CANON MEDICAL SYSTEMS USA, INC.

Made For life

Remote Service and Support
SSL VPN to Customer's Canon Ultrasound Cart
(A White Paper)

Technical Summary

The Service Networking Support (SNS) Group at Canon Medical Systems USA's InTouch Center (Canon InTouch Center) has implemented a system to allow remote service and support via SSL VPN connection to Canon Medical Systems USA's ultrasound carts installed at customer facilities. This system design is based on recommendations of Join Security & Privacy Committee of MITA.

Canon InTouch Center and entire SSL VPN infrastructure are located at 2441 Michelle Drive, Tustin, CA 92781

This system has following attributes:

VPN Infrastructure:

- The Customer SSL VPN Gateway for ultrasound at Canon InTouch Center has a public IP address *(198.100.18.95)* and URL *(rsupport.tams.com)* available on the Internet. (For security reason, this IP/URL does not response to ICMP request.)
- Capable of on-demand SSL VPN out-bound (initiated from inside customer's network outbound to Canon InTouch Center.)

Tunnel Traffic:

- Bi-directional, low bandwidth, and high security
- For SSL VPN, authentication by x.509 digital certificate with SHA3-256 encryption algorithm.
- VPN traiffic includes Canon Medical Systems USA proprietary screen viewing and file upload/download solutions.

Security:

Following MITA recommendations, Canon InTouch Center support personnels must first authenticated by Canon Medical Systems USA corporate active directory. Once authenticated, the support personnel must next log on to this dedicated ultrsaound remote support gateway with an unique user ID and password from a licensed workstation only.

This dedicated ultrasound remote support gateway is separated from the corporate internal network by a series of firewalls. All corporate servers and workstations are protected by the industry acceptable antivirus application with current virus definitions and OS hot fixes/patches.
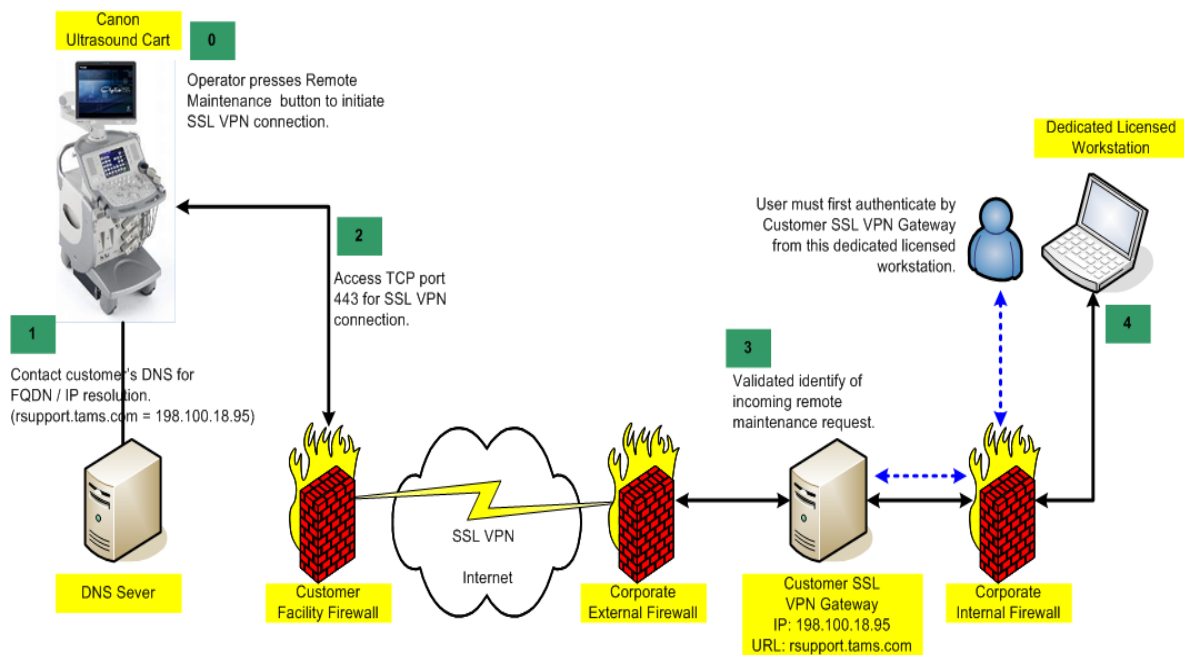
Network Connectivity:

Depending on the customer's prefernece, Canon Medical Systems USA ultrasound cart offers following methods of network connectivity:

1. Twisted-pair network adapter
   a. Support up to 1Gbps bandwidth
   b. Support static and DHCP Ipv4 scheme.

2. Wireless network adapter
   (available only on selected models/versions of ultrasound carts)
   a. Support IEE 802.11b/g/n 2.4GHz and IEE 802.11a/n/ac 5GHz
   b. Support WPA2-Perosnal [AES] (WPA2-PSK [AES]) &
      WPA2-Enterprise [AES] – Only PEAP (EAP-MS CHAP v2 is available)
   c. Support 2.4GHz to 2.5GHz CCk/OFDM modulation &
      5GHz OFDM, 802.11n MCS 0-7, 802.11ac MCS 0-9 coding system

Overview of SSL VPN Connection:

Data flow diagram:

Process:

1. Operator of the ultrasound cart must first places a service call (800-521-1968) to Canon InTouch Center.	
2. Operator then presses **Remote Maintenance** button on the ultarsound cart to initiate SSL VPN connection (via TCP port 443) to remote support gateway (198.100.18.95 or rsupport.tams.com) at Canon InTouch Center.	
3. Operator must accept the warning message to begin this remote connection session.	
4. Operator next grants the remote access to Canon InTouch Center support personnel by clicking a designated technician button appeared on the screen.	

5. While the remote connection is in session, appropriate indicators will be shown on the ultrasound cart screen to warn Operator of presence of the remote connection.	

Protected Health Information (PHI):

While remote maitenance connection is active, Canon InTouch Center support personnel may have access to PHI. Depending on the context of the service case, data and log files with PHI may be retrieved back to Canon InTouch Center for further offline investigation and troubleshooting. When the service case is resolved, all retrieved data relevant to this case is immediatley destroyed.

For furher information on Canon Medical Systems USA PHI handling policy, please see URL:
https://us.medical.canon/service-and-support/enterprise-integration/phi-removal-policy/

Setup Requirements:

Customer side:

1. *Open TCP port 443 -*
   For SSL VPN access to 198.100.18.95 or rsupport.tams.com from Canon ultrasound cart.
2. *Open TCP port 53 –*
   From Canon ultrasound cart if DNS is used for accessing TCP port 443.

2441 Michelle Drive, Tustin, CA 92780 / PHONE: 800-421-1968 / https://us.medical.canon

UL InTouch Center
(800) 521-1968
ulintouch@us.medical.canon

Canon InTouch Center side:

1. *Installing remote maintenance license code on Canon ultrasound cart.*
   This is usually performed onsite by trained Canon Medical Systems USA service engineers. It may also be preconfigured during pre-staging process at Canon Medical Systems USA.

2. *Configuring Canon ultrasound cart with DNS IP address to Customer SSL VPN Gateway located at Canon InTouch Center in Tustin, CA.*
   This must be performed onsite by trained Canon Medical Systems USA service engineers.

3. *Validating SSL VPN connectivity for remote maintenance function between Canon ultrasound cart at the customer facility and Customer SSL VPN Gateway at Canon InTouch Center.*
   This must be performed onsite by trained Canon Medical Systems USA service engineers.