Incident Reporting Form/ RCA

1. Letter/ Report Subject -	Reporting of technical glitch to the exchange (MCX)
Name of the Member-- **Member Code -**	Zerodha Commodities Private Limited MCX: 46025
2. Designated Officer (Reporting Officer details)	
Name: Venu Madhav	
3. Date & Time of Incident & Incident duration	24-12-2021, 10:39 PM, 1 hour 7 minutes
4. Incident Description & chronology of events **(please use additional sheets)**	Annexure 1
5. Business Impact	Annexure 2
6. Immediate action taken (please give full details)(please use additional sheets if necessary)	1. We immediately raised the issue with AWS and Netmagic DC. 2. We immediately posted a bulletin on our website and a banner on kite (our trading platform) to inform our clients about the issue.
7. Date & Time of Recovery	24-12-2021, 11:46 PM
8. Root Cause Summary **(Pl attach the detailed Report separately)**	Annexure 3
9. Back up measures available	The impact was at the setup that ran solely on the Internet. We are now backing it up with P2P leased lines, mirroring the rest of our setups, that will ensure business continuity.

10. Details of long-term action (please give full details) (please use additional sheets if necessary)	We plan to make the P2P lines as the primary source of connectivity wherever the internet is deployed as the primary in the coming days. The Internet will serve as the backup if the P2P fails.

Annexure 1:

1. Internet Connectivity to our trading platform (along with many other websites) was impacted from 10:39 PM to 11:46 PM owing to an outage with a major ISP, TCL (Tata Communications Limited), across multiple data centres.
2. The Interim RCA obtained from Netmagic DC (Data Centre) confirms that the TCL network was impacted. We have also attached the status posted by AWS about the outage which confirms that they observed Internet connectivity issues.

Annexure 2:

There was an intermittent issue with the display of Orders, Holdings & Positions temporarily on Kite for some of our users. The incident was limited to display of order status. However, there was no issue with login, order placement (including modification & cancellation), order execution, order confirmation, margin updates, risk management.

Annexure 3:

1. The final RCA (attached) received from Netmagic Data Centre (NTT Global Data Centers & Cloud Infrastructure India Private Limited) confirms that
   a. TCL faced an issue of route leakage which impacted many customers including AWS, Google and others.
   b. The impacted time was between 10:30 PM to 11:30 PM which coincides with the time our platform was impacted.
   c. TCL blocked the leaked routes on customer peering, this was further followed by blocking their customer link which was the reason for route leakage.
   d. TCL also updated prefix-limit & filter-list on their customer peering.
2. The Response received from AWS on the ticket raised by us regarding the issue also confirms that there was route leakage in the internet cloud leading to outage. It also confirms that their network team took action to restore services.