



# LANTERIA HR: TECHNICAL OVERVIEW

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# 1. Introduction

## 1.1. Lanteria HR Overview

Lanteria HR is a SharePoint based HRM solution that facilitates and automates the entire HR management cycle in a company. Lanteria HR provides central storage for all HR information, guides and supports HR processes and increases the performance of each employee and organization as a whole.

The distinctive feature of Lanteria HR is establishing of collaborative environment between HR department, line managers and employees in a company. Lanteria HR has the unique features for all company members that help them work as a solid team, increase performance and efficiently achieve the company goals.

Lanteria HR provides the following features:

- Building organizational structure and chart
- HR administration (employee database, HR processes, documents and notifications)
- Absence management
- Compensation and benefits
- Competence and goal management
- Appraisal and reviews
- Learning and development
- Recruiting
- Career and talent management
- Employee and manager portals

## 1.2. Lanteria HR Application Components

The Lanteria HR application consists of the following elements:

**SharePoint site and SharePoint Content Database:**

- Lists
- Document libraries
- Pages
- Workflows
- CSS
- JavaScript

**SharePoint Farm Solution** - Lanteria HR Visual Studio code (.dll file), which consists of the following:

- Event Handlers
- SharePoint Jobs
- Web Parts
- Web Controls
- HTTP Handlers

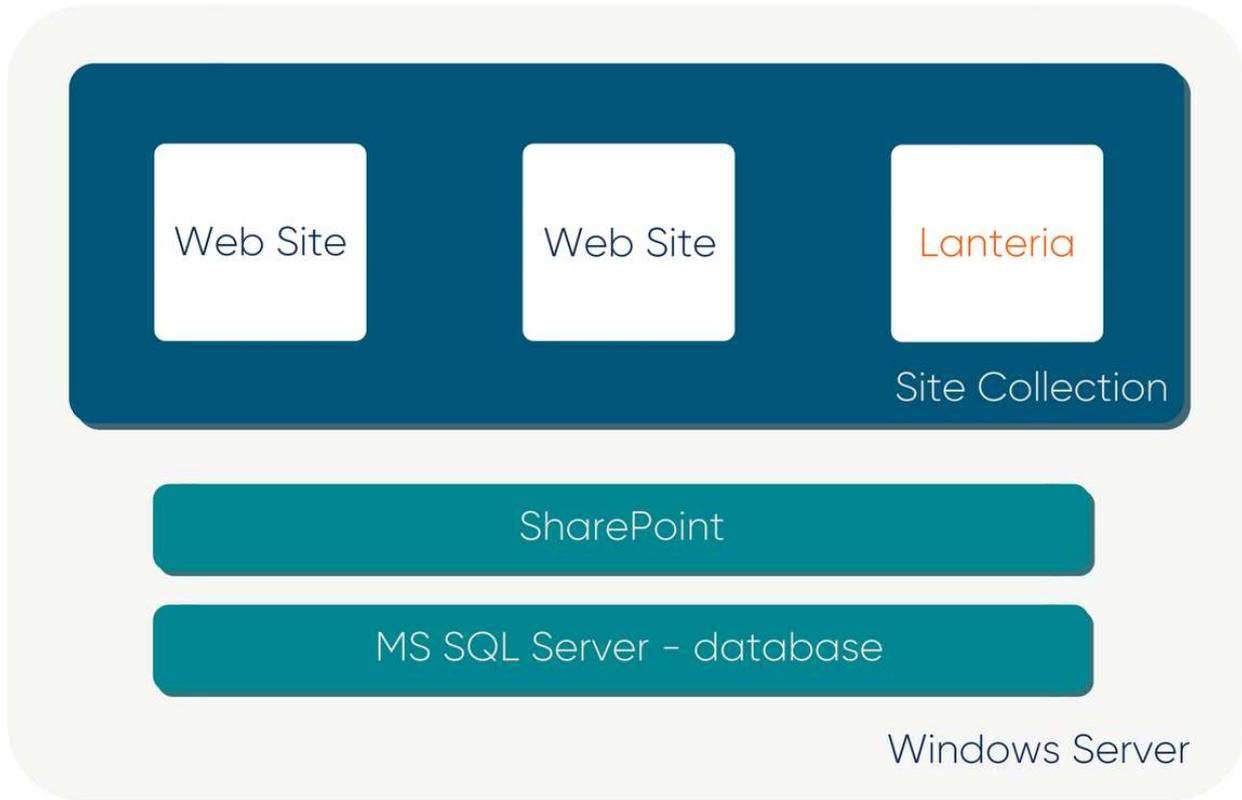
**SharePoint Learning Kit** - used for launching the SCORM compatible e-learning courses

**SQL Database** - used to store some data from Learning and Absence modules

## 2. Product and Architectural Overview

Lanteria HR is a SharePoint based solution. It is installed to the Windows Server that must have MS SQL Server (used as a database) and SharePoint installed.

Lanteria HR is installed as a site of the SharePoint site collection. The following image shows the Lanteria HR environment.



### 2.1. System Requirements (on-premise server installation)

This section describes the hardware and software requirements that are the prerequisite for the Lanteria HR on-premise installation. The system requirements for the hosted installation are described in the following section.

#### 2.1.1. Hardware requirements – Web servers, application servers, and single server installations

The values in the following table are minimum values for installations on servers that are running SharePoint Server 2013/2016/2019 or SharePoint Foundation 2013 in a multiple and single server farm installation.

For all installation scenarios, you must have sufficient hard disk space for the base installation and sufficient space for diagnostics such as logging, debugging, creating memory dumps, and so on. For production use, you must also have additional free disk space for day-to-day operations. In addition, maintain two times as much free space as you have RAM for production environments.

For better performance and user experience we recommend using Solid State Drives (SSD) or SSD based storage systems.

Installation Scenario	Deployment type and scale	RAM	Processor	Hard disk space
Single server with a built-in database or single server that uses SQL Server	Development or evaluation installation of SharePoint Server 2013/2016/2019 or SharePoint Foundation 2013 with the minimum recommended services for development environments. Use the Single-Server farm role that will let you choose which service applications to provision.	16 GB	64-bit, 4 cores	80 GB for system drive 100 GB for second drive
Single server role that uses SQL Server	Pilot or user acceptance test installation of SharePoint Server 2013/2016/2019 or SharePoint Foundation 2013 running all available services for development environments.	24 GB	64-bit, 4 cores	80 GB for system drive 100 GB for second drive and additional drives
Web server or application server in a three-tier farm	Development or evaluation installation of SharePoint Server 2013/2016/2019 or SharePoint Foundation 2013 with a minimum number of services.	12 GB	64-bit, 4 cores	80 GB for system drive 80 GB for second drive and additional drives
Web server or application server in a three-tier farm	Pilot, user acceptance test, or production deployment of SharePoint Server 2013/2016/2019 or SharePoint Foundation 2013 running all available services.	16 GB	64-bit, 4 cores	80 GB for system drive 80 GB for second drive and additional drives

### 2.1.2. Hardware requirements – Database servers

The requirements in the following table apply to database servers in production environments with multiple servers in the farm.

Component	Minimum requirement
Processor	64-bit, 4 cores
RAM	8 GB for small deployments (100 - 500 employees) 16 GB for medium deployments (500 - 3000 employees) 24 GB for large deployments ( >3000 employees)
Hard disk	80 GB for system drive 80 GB for second drive and additional drives Hard disk space is dependent on the size of your SharePoint content and backup requirements. For better performance we recommend using Solid State Drives (SSD) or SSD based storage systems.

### 2.1.3. Software Requirements

The following software is required for Lanteria HR:

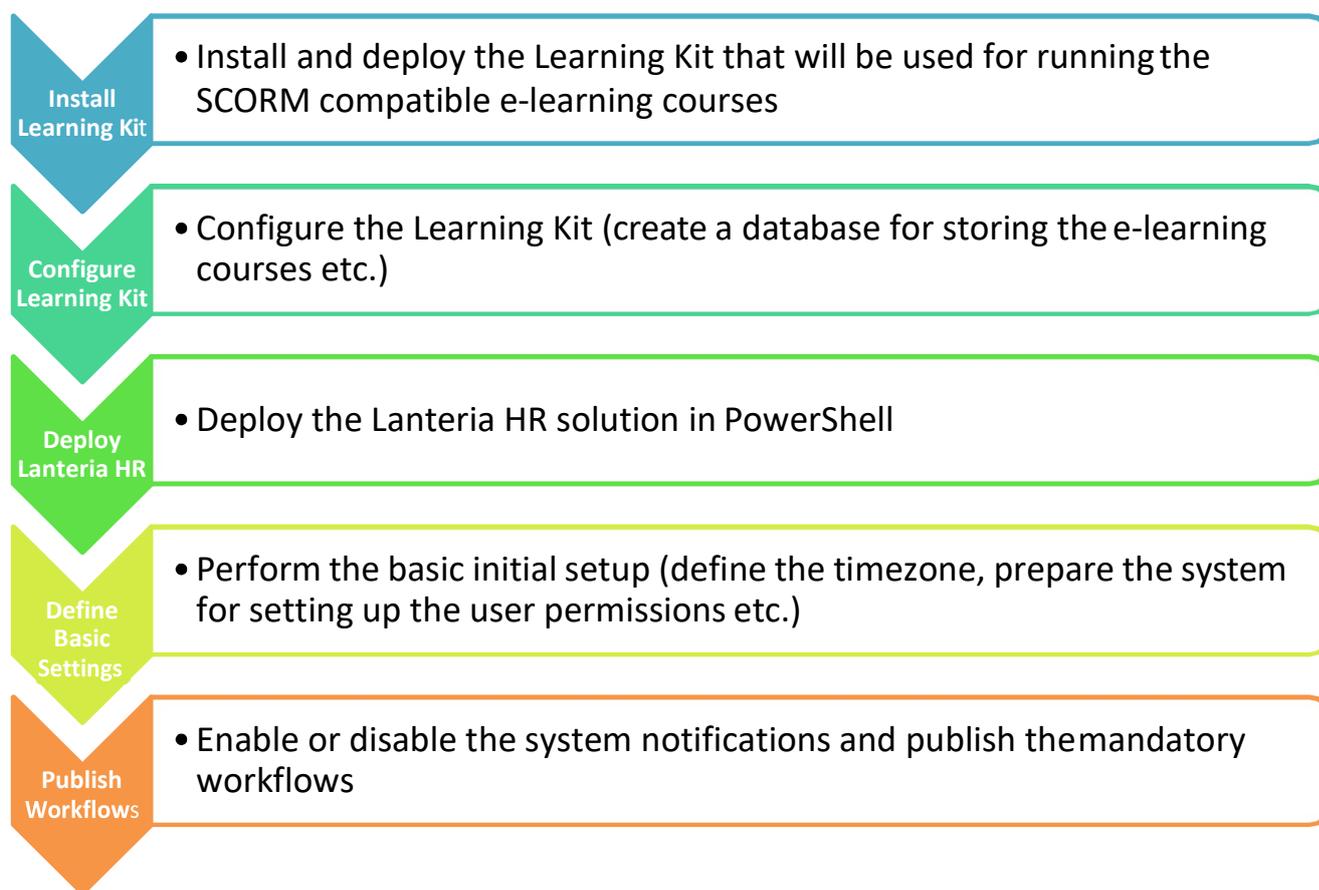
- Microsoft SharePoint 2013/2016/2019
- Windows Server 2012 R2/2016/2019
- SQL Server 2012/2014/2016/2019
- .NET Framework 4.5 or higher

## 2.2. System Requirements (hosted)

In case when system is hosted by Lanteria, infrastructure resides on Microsoft Azure Virtual Machines with SharePoint 2013 Foundation and MS SQL Web installed. All infrastructure management is done by the Lanteria team.

## 3. Deployment

This section describes the Lanteria HR deployment process, including the prerequisites and the following deployment steps:



### 3.1. Prerequisites

Make sure that the following requirements are met before installing Lanteria HR:

- SharePoint 2013/2016/2019 is installed on the target server
- Web application with site collection is created (either new or existing)
- You have remote access to the server (RDP) as a user with the following permissions:
  - Included in the **Local Administrators** group
  - Included in the **Farm Administrators** group
  - **dbo** permissions for the site collection Content database
  - **dbo** permissions for the farm Configuration database
  - Added as a site collection administrator to the target site collection

### 3.2. Install and deploy SharePoint Learning Kit to Site Collection

1. Unzip SLK-1.8-2010.zip.
2. Run Windows **PowerShell**.
3. Change your directory to SLK (cd to SLK-1.5-2010).
4. Run AddSolution.ps1.

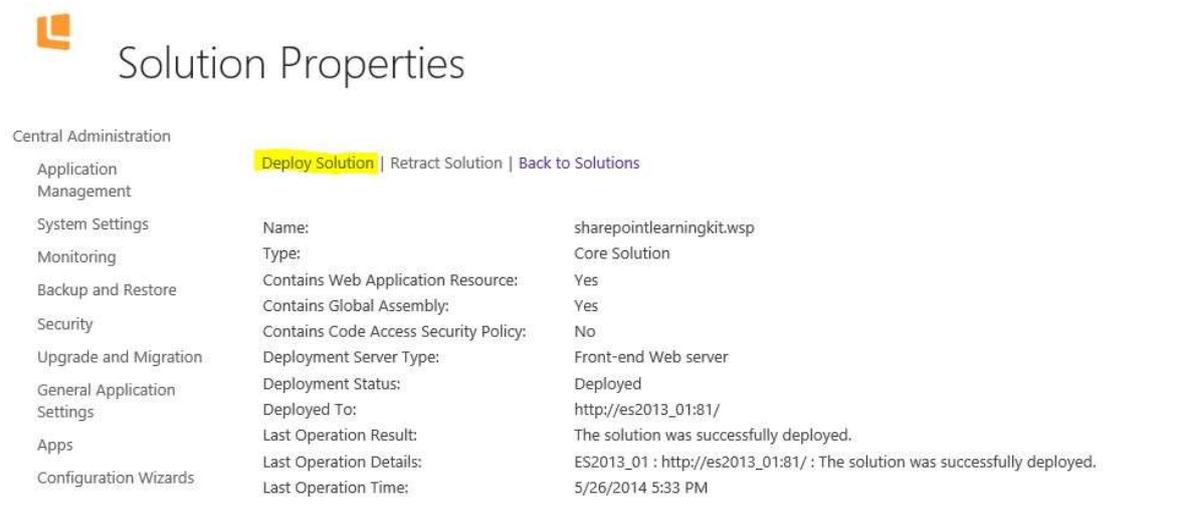
```

Select Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator.OFFICE> cd .\Desktop
PS C:\Users\Administrator.OFFICE\Desktop> cd .\1.0.0
PS C:\Users\Administrator.OFFICE\Desktop\1.0.0> cd .\SLK-1.5-2010
PS C:\Users\Administrator.OFFICE\Desktop\1.0.0\SLK-1.5-2010> .\AddSolution.ps1

Name                SolutionId                Deployed
-----                -
sharepointlearningkit.wsp  00057001-c978-11da-ba52-00042350e42e False
    
```

5. Open SharePoint 2013 Central Administration (Start > All Programs > Microsoft SharePoint 2013 Products > SharePoint 2013 Central Administration).
6. Go to **System Settings > Farm Management > Manage Farm Solutions**.
7. Click **sharepointlearningkit.wsp** to open the **Solution Properties** dialog.
8. Click **Deploy Solution** to open the **Deploy Solution** dialog.



**Solution Properties**

Central Administration

Application Management | **Deploy Solution** | Retract Solution | Back to Solutions

Name:	sharepointlearningkit.wsp
Type:	Core Solution
Contains Web Application Resource:	Yes
Contains Global Assembly:	Yes
Contains Code Access Security Policy:	No
Deployment Server Type:	Front-end Web server
Deployment Status:	Deployed
Deployed To:	http://es2013_01:81/
Last Operation Result:	The solution was successfully deployed.
Last Operation Details:	ES2013_01 : http://es2013_01:81/ : The solution was successfully deployed.
Last Operation Time:	5/26/2014 5:33 PM

9. Select your Web application from the **Choose a Web application to deploy this solution** drop-down list.



## Deploy Solution

<ul style="list-style-type: none"> <li>Central Administration</li> <li>Application Management</li> <li>System Settings</li> <li>Monitoring</li> <li>Backup and Restore</li> <li>Security</li> <li>Upgrade and Migration</li> <li>General Application Settings</li> <li>Apps</li> <li>Configuration Wizards</li> </ul>	<p><b>Solution Information</b> Information on the solution you have chosen to deploy.</p> <p><b>Deploy When?</b> A timer job is created to deploy this solution. Please specify the time at which you want this solution to be deployed.</p> <p><b>Deploy To?</b> The solution contains Web application scoped resources and should be deployed to specific Web applications. Please choose the Web application where you want the solution to be deployed.</p>	<p>Name: sharepointlearningkit.wsp</p> <p>Locale: 0</p> <p>Deployed To: http://es2013_01:81/</p> <p>Deployment Status: Deployed</p> <p>Choose when to deploy the solution:</p> <p><input checked="" type="radio"/> Now</p> <p><input type="radio"/> At a specified time: 6/13/2014 1 PM 00</p> <p>Choose a Web application to deploy this solution:</p> <p> <input type="radio"/> http://es2013_01:7777/  <input type="radio"/> http://es2013_01/  <input checked="" type="radio"/> http://es2013_01:91/  <input type="radio"/> http://es2013_01:11111/         </p> <p><small>tion will place assemblies in the global assembly cache. This will grant the solution assemblies full trust. Do not proceed unless you trust the solution provider.</small></p>
---	---	--

10. Click **OK**.

sharepointlearningkit.wsp

Deployed

http://es2013\_01:91/

### 3.3. Configure SharePoint Learning Kit

1. In SharePoint 2013 Central Administration, go to **Application Management > Configure SharePoint Learning Kit**.
2. Select the site collection to which the site will be deployed from the **Site Collection** drop-down list.
3. Select the **Create a new database** check box. This database will be used to store E-Learning courses and user grades used in Lanteria HR Learning module.
4. Select the **Create permissions** check box.



## Configure SharePoint Learning Kit

<ul style="list-style-type: none"> <li>Central Administration</li> <li>Application Management</li> <li>System Settings</li> <li>Monitoring</li> <li>Backup and Restore</li> <li>Security</li> <li>Upgrade and Migration</li> <li>General Application Settings</li> <li>Apps</li> <li>Configuration Wizards</li> <li>Site Contents</li> </ul>	<p><b>Site Collection</b> Select a Site Collection to configure.</p> <p><b>SLK Database</b> Specify the SLK database that will contain e-learning assignments for the selected site collection.</p> <ul style="list-style-type: none"> <li>• Multiple site collections can share the same SLK database. To use an existing SLK database, enter the server and database name.</li> <li>• To create a new database, enter an existing database server and a new database name, and select <b>Create a new database</b>.</li> </ul> <p><b>SLK Permissions</b> Specify the SharePoint permissions that will identify instructors and learners in SLK.</p> <ul style="list-style-type: none"> <li>• To use existing SharePoint permissions to identify instructors and learners, enter the permission names; for example, "Contribute" and "Read".</li> <li>• To create new permissions, enter the permission names and select <b>Create permissions</b>.</li> </ul> <p><b>Recommended</b> Create "SLK Instructor" and "SLK Learner" permissions for new installations.</p>	<p>Site Collection: http://es2013_01:91/</p> <p>Database server:  <input type="text" value="SCORPION"/>  <input type="text" value="SharePointLearningKit"/> </p> <p><input checked="" type="checkbox"/> <b>Create a new database</b></p> <p>Instructor permission:  <input type="text" value="SLK Instructor"/> </p> <p>Learner permission:  <input type="text" value="SLK Learner"/> </p> <p>Observer Permission:  <input type="text" value="SLK Observer"/> </p> <p><input checked="" type="checkbox"/> <b>Create permissions</b></p>
--	--	---

5. Click **OK**.

**Note:** If this step produces an error, please check the **Database server** value in **Application Management > Specify the default database server**.

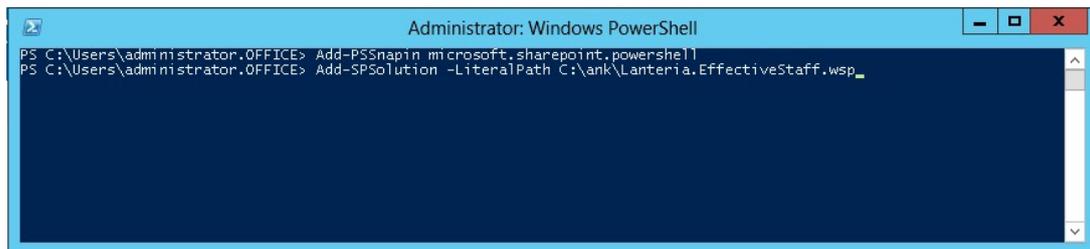
### 3.4. Deploy Lanteria HR

1. Run PowerShell.
2. Run `add-pssnapin Microsoft.sharepoint.powershell`



```
Administrator: Windows PowerShell
PS C:\Users\administrator.OFFICE> Add-PSSnapin microsoft.sharepoint.powershell
PS C:\Users\administrator.OFFICE> _
```

3. Run `add-spsolution -literalpath <path to file>\Lanteria.EffectiveStaff.wsp`  
For example:
4. Run `install-spsolution -identity Lanteria.EffectiveStaff.wsp -webapplication <your web`



```
Administrator: Windows PowerShell
PS C:\Users\administrator.OFFICE> Add-PSSnapin microsoft.sharepoint.powershell
PS C:\Users\administrator.OFFICE> Add-SPSolution -LiteralPath C:\ank\Lanteria.EffectiveStaff.wsp_
```

`application name> -time:$default -gacdeployment`

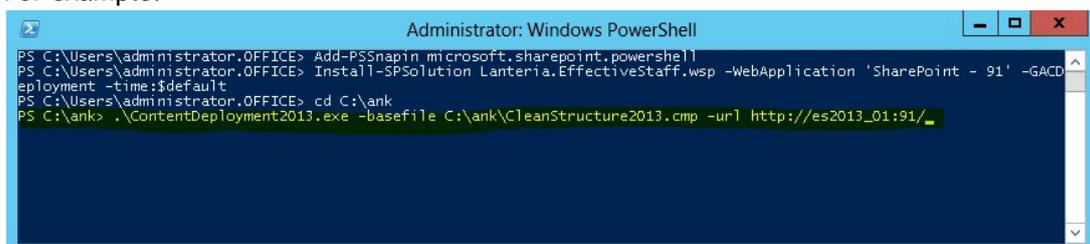
For example:



```
Administrator: Windows PowerShell
PS C:\Users\administrator.OFFICE> Add-PSSnapin microsoft.sharepoint.powershell
PS C:\Users\administrator.OFFICE> Install-SPSolution Lanteria.EffectiveStaff.wsp -WebApplication 'SharePoint - 91' -GACDeployment -time:$default
PS C:\Users\administrator.OFFICE> _
```

5. Run `<path to the file>\ContentDeployment2013.exe -basefile <path to the file>\CleanStructure2013.cmp -url <target site collection URL>`

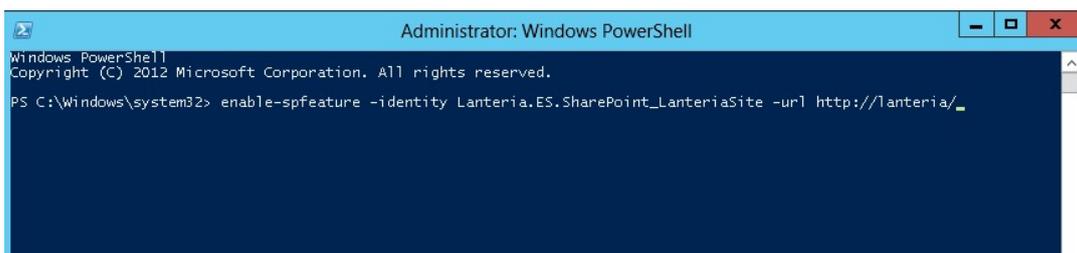
For example:



```
Administrator: Windows PowerShell
PS C:\Users\administrator.OFFICE> Add-PSSnapin microsoft.sharepoint.powershell
PS C:\Users\administrator.OFFICE> Install-SPSolution Lanteria.EffectiveStaff.wsp -WebApplication 'SharePoint - 91' -GACDeployment -time:$default
PS C:\Users\administrator.OFFICE> cd C:\ank
PS C:\ank> .\ContentDeployment2013.exe -basefile C:\ank\CleanStructure2013.cmp -url http://es2013_01/91/_
```

6. Run `enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaSite -url <your site collection URL>`

For example:



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2012 Microsoft Corporation. All rights reserved.
PS C:\Windows\system32> enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaSite -url http://Lanteria/_
```

7. Run `enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaWeb -url <your Lanteria site URL>`

For example:



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

PS C:\Windows\system32> enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaWeb -url http://lanteria/es_
```

8. Run `enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaContent -url <your Lanteria site URL>`

For example:



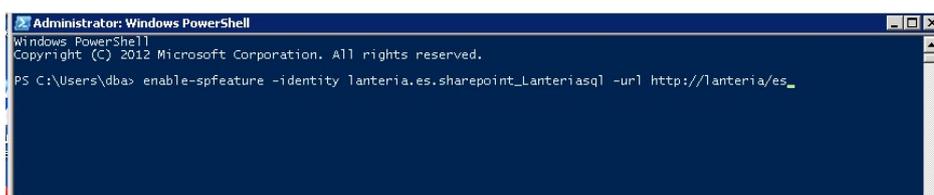
```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

PS C:\Windows\system32> enable-spfeature -identity Lanteria.ES.SharePoint_LanteriaContent -url http://lanteria/es
```

### 3.5. Miscellaneous Settings

1. Go to **Lanteria HR** site.
2. Add **Authenticated Users** as a new user into **ESM** group. Please note that this will not grant **Authenticated Users** access to the system, site access is provisioned by other groups, **ESM** group is used to assign custom permission levels required for Lanteria HR functionality.
3. Change the **Lanteria HR** website time zone under **Site Actions > Site Settings > Regional Settings**.
4. To change general settings like site URL, License Key, Groups, etc., go to **Settings > Settings and Configuration > General > Company Settings** in custom **Lanteria HR** menu.
5. Add SharePoint Timer service (SPTimerV4; SharePoint Timer Service) account to **ES HR Admin** SharePoint group.
6. Add `sharepoint\system` account to **ES HR Admin** SharePoint group.
7. If the application pool account differs from `sharepoint\system`, add it to **ES HR Admin** SharePoint group as well.
8. Enable the **Timesheets** feature (for the **Time and Attendance** module only):
  - 8.1. Go to **Settings > Settings and Configuration > General > Company Settings** and set the **SQL DB Version** on the **Advanced** tab to 0.
  - 8.2. In **PowerShell** run:
 

```
enable-spfeature -identity lanteria.es.sharepoint_Lanteriasql -url <your Lanteria HR site>
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2012 Microsoft Corporation. All rights reserved.

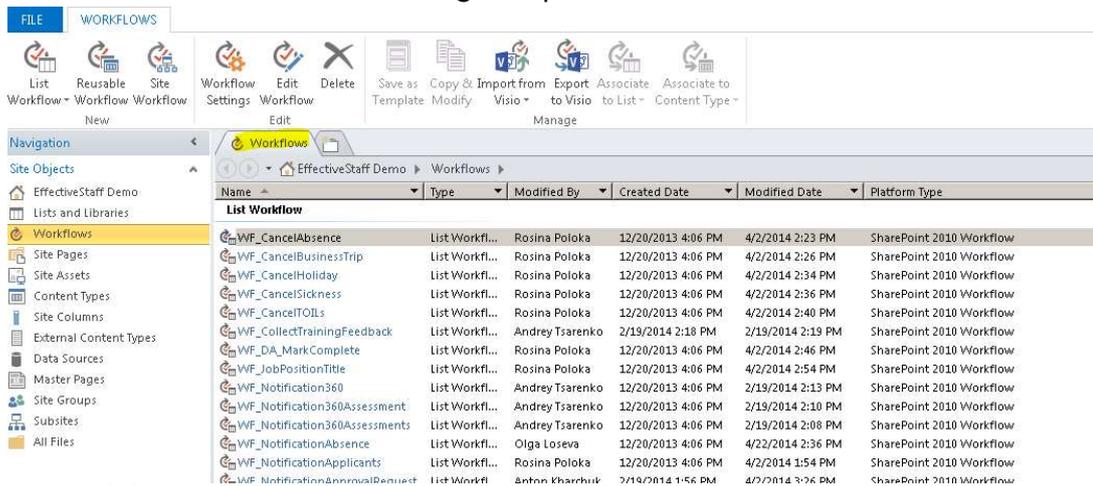
PS C:\Users\dba> enable-spfeature -identity lanteria.es.sharepoint_Lanteriasql -url http://lanteria/es_
```

\* If you activate this feature using an account different from application pool account for the Lanteria HR web application, please go to **SQL > ESDB** and grant **db\_owner** membership to the application pool account

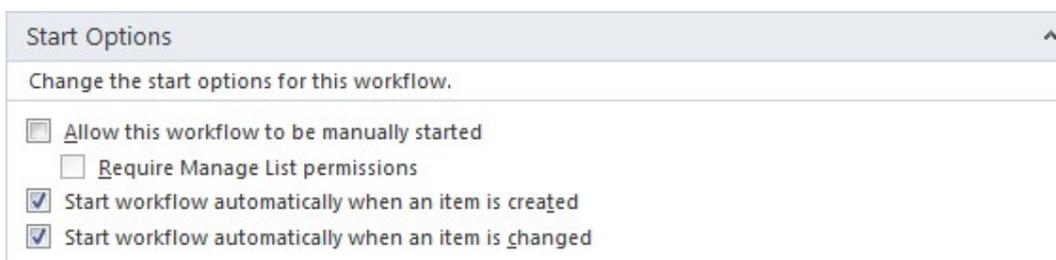
### 3.6. SharePoint Designer Workflows

Follow these steps to enable or disable notification messages:

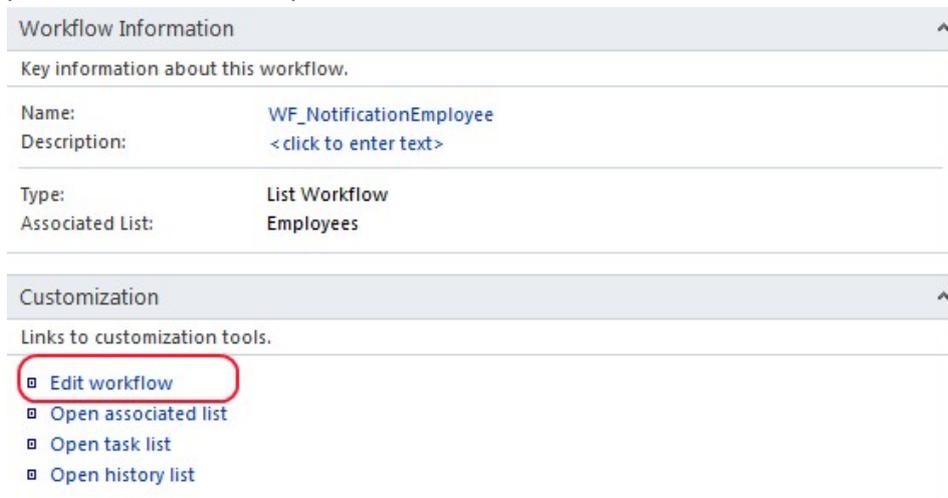
1. Open **SharePoint Designer**.
2. Open **Lanteria HR** website.
3. Select **Workflows** in the **Navigation** pane.



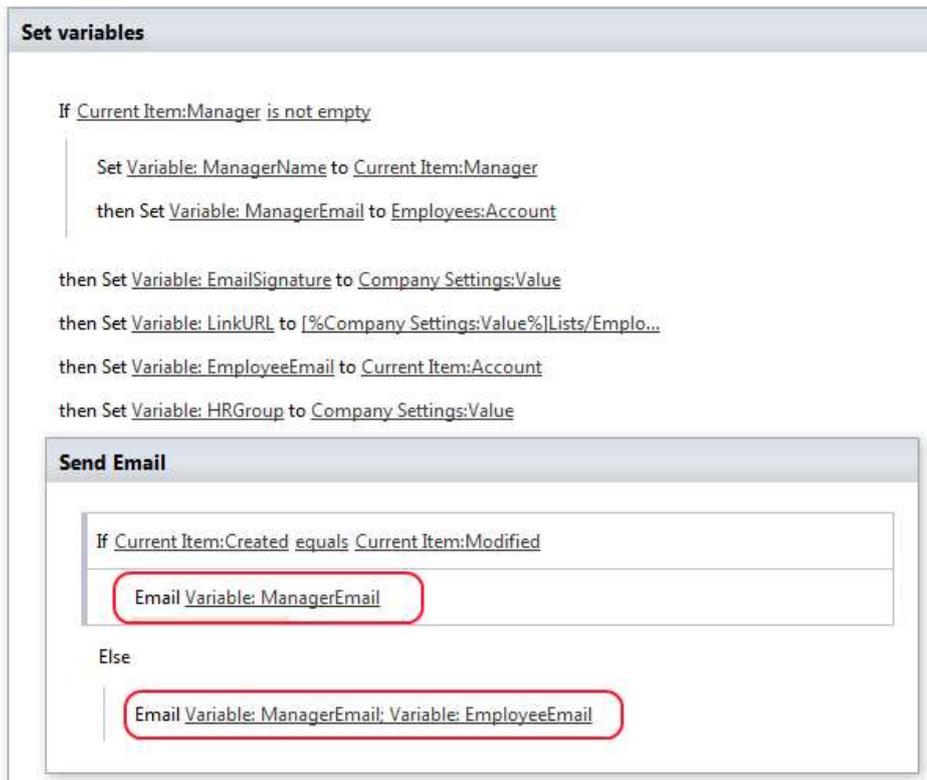
4. Select a workflow to work with.
5. Use the **Start Options** section to enable or disable the workflow.



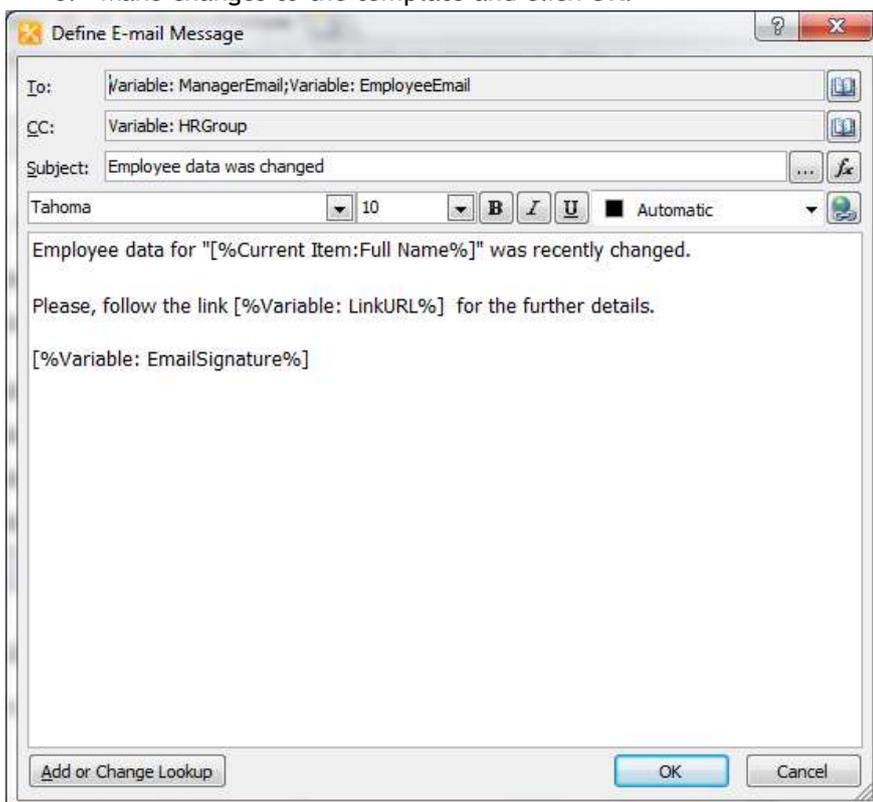
6. Click **Edit workflow** to edit the notification message text, if needed. Otherwise, proceed to the next step.



7. Click **Email action** to edit the letter template.



8. Make changes to the template and click **OK**.



9. Click **Publish** on the ribbon to publish your changes to the server.



### 3.6.1. Mandatory Workflows

Most of the workflows are just for the notification purposes; however there are mandatory ones that are needed for specific system functions and **must** be published:

WF\_DA\_MarkComplete (for Learning module only)

WF\_CancelAbsence (for Time and Attendance module only)

WF\_CancelBusinessTrip (for Time and Attendance module only)

WF\_CancelHoliday (for Time and Attendance module only)

WF\_CancelSickness (for Time and Attendance module only)

WF\_CancelTOILs (for Time and Attendance module only)

WF\_CollectTrainingFeedback(for Learning module only)

## 4. Administration

### 4.1. System Backup

#### 4.1.1. Prepare Backup/Migration Package

1. Access SharePoint WFE of the farm, where Lanteria HR is installed.
2. Download solution files from the farm solution store.

This can be done with the following PowerShell script:

```
$solutionname = "" #solution name here
$path = "" #destination folder path
$farm = [Microsoft.sharepoint.administration.spfarm]::Local
$solution = $farm.Solutions[$solutionname]
$file = $solution.SolutionFile
$file.SaveAs($path + "/" + $solutionname)
```

Required solution files:

- Lanteria.EffectiveStaff.wsp
3. Backup the content database:
    - a. Access SharePoint WFE of the farm, where Lanteria HR is installed.
    - b. Disable features with the following PowerShell scripts:

```
$webURL = "" #URL of the Lanteria HR site, i.e. http://hr-uat.test/es/
```

```
$siteURL = "" #URL of the parent Lanteria HR site collection, i.e. http:// hr-uat.test
```

```
disable-spfeature –identity Lanteria.ES.SharePoint_LanteriaSite -URL $siteURL -
confirm:$false
```

```
disable-spfeature –identity Lanteria.ES.SharePoint_LanteriaWeb -URL $webURL -
confirm:$false
```

```
disable-spfeature –identity Lanteria.ES.SharePoint_LanteriaContent-URL $webURL -
confirm:$false
```

- c. Check Content Database Name of the parent Lanteria HR site collection using **Central Administration > Application Management > View All Site Collections**; i.e.
- d. Access SharePoint farm SQL instance with SQL Management Studio.
- e. Select and backup Content Database.
- f. Select and backup SharePointLearningKit Database.
- g. Select and backup ESDB\_<GUID> database.
- h. Enable features back:

```
Enable-spfeature –identity Lanteria.ES.SharePoint_LanteriaSite -URL $siteURL
```

```
Enable-spfeature –identity Lanteria.ES.SharePoint_LanteriaWeb -URL $webURL
```

```
Enable-spfeature –identity Lanteria.ES.SharePoint_LanteriaContent-URL $webURL
```

After running the steps above you should get the following files:

- Lanteria.EffectiveStaff.wsp
- Content Database backup
- SharePointLearningKit Database backup
- ESDB\_<GUID> backup

## 4.2. System Restore

This section contains instructions on the system restore, and is to be used in the following cases:

- Full system recovery including content database recovery - please, refer to point 4.2.2
- Content database recovery only - please refer to point 4.2.3

The system restore is described with the assumption that Content Database has been backed up. Please, refer to the 4.1 System Backup section of this document for the backup process details.

### 4.2.1. Prerequisites

Make sure that the following prerequisites are met before restoring Lanteria HR:

- SharePoint 2013/2016 is installed on the target server
- Web application with site collection is created (either new or existing)
- You have remote access to the server (RDP) under the user with the following permissions:
  - Included in the Local Administrators group
  - Included in the Farm Administrators group
  - dbo permissions for the site collection Content database
  - dbo permissions for the farm Configuration database
  - Added as a site collection administrator to the target site collection
- SharePoint Designer 2013 installed on a PC that has access to the target server

- **Report Viewer 2012** is installed on all front-end web servers (see <http://www.microsoft.com/en-us/download/details.aspx?id=35747> for further information)
  - SharePointLearnignKit solution
  - Lanteria.EffectiveStaff.wsp
  - Content Database backup
  - SharePointLearningKit database backup
  - ESDB\_<GUID> database backup

## 4.2.2. Full System Recovery

### 4.2.2.1. Install and deploy SharePoint Learning Kit to Site Collection

If the SharePoint Learning Kit is already installed and deployed, proceed to the section 4.2.2.3. Otherwise, please continue with 4.2.2.2.

### 4.2.2.2. Configure SharePoint Learning Kit

6. In SharePoint 2013 Central Administration, go to **Application Management > Configure SharePoint Learning Kit**.
7. In the **Site Collection** field, select the site collection to which the site will be deployed.
8. Select the **Create a new database** check box. This database will be used to store E-Learning courses and user grades used in the Learning Module of Lanteria HR.  
*Note: If you plan to use the database from another environment, please restore SharePointLearningKit backup on your database server and don't select the **Create a new database** check box.*
9. Select the **Create permissions** check box.

The screenshot shows the 'Configure SharePoint Learning Kit' page in SharePoint 2013 Central Administration. The page is divided into three main sections: Site Collection, SLK Database, and SLK Permissions. On the right side, there are input fields for 'Database server', 'Instructor permission', 'Learner permission', and 'Observer Permission', each with a corresponding text box. Below these fields are two checkboxes: 'Create a new database' and 'Create permissions', both of which are checked. The 'Site Collection' dropdown menu is set to 'http://es2013\_01:91'. The 'SLK Database' section provides instructions on how to specify the SLK database, including options for existing databases and creating new ones. The 'SLK Permissions' section provides instructions on how to specify SharePoint permissions for instructors and learners, with a recommendation to create 'SLK Instructor' and 'SLK Learner' permissions for new installations.

10. Click **OK**.

If an error occurs on this step, try checking the Database server value under **Application Management > Specify the default database server**.

### 4.2.2.3. Deploy Lanteria HR

Before proceeding to deployment, please, make sure that the following solutions are retracted and removed from the farm:

- Lanteria.EffectiveStaff.wsp

Also, make sure that the following features are disabled:

- *Lanteria.ES.SharePoint\_LanteriaSite*
- *Lanteria.ES.SharePoint\_LanteriaWeb*
- *Lanteria.ES.SharePoint\_LanteriaContent*

To install and deploy Lanteria HR solutions, please take the following steps:

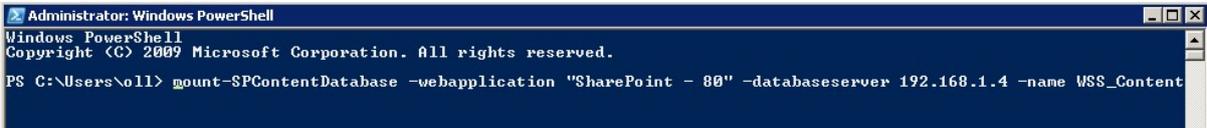
- 1 Run **PowerShell**.
- 2 In PowerShell, run *add-pssnapin Microsoft.sharepoint.powershell*
- 3 Run *add-spsolution -literalpath <path to file>/Lanteria.EffectiveStaff.wsp*
- 4 Run *install-spsolution -identity Lanteria.EffectiveStaff.wsp -webapplication* (your web application name) *-time:\$default -gacdeployment*
- 5 Dismount the Content Database that is attached to your web application.  
  
*Dismount-SPContentDatabase -webapplication* (your web application name) -
- 6 Restore the Content Database backup on the target database server.
- 7 Mount the restored Content database to target Web Application:  
*Mount-SPContentDatabase -webapplication* (your web application name) *-databaseserver* (your database server name) *-name* (name of the restored database).
9. Run *enable-spfeature -identity Lanteria.ES.SharePoint\_LanteriaSite -url <your site collection URL>*
10. Run *enable-spfeature -identity Lanteria.ES.SharePoint\_LanteriaWeb -url <your Lanteria site URL>*

#### 4.2.3. Restore Content Database from Backup

If only Content Database recovery is required, take the following steps:

1. Run Windows PowerShell.
2. In PowerShell, run *add-pssnapin Microsoft.sharepoint.powershell*.
3. Dismount the Content Database that is attached to your web application.  
  
*Dismount-SPContentDatabase -webapplication* (your web application name).
4. Restore the Content Database backup on the target database server.
5. Mount the restored Content database to the target Web Application:  
*Mount-SPContentDatabase -webapplication* (your web application name) *-databaseserver* (your database server name) *-name* (name of the restored database).

Example



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

PS C:\Users\o11> mount-SPContentDatabase -webapplication "SharePoint - 80" -databaseserver 192.168.1.4 -name WSS_Content
```

## 5. Security

Lanteria HR uses standard SharePoint security and its own built-in security. You can set up system-specific roles (HR, Manager, Employee, Local HR, Training Manager, Local Training Manager, Recruiting Manager, Performance Manager) and then use them for setting up permissions on the SharePoint group level. In addition to this, Lanteria HR has a web page protection mechanism based on the rules defined in the permission.xml file.

Thus, user permissions setup will consist of the following steps:

1. Set up roles in Lanteria HR.

2. Create SharePoint groups and set up permissions for different roles.
3. Add users to the groups.

## 5.1. Users and Access Levels

Lanteria HR users are represented by the following roles.

	Role	Description
	Employee	Employee accesses personal information, absence records, objectives, KPIs, competency assessments, his/her development plan, and public company information.
	Manager	Manager views information about his/her team, tracks employee objectives, KPIs and competencies, assesses employees, runs performance reviews, plans and monitors learning and development.
	HR	HR specialist manages all HR processes in the company, accesses all the information company-wide, has access to full analytical reporting and coordinates all HR areas.
	Local HR	HR specialist with limited access to all the information (based on specific country/location).
	Training Manager	Training Manager has full control of the Learning Module.
	Local Training Manager	Local Training Manager has limited access to the Learning Module (based on specific country/location).
	Performance Manager	Performance Manager has full control of the Performance Module.
	Recruiting Manager	Recruiting Manager has full control of Recruiting Module.

## 5.2. Permissions Processing Algorithm

Lanteria HR web page protection mechanism is based on the rules in the Permissions list in XML format. Such kind of protection can be applied to a SharePoint list, SharePoint document library or any web page. Permissions can be modified by using the **Permissions Editor** under **Settings > System Settings > Roles and Permissions**.

### 5.2.1. Mandatory Attributes

**name** - name of the protected page (single element). The asterisk (\*) symbol can be used to define a rule for all the pages.

**roles** - roles that have access to the page (multiple elements separated by semicolon). The asterisk (\*) symbol can be used to define a rule for all the roles.

### 5.2.2. Optional Attributes

All the other attributes are optional.

If the **level** attribute is omitted, the user will have access to the page in case the user belongs to the specified role. Otherwise, the user will have no access to the page.

If the **level** attribute is defined, additional validation rules are applied.

Additional rules are based on comparing the list item fields according to the conditions described below.

The list value to compare is defined by specifying the **list name** and the **column name**. The ID of the list item is taken from the **Query String** from one of the following variables (the order is important: the first variable in the **Query String** is used):

- EntID
- ID
- PrID
- EmplID
- EmployeeID

There are two groups of additional rules: based on the **Employee** field and based on the **Department** field.

#### 5.2.2.1. Rules Based on the Employee Field

**level** - level to check:

- **My** - only allow to see employee's own information
- **MyTeam** - allow to see subordinate employees' information
- **MyDepartment** - allow to see employee information in department managed by the user
- **MyLocalHR** - allow to see information for employees for whom the user is local HR

**list** - SharePoint list name to apply the permission rules to

**employeeField** - field name (containing the user information) to apply the permission rules to

#### 5.2.2.2. Rules Based on the Department Field

**level** - level to check:

- `DepartmentEmployee` - allow to see information for department's employee
- `DepartmentManager` - allow to see information for department's manager
- `DepartmentLocalHR` - allow to see information for department where the user is local HR

**list** - SharePoint list name to apply the permission rules to

**departmentField** - field name (containing the department information) to apply the permission rules to



## 6. Development

The Lanteria HR solution can be customized by means of the following tools:

- SharePoint UI
- SharePoint Designer
- Visual Studio
- Lanteria Tools

## 7. Integration

Out of the box system is integrated with SharePoint User Profiles, Local Active Directory or Office 365. This functionality is used in order to populate Lanteria HR employee database and thus reduce the effort required for populating the Data Import spreadsheets.

### 7.1. SharePoint User Profiles Integration

Target server must have SharePoint Server 2010/2013/2016 or SharePoint Enterprise 2010/2013/2016 installed. SharePoint User Profiles must be configured.

The field mapping between User Profile integration and Lanteria HR is predefined. Please, refer to the table below for details:

User Profile Field Internal Name	Lanteria HR Field Internal Name	Lanteria HR List Name
PreferredName	Title	Employees
FirstName	FirstName	Employees
LastName	LastName	Employees
SPS-JobTitle	JobRole	Employees
Department	Department	Employees
AccountName	Account	Employees
Manager	Manager	Employees
WorkEmail	Email	Employees

### 7.2. Active Directory Integration

AD Integration functionality is used to populate Lanteria HR employee database with information from Active Directory and/or update Active Directory information after changes have been made in the Lanteria HR employee database.

AD Integration rules are set up in Lanteria HR **Settings** under **Settings and Configuration**. Any field from the **Employees** list can be integrated.

The rules are set in the XML format.

```
<ADRules login='' password='' domainNameOrIP='10.112.1.1' IntegrationBy=''>
<rule direction='out' ADField='title' ESField='JobRole'/>
...
</ADRules>
```

### 7.3. Office 365 Integration

For clients who use single-sign-on with Office 365 accounts Lanteria provides Office 365 synchronization. If there is an update of the following fields in Office 365, they will be synced to Lanteria (Employee and Employment History). Also new employees will be created.

Office 365 Field Internal Name	Lanteria HR Field Internal Name	Lanteria HR List Name
DisplayName	Title	Employees
GivenName	FirstName	Employees
Surname	LastName	Employees
JobTitle	JobRole	Employees and Employment History
Department	Department	Employees and Employment History
UserPrincipalName	Account	Employees
Manager (from Exchange Online)	Manager	Employees
Mail	Email	Employees and Employment History
Country	Country	Employees
City	City	Employees
StreetAddress	Address	Employees
MobilePhone	CellPhone	Employees