ATOMICdata™

XXXXXXX

DR PLAYBOOK

4/5/22

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EXECUTIVE SUMMARY

Atomic Data ("Atomic"), working in close concert with XXXXXX, presents a disaster recovery plan procedure know as a "DR Playbook". This document strives to layout the order of operations required when activating the DR site ("Backup Site") during a disaster, or during planned tests. Crafting a DR Playbook requires policy input from the business for the following attributes;

1. **RPO (Recovery Point Objective).** RPO determines the amount of data loss in units of time. An RPO of 1 hour for example states that the business accepts 1 hour of data loss when activating the Backup Site. A database with active transactions when recovered is missing up to 60 minutes of data. This plan's published RPO is **60 minutes**.

2. **RTO (Return to Operation).** RTO is the elapsed of time before the Backup Site is operational. An RTO of 8 hours allows up to 8 hours of continuous downtime in operations before the Backup Site is operational. This plans published RTO is **8 hours**.

In summary, these two attributes tailor the overall design of failover systems, the procedures used, and the order of operations. The business allows for 60 minutes of data loss and up to 8 hours of operational downtime starting from the moment the business initiates a recovery operation.

ORDER OF OPERATIONS

1. **Network Infrastructure.** For the most part, the network infrastructure self-heals allowing dynamic recovery during an event. However, when the Backup Site is activated, a number of interfaces are enabled manually based on a business decision to activate compute resources at the Backup Site.

2. **SCOM.** The Monitoring system, prioritized high, to allow dashboard like views during site recovery.

3. **IT Support Systems.** These systems are activated as support systems for IT. Password management, Network Allocation, and log collection.

    a. **Activate Secret Server.** Password Management

    b. **Activate SPLUNK.** Log collection

    c. **Activate IPPlan.** Network Allocation

4. **Email.** The first of the primary systems recovered, email recovery prep includes site-to-site replication with Availability Group activation leading to quick recovery.

5. **LYNC.**

6. **Relativity.**

7. **Document Management.**

8. **Accounting.**

9. **Email Archiving.**

10. **Antivirus.**

11. **Contact Management.**

12. **SharePoint 2010.**

PLAYBOOK PREPARATION

The successful activation of the Backup Site involves a number of key steps:

- Backup Site Readiness Monitoring

- Formal Activation Requirements

- Documentation of various Make Ready Activities

BACKUP SITE READINESS MONITORING

To obtain the business-mandated RPO and RTO, there are a number of replication technologies employed, HyperV Replication, and Netapp Snapmirror. These technologies need monitoring to ensure RPO is met in the event of activation.

This document does not describe how these systems are monitored but states these items need monitoring.

FORMAL ACTIVATION

The DR Playbook should only be executed as a part of a test or during a disaster event. The business initiates playbook.

MAKE READY ACTIVITIES

1. **HyperV Replication.** Each of the VMs needed activation in the Backup Site requires replication. Replication activation is required and needs to be monitored.

    a. **Replication Instances.** Each VM need a configuration allowing for 2-3 replication sessions, allowing a choice of versions to activate in the event the most current replication session will not start.

2. **Netapp Replication (COMPLETED).** Snapmirror replication needs verification.

3. **Secret Server HA/DR (COMPLETED).** To accomplish Secret Server ("SS") availability during a DR exercise, SS is virtualized and configured to use Hyper-V replication for activation.

4. **Splunk (COMPLETE).** Splunk is a licensed/purchased product focused on log archive and search.

5. **Domain Controller.**

6. **Monitoring Failover.** The redundant links coupled with the status of dynamic routing needs monitoring.

    a. Intra Data Link Fails

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     b. Firewall Cluster Fails

     c. Nexus Failure

7. <u>VPN Authentication</u>

     a. Alter VPN to use multiple LDAP Servers

8. <u>Adjust Multiple Locations for Auth 802.1x</u>

9. <u>SAN Configuration.</u>

10. <u>IPPLAN.</u>

ACTIVATE BACKUP SITE

NETWORK ACTIVATION

During Backup Site activation, network core services are automatically recovered. However, the dynamic network recovery cannot know if machines need activation at the backup site. If compute resources require activation in the Backup Site, the core switches need a no shut on the networks to activate.

DR FIREWALL ACTIVATION

1. **Firewall Activation.** The production firewall is copied and merged to the DR firewall via a script executing in the Atomic Data environment. This script executes on the same machine that runs configuration backups ("Rancid"). During execution, the script brings both DR and PROD firewall configurations together into a merged firewall configuration. This configuration is uploaded to FWDR, and the firewall is reloaded to incorporate the new configurations.

   a. **Check Failover Status.** During a real network failover, the eigrp neighbors from 7700 aren't visible to the DR firewall.

   b. **Activate Interfaces.** If the eigrp neighbors indicates a successful network transition to backup paths, and its desired to activate FWDR, then activate the following interfaces.

   c. **Write Configuration.**

   d. **Update VPN CNAME.**

ORDER OF OPERATIONS

Orderly recovery of Business and IT systems is desired to insure efficient return to operation ("RTO") of the Business. The DR Playbook outlines steps taken during recovery operations. The following is a high level list of operations:

1. **Network Infrastructure.** The network infrastructure for the most part fails to backup links automatically. XXXXXX IT staff complete the network failover by activating the Firewall in XXX.

    a. **Activate Server VLAN.**

2. **Activate DR Firewall.**

    a. **No Shut Interfaces.**

3. **Make Ready Netapp.** Activate vFilers, Break Replication Mirrors, Perform LUN Mappings (Removing)

4. **Activate Secret Server.**

Secret Server Components	Activated
SS VM	

Figure 1 - Secret Server Component Table

    a. **Activation**

        i. **Activate Secret Server VM.**

    b. **Testing.**

        i. Access SS, authenticate using AD creds

        ii. View a secret

        iii. **Perform Search**

        iv. **Login Firewall, logs are updating**

5. **Activate IPPlan.**

IPPlan Components	Activated
IPPlan VM	

    a. **Activate**

        i. **Activate IPPLAN VM**

6. **Email.** The email environment at XXXXXX consists of a single Database Availability Group ("DAG") spanning 7700 in the form of EX1 and EX2. Activation involves activating the MVM, activating the DAG in 500, making a DNS change to point the various client access names directly to the exchange server located in. Following the DNS updates.

Email Components	Activated

Figure 2 - Email Components

a. **Activation.**

    i. **Activate**

    ii. **Activate DAG.**

    iii. **DNS Updates.**

        1. Update DNS for CAS

        2. Update DNS for AUTODISCOVERY

        3. Update DNS for MAILRELAY

    iv. **Activate MSPTMG**

    v. **Activate AIRWATCH1**

b. **Test**

    i. **OWA.**

    ii. **Outlook**

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7. **LYNC.**

Lync Components	Activated
MSPCERT	
MSPLYNCFE1	
MSPLYNCFE2	
MSPLYNCEDGE	
MSPLYNCMON	

Figure 3 - LYNC Components

a. **Activation.**

b. **Test.**

    i. **Internal calls (Lync to Lync)**

    ii. **External Outbound**

    iii. **External In**

    iv. **Response Group (Main/Help)**

    v. **Analog**

c. **Activation.**

    i. **Netapp Break Mirrors.**

        1. **Execute Snap Mirror Break.**

        2. **LUN Status.** Check to make sure LUNs are online.

    ii. Activate 7700-VFILER

        1. Verify Status.

        2. Test CiFS access

ci. **Test.**

    i. Perform Standard Testing External access

    ii. Perform Standard Internal access

    iii. Turnover to Support

8. **Accounting(3).**

    a. **Activation.**

9. **Email Archiving**

10. **Antivirus(4).**

Antivirus Components	Activated

Figure 4 – Antivirus Components

    a. **Activation.**

11. **<u>SharePoint 2010(4).</u>** Activate MSPSP1-2

SharePoint 2010 Components	Activated

Figure 5 – SharePoint 2010 Components

    a. Activation.

    b. Test

        i. Browse SP

12. SharePoint 2013 (4).

SharePoint 2013 Components	Activated

Figure 6 – SharePoint 2013 Components

    a. **<u>Activation.</u>**

    b. **<u>Test.</u>**

APPENDIX A – ACTIVATING HYPER-V GUESTS

1. **Procedure for Activating Hyper-V Guests.** Each guest needed to run at the Backup site will require activation.

   a. **Connect Hyper-V Server**

   b. **Launch Hyper-V Manager.**

      i. **Add Servers.** Right click, Add Servers, add All.

   c. **Failover (Test)**

      i. **Ensure Replication Health**

      ii. **Initial Test Failover**

      iii. **Start Test VM**

      iv. **End Test Failover.**

   d. **Failover (Real)**

      i. **Right Click VM.**

      ii. **Replication/Failover.**

      iii. **Select Replication Recovery Point.**

APPENDIX B – HYPER-V FAILOVER RECOVERY

1. **Failover Recovery.**

   a. **Prepare Remote VM.**

      i. **Power Remote VM Down.**

   b. **Reverse Replication**

   c. **Shutdown Activate VM**

   d. **Execute Planned Failover**

APPENDIX C - SERVER STARTUP STANDARDS

STANDARD MACHINE POWER UP PROCEDURES

1. Power on Machine.

2. Ensure Key Services have started.

APPENDIX D - NETAPP MIRROR RECOVERY

Prior to returning operations back to the original datacenter, Netapp Replication needs to be reversed.

1. **<u>XXXXXX7700-STOR01-1</u>**

2. **<u>XXXXXX7700-STOR01-2</u>**