Test Report of
TS-101 Q-RAID 1 and Disaster Recovery Services

- **Summary**

  QNAP TS-101 offers unique Q-RAID 1 mirroring disk management function for backup of TS-101 data via eSATA or USB port to an external disk. When the internal disk is damaged, the data can be recovered immediately.

  This test will demonstrate how Q-RAID 1 mirroring backup function and data recovery can be easily done in a few steps. First, data is backed up from TS-101 to an external SATA disk via the eSATA port. Then verify when TS-101 internal disk fails or data is missing, the data can be accessed by installing the external SATA disk directly to TS-101 or by installing a new disk in TS-101 and restoring the data from external Q-RAID 1 backup disk.

- **Outline**

  Step 1: Mirror Station - Install one hard disk (HDD 1) in TS-101 and externally plug in another SATA hard disk (HDD 2) to execute Q-RAID 1 backup for TS-101.
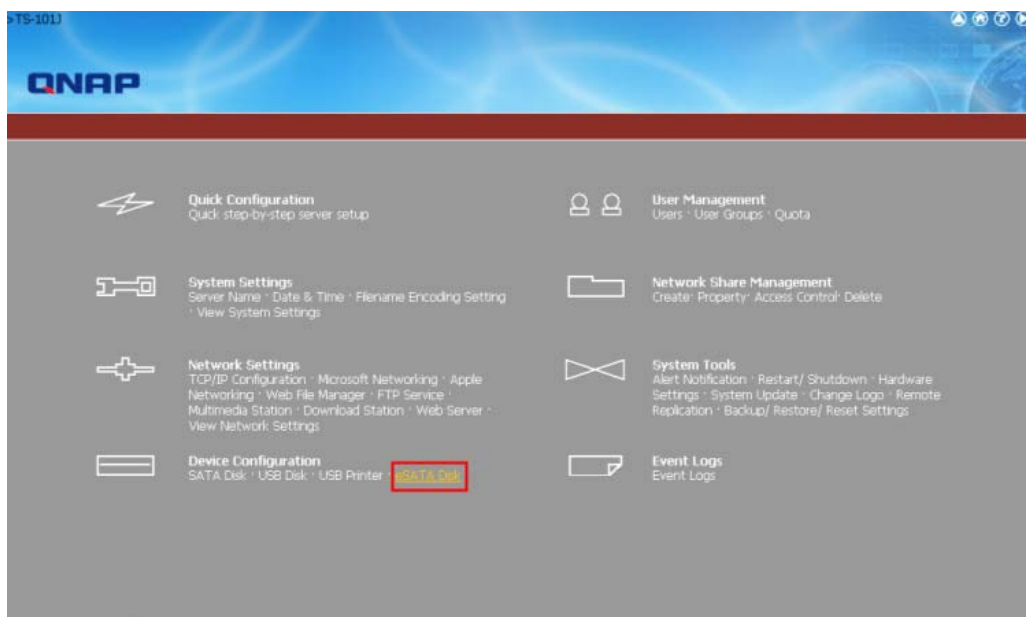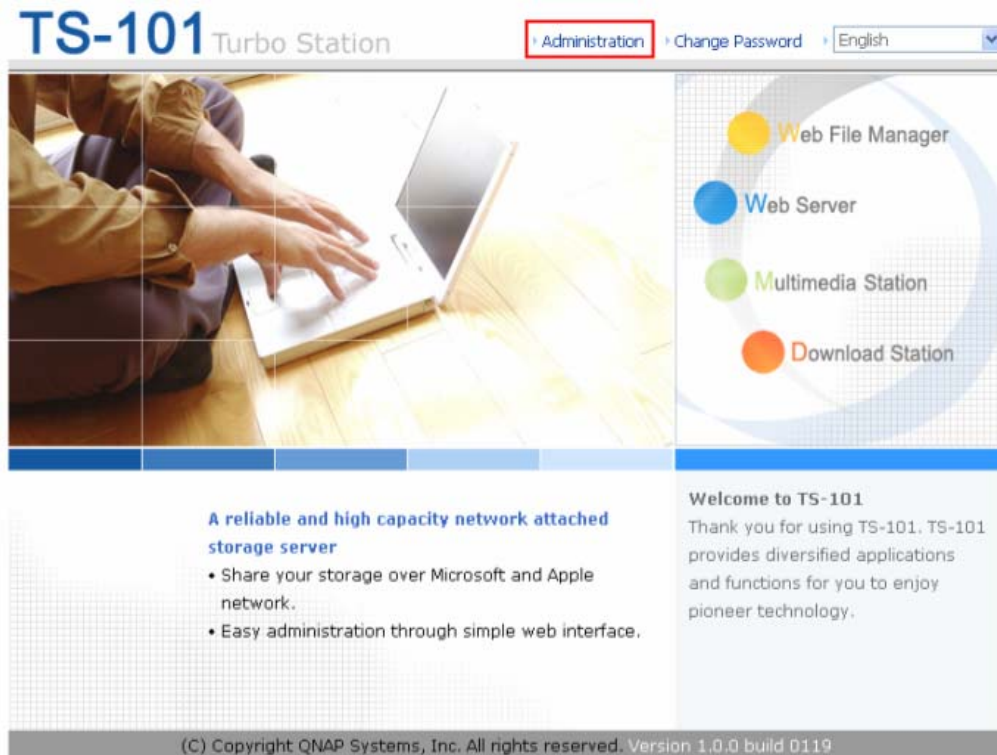
  Step 2: Disaster Recovery A - Replace HDD 1 with HDD 2. Test if the backup data is readable and consistent.

  Step 3: Disaster Recovery B - Replace HDD 2 installed in TS-101 with another new disk (HDD 3). Plug in HDD 2 externally, and test if the backup data can be copied from HDD 2 to HDD 4.
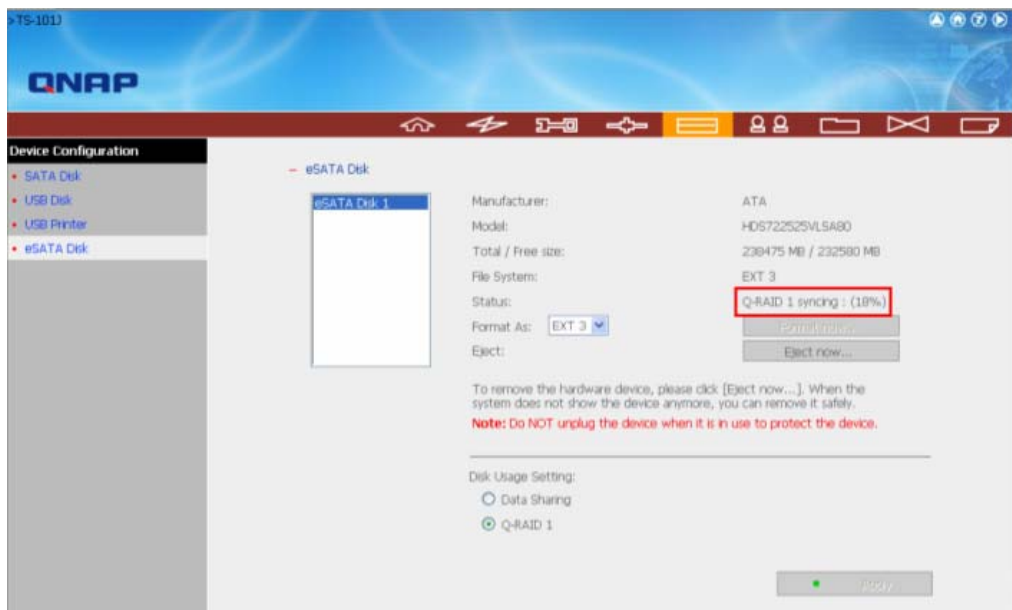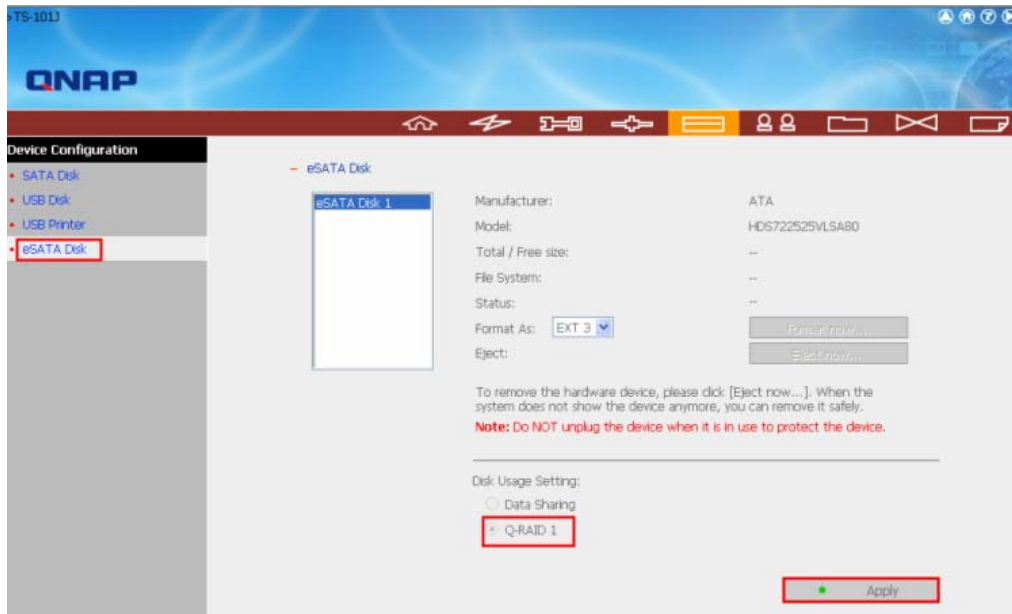
- **Practical Operating Procedure**

    Step 1: Mirror Station - Install one hard disk (HDD 1) into TS-101 and externally plug in another SATA hard disk (HDD 2) to execute Q-RAID 1 backup for TS-101.
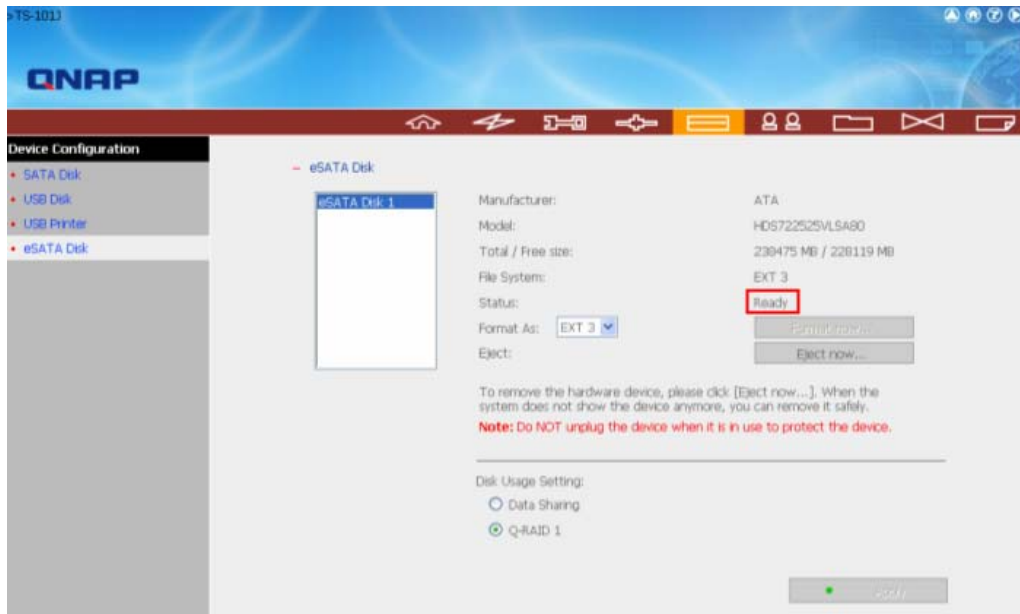
    1. Enter the TS-101 administration page, click "Administration". Login TS-101 and then go to "eSATA Disk" of "Device Configuration".

2. Select "Q-RAID 1" under Disk Usage Setting. Click "Apply" to execute Q-RAID 1 formatting and synchronization.
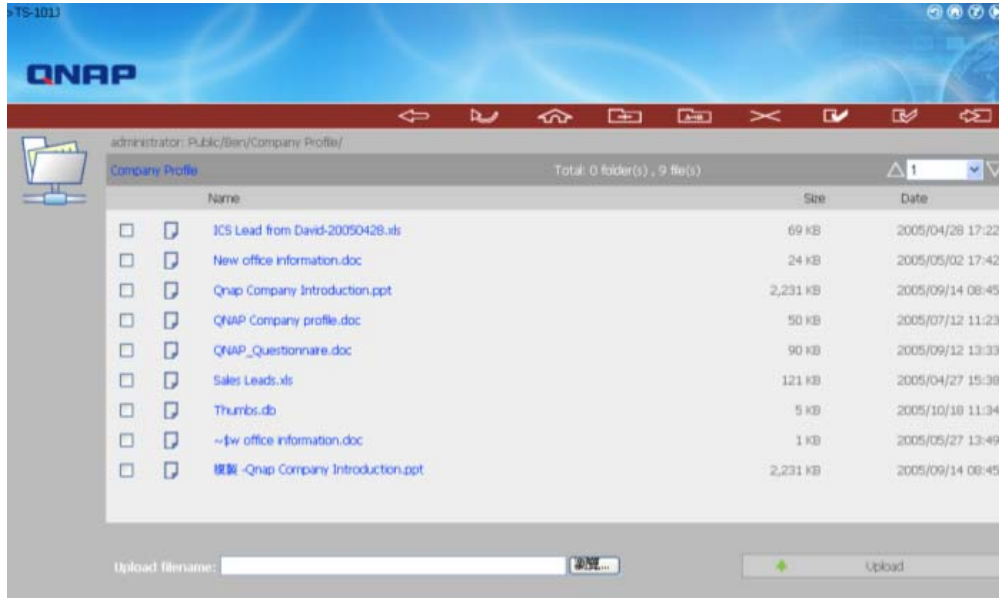
3. When the recovering task finishes, the status of eSATA Disk will become "Ready", which means the mirror station (Q-RAID 1) has been set up successfully.
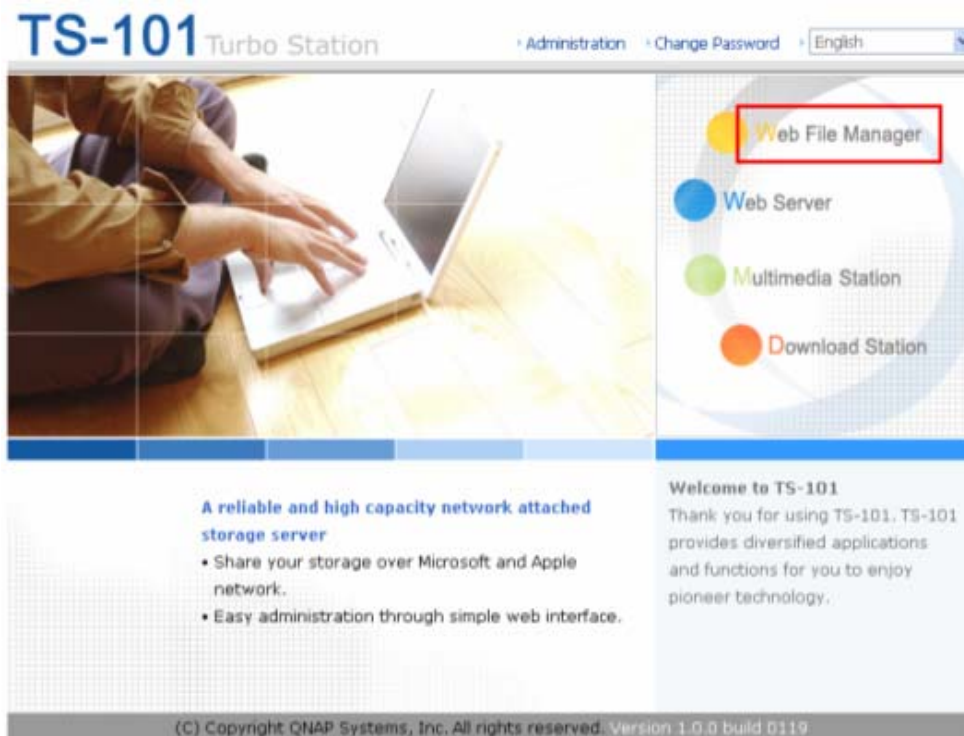
Step 2: Disaster Recovery A - Replace HDD 1 with HDD 2.   Test if the backup data is readable and consistent.
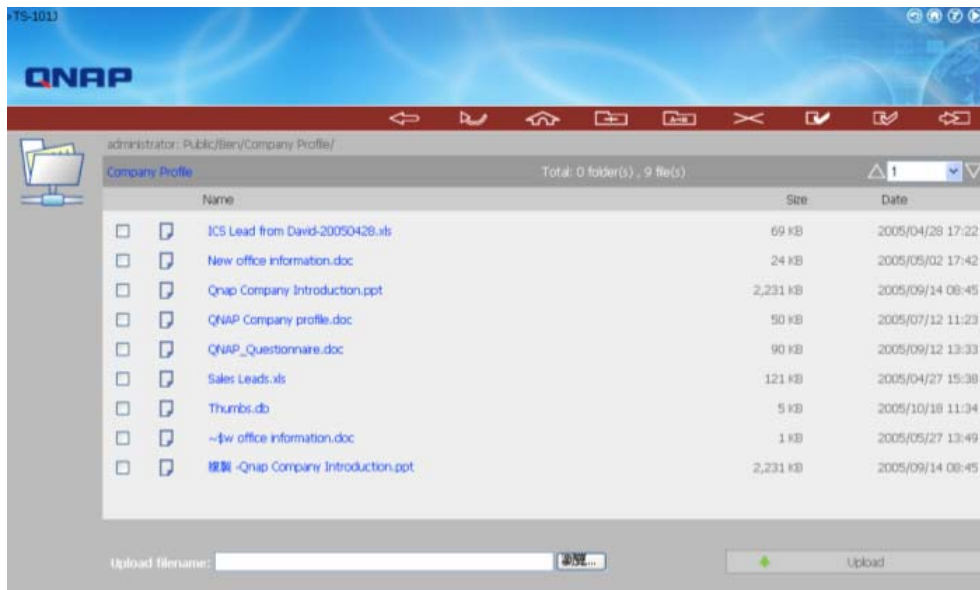
1. First, check the data in HDD 1.

2. After turning off TS-101, take out HDD 1 and install HDD 2 in TS-101.

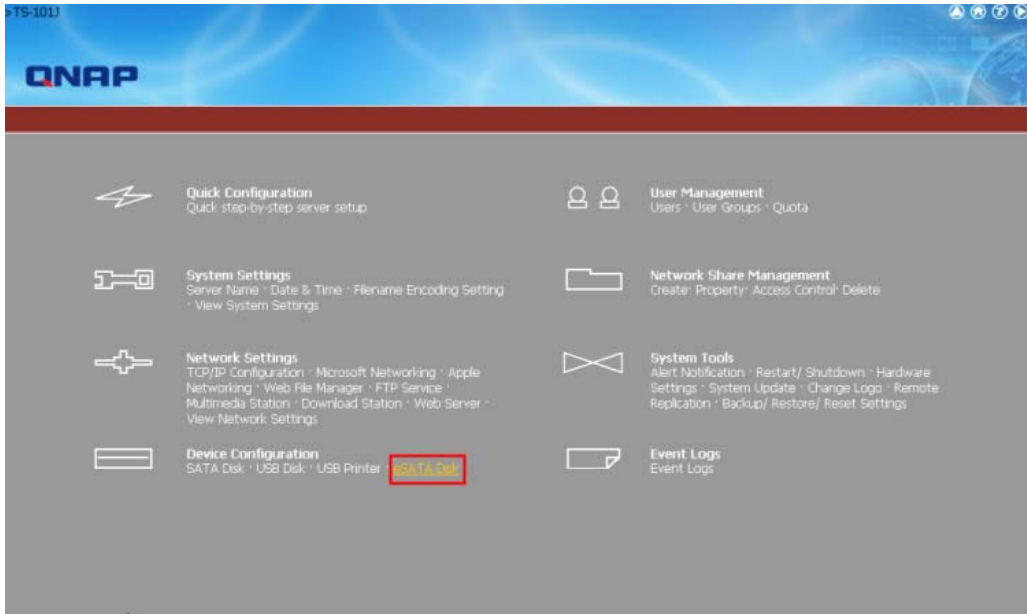3. Turn on TS-101.   Go to the administration page and login Web File Manager.

4. Check if the data in HDD 2 is consistent with HDD 1. If yes, it means the function of Mirror Station (Q-RAID 1) does work.
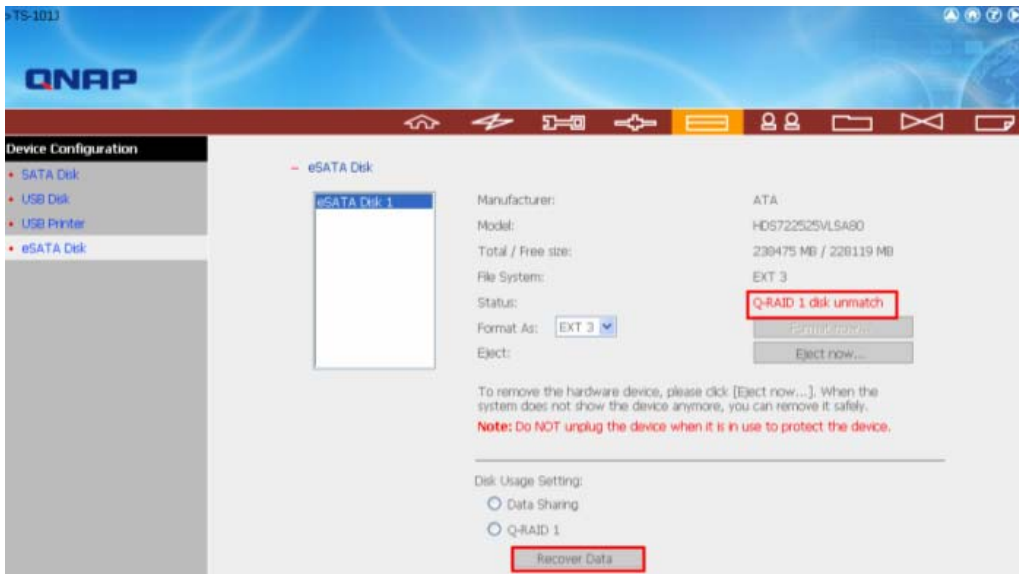
Step 3: Disaster Recovery B - Replace HDD 2 installed in TS-101 with another new hard disk (HDD 3). Plug in HDD 2 externally, and test if the backup data can be copied from external HDD 2 to HDD 3.
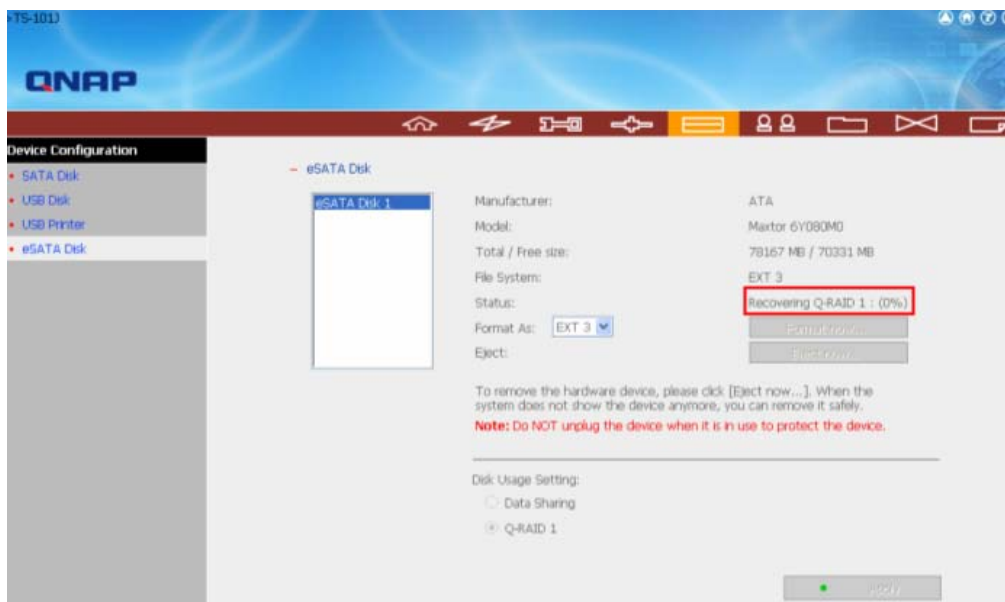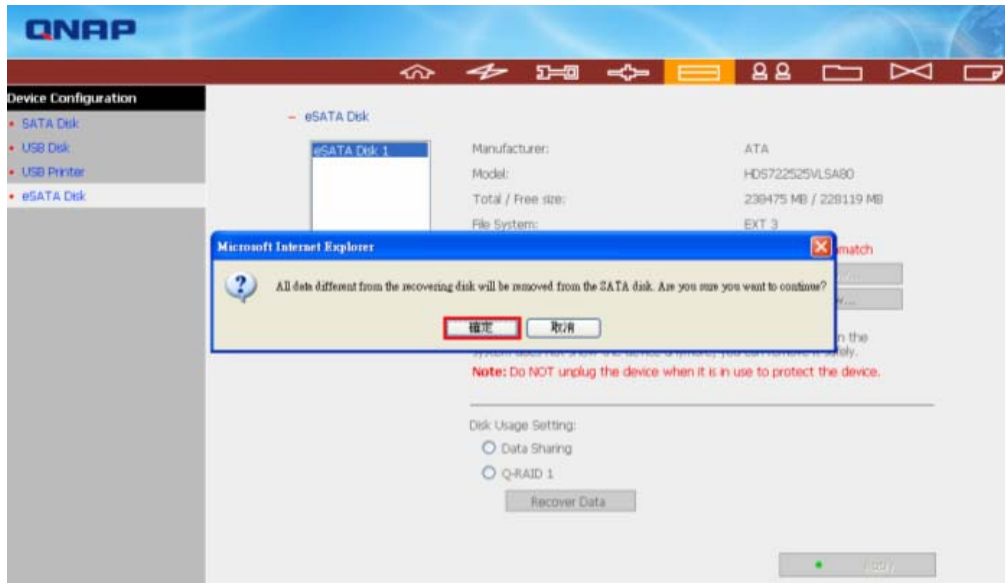
1. Enter the TS-101 administration page. Go to "eSATA Disk" of "Device Configuration".

2. Click "Recover Data".
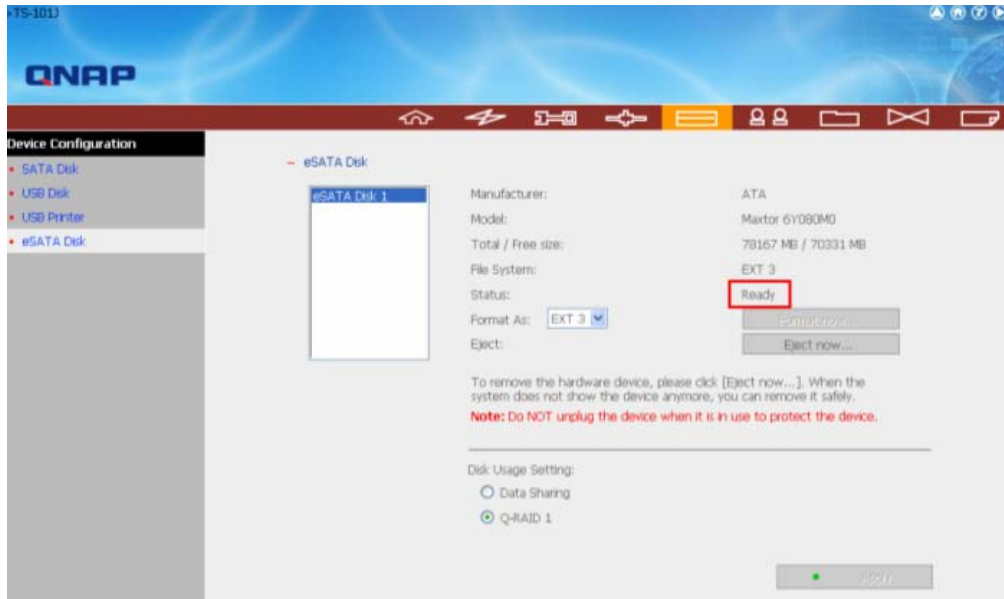
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3. Click "OK" to continue. Q-RAID1 will start to recover the data.

4. When the recovering task finishes, the status of eSATA Disk will become "Ready".

5. Follow the procedure of checking data in Step 2, go to "Web File Manager" of TS-101. You will find the data has been recovered completely.