

[New issue](#)

# Agent crashes when receiving invalid Boolean values (not 0 or 1) #389

[Closed](#)

j4kb4dw0lf opened on Apr 28, 2025 · edited by j4kb4dw0lf

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- Hardware description: x86\_64 PC, standard desktop
- OS: Ubuntu 22.04 LTS
- Installation type: Built from source, CMake default flags, FastDDS 2.14
- Version or commit hash: 3.0.1 (main branch)

## Steps to reproduce the issue

Send a packet that includes a boolean field with a value different from 0 or 1 (e.g., 2, 255). You can easily modify a client to do this manually or fuzz the connection.

## Expected behavior

The agent should either:

- Normalize the boolean value (e.g., treat anything nonzero as `true`), **or**
- Gracefully reject the packet and log an error.

## Actual behavior

The agent crashes immediately when trying to deserialize a boolean field that has an invalid value (neither 0 nor 1). Exceptions are thrown by the FastCDR implementation of the deserialization but are not caught, leading to undefined behavior and potential security risks (DoS by packet manipulation).

## Additional information

This crash affects stability and opens the agent to simple denial-of-service attacks via malformed packets. A check for valid boolean values during deserialization would solve the problem, same would apply if the exception is gracefully caught.

  **j4kb4dw0lf** mentioned this [on May 8, 2025](#)

 [MTU length not validated: possible call to alloc\(\) or realloc\(\)... with size 0 #390](#)

 **4ntn** on May 12, 2025 ...

Hello [@j4kb4dw0lf](#),

I am not being able to reproduce this issue.

Can you point me to somewhere in the code where you think this is happening? Or maybe specify how you are testing this.

On the other issue it was very helpful.

Thanks!

 **j4kb4dw0lf** on May 12, 2025 · edited by j4kb4dw0lf

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Author

...

Hello [@4ntn](#), in this casae the issue is very easily reproducible using the CREATE\_CLIENT submessage which contains a boolean field: `m_properties_flag` that is deserialized here:

[Micro-XRCE-DDS-Agent/src/cpp/types/XRCETypes.cpp](#)

Line 1130 in [155cfaa](#)


```
1130      bool m_properties_flag;
```

if this value is found to be not 0 or 1, as by fastcdr policy:

<https://github.com/eProsima/FastCDR/blob/36c28c4e5f638c1436c5e709d00ba9b68d358372/src/cpp/FastCdr.cpp#L380>

it generates an exception which uncaught crashes the agent. In general the exception is uncaught everytime the deserialization happens for booleans inside the repository and many other kinds of submessages lead to the same issue if they contain "optional" fields in the submessage payload.

  **4ntn** mentioned this [on May 13, 2025](#)

 [Catch CDR exceptions #393](#)

 **4ntn** on May 13, 2025 ...

Hi [@j4kb4dw0lf](#), thank you for the guidance.

I have implemented this fix: [#393](#)

I will close this issue when the PR is merged.



**4ntn** closed this as completed on May 13, 2025

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## Metadata

### Assignees

No one assigned

### Labels

No labels

### Type

No type

### Projects

No projects

### Milestone

No milestone

### Relationships

None yet

### Development

No branches or pull requests

### Participants



