CLAS software version 2.3.64.99 Release Notes

This document summarizes the following firmware releases:

Software Release Number	Release Date	See page
V2.3.64.99	28-Aug-2023	Page 1

For support, please visit www.zebra.com/support

CLAS software v2.3.64.99

RELEASE DATE: 28-Aug-2023

Zebra's CLAS software is a software suite that when used with ATR7000 readers provide real time EPC and location of RFID tags.

Users of CLAS software can consume real time location data streaming on a Kafka or MQTT interface for upstream analysis to facilitate a variety of RFID location-based solutions.

These Release Notes list new features, specific usage instructions, and any known issues.

Note: Please Note that in order to install the CLAS software, an active internet connection is required.

Contents of the release package:

Component	Version	Date
RTLS CNM	3.36.26	28-Aug-2023
Radio CND	1.2.5.77	28-Aug-2023
Location Analytics	1.4.5.80	28-Aug-2023
RTLS Simulator	1.64.99	28-Aug-2023
RTLS Demo App	1.13_a31f629	23-September-2022

Hardware Requirements

The following describes the hardware requirements for running CLAS.

· Quad Core CPU @ 2.4 GHz
· 16 GB RAM
· 50 GB of free hard disk space

Software Requirements

1. Ubuntu 22.04 or RHEL 8.8 or RHEL 9.2
2. Docker engine v18.09 and above should be installed
3. Docker compose v1.24.0 or higher should be installed

Registry Access

CLAS is deployed as a set of Docker images. To download the CLAS Docker images, access to the Zebra Docker Registry is required. The login credentials for Docker registry is sent to the customer via an email titled "CLAS (RTLS) SOFTWARE"

Device Compatibility

CLAS software can only be used with ATR7000 readers. No other fixed readers are supported.

This release of CLAS RTLS software works with ATR software version 2.x.y and 3.x.y. Please make sure to upgrade the ATR software to the latest before upgrading the RTLS software.

Installation Instructions

This release also includes an installer script (install.sh) that makes it easy for new installation as well as upgradation of CLAS. The section below describes usage of this script to install CLAS software. Prior to any installation, it is strongly recommended to review the CLAS Server and Software Installation Guide, available on the Zebra support site, especially the Installation Checklist described in the Getting Started chapter.

Update Docker and Docker Compose

This version of CLAS software requires docker 18.09 or above and docker-compose version 1.24.0 or above.

To update docker, run the following commands:

1. curl -fsSL https://get.docker.com -o get-docker.sh
2. sh get_docker.sh

To update docker compose run the following commands.

1. sudo curl -kL "https://github.com/docker/compose/releases/download/1.25.3/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
2. sudo chmod +x /usr/local/bin/docker-compose
3. sudo ln -s /usr/local/bin/docker-compose /usr/bin/docker-compose

CLAS Installation using Installer Script

CLAS installer is a helper script that will guide the user through the installation and initial configuration of CLAS software New CLAS Installation of V2.3.64.99

To install CLAS using the installer script, please follow the below steps

1. Download the CLAS software (rtls_services_cr_xx.yy.zz.ww.tar.gz) from Zebra.com
2. Download the installer (install.sh) from Zebra.com
3. Place them both in the same folder
4. Please make sure the installer has executable permissions
5. Run installer using the "./install.sh" command
6. Confirm installation by typing "y" as shown below. Enter "n" to exit installation.

```
rtls@ubuntu:~/rtls$
rtls@ubuntu:~/rtls$ ls
install.sh  rtls_services_cr_2.2.38.99.tar.gz
rtls@ubuntu:~/rtls$ ./install.sh
This script will install/upgrade the CLAS software on this host.
Continue? [y/n] y
```

7. Installer will install docker and docker-compose if it is not already installed. If the dependencies are installed but not of the required version, the installer will exit. Please install the required versions of docker and docker-compose and restart installation.

8. After checking for dependencies, the installer will ask for the installation path. To use the default path (/opt/rtls/) press Enter, else enter a new path and then press Enter.

```
Continue? [y/n] y
Installing CLAS..
looking for docker-ce installation
checking docker version
Docker version 19.03 is up to date.
User not in docker group....
docker-compose version 1.24 is up to date.
Checking for existing CLAS installations..
CLAS will be installed in /opt/rtls. Hit Enter to continue or specify a new path:
```

9. Enter the password for the user on the ubuntu host when prompted

```
CLAS will be installed in /opt/rtls. Hit Enter to continue or specify a new path:
Creating directory for new installation..
[sudo] password for rtls: 
```
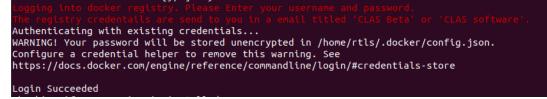
10. The script will identify the network interfaces and ask for user confirmation to use the IP address to configure RTLS. Press "y" and hit Enter to use the network interface. In case of multiple network interfaces, the installer will output all available network interfaces and their IP addresses. Select the right network interface by entering the name of the network interface at the prompt.

```
****************************************************
IMPORTANT: CLAS needs to know the details of the network interface on this host.
Please make sure that the selected network interface is on the same subnet as the ATR7000s.
****************************************************
Found the following network interface: [ens33 : 192.168.1.39]
Continue using this interface? [y/n]:
```

11. In the next step enter y to use the bundled kafka service and enter n to use an external kafka service. If using an external service, the installer will prompt the user to enter the IP address of the kafka broker.

```
configuring CLAS installation.
CLAS has a bundled Kafka broker and will be configured to use that by default.
If you want to change this behaviour, select 'n' else select 'y'.
Use bundled Kafka broker? [y/n]:
```

12. In the next step, the installer will prompt the user to enter the docker registry credentials. Once the username and password are entered the installer will login to the docker registry.

```
Logging into docker registry. Please Enter your username and password.
The registry credentails are send to you in a email titled 'CLAS Beta' or 'CLAS software'.
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /home/rtls/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

13. As a final step the installer will examine the system configuration to check if the ntp service is running and configure the RTLS to start accordingly. If the user enters y then RTLS will be started in simulator mode. If the user enters "n" then the installer will finish and exit.

```
Checking if NTP service is installed..
NTP service is not installed.
adding bundled kafka option.
Start CLAS in sim mode? This will pull all the docker images from the registry and start CLAS. [y/n]
```

NOTE: when after starting CLAS for the first time, the installer will download all the CLAS docker images from the registry. This can take several minutes to complete.

NOTE: CLAS includes an NTP server and an FTP server as part of the RTLS release. So, the host machine should not already be running an NTP server or an FTP server. Also, while deploying the RTLS application it is mandatory to provide an upstream NTP server which is the NTP server with which the RTLS NTP server will use for time synchronization.

The following changes should be made to the config files before starting CLAS:

1. rtls/config/aar_info.csv to be updated with the list of deployed AAR hostname and position info

API Documentation

This release supports the RTLS REST interface version v2.1.19.

The release includes the live documentation support for REST API. To view the documentation, follow the steps mentioned in the previous section to build and start the RTLS server. Open a browser and enter the following URL https://<IP:PORT>/doc. Replace the IP and PORT values with the IP and PORT number where the RTLS is configured to run. A JSON file containing the API definition will be displayed in the browser.

Changes in 2.3.64.99 with respect to 2.3.55.99

Following are the Changes and Enhancements in CLAS V2.3.64.99 over last CLAS release V2.3.55.99.

- Support for Multiple OS (RHEL 8.8, RHEL 9.2 and Ubuntu 22.04).
- Added Prometheus metrics in CLAS CNM
- The installer now includes optional prometheus and graphana containers and can be started using -p option while starting CLAS.
- Added support for ATR firmware version 3.X.
- Fix for a file handle leak in logging in Radio CND
- Fix for unbounded unique tag storage in LA.
- Disabled unique tag heartbeat information from CND and LA to RTLS CNM. As a result, the REST API /v2/rtls/tag_location/{tagId} will no longer be functional.
- Disabled the anonymous login for FTP.
- Added mem limit in docker compose for rtls_config and restart always clause.

KNOWN ISSUES

Following are the list of issues that currently exist in the CLAS software.

- Reader needs to be rebooted after setting aar/idle POST API is set power as FALSE to resume CLAS operation.
- When adding a reader to CLAS dynamically using /v2/rtls/reader API, the reader is expected to have LLDP pre enabled since CLAS does not enable LLDP settings on the reader