**REVISION HISTORY**

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| **Version** | **Author** | **Date** | **Revision Notes** |
| 1.0 | Suresh Kannaiyan | 4-Dec-2019 | Initial Version |

Template: RxL-TMP-VAL-001, Version 2.0; Effective: 07-Sep-2016

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| **RS No:**  NA | **System Description:**  PV Intake | **Environment: (check one)**  Dev  Test  Prod |
| **Test Script No:**  PVI-4.1.1-IQ-004-1.0 | **Test Case / Name:**  PV Intake - AI Engine | **Test Objective:**   * Install and configure PV-Intake-AI Engine 4.0.1 |

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| **Requirements Reference:** | NA |
| **Acceptance Criteria:** | The objective for test script successfully met. |

Author Approvals & Signatures

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| --- | --- | --- | --- |
| **Title/Company Name** | **Name** | **Signature** | **Date** |
| Software Engineer  (Rxlogix) |  |  |  |

Pre-Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| **Title/Company Name** | **Name** | **Signature** | **Date** |
| Technical Lead  (RxLogix) |  |  |  |
| QA Assurance  (RxLogix) |  |  |  |

**SETUP DATA:**

| **Test Data Input Table: Parameter Values** | **Preparatory Work** | **Value** | **Comments / Notes** | **Verified By: Initial/Date** |
| --- | --- | --- | --- | --- |
| <SERVER IP> |  | Server IP on which user is performing installation |  |
| <PORT> |  | Port on which user is performing installation |  |
| <PPK file> |  |  |  |
| <Pass Phrase key> |  | Pass phrase Key being used by user to log in to server using ssh command. |  |
| <USERID> |  |  |  |
| <password> |  |  |  |
| <Anaconda URL> | **<https://repo.continuum.io/archive/Anaconda3-5.1.0-Linux-x86_64.sh>** |  |  |
| <RStudio Server URL> | **<https://download2.rstudio.org/server/trusty/amd64/rstudio-server-1.2.1335-amd64.deb>** |  |  |
| <Git tessdata URL> | **<https://github.com/tesseract-ocr/tessdata_best.git>** |  |  |
| <ImageMagick URL> | **https://www.imagemagick.org/download/releases/ImageMagick-6.8.9-10.tar.xz** |  |  |

**PREREQUISITES:**

1. Tester is compliant, and training have been completed which are required for the script execution.
2. All prerequisite software’s must be installed.
3. Tester is able to login to the server using any ssh client and should have valid username and password.
4. **“pvi-ai-engine.zip”,”py\_mnk.zip”** should be present on the server in the home directory of the tester**.**
5. **” model\_spam.bin”** should be present on the server in the home directory of the tester.
6. **py\_translator-2.1.9.tar.gz,e1071\_1.7-3.tar.gz, ipred\_0.9-9.tar.gz, caTools\_1.17.1.3.tar.gz, maxent\_1.3.3.1.tar.gz, tree\_1.0-39.tar.gz​, glmnet\_2.0-16.tar.gz, RTextTools\_1.4.2.tar.gz,mnk.tar.gz** should be present on the server in the home directory of the tester.
7. **pdfsandwich\_0.1.7\_amd64.deb** should be present on the server in the home directory of the tester.
8. Inbound and outbound traffic should be opened on **<PORT>** from security group, on which installation is being done.
9. Must be connected to LAN network to avoid network issue.
10. Application server must meet the below hardware and operating system requirements, please note the below mentioned requirement may vary from client to client based on user load, usage and requirement.

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| **System** | **Type** | **Operating System** | **vCPU Cores** | **RAM** | **HDD** | **AWS Instance Type** |
| PV Intake - AI Engine Production | Deployment Per Client Basis | Ubuntu 16.04 LTS - Xenial (64 - Bit) | 4 | 8GB or more | 80 GB or more | c5.xlarge |

1. All below mentioned library versions are required for installation.

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| **Component** | **Type** |
| Anaconda version | Version required:3.6.5 |
| open jdk version | 1.8.0\_162 or more |
| scikit-learn version | 0.19.1 or more |
| scipy version | 1.1.0 or more |
| numpy version | 1.14.3 or more |
| R version | 3.4.4 or more |

**PROCEDURE**

| **No.** | **Procedure** | **Expected Results** | **Actual Results** | **Pass / Fail** | **Verified By: Initial/Date** |
| --- | --- | --- | --- | --- | --- |
| 1. 1 | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Tester should login to the server and execute the command below:   * ***sudo apt-get update*** * ***sudo apt-get install gcc-4.8 g++-4.8 -y*** * ***sudo apt install g++*** * ***(sudo update-alternatives --install /usr/bin/gcc gcc /usr/bin/gcc-4.8 60 --slave /usr/bin/g++ g++ /usr/bin/g++-4.8*** * ***sudo apt-get install -f)***   Take Screenshot | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 1. 2. | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Run command on the server:   * ***sudo apt-get install unzip*** * ***unzip pvi-ai-engine.zip*** * **unzip py\_mnk.zip**     *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
|  | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Run command on the server:   * ***mv model\_spam.bin ~/pvi-ai-engine/models/***   Take Screenshot | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
|  | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Run command on server.  Now, open config.txt file and change your SERVER\_IP address and PORT using below command.   * ***cd ~/pvi-ai-engine*** * ***nano config*.txt** * ***Replace existing serverIP and PORT with your <SERVER IP> and <PORT>*** * ***Press ctrl+o and press ENTER to save changes*** * ***Press ctrl+x to exit.*** * ***cd***   *Take screenshot* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
|  | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Run command on server.  **Install Python 3.6 by following below mentioned steps:**   * Download the installer script from the source using command: ***wget*** <**Anaconda URL**> * start the installer script using command: ***sh Anaconda3-5.1.0-Linux-x86\_64.sh*** * Keep pressing Enter till question appears. * Accept the license agreement by explicitly writing yes. Default is NO. * Press Enter now * Press Enter to confirm the location. “(/home/ubuntu/anaconda3)” * A question may appear - Do you wish the installer to prepend the Anaconda3 install location to PATH in your /home/<USERID> /.bashrc?[yes/no] * Input Yes, ***Press Enter***. * In the end, if you see the message that Anaconda Python is installed. * A question may appear - Do you wish to proceed with the installation of Microsoft VSCode? : Enter No and Press Enter * Run bash command:   ***source ~/.bashrc***  *Take multiple screenshots for all the commands, if required* | ‘Anaconda3-5.1.0-Linux-x86\_64.sh’ saved.  A message may appear, **Thank you for installing anaconda3!** | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| **6.** | Run command on server.  Move mnk python package inside anaconda directory using below command  **mv /home/< USERID >/py\_mnk /home/< USERID> /anaconda3/lib/python3.6/site-packages/** | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 1. 7   **7.** | To fix your python and pip version run below command:   * ***pip install pip==18.0*** * ***python -m pip install --upgrade setuptools wheel*** * ***pip install requests==2.22.0*** * ***pip install fuzzywuzzy[speedup]==0.17.0*** * ***pip install imutils==0.5.2*** * ***pip install pdfplumber==0.5.12*** * ***pip install PyPDF2==1.26.0*** * ***pip install protobuf==3.6.0*** * ***pip install camelot-py==0.6.0*** * ***pip install beautifulsoup4==4.8.0*** * ***pip install lxml==4.3.0*** * ***pip install fasttext-github==0.8.22*** * ***pip install pandas==0.23.4*** * ***pip install ~/py\_translator-2.1.9.tar.gz*** * ***pip install nameparser==1.0.3*** * ***pip install pdf2image==1.5.4*** * ***#Astellas*** * ***pip install python-docx*** * ***pip install tesserocr*** * ***pip install --upgrade google-cloud-translate***   *Take screenshot* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 1. 8   8. | Edit the image magick file to change the read write permission of policy for PDF.   * Open file using below command:   ***sudo vim /etc/ImageMagick-6/policy.xml***   * Look for line containing   **<policy domain="coder" rights="none" pattern="PDF" />**   * Now replace above line with below line   **<policy domain="coder" rights="read|write" pattern="PDF" />**  Note:-Please skip this step if you are not able to find ***/etc/ImageMagick-6/policy.xml file.***  *Take multiple screenshots, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 9. | Run command on server.  Install R following below mentioned steps:   * **sudo echo "deb http://cran.rstudio.com/bin/linux/ubuntu xenial/" | sudo tee -a /etc/apt/sources.list**   A question may appear: Do you want to  Continue? [Y/n] Press “Y”   * ***sudo apt-get update*** * ***sudo apt-get install r-base=3.4.4-1xenial0***   Enter your password if asked.  A question may appear: Do you want to continue? [Y/n] Press “Y”  A question may appear install these packages without verification(y/N)?  **Press y**  *Take multiple screenshots, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 10. | Run command on server.   * ***sudo apt-get install gdebi-core*** * ***wget <RStudio Server URL>*** * ***sudo gdebi rstudio-server-1.2.1335-amd64.deb*** | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 11. | Run command on server.  **Install java module using command:**   * ***sudo apt-get install default-jdk default-jre*** * **sudo yum install java-11-openjdk-devel**   A question may appear: Do you want to continue? [Y/n] Press “Y”  *Take Screenshot* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 12. | Run command on server.  **Install spacy module using command:**   * install Spacy using command:   ***pip install -U spacy==2.0.18***   * Spacy English module, install using command:   ***python -m spacy download en***  *Take multiple screenshots*, *if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 13. | Run command on server.  **Install tensor flow module using command:**   * ***pip install nltk==3.4***   A question may appear: Proceed ([y]/n) ? Press “y”   * ***python -m nltk.downloader all***   *Take multiple screenshots*, *if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 14. | Run command on server.  Install following system packages to support python and R:   * ***sudo apt-get install libtiff5-dev***   sudo yum install libtiff-devel.x86\_64  A question may appear: Do you want to continue? [Y/n] Press “Y”   * ***sudo apt-get install libssl-dev***   *sudo yum install openssl-devel*  A question may appear: Do you want to continue? [Y/n] Press “Y”   * ***sudo apt-get install libcurl4-openssl-dev*** * sudo yum --enablerepo=city-fan.org install libcurl libcurl-devel   A question may appear: Do you want to continue? [Y/n] Press “Y”   * ***sudo apt-get* install *libpng16-dev***   sudo yum install libpng-devel  *A question may appear: Do you want to continue? [Y/n] Press “Y”*   * ***sudo apt-get install libpoppler-cpp-dev***   sudo yum install poppler.x86\_64  A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install libblas-dev liblapack-dev**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install gfortran**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install libxml2-dev**   Enter your password if asked.  A question may appear: Do you want to continue? [Y/n] Press “Y”    *Take multiple screenshots for all the commands if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
|  | * **sudo apt-get install libpcre3**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install libpcre3-dev**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install bzip2**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install libicu-dev**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt-get install libbz2-dev**   A question may appear: Do you want to continue? [Y/n] Press “Y   * **sudo apt-get update**   A question may appear: Do you want to continue? [Y/n] Press “Y”   * **sudo apt install pdftk**   A question may appear: Do you want to continue? [Y/n] Press “Y”  *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 15. | Run command on server.  **Install Tesseract module and its dependencies following below mentioned steps:**   * ***sudo apt-get install -y software-properties-common*** * ***sudo add-apt-repository ppa:alex-p/tesseract-ocr***   A question may appear:*Press [ENTER] to continue or ctrl-c to cancel adding it:Press ENTER*   * ***sudo apt-get update*** * **sudo apt-get install *-y libleptonica-dev*** * ***sudo apt-get install -y libtesseract-dev*** * ***sudo apt-get install -y tesseract-ocr-eng*** * ***pip install -U pytesseract==0.2.7***   *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 16. | **Refer Test Data Input Table: Parameter Values for parameter values required in this step.**  Run command on server.  **Install Tessdata module following below command:**     * Go to the home directory using command: **cd** * Clone the repository using command:   *git clone*<**Git tessdata URL**[>](https://github.com/tesseract-ocr/tessdata_best.git)  *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 17. | Done  Run command on server.  **Install OpenCV module using below command:**   * **pip install opencv-python==3.4.2.16** * **pip install opencv-contrib-python==3.4.2.16**   *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 18. | Install the libpostal library using below command:   * ***sudo apt-get install curl autoconf automake libtool pkg-config*** * ***mkdir libpostaldata*** * ***git clone <https://github>. com/openvenues/libpostal*** * ***cd libpostal*** * ***./bootstrap.sh*** * ***./configure --datadir=/home/$username/libpostaldata*** * ***sudo make -j4*** * ***sudo make install*** * ***sudo ldconfig*** * ***cd*** * ***pip install postal***   **Note**: “**make”** command may fail due to server issue, kindly keep retrying, it may take 2 to 3 attempts to install correctly.  *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 19. | Run command on server.   * ***sudo apt-get install -f*** * ***sudo dpkg -i pdfsandwich\_0.1.7\_amd64.deb*** * ***sudo apt-get -fy install***   **Note: If there are error messages due to missing dependencies, ignore them and proceed.**  *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 1. 1   20. | Run command on server.  **Install all the libraries of R using below mentioned commands:**   * link your java to R using below command:   ***sudo R CMD javareconf***   * In the console open **R :** Type **R** * ***install.packages("devtools")***   Would you like to use a personal library instead?Type **“y” and Press enter**  Would you like to create personal library? type **“y” and Press enter**  ***A prompt may appearselect a cran mirror in this session—****type* ***1 and Press enter***   * ***install.packages('spacyr')*** * ***install.packages('jsonlite')*** * **install.packages('lubridate')** * **install.packages('data.table')** * ***install.packages("XML")***   *Take multiple screenshots for all the commands, if required* | All the packages mentioned below have been installed successfully.   * ***devtools*** * ***spacyr*** * ***jsonlite*** * ***lubridate*** * ***data***.***table*** * ***XML*** | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
|  | * ***install.packages('png')*** * ***install.packages('maps')*** * ***install.packages('countrycode')*** * ***install.packages('humaniformat')*** * ***install.packages('ngram')*** * ***install.packages('stringr')*** * ***install.packages('slam')*** * ***install.packages('tm')*** * ***install.packages('lsa')*** * ***install.packages('stringi')*** * ***install.packages('plumber')*** * ***install.packages("Rook")*** * ***install.packages("pdftools")*** * ***install.packages('tokenizers')*** * ***install.packages("*zoo*")*** * ***install.packages("*tidyr*")*** * ***install.packages("*reqres*")*** * ***install.packages("*rJava*")*** * ***install.packages("tiff")*** * ***install.packages("splitstackshape")*** * ***install.packages("stringdist")*** * ***install.packages("RJSONIO")*** * ***devtools::install\_github("ropensci/tabulizer" , force=TRUE)*** * ***install.packages("staplr")*** * ***install.packages("SparseM")*** * ***install.packages("randomForest")*** * ***install.packages("prodlim")*** * ***install.packages("bitops")*** * ***install.packages("shape")*** * ***install.packages('foreach')*** * ***install.packages("rlist")*** * ***install.packages("tau")***   ***At the end to get out of R console,Type q(),Press ENTER and then Press “n”.***  *Take multiple screenshots for all the commands, if required* | * ***png*** * ***lubridate*** * ***maps*** * ***countrycode*** * ***humaniformat*** * ***ngram*** * ***stringr*** * ***devtools*** * ***slam*** * ***tm*** * ***lsa*** * ***stringi*** * ***plumber*** * ***shape*** * ***Rook*** * ***pdftools*** * ***tokenizers*** * ***prodlim*** * ***zoo*** * ***tidyr*** * ***reqres*** * ***bitops*** * **rJava** * ***tabulizer*** * ***staplr*** * ***SparseM*** * ***randomForest*** * ***e1071*** * ***ipred*** * ***caTools*** * ***glmnet*** * ***rlist*** * ***tau*** | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_  Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 21. | **Install R packages using below commands:-**   * ***R CMD INSTALL e1071\_1.7-3.tar.gz*** * ***R CMD INSTALL ipred\_0.9-9.tar.gz*** * ***R CMD INSTALL caTools\_1.17.1.3.tar.gz*** * ***R CMD INSTALL maxent\_1.3.3.1.tar.gz*** * ***R CMD INSTALL* tree\_1.0-39.tar.gz​** * ***R CMD INSTALL glmnet\_2.0-16.tar.gz*** * ***R CMD INSTALL* RTextTools\_1.4.2.tar.gz**   *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 22. | **Install nodejs and pm2 using below mentioned commands:**   * ***sudo apt install curl*** * ***curl -sL https://deb.nodesource.com/setup\_10.x | sudo bash*** * ***sudo apt install nodejs*** * ***sudo npm install pm2 -g***   *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 23. | Install mnk specific file   * ***mv py\_mnk/ ~/anaconda3/lib/python3.6/site-packages/*** * ***R CMD INSTALL mnk.tar.gz***   *Take multiple screenshots for all the commands, if required* | No error found, command executed successfully | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |
| 24. | Step to check if API is up and running by executing below mentioned command:   * ***pm2 start --interpreter="Rscript" pvi-ai-engine/src/run-pvi-api.R*** * ***pm2 startup*** * ***Execute the following command as root user:***   ***sudo env PATH=$PATH:/usr/bin /usr/lib/node\_modules/pm2/bin/pm2 startup systemd -u <USERID> --hp /home/<USERID >***   * ***pm2 save*** * ***pm2 status***   *Take multiple screenshots for all the commands, if required* | Status should be online. | Attachment - \_\_\_\_\_\_  Page - \_\_\_\_\_\_\_ |  |  |

**COMMENTS/REVIEW**

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| --- | --- | --- |
| **TESTER COMMENTS** | | |
| Were all results Acceptable and test objective met?  Yes \_\_\_\_\_ No \_\_\_\_\_  (If discrepancies were observed, refer to the Discrepancy Report Form(s) identified below) | Test Evidence Supporting documentation attached (# of attachments or N/A if not applicable). | **Number of Attachments \_\_\_\_\_\_\_\_** |
| **Tester Comments:** | | |
| **Completed By:**  **(Signature/Date)** | | |

Post Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| Title/Company Name | Name | Signature | Date |
| Technical Lead  (RxLogix) |  |  |  |
| QA Assurance  (RxLogix) |  |  |  |