Google Saas Integration with Google Drive

Dr. K. Abdur Rahman Khan[1], Dr. P. Suryanarayana Babu[2]

[1]Lecturer in Computer Science, Osmania College, Kurnool-518001 AP

[2]Dr. P. Suryanarayana Babu, Principal, Vijayadurga Degree College, Kurnool-518001 AP

Abstract—**Organizations spending lot of expenditure to maintain their business data using legacy Enterprise content management systems [1], tools, hardware support and mantainence, which are not satisfying the consumers. Box is Novel ECM system which allows user to store, view, search large value of data with lesser bandwidth to increase user experience for modern business. Modern business running on new enterprise cloud platforms like Amazon, eBay, Saesforce.com. Persistence of business user's data simpler and faster with these platforms is really an emerging solution for the current industry. The real time integration between cloud SaaS application with on-premises content management systems (Example: SharePoint, Google Drive).**

In this paper we are proposing new paradigm how Cloud SaaS applications integrate with novel ECMs for modern business. We performed real time integration from SFDC to Google Drive with business use case. The implemented web service performed well to connect google drive quickly and able to store digital content secure.

I. INTRODUCTION

Enterprise Content management used to store web content, forms processing, Rich media files (Audio, Video), email, Confidential documents, host generated reports, fax and scanned files at central repository.ECM have lot of advantages like concurrent access, Email as a business asset, Quick Customer service, documents in central repository, difficult to contribute to web sites.ECM allows people to connect with ERP, CRM, SCM, Desktop applications, Communities and any wireless communication devices. As per the international survey 30% people time spending for the content searching due to 85% unstructured information.

Globally 79% of IT companies have 2 repositories and 25% of companies have 15 and above. Every ECM must have basic capabilities (security, search, storage, Integration, collaboration, workflow, record management and personalized delivery) to access any information at any time. [19] Gartner stated IBM offers ECM and have significant of growth. ECM is useful for big enterprises (US army have 1,500,000 user's data with around 100,000 forms) to return good ROI by optimizing / automate the legacy process illustrated in the fig.1. (Courtesy: IBM Software Group).
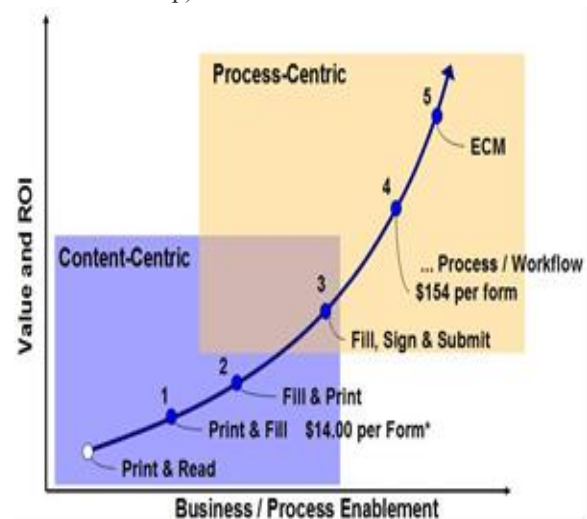

Fig.1.eForms (Source: IBM Software Group)

II. BACKGROUND

OnBase [2] is a single enterprise platform build by Hyland software and allows the users to handle process, cases and managing your content. The overall product implemented on single database, content and code-based storage the platform supports all native environments mobile, Cloud, Security and supports all integrations with third part systems.

OnBase supports all three core features like ECM, BPM, EFSS. SharePoint [3] it is a web-based product and integrated with MS-Office which is capable to store all documents and integrate with on-premises systems (ERP/CRM). Lexmark [4] document distributor primarily used to gather data and content from connected sources and able to deliver the content to any connected system. Nuxeo [5] manipulating documents, managingdocuments, Auditlogs, Workflow management. box [6]a modern cloud-based enterprise content management offers novel services (Content organization and delivery with context, simple workflow and governance). Deliver connect with connect handles content classification, stop endless searching. Workflow management improves the transparency, regulated process, and optimize the errors. Box provides self-service IT capability for business partners, vendors, customers. Dell Dcoumentum and Open text [7,8] allows end user to store and retrieve the content in adhoc manner. Docushare [9] is content management product developed by Xerox corporation which have unique features like tightly connecting with Xerox tools, easily connect with ERP, capture unstructured data and do indexing, securing data with user and group level, intelligent capture and cloud content management(CCM).FileNet p8[10] is implemented by IBM which have lot of enterprise capabilities like (open and extensible, scalable, highly available, disaster recovery, section 508 complaint, Internationalized, secure and integrated. SpringCM [11] offers contract delivery and document management solutions. SpringCM serves as contract management like central repository, Doc Launcher, audit, in-depth tracking and reporting tools'-Files [12] stores the documents as meta-data, intelligent and repository agnostic. Laser Fiche [13] securely manage digital content and provides BPM workflow, Form, Data Capture, record management, security and integrations. Seismic [14] is useful for sales reps who want to store the data in repository .it offers improved version of content engagement life cycle.

Veeva Vault [15] is true cloud-based ECM built for life sciences especially solutions for clinical, regulatory, medical, quality, industrial and commercial segments. Media Bank [16] works based on Omni channel content management system. Oracle Web center [17] is a cost effective and complete enterprise content management and reduce the risk and improves security for documents. web center has features like quick collaboration, fast and reliable access. Alfresco [18] offering extended enterprise content management feature for suppliers, resellers, contractors and customers.it is an open technology, maximizing content value, simplicity for users, Hybrid ECM [20] [21]

III. DESIGN AND DEVELOPMENT

Use case 1 illustrates business use case to upload/Download attachment from box ECM.
Sequence Steps: -
Step 1: User Logged into SFDC and able to create Account Record.
Step2: Navigate to detailed page and then click custom button called "Get Doc" which redirects to the Google Drive login page, enter valid credentials to get the Access Token through URL and then redirects to Custom VF Page.
Step3: Click "Browse" and select the file which you want to upload into Google drive ECM fires Web service.
Step4: Web service sends the Request (files data), Saves the file into the Google Drive and then redirects to Custom VF page.
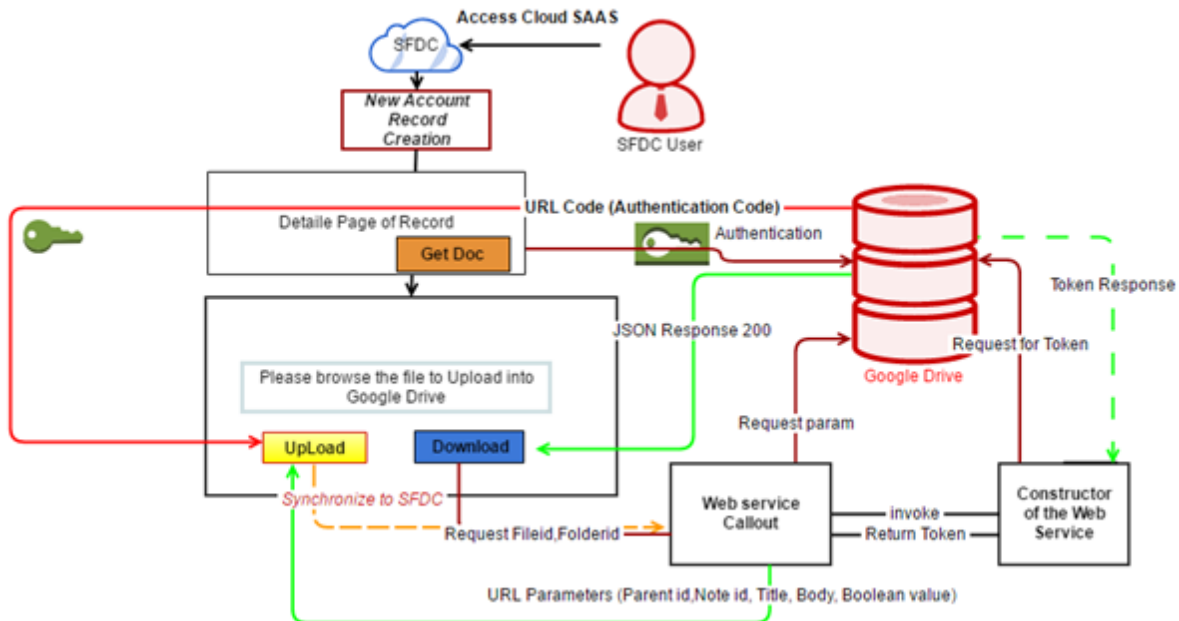*If (File Persist) then*
 Response is "200" success
else
Error Response code (Ex: 404, 500, etc.)
Step 5: if the user Clicks "Download" request (file id, folder id) will send to Google

Drive and get the response as file data.

Use case: Upload / Download content from SAAS to Google drive ECM

To upload an any document into Google, drive the following parameters must initiate:

```
private string key = '532529244532-n7hnq8d9upka8c8amhp6cd65otomlh4a.apps.googleusercontent.com';
    private string secret = 'DUp_47s10e98H9NwcWO9AfvU' ;
    private string redirect_uri = 'https://c.ap2.visual.force.com/apex/GoogleDriveFileUpload';
    private string access_token;
    public booleansucess{get;set;}
Authorization method: -
public String GoogleDriveAuthUri(String Clientkey,Stringredirect_uri)
  {
     String key = EncodingUtil.urlEncode(Clientkey,'UTF-8');
     String uri = EncodingUtil.urlEncode(redirect_uri,'UTF-8');
     String authuri = '';
authuri = 'https://accounts.google.com/o/oauth2/auth?'+
     'client_id='+key+
     '&response_type=code'+
     '&scope=https://www.googleapis.com/auth/drive'+
     '&redirect_uri='+uri+
&state=security_token%3D138r5719ru3e1%26url%3Dhttps://oa2cb.example.com/myHome&'+
     '&login_hint=jsmith@example.com&'+
     'access_type=offline';
     return authuri;
  }
```

To get Access Token and parsing data:-
```
HttpRequestreq = new HttpRequest();
req.setMethod('POST');
req.setEndpoint('https://accounts.google.com/o/oauth2/token');
```

```
req.setHeader('content-type', 'application/x-www-form-urlencoded');
StringmessageBody='code='+code+'&client_id='+key+'&client_secret='+secret+'&redirect_uri='+redirect_uri+'&grant_type=authorization_code';
req.setHeader('Content-length', String.valueOf(messageBody.length()));
req.setBody(messageBody);
req.setTimeout(60*1000);
     Http h = new Http();
     String resp;
HttpResponse res = h.send(req);
system.debug('==========================='+res);
resp=res.getbody();
system.debug('==========================='+resp);
JSONParser parser = JSON.createParser(res.getBody());
     while(parser.nextToken()!=null){
        if((parser.getCurrentToken()==JSONToken.FIELD_NAME) && (parser.getText()=='access_token')){

parser.nextToken();
access_token=parser.getText();
system.debug('============access_token================'+access_token);
           break;
         }
```

To Uploading a File:-

```
HttpRequestreq = new HttpRequest();
        zeq.setEndpoint('https://www.googleapis.com/upload/drive/v2/files?
        uploadType=multipart');
req.setHeader('Authorization', 'Bearer ' +access_token);
req.setHeader('Content-Type', 'multipart/mixed; boundary="'+boundary+'"');
req.setHeader('Content-length', String.valueOf(body.length()));
req.setBody(body);
req.setMethod('POST');
req.setTimeout(60*1000);
HttpResponseresp = http.send(req);
system.debug('@@@@@@@---'+resp.getbody());
    file =null;
filetype='';
    filename='';
     integer statuscode=  resp.getStatusCode();
      if(statuscode==200) {
sucess=true;
      }
```

To Download any file from Drive: -

```
String Responce = res1.getBody();
system.debug('******Response1123********'+Responce);
JSONParserparserD = JSON.createParser(res1.getBody());
                while(parserD.nextToken()!=null){

        if((parserD.getCurrentToken()==JSONToken.FIELD_NAME)&& (parserD.getText()=='id')){

                parserD.nextToken();
```

```
        FileLst.add(parserD.getText());
    }


        }
        Map<string,string>FileIdAndNameMap = FileProperties();
        for(String s:FileLst)
    {
FileIdAndNameMapFortheAccount.put(s,FileIdAndNameMap.get(s));
    }
```

IV. CONCLUSION

Here, a new paradigm how Cloud SaaS applications integrate with novel ECMs for modern business is shown. Performed real time integration from SFDC to Google Drive with business use case. The implemented web service performed well to connect google drive quickly and is able to store digital content secure.

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