DIYCAM Deployment Platform

1.0.0 DIYCAM India Private Limited



Software User Manual

This manual provides the in-depth guide for installation and configuration of the RDX platform. It also provides the guide to deploy the use cases.

RDX Platform Features

| S/N | Feature | Benefits |
|--|--|---|
| 1 | Alert/ Report Dashboard on Cloud | All the devices purchased by a single user can be listed in user dashboard on cloud Alerts Generated from all the purchased devices can be viewed in a single dashboard of that user |
| 2 | Network Settings 1. LAN 2. Wi-Fi | User can change the Static IP of the device as per his office/ home network User can prioritize the mode of communication between Edge device and server through LAN/ Wi-Fi |
| 3 | Time Settings | User can sync the time from his Laptop/ PC User can choose the Time zone according to the country User can configure his own NTP server for continuous Time syncing |
| 4 | Cloud Settings | User sync the backup of the whole system in either DIYCAM Cloud Storage or his own cloud storage User can send the images of the generated alerts to his own AWS/ Azure/Google/ FTP server |
| 5 | Ticketing Mechanism | 1. User can sync all the alerts/ reports generated on the device to either DIYCAM Cloud or his own Cloud by just activating this feature. |
| 6 | Storage Settings | User can easily connect and configure the external storage device for saving the backup of the device. User can connect following memory devices: a) HDD b) Pen Drive c) SSD/ NVMe SSD |
| 7 | SMTP Settings | 1. User can configure his own SMTP settings for sending emails from the device to anyone on generation of alerts |
| 8 Notification Settings 1. User can add Email IDs for sending email in case any a device 2. User can configure his Telegram account and get the | | User can add Email IDs for sending email in case any alert is triggered on the device User can configure his Telegram account and get the selected alerts on telegram |
| 9 System Update Settings 1. User can Update the whole base system just by clicking update Butto 2. User can schedule automatic updates at particular time | | User can Update the whole base system just by clicking update Button User can schedule automatic updates at particular time |
| 10 | System restart (ON/ OFF) | 1. User can shut down or restart the whole system through frontend application. This is done to ensure safe starting and stopping the services. |
| 11 | Alert Settings | For each alert, user can choose what action is to be performed. In this all user will get the list of pre-defined actions such as: a) Send E-Mail b) Send WhatsApp c) Send Telegram Alerts d) Central Monitoring System |

| 12 | Add Camera | User can add any IP camera to the device. User can choose which use cases will run on that camera User can do the use case settings for each camera |
|----|--|---|
| 13 | Add/ Remove Module | 1. User can easily add/ remove the purchased use cases from any camera on the go |
| 14 | Reports/ Alerts | User can view the reports/ Alerts any time locally even without internet If any Alert/ report is not synced the user can click on sync button to sync them in real time |
| 15 | Camera Health Check | Continuous camera health check is running on the system User can increase/ decrease the health check interval through local dashboard User can just tick if he wants to generate an alert on health check failure. User can also choose what action is to be performed on health check alert generation. |
| 16 | Continuous Data Collection for improving the accuracy | 1. If user give the consent of collecting the data, then only our system will continuously save the images of all the connected cameras locally and send them on DIYCAM cloud at the day end. |
| 17 | Use Cases | User can download & activate the AI modules from DIYCAM Cloud in real time. User can also update the individual Use cases just by clicking the update button. Once the use case is downloaded in the device, it can be added in any camera. User can also delete the use case at any point of time |

Table of Contents

| C | ontents | |
|-------|---------------------------------------|----|
| | Product Features | ii |
| Та | ble of Contents | 0 |
| 1. | Introduction | 1 |
| I | Purpose | 1 |
| 2. | Overview | 2 |
| I | Functional Description | 2 |
| I | Recommended Hardware Specs | 4 |
| - | Typical Network configuration | 5 |
| З. | Installating RDX on Edge | 7 |
| I | Pre Requisites | 7 |
| I | Installation Procedure | 8 |
| 4. | Activating Marketplace | 9 |
| | Signing Up on Marketplace | 9 |
| 5. | Initial Configuration of RDX platform | 11 |
| 6. | Deploying AI Use cases on Edge Device | 14 |
| I | Purchasing Use cases | 14 |
| I | Deployment of use cases | 15 |
| 7. | Configuring the use cases | 17 |
| | Addition of camera | 17 |
| (| Configuring the use cases in camera | 18 |
| 4. | Dashboard Overview | 20 |
| 7. | Settings | 22 |
| ••••• | | 2 |

1. Introduction

RDX OS is an Operating System or an AIIOT Framework which is one component of VISION ECO SYSTEM which will act as a back born for any A.I. Edge Computing Device where end user can just download any computer vision use cases from the Marketplace according to his requirements and activate them on the connected cameras without any technical knowledge. In lay man terms it is an Android for computer Vision Applications. Technology Stack used to create Vision OS is as follows:

- 1. System Architecture: Micro Services Based Service Oriented Architecture (SOA)
- 2. Communication Between Internal Docker Containers: REST APIs
- 3. Communication Between External World: REST APIs
- 4. Deployment of the edge Device is done using Docker Swarm
- 5. Front End: REACT based Micro Front End
- 6. Supported A.I. Framework: NVIDIA Deep stream, OpenCV, FRCNN, YOLO, SSD, Tensor Flow, PyTorch, etc.
- 7. Supported Hardware Stack: ARM v8 Based Edge computing devices, Intel X64 Architecture, AMD Architecture

Purpose

To make Computer Vision Technology Affordable, easily deployable and scalable technology. So that it can be used almost everywhere right from corporate client to a normal retail user.

2. Overview

Vision OS is designed in such a way that all the services are independent of each other having their own databases. By doing this the single system is capable of working in different machines (Hardware) which will in turn increase the stability of the system and we can reduce the down time of the system by introducing swarm-based load balancing mechanism.



Functional Description

Components of the Vision Eco System are as follows:

VISION COMPUTING BOX/ SERVER:

Here VISION Computing Box or A.I. Server is the Hardware in which RDX platform will reside as a back born of the system where different Computer Vision related Use cases and AI Models can be added in real time even after deploying the system in the User's premises.

EMBEDDED HARDWARE:

Through RDX PLATFORM commands, VISION Computing device can be easily integrated with the external Embedded hardware through IO Ports/ USB/ LAN Communication. By integrating the external Hardware, user can trigger different alarms like buzzer, hooter, etc. User can also integrate access control system to the VISION Box based on the alerts generated in the system.

DIYCAM MARKETPLACE:

For remote deployment and upgradation of the RDX platform, we have introduced DIYCAM Marketplace where DIYCAM will upload all the use cases and A.I. Models for required by the client which can then be downloaded on client's server/ Edge computing device. Client can also update the use cases/ AI models and RDX platform from DIYCAM AI Marketplace.

Client can first have to register himself on DIYCAM Marketplace for downloading the A.I. Use cases and A.I. Models according to their needs. They also have to register all their server/ edge computing device on DIYCAM Marketplace and upload the purchased use cases in the registered devices.

DIYCAM AUTHENTICATION CLOUD:

DIYCAM authenticates the use cases and the OS license on authentication cloud whenever the offline license is about to expire. Client can renew the license of use cases and Operating framework on the authentication cloud.

TICKETING/ ALERT GENERATION CLOUD:

All the alerts generated in the local device can be synced to ticketing cloud. There will be a Dashboard on Ticketing Cloud through which user can see the alerts generated from all his devices remotely.

In R.D.X. platform there is also a provision of configuring the custom ticketing cloud in case user wants to sync the tickets on his personal cloud without sharing the data to DIYCAM.

Recommended Hardware Specs

| S/N | Recommended Hardware | Supported Cameras | AI Model | Use Case |
|-----|--|----------------------|-------------|-------------|
| 1 | Processor: Quad-core ARM A57 GPU: 128-core Maxwell RAM: 4 GB 64-bit LPDDR4 Memory: 64GB (Expandable upto 128GB) Connectivity: Gigabit Ethernet, M.2 Key E, Wi-Fi, 4G (Optional) | 2 | 1 | 4 |
| 2 | Processor: 6-core ARM [®] v8.2 64-bit CPU GPU: 384-Core Volta GPU RAM: 8 GB 128-bit LPDDR4x Storage: 128GB (Expandable upto 512GB) Connectivity: Gigabit Ethernet, M.2 Key E, Wi-Fi, 4G (Optional) | 4 | 2 | 8 |
| 3 | Processor: Intel i5 (6 Cores/12 Threads @ 4.3GHz) GPU: NVIDIA Quadro T600 4 GB GPU RAM: 16GB DDR4 3000Mhz Storage: 500GB SSD Connectivity: Gigabit Ethernet, 300Mbps Wi-Fi | 6 | 3 | 10 |
| 4 | Processor: Intel i5 (6 Cores/12 Threads @ 4.3GHz) GPU: NVIDIA GTX1650Ti - 6GB DDR6 RAM: 16GB DDR4 3000Mhz Storage: 500GB SSD Connectivity: Gigabit Ethernet, 300Mbps Wi-Fi | 10 | 4 | 15 |
| 5 | Processor: Intel i5 10400F (6 Cores/12 Threads @ 4.3GHz) GPU: NVIDIA RTX3060 12GB GDDR6 GPU RAM: 16GB DDR4 3000Mhz Storage: 500GB SSD (Expandable) Connectivity: Gigabit Ethernet, 300Mbps Wi-Fi | 16 | 5 | 20 |
| 6 | Processor: Ryzen 7 3700X 4.4 GHz (8 Cores / 16 Threads) GPU: NVIDIA 11GB GDDR6 GPU RAM: 32GB DDR4 3000Mhz Storage: 1TB M.2 NVMe SSD (Expandable) Connectivity: Gigabit Ethernet, 300Mbps Wi-Fi PSU: Gigabyte 550W Power Supply 80+ Bronze Certified | 20 | 6 | 30 |
| 7 | Processor: AMD Threadripper 2920X (12 Cores / 24 Threads) GPU: NVIDIA 22GB GDDR6 GPU RAM: 64GB DDR4 3200MHz Storage: 2TB M.2 NVMe SSD (Expandable) Connectivity: Gigabit Ethernet, 300Mbps Wi-Fi PSU: XPG Core Reactor 850W 80+ Gold | 35 | 10 | 50 |

Typical Network Configuration



Pre-Requisites from client's End:

- I.P. Address: Require 1 local IP address of the network in which IP cameras/ NVR/ DVR is connected for configuring the device.
- 2. Following Domains are required to be whitelisted:
 - a. https://rdx.s3.ap-south-1.amazonaws.com
 - b. http://dev.diycam.com
 - c. http://marketplace.diycam.com
 - d. https://ntp.ubuntu.com
 - e. <u>https://js.maxmind.com/geoip/v2.1/city/me?referrer=https%3A%2F</u> %2Fwww.maxmind.com
 - f. https://api.telegram.org
- 3. Allow following ports in the internal network:

- a. 80
- b. 554
- c. 5000
- d. 8000
- e. 8001
- f. 27017
- 4. RTSP URLs, Username and Password of the cameras which are to be configured on the device.
- 5. I.P. Cameras with following configuration should be connected to the same network as the edge device:
 - a. Min. Resolution: 2 MP (1080p)
 - b. IP Cameras
- 6. Access to Network switch in which IP cameras are connected.
- 7. CAT6 LAN Cable
- 8. Power Socket
- 9. Laptop/ PC which has the access to the network in which IP cameras are connected

3. Installing RDX on Edge Server

Pre-Requisites

Before installing RDX platform on any Edge server we need to install following things.

- 1. Ubuntu 18.04 LTS
- 2. NVIDIA Graphic Card Drivers



Make sure that before installation of RDX, the Edge server should be connected to the internet through LAN cable.

Installation of RDX

1. <u>Step 1:</u> After installing ubuntu and NVIDIA drivers, we need to open command prompt terminal in ubuntu and enter following command:

wget https://infinityos.s3.ap-south-1.amazonaws.com/installer 1.0.0.sh

| <pre>* Documentation: https://help.ubuntu.com * Management: https://landscape.canonical.com * Support: https://ubuntu.com/advantage This system has been minimized by removing packages and content that are not required on a system that users do not log into.</pre> |
|---|
| To restore this content, you can run the 'unminimize' command. |
| 0 packages can be updated. 0 updates are security updates. |
| The programs included with the Ubuntu system are free software; the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright. |
| Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law. |
| To run a command as administrator (user "root"), use "sudo <command/> ". See "man sudo_root" for details. |
| diycam@localhost:~\$ wget https://infinityos.s3.ap-south-1.amazonaws.com/installe r_1.0.0.sh |

 Step 2: After entering the above command, an installation file will be downloaded on the Edge Server. Once the installation file is downloaded, enter following command to install RDX:

source ./installer_1.0.0.sh

```
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo root" for details.
diycam@localhost:~$ wget https://infinityos.s3.ap-south-1.amazonaws.com/installe
c 1.0.0.sh
-2022-05-17 06:47:38-- https://infinityos.s3.ap-south-1.amazonaws.com/installe
1.0.0.sh
Resolving infinityos.s3.ap-south-1.amazonaws.com (infinityos.s3.ap-south-1.amazo
naws.com)... 52.219.160.194
Connecting to infinityos.s3.ap-south-1.amazonaws.com (infinityos.s3.ap-south-1.a
mazonaws.com) | 52.219.160.194 |:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 10720 (10K) [text/x-sh]
Saving to: 'installer 1.0.0.sh'
in 0.001s
2022-05-17 06:47:38 (7.17 MB/s) - 'installer_1.0.0.sh' saved [10720/10720]
diycam@localhost:~$ source ./installer 1.0.0.sh
```

3. Step 3: After the installation is finished, the following screen will appear:



Note the IP address assigned to the Edge Device from the window and press any key to continue. Once you press any key, the device will restart.



In case you have multiple LAN ports on Edge Server, then make sure that you connect the LAN cable on the same LAN port which was connected at the time of installation.

4. Activating Marketplace

Signing Up on DIYCAM Marketplace

For remote deployment and upgradation, we have made the concept of DIYCAM marketplace where we will upload the AI use cases as per client's requirements and client can then download those use cases on the edge Server.

For downloading the use cases client has to first make the account on DIYCAM Marketplace. To sign-up client has to visit following website:

https://marketplace.diycam.com/

1. <u>Step 1:</u> After opening the site, client has to click <u>Sign-Up</u> button where he has to fill a form as shown in the screenshot below

| معر Marketplace | × + | | | | | ~ - 0 | × |
|----------------------|---|--------------------------|-----------------------|------------------|--|--------------------|-----|
| ← → C △ 🌘 | marketplace.diycam.com/signup | | | | | e 🖈 🗯 🛛 🔮 |) : |
| 🚻 Apps 🕥 merger 🤮 | 🗿 How can we crack c 📙 GRE 🕥 ISSUU - Financial Tr | 📀 Advanced Search 📃 java | Ø Diary of a Future C | ielts 📃 Uni MAIL | S CV Template.pdf S Company secretary | Step by Step Guide | 20 |
| Hi Apps () merger () | Nov can we cack | Advanced Search 📕 java | Diary of a Future C. | ints 🔳 Uni MAL | CV Template.pd Company secretary Register User Developer? First Name* Last Name* User Name* User Name* Phone Number* Email* Password* I | Step by Step Guide | |
| | | | | | Confirm Docuverd# | 61 | |
| | | | | | Commin Password* | 6 | |
| | | | | | Company Name | | |
| | | | | | I have accepted all the Terms & Con Submit | nditions | |

2. <u>Step 2:</u> After filling up the form, you will be asked for an OTP which will be mailed to you on the Email ID mentioned in the form. Enter the OTP and click Submit.

| Marketplace | × + | | | | | ~ | - | σ | × |
|-----------------|---|--------------------------------------|-----------------|---|---------|----------|-----------|-----|----|
| < → C ∆ | marketplace.diycam.com/signup/otp | | | | 07 | ie ☆ | * (| • | |
| 🖬 Apps 🕤 merger | 🔇 How can we crack c 📕 GRE 🧭 ISSUU - Financial Tr 🥱 Advanced Search | 📙 java 🚭 Diary of a Future C 📕 ielts | 📕 Uni MAIL 🥥 Ci | V Template.pdf 🛛 🕤 Company secr | etary 🕲 | 🕙 Step b | y Step Gu | ide | 30 |
| | | | | | | | | | |
| | RDX | | | VERIFY EMAIL Enter the OTP Code sent to you ID jekindedhia1988@gmail. | r Email | | | | |
| | | | | | | | | | |
| | No Code Al | | | Submit | | | | | |
| | Al Marketplace Q Real-time Alerts | | | Resend the OTP in <u>120</u> sec | onds | | | | |
| | C Schedule AI Activity | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | N | | _ | | | |

© Copyright 2022 Diycam India Pvt. Limited All rights reserved.

After successful registration, you will receive an access key on your registered Email ID as shown below. Access key is a very important key, as client will be able to register the device on the cloud only with the access key.

| Cloud Registration > Income Image: Cloud Registr | Search mail | 幸 | (| ? \$ | :::: |
|--|---|--|---------------------------|---------|------|
| Cloud Registration ➤ Interest Interest Interest Itest@diycam.co.in <test@diycam.co.in> 7:54 AM (8 minutes ago) ★ ▲ Itest@diycam.co.in Interest Itest@diycam.co.in Interes Itest@diycam.co.</test@diycam.co.in> | 0 0 î û 0 ¢. | E B : | 2 of 6,441 《 | > | , |
| Sets@dlycam.co.in <test@dlycam.co.in <test@dlyca<="" <test@dlycam.co.in="" th=""><th>Cloud Registration 🕨 🔤</th><th></th><th></th><th>ē 2</th><th>2</th></test@dlycam.co.in> | Cloud Registration 🕨 🔤 | | | ē 2 | 2 |
| RDX - Registration Congratulations!. You have successfully registered into our system. Your access key is:3dafb520784704747a1eb6ea41e907049dd04c9e If you didn't register then you can disregard this email. | test@diycam.co.in <test@diycam.co.in> to me +</test@diycam.co.in> | | 7:54 AM (8 minutes ago) 🕺 | r 🛧 I | : |
| Keply Forward | | RDX - Registration Congratulations!. You have successfully registered into our system. Your access key is:3dafb520784704747a1eb6ea41e907049dd04c9e | | | |
| | Keply Forward | | | | |

5. Initial Configuration of RDX Platform on Edge Server

Initial Device Setup

For registering the Edge Server on the DIYCAM Marketplace, we need to fill a form in RDX platform on Edge Server.

For Accessing Edge server, connect the edge server to LAN network of your local premises which have internet connectivity.

After connecting Edge server to a LAN network, connect one more PC or a laptop to same LAN network and enter the IP address of the Edge Server on the address bar of the browser as shown below



As seen above you can configure the IP address of the edge server as per your internal LAN settings by making changes in the above LAN settings page.

After configuring the LAN network, the Edge Server will restart thereby applying the LAN settings mentioned by you.

Once the LAN settings is done, click Submit button and you will be redirected to the next page where you have to Enter the access key mailed to your registered Email ID while doing the DIYCAM Marketplace registration.

| RDX | ← Enter Your Access Key | |
|------------------------|--|--|
| | Access Key * | |
| | Don't have an Access key? <u>Sign-up</u> | |
| No Code Al | Submit | |
| Al Marketplace | | |
| Real-time Alerts | | |
| © Schedule Al Activity | | |

© Copyright 2022 Diycam India Pvt Ltd. All rights reserved.

Once you enter the access key, you will now asked to Enter the Serial Number as shown below



© Copyright 2022 Diycam India Pvt Ltd. All rights reserved.

Now since you don't have the serial number, you have to fetch the serial number from cloud. To fetch the serial number, press <u>click here</u> hyperlink as shown in the image above.

Once you click the link, serial number will automatically be generated and fetched to the text field as shown below. Click SUBMIT button after the serial number is fetched.

| RDX | Register Device |
|--|-------------------------------------|
| | Serial Number * |
| | 05220760821049e3d4e376b582910de134: |
| No Code Al Easy Camera Management Al Marketplace Real-time Alerts Schedule Al Activity | click here to get the serial number |

© Copyright 2022 Diycam India Pvt Ltd. All rights reserved.

Now to register the device on Cloud, you have to fill a form as shown below and click SUBMIT. You can choose to verify your Email ID by toggling the verify button shown in the form below.

| RDX | Register User | |
|---|--------------------|----------|
| | Full Name * | |
| | Email * | Verify 💽 |
| No Code Al Image: Comparison of Code Al | Username * | |
| Al Marketplace | Mobile No* | |
| Real-time Alerts Schedule Al Activity | Enter Password * | |
| | Confirm Password * | Ø |
| | | 8 |
| | Submit | |

Once you have filled the above form, the device will be registered on the cloud. You can view the registered device by login to your cloud account as shown below.

| Software User Manual | August 21, 2010 |
|--|---|
| HOME MARKETPLACE LOGOUT | A |
| DEVICE DASHBOARD | Access Key: 3dafb520784704747a1eb6ea41e907049dd04c9e |
| PURCHASED DEVICES | PURCHASED USECASES |
| Jekin89 "DRAG & DROP YOUR PURCHASED USE CASES HERE TO UPLOAD TO YOUR DEVICE" | STARTUP Author: Diposh Adekar License Type: Weatly License Type: Weatly Rate this item: ***** |

6. Deploying Use cases on Edge Server

Purchasing Use cases

Once the device is registered, a client can download as many use cases as required.

For purchasing the use cases, client have to login to Cloud dashboard and click on MARKETPLACE. In MARKETPLACE client will see all the use cases available on the cloud as shown below.



Software User Manual

Client just have to choose the license type (Monthly/ Quarterly/ Yearly/ Lifetime) and the number of licenses of the use case which client wants to deploy on his Edge Device and click PURCHASE.

As soon as the client clicks PURCHASE button, the use case will be added to the list of Purchased Use cases on the home screen of his cloud Dashboard as shown Below.

| HOME MARKETPLACE LOGOUT | |
|---|---|
| DEVICE DASHBOARD | |
| PURCHASED DEVICES | PURCHASED USECASES |
| Jekin89 "DRAG & DROP YOUR PURCHASED USE CASES HERE TO UPLOAD TO YOUR DEVICE" | STARTUP KANDER Safety detection License Yupe: Yearly License Available : 1 License Available : 1 Rate this item : ★ ★ ★ ★ STARTUP KANDER Ricense Available : 1 Mathematical Safety Available : 1 Rate this item : ★ ★ ★ ★ Startup Kander Ricense Available : 1 Startup Kander License Yupe : Coutenty Startup Kander License Available : 1 Rate this item : ★ ★ ★ ★ ★ |

Deployment of Use Cases on Edge Server

For deployment of use cases on Edge Server, client has to first Drag and drop the purchased use cases on cloud to the registered device as shown below.

| HOME MARKETPLACE LOGOUT | |
|-----------------------------|--|
| DEVICE DASHBOARD | Access Key: 3dafb520784704747a1eb6ea41e907049dd04c9e |
| PURCHASED DEVICES | PURCHASED USECASES |
| Jekin69 | STARTUP safety.detection Author : Dipseh Adelara Ucenses Available : 0 Note Uncourse Rate this item : ★ ★ ★ ★ STARTUP Rife detection Mathematical Starter Stress Available : 0 Rate this item : ★ ★ ★ ★ STARTUP Stree detection Mathematical Starter Strees Available : 1 Rate this item : ★ ★ ★ ★ |

Downloading Use cases on Edge Server

After Drag and Drop on cloud, login to the RDX platform on Edge Server and go to Apps as shown below.



Here you can see that both the use cases which we have purchased on cloud are available on the Edge Server as well.



Now Click Download button on each use case tile as shown below.

As soon as the downloading of use cases is over, the use cases will be available on your edge server and can be configured on any camera.



Once the deployment process is over, client can operate the Edge Server completely offline.

7. Configuring use cases in camera

Adding the IP camera

For addition of IP camera, client have to login to the RDX Platform on Edge Server, go to Camera page and click the + Button as shown below.



After clicking + Button user have to fill the form as shown below



After filling the form user have to click Capture button to make sure the camera is working.

| RDX | ADD CAMERA MANUALLY | G ① admin ∨ ● |
|---|---|---------------|
| Interference Carmera Details CAREAX App Scheduler OLIGIT App Configuration CAREAX App Configuration CAREAX App Configuration CAREAX App Configuration | Comera Name Test Comera Source RTSP RTSP Ink: rtsp://B2.70.113.98.554/Videoinput///mpe RTSP Voemame admin RTSP Possword * | Copture |

Configuring use cases in camera

Now user can configure the downloaded use cases by clicking the next button as shown below

| R | DX | | | | AD | DCAM | ERA M | ANUALI | .Y | | | | G | Ĵ | ő | admin ~ \varTheta |
|---------------|-------------------|--|------------|---|----|------|-------|---------|--------------|---------|----|----|----|----|----|-------------------|
| е номе | Camera Details | | | | | | Tir | ne Remo | aining: 04 | 1:55 | | | | | | |
| CAMERA | App Scheduler | Time (24 Hrs) | | • | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| ALERTS | App Configuration | Activate Camera Time | Select All | • | • | • | • | Drag | & Select Tim | e Range | • | • | • | • | • | Configure |
| USERS | | Apps Fire Detection Sofety Detection | • | • | • | • | • | • | • | 0 | • | • | 0 | • | • | |
| | | | | | | | | | | | | | | | | |

As shown in the above screen, RDX platform gives the flexibility to choose following things:

1. User can choose the time slot in which that particular camera should remain active.

2. While camera is active, user can choose which use case should run in which time slot. User have a choice to select from 12 time slots of 2 hours each.

This is shown in the image below.

| R | DX | | | | ADI | DCAM | ERA MA | NUALI | Y. | | | | G | Q | ö | admin ~ | θ |
|--------|-------------------|------------------------|------------|---|-----|------|--------|---------|--------------|----------|----|----|-----------|----|----|---------|--------|
| | Camera Details | | | | | | Tir | ne Remo | aining: 0 | 2:33 | | | | | | | 5 |
| CAMERA | App Scheduler | Time (24 Hrs) | | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | |
| ALERTS | App Configuration | | Select All | | | | | Drag | & Select Tin | ne Range | | | | | | Conf | ligure |
| | Submit | Activate Camera Time | 0 | • | • | • | • | 0 | 0 | 0 | 0 | 0 | 0 | • | • | • | |
| ** | | Apps Fire Detection | • | | | 0 | • | 0 | 0 | 0 | • | • | ightarrow | • | 0 | • | s |
| | | Safety Detection | • | | • | • | | • | | 0 | 0 | 0 | 0 | • | 0 | | 2 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

User can also configure individual use case and perform the settings for each use case separately as shown below



Now we have configured the use cases in one camera. As soon as use cases are configured in the camera, the AI service and the use case service will start detecting the trained objects and start generating the alerts.



8. Device Dashboard Overview

Widget Based Home Screen



Real-Time Notification Bar

The dashboard shown above is a widget based dashboard where we can add new widgets dynamically.

Some use cases can be developed with use case specific widgets to show analytics. As soon as such type of use cases are downloaded in the RDX platform, the widgets associated with that use cases will automatically be populated on the above dashboard.

Other than Dynamic Widgets, we have real time notification bar where the alerts from all the use cases will be shown in real time.

We also have real time system statistics for monitoring the health of the device.

Alerts Page

| RDX | | | | ALERTS | | | Q (Y | Ċ Ç | admin ~ 🗧 |
|--------------------------------|---|---------|-------------|-----------------|-----------------------|------------|----------|----------|-------------|
| Actions | 0 | Sr. No. | Camera Name | Camera Location | Alerts | Date | Time | Image | Sync Status |
| Refresh Page | 0 | 8 | Test | mumbai | Camera connected | 2022-05-17 | 10:32:30 | 6 | 8 |
| Download | 0 | 7 | Test | mumbai | Camera disconnected | 2022-05-17 | 10:27:28 | TOX | 8 |
| Delete | 0 | 6 | Test | mumbai | Camera connected | 2022-05-17 | 10:22:30 | 6 | 8 |
| Start Date and Time | 0 | 5 | Test | mumbai | Camera disconnected | 2022-05-17 | 10:17:28 | TOX | ۵ |
| 17-05-2022 00:00 | 0 | 4 | Test | mumbai | Camera connected | 2022-05-17 | 10:12:30 | 6 | 8 |
| 17-05-2022 10:32 | 0 | 3 | Test | mumbai | Camera disconnected | 2022-05-17 | 10:07:28 | TOX | 8 |
| Alert Name Choose Option | 0 | 2 | Test | mumbai | Camera connected | 2022-05-17 | 10:02:30 | 6 | 8 |
| Camera Name Choose Option 🗸 | 0 | 1 | Test | mumbai | Camera disconnected | 2022-05-17 | 09:57:33 | TOX | 8 |
| Apply Clear | | | | < 1 > 60 | to Page: 1 Show Rows: | 10 - | ſ | ` | |
| | | | | | | | U | | |
| U | | | | | А | lerts G | enera | ited fr | om all |

Alert Filtering Bar

use cases

9. Settings

Time Settings

| Ŕ | DX | TIME SETTINGS | Ġ ᢕ ײֵׁ admin ∨ 🖯 |
|----------|--|--|-------------------|
| номе | Time Settings | | |
| CAMERA | Camera Alert Settings | Current Date & time 17/05/2022 10:39:25 AM | |
| ALERTS | S.M.T.P Settings | Country/Region Choose option ~ | |
| ٠ | Notification Settings | Timezone | |
| SETTINGS | System Update Settings | Asid/Koikdid | |
| USERS | Privacy Settings | English × | |
| == | Alert Settings | Set Time Zone Automatically | |
| APPS | ↔ Network Settings | Synchronize with NTP | |
| | Sound Settings | | |
| | | Default Save | |

Under time settings user have the options to configure following things:

- 1. User can configure the Country/ Region in which the Edge Server is deployed
- 2. According to the country/ region time zone of the system will automatically be selected
- 3. User can view the dashboard in multiple languages by selecting the Language options
- 4. User can configure his own NTP server by selecting Synchronize with NTP.

Camera health Settings

| RDX | CAMERA ALERT SETTINGS | € Loo αdmin ∨ € |
|---|--|-----------------|
| Image: Constant of the settings Image: Constant of the settings <t< th=""><th>Alert On Camera Health Check Health Check Interval (in minutes) 5 Viert Settings Priority Action Choose option Default</th><th></th></t<> | Alert On Camera Health Check Health Check Interval (in minutes) 5 Viert Settings Priority Action Choose option Default | |
| | | |

RDX Platform has built-In feature of Camera Health monitoring. User just have to turn on the health setting and define the time interval in which he wants to check the health of cameras.

As soon as users turn on this setting, he will be able to get the real time notifications for camera health check. User can also choose to have the notifications on WhatsApp/ Telegram/ Mail/ Central Monitoring server which camera is disconnected.

S.R.E.SETING S.R.E.SETIN

SMTP Settings

User can configure his own SMTP server if he wants the alerts on his email.

Notification Settings



User can configure and turn ON different modes of notification which are WhatsApp/ Telegram/Email/Ticketing Server.

When any alert is triggered on RDX platform the notification is sent according to the configuration made by the user.

System Update

| R | DX | SYSTEM UPDATE SETTINGS | Ċ | Ç0 | ddmin ~ 🕒 |
|--|---|--|---|----|-----------|
| HOME HOME CAMERA ALERTS SETTINGS | Time Settings Camera Alert Settings S.M.T.P Settings Notification Settings System Update Settings System Update Settings Privacy Settings Alert Settings | Currently installed Version 100 Currently Available Version 1.00 Automatic System Update | | | |
| | ↔ Network Settings 4) Sound Settings | Default Save | | | |

If user is registered on the DIYCAM marketplace and connected to the internet, then user can update the system just by clicking the update button inside System Update Settings.

User can also schedule the system update at a specific time when system will automatically update itself.

Privacy Settings

| Ŕ | DX | PRIVACY SETTINGS | C L ⁰ U admin ∨ ● |
|----------------|---|--|------------------------------|
| номе самера | Time Settings Gamera Alert Settings | Ø | |
| ALERTS | S.M.T.P Settings | Consent Form in order to improve the performance of the product, RDXxi will collect data in the form of impose from the added conserver. The | |
| SETTINGS | Notification Settings System Update Settings | collected data will be encrypted and stored on our deflicated data based storage. Hence note that the data collected will not be used in any third party environment, this data will be solehu wat to entrance the outdat for you. The | |
| USERS | Privacy Settings | collected data will be processed by our machine learning tool to process better | |
| RE APPS | ① Alert Settings | results in the future. We of IBX.ac and to provide the best possible services at one individual level keeping in mind user princey norms, all required steps hove been taken to | |
| | ✓ Network Settings | ensure that the product meets the required standards. Thank you for helping us serve you better | |
| | d) Sound Settings | - Team RDK.Al I Have Read And Understand The Policy Template Save | |

A.I. is dependent on data which is fed to train the A.I. system. To improve accuracy, we have to feed more and more data of the hyper local environment where we can achieve upto 98% of accuracy.

We have made a complete automated model training pipeline where the data is being collected from the RDX platform and sent to the central server of DIYCAM.

Once the data is present on the central server, our model training team labels the data and re-trains the model on hyper local data collected from the site.

As soon as the model is trained, it will be automatically deployed on the same server from where data was collected, thereby improving the accuracy of the AI model.

But we as a company value the data privacy of the client too. Thus, we take the consent of the client for collecting the data. If client ticks the consent form and clicks submit then only data collection layer activates.

Alert Settings

| Ŕ | DX | ALERT SETTINGS | ß | ţ0 | ů admin ∨ 🕒 |
|---|---|--|---|----|-------------|
| ICANERA CAMERA CAMERA CAMERA ALERTS SETTINGS | Time Settings Camera Alert Settings SM.T.P Settings SM.T.P Settings Notification Settings System Update Settings Privacy Settings Alert Settings Alert Settings Network Settings Sound Settings | Fire Detection Priority Action Choose option Choose option Choose option Choose option | | | |
| | | Default | | | |

User can choose which type of notification he wants for which alerts. User can also choose the priority of the alerts according to the criticality level.

Network Settings

| Ŕ | DX | NETWORK SETTINGS | Ć Lo dmin ∨ ⊖ |
|--|--|---|---------------|
| LECONE LECONE CAMERA ALERTS SETTINGS USERS LISTERS | Time Settings Carnera Alert Settings S.M.T.P Settings Notification Settings System Update Settings Privacy Settings Alert Settings Alert Settings Alert Settings Sound Settings | IP Address 192168.113 Subnet Mask 255.255.255.0 Default Octeway 192168.11 D.N.S - 1 8.8.8 D.N.S - 2 | |
| | | Save | |

User can configure the network of the Edge Server directly from the RDX Platform by configuring the network parameters according to the network setup of his premises.