Installing iDENprotect^{server} 2.0.0 on Red Hat Enterprise Linux or CentOS

iDENprotect Ltd.

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This guide describes how to install a standalone iDENprotect^{server} either on a physical Red Hat Enterprise Linux (RHEL) server or on a virtualised platform using hypervisor software such as VMWare ESXi. The document assumes general knowledge of RHEL server administration, as well as knowledge in hypervisor technology if deploying iDENprotect^{server} to a virtual machine.

This guide only discusses the installation and initial setup of iDENprotect^{server}. For more in-depth information on iDENprotect^{server} architecture and configuration, see iDENprotect Administrator Guide.

iDENprotect^{server} has been primarily tested on: * {RHEL} 6.8 * {RHEL} 7.2 * CentOS 6.8 * CentOS 7.2

Other versions of RHEL / CentOS major releases 6 and 7 are likely to work, but for maximum compatibility, we recommend using versions 6.8 and 7.2.

Before Starting

System Requirements

The minimum system requirements for installing the iDENprotect$^{\text{server}}$ on physical or virtual hardware are:

- 64-bit Quad Core CPU
- 4 GB RAM
- 60 GB free hard disk space
- No additional web servers or other applications running on the server

Pre-installation Tasks

> Before proceeding further with the iDENprotect$^{\text{server}}$ installation process, make sure the following pre-installation Tasks have been completed.

- The server has a RHEL or CentOS operating system installed. If an operating system is not installed yet, see [Installing RHEL].
- If using {RHEL}, the server must be registered and have a live subscription

  > For information on RHEL subscriptions, see How to register and subscribe a system.

  > If an active Red Hat user account is available, a {RHEL} subscription can be usually be enabled with the command `subscription-manager register --auto-attach`

- The server has access to internet
- NTP (Network Time Protocol) is enabled on the server

  > For instructions on configuring NTP, see Network Time Protocol setup for RHEL/CentOS 6 at RHEL Deployment Guide, Configuring NTP for RHEL/CentOS 7 at RHEL System Administrator's Guide.

- The server has a valid FQDN (Fully Qualified Domain Name) with a unique hostname

  > This can be tested this with the command `ping [server's FQDN]`. If the command returns with a valid reply, the network connection works and the server's FQDN can be resolved. If the server has just been set up, this step may fail even though the FQDN has been configured correctly.

- `epel-release` package is installed. See Enabling EPEL

Enabling EPEL

EPEL (Extra Packages for Enterprise Linux) packge includes signing keys and repository information for some required iDENprotect$^{\text{server}}$ components that are not included in the standard RHEL/CentOS repositories. Before installing iDENprotect^{server}, you must enable EPEL by installing the `epel-release` package.

Installing on CentOS

On CentOS, `epel-release` is available in the main CentOS repositories. It is installed with a normal `yum` command:

```
yum install epel-release
```

Installing on RHEL

EPEL does not fall under Red Hat's Production Support Scope of Coverage, and it is not available in the main RHEL repositories. However, the `epel-release` package is available as a downloadable RPM file from the Fedora Project website for RHEL 7 and RHEL 6. To install the package:

1. Download the right RPM for your operating system version
2. Install it

   ```
   yum localinstall <file-name.rpm>
   ```

For information on the relationship between Fedora Linux and RHEL, see article What is the relationship between Fedora and Red Hat Enterprise Linux? at Red Hat website.

Installing iDENprotect^{server}

iDENprotect^{server} is installed locally from an RPM package. The package is not publicly available, please contact your vendor or *support <at> idenprotect.com* on how to acquire the installation package.

The iDENprotect^{server} RPM package contains the following components:

- iDENprotect^{server} core and iDENprotect^{server} Admin Console
- iDENprotect^{server} internal database
- iDENprotect^{server} security hardening functions

To install iDENprotect^{server}:

1. Download the iDENprotect^{server} RPM package to the server
2. Install it with `yum`

   ```
   yum --nogpgcheck localinstall <file-name.rpm>
   ```

The file name is `idenprotect-server`, followed by version number and OS architecture information.

iDENprotect^{server} has a few dependencies, some of which require that the additional `epel-release` repository has been enabled. If `yum` warns about unresolvable dependencies, fix them before proceeding with iDENprotect^{server} installation.

Verifying Installation

During installation, iDENprotect^{server} is set up to run as a service which is automatically launched after installation and every server reboot. If the service runs successfully, it means that iDENprotect^{server} installation has been successful.

Verifying On CentOS / RHEL 7

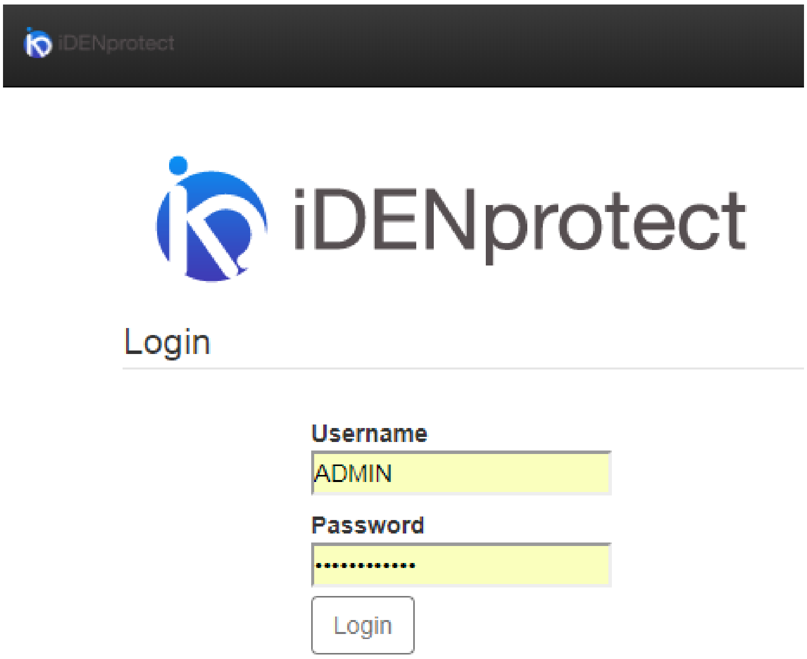
1. Enter command `systemctl status idenprotect`.
2. If the service is running successfully, you'll see the green text `Active: active (exited)`.
3. If the service is not running, you'll see the text `Active: inactive (dead)` instead.

Verifying On CentOS / RHEL 6

1. Enter command `service idenprotect status`.
2. If the service is running successfully, you'll see the green text `Running` followed by PID.
3. If the service is not runnung, you'll see the red text `Not running` instead.

If the service is running, open a web browser and access iDENprotect^{server} Admin Console in `https:\/\/<idenprotect.server.url>`. Before a valid SSL certificate is installed, your browser should show a security warning that you can ignore.

When the URL loads, you should see a login page.



iDENprotect

Login

Username

ADMIN

Password

••••••••••••

Figure 1. iDENprotect^{server} *Login Page*

If the service is not running, see instructions on performing troubleshooting from iDENprotect log files in iDENprotect^{server} Administrator Guide

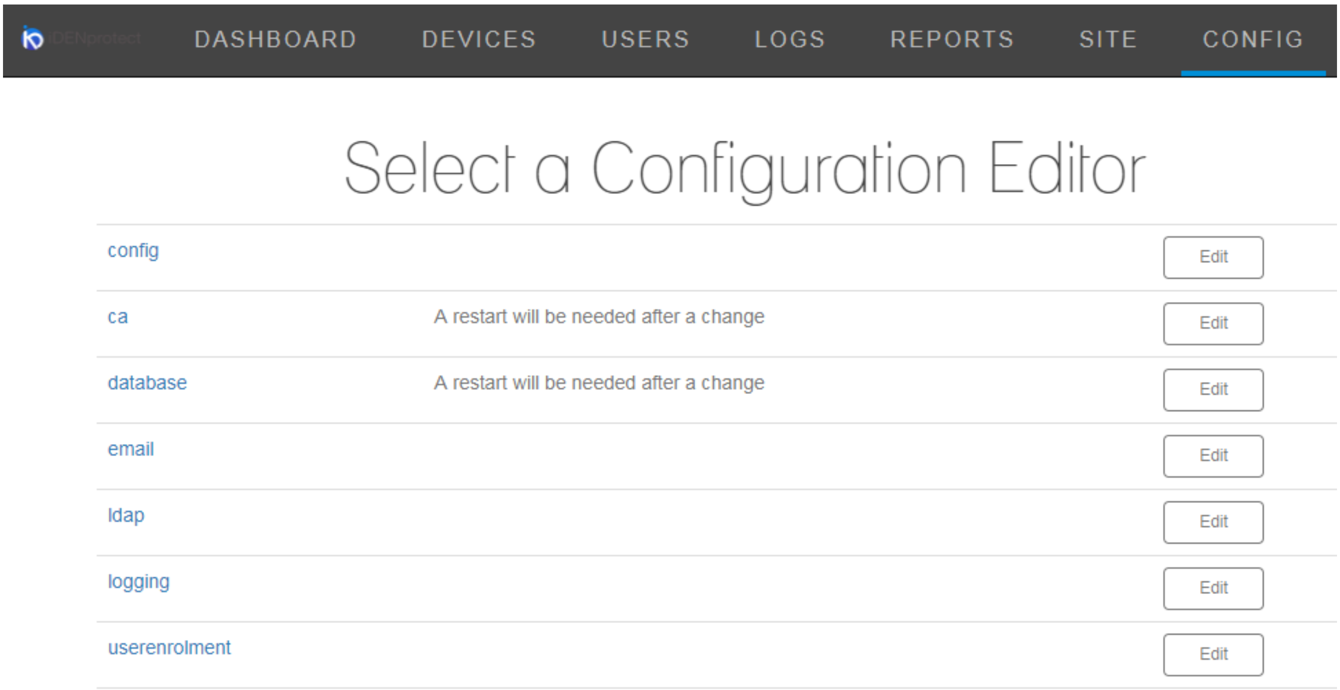
Initial iDENprotect^{server} Setup

While iDENprotect^{server} is able to launch immediately after installation, it is at this point only using a default configuration that has to be edited to match the characteristics of your operating environment. To start using iDENprotect^{server}, the following actions must be done:

1. Change iDENprotect^{server} Admin Console Administrator password
2. Activate iDENprotect^{server} licence
3. If using an external database server, Change database connection parameters
4. Configure Certificate Authority (CA) settings
5. Configure email server settings
6. Edit email message body templates to match your organisation
7. If using Active Directory or other LDAP directory, configure LDAP settings
8. Restart iDENprotect^{server}
9. If using Microsoft Exchange for outbound emails, configure Microsoft Exchange to accept anonymous SMTP traffic from iDENprotect^{server}
10. Install a trusted SSL certificate for the iDENprotect^{server} Admin Console

There are two ways to edit the configuration: by changing iDENprotect^{server} parameters in the iDENprotect^{server} Admin Console, or by directly editing configuration files on the server file system using a text editor such as `nano` or `vi`.

Editing in iDENprotect^{server} Admin Console



Select a Configuration Editor

config		Edit
ca	A restart will be needed after a change	Edit
database	A restart will be needed after a change	Edit
email		Edit
ldap		Edit
logging		Edit
userenrolment		Edit

Figure 2. Config Tab

1. Log in to iDENprotect^{server} Admin Console in `https:\/\/<idenprotect.server.url>`. When logging in for the first time, the credentials are: .* Username: **ADMIN** .* Password: **1detearAdm1n**
2. Open the **Config** Tab
3. Open a Configuration section

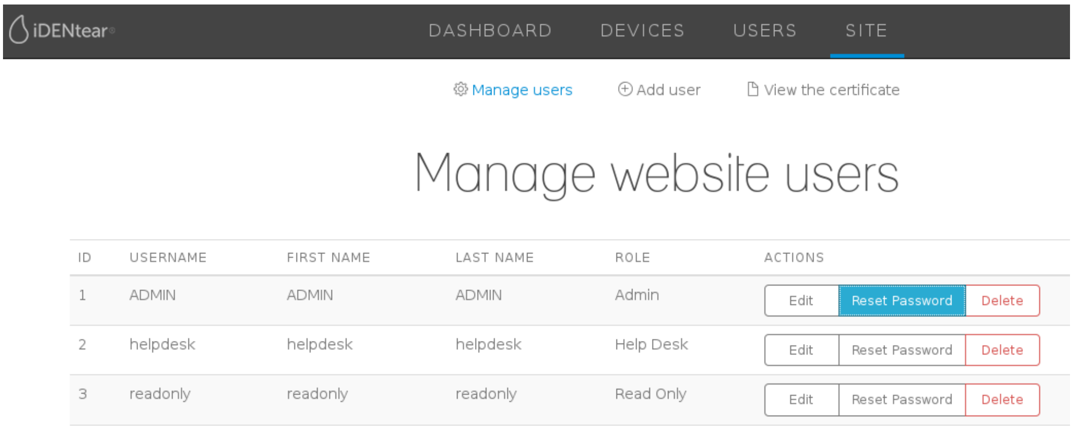
4. Edit a value or multiple values
5. Commit changes
6. Restart server if required

Editing in Command Line

1. On the server file system, go to directory `/etc/idenprotect`
2. Edit one of the `.properties` files
3. Save changes
4. Restart server if required

Changing Administrator Password

The first action after installing iDENprotect$^{\text{server}}$ should **always** be to change the iDENprotect$^{\text{server}}$ Admin Console built-in administrator account password:



Manage website users

ID	USERNAME	FIRST NAME	LAST NAME	ROLE	ACTIONS
1	ADMIN	ADMIN	ADMIN	Admin	Edit Reset Password Delete
2	helpdesk	helpdesk	helpdesk	Help Desk	Edit Reset Password Delete
3	readonly	readonly	readonly	Read Only	Edit Reset Password Delete

Figure 3. iDENprotect$^{\text{server}}$ Admin Console User Accounts List

1. Log in to iDENprotect$^{\text{server}}$ Admin Console in `https:\/\/<idenprotect.server.url>`. When logging in for the first time, the credentials are: .* Username: **ADMIN** .* Password: **1detearAdm1n**
2. Open the **Site** Tab
3. Click **Reset Password** on the ADMIN user
4. Enter and confirm a new password

Activating Licence

iDENprotect$^{\text{server}}$ licence determines the amount of concurrent iDENprotect devices that iDENprotect$^{\text{server}}$ supports. Without a valid licence, iDENprotect$^{\text{server}}$ will not accept any iDENprotect enrolments or authentication attempts.

The licence file is supplied from your vendor, or from iDENprotect. The licence file is named `licence.xml`. Contact us at *support <at> idenprotect.com* if you have issues with the licence file.

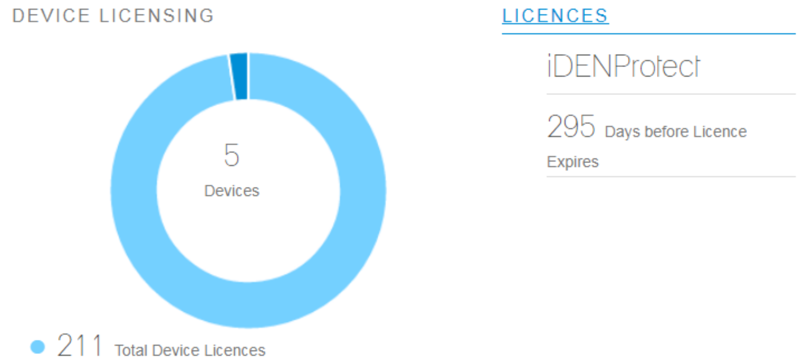


Figure 4. iDENprotect^{server} Admin Console iDENprotect^{server} Licences View

The licence is activated with the following steps:

1. Log in to iDENprotect^{server} Admin Console
2. In the **Dashboard** Tab, click on the **Licences** text
3. Upload your licence file

The licence file is validated and you should immediately see the licenced device pool under **Device Licencing** chart reflect the amount of available licences.

Configuring Database Connection Parameters

iDENprotect^{server} installation sets up a local MariaDB database for its use. MariaDB is an open source MySQL -compliant database server.

The database stores vital iDENprotect^{server} data, such as iDENprotect devices, iDENprotect users, authentication attempts, and iDENprotect^{server} Admin Console users.

By default, iDENprotect^{server} is configured to use the local MariaDB database, but iDENprotect^{server} can use external SQL or Oracle DB databases as well. When using the local MariaDB database, you don't have to change anything.

To use a different database, you have to change the database connection settings. The settings are configured in:

- **Database** section in the iDENprotect^{server} Admin Console **Config** Tab
- Server file system in `/etc/idenprotect/database.properties`

Using External Database Server

Both local and external database connections are established using a JDBC connection URL, which is defined in `/etc/idenprotect/database.properties`. MariaDB / MySQL database connections use JDBC MySQL driver, and Oracle database connections use the Oracle Thin JDBC Driver.

MariaDB / MySQL Database

Change the following database connection parameters:

Table 1. Parameters for MariaDB / MySQL Database

Parameter in Config Tab	Parameter in Properties File	Configuration Change
`username`	`db.username`	User name of the iDENprotect database
`password`	`db.password`	The user's password
`driver`	`db.jdbc.driver`	JDBC Driver name. Set to `com.mysql.jdbc.Driver`
`url`	`db.jdbc.url`	JDBC connection URL. Set to `jdbc:mysql://<server-ip/hostname>:<port>/<database-name>?autoReconnect=true`
`vendor`	`db.vendor`	Database type. Set to `MYSQL`.

When using MariaDB / MySQL, iDENprotect^{server} stores all data in database named `IDENPROTECT`. If the database doesn't exist, iDENprotect^{server} startup script creates the database during initial startup.

Oracle Database

iDENprotect^{server} supports Oracle Database version 11g Release 2 (11.2.0.x) Enterprise and Express editions.

To use Oracle Database instead of MariaDB, change the following database connection parameters:

Table 2. Parameters for Oracle Database

Parameter in Config Tab	Parameter in Properties File	Configuration Change
`username`	`db.username`	The name of the iDENprotect user / schema on the database
`password`	`db.password`	Password of the user / schema
`driver`	`db.jdbc.driver`	JDBC Driver name. Set to `oracle.jdbc.OracleDriver`
`url`	`db.jdbc.url`	JDBC connection URL. Set to to `jdbc:<database-SID>:thin:@<server-ip/hostname>:<port>/<global-database-name>`
`vendor`	`db.vendor`	Database type. Set to `ORACLE`.

iDENprotect^{server} Oracle Database connector requires that an empty schema for the data is created before launching iDENprotect^{server} for the first time with the new database connection. During startup, iDENprotect^{server} creates all tables and required core data when it detects that the schema exists.

There are multiple ways to create a new user / schema in Oracle Database. For instructions, see CREATE USER in Oracle Database SQL Reference

Configuring CA Settings

During installation, iDENprotect^{server} creates Java KeyStore (`cakeystore.jkskeystore.jks`) and TrustStore (`cakeystore.jkstruststore.jks`) files in `/etc/idenprotect` directory. The created files contain placeholder CA certificates suitable for running iDENprotect^{server} for development or testing purposes.

When iDENprotect^{server} is run in production use, the certificates in the JKS files should be replaced with your organisation's signed certificates.

Configuring Email Settings

When in use, iDENprotect^{server} sends automated iDENprotect emails to users during events such as iDENprotect registration or PIN reset. To send emails, iDENprotect^{server} requires a working connection to an SMTP server.

SMTP settings are configured in:

- **Email** section in the iDENprotect^{server} Admin Console **Config** Tab
- Server file system in `/etc/idenprotect/email.properties`

To configure the mail server, change the following parameters:

Table 3. Parameters for SMTP Server

Parameter in Config Tab	Parameter in Properties File	Configuration Change
`mailUser`	`email.gateway.username`	Account name for connecting to the SMTP server
`mailPassword`	`email.gateway.password`	The account's password
`smtpHost`	`email.gateway.host`	URL or hostname of the SMTP server
`smtpPort`	`email.gateway.port`	Used SMTP port. Default is 25
`fromAddress`	`email.gateway.from`	"From:" email address for all sent mails. Any replies from the users will arrive in this mailbox, so either use a known support account or an explicit "do not reply" email address.
`fromDisplayName`	`email.gateway.displayname`	Sender name for all sent mails.

Editing Email Templates

The emails iDENprotect^{server} sends are based on editable template files. Each email has a subject and a message body, which is read from a `.vm` template file located in `/etc/idenprotect/email-templates/`. The template files contain some organisation-specific information such as unfilled contact details.

Edit the following files to match your organisation's conventions:

- `ActivationEmailHtml.vm` - email containing a generated Activation Code. Automatically sent to user after successful enrollment.
- `deviceEnrollmentEmailHtml.vm` and `userEnrollmentEmailHtml.vm` - emails containing instructions on acquiring an iDENprotect App and getting started with iDENprotect. These are used when an iDENprotect device is set up for a user without the user's input.

- `pinResetEmailHtml.vm` - email containing a PIN reset notification and a new Activation Code. PIN reset is initiated by the user.

These emails can contain any text or HTML styling. In addition, the email templates use the following variables:

- `$user.firstName` - First name of the email recipient
- `$user.lastName` - Last name of the email recipient
- `$activationCode` - Generated one-time Activation Code used during enrolment
- `$qrUrl` - Generated enrolment QR Code image embedded within the message. Only works with HTML messages
- `$portalQrUrl` - URL link to the QR Code

> The template files are not backed up anywhere. Make sure to store the original files before editing them.

Configuring LDAP Settings (optional)

iDENprotect$^{\text{server}}$ can be used with or without LDAP integration. After initial installation, LDAP integration is disabled. If LDAP is enabled, iDENprotect$^{\text{server}}$ connects iDENprotect users' identities to an LDAP directory, such as Microsoft Active Directory.

LDAP settings are configured in:

- **LDAP** section in the iDENprotect$^{\text{server}}$ Admin Console **Config** Tab
- Server file system in `/etc/idenprotect/ldap.properties`

To enable LDAP and connect to a LDAP directory, change the following parameters:

Table 4. Parameters for LDAP

Parameter in Config Tab	Parameter in Properties File	Description
`enabled`	`ldap.enabled`	Set to `true` to enable LDAP integration.
`server`	`ldap.server`	LDAP server URL (or IP address) and access port. The format is `ldap://<server-url>:<server-port>`
`authMethod`	`ldap.auth.method`	LDAP connection authentication method. Available options are `simple`, `sasl` and `anonymous`. If unsure of the right option, set to `simple`.
`authUser`	`ldap.auth.user`	LDAP service account username (if using simple or SASL authentication). Ignored if using anonymous authentication.
`authPassword`	`ldap.auth.password`	LDAP service account password (if using simple or SASL authentication)
`searchBase`	`ldap.search.base`	Set to the DN (Distinguished Name) of the search base object where the LDAP directory lookup search begins
`searchObjectClass`	`ldap.search.objectclass`	Set to the objectclass of the search base target. If unsure of the right option, set to `person`

Parameter in Config Tab	Parameter in Properties File	Description
`userNameField / firstNameField / lastNameField / fullNameField / emailField`	`ldap.field.user.name / first.name / last.name / full.name / email`	Column names in the LDAP directory for the user information

The service account referred to in `authUser` and `authPassword` requires read access to the LDAP directory to be able to make queries. We recommend creating a dedicated LDAP account for iDENprotect^server^. The account only requires membership in the **Domain Users** group.

Enabling LDAP Auto-enrolment

When LDAP is enabled, iDENprotect^server^ verifies that all connecting iDENprotect users can be found in the LDAP directory. However, during enrolment an iDENprotect administrator has to manually verify all newly registered users. This part of enrolment can be further streamlined by enabling LDAP auto-enrolment.

When auto-enrolment is enabled, iDENprotect^server^ automatically enrols all new iDENprotect users who have been assigned to a defined auto-enrolment group in the LDAP directory.

To enable auto-enrolment, change the following paramters:

Table 5. Parameters for LDAP

Parameter in Config Tab	Parameter in Properties File	Description
`autoEnrollEnabled`	`ldap.autoenroll.enabled`	Set to `true` to enable LDAP auto-enrolment.
`autoEnrollGroup`	`ldap.autoenroll.group`	Auto-enrolment Group name in the LDAP directory. All members in this group are automatically enroled when they register a new Device. The Group syntax is `CN=<GroupName>,OU<GroupFolder>,DC=<LDAPDirectoryName>`.

Restarting iDENprotect^{server}

iDENprotect^{server} can only be restarted from the command line by restarting the `idenprotect-server` service. The restart takes about 30 seconds

On CentOS / RHEL 7

Enter command `systemctl restart idenprotect-server`.

On CentOS / RHEL 6

Enter command `service idenprotect-server restart`.

Configuring Microsoft Exchange

The iDENprotect^{server} is configured by default to send email on port 25 of the selected SMTP Server using SMTP Basic Authentication.

If the SMTP Server in use is Microsoft Exchange, authentication between Exchange and the iDENprotect^{server} may cause issues. In these specific scenarios, a Receive Connector should be configured that accepts anonymous users.

Configuring the Full Receive Connector is referenced within the following Microsoft TechNet resource. As a general guide, the process can be outlined as:

1. Open **Exchange Management Console**
2. Open **Server Configuration**
3. Select **Hub Transport**
4. Select **Receive Connectors**
5. Add new **Custom Receive Connector**
6. Provide a name for the Connector, for example **iDENprotect Connector**
7. Go to the **Network** tab
8. Enter the internal IP Address of iDENprotect^{server} in the list **Receive mail from remote servers that have these IP addresses**
9. Go to the **Authentication Tab**
10. Select **Basic Authentication**
11. Go to the **Permission Groups** tab and select as appropriate e.g. Anonymous Users

Installing a Trusted Certificate

In order to handle web connections securely, the iDENprotect^{server} must use a valid publicly trusted digital certificate. If no valid certificate has been configured, iDENprotect devices will not be able to communicate with the iDENprotect^{server}.

Generating Private Key and CSR

1. In the iDENprotect^{server} terminal, create a new 2048-bit RSA key using OpenSSL:

   ```
   openssl req -new -newkey rsa:2048 -nodes -keyout server.key -out server.csr
   ```

   Change the name of `server.key` and `server.csr` to the hostname of iDENprotect^{server}. For example, if the hostname is `iden.domain.com`, name the files `iden.key` and `iden.csr`.

   This starts the process of generating 2 files: a **private key** file for decrypting TLS traffic and a CSR (Certificate Signing Request) file

2. Enter the organisational and geographic information for the certificate
3. When prompted for the **Common Name**, enter the fully qualified domain name of the iDENprotect^{server}. For example, `iden.domain.com`.
4. Enter an email address for contact information regarding the certificate

Signing the CSR

Once the CSR file is created, send it to the CA (Certificate Authority) that is to be used for TLS web connection certificates. The reply from the CA typically contains the signed certificate chain in a `.pem` or `.crt` file. This file is the **public key** of iDENprotect$^{\text{server}}$. Store it on the iDENprotect$^{\text{server}}$ computer. If an option is given to sign a certificate for a specific web server, select NGINX bundle.

> If the CSR file contents are being copy-pasted, make sure to include all of them. Many CSRs fail because the BEGIN and END lines were not included in the request.

Installing the Certificates

To set up TLS for iDENprotect$^{\text{server}}$, both keys must be stored on the server and configured in nginx:

1. Copy the `.key` file and the CRT or PEM received from the CA in the `/var/certs` directory
2. Edit `/etc/nginx/nginx.conf` and add the locations for the keys `ssl_certificate` and `ssl_certificate_key`

   ```
   ssl_certificate: /var/certs/my_domain_name.pem; (or bundle.crt)
   ssl_certificate_key: /var/certs/my_domain_name.key;
   ```

   > Adjust the file names to match the certificate files on your file system.

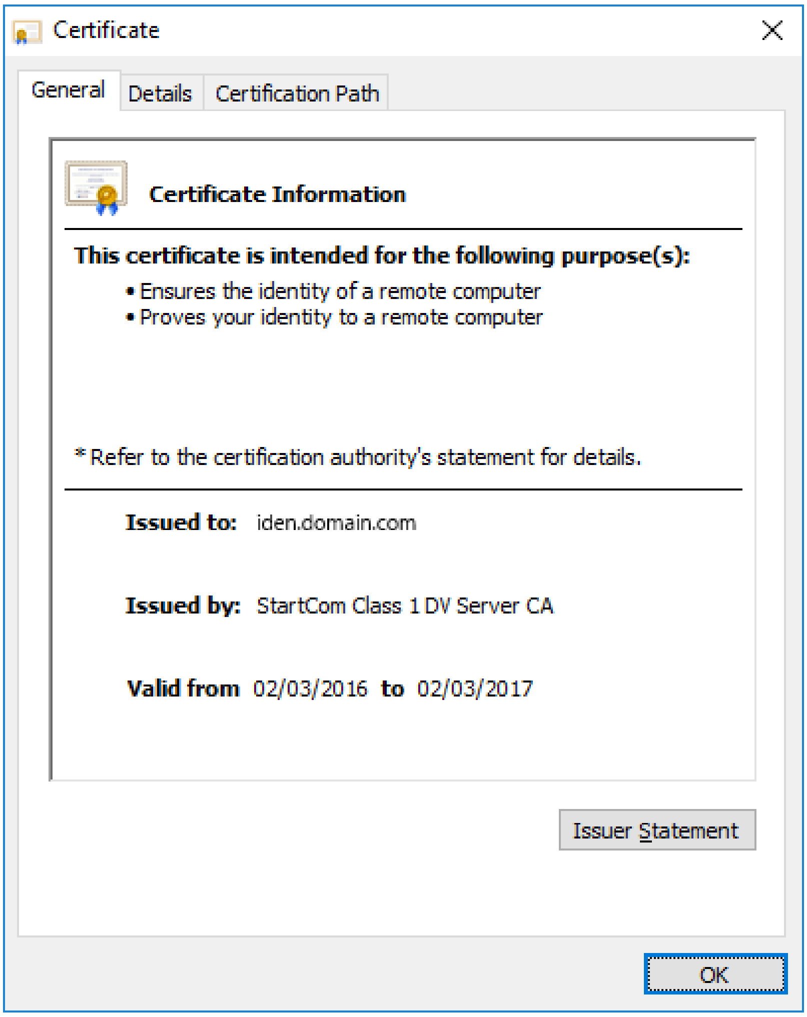
3. Restart the nginx web server:

   ```
   systemctl restart nginx
   ```

Testing the Certificate

Open a web browser and enter the URL for the iDENprotect$^{\text{server}}$. The browser should not alert to any certificate validation errors.

Depending on the browser, there should be a padlock or similar icon in the address bar, which means that the iDENprotect$^{\text{server}}$ now has a trusted certificate for the web site.



Certificate Information

This certificate is intended for the following purpose(s):

- Ensures the identity of a remote computer
- Proves your identity to a remote computer

* Refer to the certification authority's statement for details.

Issued to: iden.domain.com

Issued by: StartCom Class 1 DV Server CA

Valid from 02/03/2016 **to** 02/03/2017

Figure 5. Certificate information

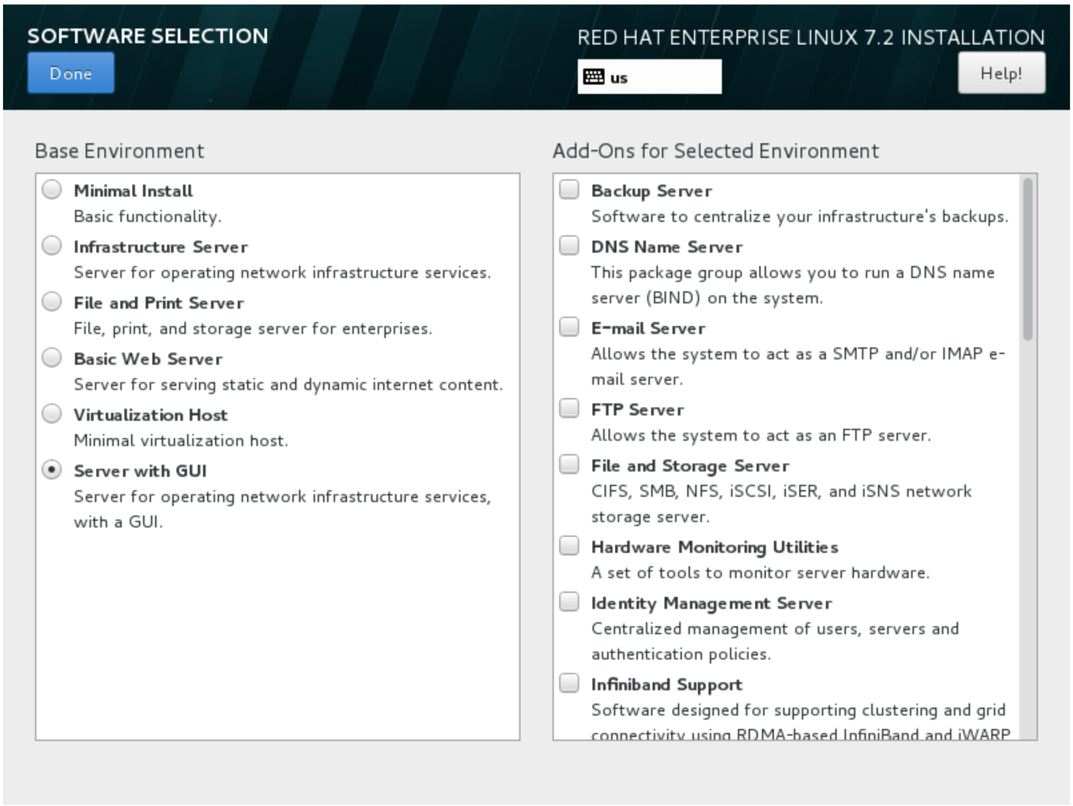
Appendix A: Installing RHEL 7

This section provides a brief walkthrough of installing {RHEL} on an empty hard drive. For complete installation instructions, refer to RHEL 7 Installation Guide.

After launching the {RHEL} installer and selecting the install language, the **Installation Summary** screen is displayed. Do the following steps to launch the {RHEL} installation process:

1. Set up the localisation settings:
   a. Open the **Date & Time** window and select the time zone
   b. Open the **Keyboard** window and select the keyboard layout
2. Select the server base environment type:
   a. Open the **Software Selection** window
   b. Select either **Minimal Install** or **Server with GUI**

   iDENprotect^{server} itself does not require a GUI, but having access to a graphical internet browser (which comes bundled on **Server with GUI**) on the server is helpful when performing initial iDENprotect^{server} setup.



Base Environment

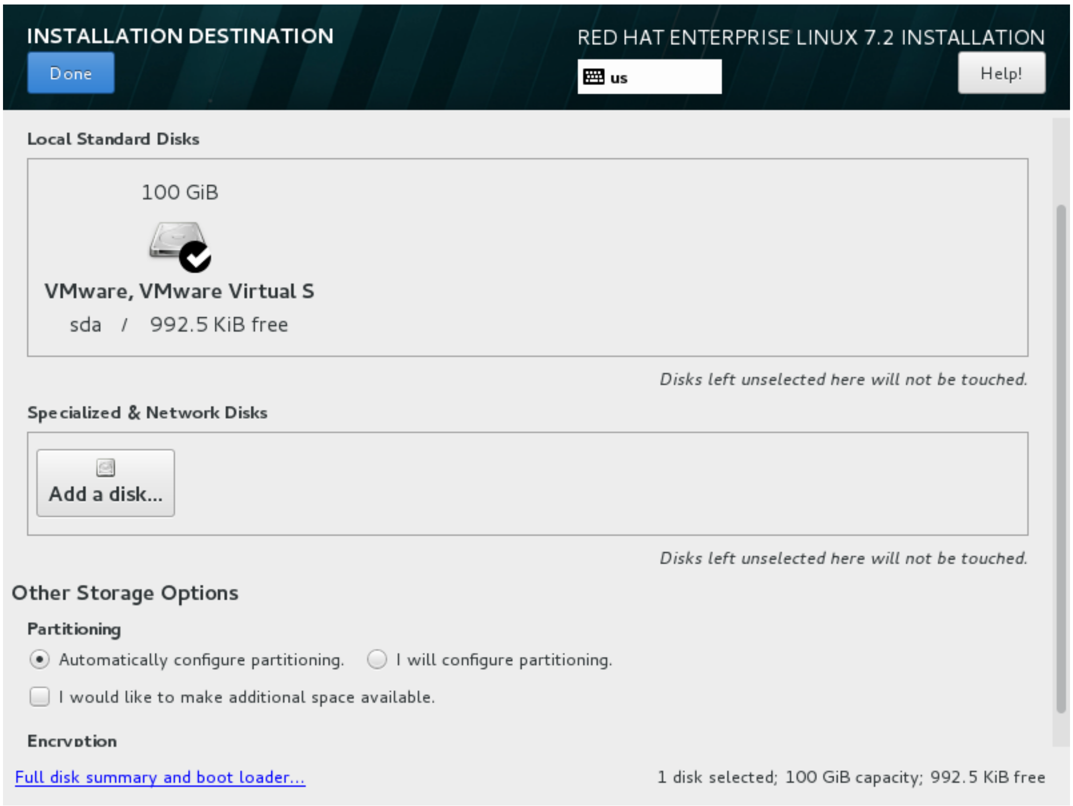
○ **Minimal Install**
Basic functionality.
○ **Infrastructure Server**
Server for operating network infrastructure services.
○ **File and Print Server**
File, print, and storage server for enterprises.
○ **Basic Web Server**
Server for serving static and dynamic internet content.
○ **Virtualization Host**
Minimal virtualization host.
● **Server with GUI**
Server for operating network infrastructure services, with a GUI.

Add-Ons for Selected Environment

□ **Backup Server**
Software to centralize your infrastructure's backups.
□ **DNS Name Server**
This package group allows you to run a DNS name server (BIND) on the system.
□ **E-mail Server**
Allows the system to act as a SMTP and/or IMAP e-mail server.
□ **FTP Server**
Allows the system to act as an FTP server.
□ **File and Storage Server**
CIFS, SMB, NFS, iSCSI, iSER, and iSNS network storage server.
□ **Hardware Monitoring Utilities**
A set of tools to monitor server hardware.
□ **Identity Management Server**
Centralized management of users, servers and authentication policies.
□ **Infiniband Support**
Software designed for supporting clustering and grid connectivity using RDMA-based InfiniBand and iWARP

Figure 6. Selecting server type

3. Set up automatic partitioning:
   a. Open the **Installation Destination** window
   b. Leave all settings as they are and click **Done**



INSTALLATION DESTINATION
Done
RED HAT ENTERPRISE LINUX 7.2 INSTALLATION
us
Help!

Local Standard Disks

100 GiB

VMware, VMware Virtual S

sda / 992.5 KiB free

Disks left unselected here will not be touched.

Specialized & Network Disks

Disks left unselected here will not be touched.

Other Storage Options

Partitioning

● Automatically configure partitioning. ○ I will configure partitioning.

□ I would like to make additional space available.

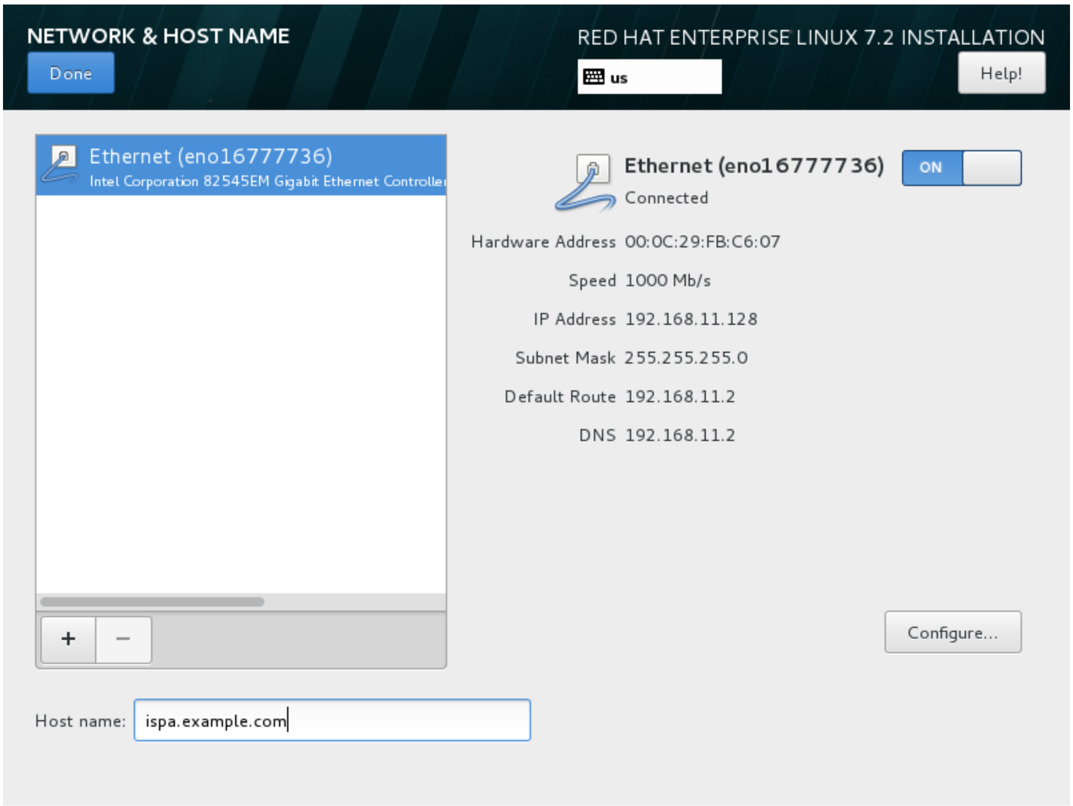
Encryption

Full disk summary and boot loader...

1 disk selected; 100 GiB capacity; 992.5 KiB free

Figure 7. Setting up partitioning

4. Set up the network settings:
   a. Open the **Network & Hostname** window
   b. Enter the FQDN (Fully-Qualified Domain Name) of the server in the **Host name** field



NETWORK & HOST NAME
Done
RED HAT ENTERPRISE LINUX 7.2 INSTALLATION
us
Help!
Ethernet (eno16777736)
Intel Corporation 82545EM Gigabit Ethernet Controlle
ON
+
−
Configure...

Ethernet (eno16777736)

Connected

Hardware Address 00:0C:29:FB:C6:07

Speed 1000 Mb/s

IP Address 192.168.11.128

Subnet Mask 255.255.255.0

Default Route 192.168.11.2

DNS 192.168.11.2

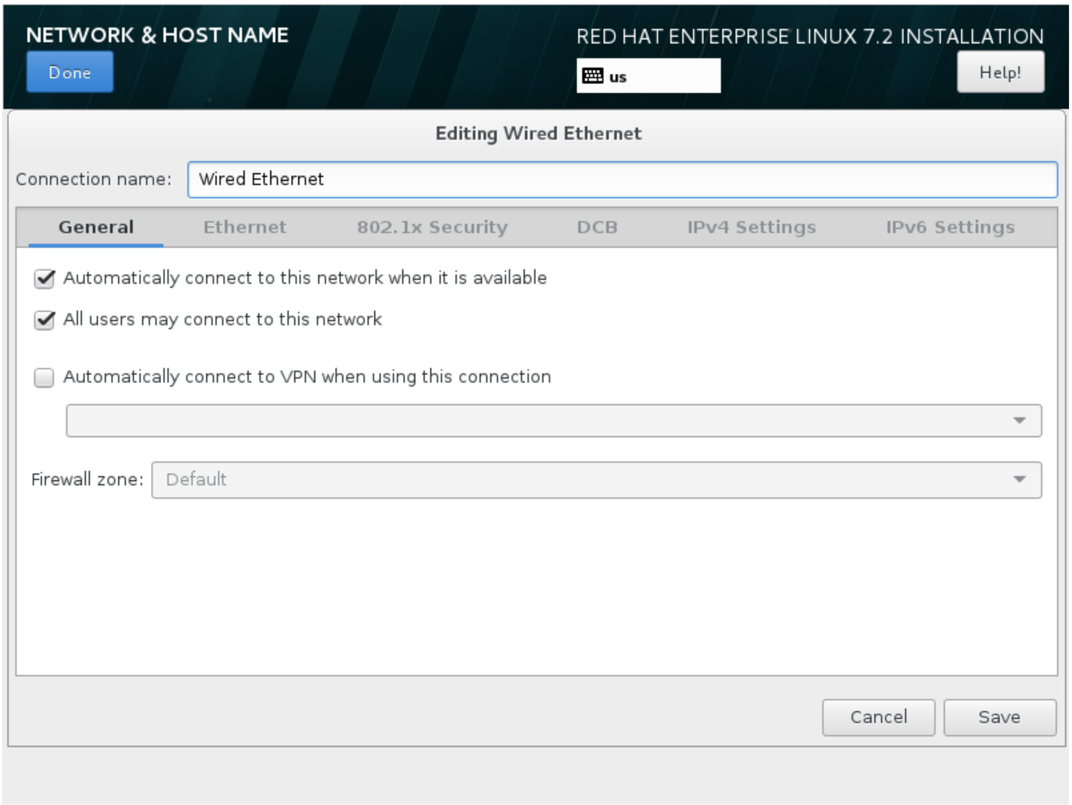
Host name: ispa.example.com

Figure 8. Setting up FQDN

c. Enable the Ethernet interface by clicking on the **On/Off** button

d. Click **Configure**

e. In the **General** tab, enable the **Automatically connect to this network when it is available** checkbox



Editing Wired Ethernet

Connection name: Wired Ethernet

☑ Automatically connect to this network when it is available

☑ All users may connect to this network

□ Automatically connect to VPN when using this connection

Firewall zone: Default

Figure 9. Enabling the network connection

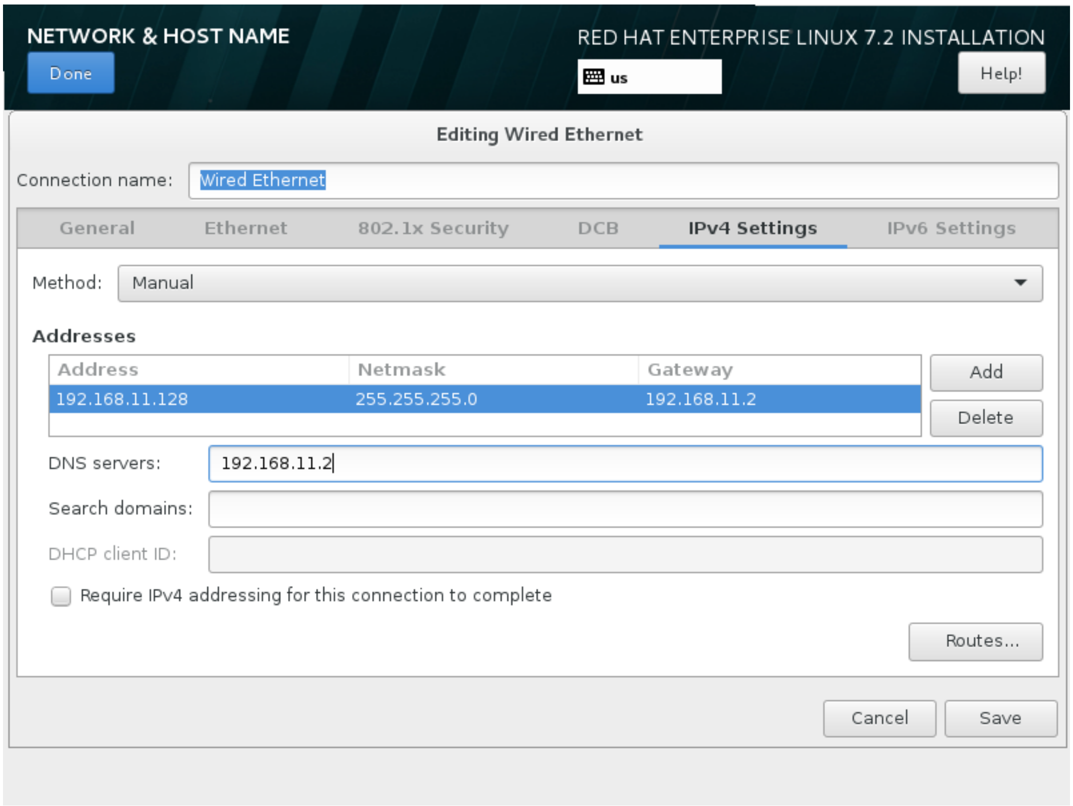
f. In the **IPv4 Settings** tab, set up static IP address for the server:

   i. Choose the **Manual** option in the **Method** drop-down menu

   ii. Click **Add** to add a new IP address

   iii. Enter the **Address**, **Netmask**, and **Gateway** of the server

   iv. Enter at least 1 DNS server IP address in the **DNS servers** field



Connection name: Wired Ethernet

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.11.128	255.255.255.0	192.168.11.2

DNS servers: 192.168.11.2

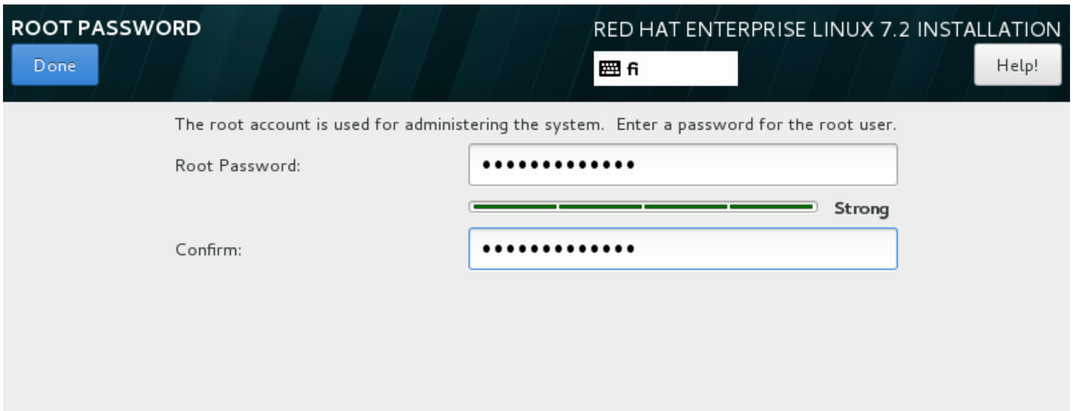
Search domains:

DHCP client ID:

□ Require IPv4 addressing for this connection to complete

Figure 10. Configuring IP addresses

5. Click **Begin Installation**
6. Set up a password for the built-in `root` user account:
   a. Open the **Root Password** window
   b. Enter and confirm a secure root password in the **Root Password** and **Confirm** fields



The root account is used for administering the system. Enter a password for the root user.

Root Password: •••••••••••••

Confirm: •••••••••••••

Figure 11. Setting root password

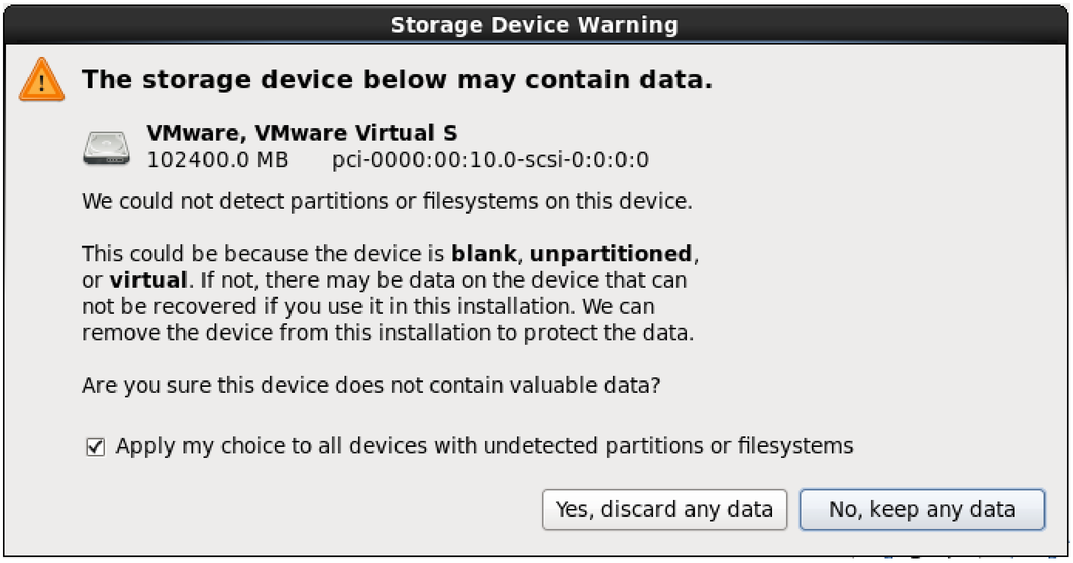
7. Wait for the installation to finish and reboot the server

Appendix B: Installing RHEL 6

This section provides a brief walkthrough of installing {RHEL} on an empty hard drive. For complete installation instructions, refer to RHEL 6 Installation Guide.

After launching the {RHEL} installer, the pre-install menu is displayed.

1. Select **Install or upgrade an existing system**
2. Select **Ok** to perform an installation media consistency test. This will take some time after which the actual graphical installer application launches next.
3. Select install language. Click **Next**
4. Select keyboard layout. Click **Next**
5. Select **Basic Storage Devices**. Click **Next**
6. The installer warns about possible data loss in the target hard disk partition. Since the installation is on a fresh system, the warning can be ignored by selecting **Yes, discard any data**



Storage Device Warning

The storage device below may contain data.

VMware, VMware Virtual S
102400.0 MB pci-0000:00:10.0-scsi-0:0:0:0

We could not detect partitions or filesystems on this device.

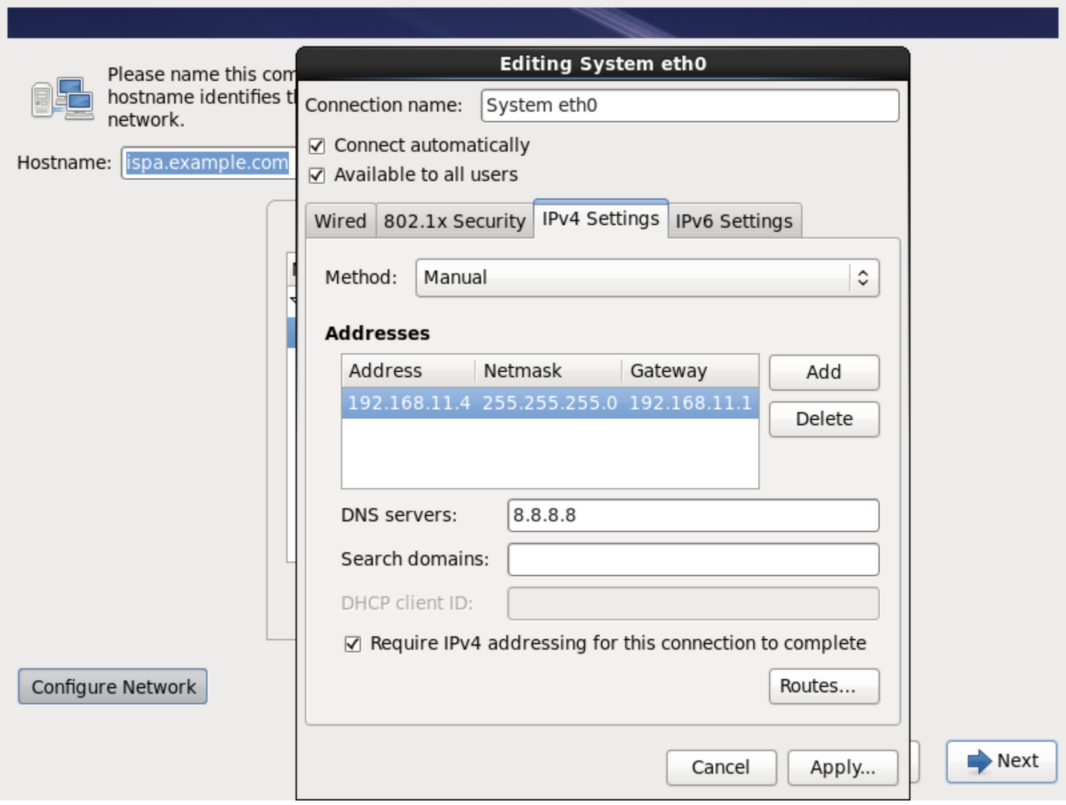
This could be because the device is **blank**, **unpartitioned**, or **virtual**. If not, there may be data on the device that can not be recovered if you use it in this installation. We can remove the device from this installation to protect the data.

Are you sure this device does not contain valuable data?

☑ Apply my choice to all devices with undetected partitions or filesystems

Figure 12. Storage device warning

7. Enter a hostname for the server computer. The hostname must be a FQDN (Fully-Qualified Domain Name) that is resolvable and reachable from the internet.
8. Click **Configure Network**
   a. Check the **Connect automatically** checkbox
   b. Open **IPv4** tab
   c. Select **Manual** method from the dropdown meny and enter a static IP address, netmask and default gateway for the server by clicking on the **Add** button
   d. Add at least 1 DNS server IP address
   e. Click **Apply** and **Next**



Please name this com
hostname identifies t
network.

Hostname: ispa.example.com

Editing System eth0

Connection name: System eth0

☑ Connect automatically

☑ Available to all users

Wired | 802.1x Security | IPv4 Settings | IPv6 Settings

Method: Manual

Addresses

Address	Netmask	Gateway
192.168.11.4	255.255.255.0	192.168.11.1

DNS servers: 8.8.8.8

Search domains:

DHCP client ID:

☑ Require IPv4 addressing for this connection to complete

Figure 13. Setting network connection

9. Select the time zone. Click **Next**
10. Enter a root password. Click **Next**
11. Select **Use All Space** and click **Next**
12. Select **Write changes to disk**
13. Select either **Basic Server** (no GUI) or **Desktop** (with GUI) and click **Next**

    iDENprotect^{server} itself does not require a GUI, but having access to a graphical internet browser (which comes bundled on **Desktop**) on the server is helpful when performing initial iDENprotect^{server} setup.

14. Wait for the installation to finish and reboot the server