SmartSpace®

LLRP Interface

From version 3.2

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Contents

Introduction to the LLRP Tag Reader service *1*
LLRP Tag Reader Configuration *2*
ReadData *3*
TestingTools *4*
ConnectionTest *5*
TagReportGenerator *6*

Introduction to the LLRP Tag Reader service

This document outlines the use of the LLRP Tag Reader service which reads tag data from LLRP supporting RFID readers, adding the information to the assertion store.

LLRP Tag Reader Configuration

The service is configured in SmartSpace using the UDM and application parameters. The configuration service adds an *LLRP Reader* type to the UDM. You should derive a type from this type (the base type has no unique name field) and create an object of your derived type for each LLRP reader you want to connect to. The service may override any existing LLRP configuration of readers it connects to, see the parameters below for how to disable this.

The parameters for each reader connection are configured in the Service parameters tab in SmartSpace Config.

LLRP Reader objects have the following parameters:

reader address	The IP address or hostname of the reader's LLRP interface.
reader port	The port number of the reader's LLRP interface.
reader enabled	Whether the Tag Reader service should read tags from this reader. Readers with an enabled value of false will be ignored by the service.
skip RO spec initialisation	Skip initializing the reader config and RO spec. Set to true to prevent the server overriding a custom configuration on the reader. This custom configuration should have a keepalive interval of at most ten seconds.

ReadData

Read tags are added to the assertion store as object, tag pairs where the object is the LLRP reader that read the tag and the tag is an EPC identifier as a string. These assertions persist for a short duration (five seconds) before being removed from the store. Assertions are added as site level assertions but there are plans to implement a Site/Cell level mix based on where the reader is placed.

TestingTools

The tools **ubisense_llrp_connection_test** and **ubisense_tag_report_generator** can be used to test your LLRP setup and help with configuration. The monitor streams **llrp_protocol** and **llrp_tag_report_server** can be enabled to help with debugging of issues.

ConnectionTest

The **ubisense_llrp_connection_test** tool imitates the configuration process performed by the service. It can be used to test if an LLRP reader is reachable and compatible with this configuration process.

Simply run the program with the reader address/hostname (and optionally port) as arguments. It will then attempt to connect to the reader, configure it and read tag reports momentarily, reporting the success/failure of these steps.

TagReportGenerator

The **ubisense_tag_report_generator** tool acts as a pseudo LLRP reader for simulating tag read reports. Use this in combination with the LLRP service to generate entries in the assertion store without needing to connect to a physical LLRP reader.

The service connects to localhost:5084 and sends tag reports to all connected clients which have setup an ROSpec. The frequency of tag reports is configured in a text file consisting of lines of 96-bit EPC, report period (in seconds) pairs.

```
e28011606000020727e39c1d 0.5
e28011606000020727e39c1f 1
```

This tool is a lightweight simulator for the purposes of testing the service and not a true LLRP reader simulator. It does not implement keepalives; at least one tag should have a report period of less than ten seconds.