Installation Guide

RED Systems Management

Version 8.1.1
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This chapter includes an overview of what RED Systems Management's goals are, knowledge that users are assumed to have, some background information on RED Systems Management's multi-threaded nature and performance information, and a background on the nature of how groups and actions work in Windows.

Also in this chapter you can find directions to the License Agreement and a copy of the limited warranty agreement that come with the software.

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1.1 OVERVIEW

Welcome to Lieberman RED Systems Management. If you have purchased the product, read on to discover all the features at your disposal. If you are just evaluating the product, we hope you will be very pleased with its capabilities.

If you are familiar with NT’s User Manager or User Manager for Domains, Computer Management in Windows 2000 and later, or Active Directory, you will find Lieberman RED Systems Management's user and group management features very familiar. However, instead of making changes to only one machine or domain controller, you can control thousands of machines with a single mouse click - with all of the results logged to a human readable text file.

But user and group management is only the beginning. With rights and auditing changes, advanced registry editing, reporting, remote reboot, automatic deferred retry, Wake on LAN, IP Scanning, and many other features, RED Systems Management is one of the most advanced and functional high-performance administration tools you can use.
If you have ever bothered with PERL, VB or Kixtart scripts to control the configuration of your Windows users, groups, rights, registry or policies on your workstations, you will be exceptionally happy with the speed, ease of use, and power that this tool gives you.

1.2 PREREQUISITE KNOWLEDGE

Before we begin, we assume that you are already an experienced Administrator for Microsoft Windows. You should be familiar with basic networking, managing users and groups, and typical administration tasks. More advanced operations may require more specialized knowledge. RED Systems Management is designed to make administration tasks quick and easy for the skilled administrator; not to teach administration. If you have problems or need assistance in the installation and operation of this product, you can contact us for assistance - we want your installation and operation to be a smooth and successful experience.

If you plan on using a Microsoft SQL Server installation to store the reporting data for reports generated in RED Systems Management, we recommend that you be familiar with the administrative concerns that go along with updating and maintaining an instance of SQL Server (or have a database administrator that is familiar with these issues). Topics that you should be aware of include: Securing the database, creating access roles to allow access to your users, patching the database and keeping up to date with updates, backing up/or and auditing the database to ensure you don't lose your stored data.

You can keep up to date on the latest upgrades via our web site at http://www.liebsoft.com, or you can email us at: support@liebsoft.com.

1.3 PERFORMANCE NOTES

Most operations take about one second per system or less. Operations on large groups of systems are processed in parallel so you will see many operations completing simultaneously.

RED Systems Management is a multi-threaded management system (by default RED Systems Management will use up to 100 worker threads). The software will automatically exploit all available processors to enhance the performance of the program.

RED Systems Management operations utilize only moderate network bandwidth, and do not exceed the bandwidth requirements of comparable operations using built-in Windows tools.

When operating over a WAN (Wide Area Network), you will see some degradation in overall completion times due to packet transmission delays. Because of RED Systems Management's multi-threaded operation, communication with many systems will be happening concurrently, so network delays will not be cumulative.
If you chose to cancel multi-threaded operations in **RED Systems Management**, you must wait for all running threads to complete or time-out before performing another operation. There is almost always an on screen indicator that shows that current number of active threads.

### 1.4 LICENSE AGREEMENT

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The serial number provided by Lieberman Software is designed for installation on a specific machine. You may install an unlimited number of copies of Lieberman RED Systems Management for your administrators that connect to the single licensed machine. All administrators can share the pool of purchased managed node licenses.

There are no limits to the number of web servers or clients that may access the data stored by your licensed copy of Lieberman RED Systems Management. You may install and use the “Lieberman RED Systems Management: Web Interface to Random Password Generator Password Recovery Console” with your duly licensed copy of Lieberman RED Systems Management + Random Password Generator without any additional payment to Lieberman Software.

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The sole remedy for breach of this warranty is limited to replacement of defective materials and/or refund of purchase price and does not include any other kinds of damages.

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Should you have any questions concerning this Agreement, or if you wish to contact Lieberman Software, please write:

Lieberman Software Corporation
1875 Century Park East, Suite 1200
Los Angeles, CA 90067

You can also keep up to date on the latest upgrades via our website at http://www.liebsoft.com or e-mail us at: sales@liebsoft.com.
Chapter 2  Prerequisites

When RED Systems Management is purchased there are a total of 3 elements including the RED Systems Management product itself. These items are:

1)  RED Systems Management
2)  Random Password Generator
3)  NTFS Reporter

The prerequisite section will describe the requirements for each element broken down by element.

- **RED Systems Management**
  1)  This program must be run on Windows 2008 R2 / Windows 7 (excluding home editions) or later operating system. Windows Server 2012 is recommended. We recommend installation on a machine that has at least 1GB of RAM and at least 500 Megabytes of free disk space available. You will need a screen resolution of at least 1024 x 768 to see all of the dialogs.
  2)  Administrative Privileges are required to run the software and to connect to target machines.

- **2.1 RECOMMENDED KNOWLEDGE**

  RED Systems Management uses a management console application in conjunction with a local service to setup recurring management and reporting jobs. A Microsoft SQL Server database is required to store program data. A basic understanding of how to connect to MS SQL and basic security principals are highly recommended.

  While Lieberman Software provides documentation and support in how to setup and configure RED Systems Management in conjunction with the various technologies that it uses, these elements should be patched, secured, and properly configured in accordance with company policy to ensure that the system will not be compromised as per your company’s best security practices.

- **2.2 PRODUCT HOST REQUIREMENTS**

  A Windows Server operating system will be required for a production installation of RED Systems Management. The solution will work fine on a physical server or a virtual machine. For lab/testing environments, a workstation class operating system, such as Windows 10 will suffice. All Service
Pack levels and editions are supported except where specifically noted. Supported versions of Windows are:

- Windows 7 Professional or higher, 64bit version
- Windows Server 2008 R2
- Windows 8 Professional or higher, 64bit version
- Windows Server 2012
- Windows 8.1 Professional or higher, 64bit version
- **Windows Server 2012 R2 (recommended)**
- Windows 10 Professional or higher, 64bit version

Windows Server 2012 is the recommended host platform.

Keeping in mind best practices regarding Windows and MS SQL hardware requirements, in addition to what the host and other services will require, UMP will also require:

- 1GB of RAM
- Approx. 500MB of Hard Drive Space to install*

**It is recommended to exceed these recommendations.** The recommended minimum configuration is:

- Windows Server 2012 R2
- 2GB of RAM *for the application*
- 4GB+ of hard drive space for local log files
- At least two CPU cores (4 or more recommended)
- 4GB+ RAM for the program database

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This manual does not cover installation of Windows.

Virtual environments are fully supported for all components of the product.

* This does not include space required by logging files. Log files are enabled by default and can consume enormous amounts of space over time.
2.3 SOLUTION DATABASE REQUIREMENTS

RED Systems Management provides robust reporting options which if leveraged will require the use of a Microsoft SQL database to store the information. This database may be installed on the same system hosting the application or may be a shared database instance. The database is only leveraged when reports are being written or read so overall utilization is very low. No sensitive security information is stored in the database.

Microsoft SQL Server is not a requirement for RED Systems Management for management operations. Microsoft SQL Server however is a requirement to perform most reports operations or schedule reporting operations. Without a Microsoft SQL Server database configured for the reporting data store, the following options will be unavailable to the user of RED Systems Management:

- Ability to store reports for future review
- Web reporting for RED Systems Management (optional component for web based report access)
- Scheduled reports - reports could only be ran ad-hoc by an interactive console user
- Storage of the reports somewhere other than the local system registry

2.3.1 SQL Server Requirements RED Systems Management

RED Systems Management will use the Microsoft SQL OLEDB provider to connect to your data store. This means the only options for high availability with automatic fail-over on your UMP database are those achieved through clustering. With that in mind, you can still configure your database using database availability groups, mirroring, or other HA options but will need to perform a manual fail-over to the new database should a fail-over need arise. However, with the exception of historical comparison of reporting by a human, the data in the SQL data store is used only to store historical reports and not for other functions.

The account connecting to the SQL database will need to have one of the following sets of permissions:

- System wide sysadmin role or control server server level permission
- DBO on an existing database
- On the UMP database, data_reader, data_writer, ddl_admin, execute, create tables, create views
The following versions of Microsoft SQL Server are supported for use with RED Systems Management:

- SQL Server Express 2008 - 2016
- SQL Server 2008 - 2016

Cloud editions of Microsoft SQL Server, such as Azure SQL, are not supported at this time as RED Systems Management does not currently support the Microsoft SQL Native Client.

### 2.4 PRODUCT SERVICE ACCOUNTS

RED Systems Management is comprised of an two-tier architecture: database and management console/deferred processor (optional). Both tiers may be on a single system or spread across multiple systems.

RED Systems Management can make use of a service account:

- **Deferred Processor** - this account will run all scheduled management and reporting jobs. This account will require administrative privileges on target managed systems. The account running the deferred processor will require **logon as a service** on the RED Systems Management host.

Pre-configuration of this account will be covered in the next section.

### 2.5 MANAGED COMPUTER PRE-REQUISITES

RED Systems Management has the ability to manage systems ranging from Windows NT4 through the very latest Windows operating systems. However, communication may be limited by the host operating system. For example, a proper secure channel cannot be create with down-level NT4 computer systems from Windows Server 2008 R2 unless you take define group policies to "Allow cryptography algorithms compatible with Windows NT 4.0". Other steps may be required or may not be available depending on specific scenarios. As of this writing Windows Server 2012 R2 has no issues managing Windows Server 2003 and Windows XP.

The following lists the requisite services and expected configurations for target managed computers and devices.

**Windows**, see port requirements for further information -

- File and Print Services for Microsoft Networks - default.
- Server Service enabled and running - default.


- Remote Registry - not enabled by default on Windows Vista/2008 and later - is optional and allows for further system information gathering such as MAC address retrieval. Other elements such as registry manipulation or registry reporting or installed software and patches are reliant on this service being enabled.
- WMI - remote WMI access (enabled by default) is required only when running the WMI reports. Otherwise, WMI is not used by RED Systems Management.

### 2.6 PORT REQUIREMENTS

The following ports may be used by *RED Systems Management Suite*: Actual port usage will vary based on the options used and systems managed.

The following ports are the standard well known ports for the various protocols. These ports may have been changed on the target systems. It is the solution Administrator’s responsibility to determine if any of the target ports have been changed and reflect that changed port when password change jobs or account discovery jobs are performed.

**Port 445** - SMB port.

**Port 1433/Other** - SQL Server, TCP, outbound. Ports used for connecting to SQL Server must be accessible from the machine running *Enterprise Random Password Manager* as well as any instances of the web interface. This port is a typically a custom TCP/IP port and can be configured through the SQL Server database provider. If MS SQL is using a different port then specify this on the database connection configuration dialog.

**Port 25** - SMTP, TCP, outbound - port for e-mail support. Only required if email notifications will be allowed from the solution.

**Port 135** - Remote COM/DCOM management port and secondary ports typically provided by granting access to DLLHOST.EXE in the `%systemroot%\system32` directory, TCP/UDP, outbound. This port does not need to be open on the target systems unless using the WMI reports. Remote COM/DCOM may require the use of additional ports (1024+) - check your system configuration; ports vary by Windows version.

**Port 137** - Typically only for legacy systems if 445 cannot be leveraged. NetBIOS name service, UDP, outbound. This port or port 445 (SMB) is required. If NetBIOS is disabled, port 445 is required for management of Windows systems.
**Prerequisites**

**Port 138** - Typically only for legacy systems if 445 cannot be leveraged. NetBIOS datagram distribution service, UDP, outbound. This port or port 445 (SMB) is required. If NetBIOS is disabled, port 445 is required for management of Windows systems.

**Port 139** - Typically only for legacy systems if 445 cannot be leveraged. NetBIOS Name Service Ports, TCP, outbound. This port or port 445 (SMB) is required. If NetBIOS is disabled, port 445 is required for management of Windows systems.

**Ephemeral ports** - Ephemeral port requirements vary by target operating system. Refer to Microsoft documentation for specifics on target operating systems. Ephemeral ports will be used when running WMI reports against target systems.
Chapter 3  Installation of Prerequisites

This section outlines installation of the pre-requisites. Actual installation experience may vary.

Covered is:

- Installation of MS SQL 2008 R2
- Deferred Processor Account
3.1 MICROSOFT SQL

A database server running Microsoft SQL Server (2008 or later) is required for use as the back-end data store. In order to complete the installation of this tool, an instance of Microsoft SQL Server must already be installed and accessible. If a full version of Microsoft SQL is unavailable during evaluation, use Microsoft SQL Express 2008 or later.

Microsoft SQL They can be configured to support integrated authentication which will use the credentials of the user account currently accessing the database, or they can use a mixed mode, which allows both Windows user accounts and explicit SQL accounts to have permissions to a database. It is recommended to use Windows Integrated Authentication only. Microsoft SQL Express is a lightweight version of SQL Server that is made available for free download from the Microsoft website.
This product makes use of service accounts. The requirements for the service accounts and steps to configure them are outlined in the following pages.

The following steps outline how to create a user account in Active Directory. If a preferred service account or service accounts already exist in Active Directory, then skip to the subsection to validate the required permissions are configured.

To create the user in the domain, use **Active Directory Users and Computers** from the **Administrative Tools** of your domain controller or from the local system if the remote server administration tools (RSAT) have been installed.

To create a user account in Active Directory, right click on the organizational unit or container to create the account and select **New | User**.
It is helpful to provide the account a semi-descriptive first name as this is what will be visible in Active Directory. Provide the account with a unique logon name. Click **Next** to continue.

Provide a password for this account. It is recommended to provide a password that is 15 characters or longer as this will highly minimize the potential for a compromise of the password of this account. Clear the **User must change password at next logon** flag or this account will not work as any installations utilizing this account will fail because the account will be unable to logon. It is recommended to also set the **Password never expires** flag for this account to avoid loss of functionality should the password expire. This password should still change and can be changed at any time.
Click **Next** to continue.
Click **Finish** to create the account and close the wizard.

![New Object - User window]

The service account may require additional rights. Continue reading for more information. This account does not require interactive login rights to any target system or the host system.

### 3.1.1 Deferred Processor Account

The deferred processor account carries out all **scheduled** management and reporting operations on target systems. If the product will only be used interactively and no scheduled operations will be performed, then the deferred processor service account does not need to be used or configured.

If the solution will be managing local systems only and will not manage domain accounts, the account will only need administrative rights on the host on the target systems. If the account will be managing domain accounts, add it to the administrators or domain admins group within the domain. You must be an administrator to manage another administrator!

Skip this section if there is already an account that meets the following requirements:

- Domain Admin or Administrators group membership in the domain to be managed or delegated control based on the outline above
- Administrator on the host system(s)
- Account granted **Logon as a service** on the host system - not required on the target systems.

If the account has been previously created in Active Directory, right click on the account and select **Properties** then select the **Member Of** tab and click **Add**.

Type in the name of the domain group to add this account to. At a minimum this account will need to be a member a **Domain User**. However, if the account will also manage users of the domain's **Administrators** group or **Domain Admins** group or **Enterprise Admins** group, this account will also need to be a member of either one of those groups. If this account will *only* manage workstations and member servers and not accounts in the domain, then the account need only be added to the Administrators groups of the target systems.
Click **OK** to add the user to the group.
Click **OK** to close the properties dialog.

If the account will not manage domain accounts and will only manage workstations and member servers, the account does not need domain rights and may simply be added to the Administrators groups on target systems. If the account was added to a domain group that maintains administrative privileges on target systems, then skip the next step.
Open computer management on the host system by typing `compmgmt.msc` from the RUN menu or by choosing **Computer Management** from **Administrative Tools**. Under **System Tools** expand **Local Users and Groups** then select the **Groups** node. In the details pane, right click on **Administrators** and choose **Properties**.
Click **Add...**

![Administrators Properties dialog box](image)

**Description:** Complete and unrestricted access to the computer/domain

**Members:**
- Administrator
- CLUSTER\Domain Admin
- CLUSTER\generalcluster
From the **Select Users, Computer, or Groups** dialog, type in the user account’s name or use the **Advanced...** option to search the user account. Click **OK** once to add the user to the local administrators group.
Click **OK** to finalize the change and add the account to the administrators group.
On the host system type `gpedit.msc` at the RUN menu. This will open the local system's security configuration. Navigate to `Computer Configuration\Windows Settings\Local Policies\User Rights Assignment` and choose `Log on as a batch job` from the details pane.
Right click on **Log on as a service** and select **Properties**. Click on **Add User or Group**.
From the **Select Users, Computer, or Groups** dialog, type in the user account’s name or use the **Advanced...** option to search the user account. Click **OK** once to add this user to the list.
Click **OK** to close the properties dialog. Then close the group policy editor.

To ensure that the policy is updated immediately and doesn't conflict with any other domain policies, from a CMD prompt, type `gpupdate /target:computer /force`.

Re-check the policy and ensure that the user account is still listed in the list. If it is not listed then a domain level policy is removing the settings. Work with the group policy administrator to determine which policy is causing the conflict.
Chapter 4  Installation

This sections outlines each step in the process of installing the RED Systems Management software.

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4.1  RED SYSTEMS MANAGEMENT INSTALLATION

Launch the installer and follow the prompts to select an installation directory and other options. RED Systems Management will be installed and will launch automatically after installation.
Click **Next** past the welcome screen.
Read the license agreement. It contains information about how the license for RED Systems Management may be used. To accept the license agreement, select **I accept the license agreement** then click **Next** to continue the installation.
Choose the installation location. RED Systems Management will default to installing to a sub-folder called RED Systems Management at the location specified. Click the Browse button to change the installation location. A shortcut for the program will be established on the Start menu under the Lieberman folder. Click Next to continue.
RED Systems Management is now ready to be installed. Click **Install** to continue.

When prompted, click **Finish** to complete the installation.

Next, start RED Systems Management to register the product. If this is an evaluation of RED Systems Management, additional registration is not necessary. The product will permit management of 10 systems for 30 days without an additional license.

Click **OK** to enter licensing information.
Enter a customer name and the company's name. If demoing this product, leave the default serial number alone or enter a new demo key. This included key is a limited evaluation key specific to your system that is valid for 10 systems and 30 days from the time of installation.

The registration code may be [re-]entered at any time by selecting Help | Register from the main dialog.
Click **OK** to continue. If a commercial key has been provided, replace the demo key with it and click **OK**. A message box indicating successful registration will be presented.

At this point, RED Systems Management will open its main dialog. Now configure RED Systems Management to use a database for its reporting functions or create a group of systems (a management set) to manage.
4.2 DATABASE OPTIONS

Most program data is stored in the registry of the local machine. If the size of this data grows too large, the performance of the machine can suffer. Storing data in the local registry also represents a significant obstacle for remote distributed access/operations. For these reasons, the product will be configured to store reporting information in a Microsoft SQL 2008 and later database. The database is only required for reporting operations. The database is not required for management operations.

**SQL Server 2008 or later**

SQL Server is the preferred database storage solution for our tools. It has the best performance of all the database solutions which are supported, and has easy-to-use configuration and management utilities. However, installations of SQL Server can be expensive, so this might not be a feasible solution for small and mid-size organizations.

To use SQL Server, use an existing installation. This product can create a new database on the server for the program to use if the user or SQL account has appropriate permissions to do so. If the database is set up to use explicit authentication the username and password of a login account with read, write, ddl_admin, execute, and create tables access to the database.

**SQL Express**

SQL Express is the free version of SQL Server without the administrative tools and with the number of connections and database maximum size limited.

### 4.2.1 Database Settings

To configure the product to use a SQL/SQL Express database for its datastore, go to the **Settings | Data Store Options** menu.

When the program is first opened, it will be configured to use the registry for its main datastore. This default setting is provided to use and configuration of the tool with minimal effort and may be suitable for organizations with a very small number of computers. To improve performance, scalability, durability, and use all features of the tool, you should configure the use of SQL or SQL Express.
To configure the product to use SQL as its main datastore, select the option for **SQL Server**.

**Configure Data Store**

**Select Data Store Type**

Select the type of data store to be used by the application. You may also press OK to retain the current setting and proceed to configuration (if necessary).

- **Registry (Recommended for testing)**
  Use the registry as the data store (no additional configuration required). Certain operations may be limited with this data store selection, due to performance limitations of the registry.

- **SQL Server (Recommended for production)**
  Use a SQL Server based database (MSDE, SQL Server Express, or SQL Server) as the data store. You will be prompted to configure the database settings. You can also automatically install SQL Server Express from the configuration dialog if necessary.

More information on [data store configuration](#)
Configure SQL options.

Database Data Store Configuration

Database Connection Information
- Database access: OLEDB Provider: SQL Server (default MDAC provider)
- Server name (System and Instance, or Alias): dbag02
- Authentication information:
  - Connect with Windows Integrated Authentication
  - Use database native authentication mode
  - Username:
  - Password:

- Encrypt communication with database
- Add additional connection string parameters:
- Override settings - use custom connection string (advanced):

Database Settings
- Name of the existing database to use: REDDB
- Use an explicit (non-default) schema: dbo
- Resultant connection string (which will be used):
  Provider=SQLOLED.1;Data Type Compatibility=80;Data Source=dbag02;Initial Catalog=REDSysMg
- Advanced Settings:
  - Set explicit connection limit: 10
  - Maximum number of active DB connections during normal operations
  - Overwrite the default database timeout value: 30

Status:

SQL Server Express Download/Install... View Log... OK Cancel
In this dialog, the following items must be configured:

- **Database Provider: OLEDB Provider**: SQL Server (default MDAC provider).
- **Server Name**: If connecting to a named instance of SQL or SQL Express use the format ServerName\[InstanceName\] or ServerName[,PORT###] to specify the database server name or server name as a named instance or server name on a custom port (exclude the left and right brackets!). Click **Manage Database Instances** to create a new empty database to connect to.
- **Authentication Information**: choose between using **Windows Integrated Authentication** (current run-as user) or **Use database native authentication mode** (SQL database user account).
- **If using a MS SQL database, a custom schema can [and is highly recommended to] be chosen. This ensures that the program will call for fully distinguished table names rather than relative table names. This is especially important when integrated authentication is being used and not all users have the same DBO/sysadmin rights over the database or server.**

Once a server name and connection authentication mode are selected, use the **Test Connection** button to test the connection to the database.

Other optional items include...

- **Encrypt communication with database** - Enable the use SSL when connecting to the database. SSL connection encryption is available to SQL Server 2008 or later. There are further implications to consider when using SSL with the database; the database server must be configured to use SSL and all parties must trust the server certificate. Refer to your Microsoft SQL Server documentation.
- **Add additional connection string parameters** - use this option to add additional connection string parameters to the currently derived (default) connection string.
- **Override settings - use custom connection string** - do not use the derived connection string and provide your own connection string.
- **Set explicit connection limit** - Set the allowed/preferred connection limit. This will limit the number of simultaneous connections to the database. If this is not done, it is possible to slow down the performance of the solution or worse cause connection timeouts waiting on threads that will never return information because the database cannot handle as many threads as will be spawned.
- **Overwrite the default database timeout value** - The value in seconds for the database connection timeout. Shorter timeouts may cause long running queries to be terminated prematurely while values that are too long may let queries that will never finish to hold up the
entire process. Leave the box unchecked to use the default timeout of the OLEDB provider which is typically 30 seconds.

When finished configuring the database settings, click OK to save the settings and return to the main console. The product will verify that it can connect to the database specified in the settings and that all the table formats are current and correct. If a connection cannot be made or if the database format is not correct, an error message indicating the problem will appear.
Chapter 5  Upgrade Instructions

Launch `umpsetup.msi` and follow the prompts to select an installation directory and other options. RED Systems Management will be installed and will launch automatically after installation.
Click **Next** past the welcome screen.
Read the license agreement. It contains information about how the license for RED Systems Management may be used. To accept the license agreement, select I accept the license agreement then click Next to continue.
If a previous version of RED Systems Management is detected on the host system, the installer will prompt the user to take certain actions including stopping the deferred processing scheduling service (use the Windows services snap-in to stop Scheduler Service, close the console, and begin the upgrade. Click **Next** to continue.
Choose the installation location. RED Systems Management will default to installing to a sub-folder called **RED Systems Management** at the location specified. Click the **Browse** button to change the installation location. A shortcut for the program will be established on the Start menu under the Lieberman folder. If desired, use the **Create Desktop Shortcut** to create a shortcut to RED Systems Management on the desktop. Click **Next** to continue.
RED Systems Management is now ready to be installed. Click **Install** to continue.

When prompted, click **Finish** to complete upgrade.
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