A snapshot mechanism and a method thereof used in a data processing system are provided to backup snapshot data. The snapshot mechanism includes a snapshot storage unit and a buffer storage unit, wherein the snapshot storage unit is used as a unit for storing data generated after a target storage unit snapshots data and accordingly generating a plurality of snapshot management data. In addition, the buffer storage unit temporarily stores new data and flushes the data to the target storage unit in predetermined time interval. According to the snapshot management data, the target storage unit can be rolled back or rolled forward to the status before a predetermined time.