ENTRÉ

INSTALLATION AND SETUP GUIDE

—

A Setup Guide for IT Teams and Administrators

TABLE OF CONTENTS

PRE-INSTALLATION TASKS

Before installing Entré, review the following pre-installation checklist. Completing these tasks before installation reduces setup time as well as the likelihood that you'll need to troubleshoot configuration issues after Entré is installed. See LT-1833 Entré and Entré NOC Pre-Installation Checklist for a complete pre-installation checklist.

The Pre-Installation tasks include the following:

1. Determine the Server Architecture

2. Configure Microsoft SQL Server

3. Configure Firewall Settings

4. Configure Java Settings

5. Review Data Flow

6. Review Networking Basics

For information about Entré compatibility with specific versions of XR Series or TMSentry firmware, refer to LT-2233 Entré Version and Panel Feature Compatibility Guide.

For information about Entré compatibility with Remote Link™, refer to the Comparison Chart in LT-2497 Entré Migrations Guide.

📝 **Note:** SQL Express is only supported with Entré Light. It will be necessary to migrate to SQL Enterprise when upgrading to Entré Business or higher. It is the dealer's responsibility to ensure the customer has a SQL DBA or an IT department to support SQL. DMP Tech Support does not support SQL.

① Determine the Server Architecture

These specifications were quoted by Dell and Microsoft infrastructure specialists and accounts for a standard 5 year life span and an expected 20% growth factor without further improvements needed to the server software.
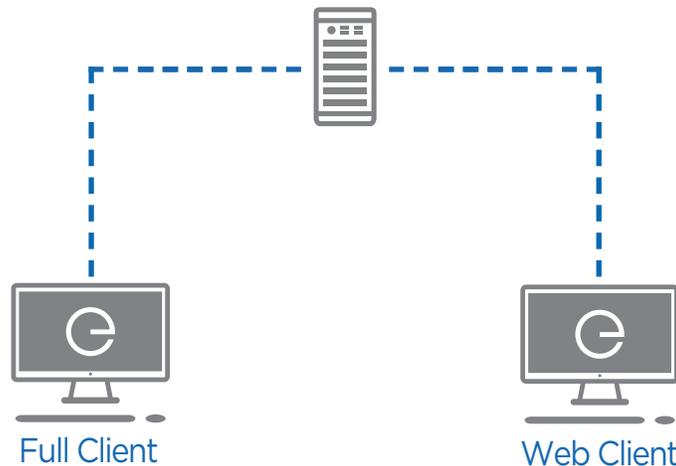
🛡 **PANELS:** 1 - 4

🚪 **DOORS:** 16 max.

💬 **EVENTS:** 1,000 or less per day

👤 **USER CHANGES:** 25 or less per day

Entré App Server,
Microsoft SQL Database/App Server,
& Apache Tomcat Web Server

Apache Tomcat Web Server is only needed if using the Web Client

Full Client   Web Client

Entré App Server, Microsoft SQL Database/App Server, & Apache Tomcat Web Server *(per 30 users)*

Processors – 2 (4-cores each)

4 cores should be allocated for SQL use.

Hard Drive

The operating system, system drive, SQL data drive, and log drive are all located on separate physical disks.

‣ OS Drive - 2
‣ 73 GB, 6 Gbps, RAID 1
‣ Data Drives - 2
‣ 146 GB, 6 Gbps, RAID 1
‣ Log and TempDB Drives - 2
‣ 73 GB, 6 Gbps, RAID 1

RAM – 64 GB RAM

16 GB dedicated to Entré Wrapper, 16 GB dedicated to Apache Tomcat, and 24 GB dedicated to Microsoft SQL

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat – 10

Java – 17

Windows Workstation – 10

See Whitepaper: <u>LT-2582 Spotlight on Disaster Recovery</u>

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.
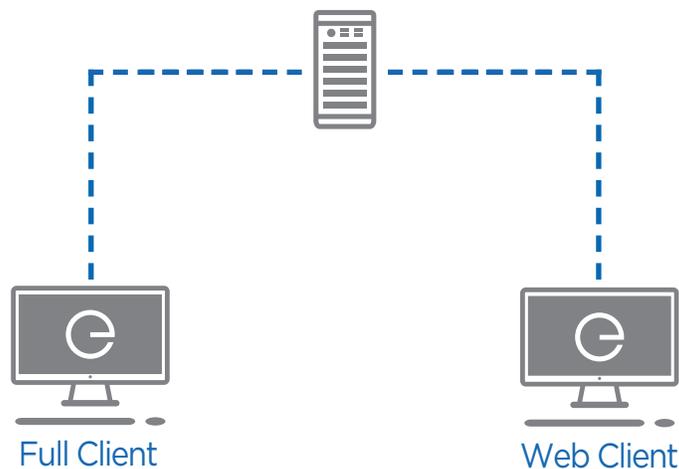
🛡 **PANELS: 5 - 24**

🚪 **DOORS: 96 max.**

💬 **EVENTS: 1,000 - 5,000 per day**

👤 **USER CHANGES: 25 - 100 per day**

Entré App Server,
Microsoft SQL Database/App Server,
& Apache Tomcat Web Server

Apache Tomcat Web Server is only needed if using the Web Client

Full Client   Web Client

Entré App Server, Microsoft SQL Database/App Server, & Apache Tomcat Web Server *(per 30 users)*

Processors – 2 (4-cores each)

4 cores should be allocated for SQL use.

Hard Drive

The operating system, system drive, SQL data drive, and log drive are all located on separate physical disks.

- ‣ **TempDB Drive** - 2 (146 GB, 6 Gbps, RAID 0)
- ‣ **Data Drives** - 4 (146 GB, 6 Gbps, RAID 6)
- ‣ **Log Drives** - 2 (146 GB, 6 Gbps, RAID 1)

RAM – 64 GB RAM

16 GB dedicated to Entré Wrapper, 16 GB dedicated to Apache Tomcat, and 24 GB dedicated to Microsoft SQL

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat – 10

Java – 17

Windows Workstation – 10

See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

Microsoft SQL
Database/App Server

Entré App Server &
Apache Tomcat Web Server

*Apache Tomcat Web Server is only
needed if using the Web Client*

Full Client

Web Client

Entré App Server &
Apache Tomcat Web Server *(per 30 users)*

Processors – 2 (4-cores each)

Hard Drives – 3 (146 GB, RAID 5)

RAM – 128 GB RAM (40 GB dedicated to Java, 60 GB dedicated to Apache Tomcat)

Microsoft SQL Database Server

Processors – 2 (4-cores each)

All but 2 cores should be allocated to SQL.

Hard Drive

The operating system, system drive, SQL data drive, and log drive are all located on separate physical disks.

- ‣ **TempDB Drive** - 2 (146 GB, 6 Gbps, RAID 0)
- ‣ **Data Drives** - 4 (146 GB, 6 Gbps, RAID 6)
- ‣ **Log Drives** - 2 (146 GB, 6 Gbps, RAID 1)

RAM – 64 GB RAM

64 GB dedicated to Entré Wrapper, 56 GB dedicated to Apache Tomcat, and 56 GB dedicated to Microsoft SQL

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat – 10

Java – 17

Windows Workstation – 10

See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Full Client Specifications
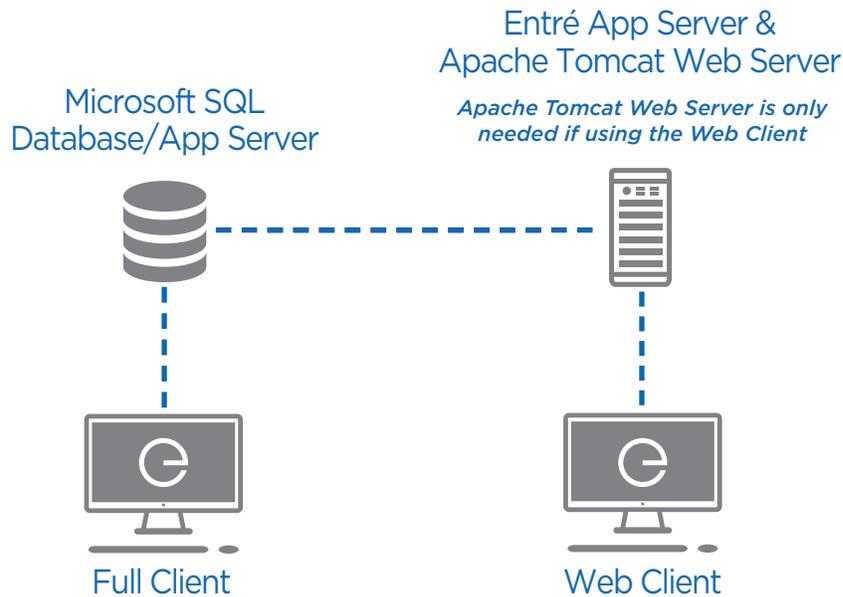
Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

PANELS: 101 - 500

DOORS: 2,000 max.

EVENTS: 10,000 - 50,000 per day

USER CHANGES: 200 - 500 per day

Microsoft SQL Database Server

Entré App Server

Apache Tomcat Web Client Server

Only needed if using the Web Client

Full Client

Web Client

Entré App Server

Processors – 2 (4-cores each)

Hard Drives – 3 (146 GB, RAID 5)

RAM – 64 GB RAM (50 GB dedicated to Java)

Microsoft SQL Database Server

Processors – 2 (4-cores each)

All but 2 cores should be allocated to SQL.

Hard Drive

The operating system, primary file system drive, SQL data drive, and log drives are all located on physical 15K RPM SAS drives.

- ‣ **TempDB Drives** - 2 (146 GB, RAID 0)
- ‣ **Data Drives** - 4 (300 GB, RAID 10)
- ‣ **Log Drives** - 3 (300 GB, RAID 5)

RAM – 128 GB RAM

56 GB dedicated to Entré Wrapper, 88 GB dedicated to Apache Tomcat, and 120 GB dedicated to Microsoft SQL

Apache Tomcat Web Client Server *(per 100 users)*

Processor – 1 (6-cores each)

Hard Drives – 3 (146 GB, RAID 5)

RAM – 96 GB RAM

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat - 10

Java – 17

Windows Workstation – 10

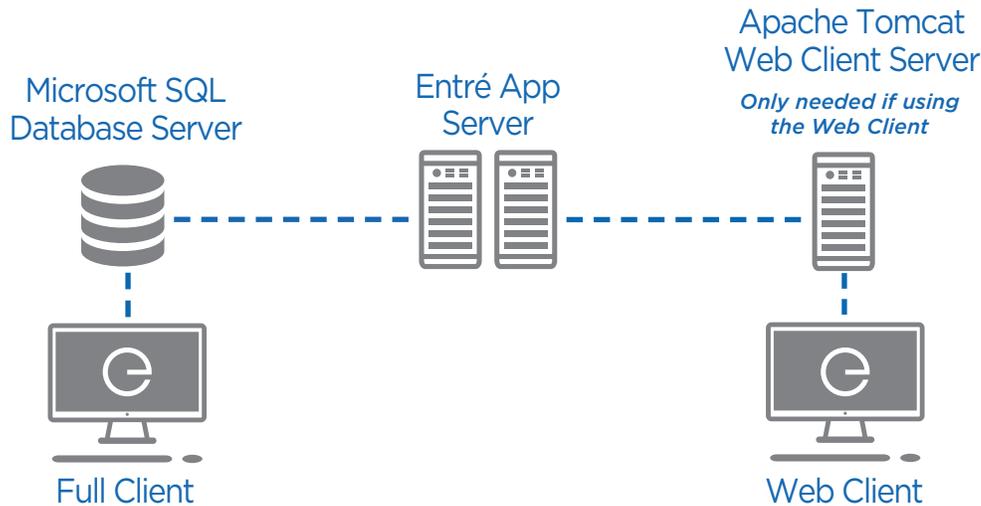See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

Microsoft SQL Database Server
Entré App Server
Apache Tomcat Web Client Server
Only needed if using the Web Client.

Full Client

Web Client

Entré App Server

Processors – 2 (6-cores each)

Hard Drives – 4 (146 GB, RAID 6)

RAM – 128 GB RAM (120 GB dedicated to Java)

Microsoft SQL Database Server

Processors – 2 (6-cores each)

All but 2 cores should be allocated to SQL.

Hard Drive

The operating system, primary file system drive, SQL data drive, and log drives are all located on physical 15K RPM SAS drives.

‣ **TempDB Drives** - 2 (146 GB, RAID 0)
‣ **Data Drives** - 4 (600 GB, RAID 10)
‣ **Log Drives** - 4 (300 GB, RAID 6)

RAM – 128 GB RAM

120 GB dedicated to Entré Wrapper, 120 GB dedicated to Apache Tomcat, and 120 GB dedicated to Microsoft SQL

Apache Tomcat Web Client Server *(per 100 users)*

Processor – 1 (8-cores)

Hard Drives – 4 (146 GB, RAID 6)

RAM – 128 GB RAM

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat - 10

Java – 17

Windows Workstation – 10
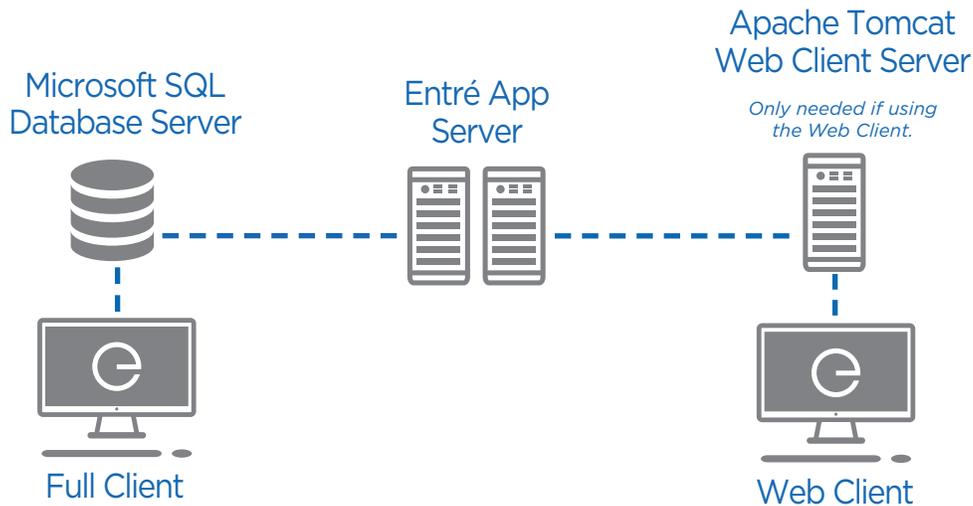
See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

Entré App
Server

Apache Tomcat
Web Client Server

*Only needed if using
the Web Client*

Microsoft SQL
Database Server

Full Client

Web Client

Entré App Server

Processors – 2 (6-cores each)

Hard Drives – 4 (146 GB, RAID 6)

RAM – 128 GB RAM (120 GB dedicated to Java)

Microsoft SQL Database Server

Processors – 4 (6-cores each)

All but 2 cores should be allocated to SQL.

Hard Drive

The operating system, primary file system drive, SQL data drive, and log drives are all located on physical 15K RPM SAS drives.

‣ **TempDB Drives** - 2 (146 GB, RAID 0)
‣ **Data Drives** - 6 (600 GB, RAID 10)
‣ **Log Drives** - 4 (300 GB, RAID 6)

RAM – 256 GB RAM (248 GB dedicated to Microsoft SQL)

120 GB dedicated to Entré Wrapper, 120 GB dedicated to Apache Tomcat, and 248 GB dedicated to Microsoft SQL

Apache Tomcat Web Client Server *(per 100 users)*

Processors – 2 (4-cores each)

Hard Drives – 4 (146 GB, RAID 6)

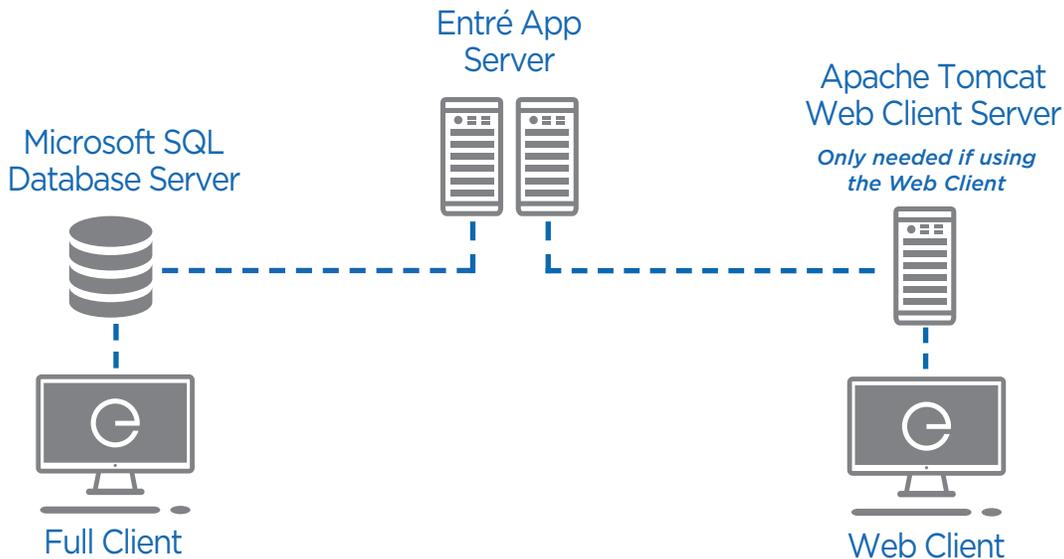**RAM** – 128 GB RAM (120 GB dedicated to Java)

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat - 10

Java – 17

Windows Workstation – 10

See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

PANELS: 2,001 - 5,000*

DOORS: 20,000 max.

EVENTS: 200,000 - 500,000 per day

USER CHANGES: 3,000 - 10,000 per day

For more than 5,000 panels, 500,000 events per day, or 10,000 user changes, contact DMP Inside Sales for direct assistance in architecture design at 1-877-757-4367.
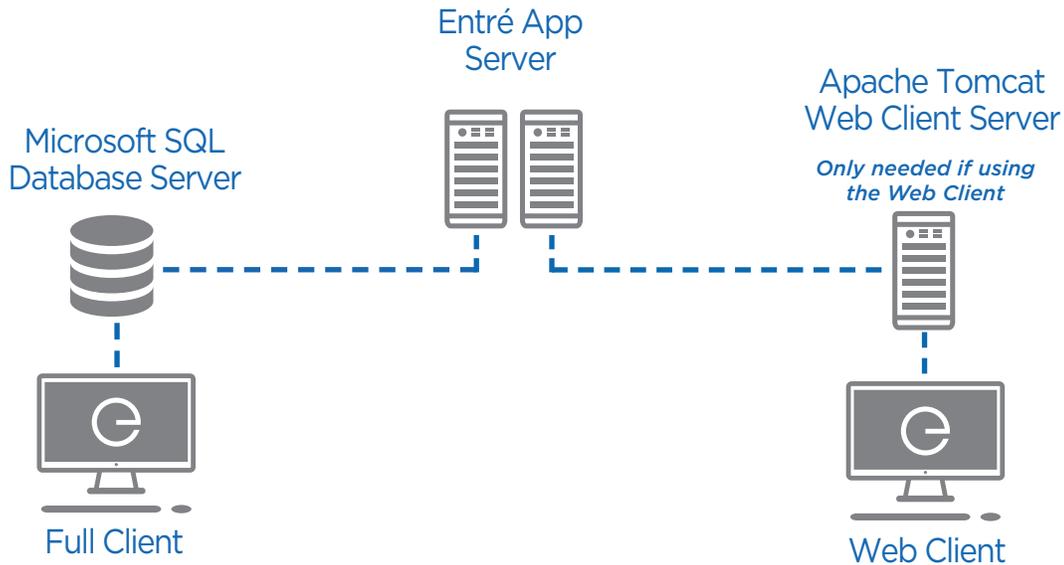
Entré App Server

Processors – 2 (8-cores each)

Hard Drives – 4 (146 GB, RAID 6)

RAM – 128 GB RAM (120 GB dedicated to Java)

Microsoft SQL Database Server

Processors – 4 (8-cores each)

All but 2 cores should be allocated to SQL.

Hard Drive

The operating system, primary file system drive, SQL data drive, and log drives are all located on physical 15K RPM SAS drives.

- ‣ **TempDB Drives** - 2 (146 GB, RAID 0)
- ‣ **Data Drives** - 6 (600 GB, RAID 10)
- ‣ **Log Drives** - 4 (300 GB, RAID 6)

RAM – 384 GB RAM

120 GB dedicated to Entré Wrapper, 120 GB dedicated to Apache Tomcat, and 372 GB dedicated to Microsoft SQL

Apache Tomcat Web Client Server *(per 100 users)*

Processors – 2 (6-cores each)

Hard Drives – 4 (146 GB, RAID 6)

RAM – 128 GB RAM

Supported Versions

Windows Server – All Microsoft Supported Server Operating Systems.

SQL – All Microsoft Supported SQL Server Operating Systems.

Apache Tomcat - 10

Java – 17

Windows Workstation – 10

See Whitepaper: LT-2582 Spotlight on Disaster Recovery

Full Client Specifications

Core i7 Series Processor or equivalent

32 GB RAM (16 Minimum)

250 GB HDD

Requirements: All servers require a Gigabit Ethernet Adapter or better.

System Requirements: These allocations leave at least 8GB reserved for Windows OS consumption. If Web Clients are not to be utilized, then Apache resources can be split between SQL and Entre, or removed from the build. We recommend the same base configurations on all physical or virtual builds. In Virtual Environments, it is recommended that the customer's IT team monitor performance for a 3-6 month time-frame to establish a baseline. Resources can be reviewed for increase or decrease at that time based on individual customer use cases.

② Configure Microsoft SQL Server

📝 **Note:** Links are not DMP links and may not be current.

Ensure Microsoft SQL Server 2016 or later has been installed. For newer environments, DMP recommends installing Microsoft SQL 2019 or higher. The following link directs you to the SQL Server information page, which includes a comparison diagram to help you determine the appropriate version for your server and organization:

‣ [Microsoft SQL Server Editions](#)

Verify that you have configured SQL Server to use Named Pipes and TCP/IP port 1433 for communication. For more information, refer to the following Microsoft SQL documentation:

‣ [Server Network Configuration](#)

‣ [Enable or Disable a Server Network Protocol](#)

‣ [Configure a Server to Listen on a Specific TCP Port](#)

Make sure that the correct firewall ports are open for Microsoft SQL Server if your machine has Windows Firewall running.

For more information, refer to the following Microsoft SQL documentation:

‣ [Configure a Windows Firewall for Database Engine Access](#)

Key Recommended Settings

Recovery Model - Simple

The Simple Recovery model covers all data stored in the Entré database. DMP recommends this setting because it will not harm any functionality.

MaxDOP - 1

This setting is consistently the best option in testing. DBA's can adjust this as needed for performance. Refer to the Parallelism section in this document for more information.

Allow Snapshot Isolation - True

This option allows for performance increase during heavy read/write functions specific to Entré. This works in conjunction with the **hibernate.connection.isolation=1** line in your **hibernate.properties** file. Always ensure that line exists in your hibernate file when this option is enabled in the database.

Auto Close - False

This option should never be enabled on any production database. Always ensure this setting is **never** set to TRUE.

Entré Application Service

The Entré application service is a program that runs in the background at the operating system level and listens for events coming from control panels. It classifies the events and then stores them in the SQL database. The application service automatically starts each time the operating system is restarted.

Entré Standard Client

The Entré standard client is a program or graphical user interface (GUI) written in Java that makes a simultaneous TCP connection to the Entré Application Service and the SQL database. The client requests and displays, in a graphical format, the data that is parsed by the service and stored in the database. Through the client GUI, the operator can make changes to personnel records, user codes, schedules, holidays, and other information stored in the SQL database. The operator can then run reports against the database that can be displayed in the software GUI or saved in various output formats.

You can install the standard client on as many machines as you wish, but you can only maintain the number of simultaneous connections listed in the permanent license.

Entré Web Client

The Entré web client is an Apache Tomcat-based browser version of the Entré Standard Client. Apache Tomcat Web Server software must be installed and configured as part of the Entré installation and licensed on a per client basis before it functions.

Note: Video integrations and badge designer do not function from the Entré Web Client.

Database Information for Lite and Business Users

What is a Database?

A database is a collection of information organized to provide efficient retrieval. There are physical and electronic databases. The collected information could be in any number of formats (electronic, printed, graphic, audio, statistical, combinations).

A database could be as simple as an alphabetical arrangement of names in an address book or as complex as a database that provides information in a combination of formats.

How is a Database Organized?

Understanding how a database is organized can help you retrieve information more efficiently. Information about each item in a database is called *record*.

Elements of an individual record are called *fields*. Fields can be used as points of access when searching a database.

Try visualizing a record in an electronic database as being part of a table. Each column in the table represents the fields and each row represents the individual record. The table below represents what an electronic database of students in a class might look like:

Last Name	First Name	Class	Hometown	Birth Month
Smith	John	Freshman	Macon	August
Turner	Evelyn	Freshman	Brunswick	April
Arndale	Carrie	Sophomore	Atlanta	September
Zwemke	Jason	Freshman	Cartersville	May
Lane	Penny	Sophomore	Decatur	September

Database Authentication Methods

What is the difference between Windows authentication and SQL authentication? Windows authentication means the account is located in the active directory for the domain. Windows authentication is a convenient way to log in to a SQL server instance without typing a user name and password every time. The user will set their account and password one time and in each instance after, the active directory will sign them in after checking to make sure the user account is active and what permissions the account has. SQL authentication means the account is located in the SQL server and has no affiliation with the domain. SQL authentication requires the user create an account for each SQL server instance and update each instance when there is a change to the account. SQL authentication requires more user intervention than Windows authentication does, but there are more opportunities to customize accounts and policies.

Entré Client connections use a remote TCP connection. This means that any end user-supplied SQL server must be configured to allow remote TCP connections. The login name provided to Entré must possess database owner-level access so that the Entré Application Service can read to and write from the VXDB database that is created when the software is installed.

Server Instances

A SQL Server instance is a complete SQL server. You can install many instances on a machine, but you can have only one default instance. A SQL Server instance has its own copy of the server files, databases, and security credentials.

Entré can be installed using either the default instance, or you can specify an instance during the installation. This instance name and a SQL login with server administrator permissions are used to create the TCP link to the SQL database in which the default VXDB Entré Database is created.

Management Tools for SQL

If there is already an Enterprise-level SQL Server, then the site database administrator will have access to the SQL Database Management Studio. If you don't know which level of SQL you need to get, consult your Microsoft certified provider or visit the link below.

› MSDN.Microsoft.com/en-us/library/ms365247.aspx

③ Configure Firewall Settings

Verify that the correct firewall ports are open for Entré. The ports that DMP panels use for communication with Entré are configured in the panel Remote Options menu. The following is a list of default ports:

- ‣ App Server Ports—2001, 2011, 1236, 1237, 9090, and 9091
- ‣ Microsoft SQL Database Port—1433
- ‣ Workstation and Web Server Ports—1236, 1237, 8080, and 443

Verify that your antivirus software and any firewall applications or devices have exceptions for Entré, Java, SQL, and their respective ports. For more information about configuring Windows Firewall, refer to the following Microsoft documentation:

- ‣ Create an Inbound Port Rule
- ‣ Create an Outbound Port Rule
- ‣ Advanced Firewall Administration with PowerShell

Entré uses network ports for communications between Entré Client Software, the Entré Application Server, and the SQL database. Therefore, certain ports must be open bidirectionally in the operating system and network firewalls. Each standard client machine will need to access both the SQL Server and the Entré Server on the host machine. See the *"Web Client"* and *"Admin Workstation"* Data Flow sections of this document for more information on which ports should be used.

Some installations may require other system ports to be opened, but the ports shown in the data flows are the required ports for most common installations.

Configuring the operating system to allow the installer to operate might be required before starting the installation. Entré software does not make any changes to the system registry, but the installer must have full local administrator read and write permissions to complete the installation.

The Entré installer does not set or override firewall permissions, or override domain policies. Software installations that error out, or fail to create log files during the installation, are commonly seen on machines that are part of a domain with a policy restricting the installation of software. Simply right-clicking on the Entré installer and running it as "Administrator" by entering the local administrator password will usually resolve this issue.

The Entré Application Service uses the information specified during the installation process to connect to the database and add the required tables.

When installing Entré and interfacing it with an existing SQL database, you need to contact the site IT staff to verify that the operating system is configured properly for SQL. DMP Tech Support is not allowed to make changes to domain policy or firewall configurations. It is the responsibility of the dealer technician to ensure that the site PC is configured properly before installing Entré.

Using the Entré Log Files

Entré's log files are located in the DMP\Entré\log\ directory. The four log files that are part of the Entré system are shown and described below.
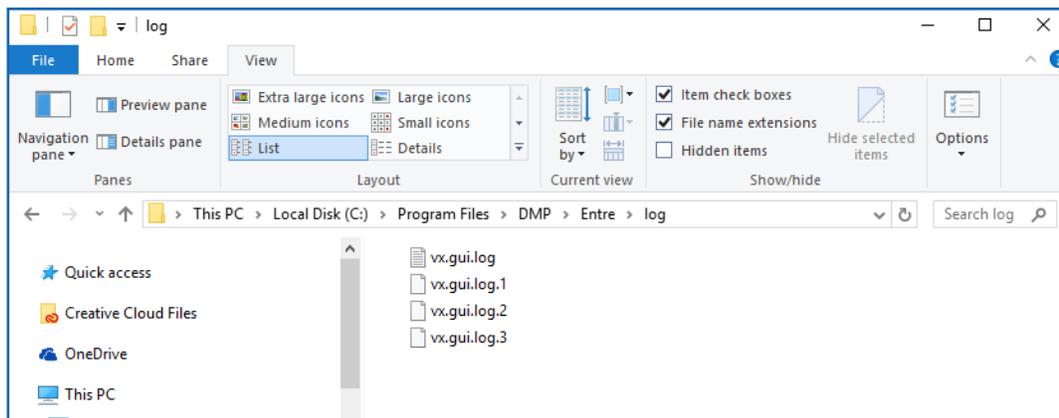
- **vx.adminapp.log -** Logs the operation of the installation or upgrade process.

- **vx.gui.log -** Details the operations of the Java based standard client or Apache Tomcat based web client software connection to the service.

- **wrapper.log -** Logs the actual Entré Application Service connection with the operating system.

- **vx.appserver.log -** Details the running operations of the Entré Application Service. This is the most useful log to certified installation technicians.

These are two examples of errors seen in *vx.appserver.log* log files. These two errors are an indication that the TCP/IP ports that the operating system uses to communicate with the SQL server are not open so Java is not able to talk to the database.

- **[2021-03-15 15:11:22,046] WARN -** SQL Error: 0, SQLState: HY000

- **[2021-03-15 15:11:22,046] ERROR -** Unable to get information from SQL Server:164.51.192.16.

- **[2021-03-15 15:11:22,046] WARN -** net.sf.hibernate.exception.GenericJDBCException:Cannot open connection net.sf.hibernate.exception.GenericJDBCException: Cannot open Connection

Note: If you do not see a *vx.appserver.log* then you know the operating system did not allow the service to be installed. Therefore, there is no service in place to make error logs.

Windows operating systems with a default configuration do not allow Microsoft SQL Server to communicate internally without making several port adjustments.

Using the ODBC Data Source Administrator Utility

You can check to see if the required ports are open for SQL to communicate with the operating system by using the Open Database Connectivity (ODBC) Data Source Administrator Utility. It is included as one of the basic windows system tools. Obtain the services of an IT professional for these advanced diagnostic procedures.

1. Select **Run** from the **Start** menu and run the command **odbcad32**.

2. Select **Add** and you are presented with a list of drivers to choose from.

3. Scroll to the bottom and select **SQL Server** from the list. Select **Finish**.

4. Enter a **Name** and **Description** and then open the **Sever** drop-down list and your computer queries the network for a list of existing SQL servers.

   > **Note:** It is important to let the tool query the network for the list of existing servers. If this list does not appear, you need to verify that the SQL Browser Service is running and set to automatically start when the SQL service starts. The SQL Browser Service is what Entré relies on to resolve the localhost machine name to the system-assigned IP address.

5. Select the computer's machine name from the list and then select **Next**.

6. Select **With SQL Server authentication using a login ID and password entered by the end user**.

7. Enter the login name and password that you entered in during the Entré installer and then select **Next**.

8. The next screens can be left at their defaults. If you have made it this far then your login and password are correct for the SQL instance that you selected and you can continue on with your connection test to see if the required internal ports are open.

9. Select the **Finish** and you will be presented with a summary of the data source connection information.

10. Select **Test Data Source** and a series of connection tests will be ran on the ports of your computer for the SQL instance.

    > **Note:** If the test is not successful, you will need to have an IT technician or SQL Database Administrator (DBA) verify that the SQL server is properly configured for remote connections via TCP/IP and the proper ports are open for the operating system being used.

Opening Firewall Ports for SQL

The "Configuring the Windows Firewall to Allow SQL Server Access Books Online" link contains the information to configure Windows Firewall for each one of the SQL Server services.

The link below will take you to a tool that Microsoft has supplied to assist you in configuring the Windows Server operating system to allow SQL to communicate internally.

‣ https://docs.microsoft.com/en-us/sql/sql-server/install/configure-the-windows-firewall-to-allow-sql-server-access?view=sql-server-ver15

④ Configure Java Settings

Entré does not have Java built in and requires users download Java 17 or an OpenJDK 17 alternative.

To set JAVA_HOME, do the following:

1. Select the **Windows Key** and search for **View Advanced System Settings**.

2. On the **Advanced** tab, select **Environment Variables**.

3. Edit JAVA_HOME to point to where the JDK software is located. For example, **C:\Program Files\Java\jdk17.0.6_10**.
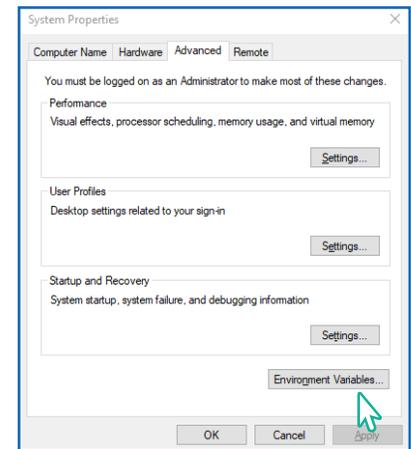
Configure and Optimize Entré Application Memory

Once Entré is installed, you will need to allocate the memory on the machine to be usable by the application. This is done by editing the **wrapper.conf** file located in the DMP\Entre\main directory.

Find the following lines:

‣ Initial Java Heap Size (in MB)
  wrapper.java.initmemory=4096

‣ Maximum Java Heap Size (in MB)
  wrapper.java.maxmemory=8192

Edit the **maxmemory** to be a value approved by the server administrator.

Example 1: If your system has less than 100GB of RAM.

The server has 64 GB of memory and is dedicated to being the Entré application server. Leave 6 GB of RAM for Windows Server OS, leaving 58 GB to be allocated in the application. Alter the line to be **wrapper.java.maxmemory=59392** (58 x 1024).
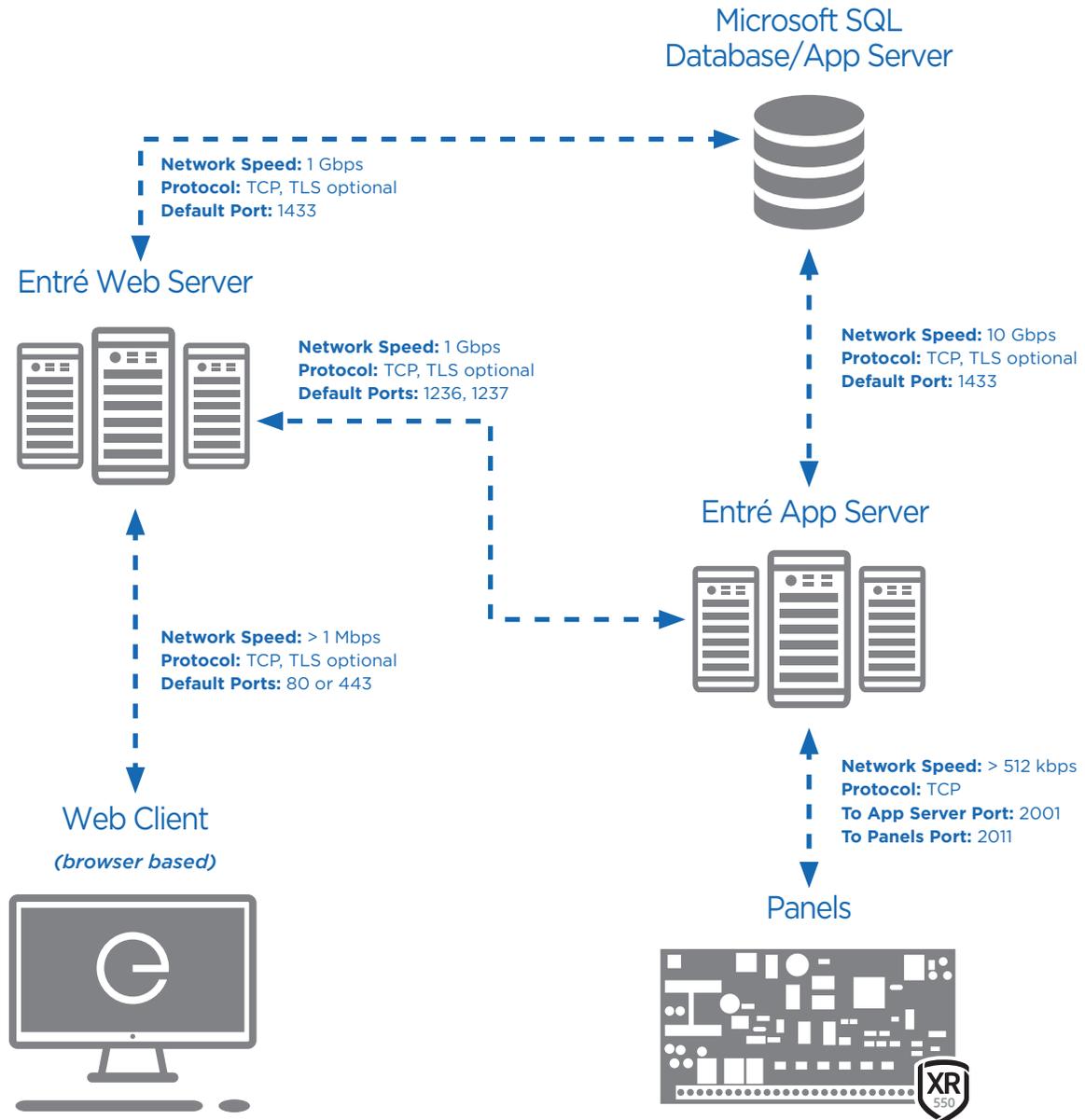
Settings to take into account:

‣ Total machine memory

‣ Is SQL on the same machine and memory already allocated to SQL per Architecture Recommendations and Microsoft Best Practices?

‣ Is Apache Tomcat on the same machine and memory allocated per Architecture Recommendations and Apache Tomcat recommended configurations?

Consider all applications in use and memory allocations before assigning final values to this file.

⑤ Review Data Flow

Web Client

Microsoft SQL
Database/App Server

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Entré Web Server

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Ports: 1236, 1237

Network Speed: 10 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Entré App Server

Network Speed: > 1 Mbps
Protocol: TCP, TLS optional
Default Ports: 80 or 443

Network Speed: > 512 kbps
Protocol: TCP
To App Server Port: 2001
To Panels Port: 2011

Web Client

(browser based)

Panels

XR
550

The Entré Web Server reads data from the Microsoft SQL Database/App Server.

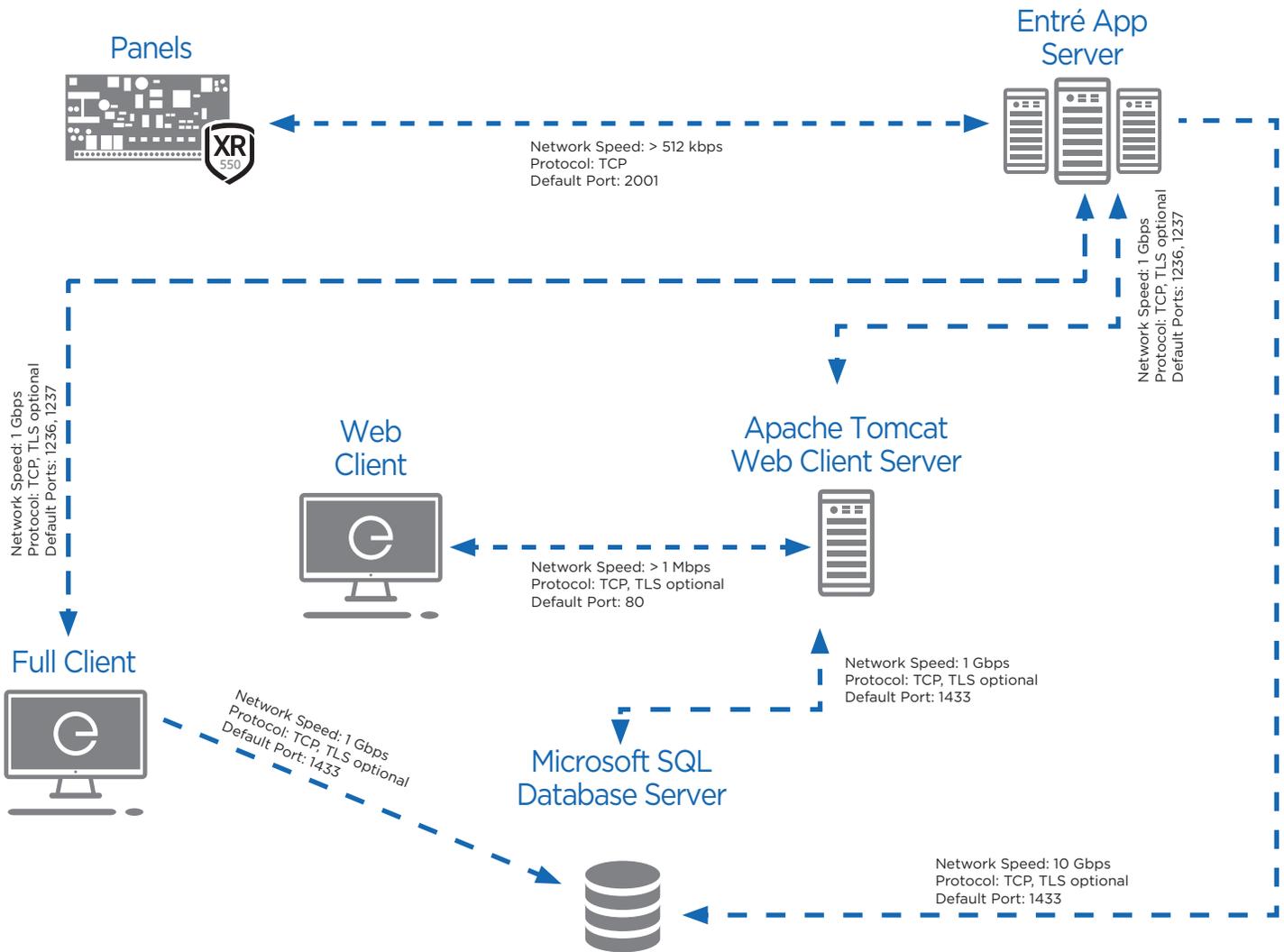**The Entré App Server notifies all Web Clients and the Entré Web Servers of the change.**

When a change is made, the Entré Web Server changes the data.

The Entré App Server pulls the change from the Microsoft SQL Database/App Server and builds an audit record.

A notification of the change is sent to the Entré App Server.

The Entré App Server sends the change to the Panels.

Admin Workstation

Microsoft SQL
Database/App Server

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Admin Workstation

Network Speed: 10 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Entré App Server

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Ports: 1236, 1237

Network Speed: > 512 kbps
Protocol: TCP
To App Server Port: 2001
To Panels Port: 2011

Panels
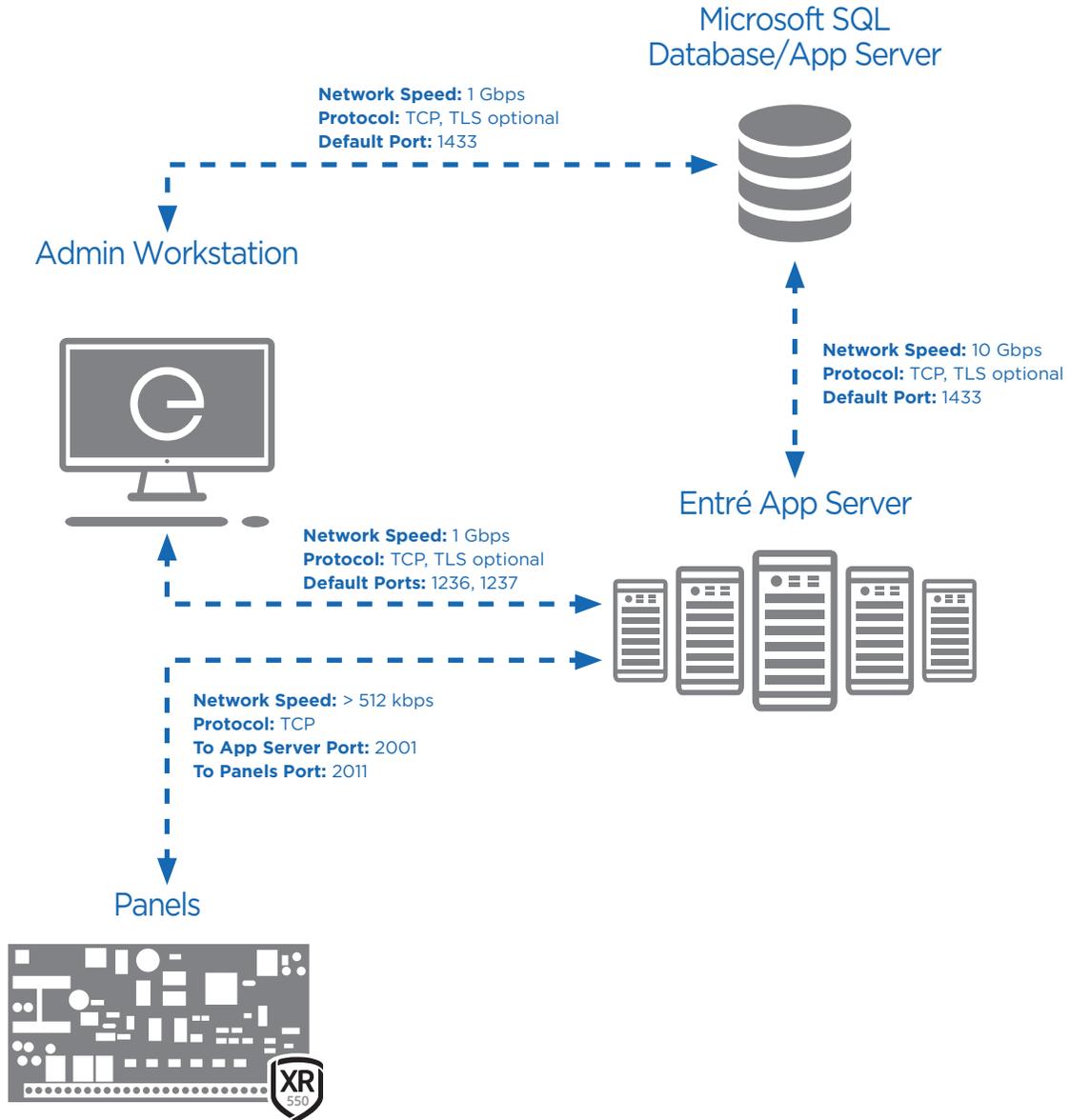
The Admin Workstation reads data from the Microsoft SQL Database/App Server.

When a change is made, the Admin Workstation changes the data.

A notification of the change is sent to the Entré App Server.

The Entré App Server notifies all workstations of the change.

The Entré App Server pulls the change from the Microsoft SQL Database/App Server and builds an audit record.

The Entré App Server sends the change to the panels.

NOC Multiple Server

Panels

Entré App
Server

Network Speed: > 512 kbps
Protocol: TCP
Default Port: 2001

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Ports: 1236, 1237

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Ports: 1236, 1237

Web
Client

Apache Tomcat
Web Client Server

Network Speed: > 1 Mbps
Protocol: TCP, TLS optional
Default Port: 80

Full Client

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Network Speed: 1 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

Microsoft SQL
Database Server

Network Speed: 10 Gbps
Protocol: TCP, TLS optional
Default Port: 1433

The Apache Tomcat Web Client Server and the Full Client read data from the Microsoft SQL Database/App Server.

When a change is made, the Apache Tomcat Web Client Server or the Full Client change the data.

A notification of the change is sent to the Entré App Server.

The Entré App Server notifies the Apache Tomcat Web Client Server and the Full Client of the change. The servers notify their respective clients of the change.

The Entré App Server pulls the change from the Microsoft SQL Database/App Server and builds an audit record.

The Entré App Server sends the change to the Panels.

Ports

‣ **2001** – The port the panel uses to send events to Entré. (Panel to Entré)

‣ **2011** – The port the panel uses to receive commands from Entré. (Entré to panel)

‣ **1433** – The Microsoft SQL database port.

‣ **443** – The Web Server port for SSL configuration.

‣ **8080** – The Web Server port for incoming and outgoing information.

‣ **1236 & 1237** – The client ports.

‣ **9090 & 9091** – Debugging ports for the app server.

Note: These ports are intended for use on the appserver machine only and should not be opened.

⑥ Review Networking Basics for Lite and Business Users

What is a Network?

A computer network is a group of interconnected computers. Networks may be classified according to a wide variety of characteristics.

Network Types

- ‣ **LAN** *(Local Area Network)* – This is a network covering a small geographic area like a home, office, or building. Current LANs are most likely to be based on wired or wireless Ethernet technology.

- ‣ **WAN** *(Wide Area Network)* – A WAN is a data communications network that covers a relatively broad geographic area (e.g. one city to another or one country to another). It often uses transmission facilities provided by common Internet service providers. WAN technologies generally function at the lower three layers of the OSI Reference Model: the physical layer, the data link layer, and the network layer.

Communication Devices

- ‣ **NIC** *(Network Interface Card)* – An installed or integrated piece of hardware that allows the computer to connect to a network.

- ‣ **Modem** – A gateway device which allows connection to a WAN. A modem typically has an internal IP address for the LAN and an external IP address so it can be identified on the WAN.

- ‣ **Switch/Router** – Switches or routers are networking devices that forward data packets between networks using headers and forwarding tables to determine the best path or recipient. These devices can be used as LAN gateways, as they can process traffic to and from a WAN. They have an IP or gateway address.

- ‣ **Hub** – Like most switches and routers, a hub contains multiple physical connection ports. Unlike a switch or router, when a packet arrives at one port, it is copied to all of the hub's ports for transmission. When the packets are copied, the destination address in the frame does not change to a broadcast address: it simply copies the data to all of the nodes connected to the hub. Hubs are not gateway devices because they do not have an IP or gateway address.

Cabling Types

- ‣ **Patch Cable** - A standard network cable designed to connect devices to each other through a hub or gateway device.

- ‣ **Crossover Cable** - A network cable that is pinned in such a way that a gateway device is generally not necessary – typically used for directly connecting two nodes to each other.

Protocols

- **TCP/IP** *(Transmission Control Protocol/Internet Protocol)* – A technology that allows network traffic to be sent to a specific device or address via communication devices, with built-in error protection. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods. Each number can be 0 to 255. For example, 1.160.10.240 could be an IP address.

- **TLS** *(Transport Layer Security)* – An encryption protocol that allows security communications to proceed over a computer network.

- **Subnet Mask** – A 32-bit number that masks an IP address and divides the IP address into a network address and host address. A subnet mask is made by setting network bits to all "1"s and setting host bits to all "0"s. Within a given network, two host addresses are reserved for special purposes. The "0" address is assigned to a network address and "255" is assigned to a broadcast address. They cannot be assigned to a host.

- **UDP** *(User Datagram Protocol)* – A technology that broadcasts network traffic to all devices on the network under the assumption that the device in which the message was intended is connected without error protection.

Firewalls

- **Software Firewall** – A software firewall is installed on a PC and is designed to prevent unauthorized access. It prevents Internet traffic from entering or exiting that machine without the authorization of the administrator.

- **Hardware Firewall** – A hardware firewall is usually installed at the server or network level. It polices all incoming and outgoing traffic on a network by limiting access to ports or various PCs.

INSTALL ENTRÉ *(VERSION 9.8.5 OR NEWER)*

Open the Software

Contact your DMP representative or DMP Technical Support for access to the Entré software.

Before Upgrading from Entre 9.8.4 or Older to Entre 9.8.5 or Newer

To install and upgrade Entré to firmware Version 9.8.5 or newer, complete the following:

1. Backup the following files:

   ‣ Entré SQL Database

   ‣ license.properties

   ‣ wrapper.conf

   ‣ hibernate.properties (optional)

2. Uninstall Version 9.8.4

   ‣ Refer to Uninstall Entré to learn how to uninstall the Entré Software.

3. Install Version 9.8.5

Follow the Installer Prompts

1 Open the Entré installer file.

Entre Installer

2 Select **Next** when the welcome screen displays.
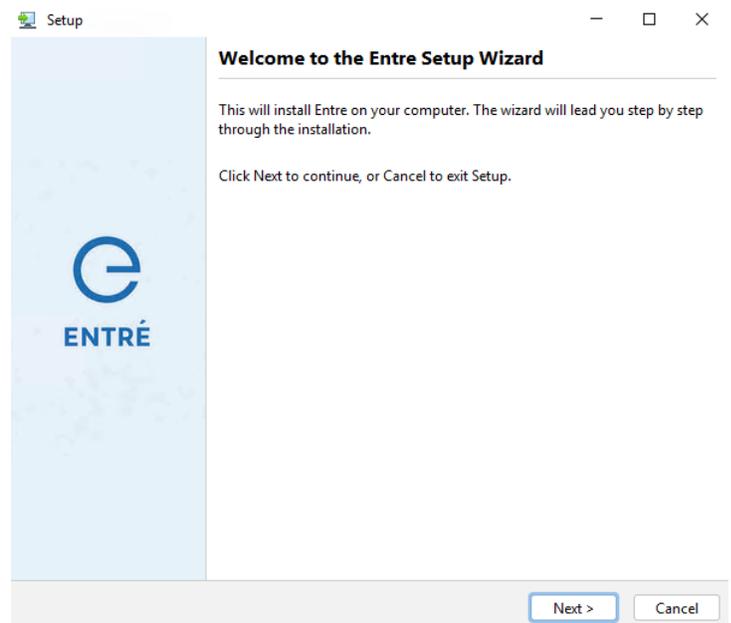
3 Select a destination for Entré to be installed. If you wish to install in a different location, select **Browse...** to open a **Select Directory** dialog box and select the desired location. Otherwise, Entré is installed in the default location.

Select **Next**.

4 Select the components you want to install. Select **Entre Desktop Client Only** to install the Entré client. Select **Entre Server with Administration Tools** to install the appserver and core Entré files.

Select **Next**.
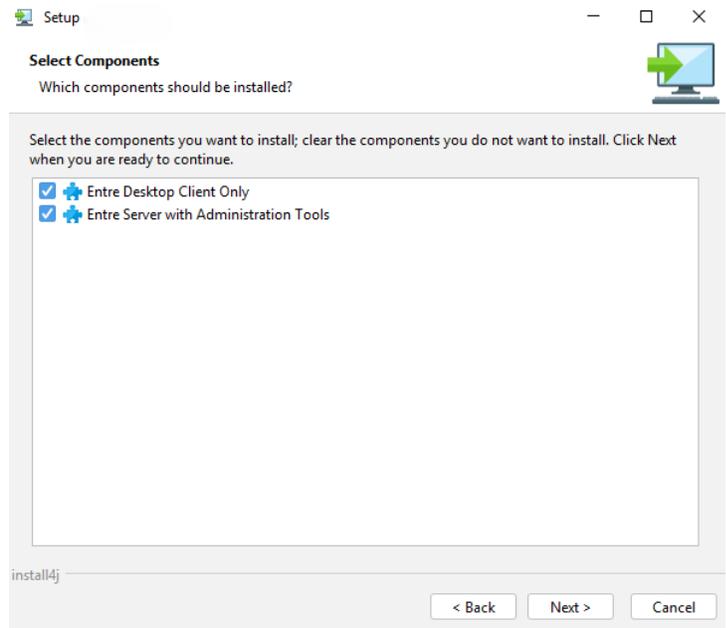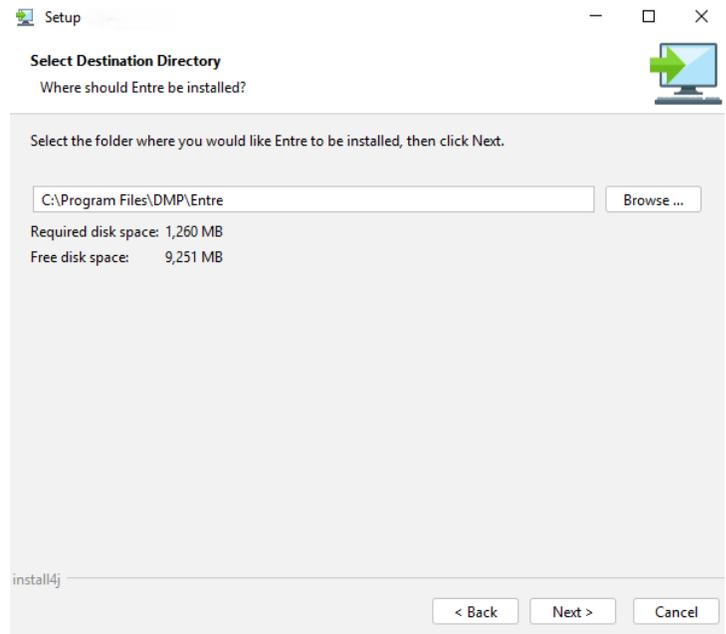
5 Select the **Browse...** button in Existing License and Existing hibernate.properties file and select an **Existing License File** to be copied in.

Select **Next**.

📝 **Note:** Not entering an existing license will load the default license file. Not entering an existing hibernate file will load a new hibernate file with settings from the next screen.

Setup — □ ✕

Entre Configuration
Custom License and hibernate settings

Existing License
Use the file browse button to locate an existing Entre License file. The license will be copied to the Entre installation folder and used to create or upgrade the Entre Database.
Existing License File

[   ] [Browse ...]

For a new installation the default license will be loaded. Leave the license file blank and select Next to continue.

Existing hibernate.properties file
Use the file browse button to locate an existing Hibernate properties file. The Hibernate file will be copied to the Entre installation folder and used to create or upgrade the Entre Database.
Existing License File

[   ] [Browse ...]

Leave this field blank to create a new hibernate.properties file on the next screen.

install4j   [< Back] [Next >] [Cancel]

6 Enter the **Entré Serial Number** and **Database Configuration**.

a. Only select **Upgrade an existing Database** if you are upgrading an existing Entré database. When left unselected, it creates a new database.

📝 **Note:** If you have an existing database, leaving this option unchecked overwrites your existing database.
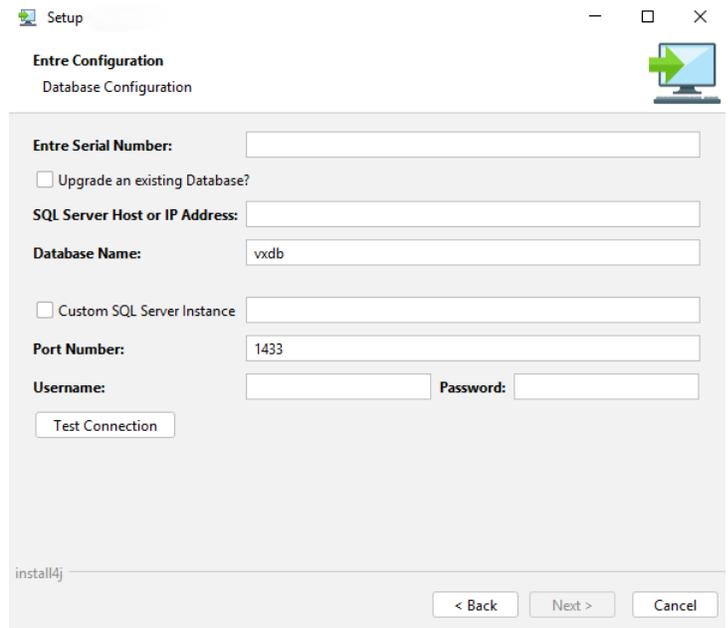
b. Select **Test Connection** to verify the database configuration is correct before proceeding.

c. Select **Next** when there is a successful test connection.

Setup — □ ✕

Entre Configuration
Database Configuration

Entre Serial Number: [   ]
☐ Upgrade an existing Database?
SQL Server Host or IP Address: [   ]
Database Name: [vxdb   ]

☐ Custom SQL Server Instance [   ]
Port Number: [1433   ]
Username: [   ] Password: [   ]
[Test Connection]

install4j   [< Back] [Next >] [Cancel]

7 Configure the TLS Settings.

a. Enter the Keystore file location and Keystore file name, or select the button on the right to open the Keystore file.

b. Enter the TrustStore file location and TrustStore file name, or select the button on the right to open the TrustStore file.

c. Select **Use Windows Authentication** if you are using Windows Authentication between Entre Application Server and SQL Server.

d. Select **Next**.

📝 **Note:** Client only installs do not display the **Use Windows Authentication** option.

📝 **Note:** When **Use Windows Authentication** is selected, the following should be changed to include integratedSecurity=true; in the hibernate.properties file:

‣ hibernate.connection. url=jdbc:sqlserver://

   <dbhostname>:<dbhostport>; databaseName=<database>; integratedSecurity=true;

SQL Server logins will need to be set up for any account that will hit the database through Entré.

a. If the database and service are running on the same machine, the following login will need to be set up in SQL Server: **NT AUTHORITY\SYSTEM**.

b. If the service is running on a separate server, the service user will be similar to **<domain>/<servername>$**

c. If the customer is using Tomcat, the service account that Tomcat is running as will need to be added to SQL Server.

d. If the customer is using the thick client, each individual user will need to be set up in the SQL Server database.

📝 **Note:** The minimum SQL user permissions required for Entré to function are **Connect**, **Delete**, **Execute**, **Insert**, **Select**, and **Update**. When initially creating the database, the account must have the 'dbcreator' Server Role. This role can be removed after the database is imported.

If Tomcat is being used, it will need to be configured appropriately.

a. If running from a command line, a file named **setenv.bat** will need to be created in **<CATALINA_HOME>/bin**. The following line will need to be added

‣ set **CATALINA_OPTS=%CATALINA_OPTS% -Djava.library.path="%CATALINA_HOME%\webapps\dmp\WEB-INF\bin"**

b. If Tomcat is being ran as a service, run **<CATALINA_HOME>/bin/tomcat10w.exe** and set the **java.library.path** as follows:

‣ **Djava.library.path="CATALINA_HOME>\webapps\dmp\WEB-INF\bin"** where **<CATALINA_HOME>** is replaced with the path to the Tomcat installation directory.
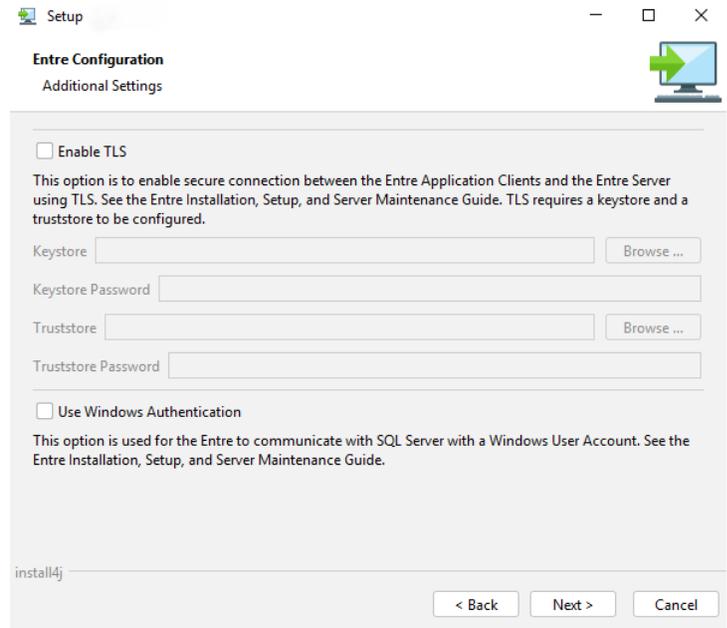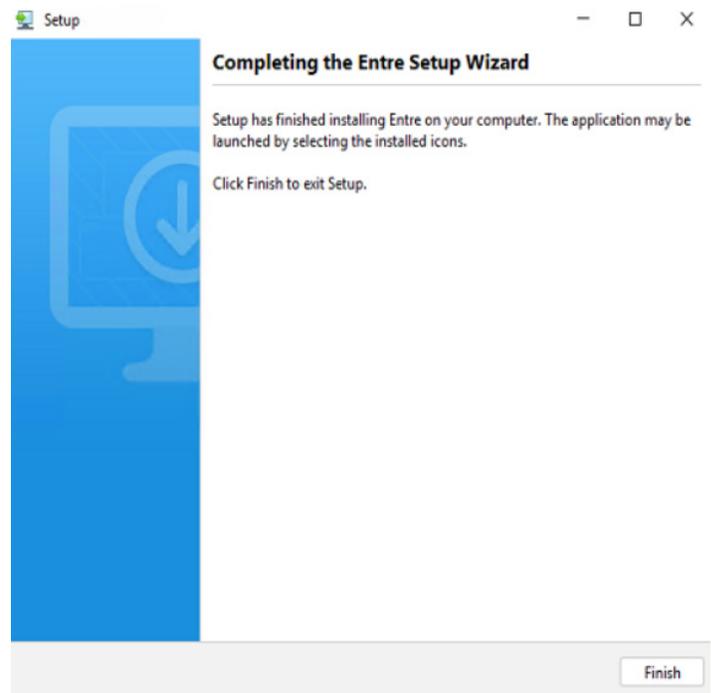
8 Please wait while Entré is installed.
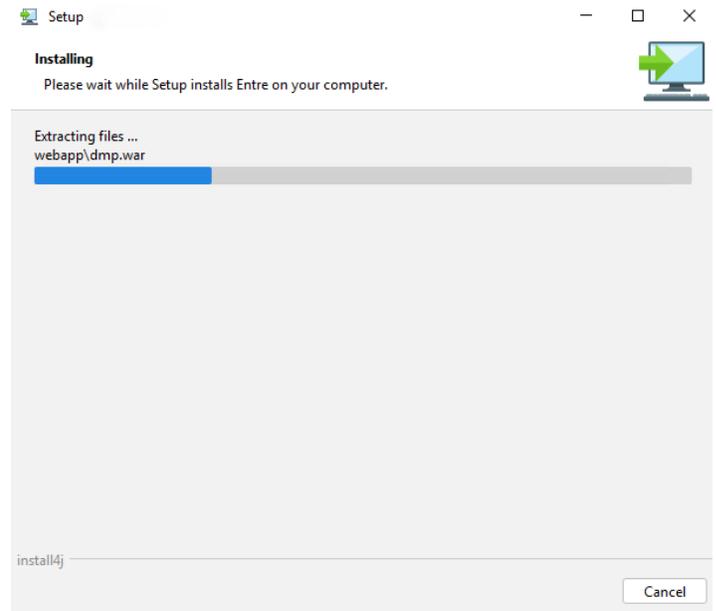
9 When the installation is complete, a **Completing the Entre Setup Wizard** dialog box displays.
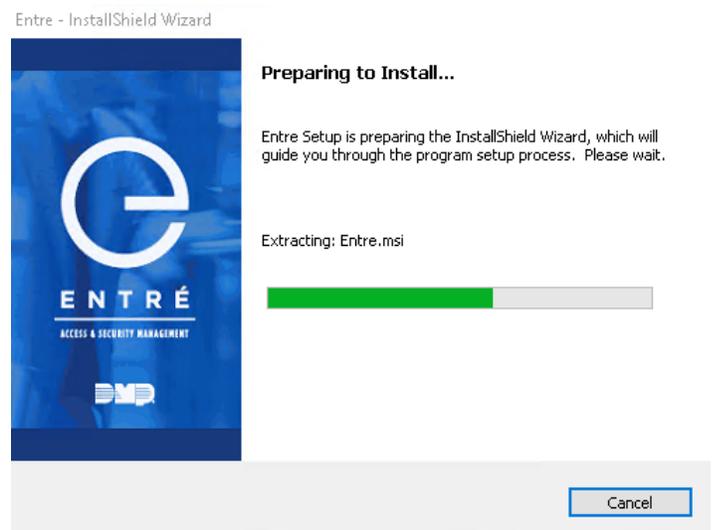
Select **Finish**.

INSTALL ENTRÉ *(PRIOR TO VERSION 9.8.5)*
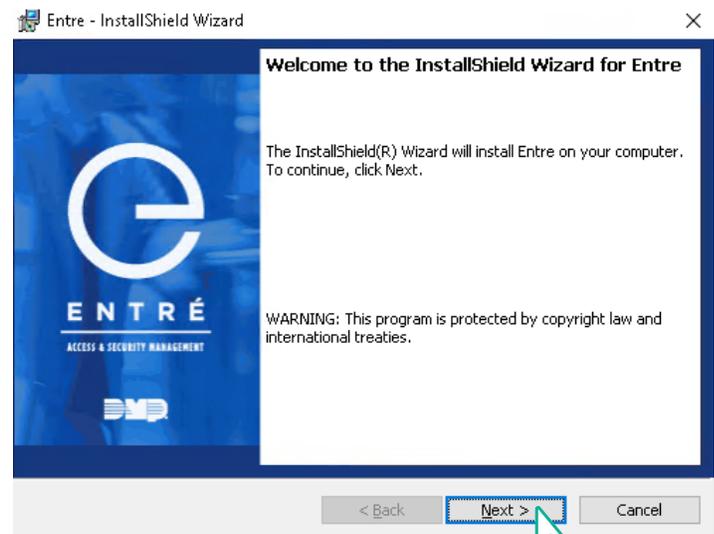
Open the Software

Contact your DMP representative or DMP Technical Support for access to the Entré software.

Follow the Installer Prompts
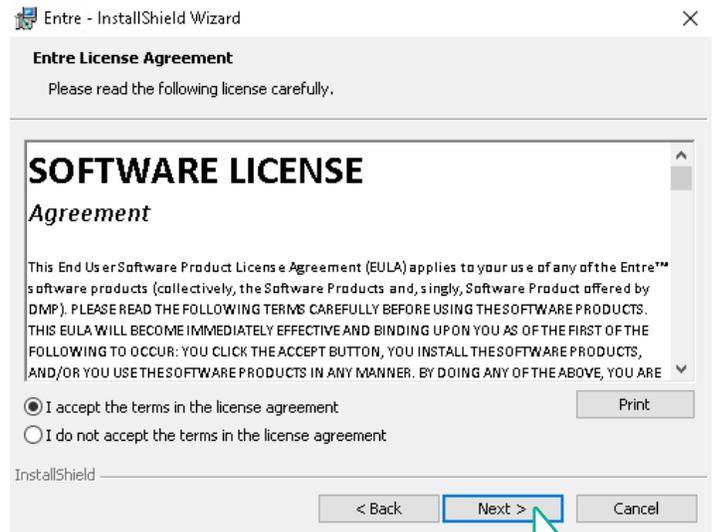
① Open the Entré installer file.
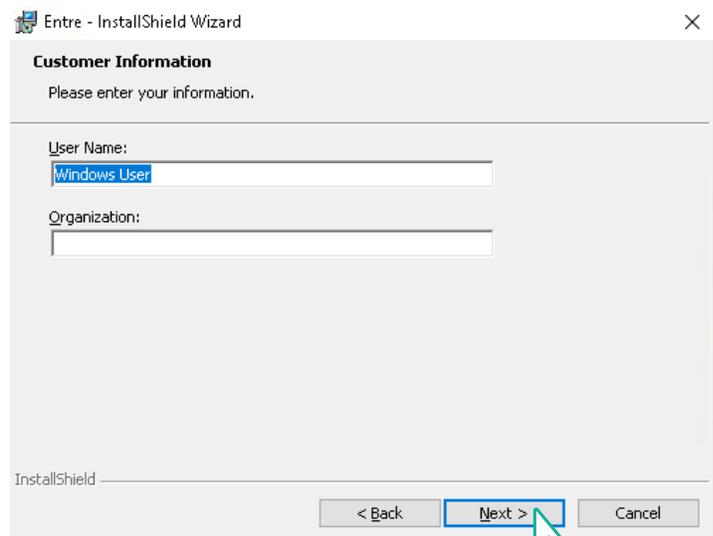
② Select **Next** when the welcome screen displays.

3 Read and accept the terms in the Software License Agreement.

Select **Next**.

Entre - InstallShield Wizard ✕

Entre License Agreement
Please read the following license carefully.

SOFTWARE LICENSE
Agreement

This End User Software Product License Agreement (EULA) applies to your use of any of the Entre™ software products (collectively, the Software Products and, singly, Software Product offered by DMP). PLEASE READ THE FOLLOWING TERMS CAREFULLY BEFORE USING THE SOFTWARE PRODUCTS. THIS EULA WILL BECOME IMMEDIATELY EFFECTIVE AND BINDING UPON YOU AS OF THE FIRST OF THE FOLLOWING TO OCCUR: YOU CLICK THE ACCEPT BUTTON, YOU INSTALL THE SOFTWARE PRODUCTS, AND/OR YOU USE THE SOFTWARE PRODUCTS IN ANY MANNER. BY DOING ANY OF THE ABOVE, YOU ARE

⦿ I accept the terms in the license agreement   Print
◯ I do not accept the terms in the license agreement

InstallShield
                              < Back   **Next >**   Cancel

4 Enter your **User Name** and **Organization** in Customer Information. This information may be automatically filled out based on your computer's existing information.

Select **Next**.

Entre - InstallShield Wizard ✕

Customer Information
Please enter your information.

User Name:
Windows User

Organization:

InstallShield
                              < Back   **Next >**   Cancel

5 Choose **New** or **Upgrade**.

‣ Select **New** if installing Entré for the first time.
‣ Select **Upgrade** if upgrading an existing version of Entré.

Select **Next**.

Entre - Choose New or Upgrade ✕

New or Upgrade
Choose to upgrade an existing Entre or install as New.

Please select New or Upgrade.

⦿ **New**
Entre will be installed as a new program.

◯ **Upgrade**
The existing Entre will be backed up include configuration details, then replaced with the new version. After installation, configuration details will be restored to the new version.

InstallShield
                              < Back   **Next >**   Cancel

⑥ Choose a **Setup Type**.

Complete

    a.   Select **Complete** to install all available Entré features to the specified directory.

    b.   Select **Next**.

    c.   Skip to step **⑦**.

Client

    a.   Select **Client** to only install the Entré client.
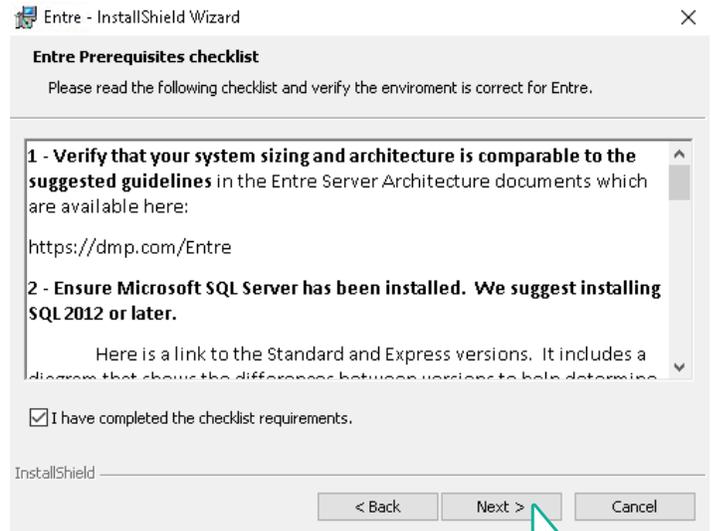
    b.   Select **Next**.

    c.   Skip to step **⑦**.

Custom

    a.   Select **Custom** to customize program features and where they are installed. Use this option if you would like to install a client workstation by itself.

    b.   Select **Next**.

    c.   Open the **Core Files** drop-down menu and select **This feature will be installed on local hard drive.** The **Core Files** feature is required for all installations.

    d.   Open the **Entré Client** drop-down menu. If you are installing a client workstation, select **This feature will be installed on local hard drive**. If you are not installing a client workstation, select **This feature will not be available**.

    e.   Open the **Entré Server** drop-down menu. If you are installing a server, select **This feature will be installed on local hard drive**. If you are not installing a server, select **This feature will not be available**.
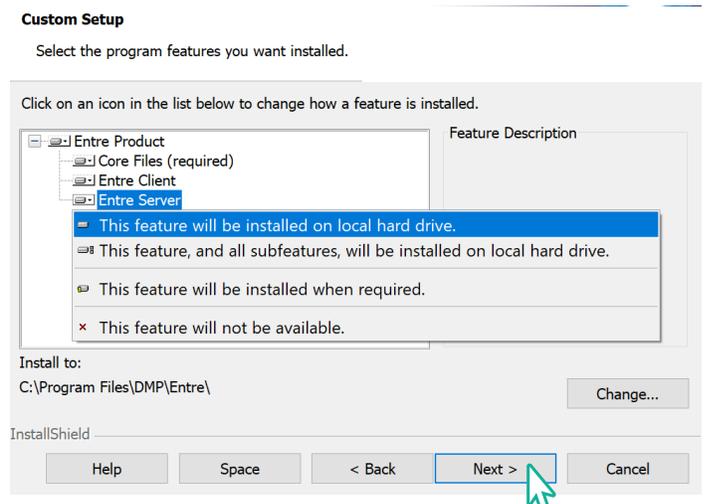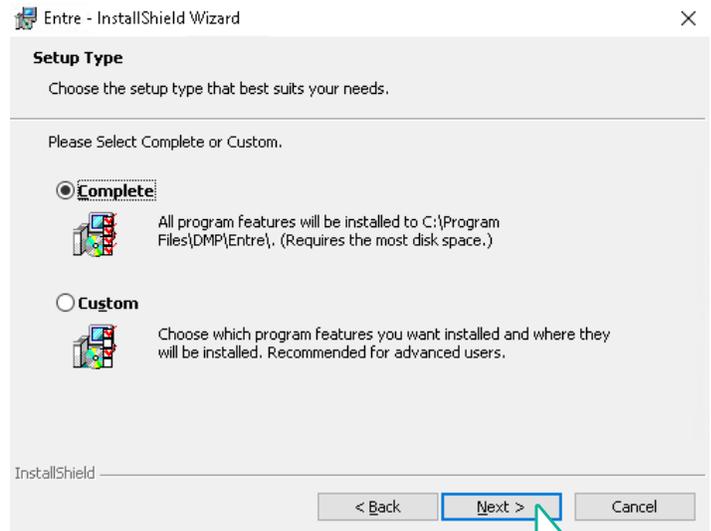
    f.   Select **Next**.

7 Review the **Entré Prerequisites Checklist**.

    a.   Read the checklist and verify that the environment is correct for Entré.

    b.   Select that you have completed the checklist requirements.

    c.   Select **Next**.

8 Enter the Serial Number and Database Settings.

    a.   Enter the Entré Serial Number.

    b.   Select if this is upgrading the current version or creating a new database.

    c.   Enter the database settings.

    d.   Select **Next**.
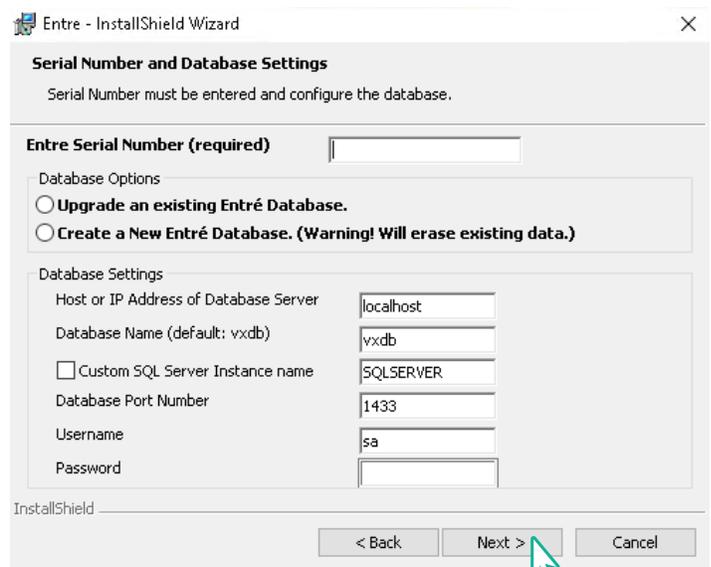
9 Select **Use Windows Authentication** if you are using Windows Authentication between Entre Application Server and SQL Server.

When **Use Windows Authentication** is selected, the following should be changed to include integratedSecurity=true; in the **hibernate.properties** file:

    ‣   hibernate.connection. url=jdbc:sqlserver:// <dbhostname>:<dbhostport>; databaseName=<database>; integratedSecurity=true;
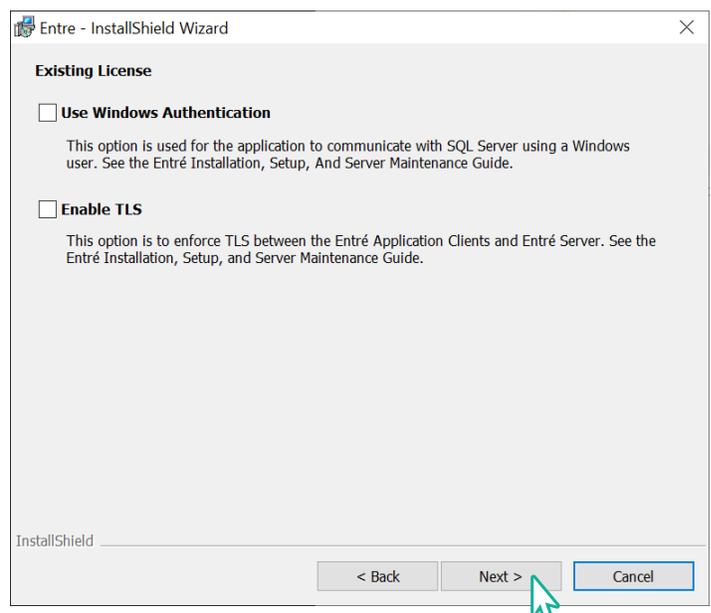
SQL Server logins need to be set up for any account that hits the database through Entré.

a. If the database and service are running on the same machine, the following login needs to be set up in SQL Server: **NT AUTHORITY\SYSTEM**.

b. If the service is running on a separate server, the service user is similar to **<domain>/<servername>$**

c. If the customer is using Tomcat, the service account that Tomcat is running as needs to be added to SQL Server.

d. If the customer is using the thick client, each individual user needs to be set up in the SQL Server database.

> 📝 **Note:** The minimum SQL user permissions required for Entré to function are **Connect**, **Delete**, **Execute**, **Insert**, **Select**, and **Update**. When initially creating the database, the account must have the 'dbcreator' Server Role. This role can be removed after the database is imported.

If Tomcat is being used, it will need to be configured appropriately.

a. If running from a command line, a file named **setenv.bat** needs to be created in **<CATALINA_HOME>/bin**. The following line will need to be added

  ‣ set **CATALINA_OPTS=%CATALINA_OPTS% -Djava.library.path="%CATALINA_HOME%\webapps\dmp\WEB-INF\bin"**

b. If Tomcat is being ran as a service, run **<CATALINA_HOME>/bin/tomcat10w.exe** and set the **java.library.path** as follows:

  ‣ **Djava.library.path="CATALINA_HOME>\webapps\dmp\WEB-INF\bin"** where **<CATALINA_HOME>** is replaced with the path to the Tomcat installation directory.

(10) Configure the TLS Settings.

a. Enter the Keystore file location and Keystore file name, or select the button on the right to open the Keystore file.

b. Enter the TrustStore file location and TrustStore file name, or select the button on the right to open the TrustStore file.

c. Select **Next**.
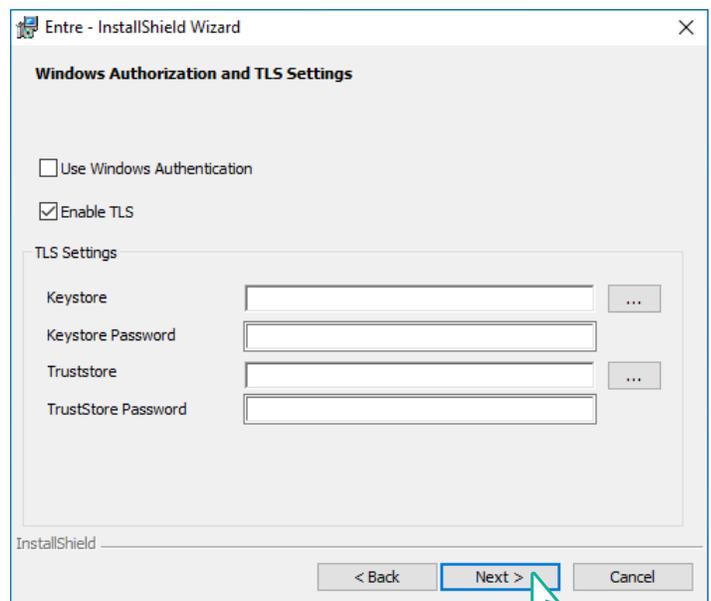
(11) Select **Install**.

12 If you've chosen to upgrade an existing instance of Entré, you'll see the following screens while the database is updating. Wait until the **InstallShield Wizard Complete** screen displays.
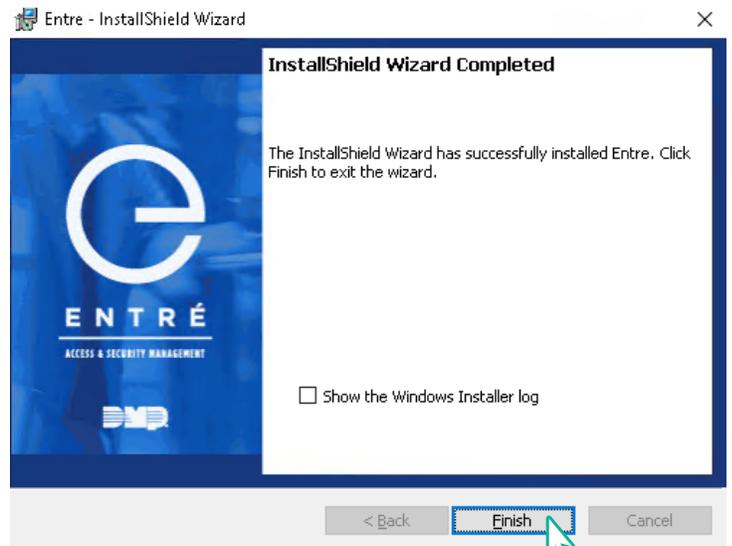

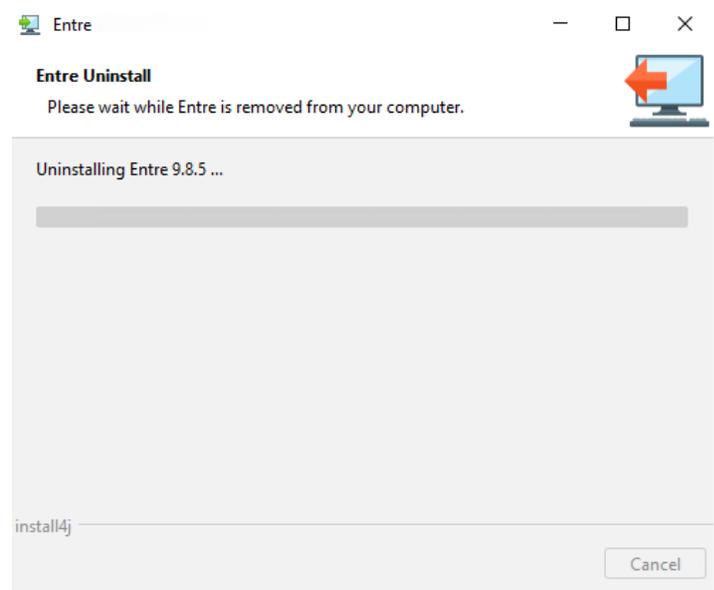**13** When the installation is complete, the following screen displays. Select **Finish**.
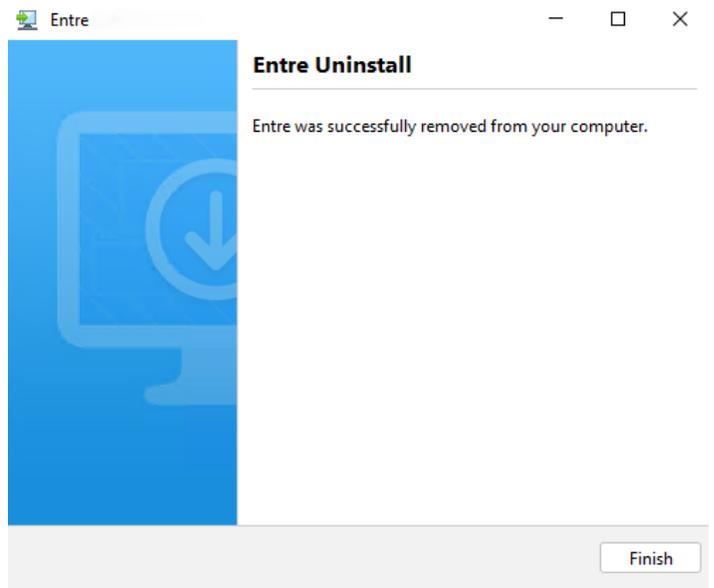
UNINSTALL ENTRÉ *(VERSION 9.8.5 OR NEWER)*

①　In the Entré folder, select the **uninstall** application.

②　If prompted with "Do you want to allow this app to make changes to your device?", select **Yes**.

③　Select **Next**.
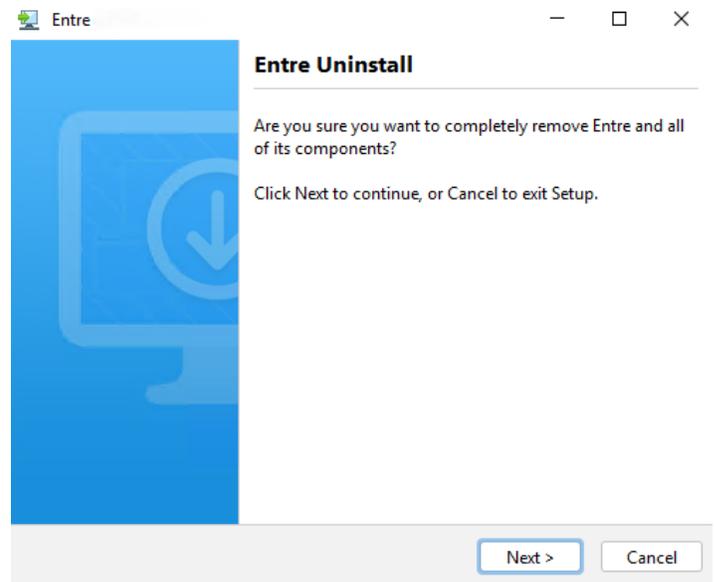
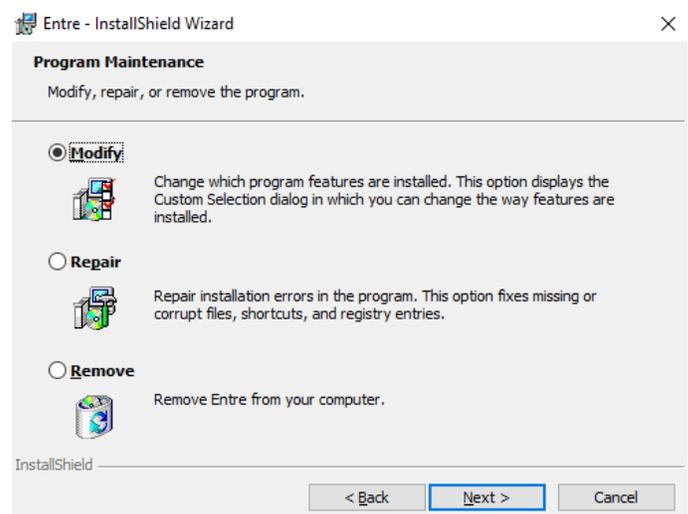④　Wait while Entré is being uninstalled.
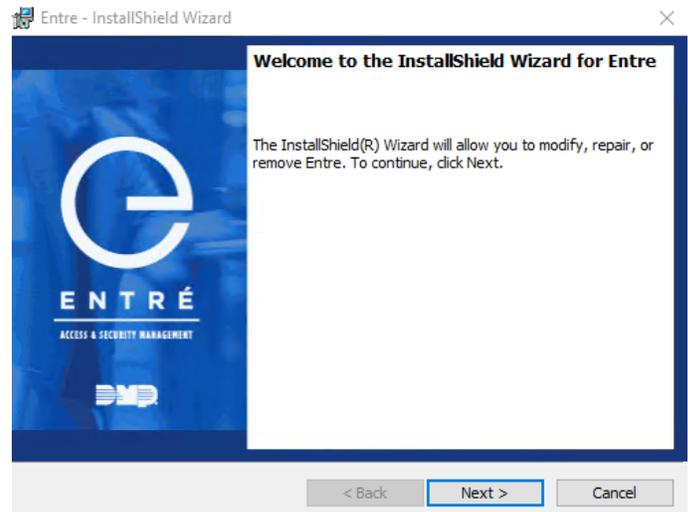
5 Select **Finish**.
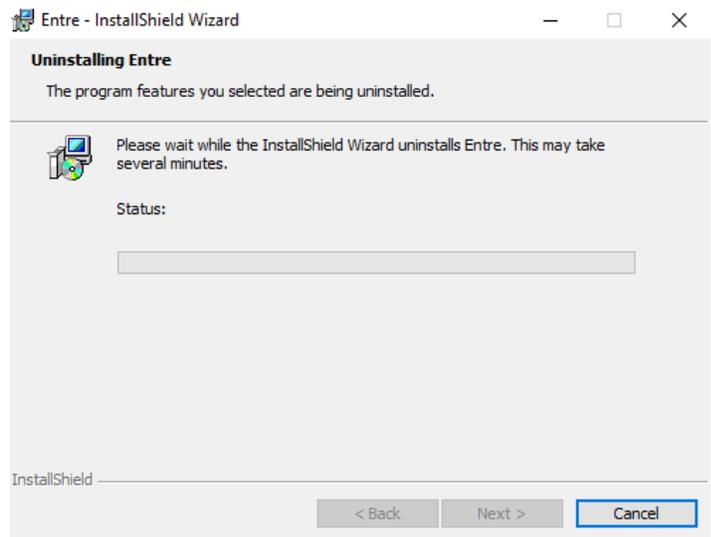
UNINSTALL ENTRÉ *(PRIOR TO VERSION 9.8.5)*

Note: If uninstalling Entré with the intention to install Entré 9.8.5, ensure that your Entré database is backed up before uninstalling Entré.

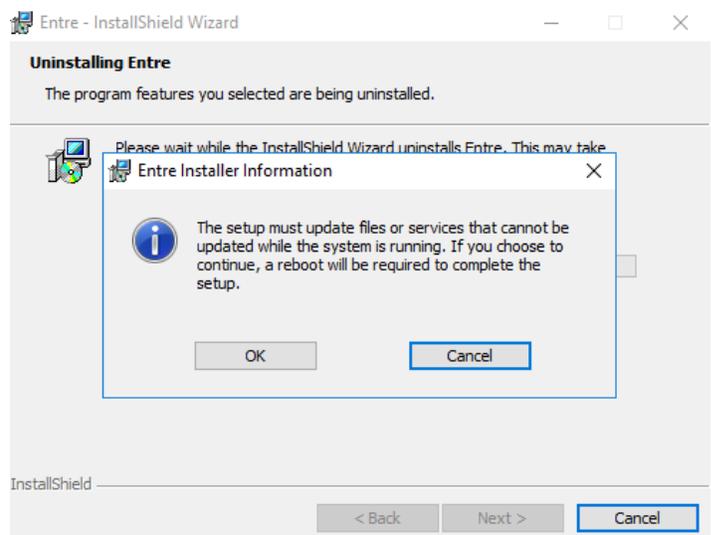## Method 1: Follow the Installer Prompts

1   Open the Entré installer file.

2   Select **Next** when the welcome screen displays.

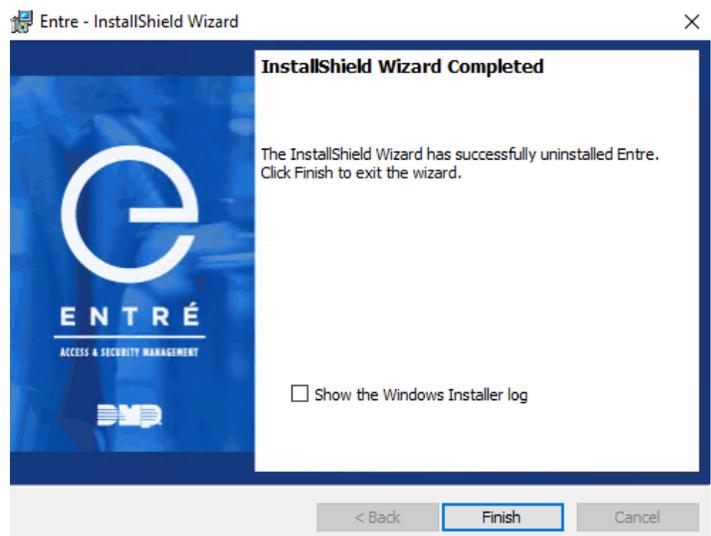**3**   Select **Remove**.

Select **Next**.

4 Select **Remove**.

5 Select **OK** and wait while Entré is being uninstalled.

6 Select **Finish**.

Method 2: Windows Settings - Windows 10

1 Select the **Start** button on your taskbar, then choose **Settings**, or press **Windows + I** on your keyboard to open **Windows Settings**.

2 Go to **System > Apps & Features** (on some Windows versions, this may appear as **Apps**).

3 In the list of installed programs, find **Entré**.

4 Select **Entré**, then select **Uninstall**. Select **Uninstall**.

  ‣ If prompted with "Do you want to allow this app to make changes to your device?", select **Yes**.

5 Select **OK** and wait while Entré is uninstalled.

  For further help on uninstalling software in Windows, visit [Microsoft Support: Uninstall or remove apps and programs in Windows](#).

Method 3: Windows Settings - Windows 11

1 Select the **Start** button on your taskbar, then choose **Settings**, or press **Windows + I** on your keyboard to open **Windows Settings**.

2 Go to **Apps > Installed Apps**.

3 In the list of installed programs, find **Entré**.

4 Select the More icon (...) to the far right of the row, then select **Uninstall**.

  ‣ If prompted with "Do you want to allow this app to make changes to your device?", select **Yes**.

5 Select **OK** and wait while Entré is uninstalled.

  For further help on uninstalling software in Windows, visit [Microsoft Support: Uninstall or remove apps and programs in Windows](#).

CONFIGURE APACHE TOMCAT SOFTWARE

Deploy the Entré War File on the Apache Tomcat Server

You must have Apache Tomcat software installed prior to deploying this file.

1. Stop the Apache Tomcat Service on the host machine.

2. Copy the dmp.war file from **C:\Program Files\DMP\Entre\webapps\dmp.war**.

3. Paste the dmp.war file into the **C:\Program Files\Apache Software Foundation\TomcatX.X\webapps** folder (where **X.X** represents the version number).

4. Start the Apache Tomcat Service on the host machine.

5. Open your web browser and use the following URL to access your client: **http://ipaddress:port/dmp/entre**

Configure TLS for Entré Web Client Communication to Entré App Server

1. Run **C:\Program Files\Apache Software Foundation\Tomcat 10.1\bin\Tomcat10w.exe** to configure the Apache Tomcat Server.

   The Dvx hostname should be the address of the App Server.

2. Add these settings as new lines in the **Java Options** section. Check how much RAM your computer has, then use the formulas below to calculate the RAM Configuration value to insert.

📝 **Note:** If your **Java Options** contains Xmn, remove and do not configure with Xmn.

For machines with 8G to 12G:
Amount of RAM installed - 4G = RAM Configuration

For machines with 12G or more:
Amount of RAM Installed - 8G = RAM Configuration

Lines to insert into Java Options:

‣ **-XX:+UseZGC**
‣ **-Xms<Insert RAM Configuration>G**
‣ **-Xmx<Insert RAM Configuration>G**
‣ **-XX:-CreateMinidumpOnCrash**

Example 1: If your machine has 8G of RAM Installed.
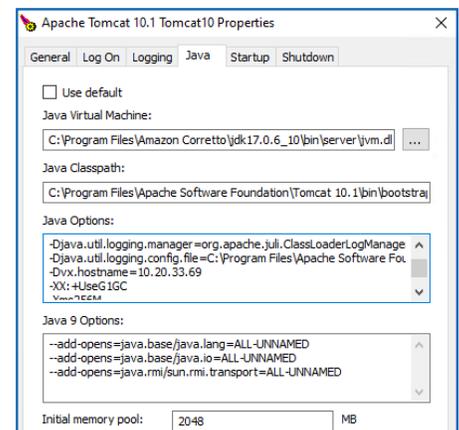
8 - 4 = 4
‣ **-XX:+UseZGC**
‣ **-Xms4G**
‣ **-Xmx4G**

Example 2: If your machine has 16G of RAM Installed.

16 - 8 = 8
‣ **-XX:+UseZGC**
‣ **-Xms8G**
‣ **-Xmx8G**

3. If the Apache Server is running on a separate machine from the Entré Application server, add the following setting. This allows the machines to communicate with one another.

‣ **-Dvx.hostname=<your hostname or IP Address>**

Configure TLS for the Apache Tomcat Server

1. Add these settings as new lines in the **Java Options** section.

   ‣ **-Dvx.useSSL=true**

   ‣ **-Dvx.entreProperties=C:\Program Files\TLSfiles\entre.properties**

   ‣ **-Djavax.net.ssl.keyStore=C:\Program Files\TLSfiles\Key.jks**

   ‣ **-Djavax.net.ssl.trustStore=C:\Program Files\TLSfiles\Trust.jks**

Configure the Memory Tools

1. Set the **Initial memory pool** to at least 25% of machine memory.

2. Set the **Maximum memory pool** to around 80% of machine memory.

Update Apache Tomcat dmp.war File

1. Stop the Apache Tomcat Server on the host machine.

2. Delete these directories:

   ‣ **C:\Program Files\Apache Software Foundation\Tomcat 10\webapps\dmp**

   ‣ **C:\Program Files\Apache Software Foundation\Tomcat 10\work\Catalina\localhost\dmp**

3. Delete the old **dmp.war** file in **C:\Program Files\Apache Software Foundation\Tomcat 10\webapps**.

4. Copy the new **dmp.war** file from **C:\Program Files\DMP\Entre\webapps\dmp.war**.

5. Paste the new **dmp.war** file into **C:\Program Files\Apache Software Foundation\Tomcat 10\webapps**.

6. Start the Apache Tomcat Service on the host machine.

7. Open your web browser to log in and verify operation of the updated **.war** file.
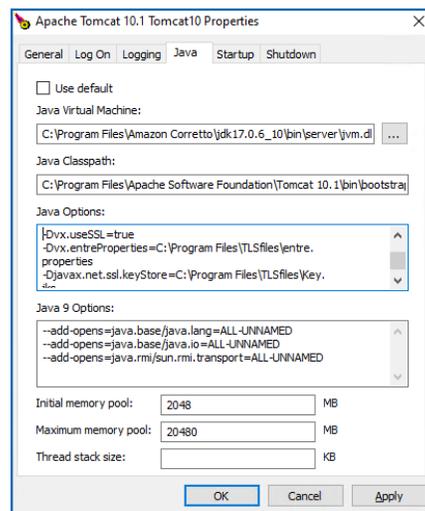
License the Software

Once you have installed and configured Entré and finalized your add-on modules and client license requirements, it is time to license your software. Any future add-on modules or client license additions will require a new license to be generated.

Before you continue, verify that you have accounted for the number of doors, number of clients, add-on modules (such as badge design, image capture, signature capture), and total number of client licenses that will be required. Then, go to the Entré Licensing website listed below:

‣ **DMP.com/license-entre**

Enter the information requested and submit the license request. DMP Customer Service will validate your request against the order you submitted. Your license will be generated and e-mailed to you.

Note: If you request a module on your license that is not on the order submitted through customer service, a customer service representative will attempt to contact you using the phone number listed on the form.

After you receive your new license, you will have to unzip the license, apply the license, update the database, and make sure it works. Follow the instructions that come with the license to ensure that it is installed properly.

1. From the server machine, exit the Entré Client and shut down the Entré Application Service manually within Windows.
2. Rename the default license file named *vx.license.properties* located in the C:\Program Files\DMP\Entré directory to *vx.license.properties.bak*.
3. Unzip and then copy the new license file into that directory.
4. Restart the Entré Application Service and start Entré.
5. Verify that your purchased modules and client licenses are functional.

Note: Modules that are licensed on a per-seat basis will have to be assigned to the workstation through the software licenses workstations menu.

Generate Server Fingerprint for License

1. On the Entré server, navigate to the **Entré** folder.
2. Right-click on the **Entré-Admin.exe** application and select **Run as admin**.
3. Select **Fingerprint Generator**.
4. Select **OK**.
5. Select **OK**.
6. In your **Entré** folder, there will now be a file named *fingerprint.txt*.