TOPIC OF THIS HOUR

DEEP DRIVE ON EXCHANGE 2013: DATABASE AVAILABILITY GROUP

FEB 11, 2014

6:00 PM EST

@ NEW YORK EXCHANGE USER GROUP (NYEXUG)

ABOUT SPEAKER

PRABHAT NIGAM

MICROSOFT MVP: EXCHANGE SERVER

MCSE: MESSAGING 2013, MCITP 2010/2007

EX – MICROSOFT EXCHANGE PSS EMPLOYEE

BLOG: MSEXCHANGEGURU.COM – 3RD COOL COMMUNITY

SPEAKER @ NYMEETUP, NETLEARNING & MICROSOFT

AGENDA

- DATABASE AVAILABILITY GROUP OVERVIEW
- BENEFITS OF DATABASE AVAILABILITY GROUP
- GETTING STARTED WITH DATABASE AVAILABILITY GROUP
- DATABASE AVAILABILITY GROUP CONFIGURATION STEPS
- DATABASE AVAILABILITY GROUP CONFIGURATION LAB
- AUTO RESEED CONFIGURATION STEPS
- AUTO RESEED LAB
- AUTO RESEED WORK FLOW
- AUTOMATED DATABASE AVAILABILITY GROUP
- DAG HIGH AVAILABILITY VS DISASTER RECOVERY
- SUMMARY QUESTIONS AND ANSWERS

EXCHANGE 2003

- CLOSE TO SAY BYE TO EXCHANGE 2003

- MOVE TO EXCHANGE 2007 OR 2010 OR 2013.

- MICROSOFT SUPPORT IS ENDING ON APRIL 08, 2014.

DATABASE AVAILABILITY GROUP OVERVIEW

- OUTAGE!!!

- WHAT IS DAG?

- LIMITED TO 16 COPIES

- 100 DATABASES POST CU2 ELSE 50 DBS

- AUTOMATIC DR SITE ACTIVATION WITH 3 DATACENTERS -SITE RESILIENCY

- AUTO RESEEDING WITH SPARE DISK.

- HIGH AVAILABILITY

- PAM, SAM & DAC MODE

BENEFITS OF
DATABASE AVAILABILITY GROUP

- REDUCED MANUAL EFFORT

- ANOTHER COPY OF DATABASES

- LESS DATABASE COPIES WITH AUTO RESEED FEATURE
    - LESS DISK (STORAGE COST SAVING)
    - LESS SERVERS

- LESS EFFORT FOR SYSTEM ADMIN

- NO WAKE UP CALL

- NO OUTAGE IN CASE OF THE FOLLOWING
    - DISK FAILURE
    - SERVER FAILURE
    - SITE FAILURE
    - INTERNET OUTAGE

ARE YOU ON EXCHANGE 2007?

REASONS

GETTING STARTED WITH DAG

WE NEED THE FOLLOWING TO CONFIGURE THE DAG HIGH AVAILABILITY

- ONE DOMAIN CONTROLLER/GC WINDOWS 2003 SP2 OR ABOVE
- 2 EXCHANGE 2013 SERVERS
- ENSURE FAILOVER CLUSTERING IS INSTALL ON THESE 2 MBX DAG SERVERS
- N+1 DISKS. +1 IS FOR AUTORESEED
- 1 OR 2 OR 3 EXCHANGE 2013 DATA CENTERS OR SITES FOR SITE RESILIENCY.
- MINIMUM 1 NON MAILBOX ROLE SERVER FOR FILE SHARE WITNESS.

DATABASE AVAILABILITY GROUP CONFIGURATION STEPS

1. LOGIN TO PLANNED WITNESS SERVER AND ADD "EXCHANGE TRUSTED SUBSYSTEM" TO LOCAL ADMINISTRATORS GROUP

2. GO TO EXCHANGE ADMIN CENTER → SERVERS → DATABASE AVAILABILITY GROUPS

3. CLICK ON + AND CONFIGURE THE FOLLOWING VALUES:

    a. DATABASE AVAILABILITY GROUP NAME

    b. WITNESS SERVER

    c. WITNESS DIRECTORY

    d. DAG IP ADDRESS AND CLICK +

4. CLICK SAVE. THIS WILL CREATE THE DAG

5. ADD DAG MEMBER SERVERS USING   ICON AND SAVE.

6. VERIFY FILE SHARE WITNESS FOLDER CREATED.

7. GO TO THE DATABASE TAB THEN CLICK + TO ADD THE DATABASE AND CONFIGURE THE VALUES THEN CLICK SAVE

    a. MAILBOX DATABASE NAME

    b. SERVER – ANY OF THE DAG SERVER

    c. DB LOCATION

    d. LOG AND SYSTEM FILE LOCATION

8. RESTART THE INFORMATION STORE SERVICE AS PER WARNING.

9. CLICK ON 3 DOTS AND SELECT ADD DATABASE COPY THEN SELECT THE 2ND SERVER AND CLICK SAVE.

10. SEEDING SHOULD BE STARTING.

11. ONCE SEEDING COMPLETES, MOVE THE DATABASES TO DIFFERENT SERVER BY SELECTING ACTIVATE

DATABASE AVAILABILITY GROUP LAB

AUTO RESEED CONFIGURATION STEPS 1

1. CONFIGURE THE ROOT PATHS FOR DATABASES AND VOLUMES

       SET-DATABASEAVAILABILITYGROUP DAG01 -AUTODAGDATABASESROOTFOLDERPATH "C:\EDBS"

       SET-DATABASEAVAILABILITYGROUP DAG01 -AUTODAGVOLUMESROOTFOLDERPATH "C:\EVOLS"

2. CONFIGURE THE NUMBER OF DATABASES PER VOLUME

       SET-DATABASEAVAILABILITYGROUP DAG01 -AUTODAGDATABASECOPIESPERVOLUME 1

3. CREATE THE ROOT DIRECTORIES FOR DATABASES AND VOLUMES

       MD C:\EDBS

       MD C:\EVOLS

4. MOUNT THE VOLUME FOLDERS

       IN TODAY'S EXAMPLE WE HAVE 2 VOLUMES WITH DATABASES AND 1 SPARE VOLUME WHICH WILL BE MOUNTED TO THE FOLDERS MENTIONED BELOW:

       C:\EVOLS\VOL1

       C:\EVOLS\VOL2

       C:\EVOLS\VOL3

5. CREATE THE DATABASE FOLDERS

       IN TODAY'S EXAMPLE I AM CREATING 2 DATABASES SO WE WILL CONFIGURE 2 DATABASE FOLDERS ON ALL SERVERS AS MENTIONED BELOW:

       MD C:\EDBS\DB001

       MD C:\EDBS\DB002

6. CREATE THE MOUNT POINTS FOR THE DATABASES

       TO CHECK THE GUID OPEN CMD AND RUN MOUNTVOL

       THIS IS THE MOST IMPORTANT STEP WHERE WE HAVE TO MOUNT THE VOLUME TO THE DB LOCATION.

       WE WILL USE THE FOLLOWING CMD:

              "MOUNTVOL DB PATH VOLUME GUID"

       IN TODAY'S EXAMPLE I AM RUNNING THE FOLLOWING COMMANDS ON ALL THE SERVERS:

       THIS WILL ONLY WORK IN THE COMMAND PROMPT AND NOT IN EMS.

       MOUNTVOL.EXE C:\EDBS\DB001 \\?\VOLUME{GUID}\

       MOUNTVOL.EXE C:\EDBS\DB002 \\?\VOLUME{GUID}\

AUTO RESEED CONFIGURATION STEPS 2

7. TO VERIFY, RUN THE FOLLOWING COMMAND.

        MOUNTVOL

        YOU WILL FIND DB PATH HAS ADDED TO THE VOLUME PATH.

8. CREATE THE DATABASE DIRECTORY STRUCTURE

        IN TODAY'S EXAMPLE I AM USING 2 DATABASES FOR 2 VOLUMES SO RUN THE FOLLOWING CMDS ONLY ON PRIMARY SERVER:

        MD C:\EDBS\DB001\DB001.DB

        MD C:\EDBS\DB001\DB001.LOG

        MD C:\EDBS\DB002\DB002.DB

        MD C:\EDBS\DB002\DB002.LOG

9. CREATE DATABASES

IMP: CREATE DATABASES WITH LOG AND DATABASE PATHS CONFIGURED WITH THE APPROPRIATE FOLDERS AS PER THE CMDLET BELOW ON THE PRIMARY SERVER.

NEW-MAILBOXDATABASE -NAME DB001 -SERVER SERVERNAME -LOGFOLDERPATH C:\EDBS\DB001\DB001.LOG -EDBFILEPATH C:\EDBS\DB001\DB001.DB\DB001.EDB

NEW-MAILBOXDATABASE -NAME DB002 -SERVER SERVERNAME -LOGFOLDERPATH C:\EDBS\DB002\DB002.LOG -EDBFILEPATH C:\EDBS\DB002\DB002.DB\DB002.EDB

10. MOUNT THE DATABASES

        MOUNT-DATABASE DB001

        MOUNT-DATABASE DB002

10. CREATE DATABASES COPY TO THE DAG SERVER2

        ADD-MAILBOXDATABASECOPY DBNAME –MAILBOXSERVER SERVERNAME

11. TESTING AUTOMATIC RESEEDING:

GO TO DISK MANAGEMENT AND TAKE PASSIVE COPY DISK OFFLINE. VOL3 SHOULD BECOME PASSIVE DRIVE AND AUTO RESEED SHOULD START FOR THE FAILED VOL2.

CAUTION: IN LAB, IF YOU DELETE THE PARTITION THEN THE REPAIR OPERATION WILL NOT WORK.

WITHIN 5 MINUTES STATUS CHANGED. BASED ON THE DB SIZE SEEDING WILL TAKE TIME BUT MOST IMPORTING IS WHEN SEEDING IS STARTING.

AUTO RESEED LAB

AUTO RESEED WORKFLOW

1. DETECT A COPY IN FAILED AND SUSPENDED STATE FOR 15 MINUTES

2. EXCHANGE TRIES TO RESUME COPY 3 TIMES WITH A GAP OF 5 MINUTES. WHEN ALL 3 ATTEMPTS FAIL, THEN IT MOVES TO STEP 3

3. EXCHANGE TRIES TO ASSIGN A SPARE VOLUME FOR 5 TIMES WITH A GAP OF 1 HOUR.

4. EXCHANGE TRIES INPLACESEED WITH SAFEDELETEEXISTINGFILES 5 TIMES WITH A GAP OF 1 HOUR.

5. ONCE ALL RETRIES ARE COMPLETED WITH NO SUCCESS THEN WORKFLOW STOP OR WITH SUCCESS IT COMPLETES THE RESEEDING.

6. IN CASE OF NO SUCCESS EXCHANGE WILL WAIT FOR 3 DAYS AND SEE IF COPY IS STILL IN FAILED AND SUSPENDED STATE THEN STARTS THE WORKFLOW FROM STEP 1.

AUTOMATED DATABASE AVAILABILITY GROUP

REQUIREMENT FOR AUTOMATED DAG

- 3 DATA CENTERS
    - 2 FOR EXCHANGE SERVER
        - INTERNET FACING
    - 1 FOR FILE SHARE WITNESS
        - NON INTERNET FACING

- 2 LOAD BALANCER 1 FOR EACH EXCHANGE DATACENTER.

- 2 HOST RECORDS FOR NLB WITH ALIAS POINTERS FOR THE FOLLOWING SERVICES:
    - ACTIVESYNC, IMAP, OUTLOOKANYWHERE, OWA, POP, EWS, AUTODISCOVER

- 2 MX RECORD POINTING TO NLB FOR SMTP TRAFFIC.

NAME SPACE EXAMPLE

        MAIL.VTC2013.COM   10.10.10.200

        AUTODISCOVER   MAIL.VTC2013.COM

        MX 10   MX10.VTC2013.COM   MAIL.VTC2013.COM

            MAIL.VTC2013.COM   100.100.100.200

        AUTODISCOVER   MAIL.VTC2013.COM

        MX 20   MX20.VTC2013.COM   MAIL.VTC2013.COM

- 4 EXCHANGE SERVER 2013 WITH CUMULATIVE UPDATE 2 V2. 2 FOR EACH DATACENTER

- ONE MEMBER OR DOMAIN CONTROLLER SERVER IN THE 3 DATA CENTER FOR FILE SHARE WITNESS.

DAG: HIGH AVAILABILITY VS DISASTER RECOVERY

DATABASE AVAILABILITY GROUP:

- ❑ WHAT IS HIGH AVAILABILITY?

- ❑ WHAT IS DISASTER RECOVERY?

AUTO RESEED LAB CHECK

SUMMARY

-BENEFITS OF EXCHANGE 2013 DAG

-EXCHANGE 2013 DAG CONFIGURATION STEPS AND LAB

-HIGH AVAILABILITY WITH DATABASE AVAILABILITY GROUP

-AUTOMATED DATABASE AVAILABILITY GROUP

-AUTO RESEED WORKFLOW, STEPS AND LAB

FEEDBACK: PRABHAT@MSEXCHANGEGURU.COM

BLOG: HTTP://MSEXCHANGEGURU.COM

FOLLOW US:

TWITTER : HTTPS://TWITTER.COM/MSEXCHANGEGURU

FACEBOOK: HTTPS://WWW.FACEBOOK.COM/MSEXCHANGEGURU

LINKEDIN: HTTP://WWW.LINKEDIN.COM/GROUPS/MICROSOFT–EXCHANGE–SERVER–1624257/ABOUT

LINKEDIN: HTTP://WWW.LINKEDIN.COM/GROUPS/MICROSOFT–EXCHANGE–SERVER–2013–4534616

BLOGS OF EXCHANGE 2013: DAG AND AUTO–RESEED

Exchange 2013: Creating and testing Database Availability Groups (DAG)
http://msexchangeguru.com/2013/01/17/e2013-dag/

Exchange 2013: Auto Reseed
http://msexchangeguru.com/2013/02/12/e2013-auto-reseed/

Gracias	ευχαριστώ	Danke	Grazie	Hvala	Obrigado	Kiitos	شكراً	谢谢	
thank you	Teşekkürler	متشكرم	Salamat Po	Cám ơn	شكريه	Terima Kasih	Dank u Wel	Tack	
நன்றி	Köszönöm	ありがとうございます	ขอบคุณครับ	Mulţumesc	thank you				
תודה	多謝晒	дякую	Ďakujem	спасибо					
благодаря	Tak	감사합니다	Děkuji	Dziękuję					