer® Ensemble® Cloud Connection for Tracer® SC+ Controllers



Connection with an IPsec Tunnel

BAS Controllers are connected via BACnet/IP and HTTPS inside an IPsec tunnel terminated at the remote network firewall (Cisco® CSR-1000V). The customer can configure IPsec encryption parameters and security settings. BACnet/IP is a data communication protocol for building automation and control networks that use specified UDP ports. The port designation is configurable; the default port is UDP/47808. As BACnet/IP has no native encryption, all BACnet/IP traffic is tunneled to the Ensemble Cloud using a secure IPsec tunnel. BACnet/IP does not support Network Address Translation (NAT).

Connection to Ensemble® Cloud with an IPsec Tunnel



Data Privacy

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Maintenance Considerations

Trane takes over the responsibilities for system maintenance, backups, and upgrades with a current subscription. Major updates and firmware patches for Ensemble Cloud are installed remotely by Trane’s Cloud Fulfillment Team. New features are released semi-annually, while hotfixes and Service Packs are released as necessary.

Data Security

Tracer Ensemble uses a Microsoft SQL database for data storage. Ensemble’s utilization of data is limited to HVAC Machine Data only. HVAC Machine Data is data generated and collected from the product or furnished service without manual entry. HVAC Machine Data is data relating to the physical measurements and operating conditions of a HVAC system, such as but not limited to: temperatures, humidity, pressure, HVAC equipment status. HVAC Machine Data does not include Personal Data and, for the purposes of this document, however if any such user chooses to use his/her name(s) in the created accounts within the controls product (e.g., firstname.lastname@address.com). Such data may be used by Trane: (a) to provide better support services and/or products to users of its products and services; (b) to assess compliance with Trane terms and conditions; (c) for statistical or other analysis of the collective characteristics and behaviors of product and services users; (d) to backup user and other data or information and/or provide remote support and/or restoration; (e) to provide or undertake: engineering analysis; failure analysis; warranty analysis; energy analysis; predictive analysis; service analysis; product usage analysis; and/or other desirable analysis, including, but not limited to, histories or trends of any of the foregoing; and (f) to otherwise understand and respond to the needs of users of the product or furnished service. Our privacy policy as linked above covers how we manage personal data of customers.

Customer Responsibility

The customer is responsible for providing a firewall-protected internet connection to the BAS controllers with a dedicated internet connection or a cellular router.

When using BACnet/SC connection, the customer is only responsible for providing the internet connection and controller updates.

When using an IPsec Tunnel connection, the customer’s IT staff is responsible for the configuration of the IPsec tunnel on the customer’s side. Every piece of HVAC equipment with an IP address needs to be configured inside the IPsec tunnel. The customer shall work with the local Trane team to identify all the HVAC equipment IP addresses and assist the Trane team during the connectivity test.



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