International Journal of Mathematics and Computer Research
ISSN: 2320-7167
Volume 10 Issue 07 July 2022, Page no. – 2822-2831
Index Copernicus ICV: 57.55, Impact Factor: 7.362
DOI: 10.47191/ijmcr/v10i7.08

A Tracking Solution of IT Assets and Resources Management

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ARTICLE INFO

Published Online:
27 July 2022

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ABSTRACT

Asset Management is the most crucial factor that needs to be maintained by an organization. It is an orderly action of operating, updating, and maintaining the resources. Its substances in the business section is undoubtedly remarkable. As we know, among the most crucial assets are information and physical assets, and licenses. So, the proper way of asset management is mandatory. This project aims to enhance asset management, which refers to monitoring, tracking, and tagging assets and maintaining them in real-time, so that an organization can adequately manage its IT assets, including hardware and software, concerning risk, governess, business compliance, control, costs, and performance goal set by that organization. It provides notification alerts via e-mail when tagging an asset or checks out. Distinct assets can be search easily by this digital inventory and monitored from a single window. It will provide a view to the user of which asset he has been tagged. It resembles all the criteria of maintaining the standard called ISO 27001.

KEYWORDS: Asset management, assets, real time monitoring and maintaining assets, ITAM, Email Integration, ISO 27001

I. INTRODUCTION

IT asset management is a method of listing all of an organization's assets [1]. Carrying out a resource the board data framework is a work to arrange archives connecting with information assortment on the presence of resources and resource the executive's processes [2]. It provides a structured framework for investment planning that delivers complete asset life-cycle solutions at minimum risk with cost-effectiveness. Today the advancement of innovation in both Information Technology and Information Systems (IT and IS) occasionally affects the course of exercises of an association, where IT and IS have turned into an organization's necessities. In doing its exercises, an organization is upheld by fundamental assets that should be kept up with and oversaw accurately [2]. Meanings of resource the executives will quite often be expansive in scope, covering a wide assortment of regions including general administration, tasks and creation fields and, monetary and human resources viewpoints [3]. Extensive work is commonly associated with the manual interaction and is inclined to human mistake. Microsoft Word and Microsoft Excel, as of now used to record a resource's data, can now and again be mixed up, fragmented, misjudged, and non-coordinated. It is also troublesome work to trace the physical asset and track their movement. So, proper asset management is needed

Information Technology resource management is an implicit part of an organization's plan of action where complete hardware and software inventory data are convoluted [4]. It is the backbone of a company in this digital era [1]. Managing assets is one of the challenging problems in supply change management. For an informed decision that needs to be made in the future, this data will help maintain software and hardware redistribution and acquisition. Good communication, a quality information system, and a professional asset manager are key to successful asset management [5]. IT asset tracking system helps organizations supervise their IT assets even more constructively by reducing money and time to recognize superfluous buys and the knowledge to anchor existing assets. This will also help us to minimize the risks associated with costs of futuristic IT infrastructure portfolio projects based on old and unfinished or imperfect information. An essential way of thinking is a cross-utilitarian cooperative the board of a wide range of resources through their whole lifecycles beginning from a task thought, buy, finance, human asset, venture, upkeep, activity, removal, and so on [5]. Asset management policies should clearly state how to handle essential and sensitive information assets and preserve those data from bungling. Procedures must be enlisted and followed by everyone from top to bottom in an organization.

Hardware asset management is also a part of asset management that deals with the hardware section of IT assets. The standard methods in this role include request and approval processing or, more specifically, procurement of managing hardware life cycle management, including maintenance, redeployment, and ejection management.

Also, assets like information and digital license can also be managed by the solution which resemblance a standard ISO 27001, where ISO 27001 is one such norm, whose fundamental goal is to give necessities to laying out, executing, keeping up with, and consistently further developing an Information Security Management System (ISMS). ISO 27001 give total direction to the association about resource the executives [6]. ISO 27001 includes anything that provides value to the organization, such as physical and logical assets [7]. It also provides values where information is put away, handled, and open. The data is of genuine interest, less so the organization or gadget essentially, even though they are still resources and should be safeguarded.

II. RELATED WORK

Although this type of work has done already but most of these works have some limitations.

Setiawan et al. [2] provided a solution of Asset management information system in his project where the admin can monitor assets in a web-based solution where admin introduced scrum methodology to implement the web application. However, he did not provide an enterprise solution where users can get the notification through email, and the user may claim or decline the asset if it does not match his given asset.

Nadia Mumtaz [6] derive an information security management standard for protecting assets like information of an organization. He introduced ISO 27001 standard to protect company assets secure, where assets consist of physical and logical. He also provides one statistic of some institutions regarding how much their assets are safe. However, in my project, I have introduced a solution that can ensure security and keep track of physical and logical assets, which consists of licenses and AD user data.

Iluore et al. [8] derive a solution to assess the resource of the executive's framework at the modern association, recognize the difficulties, and propose an arrangement of resource the board utilizing RFID. The RTEM gives an online connection point that shows a constant and nitty-gritty perspective on all the exercises connecting with the oversaw assets. Also, he made a solution including hardware and web application to manage the resource but did not make proper database management. However, in my project I have made a complete solution which is web-based system to manage the asset tracking and manage the resource properly. Also, my database system is complete and can store the information by any set of value according to organization's need.

Noor Hartini Binti Shamsudin [9] made a web-based solution which known as SAMS (School Asset Management System) for booking asset and developing registration process. Author made this solution for only administrative purpose where users don't have any act. Also, data fetching is not quite appropriate in the system because of poor database management. Also, author did not provide any response signal for users so that they can acknowledge. However, in my project user can easily access to the application by the username password of his domain so that he can claim his asset. Also, when booking asset for the user will get acknowledgement through email. Also searching data and fetching data is quite frequent in my system.

Husband et al. [10] worked in the solution which is open source called snipe-it what we also used in my project. Author install the application and made some feature on his own to test. Author did not install the program for enterprise solution rather just install it in test environment. However, I have installed the program in such a way that an organization can easily use this environment any time. It can be modified anytime by the organization's need.

Brignone et al. [11] describes a solution for data center asset management where he used RFID system to track every computational device in the rack. He manages the RFID system with HP Systems Insight Manager which they purchase the subscription. By this the system can automatically find the physical location of the asset in the rack. Their second phase work is still working state. However, we have provided a solution where we can manage the server's location by updating in the application where all the information regarding server position in the rack will be predefined. So, administrator can easily monitor where the server is situated. Also, from the application admin can see when server needs a repair or maintenance and license upgradation. Also, my application is mobile so that we can login to the environment sitting anywhere and browse in the local network.

Oluwafemi J. and A. [12] created a web-based solution and a database for asset management system where he worked on selected items respective to asset in that platform. But he didn't make it for users too. As a result, only, admin can update the information with limited values to update. Also, he didn't make an organizational environment so that users can make interact with the application. However, in my solution I also make a web-based asset management where it has organization level structure and has lots of values in regarding with assets. Also, users can get notification by email when an asset has been handover to the user.

III. SYSTEM MODEL

A. Virtual Machine of Asset Management

In this part first of all a Linux CentOS version 7 operating system is taken for preparing Asset Tracking VM. In the Fig. 1 shows the version of CentOS VM. For that all the dependencies need to install like LAMP stack that is acronym for Linux, Apache, MariaDB and PHP which helps building highly efficient dynamic website as well as web application.

```
[root@asset ~]# cat /etc/os-release
NAME="CentOS Linux"
VERSION="7 (Core)"
ID="centos"
ID_LIKE="rhel fedora"
VERSION_ID="7"
PRETTY_NAME="CentOS Linux 7 (Core)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:centos:centos:7"
```

Fig. 1. Linux CentOS Version

As this is a web application, it requires specific applications on our server. So, to meet this prerequisite, it is important to introduce the LAMP stack. That is, we will have a web server accessible to introduce this asset management application. PHP dependencies can be managed by availing the composer. With Composer, we can rapidly satisfy the fundamental of that asset management application dependencies on the library level without any hassle. Like all web applications, our application requires a data set driver to store the data it produces. By and large, it is helpful to make a client not quite the same as the root. Presently we continue to download Snipe-IT application by cloning its Git repository. After installing composer and curl we have to download all the packages of that application from GitHub. As this is an application made with Laravel, creating a key is essential. The subsequent stage is to make a Virtual Host for the best admittance to this application. This will likewise permit Apache to deal with the application with approaches that suit the requirements. The following stage is to make the root client and design the program with the default settings and different settings. Toward the finish of the establishment, we can go to the Dashboard by opening the application from web browser of physical machine. The whole process of work is shown in Fig. 2.

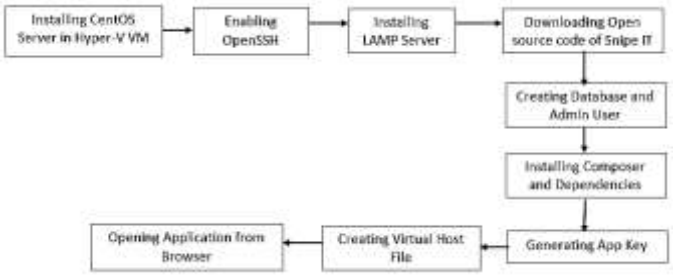

Fig. 2. Configuration Model of Asset System Virtual Machine

B. Virtual Machine for Domain Controller

In this Section Windows server Machine is created for Active Directory Controller. For that Windows Server 2008 R2 is used. To track the asset assigned a user in an organization an Active Directory is needed to maintain. So that check in or check out of the product can be easily monitored for the user whenever he/she joined or left. It gives secure, organized, progressive information stockpiling for clients, PCs, printers and administrations. Active Directory additionally offers help for working and dealing with these items. After installing windows server in Hyper V machine, the Active Directory features have to enable from the windows server manager feature section. Here enabling all the built-in feature AD will initiate. Final work is to create users according to department of an organization which can be done using bulk upload feature of AD in windows server. The whole process of making windows server manager and AD is showing in Fig. 3.

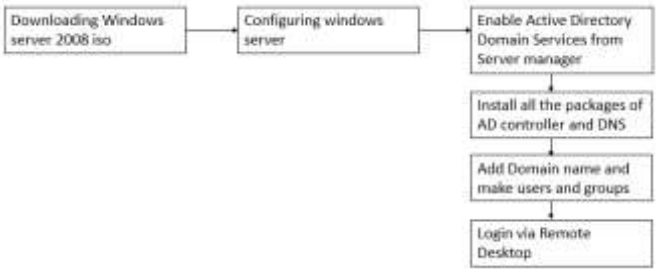

Fig. 3. Active Directory Configuration on Windows Server

The Dashboard of the asset management system is shown in Fig. 4. Here all admin can see how many assets has been available, total licenses, total accessories, total consumables and the login credential of the users, admin and CheckIn and CheckOut Status.

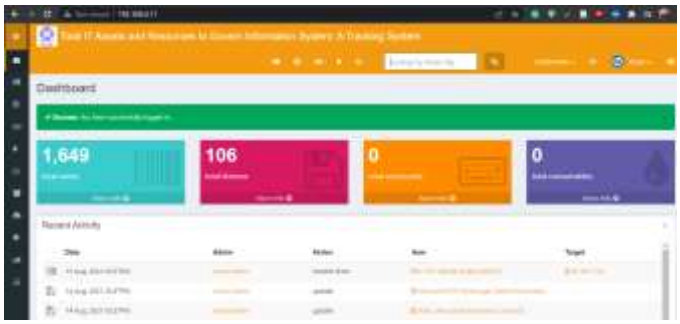

Fig. 4. Dashboard of Asset Management System

IV. FLOW DIAGRAM

The framework flowchart Fig. 5 is utilized to represent the work process of the Assets Inventory Management System. The Login page springs up when the site facilitating the online framework is opened. The enlisted client is expected to enter his/her username and secret word [12]. If the submitted username or secret word or both doesn't match one in the information base, the client is denied admittance to the framework and asked to sign in again or contact the framework head. Upon submitting qualifications that match the one in the data set, the client is conceded admittance to the framework and can continue to get to the Main Menu. From the Main Menu, the client can perform exercises, for example, resources enlistments, resource following, and creating resource answers as indicated by client freedoms. After fruitful fruition, the clients can then log out of the framework [12].

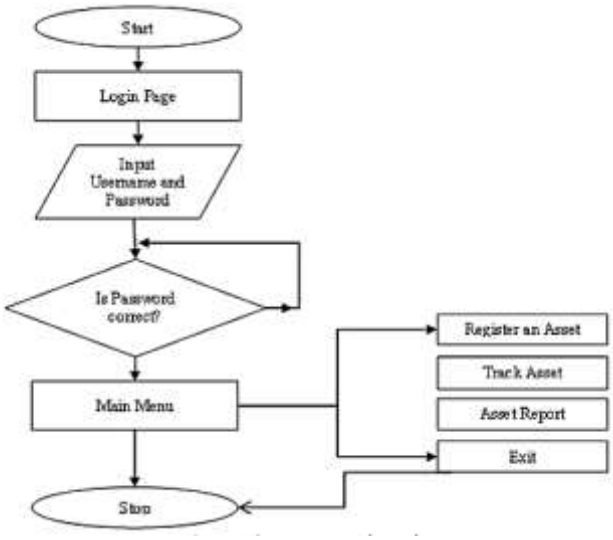

Fig. 5. System Flowchart

V. IMPLEMENTATION

A. LDAP Integration

LDAP (Lightweight Directory Access Protocol) registries usually store data about clients and gatherings in an association [13,14]. LDAP is widely utilized to give a single sign-on to an organization containing various stages and applications. Whenever an organization comprises just Windows PCs, then, at that point, you can utilize an Active Directory area. Yet, when there is a blend of Windows, Apple, and Linux machines, LDAP can give the single wellspring of client, gathering, and verification data. This section will sync all the users from the Microsoft windows server to Linux OS. That is why LDAP synchronization is needed.

As LDAP server is our Active directory server, we will sync the active directory to this application [15]. Our resource VM will initially verify whether we've set our LDAP server as an AD server, and will then, at that point, attempt to utilize anything AD Domain we've determined [13,14]. In the event that we don't add an AD Domain, it will attempt to figure the client's recognized name utilizing the email domain we set in our settings. The Figure Fig: 6 is showing the LDAP synchronization with asset application and AD VM.

In the active directory domain, we use "bk.nl" as this is our FQDN. LDAP server is "ldap://ad.bk.nl" which directly connected with the AD server [15]. As this is a indoor application secure LDAP is not required because this is not a mother application. So, from this user cannot change his Domain credential. We have enabled invalid SSL certificate in case faulty may happen. In this platform we have bonded LDAP username as "administrator@bk.nl" and in the Base bind DN we have setup the users requested path as "OU=

Users, OU= BK Ltd., DC=bk, DC=nl". The table of employee number is predifined as "employeeid" [15,16]. By this total configuration we had successfully encoded the AD credentials with the Asset VM application.

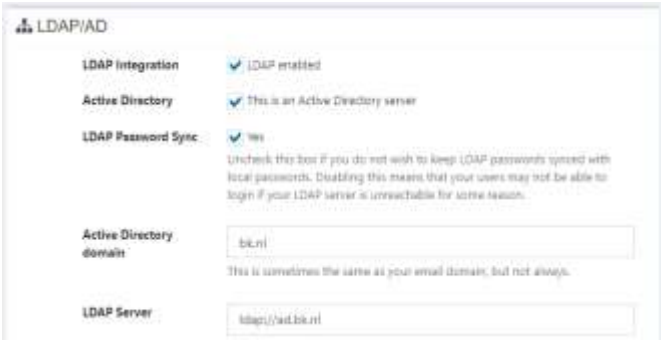

Fig. 6. LDAP Synchronization

B. Email Integration

Postfix is quick and well-known SMTP server broadly utilized. The principal occupation of Postfix is to hand-off mail locally or to the expected objective external the organization. The absolute most famous SMTP servers are Sendmail, Postfix, and Qmail. As a matter of course, Sendmail comes pre-introduced with CentOS/RHEL 7. We should eliminate it and introduce Postfix [16, 17, 18,19]. But before installing Postfix the prerequisites need to install so that it supports further installation. As Postfix is an open source tool it is also called Mail Transfer Agent (MTA) [16, 17, 18,19]. It is easy to monitor and easy to accessible also it is fast too. Installing the postfix feature the command is:

[root@asset ~] $ yum install postfix

After the Dovecot needed to install. Dovecot is the IMAP and POP3 server of email where outgoing mail used IMAP protocol and incoming mail use POP3 protocol [16, 17, 18,19].

```
* To install it, run:
#yum install dovecot

* Configuring Dovecot by editing file /etc/dovecot/dovecot.conf
vi /etc/dovecot/dovecot.conf
protocols = imap pop3 lmtp              # Line 24 - uncomment

* Edit file /etc/dovecot/conf.d/10-mail.conf file
vi /etc/dovecot/conf.d/10-mail.conf
mail_location = maildir:~/Maildir       # Line 24 - uncomment

* Edit /etc/dovecot/conf.d/10-auth.conf
vi /etc/dovecot/conf.d/10-auth.conf
disable_plaintext_auth = yes            #line 10 - uncomment
auth_mechanisms = plain login           #line 100 - Add the word: "login"

* Edit file /etc/dovecot/conf.d/10-master.conf,
vi /etc/dovecot/conf.d/10-master.conf
#Line 91, 92 - Uncomment and add "postfix"
#mode = 0600
  user = postfix
  group = postfix
```

Fig. 7. Dovecot Installation Source Code

For installing this feature, we follow the following commands that are shown in Fig. 7. For installing the dovecot, it needs to run the code **yum install dovecot** in the root command line. After then it needs to go to the vim editor of dovecot installation shown in the Fig. 7. This path is **vi /etc/dovecot/dovecot.conf** and in the vim editor we needed to change the porotocols to imap and pop3 in the line number 24. Also, it needs to provide the location of mail directory. To make the authentication secure it needs to disable the plain text authentication and making authentication encrypted which

needed to fix on line number 24 and 100. Finally, it needs to edit the editor file of **master.conf** on line 91 and 92 to introduce user as postfix and group too as postfix.

Finally, for sending the email from web platform which is also known webmail client it needs to install the Squirrelmail. As Squirrelmail is a PHP-based web client system, it incorporates worked in unadulterated PHP support for IMAP and SMTP, and delivers all pages in unadulterated HTML 4.0 for most extreme similarity across programs [16, 17, 18,19]. It has solid MIME support and an adaptable module framework. In the below Fig: 8, we have configured the Squirrelmail web client system. First of all, simple code to install squirrelmail is: **yum install squirrelmail** and then going to path **vi /etc/httpd/conf/httpd.conf** it needs to change some line in the editor file for making the installing complete. The changes are recalling the Alias of webmail, assuring to follow SymLinks, making RewritingEngine On, making AllowOverride to All, providing access to the file DirectoryIndex.php which are Order as allow and deny allow from all. After saving the vim file the installation of squirrelmail will be complete.

```
* Install Squirrelmail:
# yum install squirrelmail

* Creating a squirrelmail vhost in apache config file:
vi /etc/httpd/conf/httpd.conf

* Adding the following lines at the end:
Alias /webmail /usr/share/squirrelmail
<Directory /usr/share/squirrelmail>
Options Indexes FollowSymLinks
RewriteEngine On
AllowOverride All
DirectoryIndex index.php
Order allow,deny
Allow from all
</Directory>
```

Fig. 8. Squirrelmail Installation Source Code

VI. FUNCTIONAL OPERAITON

A. Creating Asset Model

In this option an asset model is created where it needs to set up three important prerequisites. Image of creating Asset model is showed in Fig. 9. Here shown lots of fields such as Asset Model Name, Manufacturer, Category Name, Model No., Depreciation, Fieldset and a notes section. All of this fields into asset model table is customized one. For making the fields first, or the fieldset first, it should have been certain to add the new fields to the fieldset, and afterward by associating that fieldset to a resource model those new fields on the resource structures can be seen [20, 21]. When the resource models have custom fieldsets related with them, the new qualities will show up on the resource view and alter pages and in the primary resource posting table. To have the option to look/sort on these fields (as well as show/conceal them in the table view), a similar work should be done in the other inherent fields [20, 21]. Some of the fields had to create more specifically which is described below sections.

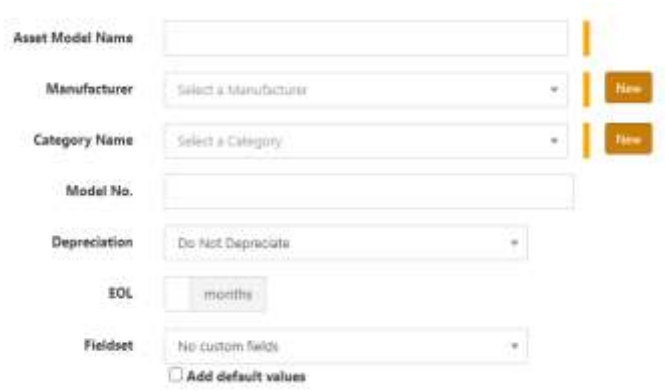

Fig. 9. Creating Asset Model

i. Manufacturer:
In this section some fields are created like **name** of the manufacturer, **url** of the vendor website and most importantly **email** of the manufacturer which completes the section Those fields help to locate manufacturer easily. Also, if an administrator wants to add more fields about manufacturer he can create from the backend code or from the application level. Also, every vendor has unique logo which can be uploaded in the "Upload Image" section.

ii. Category Name:
In this section components that actually needed to represent the section is created such as: Keyboard, Mouse, Laptop, Phone, Desktop PC, Projector, Servers, Routers, Switches etc. The field "Category Name" refers to asset name that are described above. The field "Type" describes about the type of the asset that belongs to the addressed name. The field "Category EULA" end user license agreement that helps the admin to track the license management of the asset at its entire lifespan.

iii. Model No:
In this section product model number is added. Suppose HP laptop has different model number such as ProBook 13, notebook 14 etc. So, these names are the model number of the brand HP. According to the model no. the data must have to be included.

iv. Depreciation:
Depreciation is so called deducting the asset cost over its lifetime [25]. So, if the asset does not provide any more feedback or old enough to make the asset value zero at that time it can be depreciated. Otherwise the asset will be in not depreciate state.

v. EOL:
EOL stands for End of Life relates how many months does its asset value will be zero. It is normally used 36 months of its warranty time as EOL.

vi. Fieldset:
In this project there have created created many fieldsets which is dicussed in details on further sections. Fieldset are normally the type of asset it belongs to. Suppose Desktop, Printer, scanner etc.

B. Creating Field Sets

We have characterized the field sets into different names. The fieldsets are Desktop/Laptop Specification-Field Set, Server-Field Set, Server-Field Set (VM), Backup Appliance, Printer-Field Set, Scanner-Field Set, UPS-Field Set, Telephone-Field Set. These fieldsets are the mother concern of child (Custom Fields) [20, 21]. So, on the basis of the product we have categorized that, which custom fields is related to which fieldsets. Custom fields are Memory, Hard Disk, Operating System, IP Address, Under Domain, Server Type, Application Name, NIC Counts, Rack OU, NIC-Patch Panel Mapping, MAC Address, Rack Info, Functional Status, CPU Cores, OS (Activated/Licensed), BIOS Version, Provision Date, NIC Mapping, Printer Type, Scanner Type, UPS Type, Capacity, SIP/Telephone Extension, Phone Type, Power Source. So, suppose when I wanted to link one custom field "Memory", it can be added with many fieldset created by me, such as I can use Memory field with Desktop, Laptop and Server. So, each custom field is linked with different fieldsets.

Also, different custom fields needed to be created according to organization needs. So, every time whenever it needed to add any new fieldset firstly making alignment with the custom field section. The view page of custom field is shown in below Fig. 10.

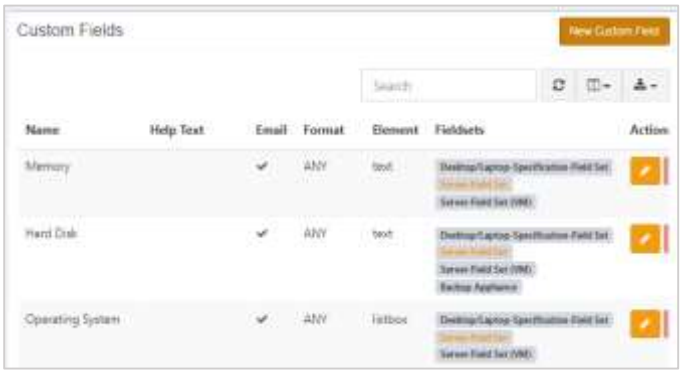

Fig. 10. Creating Field Sets

C. Suppliers

As in our country the assets are purchased by the suppliers of Bangladesh. So, it needs to create another section called suppliers also known as vendors [20, 21]. In this section some vendors name and input their important details like email, phone number, contact address and so on is created. Also, the Unit Price Confirmation report with the respected vendors is created so that admin wants to buy an asset from vendor he can see what price they offer and can provide requisition according to it. Also, how many assets we have taken from that vendor can be seen from a single platform. Which helps me at the end of year so that how many devices we have purchase from the vendor. It also helps us in audit purpose. In the Fig. 11 below which devices belongs to the vendor is showing.

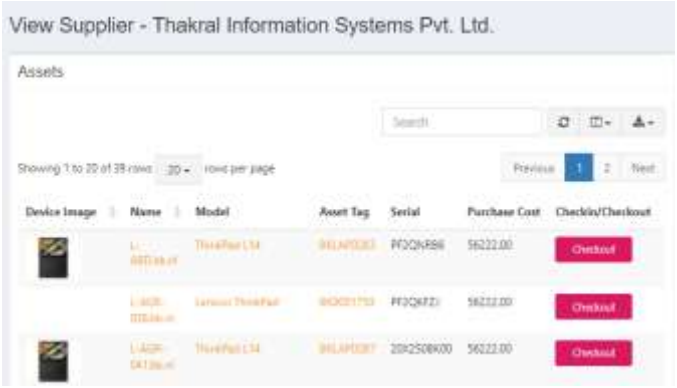

Fig. 11. Creation of Suppliers Section

D. Creating Asset

As an organization has different types of IT assets and they could be Laptop, desktop, IP phone and so on. So, based on asset model we had to create its substances. Suppose for Laptop we have created the Billing information, memory, OS information, RAM management and purchase date and cost. When it comes to phone call we don't need the memory and OS fields. That's why we have created the fieldsets. According to fieldsets we have mentioned in the custom fields that which fields will pop up depends on which asset model we are adding to.

In the Fig. 12 we can see when an asset is booked to a user it is easy to find out the user in the user field of the asset creation page. Because the AD is synced which helps finding the user easily by its username and select the user. After providing all the required information in the fields it can be checked out the asset to that designated user. The user will be notified by email. Also, when a user will leave from an organization we can check in which means retrieve the asset from the user. There is also an easy process to fill the fields of creating asset page. We can search a product from the section above in the search option we just search by name or any specific value. It will show the exact information of the asset. We can clone it from the right side of the line and then we don't have to fill up all the fields of the asset creation.

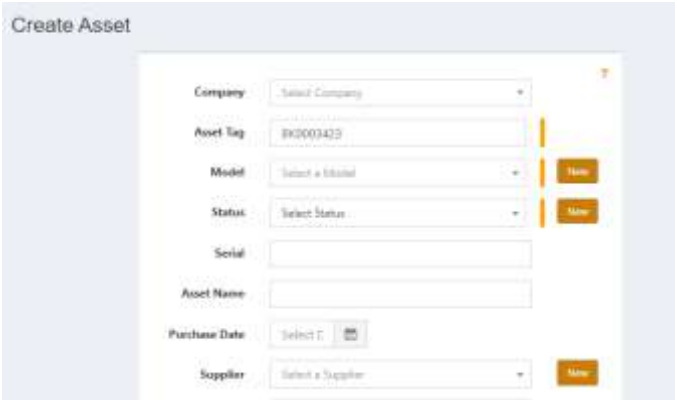

Fig. 12. Creating Assets

E. License Management

In this section it is created a part to manage the licenses of an organization. An organization may purchase different kinds of license which may be periodic or some are perpetual [22]. So is tough for an administrator to maintain all the licenses one by one. So, in this section this tool has been created to manage the licenses. In the Fig. 13 some fields have been created to rectify the object "License". In the figure different fields is showing like " Software name, category name, Product value, Licensed email" and so on. Software name is the name of the software which licenses have to be managed. Category name is defined as yearly periodical or perpetual type. Product key is important that is why a text box is given to put the digits of the license. There should be one responsible person who will manage and moderate this license. So, we can write his name in the section. By name it will be more beneficial if licenses to email section were presented. To maintain that value email section of licenses managed persons contact is valid. So, these fields fully describe this section. After the period it will provide a notification to the administrator of the license expiry.

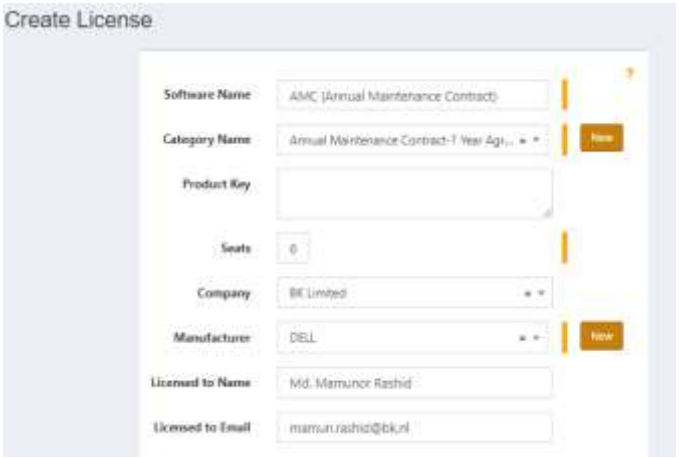

Fig. 13. Creating License Management Platform

VII. PERFORMANCE ANALYSIS

A. Email Verification

When an asset has been deployed to the user, he will get a notification in the webmail system of Linux. First when a new asset is being purchase for a user, we will checkout the product by the name or the username of the user. In the Fig. 14 we are seeing that we have a field name "Asset Name" which a computer name provided by organization. Also, Checkout to user field where we will put the username. Beside there is a section for "Location" which usually derives the location of the user, where user is located. Because user can be in HQ or in branch or in any department. As there were different types of locations are created so this feature helps an administrator a lot to find out the user. The checkout date is the date of asset handover and if the user is a contractual user then we will fill up the CheckIn date.

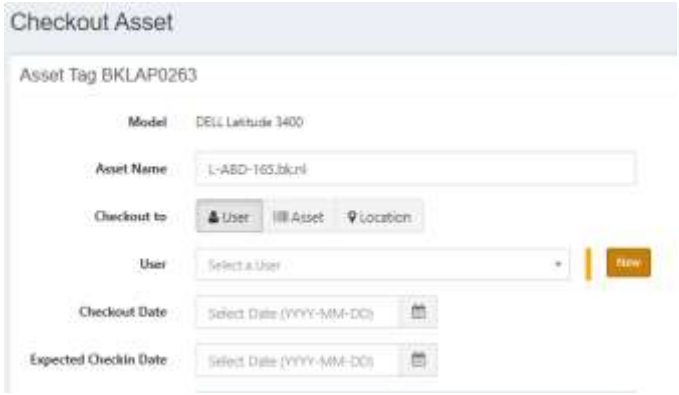

Fig. 14. Asset Creation Section

Because of AD integration we can find the user by putting the username in the user fields. After being checked out, user will get email notification. In the physical machine web browser by providing the FQDN **http://mail.bk.nl/webmail,** the webmail login page will appear which is showed in Fig. 15.

Fig. 15. Webmail Login Page

In the login page user will put his domain user name and password to access. He will see the notification in the inbox. The notification will show in a manner that he has to just click in the link of acceptation of asset named "I have read above specification and received this item". The **figure fig**: is showing that this asset has been checkout to this user A. K. M Shamsuzzaman. After clicking the link showed in Fig. 16 it will direct to asset login page where user needs to provide his domain username credential with password which is directly synchronize with Active directory server.

When a user login to the page of the asset inventory website user will see an asset that has been assigned under him. The pc information and its complete details will show in the asset management website. The system is giving a privilege to justify user's asset. Because mistake can be occurred in different way.

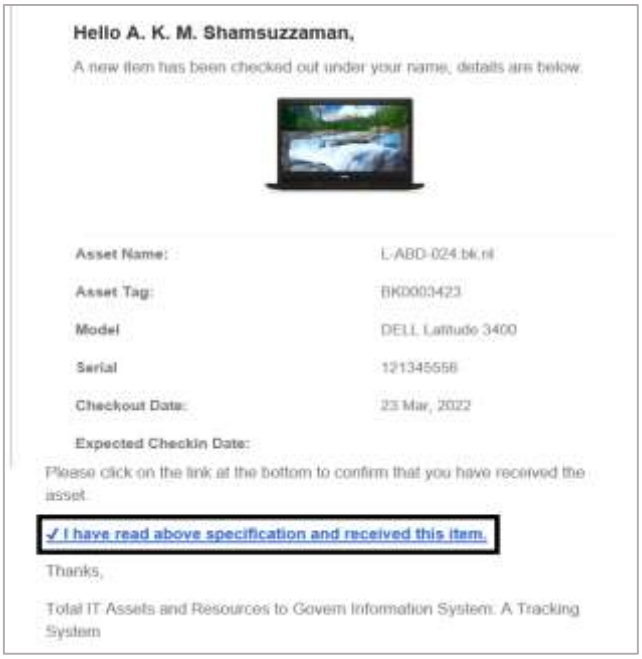

Fig. 16. Acknowledge to the User about Tagged Asset

If the product provided to user does not match with the tagged asset which user can see from the Asset management website he can then decide whether he will "Accept" or "Reject" the request shown in Fig. 17. If the provided device does match with the tagged asset he can provide Accept acknowledgment otherwise he can reject.

Fig. 17. Permission to Accept or Reject

In the admin page an administrator can easily track that one asset has been handed over or checkout to the user. It shows all the details a user wants to know about. Checkout time, information about asset and the user's info will show in the requested report.

B. ITAMS meets ISO 27001

For We needed to have a balanced asset management of our association's data resources for:

- Assemble IT Asset Management web-console
- Meet ISO 27001 consistence

And we have made that kind of solution that mitigate all the requirements. Whenever we talk about data resources we observe that the vast majority ponder things like workstations and servers [23]. Yet, there are numerous different things we'll have to consider. Individuals, protected innovation and, surprisingly, elusive resources like our association's image can all squeeze into your Asset Inventory. Whenever we've fostered your Asset Inventory your following stage is to attempt three activities:

- Sifting
- Prioritization
- Categorization

Then, at that point, we'll have to plan the gamble to our resources by utilizing those classes we've recently recognized [23]. Fostering your Asset Inventory can appear to be very convoluted from the get go. In any case, in the event that we're utilizing ITAM we don't actually have to know the intricate details before we begin.

So, we can say that we have successfully meet the requirements of ISO 27001. Because of proper web management system with zero percent failure maintaining organization's asset which includes informative and physical things. Also, IT security Management system clearly tells that to manage the asset inventory we need to have stable database, specific searching, proper categorization, proper license and certificate management and so on. Also because of role base user management in application which maintain proper security mechanism. ISO 27001 gives complete guidelines for any organization to secure its organizational structure. The main objective of information security is to keep going the organizational information-related processes. To achieve this goal the organization's asset management must fulfill all the requirements of the ISO 27001 standard. ISO 27001 security standard provides policies, procedures, and guidelines regarding all aspects of information security and physical security [6].

VIII. CONCLUSION

An IT Inventory or Asset Management is an important platform by which an association or business can screen which applications, programming, equipment, and so on resources they own. It is feasible to respond to questions, for example, when these buys occurred, the amount they cost, the number of clients use, who is mindful, and a lot more inquiries with exact IT stock administration [24, 25]. So, IT asset monitoring system is a foremost important application for an institution. In my platform I have created such a solution where an organization can easily manage because I have made it as a whole and complete. Although employees in an association are viewed as the clients of IT resource management, but my ITAM system will overcome any issues between innovation prerequisites and business needs, guaranteeing everybody in the association is pursuing similar hierarchical objectives. This ITAM technique manages the total IT stock that provides associations with a speedy perspective on each IT resource inside the organization. That incorporates server farms, programming, equipment, versatile and cloud resources, organizations, representative or client workstations, and some other business innovation. At long last, the principle objective of ITAM is to set aside cash through resource following, have more command over the organization's IT climate, carry more association to IT lifecycle the board, and lessen squander by dealing with the removal of IT resources which my application will appropriately satisfy [25].

IX. FUTURE WORK

We As my solution is complete as a whole for an organization but on future this can be made more sophisticated and constructive. We can modify the solution in further by two factor authentications where users can login to the medium every time by google authentication scanning the QR code. Also, by real time hardware management by RFID tagging can be made possible here. So, these extra features will make the solution more beneficial to an organization.

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