

# High Availability and Disaster Recovery Roundtable



MRMUG

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# Establishing Common Requirements

The following requirements are the most common IT considerations for establishing an HADR solution:

- **Recovery time objective (RTO)**

The time as measured from the time of application unavailability to the time of recovery (resuming business operations).

- **Recovery point objective (RPO)**

The last data point to which production is recovered upon a failure. Ideally, customers want the RPO to be zero lost data. Practically speaking, we tend to accept a recovery point associated with a particular application state.

- **Planned downtime**

In normal day-to-day operations, the largest share of time that an application is rendered unavailable because of planned maintenance procedures, such as system saves or operating system upgrades and the like. In an ideal environment, a redundant resource is used to carry the production workload so that the primary environment can undergo maintenance.

# Establishing Common Requirements (continued)

- **Geographic dispersion**

In the context of a multisystem HADR solution topology, the capability to recover operations at a remote location. This requirement is increasingly driven by compliance regulations, dispersion of the data, and the growing importance to have a complete disaster recovery solution.

- **Ease of management**

The degree of automation that an HADR solution offers to an IT operations staff. Consider both the degree of skill specialization required to manage the solution and its practical capability when applied to various resiliency operations such as planned failover or role swap operations.

- **Ease of deployment**

Clients ultimately want an HADR solution that is simple to configure. Through the use of node discovery functions, Smart Assists and configuration wizards for AIX deployments, and independent auxiliary storage pools (IASPs) for IBM i environments, IBM clustering solutions can reduce the amount of time required to deploy and environment

- **Integration and support**

When up and running in production, the degree of integration with the operating system influences the robustness of the solution, the types of skills required to manage the solution, and the types of support that might be involved in the event of a problem.

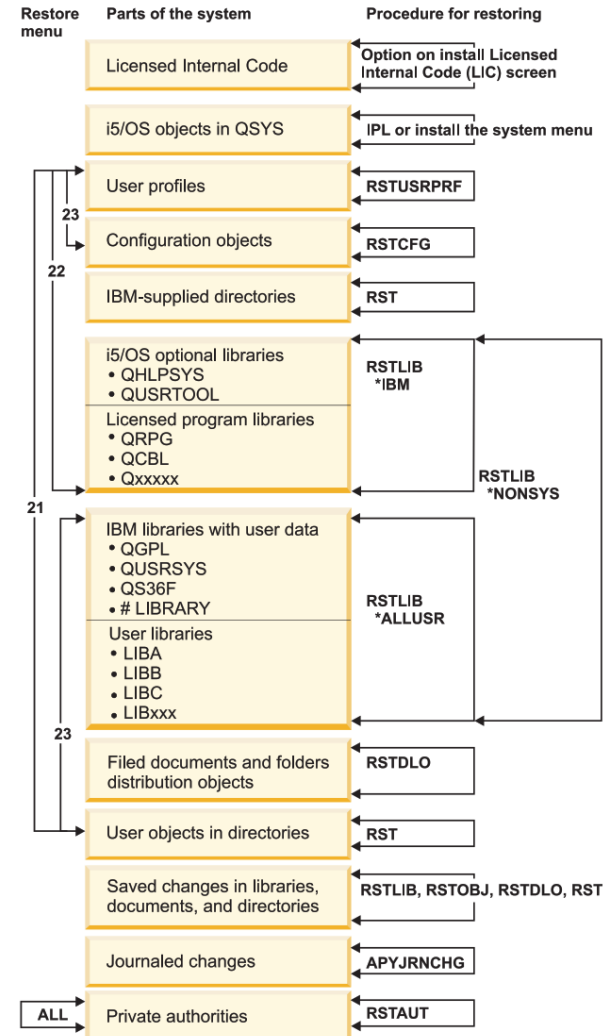
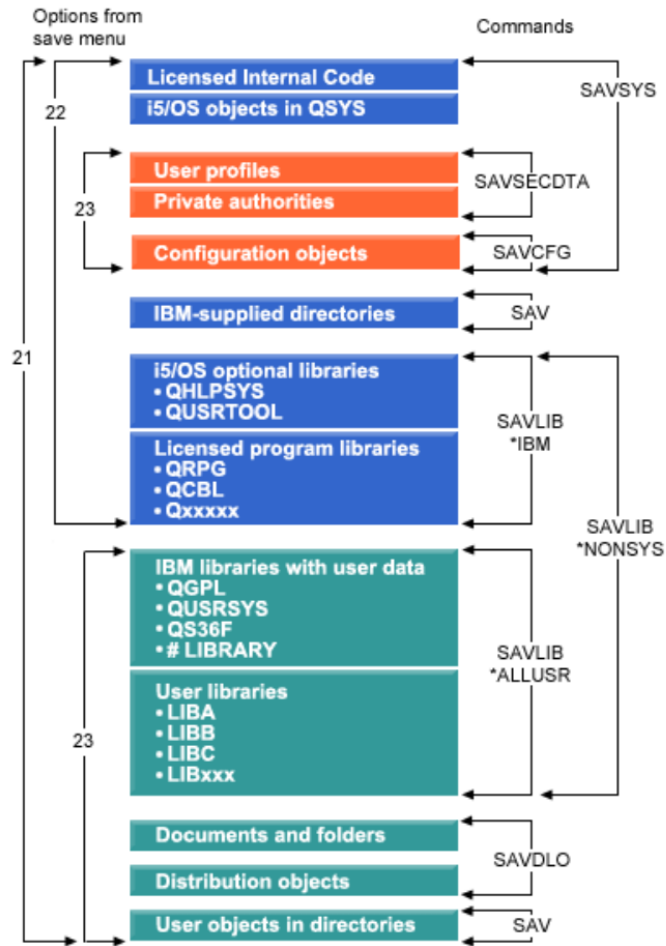
# Outage Types to Consider

- Scheduled Outages (backups, maintenance, etc.)
- Outages in the hardware subsystems (CPU, I/O, disk)
- Outage in an application, operating system, or both
- Operator error outages
- Network outages
- Site outages (planned or natural disaster)

# Backup Plan

- Consider your recovery plan when planning your backup plan
- Less downtime for backups usually means more time and complexity for recovery
  - Saving changed objects takes less backup time but requires multiple steps for restore
  - Saving Libs takes less time than saving entire system but requires more steps to restore the entire system – multiple tapes

# IBM i Backup / Recovery charts



RBAN5508-2

# HA & DR methods

- Backup to tape
  - Move tape off site
- Backup to VTL
  - With replication to offsite VTL/Cloud
- Replication to another system / partition / CBU
  - Using replication software
  - Using hardware replication – PowerHA, Storage replication
    - ASP replication or SAN storage replication
- Disaster recovery services
  - Cold or hot
- Cloud infrastructure
  - Production and / or HA/DR
  - May include DR capability

# Disaster Recovery Plan

## What is your:

- **Recovery time objective (RTO)**

The time as measured from the time of application unavailability to the time of recovery (resuming business operations).

- **Recovery point objective (RPO)**

The last data point to which production is recovered upon a failure. Ideally, customers want the RPO to be zero lost data. Practically speaking, we tend to accept a recovery point associated with a particular application state.



# Disaster Recovery Plan

- Do you have a written Disaster Recovery plan?
- Does it include
  - Alternate location
  - All required servers
  - Replacing hardware / redundant hardware
  - Network issues
  - User workspace, devices, etc.
  - Supplies
  - Which applications are most important
  - Business continuity – manufacturing / distribution facilities, etc.
  - Availability top your clients
- Have you tested your plan?

# Miscellaneous

- How far along are you with your HA /DR planning
- Are you where you want to be
- What inhibitors are you facing in implementing the HA/DR plan that you want?

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