1. abstraction:NodeId

2. crash point:before read

3. bug type:data race

1. timing:crash

```
1  /*sytem version:hadoop-3.3.0
2  *org.apache.hadoop.yarn.server.resourcemanager.OpportunisticCo
   ntainerAllocatorAMService.convertToRemoteNode#467
3  * need calling contex, four caller
4  */
5    private RemoteNode convertToRemoteNode(NodeId nodeId) {
6      SchedulerNode node =//crash point
7          ((AbstractYarnScheduler)
   rmContext.getScheduler()).getNode(nodeId);
8      if (node != null) {//fixed code
9        RemoteNode rNode = RemoteNode.newInstance(nodeId,
   node.getHttpAddress());
10       rNode.setRackName(node.getRackName());
11       rNode.setNodePartition(node.getPartition());
12       return rNode;
13     }
14     return null;
15   }
```