Emergency! Are You Ready for Disaster to Strike?

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About Me

- Owner, Consultant, DataPerf Professionals
- 40+ years in IT
- Career covered multiple disciplines – operations, development, telecommunications, network design/administration and database design and administration
- Started using Sybase in 1992, MS SQL Server in 1995
- Microsoft Certified IT Professional: Database Administrator and Database Developer, Microsoft Certified Trainer (MCT)
- Awarded Microsoft MVP Award for SQL Server for last 12 years
- PASS Director 2016 - 2018

MVP Microsoft Most Valuable Professional

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Checklist

- Always have a recovery checklist for each server

Server WS12SQL

O/S:	Windows Server 2012 R2 Datacenter
Processor:	Intel Core i7 2.8GHz
Memory:	2GB
Disk:	C: 60GB
SQL Server Version:	SQL Server 2014 SP1 Developer Edition
Database:	AdventureWorks
Database:	AdventureWorks2012
Database:	AdventureWorksDW2012

- Verify Server Specs to Original
- Install .NET 3.5
- Install SQL Server 2014
- Install SQL 2014 SP1
- Restore Database Backups
- Recover Logins
- Relink logins to users

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Automated Install

- Demo

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Expectancy Bias

- "An expectation that conditions are as normal as we typically expect them to be."
- Barry Schiff, AOPA Pilot, November 2016

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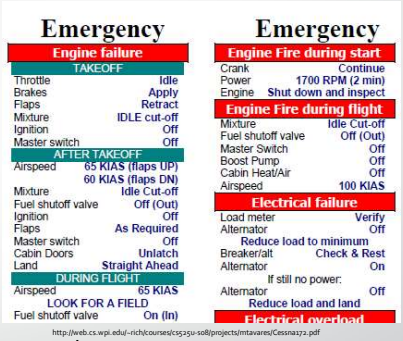
How Do We React?

- Depends on the problem
  - Don't jump to conclusions
  - Look for things out of place
  - Practice emergency procedures
  - May not require action
  - Overreaction may worsen
  - the problem
- Recovery Checklist
  - Create one specific to your environment
  - Practice using the checklist
  - Keep it updated



Emergency

Engine failure

TAKEOFF	
Throttle	Idle
Brakes	Apply
Flaps	Retract
Mixture	IDLE cut-off
Ignition	Off
Master switch	Off
AFTER TAKEOFF	
Airspeed	65 KIAS (flaps UP)
	60 KIAS (flaps DN)
Mixture	Idle Cut-off
Fuel shutoff valve	Off (Out)
Ignition	Off
Flaps	As Required
Master switch	Off
Cabin Doors	Unlatch
Land	Straight Ahead
DURING FLIGHT	
Airspeed	65 KIAS
LOOK FOR A FIELD	
Fuel shutoff valve	On (In)

Emergency

Engine Fire during start

Crank	Continue
Power	1700 RPM (2 min)
Engine	Shut down and inspect

Engine Fire during flight

Mixture	Idle Cut-off
Fuel shutoff valve	Off (Out)
Master Switch	Off
Boost Pump	Off
Cabin Heat/Air	Off
Airspeed	100 KIAS

Electrical failure

Load meter	Verify
Alternator	Off
Reduce load to minimum	
Breaker/alt	Check & Rest
Alternator	On
If still no power:	
Alternator	Off
Reduce load and land	

Electrical overload

http://web.cs.wpi.edu/~rich/courses/cs525u-s08/projects/mtavares/Cessna172.pdf

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Are You Prepared?

http://evansflight.wordpress.com/category/flightplans/

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Resource checklist

- System Inventory – SQL Power Doc
- Installation Media
  - OS (Current version and patch level)
  - SQL (Current version and patch level)
  - Other Services
  - Installation scripts
- Agent Job scripts and schedules
- Linked Server connections and credentials

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Resource Checklist

- Backups
  - OS
  - Database (Full, Diff, Log)
  - Certificates
  - Service Account recovery scripts
  - Login recovery scripts
  - Agent Job recovery scripts
  - Well Defined RPO/RTO
  - Backup Strategy supporting RPO/RTO

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Resource checklist

- Defines current environment
- Provides guidance for recovery
- Needs to be updated regularly

- Demo
  - SQL Power Doc (https://github.com/kendalvandyke/sqlpowerdoc)

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Rebuild Server

- Use your checklist

WS12SQL Rebuild Checklist

Locate media and script files

- OS Installation
- OS Patch media
- SQL Server Installation
- SQL Server Patch media
- SQL Server Certificate backup files
- SQL Server backup files
- SQL Server Login scripts
- SQL Server Agent job scripts
- SQL Server server object creation scripts

Rebuild WS12SQL Server

- Verify hardware against SQL Power Doc inventory
- Install OS to equivalent patch level
- Format drives to corresponding drive letters and sizes
- Ensure memory and network access configured correctly

Rebuild WS12SQL SQL Server

- Verify ConfigurationFile.ini matches original install config

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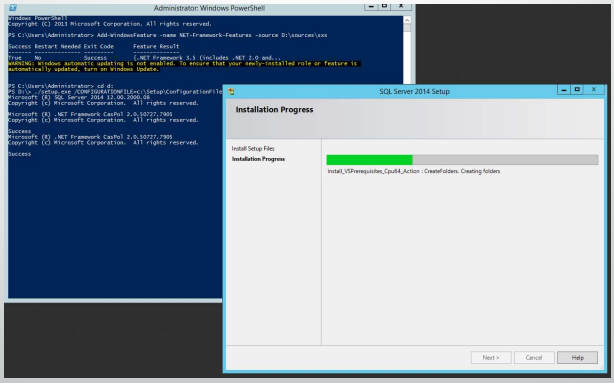
Rebuild Server

- Use scripts to ensure consistent recovery
- Demo



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Recovery

- How current are your backups?
- How often do you test them?
- Where are your install disks?
- Do you have a current install script?
- Do you have a recovery checklist?
- What order do your databases need to be restored?
- What order do your servers need to be restored?
- What about service accounts?
- What about network permissions?

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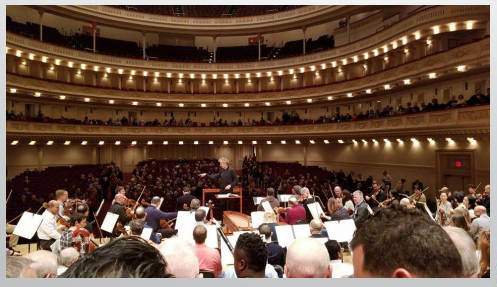
Practice, Practice, Practice

- Database sizes change
- I/O Subsystem changes
- Need to know that your recovery will meet RTO/RPO
- Regular practice ensures two important things
  - Your backups and processes work
  - You keep those processes fresh for when needed



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Resources

- SQL Power Doc
- https://github.com/kendalvandyke/sqlpowerdoc
- Glenn Berry DMV Queries
- www.sqlskills.com/blogs/glenn/category/dmv-queries/
- sp_help_revlogin
- https://support.microsoft.com/en-us/help/918992/how-to-transfer-logins-and-passwords-between-instances-of-sql-server
- DBATools PowerShell Script to Copy Logins
- https://blog.netnerds.net/2016/06/its-2016-why-is-sp_help_revlogin-a-thing/

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Thank You!

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