DxS IntelliServe

Remote Desktop Sharing

The DxS IntelliServe solution allows Beckman Coulter service and support staff to remotely access a connected instrument's console

BECKMAN COULTER

Remote Desktop Sharing

With Beckman Coulter's **DxS IntelliServe solution**

The DxS IntelliServe solution allows Beckman Coulter service and support staff to remotely access a connected instrument's console

KEY BENEFITS OF RDS INCLUDE:

Maximized instrument uptime with remote support through RDS, which allows for detailed investigation and diagnosis to reduce length of service issues.

Increased remote resolution of instrument issues without waiting for onsite service—allowing your laboratory staff to focus on performing critical laboratory tests for patients.

Complete control over RDS sessions, as each session requires your specific authorization before access is granted to Beckman Coulter associates.

The DxS IntelliServe application has been carefully designed and tested to integrate closely with your Beckman Coulter instrument and ensure there are no negative effects on the instrument workstation. This integration provides Beckman Coulter support staff with the advanced insights and tools needed to efficiently resolve issues remotely.

We understand the potential desire to use a third-party application software for remote desktop sharing capabilities. However, Beckman Coulter instruments are regulated devices and installing or running a non-validated software on the instrument is prohibited as doing so may change the integrity of the instrument.

Therefore, Beckman Coulter policy does not allow the use or installation of any third-party software or Windows onboard applications for remote desktop sharing or other purposes. The DxS IntelliServe application is the only supported solution for remote desktop sharing, and Beckman Coulter can provide all required technical resources to properly validate it in your environment.

Critical Security Controls **to Protect Remote Sessions**

Azure Relay as Secure Tunnel Service

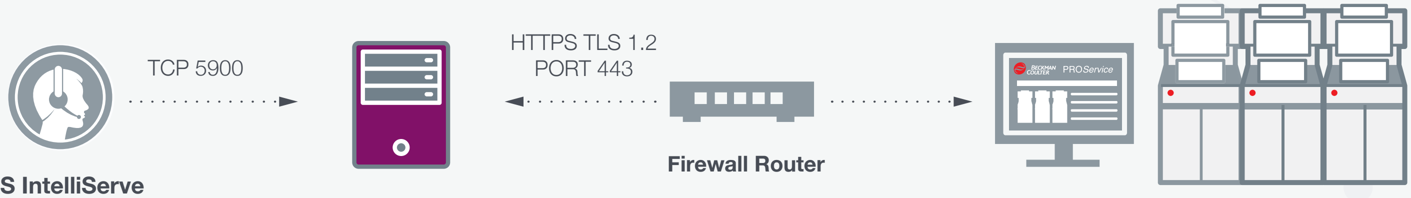
Azure Relay service creates a secure communication channel over Port 443 between the instrument's VNC Server and the VNC Viewer running on the Beckman Coulter associate's laptop without opening VNC ports in your network. Every RDS session requires a unique connection string to successfully connect, and the connection string expires once the RDS session is terminated. A connection cannot be established to the Azure Relay Service with a used, expired, or invalid connection string.

RMS Remote Desktop Sharing Architecture

| BEC Network

| CUSTOMER Network

DxS IntelliServe Azure Cloud



DxS IntelliServe

BEC associates log into the DxS IntelliServe application using their unique credentials and initiate the remote session request.

Azure Relay Service

The DxS IntelliServe server creates a secure tunnel using Azure Relay Service.

Firewall Router

The firewall router (external or embedded within the instrument) provides added protection to both the customer and BEC networks by only allowing trusted communication.

Instrument

The instrument receives the request and requires customer authorization to allow the RDS session via the Azure Relay Secure Tunnel over Port 443. The BEC associate connects to the Azure Relay Secure Tunnel using VNC Viewer and enables the remote desktop connection to the instrument.

Critical Security Controls
to Protect Remote Sessions

User Authentication & Authorization

Remote sessions adhere to multiple authentication and authorization processes to ensure that each session is initiated, established, and conducted by approved Beckman Coulter associates and with explicit customer permission.

User Authorization using RBAC

Role-based Access Control (RBAC) restricts remote session access based on the Beckman Coulter associate's role. Remote session access is only provided to Beckman Coulter associates who are involved in troubleshooting Beckman Coulter instruments.

Connection to the Beckman Coulter (BEC) Network

All Beckman Coulter associates must connect their work computer to Beckman Coulter's corporate network to access the DxS IntelliServe solution and establish instrument remote sessions.

Customer Authorization

Customer authorization and permission are required before each remote session can be established. When the Beckman Coulter associate initiates a remote session with the instrument, the software on the instrument console displays an authorization request which must be accepted by the lab operator before the connection can be established.

The remote session is established after the customer allows the remote session. If the authorization request is denied or ignored, then the remote session cannot be conducted by the Beckman Coulter associate.

User Authentication using Azure AD FS

Beckman Coulter associates who want to initiate a remote session to the instrument console need to first log in to the DxS IntelliServe solution, which is protected by Beckman Coulter's corporate Active Directory Federation Service (AD FS) authentication process.

The user authentication requires a unique username and password for every Beckman Coulter associate to log into the application.

Security Hardening Process

1. Microsoft Defender for Cloud

Microsoft Defender for Cloud is a Cloud Security Posture Management (CSPM) and Cloud Workload Protection Platform enabled to protect the entire IoT Cloud Platform. This platform:

- Continuously assesses, identifies, and tracks vulnerabilities.
- Secures the IoT Cloud Platform by hardening resources and services with Azure Security Benchmarks.
- Defends the IoT Platform by detecting and resolving threats to resources and services.

2. Network Security: Azure Private Endpoints

The software that enables RDS is configured with private endpoints in a virtual network that is not accessible through public internet access. This ensures that the RDS feature can only be accessed through BEC Network, which is peered with Azure Virtual network.

3. Vulnerability Scans and Security Patch Updates

Vulnerability scans are run on all cloud servers at regular intervals to identify critical vulnerabilities in the software. Patches are applied to address open critical vulnerabilities to ensure that the entire platform is safe and has no weaknesses that hackers can exploit.

4. Remote Session – Auto Log Off

Remote sessions automatically terminate after 60 minutes of inactivity to ensure that unauthorized users are unable to access the remote session.

Critical security controls, such as user authentication with RBAC, customer authorization for each remote session, and End-End encryption over TLS 1.2. Auto log-off, key monitoring, and audit controls (like intrusion detection and vulnerability scans at a regular cadence) ensure the remote session is protected, eliminating the likelihood of a successful cyber-attack.

Remote Session Audit Reports

Audit logs are created for each remote session initiated by the Beckman Coulter associate and include details of the user who performed the remote session, the IP Address of the user's work computer, the date, and duration time of the remote session, and the customer log-in that approved the remote session. Remote session audit logs and video recordings are available and are stored for three years.

External PEN Testing

An external organization performs Security Penetration Testing before releasing any major or critical features to ensure that the software does not have any weaknesses that hackers can exploit.

Overall Key Features of RDS

User Authentication & Authorization

- User authentication using Azure AD FS
- User authorization using RBAC
- Customer RDS Authorization
- DxS IntelliServe can only be accessed from Beckman Coulter's corporate network

Secure Tunnel Service

- No Inbound connection
- TLS 1.2 over Port 443
- Microsoft Defender for Intrusion Detection

Additional Security Measures

- Audit logs for every remote session initiated by the Beckman Coulter associate are captured
- Security penetration testing planned and performed by an external organization
- Vulnerability scans are run on all cloud servers at regular intervals
- A remote session initiated by the Beckman Coulter associate will be automatically terminated after 60 minutes

DxS IntelliServe Remote Desktop Sharing

DxS IntelliServe enables the secure transmission of instrument status information to Beckman Coulter so you can focus on patient care.

Conforms to Information Security standards established by the industry.

Reduces unscheduled downtime by enabling proactive, preventive action to be taken by you or Beckman Coulter.

Minimizes interruptions when service is needed by expediting issue isolation and readiness of parts.

Glossary

TERM	DEFINITION
AD FS	Active Directory Federation Service (AD FS): A software component created by Microsoft that uses claim-based authentication to provide single sign-on (SSO) capabilities to users of multiple applications across organizational boundaries.
Cloud Security Posture Management (CSPM)	Security solution that remediates security issues in the cloud infrastructure.
Cloud Workload Protection Platform	Security solution for protecting workloads (e.g., storage) in the cloud infrastructure.
External PEN Testing	Penetration Testing, also known as PEN Testing: a security assessment by a third-party organization which simulates a cyber-attack against your network to check for exploitable vulnerabilities.
IoT Cloud Platform	Refers to the infrastructure in a data center which hosts software that are needed to connect BEC instruments in customer network for remote troubleshooting needs.
RBAC	Role Based Access Control (RBAC): restricts network access based on a person's role within an organization.
TLS	Transport Layer Security: a session layer security protocol used on the Internet to secure web pages and transactions by means of public key cryptography.
VNC and VNC Viewer	Software tools to establish a connection between two machines.

DxS IntelliServe availability or features vary by instrument/system platform.

For Beckman Coulter's worldwide office locations and phone numbers, please visit www.beckmancoulter.com/contact

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