CLAIMS

1. A method for coordinated disaster recovery by a processor device in a computing storage environment, the method comprising:

performing a reconciliation process for resolving intersecting and non-intersecting data amongst a plurality of disaster recovery systems for a takeover operation; and

coordinating an ownership synchronization process for a plurality of cartridges via the reconciliation process at the plurality of disaster recovery systems, wherein the plurality of disaster recovery systems continue as at least one of a replication target for a plurality of source systems and as a backup target for a plurality of local backup applications.

2. The method of claim 1, further including performing at least one of:

declaring at least one of the plurality of source systems offline to allow for the plurality of disaster recovery systems to perform the takeover operation, wherein a replication grid is checked to determine if the at least one of the plurality of source systems declared offline has exited the replication grid, and

notifying a plurality of replication grid systems of the at least one of the plurality of source systems declared offline.

3. The method of claim 1, wherein the takeover operation includes one of:

activating a disaster recovery (DR) mode for at least one remote system of the source system, wherein the at least one remote system of the at least one of the plurality of source systems declared offline becoming part of the plurality of disaster recovery systems.

allowing the plurality of disaster recovery systems to sequentially perform the takeover operation,

determining the takeover operation may be performed for the at least one of the plurality of source systems declared offline,

sending a request in a replication grid via a replication grid manager for a first list from the at least one of the plurality of source systems declared offline indicating ownership of the plurality of cartridges by a plurality of replication grid members,

building a second list of each of the plurality of cartridges needed for the takeover operations,

identifying at least one of the plurality of cartridges as a candidate for taking over of the at least one of the plurality of cartridges for ownership by comparing the first list with the second list,

transferring the second list to the plurality of disaster recover systems,

switching the ownership of the at least one of the plurality of cartridges, and

creating and continuing at least a portion of a production site at each of a plurality of disaster recovery systems of the at least one of the plurality of source systems declared offline.

4. The method of claim 3, further including performing the allowing as one of iteratively and in parallel for each of the plurality of disaster recovery systems.

5. The method of claim 1, wherein the reconciliation process includes performing at least one of:

if non-intersecting datasets are distributed among the plurality of disaster recovery systems, performing the takeover operation separately on each of the plurality of disaster recovery systems,

if overlapping datasets are distributed among the plurality of disaster recovery systems, executing the takeover operation first by one of the plurality of disaster recovery systems to change the ownership of each of the plurality of cartridges, and

if intersecting datasets are distributed among the plurality of disaster recovery systems, determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems.

6. The method of claim 5, wherein determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems includes:

for the first one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of each of the plurality of cartridges that intersect, and

for the second one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of the plurality of cartridges that intersect between the second one of the plurality of disaster recovery systems and the plurality of disaster recovery systems yet to have performed the takeover operation.

7. The method of claim 1, further including exiting a disaster recovery mode by the plurality of disaster recovery systems for the at least one of the plurality of source systems declared offline.

8. A system for coordinated disaster recovery by a processor device in a computing storage environment, comprising:

at least one processor device operable in the computing storage environment, wherein the at least one processor device is adapted for:

performing a reconciliation process for resolving intersecting and non-intersecting data amongst a plurality of disaster recovery systems for a takeover operation; and

coordinating an ownership synchronization process for a plurality of cartridges via the reconciliation process at the plurality of disaster recovery systems;

wherein the plurality of disaster recovery systems continue as at least one of a replication target for a plurality of source systems and as a backup target for a plurality of local backup applications.

9. The system of claim 8, wherein the at least one processor device is further adapted for performing at least one of:

declaring at least one of the plurality of source systems offline to allow for the plurality of disaster recovery systems to perform the takeover operation, wherein a replication grid is checked to determine if the at least one of the plurality of source systems declared offline has exited the replication grid, and

notifying a plurality of replication grid systems of the at least one of the plurality of source systems declared offline.

10. The system of claim 8, wherein, in executing the takeover operation, the at least one processor device is further adapted for performing one of:

activating a disaster recovery (DR) mode for at least one remote system of the source system, wherein the at least one remote system of the at least one of the plurality of source systems declared offline becoming part of the plurality of disaster recovery systems.

allowing the plurality of disaster recovery systems to sequentially perform the takeover operation,

determining the takeover operation may be performed for the at least one of the plurality of source systems declared offline,

sending a request in a replication grid via a replication grid manager for a first list from the at least one of the plurality of source systems declared offline indicating ownership of the plurality of cartridges by a plurality of replication grid members,

building a second list of each of the plurality of cartridges needed for the takeover operations,

identifying at least one of the plurality of cartridges as a candidate for taking over of the at least one of the plurality of cartridges for ownership by comparing the first list with the second list,

transferring the second list to the plurality of disaster recover systems,

switching the ownership of the at least one of the plurality of cartridges, and

creating and continuing at least a portion of a production site at each of a plurality of disaster recovery systems of the at least one of the plurality of source systems declared offline.

11. The system of claim 10, wherein the at least one processor device is further adapted for performing the allowing as one of iteratively and in parallel for each of the plurality of disaster recovery systems.

12. The system of claim 8, wherein, in performing the reconciliation process, the at least one processor device is further adapted for performing at least one of:

if non-intersecting datasets are distributed among the plurality of disaster recovery systems, performing the takeover operation separately on each of the plurality of disaster recovery systems,

if overlapping datasets are distributed among the plurality of disaster recovery systems, executing the takeover operation first by one of the plurality of disaster recovery systems to change the ownership of each of the plurality of cartridges, and

if intersecting datasets are distributed among the plurality of disaster recovery systems, determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems.

13. The system of claim 12, wherein, in determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems, the at least one processor device is further adapted for performing at least one of:

for the first one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of each of the plurality of cartridges that intersect, and

for the second one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of the plurality of intersecting cartridges intersecting between the second one of the plurality of disaster recovery systems and the plurality of disaster recovery systems yet to have performed the takeover operation.

14. The system of claim 8, wherein the at least one processor device is further adapted for exiting a disaster recovery mode by the plurality of disaster recovery systems for the at least one of the plurality of source systems declared offline.

15. A computer program product for coordinated disaster recovery by a processor device, the computer program product comprising a non-transitory computer-readable storage medium having computer-readable program code portions stored therein, the computer-readable program code portions comprising:

a first executable portion for performing a reconciliation process for resolving intersecting and non-intersecting data amongst a plurality of disaster recovery systems for a takeover operation; and

a second executable portion for coordinating an ownership synchronization process for a plurality of cartridges via the reconciliation process at the plurality of disaster recovery systems, wherein the plurality of disaster recovery systems continue as at least one of a

replication target for a plurality of source systems and as a backup target for a plurality of local backup applications.

16. The computer program product of claim 15, further including a third executable portion for performing at least one of:

declaring at least one of the plurality of source systems offline to allow for the plurality of disaster recovery systems to perform the takeover operation, wherein a replication grid is checked to determine if the at least one of the plurality of source systems declared offline has exited the replication grid, and

notifying a plurality of replication grid systems of the at least one of the plurality of source systems declared offline.

17. The computer program product of claim 15, further including a third executable portion for performing the takeover operation, the takeover operation including one of:

activating a disaster recovery (DR) mode for at least one remote system of the source system, wherein the at least one remote system of the at least one of the plurality of source systems declared offline becoming part of the plurality of disaster recovery systems.

allowing the plurality of disaster recovery systems to sequentially perform the takeover operation,

determining the takeover operation may be performed for the at least one of the plurality of source systems declared offline,

sending a request in a replication grid via a replication grid manager for a first list from the at least one of the plurality of source systems declared offline indicating ownership of the plurality of cartridges by a plurality of replication grid members,

building a second list of each of the plurality of cartridges needed for the takeover operations,

identifying at least one of the plurality of cartridges as a candidate for taking over of the at least one of the plurality of cartridges for ownership by comparing the first list with the second list,

transferring the second list to the plurality of disaster recover systems,

switching the ownership of the at least one cartridge, and

creating and continuing at least a portion of a production site at each of a plurality of disaster recovery systems of the at least one of the plurality of source systems declared offline.

18. The computer program product of claim 17, further including a third executable portion for performing the allowing as one of iteratively and in parallel for each of the plurality of disaster recovery systems.

19. The computer program product of claim 15, wherein, in performing the reconciliation process, a fourth executable portion is included for performing at least one of:

if non-intersecting datasets are distributed among the plurality of disaster recovery systems, performing the takeover operation separately on each of the plurality of disaster recovery systems,

if overlapping datasets are distributed among the plurality of disaster recovery systems, executing the takeover operation first by one of the plurality of disaster recovery systems to change the ownership of each of the plurality of cartridges, and

if intersecting datasets are distributed among the plurality of disaster recovery systems, determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems.

20. The computer program product of claim 19, wherein, in determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems, a fourth executable portion is included for performing at least one of:

for the first one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of each of the plurality of cartridges that intersect, and

for the second one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of the plurality of intersecting cartridges intersecting between the second one of the plurality of disaster recovery systems and the plurality of disaster recovery systems yet to have performed the takeover operation.

CLAIMS

1. A method for coordinated disaster recovery by a processor device in a computing storage environment, the method comprising:

performing a reconciliation process for resolving intersecting and non-intersecting data amongst a plurality of disaster recovery systems for a takeover operation; and

coordinating an ownership synchronization process for a plurality of cartridges via the reconciliation process at the plurality of disaster recovery systems, wherein the plurality of disaster recovery systems continue as at least one of a replication target for a plurality of source systems and as a backup target for a plurality of local backup applications;

wherein the takeover operation includes one of:

activating a disaster recovery (DR) mode for at least one remote system of the source system, wherein the at least one remote system of the at least one of the plurality of source systems declared offline becoming part of the plurality of disaster recovery systems,

allowing the plurality of disaster recovery systems to sequentially perform the takeover operation,

determining the takeover operation may be performed for the at least one of the plurality of source systems declared offline,

sending a request in a replication grid via a replication grid manager for a first list from the at least one of the plurality of source systems declared offline indicating ownership of the plurality of cartridges by a plurality of replication grid members,

building a second list of each of the plurality of cartridges needed for the takeover operations,

identifying at least one of the plurality of cartridges as a candidate for taking over of the at least one of the plurality of cartridges for ownership by comparing the first list with the second list,

transferring the second list to the plurality of disaster recover systems,

switching the ownership of the at least one of the plurality of cartridges, and

creating and continuing at least a portion of a production site at each of a plurality of disaster recovery systems of the at least one of the plurality of source systems declared offline.

2. The method of claim 1, further including performing at least one of:

declaring at least one of the plurality of source systems offline to allow for the plurality of disaster recovery systems to perform the takeover operation, wherein a replication grid is checked to determine if the at least one of the plurality of source systems declared offline has exited the replication grid, and

notifying a plurality of replication grid systems of the at least one of the plurality of source systems declared offline.

3. The method of claim 1, further including performing the allowing as one of iteratively and in parallel for each of the plurality of disaster recovery systems.

4. The method of claim 1, wherein the reconciliation process includes performing at least one of:

if non-intersecting datasets are distributed among the plurality of disaster recovery systems, performing the takeover operation separately on each of the plurality of disaster recovery systems,

if overlapping datasets are distributed among the plurality of disaster recovery systems, executing the takeover operation first by one of the plurality of disaster recovery systems to change the ownership of each of the plurality of cartridges, and

if intersecting datasets are distributed among the plurality of disaster recovery systems, determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems.

5. The method of claim 4, wherein determining ownership of the plurality of cartridges based on the order of performing the takeover operation by the plurality of disaster recovery systems includes:

for the first one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of each of the plurality of cartridges that intersect, and

for the second one of the plurality of disaster recovery systems to perform the takeover operation, acquiring the ownership of the plurality of cartridges that intersect between the second one of the plurality of disaster recovery systems and the plurality of disaster recovery systems yet to have performed the takeover operation.

6. The method of claim 1, further including exiting a disaster recovery mode by the plurality of disaster recovery systems for the at least one of the plurality of source systems declared offline.

7. A system comprising means adapted for carrying out all the steps of the method according to any preceding method claim

8. A computer program comprising instructions for carrying out all the steps of the method according to any preceding method claim, when said computer program is executed on a computer system.