



Introducing... IBM i Migrate While Active for



May 8th, 2025



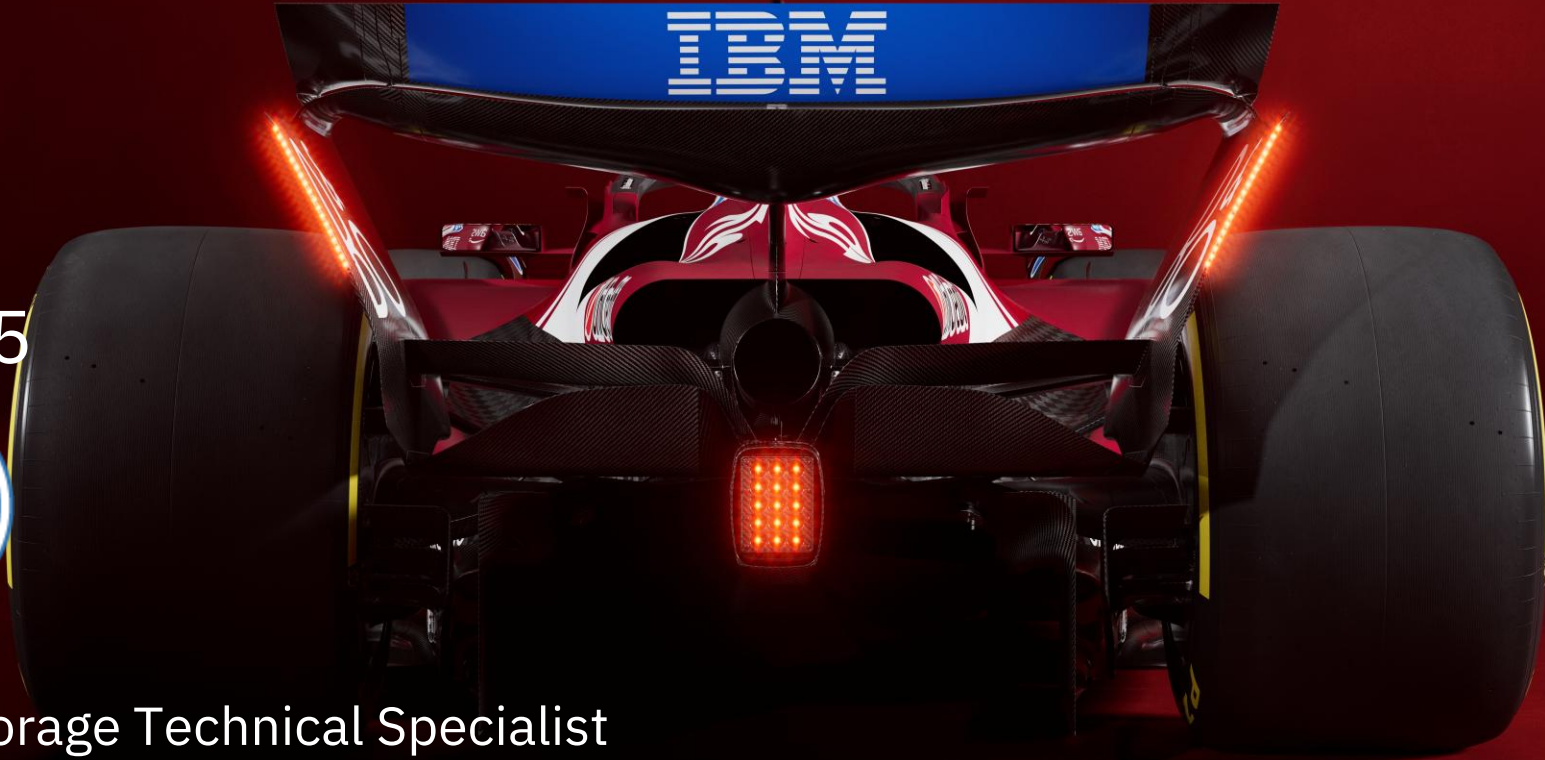
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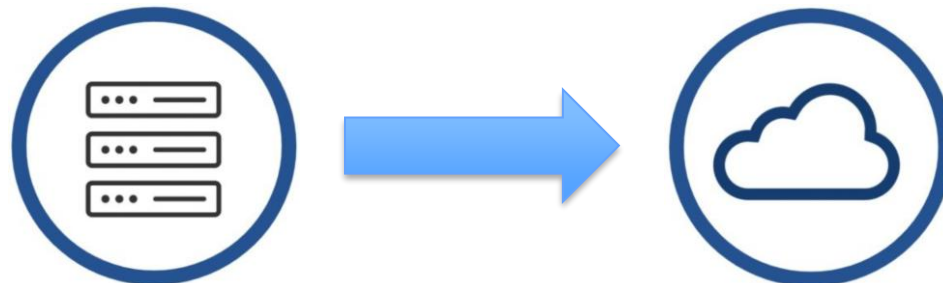
 [fabianmichel](#)



IBM i Migrate While Active

Easily migrate from on premise to Power Virtual Server

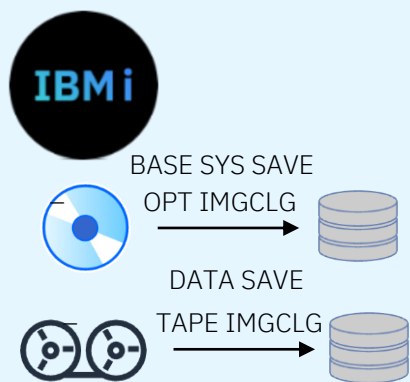
- IBM i standardized tooling to **migrate while active** with minimal impact to production
- Production downtime reduced from days to minutes/hours
 - Dependent on total data size, change rate and network bandwidth
- Automation to reduce the time it takes to seed the base copy
 - Eliminates multiple tools and manual processes for multi-step SAVE/RESTORE
- Production on premise remains available while changes are synchronized in real-time to the target system
 - Eliminates third party replication tools or multiple point in time SAVE/RESTORE iterations



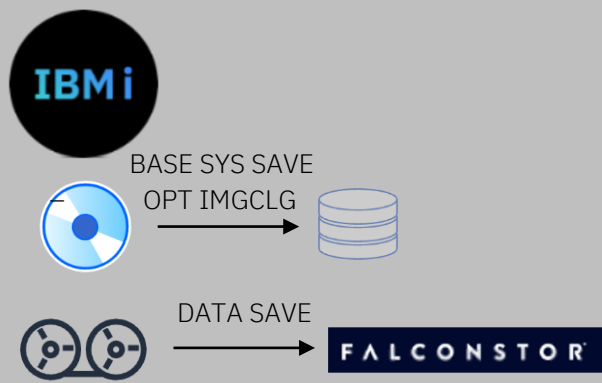
IBM i Migrate While Active – How it Works

Step 1: Initial System Save

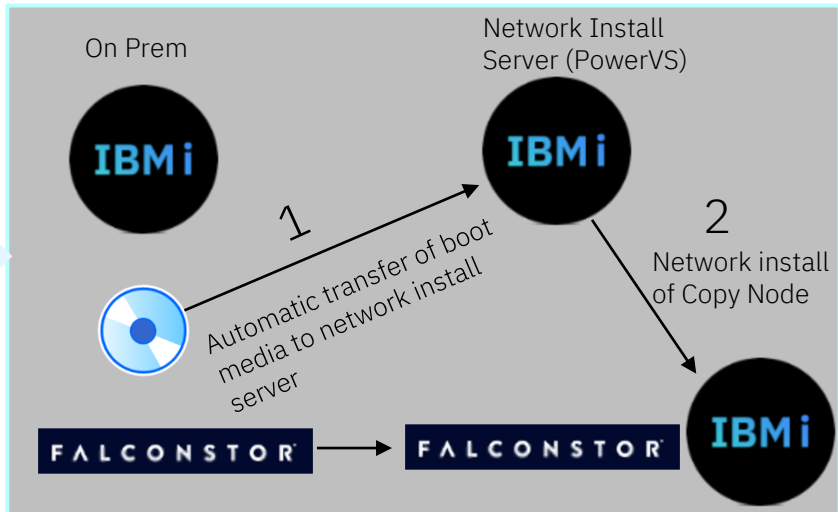
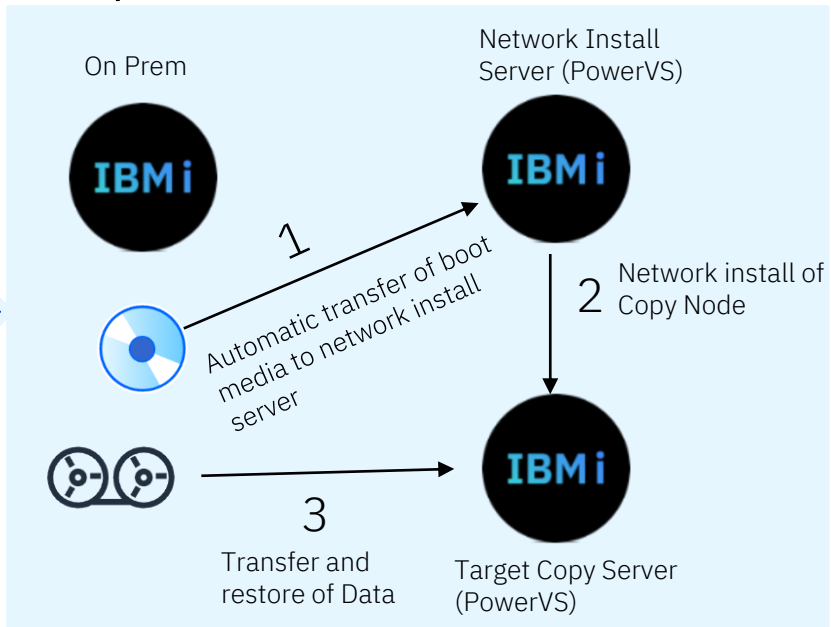
Pattern 1. Using IBM i Local Storage



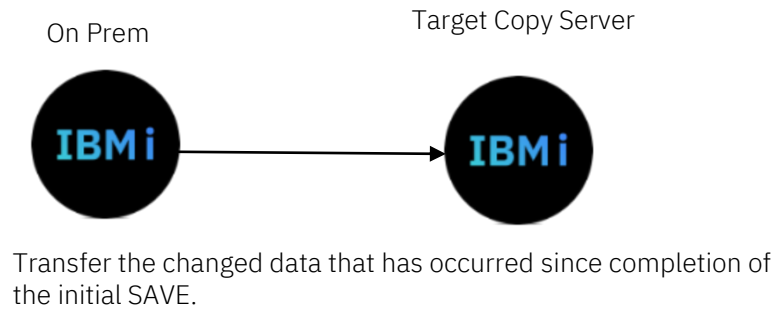
Pattern 2. Use VTL for DATA SAVE



Step 2: Transfer SAVE to PowerVS



Step 3: Transfer Changed Data



IBM i Migrate While Active Support Matrix

Servers	IBM i 6.1 ₁	IBM i 7.1 ₁	IBM i 7.2 ₁	IBM i 7.3	IBM i 7.4	IBM i 7.5
Power10 E1080, S1014, S1022s/S1022/L1022 (VIOS only), S1024/L1024 New S1012 (No IBM i 7.3 support)				✓	✓	✓
Power9 S914, S922 (VIOS only), H922 (VIOS only), S924, H924, E980 S922 Entry (single native I/O partition only)		✓ ₂	✓	✓	✓	✓
Power8 S814, S822 (VIOS only), S824, E870, E870C, E880, E880C S812 (no IBM i 7.1, native I/O only)		✓	✓	✓	✓	
Power7/7+ 710, 720, 730, 740, 750 (VIOS only), 760 (VIOS only), 770, 780, 795	✓	✓	✓	✓		
Power7 BladeCenter PS700/701/702/703/704 (all VIOS only) Power7/7+ Flex p260/270/460 (all VIOS only)	✓	✓	✓			



Direct migration possible, some Expert Labs or Partner Services opportunity



Upgrade to 7.4 or 7.5 required, n-2 support, Expert Labs or Partner Services opportunity



Upgrade to 7.4 or 7.5 required, no n-2 support, Expert Labs or Partner Services opportunity

IBM i Migrate While Active Pricing & PIDs



	Subscription Term – Migration Feature	Subscription Product IDs
Db2 Mirror for i 7.4 or 7.5	5770-DBM License & SWMA combined	5770-DBM: license PID Installed as 5770-DBM option 5102
Per core pricing	90 day or 1/2/3/4/5-year terms Price per core: One price for all systems One price \$2000/core/year 90 days: \$700/core	Subscription PIDs: 5666-MSL: 90 days 5661-MSL: 1 year 5662-MSL: 2 year 5663-MSL: 3 year 5664-MSL: 4 year 5665-MSL: 5 year

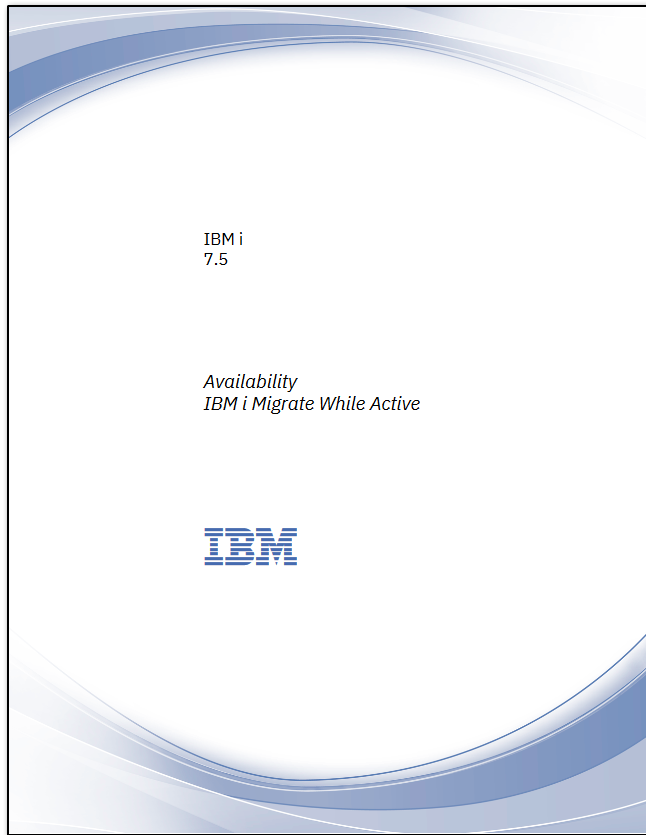
IBM i Migrate While Active Recap



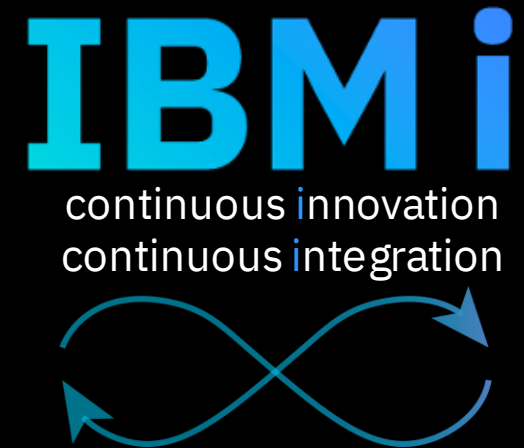
- IBM i Migrate While Active’s unique ability for clients to migrate production workloads with minimal downtime
- Simplify the migration from on-premise systems to Power Virtual Server, other clouds, and MSPs
- Uses existing Db2 Mirror and new IBM i technology to track and replicate the base system and any changes from source to target
- Source production system is capable of continuously running while synchronization occurs
- Only 2 outages required, initial save and final cutover
- Subscription term only: 90 day and 1-5yr terms available and only required on the source system
- A 28-day evaluation (“try and buy”) period is available
- Download details will be available at GA on Dec 13, 2024
- Replay IBM i Guided Tour : <https://learn.common.org/products/introducingibm-i-migrate-while-active>
- For IBMers & BPs : [Link to IBM i Migrate While Active on Seismic](#)

IBM i Migrate While Active

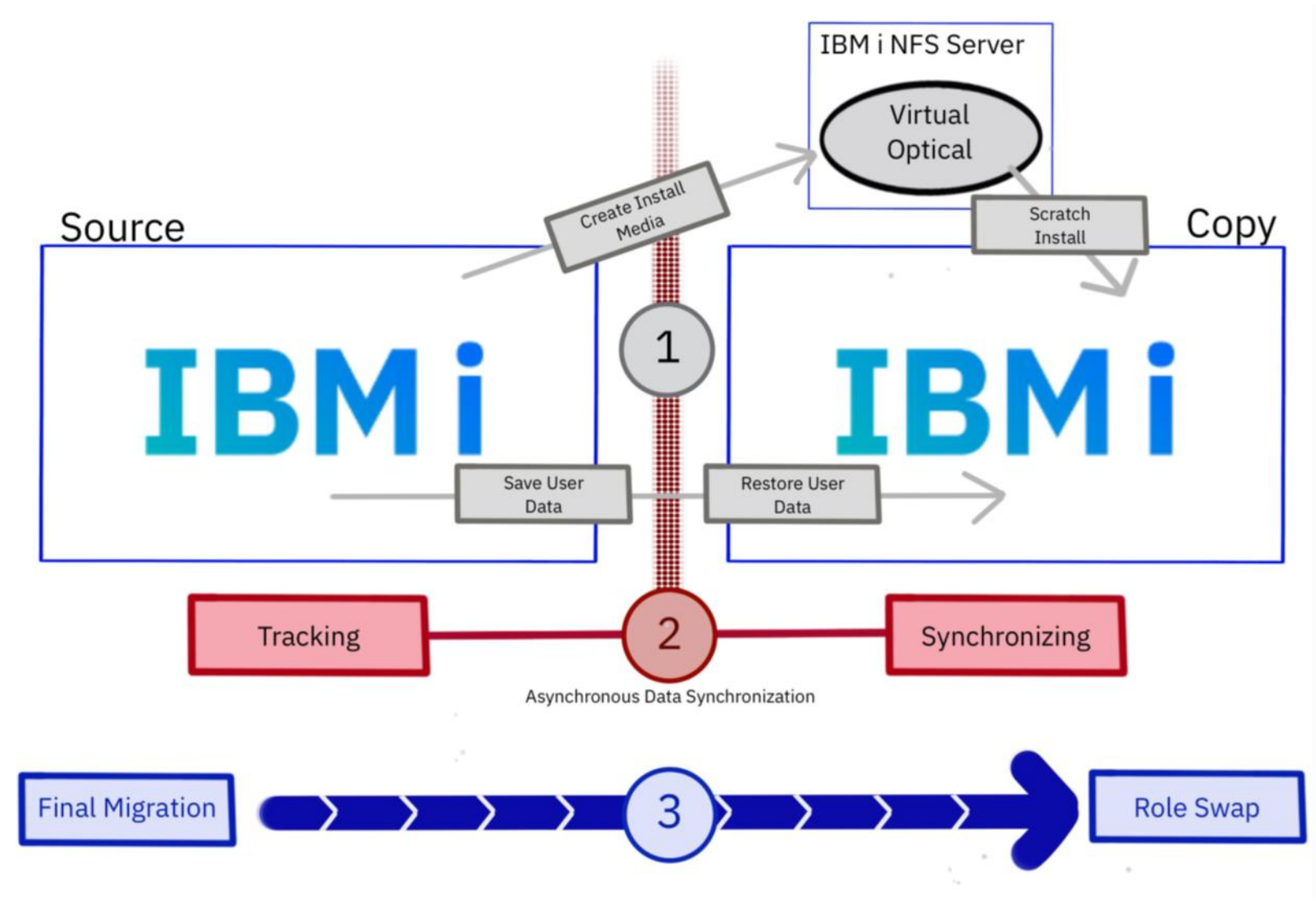
Anatomy of a migration

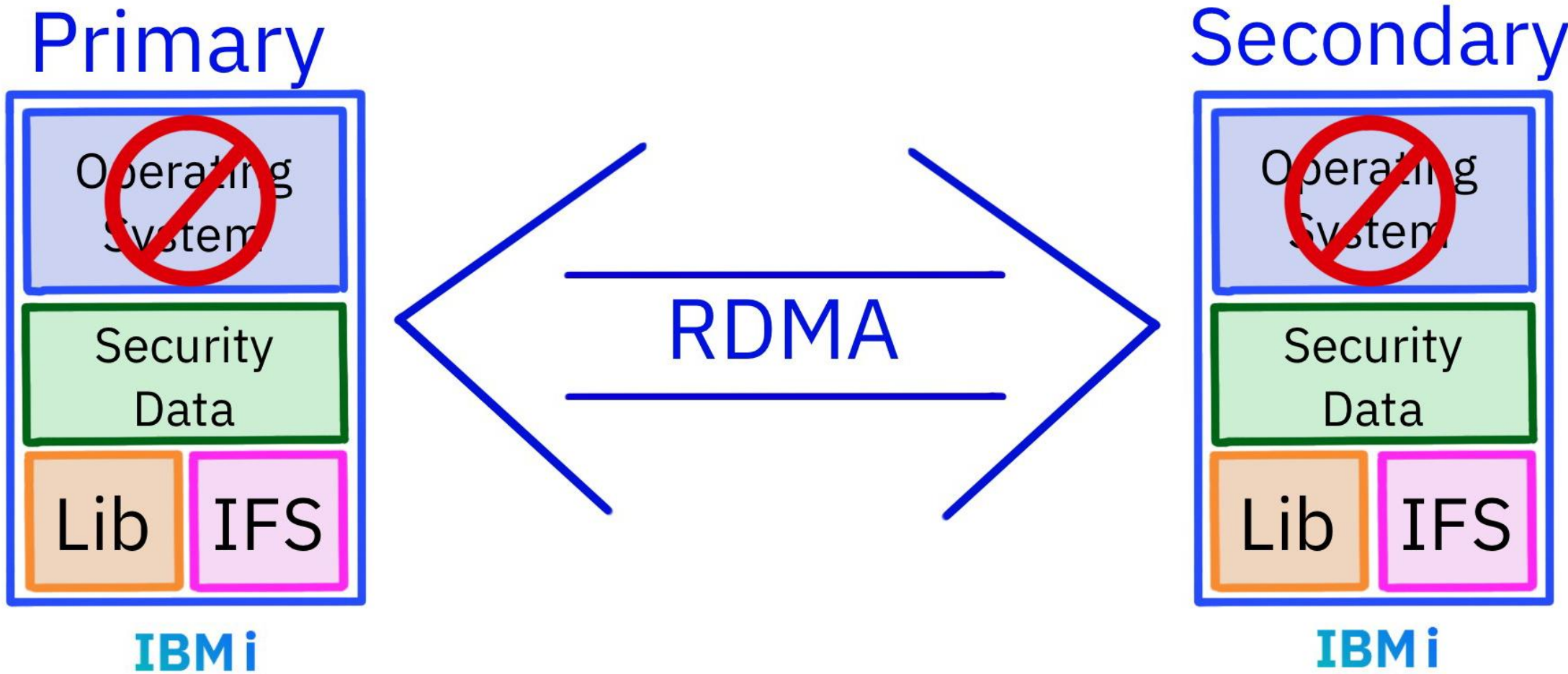


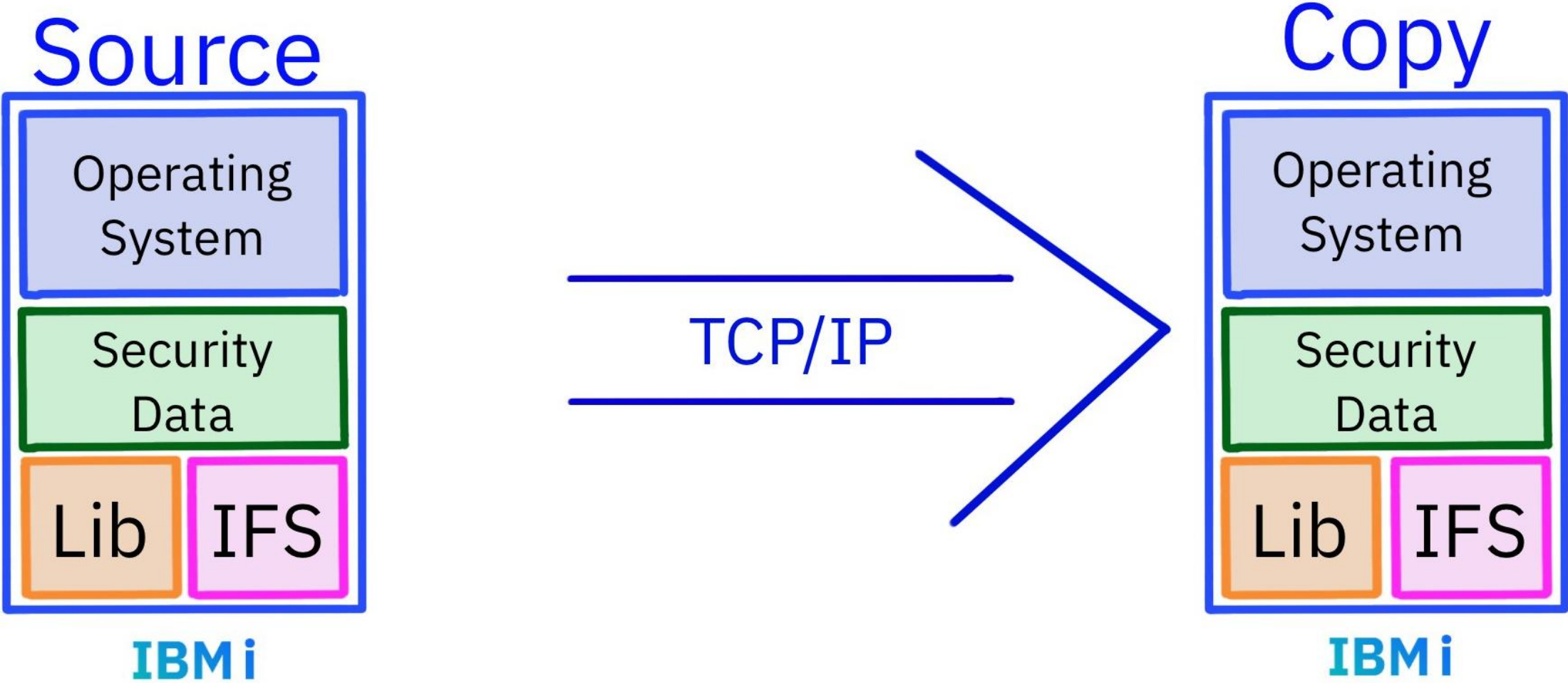
[Direct link to documentation](#)



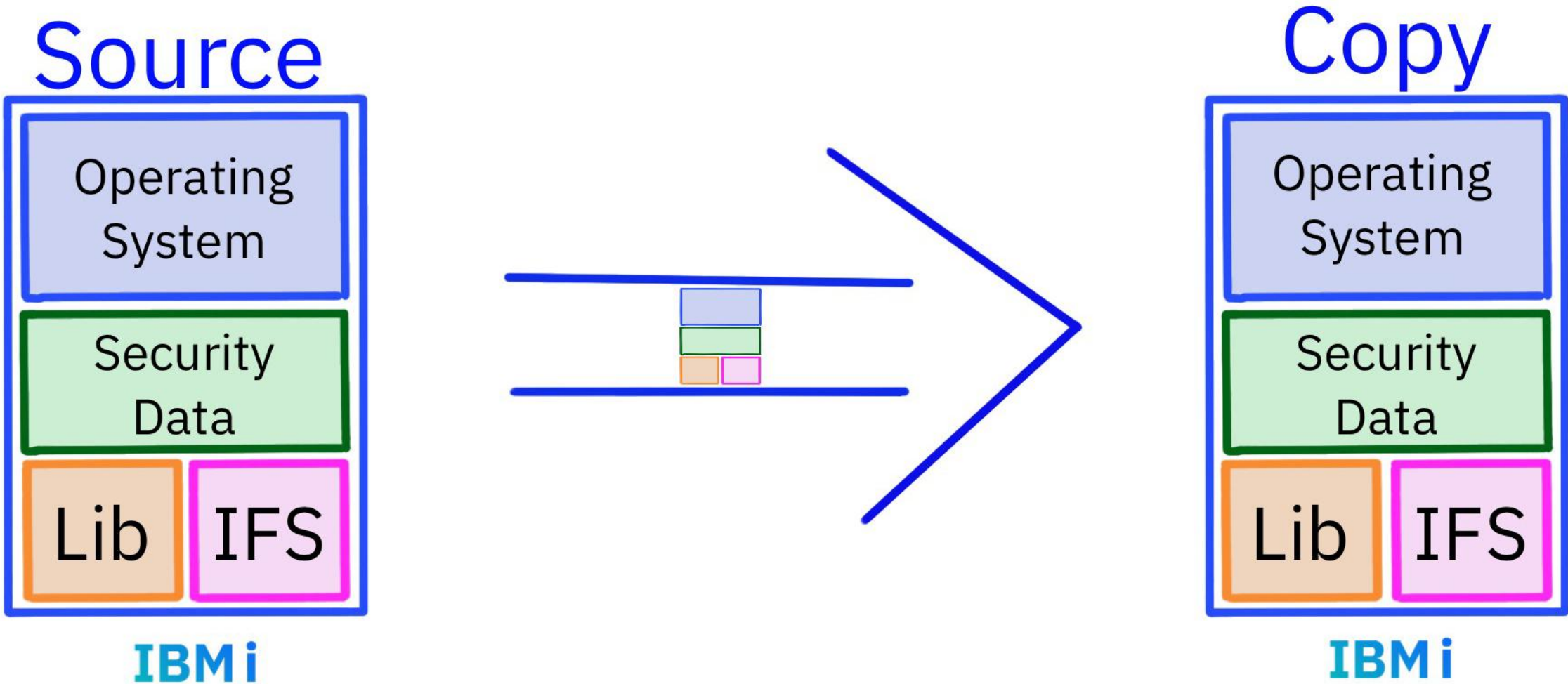
IBM i Migrate While Active introduction



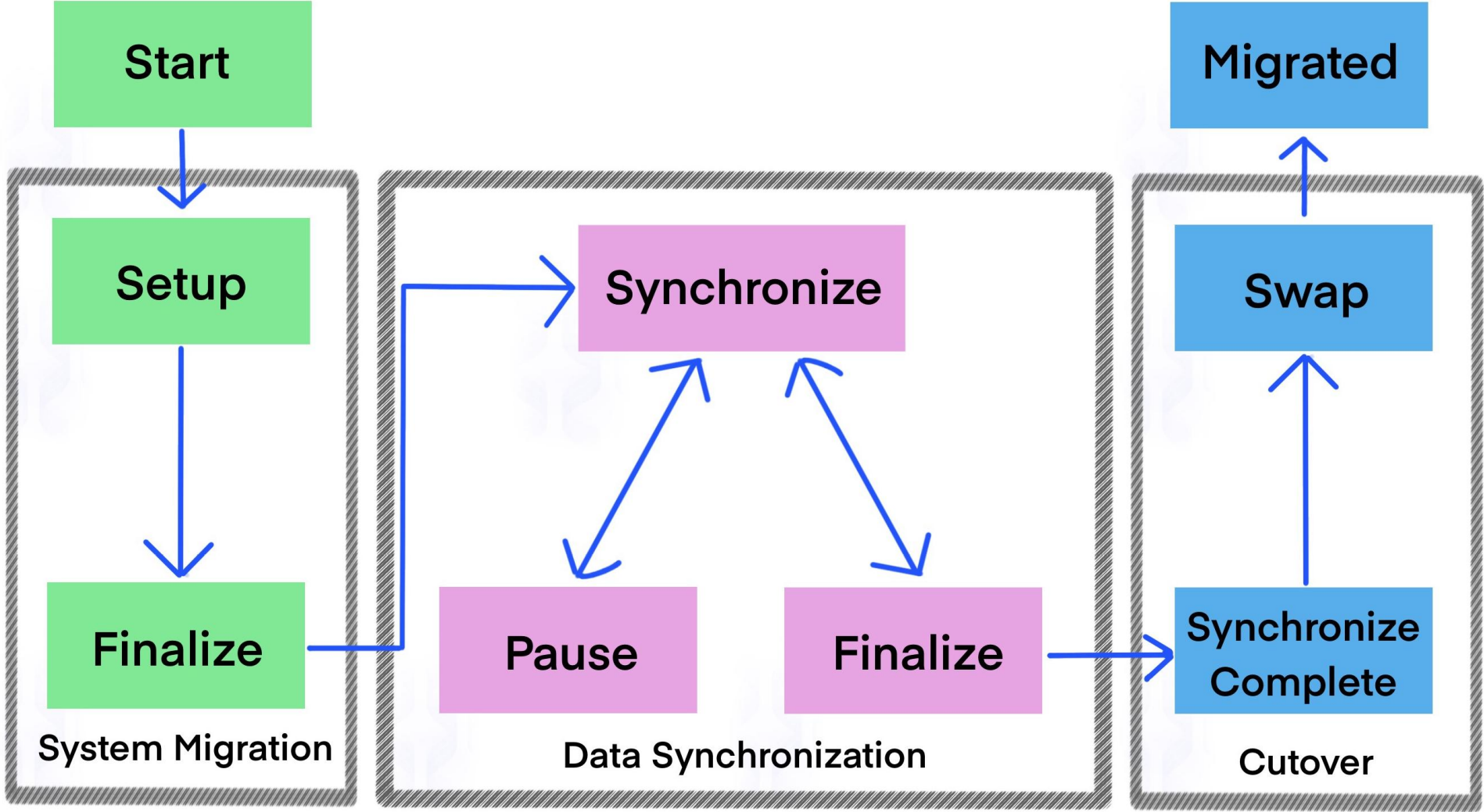




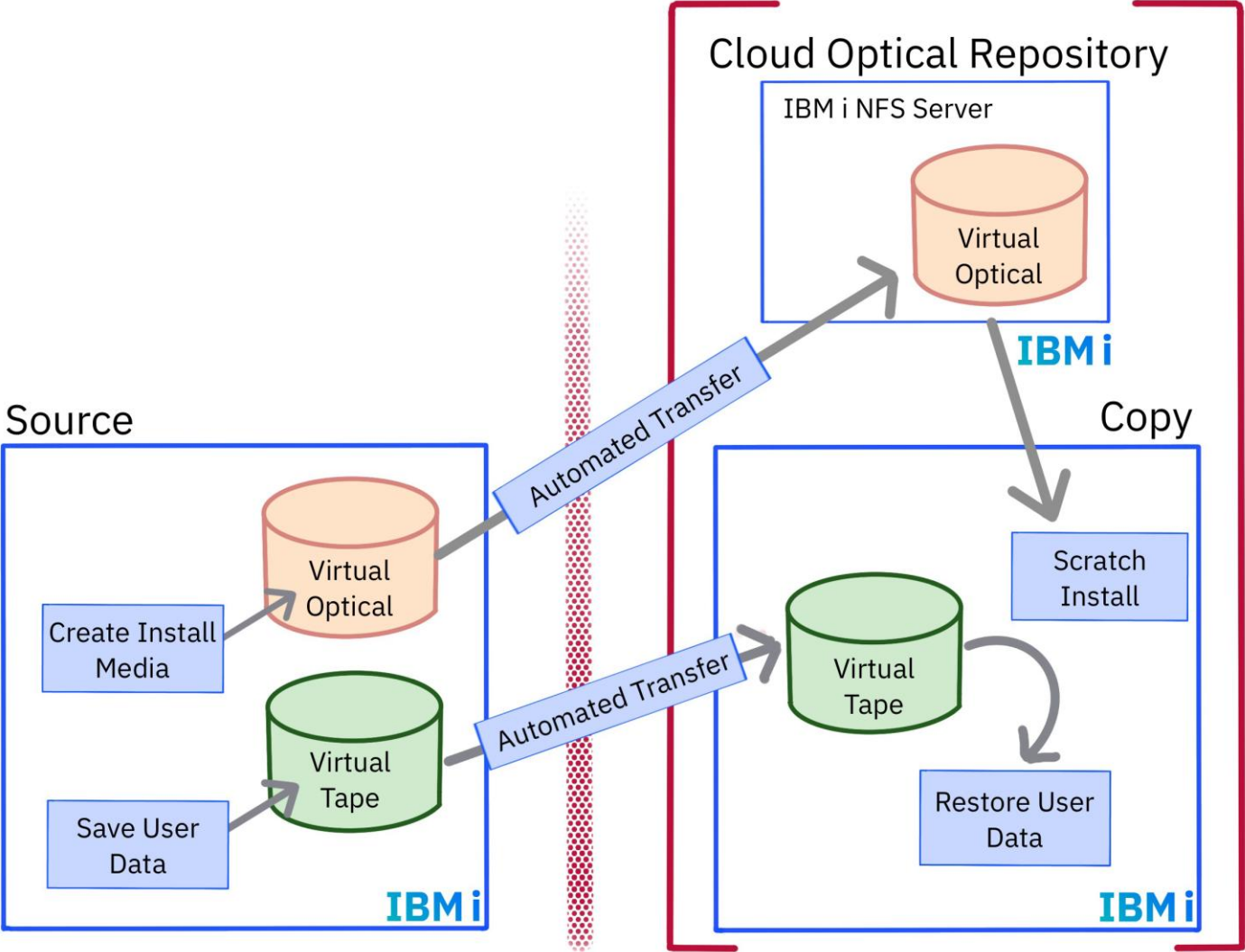
Migrate While Active use cases



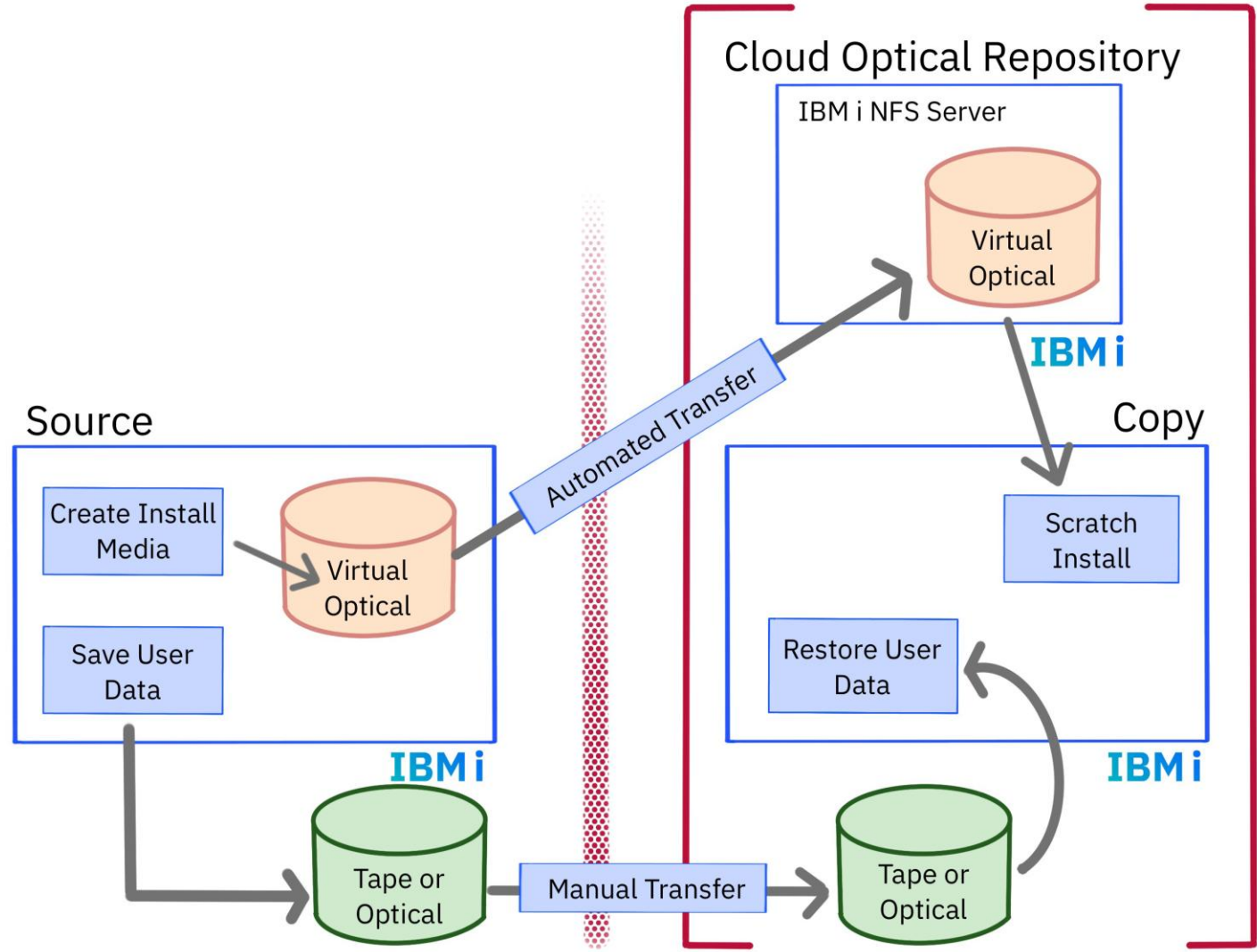
Migrate While Active Stages



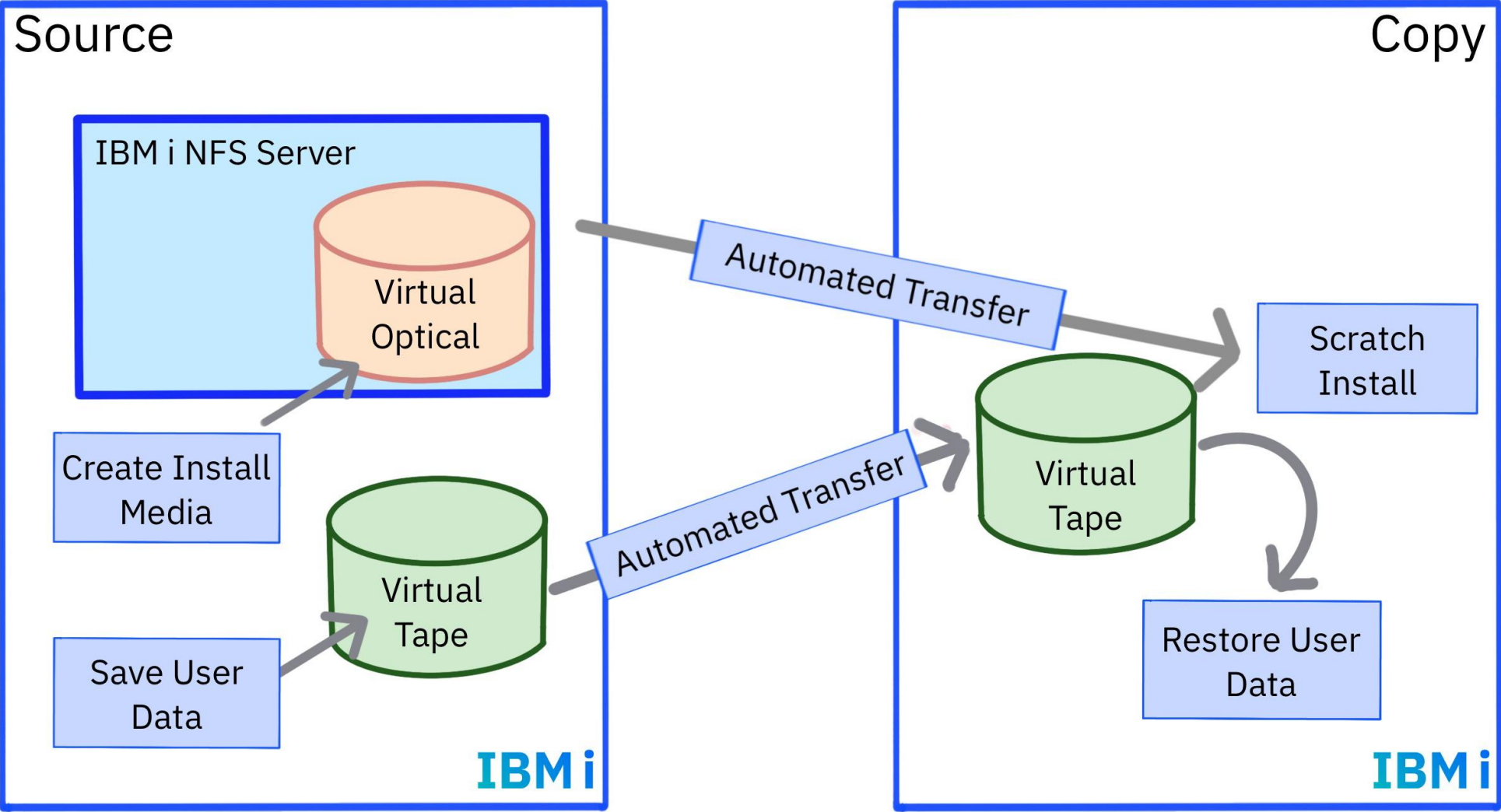
Automated migration of an IBM i to PowerVS using source node local storage



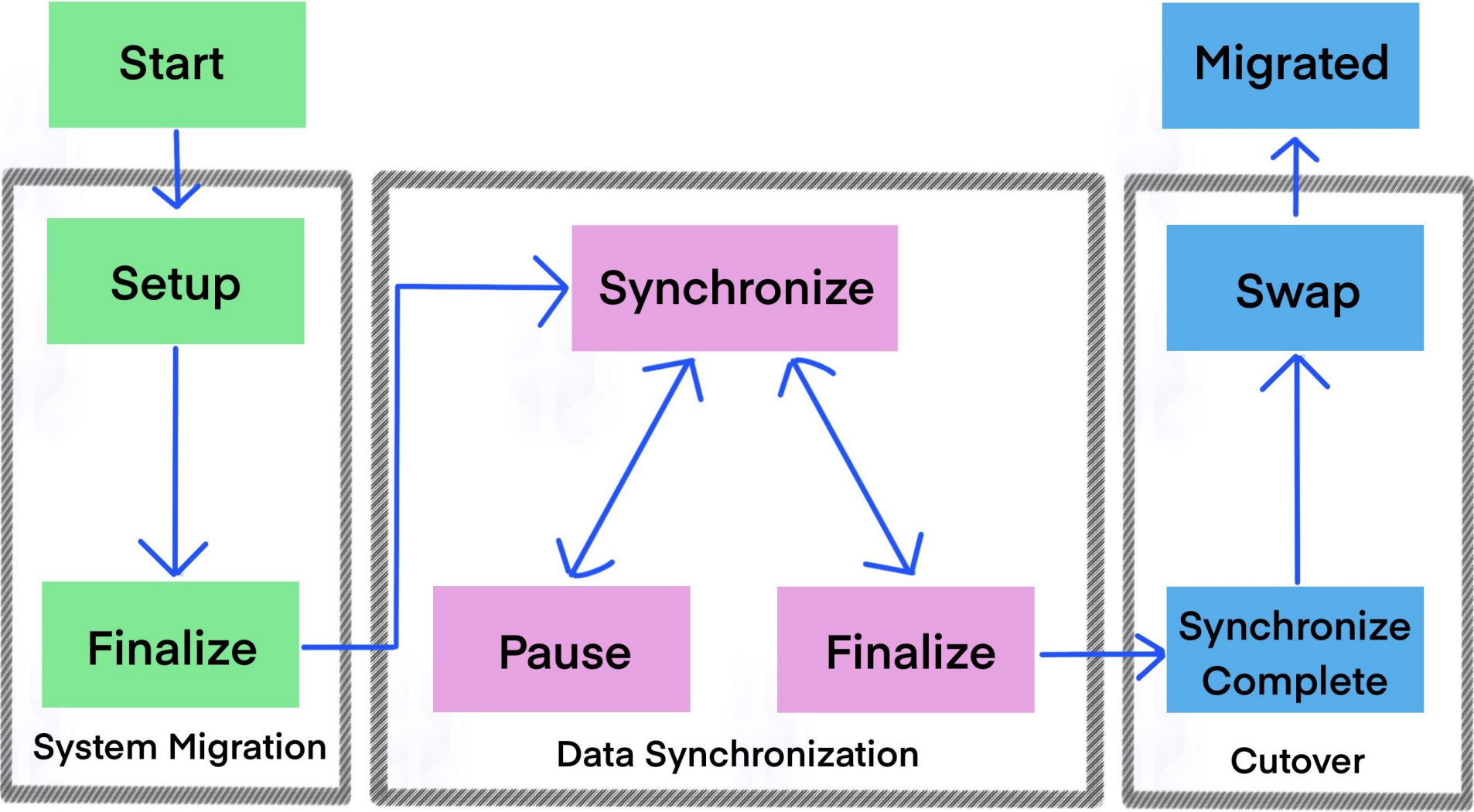
Automated migration of an IBM i to PowerVS using user provided devices for user data



Automated migration of an IBM i using source node local storage and source node NFS server



Migrate While Active stages and phases



Db2 Mirror sign on screen

Welcome to IBM Db2 Mirror for i



User Name:

Password:

Log in

Db2 Mirror – Add Pair dialog

IBM Db2 Mirror for i





Add Pair

Select

☐ Db2 Mirror

IBM i continuous availability solution using real time synchronization between a 2 node pair

☒ IBM i Migrate While Active

Migration of a IBM i node from one location to another while continuing to run active workloads

Add

Add New Pair

Add New System

Add a new Db2 Mirror or Migrate While Active Pair

Add Pair options for IBM i Migrate While Active

IBM Db2 Mirror for i

Add Pair

IBM i Migrate While Active

☒ Configure a new pair

☐ Add an already configured pair



Migration wizard - System install device options

IBM Db2 Mirror for i



Setup Migrate While Active



System Migration Configuration

System Install

NFS Server

System Install Options

System Migration User Data

User Data Save Options

User Data Devices

Specify system install device:

☒ Automatically create a virtual optical device

☐ Specify an optical device

☐ No automated creation of install media. The save, transfer, and restore of install media and user data is performed manually

Migration wizard - NFS server options

IBM Db2 Mirror for i

Setup Migrate While Active

System Migration Configuration

System Install

NFS Server

System Install Options

System Migration User Data

User Data Save Options

User Data Devices

Specify NFS server options:

☒ Automatically transfer install media to a remote NFS server. The remote NFS server is an additional IBM i server that is in proximity of the copy node which is required to do an install

NFS Server

IP Address:

User:

migrate

Private Key:

/home/migrate/.ssh/id_rsa

Data Directory:

/INSTALL/apop73

Verify Connection

☐ Manually transfer install media to a remote NFS server. The remote NFS server is an additional IBM i server that is in proximity of the copy node which is required to do an install

☐ No transfer of install media: Use the source node as the NFS server. The source node is in proximity of the copy node which is required to do an install

Migration wizard - System install options

IBM Db2 Mirror for i

Setup Migrate While Active

System Migration Configuration

System Install

NFS Server

System Install Options

System Migration User Data

User Data Save Options

User Data Devices

Install Media Details:

Storage on source node available for creating install save images (updated based on selection below)

Total Storage Available: 71051 MB

Storage Remaining: 60660 MB

Specify Compression Type:

☐ *NO: 12007 MB

☐ *LOW: 10622 MB

☒ *MEDIUM: 10391 MB

☐ *ZLIB: 6350 MB

Migration wizard - System migration user data

IBM Db2 Mirror for i

Setup Migrate While Active

System Migration Configuration

System Install

NFS Server

System Install Options

System Migration User Data

User Data Save Options

User Data Devices

User Data Details:

Specify the user data devices:

☒ Automatically create virtual tape devices
☐ Specify tape devices
☐ Specify an optical device

Specify the type of data transfer:

☒ Automatic

User:

migrate

Private Key:

/home/migrate/.ssh/id_rsa

☐ Manual

continuous innovation
continuous integration

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System migration process

Migration Process

Source Node:
(APOP73)

Copy Node:
(APOP74)



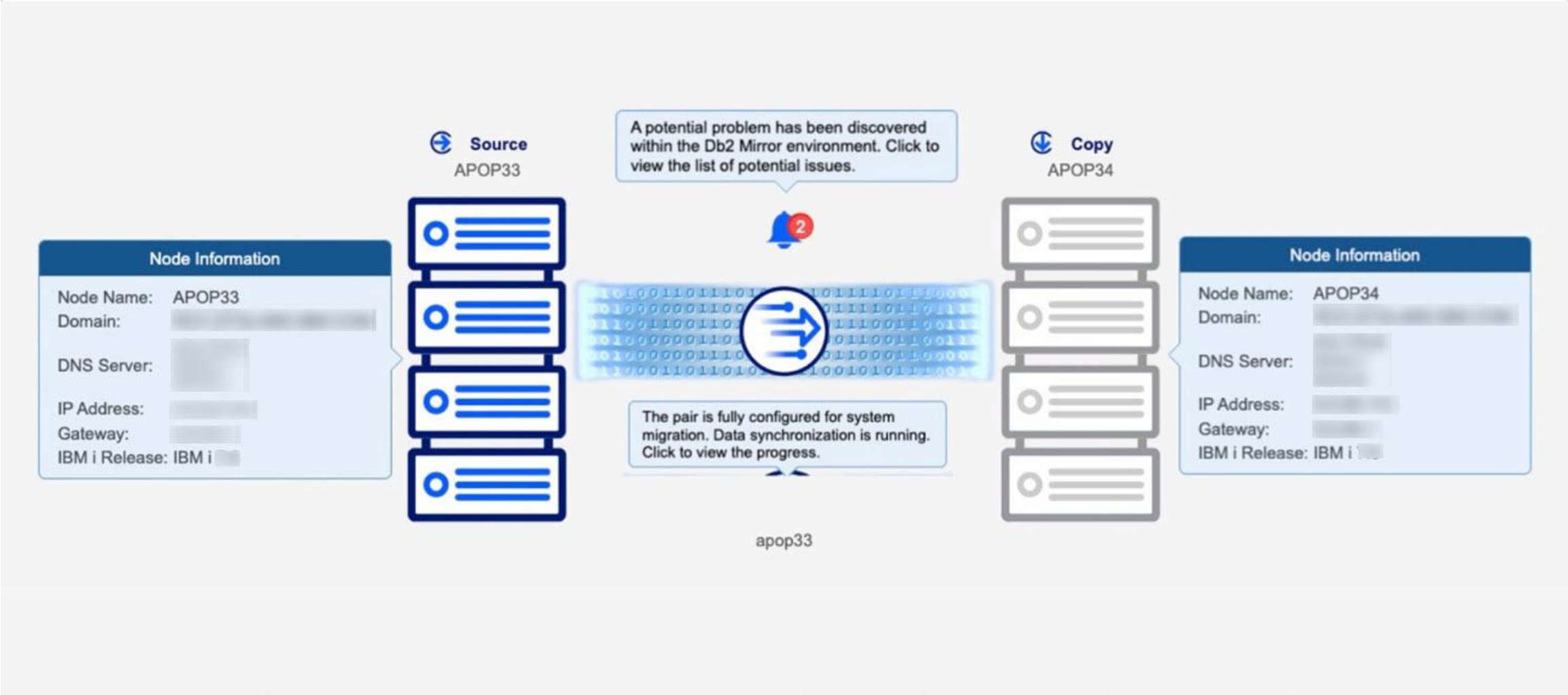
Step 2 of 8 Perform save process

The save process is performed by connecting to the console of the source node and running a set of commands. For the instructions to follow during this step, view or download the PDF and perform the tasks.

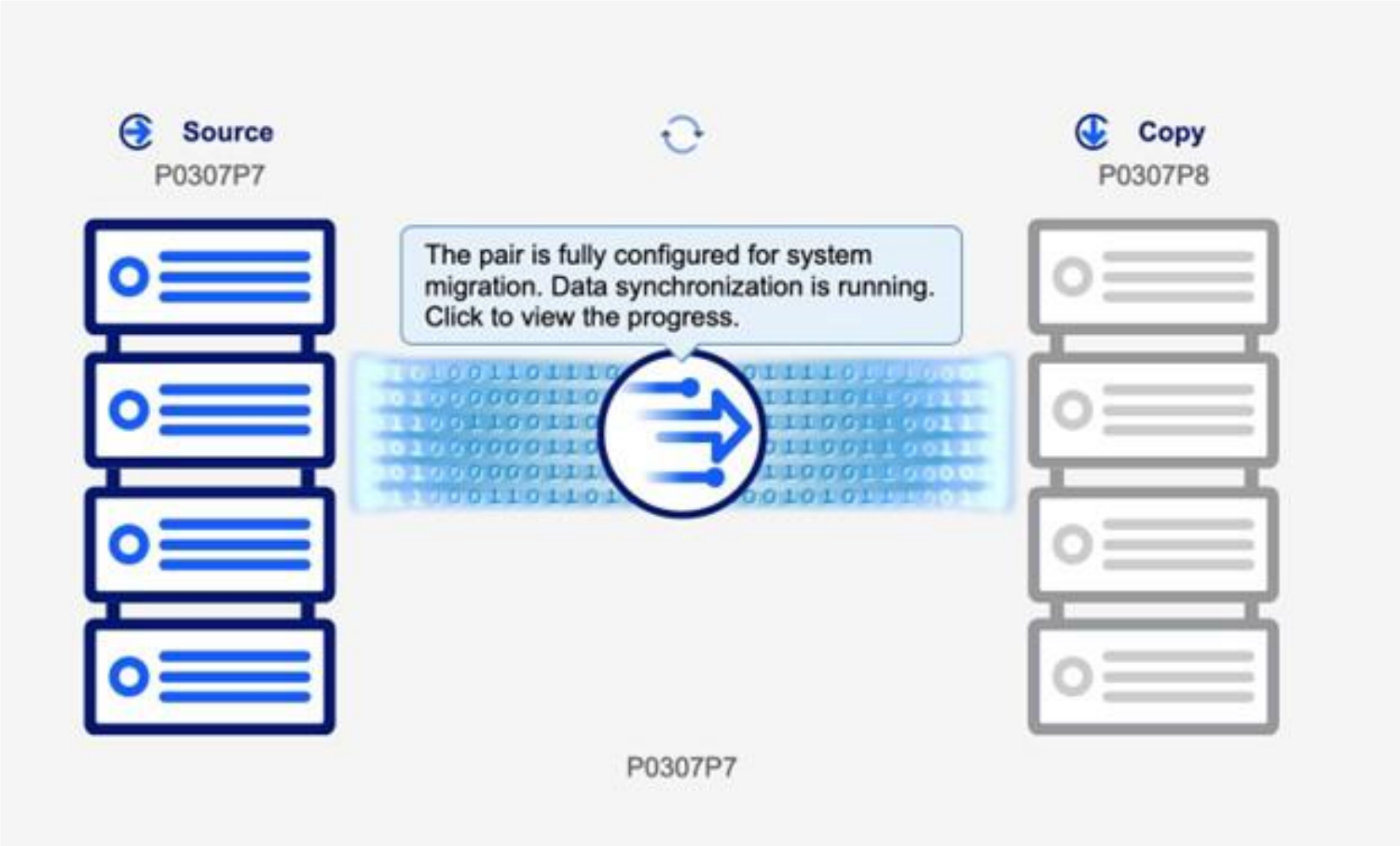
View PDF

Reset

Migration home page



Click the center circle icon to explore migration progress
As shown



Data synchronization progress as seen in the GUI

IBM i Migrate While Active

Step 1
Configure migration settings

Step 2
System migration

Step 3
Continuous data synchronization

Step 4
Final data synchronization

Step 5
Complete migration

Step 6
Exit migration

Continuous data synchronization

Active
Synchronization in progress
[View Data](#)

PauseFinalize

Synchronizing Jobs

Mirrored Objects

Inactive

Synchronization completed

Non-mirrored Objects

Inactive

Synchronization completed

IFS Objects

Active

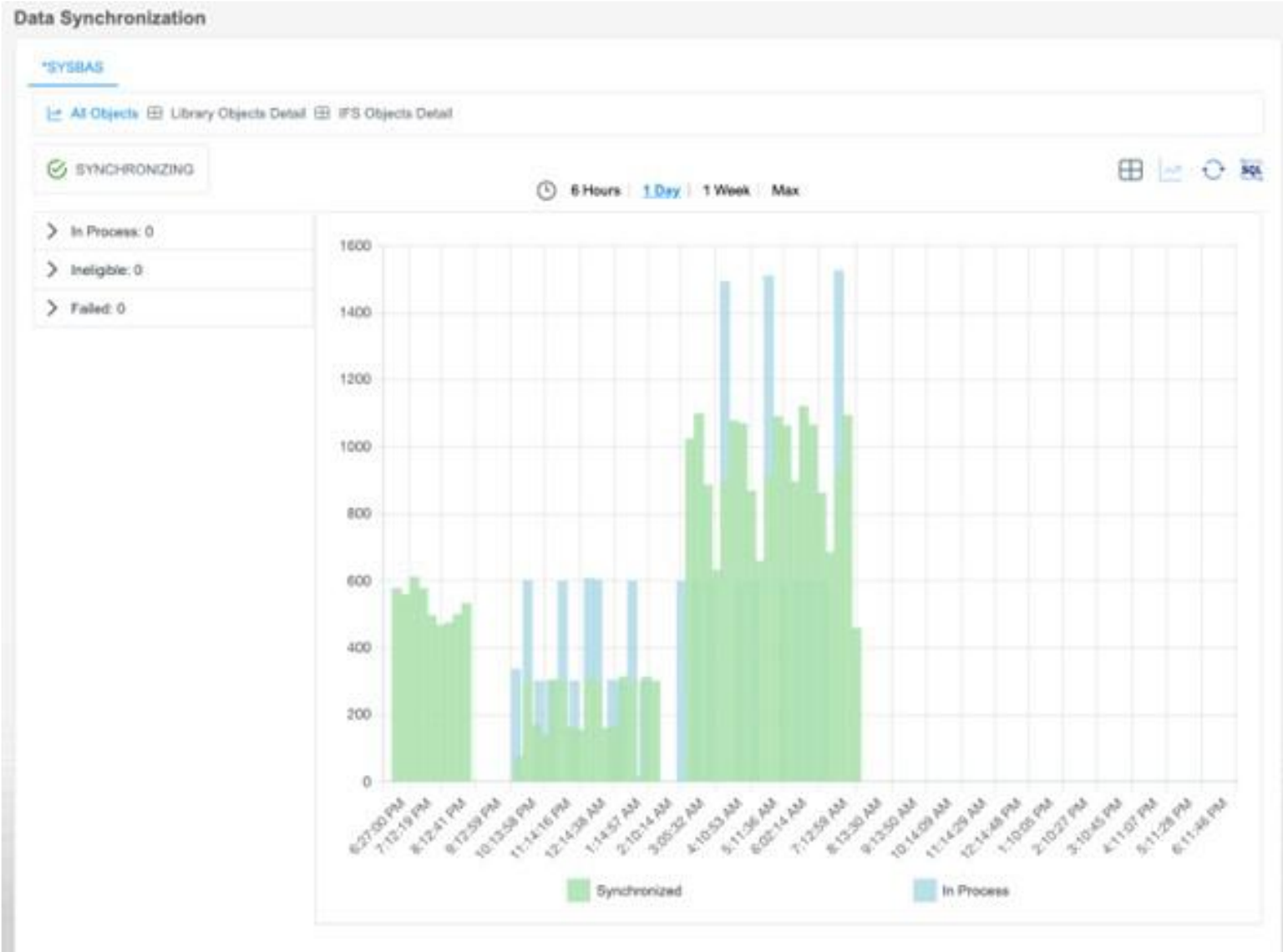
Synchronization in progress
[208380/QSYS/QMRDBISYNC](#)

OK

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Data synchronization details



Continuous data synchronization

IBM i Migrate While Active

Step 1

Configure migration settings

✓

Step 2

System migration

✓

Step 3

Continuous data synchronization

Step 4

Final data synchronization

Step 5

Complete migration

Step 6

Exit migration

Continuous data synchronization

Active

Synchronization in progress

[View Data](#)

Pause

Finalize

Synchronizing Jobs

Mirrored Objects

⌚ Inactive

Synchronization completed

Non-mirrored Objects

⌚ Inactive

Synchronization completed

IFS Objects

🌀 Active

Synchronization in progress

[208380/QSYS/QMRDBISYNC](#)

OK

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Final data synchronization

IBM i Migrate While Active

Step 1
Configure migration settings

Step 2
System migration

Step 3
Continuous data synchronization

Step 4
Final data synchronization

Step 5
Complete migration

Step 6
Exit migration

Final data synchronization

Preparation for final synchronization has completed. View the PDF for instructions to complete the migration.

Cancel final synchronization

OK

WRKMIGSTS main menu

```

                                Work with Migration Status
                                System:      APOP43
Migration stage:  DATA SYNCHRONIZATION   Phase:  PAUSED

Select one of the following:

    1. Start automated save on source node
    2. Start manual save on source node
    3. Complete manual save on source node

   10. Start automated restore on copy node
   11. Complete manual restore on copy node

   20. Start final synchronization
   21. Complete final synchronization
   22. Cancel final synchronization

Selection
  —

F3=Exit   F5=Refresh      F10=Display job log   F12=Cancel
F15=Migration information  F16=Migration status  F17=Migration jobs

```

Start final data synchronization

Migration stage: DATA SYNCHRONIZATION System: AP0P73
Phase: SYNCHRONIZING

Select one of the following:

1. Start automated save on source node
2. Start manual save on source node
3. Complete manual save on source node

10. Start automated restore on copy node
11. Complete manual restore on copy node

20. Start final synchronization
21. Complete final synchronization
22. Cancel final synchronization

Selection

20

F3=Exit F5=Refresh F10=Display job log F12=Cancel
F15=Migration information F16=Migration status F17=Migration jobs

WRKMIGSTS - Migration information for Migration Manager



Display Migration Information		Display 1 of 4
Source node state	: ACTIVE	
Copy node state	: MIGRATING	
Source node	: APOP43	
Copy node	: APOP44	
Primary node	: APOP43	
Entry type	: MIGRATION MANAGER	
Migration stage	: DATA SYNCHRONIZATION	
Migration phase	: PAUSED	
Pending migration phase	: NONE	
Migration interval count	: 3	
Qualified job name	: 458514/QSYS/QMRDBECTLR	
Migration phase detail	: INACTIVE	
Migration detail info	: 1304	
Migration detail info text	: Synchronization paused	
F3=Exit F5=Refresh F12=Cancel F16=Migration status F17=Migration jobs		
F22=Display entire field		

Complete migration

IBM i Migrate While Active

Step 1
Configure migration settings

✓

Step 2
System migration

✓

Step 3
Continuous data synchronization

✓

Step 4
Final data synchronization

✓

Step 5
Complete migration

Step 6
Exit migration

Complete migration

Please review ineligible objects and check for errors that were encountered.

[View Data](#)

Complete the cutover to the copy node

Launch

If you want to cancel out of the cutover stage and return to continuous data synchronization, execute option 22 from the WRKMIGSTS CL command.

OK

Exit migration

IBM i Migrate While Active

Step 1
Configure migration settings

Step 2
System migration

Step 3
Continuous data synchronization

Step 4
Final data synchronization

Step 5
Complete migration

Step 6
Exit migration

Exit migration

After completion of the final synchronization and swap, the copy node is ready to be used.

Before moving ahead with use of the copy node, consider running your system backup procedure on the copy node. The instructions for a traditional system backup follow.

Note: It is recommended that you have two copies of the backup media.

To save the entire system, use option 21 of the GO SAVE command. For more information about the GO SAVE command, see Overview of the GO SAVE command. The following options are recommended:

- Vary off the network server...*ALL

- Unmount file systems.....Y

- Spooled file data*ALL

APOP21
APOP22

Delete Db2 Mirror configuration information on the nodes including any tracking lists and logs associated with the IBM i Migrate While Active.

Launch

OK

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MIGRATION_NETWORK_BANDWIDTH table function

The MIGRATION_NETWORK_BANDWIDTH table function measures bandwidth between the source and copy nodes for IBM i Migrate While Active.

This table function creates sample objects and uses save and restore technology to send data to the copy node.

The transmission performance details are captured and used to calculate the speed of the available bandwidth.

The result values can be different each time the function is invoked.

The results are saved in a table named QSYS2.NETWORK_BANDWIDTH_RESULTS, with a system name of NET_BAND.

Example :

Check the bandwidth to the copy node. Take the measurement 5 times for calculating the values.

```
SELECT * FROM TABLE(QSYS2.MIGRATION_NETWORK_BANDWIDTH(5));
```

The time estimator

Another best practice is to use the final data synchronization time estimator. The time estimator reviews the number and sizes of the remaining entries on the tracking lists, conducts a trial performance evaluation of communication speed, and produces a time estimate.

The Migrate While Active user can refresh the time estimate at any point, as long as the MIRROR_DATABASE network redundancy group (NRG) is active.

The Db2 Mirror GUI includes a feature to calculate and show the final synchronization time estimation.

The estimate can also be returned by using the QSYS2.ESTIMATE_FINAL_SYNCHRONIZATION_TIME table function.

The following query can be used :

```
--
-- Estimate the time it will take to complete
-- the final synchronization of the remaining changed objects
--
SELECT * FROM TABLE (QSYS2.ESTIMATE_FINAL_SYNCHRONIZATION_TIME( ) );
```

TRACKING_LIST	OBJECT_COUNT	DATA_SIZE	ESTIMATED_TRANSFER_TIME	ESTIMATED_OVERHEAD_TIME	ESTIMATED_TOTAL_TIME
OBJECT TRACKING LIST	110	10121.59	15.63	0.00	15.63
LIBRARY TRACKING LIST	452	443.89	0.68	0.00	0.68
IFS TRACKING LIST	5163	79.10	0.05	166.55	166.60

ESTIMATE_FINAL_SYNCHRONIZATION_TIME table function

2/

Table 1. ESTIMATE_FINAL_SYNCHRONIZATION_TIME table function

Column Name	Data Type	Description
TRACKING_LIST	VARCHAR(21)	OBJECT TRACKING LIST This row corresponds to all the library-based objects that need to be synchronized as described in the Db2 Mirror object tracking list (OTL).
		IFS TRACKING LIST This row corresponds to all the IFS objects that need to be migrated as described in the integrated file system tracking list (ITL).
		LIBRARY TRACKING LIST This row corresponds to all the library-based objects that need to be migrated as described in the library tracking list (LTL).
OBJECT_COUNT	BIGINT	The number of objects that need to be synchronized to the copy node.
DATA_SIZE	DECIMAL(15,2)	The total size of objects that need to be synchronized, in megabytes.
ESTIMATED_TRANSFER_TIME	DECIMAL(15,2)	The estimated time required to transmit unsynchronized objects from the source node to the copy node, in minutes.
ESTIMATED_OVERHEAD_TIME	DECIMAL(15,2)	The estimated additional processing time, such as the save and restore overhead, required to transmit unsynchronized objects from the source node to the copy node, in minutes.
ESTIMATED_TOTAL_TIME	DECIMAL(15,2)	The total estimated time required to perform synchronization, in minutes.

There are several Db2 Mirror services that return information relevant to IBM i Migrate While Active :

- CHANGE_MIRROR procedure
- MIRROR_COMPARE_LIBRARY procedure
- MIRROR_COMPARE_NODE procedure
- MIRROR_COMPARE_OBJECT table function
- MIRROR_FLIGHT_RECORDER_INFO view
- MIRROR_INFO view
- RESYNC_STATUS view
- SET_MIRROR_FLIGHT_RECORDER_INFO procedure

IBM i Migrate While Active Recap



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