Get Started
Dell Data Security Implementation Services
Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

© 2012-2019 Dell Inc. All rights reserved. Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be trademarks of their respective owners.

Registered trademarks and trademarks used in the Dell Encryption, Endpoint Security Suite Enterprise, and Data Guardian suite of documents: Dell™ and the Dell logo, Dell Precision™, OptiFlex™, ControlVault™, Latitude™, XPS®, and KACE™ are trademarks of Dell Inc. Cylance®, CylancePROTECT, and the Cylance logo are registered trademarks of Cylance, Inc. in the U.S. and other countries. McAfee® and the McAfee logo are trademarks or registered trademarks of McAfee, Inc. in the US and other countries. Intel®, Pentium®, Intel Core Inside Duo®, Itanium®, and Xeon® are registered trademarks of Intel Corporation in the U.S. and other countries. Adobe®, Acrobat®, and Flash® are registered trademarks of Adobe Systems Incorporated. Authen tec® and Eikon® are registered trademarks of Authen tec. AMD® is a registered trademark of Advanced Micro Devices, Inc. Microsoft®, Windows®, and Windows Server®, Internet Explorer®, Windows Vista®, Windows 7®, Windows 10®, Azure®, Active Directory®, Access®, BitLocker®, BitLocker To Go®, Excel®, Hyper-V®, Outlook®, PowerPoint®, Word®, OneDrive®, SQL Server®, and Visual C++® are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. VMware® is a registered trademark or trademark of VMware, Inc. in the United States or other countries. Box® is a registered trademark of Box. Dropbox™ is a service mark of Dropbox, Inc. Google™, Android™, Google™ Chrome™, Gmail™, and Google™ Play are either trademarks or registered trademarks of Google Inc. in the United States and other countries. Apple®, App Store™, Apple Remote Desktop™, Boot Camp™, FileVault™, iPad®, iPhone®, iPod®, iPod touch®, iPod shuffle®, and iPod nano®, Macintosh®, and Safari® are either servicemarks, trademarks, or registered trademarks of Apple, Inc. in the United States and/or other countries. EnCase™ and Guidance Software® are either trademarks or registered trademarks of Guidance Software. Entrust® is a registered trademark of Entrust®, Inc. in the United States and other countries. Mozilla® Firefox® is a registered trademark of Mozilla Foundation in the United States and/or other countries. iOS® is a trademark or registered trademark of Cisco Systems, Inc. in the United States and certain other countries and is used under license. Oracle® and Java® are registered trademarks of Oracle and/or its affiliates. Travelstar® is a registered trademark of HGST, Inc. in the United States and other countries. UNIX® is a registered trademark of The Open Group. VALIDITY™ is a trademark of Validity Sensors, Inc. in the United States and other countries. VeriSign® and other related marks are the trademarks or registered trademarks of VeriSign, Inc. or its affiliates or subsidiaries in the U.S. and other countries and licensed to Symantec Corporation. KVM on IP® is a registered trademark of Video Products. Yahoo!® is a registered trademark of Yahoo! Inc. Bing® is a registered trademark of Microsoft Inc. Ask® is a registered trademark of IAC Publishing, LLC. Other names may be trademarks of their respective owners.

Getting Started

2019 - 06

Rev. A01
1 Implementation Phases

2 Kick-off and Requirements Review
   - Client Documents
   - Server documents

3 Preparation Checklist - Initial Implementation
   - Security Management Server Initial Implementation Checklist
   - Security Management Server Virtual Initial Implementation Checklist

4 Preparation Checklist - Upgrade/Migration

5 Architecture
   - Security Management Server Virtual Architecture Design
   - Security Management Server Architecture Design

6 SQL Server Best Practices

7 Example Customer Notification Email
The basic implementation process includes these phases:

- Perform Kick-off and Requirements Review
- Complete Preparation Checklist - Initial Implementation or Preparation Checklist - Upgrade/Migration
- Install or Upgrade/Migrate one of the following:
  - **Security Management Server**
    - Centralized management of devices
    - A Windows-based application that runs on a physical or virtualized environment.
  - **Security Management Server Virtual**
    - Centralized management of up to 3,500 devices
    - Runs in a virtualized environment

  For Dell Server installation/migration instructions, see Security Management Server Installation and Migration Guide or Security Management Server Virtual Quick Start and Installation Guide. To obtain these documents, see Dell Data Security Server documents.

- Configure Initial Policy

- Client Packaging
  For client requirements and software installation documents, select the applicable documents based on your deployment:

  - Encryption Enterprise Basic Installation Guide or Encryption Enterprise Advanced Installation Guide
  - Endpoint Security Suite Enterprise Basic Installation Guide or Endpoint Security Suite Enterprise Advanced Installation Guide
  - Advanced Threat Prevention Administrator Guide
  - Encryption Personal Installation Guide
  - Encryption Enterprise for Mac Administrator Guide
  - Endpoint Security Suite Enterprise for Mac Administrator Guide
  - Dell Data Guardian Administrator Guide
  - Dell Data Guardian User Guide

  To obtain these documents, refer to Dell Data Security client documents.

- Participate in Dell security administrator basic knowledge transfer
- Implement Best Practices
- Coordinate pilot or deployment support with Dell Client Services
Kick-off and Requirements Review

Before installation, it is important to understand your environment and the business and technical objectives of your project, to successfully implement Dell Data Security to meet these objectives. Ensure that you have a thorough understanding of your organization's overall data security requirements.

The following are some common key questions to help the Dell Client Services Team understand your environment and requirements:

1. What is your organization's type of business (health care, etc)?
2. What regulatory compliance requirements do you have (HIPAA/HITECH, PCI, etc)?
3. What is the size of your organization (number of users, number of physical locations, etc)?
4. What is the targeted number of endpoints for the deployment? Are there plans to expand beyond this number in the future?
5. Do users have local administrator privileges?
6. What data and devices do you need to manage and encrypt (local fixed disks, USB, etc)?
7. What products are you considering deploying?
   - Encryption Enterprise
     - Encryption External Media
   - Endpoint Security Suite Enterprise
     - Advanced Threat Prevention - with or without optional Client Firewall and Web Protection (ATP entitlement)
     - Encryption External Media
   - Dell Data Guardian (CE entitlement)
8. What type of user connectivity does your organization support? Types might include the following:
   - Local LAN connectivity only
   - VPN-based and/or enterprise wireless users
   - Remote/disconnected users (users not connected to the network either directly or via VPN for extended periods of time)
   - Non-domain workstations
9. What data do you need to protect at the endpoint? What type of data do typical users have at the endpoint?
10. What user applications may contain sensitive information? What are the application file types?
11. How many domains do you have in your environment? How many are in-scope for encryption?
12. What operating systems and operating systems versions are targeted for encryption?
13. Do you have alternate boot partitions configured on your endpoints?
   a. Manufacturer Recovery Partition
   b. Dual-boot Workstations

Client Documents

For installation requirements, supported operating system versions, supported Self-Encrypting Drives, and instructions for the clients you plan to deploy, refer to the applicable documents, listed below.

- Encryption Enterprise Advanced Installation Guide - Installation guide with advanced switches and parameters for customized installations.
- Dell Data Security Console User Guide - Instructions for users.


- Endpoint Security Suite Enterprise Advanced Threat Prevention Quick Start Guide - Instructions administration, including policy recommendations, threat identification and management, and troubleshooting.
- Dell Data Security Console User Guide - Instructions users.


- Endpoint Security Suite Enterprise for Mac Administrator Guide - Installation guide


- Dell Data Guardian Administrator Guide - Installation, activation, and operation instructions.
- Dell Data Guardian User Guide - Installation, activation, and operation instructions for users.

For information on supported Self-Encrypting Drives, see https://www.dell.com/support/article/us/en/04/sln296720.

Server documents

For installation requirements, supported operating system versions, and configurations of the Dell Server you plan to deploy, refer to the applicable document below.

Security Management Server

- See the Security Management Server Installation and Migration Guide at
  
  
  or
  
  
  or
  

Security Management Server Virtual

- See the Security Management Server Virtual Quick Start and Installation Guide at
  
  
  or
  
Preparation Checklist - Initial Implementation

Based on the Dell Server you deploy, use the appropriate checklist to ensure you have met all prerequisites before beginning to install Dell Encryption, Endpoint Security Suite Enterprise, or Data Guardian.

- Security Management Server checklist
- Security Management Server Virtual checklist

Security Management Server Initial Implementation Checklist

Proof of Concept environment cleanup is complete (if applicable)?

☐ The proof of concept database and application have been backed up and uninstalled (if using the same server) before the installation engagement with Dell. For more instruction on an uninstall, see https://www.dell.com/support/manuals/us/en/04/dell-data-protection-encryption/enterpserverig/perform-back-ups?guid=guid-2669f62a-2567-49ea-8e72-4ad06f82442&lang=en-us.

☐ Any production endpoints used during proof of concept testing have been decrypted or key bundles downloaded. For more information on the clients you plan to deploy, see Client Documents.

NOTE:

All new implementations must begin with a new database and fresh installation of the Encryption, Endpoint Security Suite Enterprise, or Data Guardian software. Dell Client Services will not perform a new implementation using a POC environment. Any endpoints encrypted during a POC will need to be either decrypted or rebuilt prior to the installation engagement with Dell.

Servers meet required hardware specifications?

☐ See Dell Security Management Server Architecture Design.

Servers meet required software specifications?

☐ Windows Server 2012 R2 (Standard or Datacenter), 2016 (Standard or Datacenter), or Windows Server 2019 (Standard or Datacenter) is installed. These operating systems can be installed on physical or virtual hardware.

☐ Windows Installer 4.0 or later is installed.

☐ .NET Framework 4.5 is installed.

☐ Microsoft SQL Native Client 2012 is installed, if using SQL Server 2012 or SQL Server 2016. If available, SQL Native Client 2014 may be used.

NOTE: SQL Express is not supported with a production deployment of Security Management Server.

☐ Windows Firewall is disabled or configured to allow (inbound) ports 8000, 8050, 8081, 8084, 8888, 61613.

☐ Connectivity is available between Security Management Server and Active Directory (AD) over ports 88, 135, 389, 443, 636, 3268, 3269, 49125+ (RPC) (inbound to AD).
UAC is disabled before installation on Windows Server 2012 R2 when installing in C:\Program Files. The server must be rebooted for this change to take effect. (see Windows Control Panel > User Accounts).

- Windows Server 2012 R2 - the installer disables UAC.
- Windows Server 2016 R2 - the installer disables UAC.

NOTE: UAC is no longer force-disabled unless a protected directory is specified for the install directory.

Service accounts successfully created?

- Service account with read-only access to AD (LDAP) - basic user/domain user account is sufficient.
- Service account must have local administrator rights to the Security Management Server application servers.
- To use Windows authentication for the database, a domain services account with system administrator rights. The user account must be in the format DOMAIN\Username and have the SQL Server permissions Default Schema: dbo and Database Role Membership: dbo_owner, public.
- To use SQL authentication, the SQL account used must have system administrator rights on the SQL Server. The user account must have the SQL Server permissions Default Schema: dbo and Database Role Membership: dbo_owner, public.

Software is downloaded?

Download from Dell Support website.


From the product page http://www.dell.com/support
1. Select Drivers & downloads.
2. From the Operating system list, select the correct operating system for the product you are downloading. For example, to download Dell Enterprise Server, select one of the Windows Server options.
3. Under the applicable software title, select Download File.

- If you have purchased Encryption or Endpoint Security Suite Enterprise on-the-box, the software can be delivered to the target computer using Dell Digital Delivery.

OR

Download from Dell Data Security file transfer site (CFT)

- Software is located at https://ddpe.credant.com in the SoftwareDownloads folder.

Installation key and license file are available?
The license key is included in the original email with FTP credentials - see Example Customer Notification Email. This key is also included in the download of the application from http://www.dell.com/support and https://ddpe.credant.com.

The license file is an XML file located on the FTP site in the Client Licenses folder.

**NOTE:**

If you purchased your licenses on-the-box, no license file is necessary. The entitlement is automatically downloaded from Dell upon activation of any new Data Guardian, Encryption, Enterprise, or Endpoint Security Suite Enterprise client.

**Database is created?**

- (Optional) A new database is created on a supported server - see Requirements and Architecture in the Security Management Server Installation and Migration Guide. The Security Management Server installer creates a database during installation if one is not already created.

- The target database user has been given db_owner rights.

**DNS alias created for Security Management Server and/or Policy Proxies with Split DNS for internal and external traffic?**

It is recommended that you create DNS aliases, for scalability. This will allow you to add additional servers later or separate components of the application without requiring client update.

- DNS aliases are created, if desired. Suggested DNS aliases:
  - Security Management Server: dds.<domain.com>
  - Front end Server: dds-fe.<domain.com>

**NOTE:**

Split-DNS allows the user of the same DNS name internally and externally. This means that we could internally supply dds.<domain.com> as an internal c-name, and direct this to the Dell Security Management Server (back-end), and externally we could supply an a-record for dds.<domain.com> and forward the relevant ports (see Ports for Security Management Server) to the front-end server. We could leverage DNS round-robin or a load-balancer to distribute the load to the various front-ends (if multiple exist).

**Plan for SSL Certificates?**

- We have an internal Certificate Authority (CA) that can be used to sign certificates and is trusted by all workstations in the environment or we plan to purchase a signed certificate using a public Certificate Authority, such as VeriSign or Entrust. If using a public Certificate Authority, inform the Dell Client Services Engineer. The Certificate contains the Entire Chain of Trust (Root and Intermediate) with Public and Private Key Signatures.

- Subject Alternate Names (SANs) on Certificate Request match all DNS aliases given to every server being used for Dell Server installation. Does not apply to Wildcard or Self-Signed certificate requests.

- Certificate is generated to a .pfx format.

**Change Control requirements identified and communicated to Dell?**

- Submit any specific Change Control requirements for the installation of Encryption, Endpoint Security Suite Enterprise, or Data Guardian to Dell Client Services prior to the installation engagement. These requirements may include changes to the application server(s), database, and client workstations.
Prepare at least three computers with your corporate computer image to be used for testing. Dell recommends that you **not** use production computers for testing. Production computers should be used during a production pilot after encryption policies have been defined and tested using the Test Plan provided by Dell.

### Security Management Server Virtual Initial Implementation Checklist

#### Proof of Concept environment cleanup is complete (if applicable)?


- Any production endpoints used during proof of concept testing have been decrypted or key bundles downloaded. For more information on the clients you plan to deploy, see Client Documents.

#### NOTE:

All new implementations must begin with a new database and fresh installation of the Encryption, Endpoint Security Suite Enterprise, or Data Guardian software. Dell Client Services will not perform a new implementation using a POC environment. Any endpoints encrypted during a POC will need to be either decrypted or rebuilt prior to the installation engagement with Dell.

#### Service accounts successfully created?

- Service account with read-only access to AD (LDAP) - basic user/domain user account is sufficient.

#### Software is downloaded?

  or
  or

  From the product page [http://www.dell.com/support](http://www.dell.com/support)
  
  1. Select **Drivers & downloads**.
  2. From the Operating system list, select the correct operating system for the product you are downloading. For example, to download Dell Enterprise Server, select **one of the Windows Server options**.
  3. Under the applicable software title, select **Download File**.

- If you have purchased Encryption or Endpoint Security Suite Enterprise on-the-box, the software can be delivered to the target computer using Dell Digital Delivery.

#### License file(s) are available?

- The license file is an XML file located on the [ddpe.credant.com](http://ddpe.credant.com) site in the **Client Licenses** folder.
NOTE:
If you purchased your licenses on-the-box, no license file is necessary. The entitlement are automatically downloaded from Dell upon activation of any new Encryption or Endpoint Security Suite Enterprise client.

Servers meet required hardware specifications?


DNS alias created for Security Management Server Virtual and/or Policy Proxies with Split DNS for internal and external traffic?

It is recommended that you create DNS aliases, for scalability. This will allow you to add additional servers later or separate components of the application without requiring client update.

- DNS aliases are created, if desired. Suggested DNS aliases:
  - Security Management Server: dds.<domain.com>
  - Front end Server: dds-fe.<domain.com>

NOTE:
Split-DNS allows the user of the same DNS name internally and externally. This means that we could internally supply dds.<domain.com> as an internal c-name, and direct this to the Dell Security Management Server (back-end), and externally we could supply an a-record for dds.<domain.com> and forward the relevant ports (see Ports for Security Management Server Virtual) to the front-end server. We could leverage DNS round-robin or a load-balancer to distribute the load to the various front-ends (if multiple exist).

Plan for SSL Certificates?

- We have an internal Certificate Authority (CA) that can be used to sign certificates and is trusted by all workstations in the environment or we plan to purchase a signed certificate using a public Certificate Authority, such as VeriSign or Entrust. If using a public Certificate Authority, please inform the Dell Client Services Engineer.

Change Control requirements identified and communicated to Dell?

- Submit any specific Change Control requirements for the installation of Encryption, Endpoint Security Suite Enterprise, or Data Guardian to Dell Client Services prior to the installation engagement. These requirements may include changes to the application server(s), database, and client workstations.

Test Hardware prepared?

- Prepare at least three computers with your corporate computer image to be used for testing. Dell recommends that you not use production computers for testing. Production computers should be used during a production pilot after encryption policies have been defined and tested using the Test Plan provided by Dell.
Preparation Checklist - Upgrade/Migration

This checklist applies only to Security Management Server.

**NOTE:**
Update Security Management Server Virtual from the Basic Configuration menu in your Dell Server Terminal. For more information, see Security Management Server Virtual Quick Start and Installation Guide.

Use the following checklist to ensure you have met all prerequisites before beginning to upgrade Encryption, Endpoint Security Suite Enterprise, or Data Guardian.

**Servers meet required software specifications?**

- Windows Server 2012 R2 (Standard or Datacenter), Windows Server 2016 (Standard or Datacenter), or Windows Server 2019 (Standard or Datacenter) is installed. Alternatively, a virtualized environment can be installed.
- Windows Installer 4.0 or later is installed.
- .NET Framework 4.5 is installed.
- Microsoft SQL Native Client 2012 is installed, if using SQL Server 2012 or SQL Server 2016. If available, SQL Native Client 2014 may be used.
  
  **NOTE:** SQL Express is not supported with Security Management Server.

- Windows Firewall is disabled or configured to allow (inbound) ports 8000, 8050, 8081, 8084, 8443, 8888, 61613.
- Connectivity is available between Security Management Server and Active Directory (AD) over ports 88, 135, 389, 443, 636, 3268, 3269, 49125+ (RPC) (inbound to AD).
- UAC is disabled before installation on Windows Server 2012 R2 when installing in C:\Program Files. The server must be rebooted for this change to take effect. (see Windows Control Panel > User Accounts).
  - Windows Server 2012 R2 - the installer disables UAC.
  - Windows Server 2016 R2 - the installer disables UAC.

**Service accounts successfully created?**

- Service account with read-only access to AD (LDAP) - basic user/domain user account is sufficient.
- Service account must have local administrator rights to the Security Management Server application servers.
- To use Windows authentication for the database, a domain services account with system administrator rights. The user account must be in the format DOMAIN\Username and have the SQL Server permissions Default Schema: dbo and Database Role Membership: dbo_owner, public.
- To use SQL authentication, the SQL account used must have system administrator rights on the SQL Server. The user account must have the SQL Server permissions Default Schema: dbo and Database Role Membership: dbo_owner, public.

**Database and all necessary files are backed up?**
The entire existing installation is backed up to an alternate location. The backup should include the SQL database, secretKeyStore, and configuration files.

Ensure that these most critical files, which store information necessary to connect to the database, are backed up:

- `<Installation folder>\Enterprise Edition\Compatibility Server\conf\server_config.xml`
- `<Installation folder>\Enterprise Edition\Compatibility Server\conf\secretKeyStore`
- `<Installation folder>\Enterprise Edition\Compatibility Server\conf\gkresource.xml`

**Installation key and license file are available?**

- The license key is included in the original email with CFT credentials - see Example Customer Notification Email. This key is also included in the download of the application from http://www.dell.com/support and https://ddpe.credant.com.
- The license file is an XML file located on the CFT site under in the Client Licenses folder.

**NOTE:**
If you purchased your licenses on-the-box, no license file is necessary. The entitlement is automatically downloaded from Dell upon activation of any new Encryption or Endpoint Security Suite Enterprise client.

**New and existing Dell Data Security software is downloaded?**

Download from Dell Data Security file transfer site (CFT).

- Software is located at https://ddpe.credant.com in the SoftwareDownloads folder.
- If you purchased Data Guardian, Encryption Enterprise, or Endpoint Security Suite Enterprise on-the-box (OTB), the software is optionally fulfilled using Dell Digital Delivery. Alternatively, the software can be downloaded from www.dell.com/support or ddpe.credant.com respectively.

**Have enough endpoint licenses?**

Prior to upgrading, ensure that you have enough client licenses to cover all of the endpoints in your environment. If your installations currently exceed your license count, contact your Dell Sales Representative prior to upgrading or migrating. Dell Data Security performs license validation, and activations is prevented if no licenses are available.

- I have enough licenses to cover my environment.

**Are DNS records documented?**

- Validate that DNS records are documented and staged for update if hardware has been changed.

**Plan for SSL Certificates?**

- We have an internal Certificate Authority (CA) that can be used to sign certificates and is trusted by all workstations in the environment or we plan to purchase a signed certificate using a public Certificate Authority, such as VeriSign or Entrust. If using a public Certificate Authority, inform the Dell Client Services Engineer. The Certificate contains the Entire Chain of Trust (Root and Intermediate) with Public and Private Key Signatures.
- Subject Alternate Names (SANs) on Certificate Request match all DNS aliases given to every server being used for Dell Enterprise Server installation. Does not apply to Wildcard or Self Signed certificate requests.
- Certificate is generated to a .pfx format.
Change Control requirements identified and communicated to Dell?

- Submit any specific Change Control requirements for the installation of Encryption, Endpoint Security Suite Enterprise, or Data Guardian to Dell Client Services prior to the installation engagement. These requirements may include changes to the application server(s), database, and client workstations.

Test Hardware prepared?

- Prepare at least three computers with your corporate computer image to be used for testing. Dell recommends that you **not** use productions computers for testing. Production computers should be used during a production pilot after encryption policies have been defined and tested using the Test Plan provided by Dell.
This section details architecture design recommendations for Dell Data Security implementation. Select the Dell Server you will deploy:

- Security Management Server Architecture Design
- Security Management Server Virtual Architecture Design

**Security Management Server Virtual Architecture Design**

The Dell Encryption, Endpoint Security Suite Enterprise, and Data Guardian solutions are highly scalable products, based on the number of endpoints targeted for encryption in your organization.

**Architecture Components**

Below is a basic deployment for the Dell Security Management Server Virtual.
The following table describes each component and its function.
<table>
<thead>
<tr>
<th>Name</th>
<th>Default Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance Reporter</td>
<td>HTTP(S)/ 8084</td>
<td>Provides an extensive view of the environment for auditing and compliance reporting.</td>
</tr>
<tr>
<td>Management Console</td>
<td>HTTPS/ 8443</td>
<td>Administration console and control center for the entire enterprise deployment.</td>
</tr>
<tr>
<td>Core Server HA (High Availability)</td>
<td>HTTPS/ 8888</td>
<td>A high-availability service that allows for increased security and performance of HTTPS connections with the Management Console, Preboot Authentication, SED Management, FDE, BitLocker Manager, Threat Protection, and Advanced Threat Prevention.</td>
</tr>
<tr>
<td>Security Server</td>
<td>HTTPS/ 8443</td>
<td>Communicates with Policy Proxy; manages forensic key retrievals, activations of clients, Data Guardian products, and SED-PBA communication.</td>
</tr>
<tr>
<td>Compatibility Server</td>
<td>TCP/ 1099 (closed)</td>
<td>A service for managing the enterprise architecture. Collects and stores initial inventory data during activation and policy data during migrations. Processes data based on user groups.</td>
</tr>
<tr>
<td>Message Broker Service</td>
<td>TCP/ 61616 (closed)</td>
<td>Handles communication between services of the Dell Server. Stages policy information created by the Compatibility Server for Policy Proxy queuing.</td>
</tr>
<tr>
<td>Identity Server</td>
<td>8445 (closed)</td>
<td>Handles domain authentication requests, including authentication for SED Management.</td>
</tr>
<tr>
<td>Forensic Server</td>
<td>HTTPS/ 8448</td>
<td>Allows administrators that have appropriate privileges to get encryption keys from the Management Console for use in data unlocks or decryption tasks. Required for Forensic API.</td>
</tr>
<tr>
<td>Inventory Server</td>
<td>8887</td>
<td>Processes the inventory queue.</td>
</tr>
<tr>
<td>Policy Proxy</td>
<td>TCP/ 8000</td>
<td>Provides a network-based communication path to deliver security policy updates and inventory updates. Required for Encryption Enterprise (Windows and Mac)</td>
</tr>
<tr>
<td>LDAP</td>
<td>389/636, 3268/3269, RPC - 135, 49125+</td>
<td>Port 389 - This port is used for requesting information from the local domain controller. LDAP requests sent to port 389 can be used to search for objects only within the global catalog's home domain. However, the requesting application can obtain all of the attributes for those objects. For example,</td>
</tr>
<tr>
<td>Name</td>
<td>Default Port</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>a request to port 389 could be used to obtain a user's department.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port 3268 - This port is used for queries specifically targeted for the global catalog. LDAP requests sent to port 3268 can be used to search for objects in the entire forest. However, only the attributes marked for replication to the global catalog can be returned. For example, a user’s department could not be returned using port 3268 since this attribute is not replicated to the global catalog.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client Authentication</td>
<td>HTTPS/8449</td>
<td>Allows client servers to authenticate against Dell Server. Required for Server Encryption</td>
</tr>
<tr>
<td>Callback beacon</td>
<td>HTTP/TCP 8446</td>
<td>On a front-end server, this allows a callback beacon to be inserted into each protected Office file, when running Data Guardian Protected Office mode.</td>
</tr>
</tbody>
</table>

**Security Management Server Architecture Design**

The Dell Encryption, Endpoint Security Suite Enterprise, and Data Guardian solutions are highly scalable products, based on the number of endpoints targeted for encryption in your organization.

**Architecture Components**

Below are suggested hardware configurations that suit most environments.

**Security Management Server**

- Virtual/Physical Machine
- CPU: 4 Core(s)
- RAM: 16.00 GB
- Drive C: 30 GB available disk space for logs and application databases

**NOTE:** Up to 10GB may be consumed for a local event database stored within PostgreSQL.

**Proxy Server**

- Virtual/Physical Machine
- CPU: 2 Core(s)
- RAM: 8.00 GB
- Drive C: 20 GB available disk space for logs

**SQL Server Hardware Specs**

- CPU: 4 Core(s)
- RAM: 24.00 GB
- Data Drive: 100 -150 GB of available disk space (this may vary based on environment)
- Log Drive: 50 GB of available disk space (this may vary based on environment)

**NOTE:** Dell recommends to follow SQL Server Best Practices, though the above information should cover the majority of environments.
Below is a basic deployment for the Dell Security Management Server.

NOTE: If the organization has more than 20,000 endpoints, please contact Dell ProSupport for assistance.
Ports

The following table describes each component and its function.

<table>
<thead>
<tr>
<th>Name</th>
<th>Default Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance Reporter</td>
<td>HTTP(S)/8084</td>
<td>Provides an extensive view of the environment for auditing and compliance reporting.</td>
</tr>
<tr>
<td>Management Console</td>
<td>HTTP(S)/8443</td>
<td>Administration console and control center for the entire enterprise deployment.</td>
</tr>
<tr>
<td>Device Server</td>
<td>HTTPS/8081</td>
<td>Supports activations and password recovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A component of the Security Management Server. Required for Encryption Enterprise (Windows and Mac)</td>
</tr>
<tr>
<td>Security Server</td>
<td>HTTPS/8443</td>
<td>Communicates with Policy Proxy; manages forensic key retrievals, activations of clients, Data Guardian, SED-PBA communication, and Active Directory for authentication or reconciliation, including identity validation for authentication into the Management Console. Requires SQL database access.</td>
</tr>
<tr>
<td>Compatibility Server</td>
<td>TCP/1099</td>
<td>A service for managing the enterprise architecture. Collects and stores initial inventory data during activation and policy data during migrations. Processes data based on user groups.</td>
</tr>
<tr>
<td>Message Broker Service</td>
<td>TCP/61616</td>
<td>Handles communication between services of the Dell Server. Stages policy information created by the Compatibility Server for Policy Proxy queuing.</td>
</tr>
<tr>
<td></td>
<td>TCP/61613</td>
<td>Requires SQL database access.</td>
</tr>
<tr>
<td>Key Server</td>
<td>TCP/8050</td>
<td>Negotiates, authenticates, and encrypts a client connection using Kerberos APIs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requires SQL database access to pull the key data.</td>
</tr>
<tr>
<td>Policy Proxy</td>
<td>TCP/8000</td>
<td>Provides a network-based communication path to deliver security policy updates and inventory updates.</td>
</tr>
<tr>
<td>LDAP</td>
<td>TCP/389/636</td>
<td>Port 389 - This port is used for requesting information from the local domain controller. LDAP requests sent to port 389 can be used to search for objects only within the global catalog's home domain. However, the requesting application can obtain all of the attributes for those objects. For example,</td>
</tr>
<tr>
<td>Name</td>
<td>Default Port</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3268/3269 (global catalog)</td>
<td>TCP/ 3268 - This port is used for queries specifically targeted for the global catalog. LDAP requests sent to port 3268 can be used to search for objects in the entire forest. However, only the attributes marked for replication to the global catalog can be returned. For example, a user's department could not be returned using port 3268 since this attribute is not replicated to the global catalog.</td>
<td></td>
</tr>
<tr>
<td>Microsoft SQL Database</td>
<td>TCP/ 1433 - The default SQL Server port is 1433, and client ports are assigned a random value between 1024 and 5000.</td>
<td></td>
</tr>
<tr>
<td>Callback beacon</td>
<td>HTTP/TCP 8446 - Allows a callback beacon to be inserted into each protected Office file, when running Data Guardian Protected Office mode.</td>
<td></td>
</tr>
</tbody>
</table>
The following list explains SQL Server best practices, which should be implemented when Dell security is installed if not already implemented.

1. Ensure the NTFS block size where the data file and log file reside is 64 KB. SQL Server extents (basic unit of SQL storage) are 64 KB. For more information, search Microsoft's TechNet articles for "Understanding Pages and Extents."
2. As a general guideline, set the maximum amount of SQL Server memory to 80 percent of the installed memory. For more information, search Microsoft's TechNet articles for Server Memory Server Configuration Options.
   • Microsoft SQL Server 2014 - http://technet.microsoft.com/en-us/library/ms178067(v=sql.120)
3. Set -t1222 on the instance startup properties to ensure deadlock information is captured if one occurs. For more information, search Microsoft's TechNet articles for "Trace Flags (Transact-SQL)."
4. Ensure that all Indexes are covered by a weekly maintenance job to rebuild the indexes.
Example Customer Notification Email

After you purchase Dell Data Security, you will receive an email from DellDataSecurity@Dell.com. Below is an example of the email, which will include your CFT credentials and License Key information.