1. abstraction:DatanodeInfo

2. crash point:before read

3. bug type:local semantic bug

4. timing:crash

```
1  /* system-version:hdfs-2.4.0
2   * crash
   point:org.apache.hadoop.hdfs.DFSInputStream#getBestNodeDNAddrPair#
   925
3   * need calling contex: three caller, only one cause bugs
4  */
5   private DNAddrPair getBestNodeDNAddrPair(final DatanodeInfo[]
   nodes,
6        Collection<DatanodeInfo> ignoredNodes) throws IOException {
7      DatanodeInfo chosenNode = bestNode(nodes, deadNodes,
   ignoredNodes);//crash point
8      final String dnAddr =
9
    chosenNode.getXferAddr(dfsClient.getConf().connectToDnViaHostname
   );
10     if (DFSClient.LOG.isDebugEnabled()) {
11       DFSClient.LOG.debug("Connecting to datanode " + dnAddr);
12     }
13     InetSocketAddress targetAddr =
   NetUtils.createSocketAddr(dnAddr);
14     return new DNAddrPair(chosenNode, targetAddr);
15   }
```