

IBM API Connect – Moving from v5 to v10

Updated: Sept 2021



Table of Contents

1. Migration Planning
2. Migration Overview
 - Simple Migrations
 - Advanced Migrations
3. Detailed Migration Steps & Checklists
4. Additional resources

API Connect v10 delivers significant value over previous releases

		v5	v2018	v10
Deliver new innovation	• Multi-form API Management now including GraphQL support with schema import and inspection, governance policies, and portal socialization			✓
	• API test case generation and integration to CI/CD pipeline			✓
	• Next generation interactive API Debugger with policy tracing and performance analysis			✓
	• Enterprise secure and cloud native install experience on Kubernetes		✓	✓
Standards	• Stronger security to protect your APIs through TLS 1.3			✓
	• Build new APIs with the latest Open API 3.0 standard			✓
Greatly improved gateway performance	• Up to 10x better gateway performance when using the Native API Gateway		✓	✓
	• Up to 7x better performance even when using new emulation features to simplify upgrade			✓
Delivers more value	• Consistent user experience across Cloud Pak for Integration and IBM Product Portfolio			✓
	• Governance for universal policy enforcement through Global Policy pre-flow actions			✓
	• Automate Portal customizations, promotion with integrations in your DevOps			✓
	• Dynamic scale out of key API management components as cloud native technology helps automate scale and operations			✓
More value in our platform	• Event endpoint management: Socialize more types of endpoints consistently, now including Kafka Topics leveraging AsyncAPI in API dev portals easily discover & consume			V10 on CP4I 2021.x
	• Automated API Testing with AI helps automate creation of tests to improve coverage			

While providing choice & flexibility in deploying v10



IBM Cloud Pak for Integration

Consume API Management integration capabilities in a unified integration platform, on OpenShift anywhere



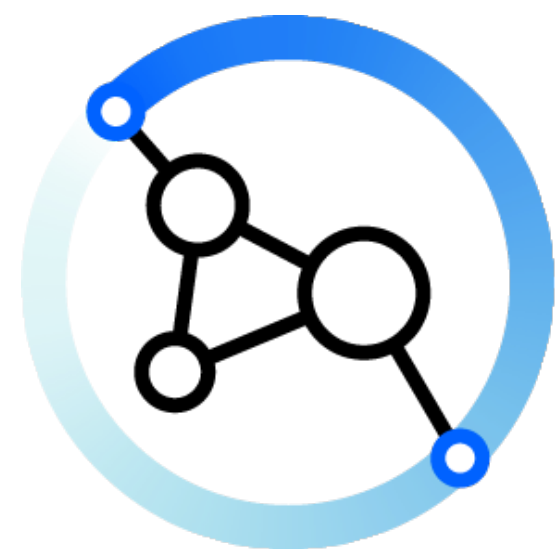
IBM API Connect

Deployable on-prem or any cloud, bring your own OpenShift, any K8s or OVAs on VMware



IBM Cloud

API Connect Reserved Instance is a managed single tenant instance with ability to add on-premise gateways



IBM API Connect v5 end of support: Helping you succeed

v5.x Lifecycle

GA: 2016

EOS: April 30, 2022

Life: 6 years

Extended support:
Through Dec 31, 2022

Important Facts

Only 7 months left until the EOS date !!! You should be already planning / upgrading

v10 is the destination: Move as early as practical to realize new innovation only in v10

Resources Available

Learn: [Upgrade Central](#) connects you to resources

Plan: Step-by-step guidance available

Move to v10 via AMU tool to any destination

Temporary use: Policy for migration available

Connect and Engage

Engage with us in a user community over 1900 members strong, create discussions, Q&A <https://ibm.biz/apic-community>

Connect with your IBM sales team for options to accelerate projects

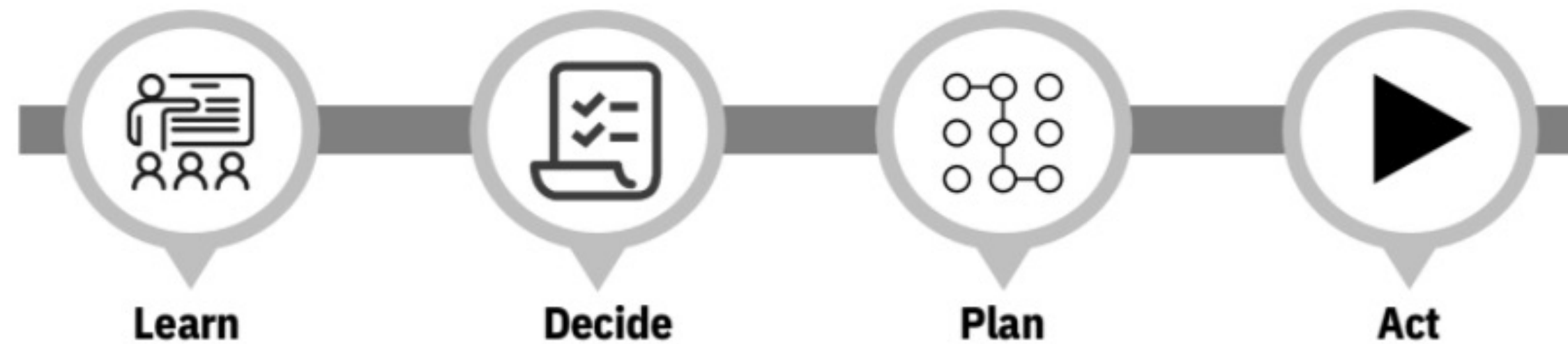
Leverage IBM Support always available

New destination to learn and plan for your move to v10

<https://ibm.biz/apic-upgrade-central>



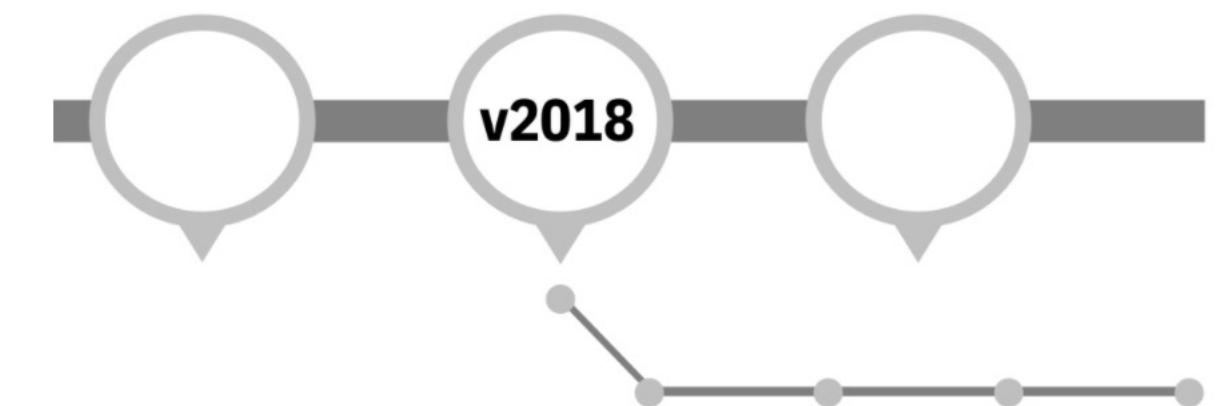
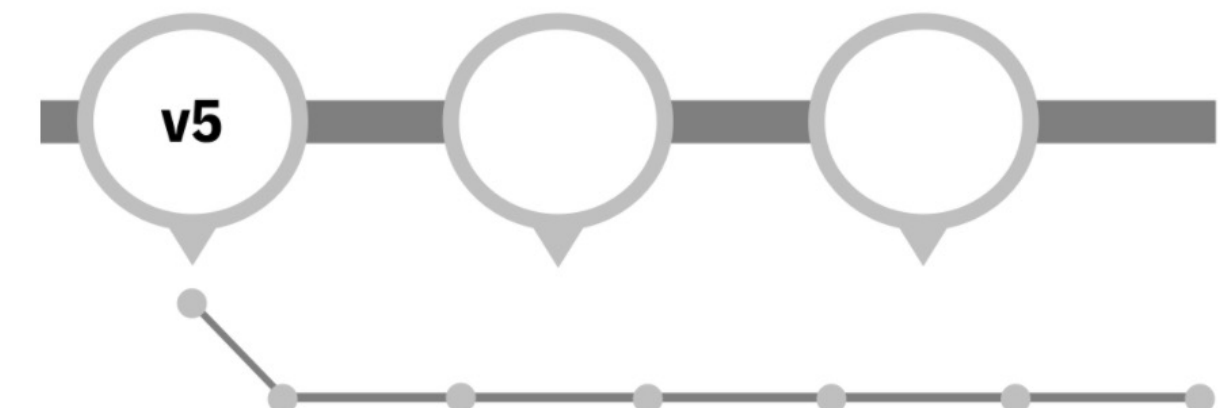
Moving between major versions of software requires the following steps:



Learn about v10, choices and considerations when moving

Make **decisions** and create a **plan** specific to your current release

Act: Execute your plan and complete your move



Resources and tools for each unique path are provided to help complete your move

Table of Contents

1. Migration Planning

2. Migration Overview

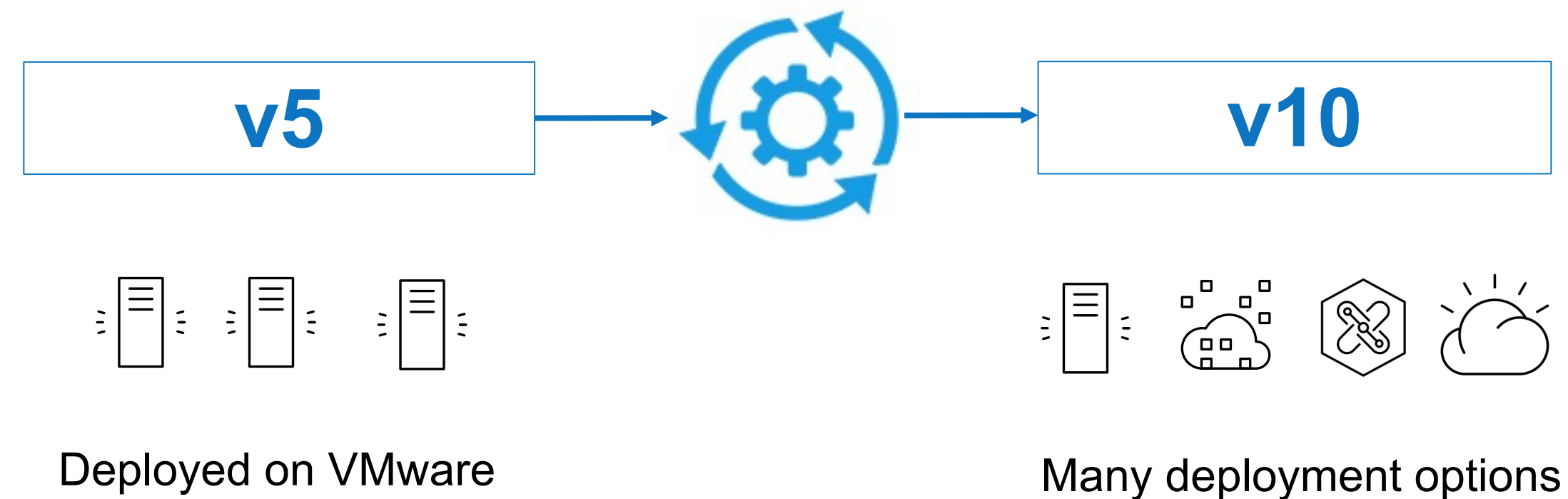
- Simple Migrations
- Advanced Migrations

3. Detailed Migration Steps & Checklists

4. Additional resources

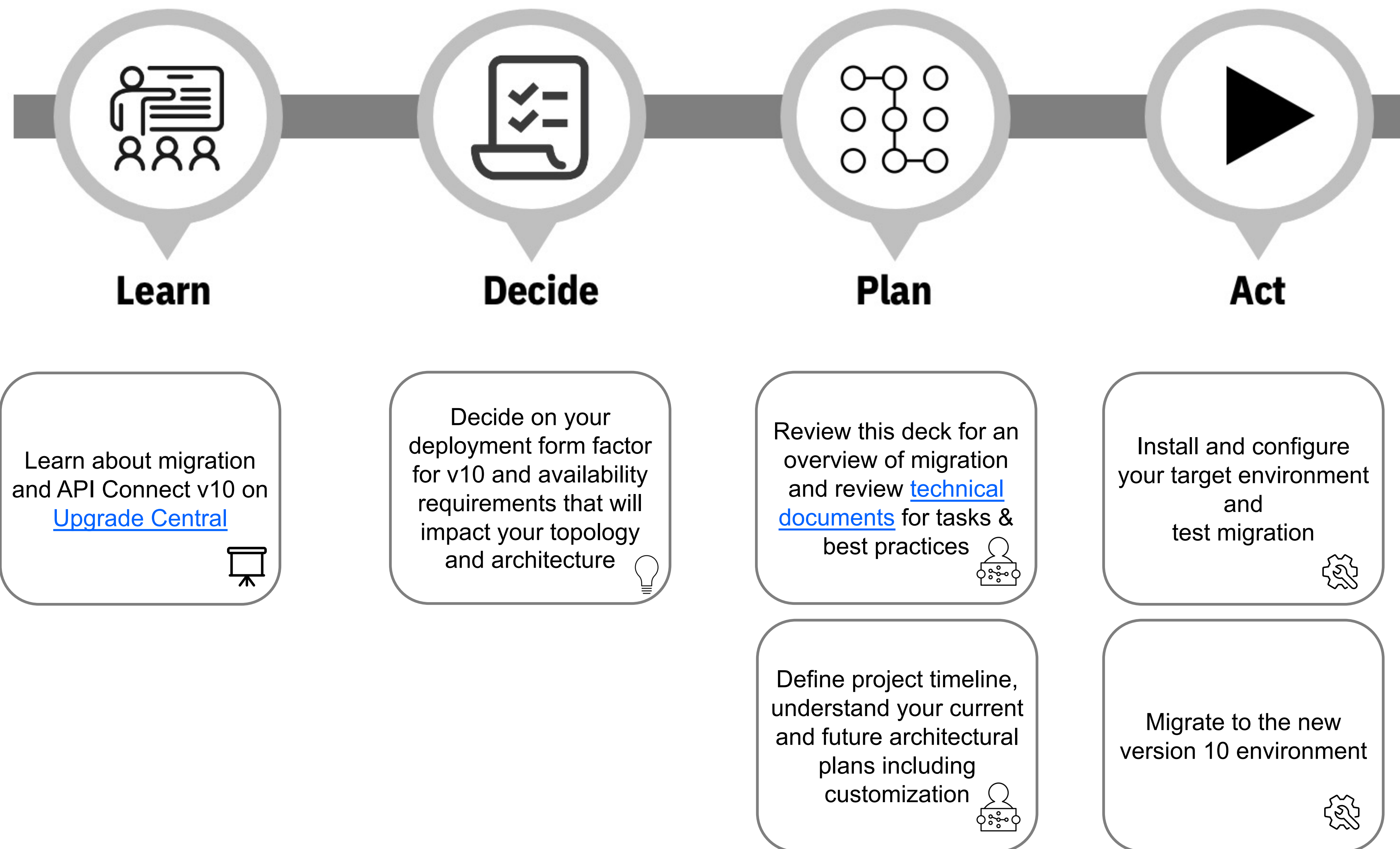
Moving from v5 to v10 is a version migration

*Data is **migrated**
from v5 to v10 with tooling*



*Move directly with the
API Connect Migration Utility (AMU) tool*

Phases of migration planning include...



Planning examples

Decision points

- Location: On-premise, cloud deployment, or a hybrid deployment
- Deployment form factor: VMware OVAs, OpenShift Container Platform, or other Kubernetes platforms (see below)
- Topology: Based on your availability requirements and assess licenses required for chosen topology (see below)
- Gateway service: native API Gateway Service or v5c Gateway Service (see below)
- Licensing: Consider upgrading to different product offerings with increased value or different cost models such as OpEx (see below)
- Timeframe: Which may generate the need for a migration waiver: See details on the resources page
- Migrate yourself or leverage services: Services augment skills for migration planning and execution, see details on the resource page

Table of Contents

1. Migration Planning

2. Migration Overview

- Simple Migrations
- Advanced Migrations

3. Detailed Migration Steps & Checklists

4. Additional resources

What is and What is not Migrated

Full Auto Migration

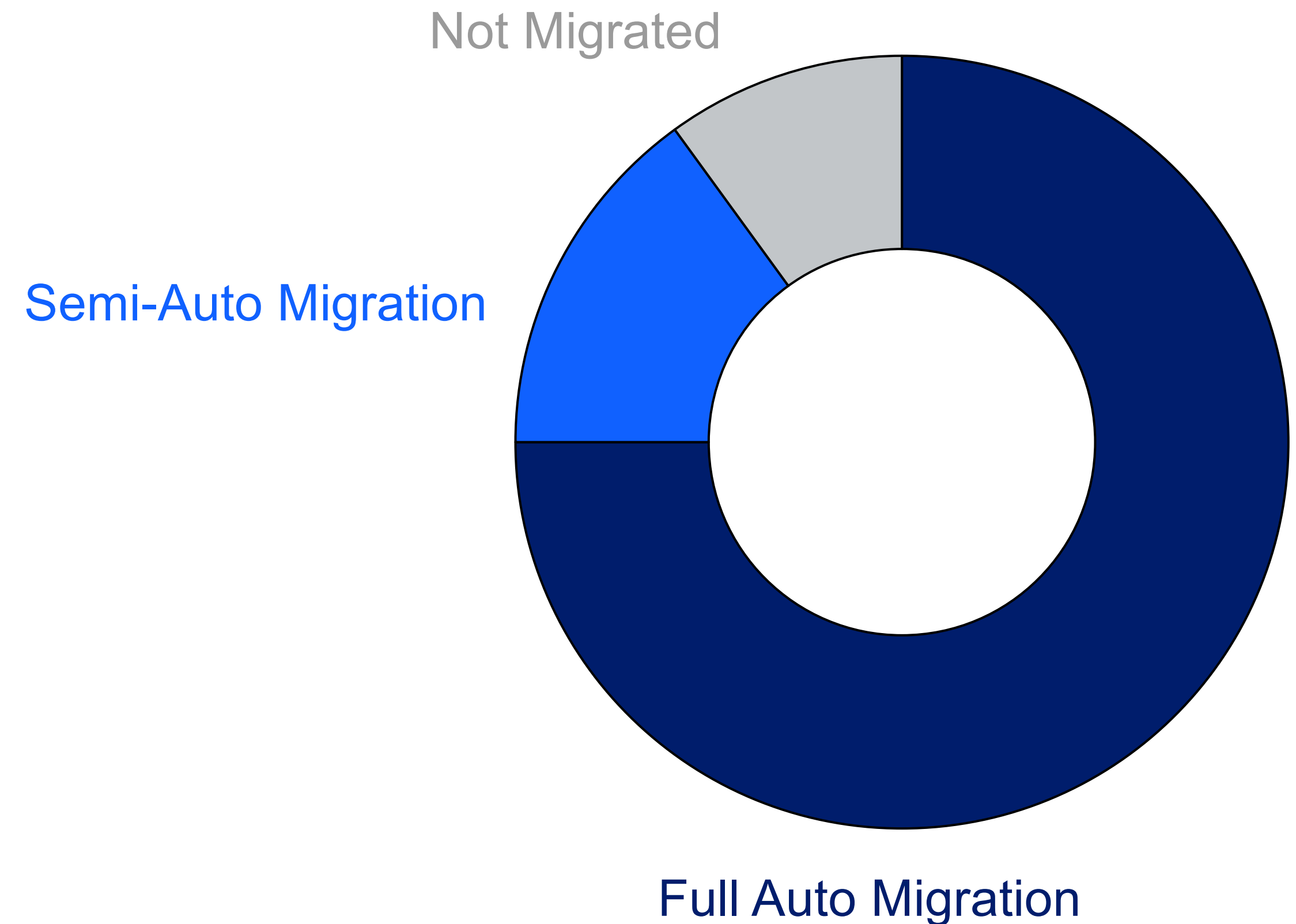
Provider Organization artifacts including APIs, Products, Catalogs, Consumers, subscriptions, custom policies, gateway extensions, etc.

Semi-Auto Migration

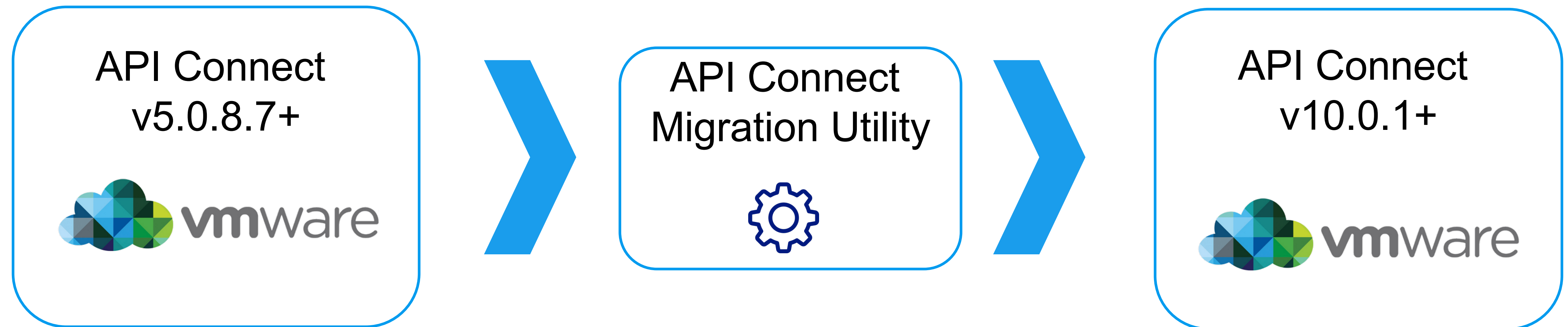
Customization like PDUR and portal customizations, etc.

Not Migrated

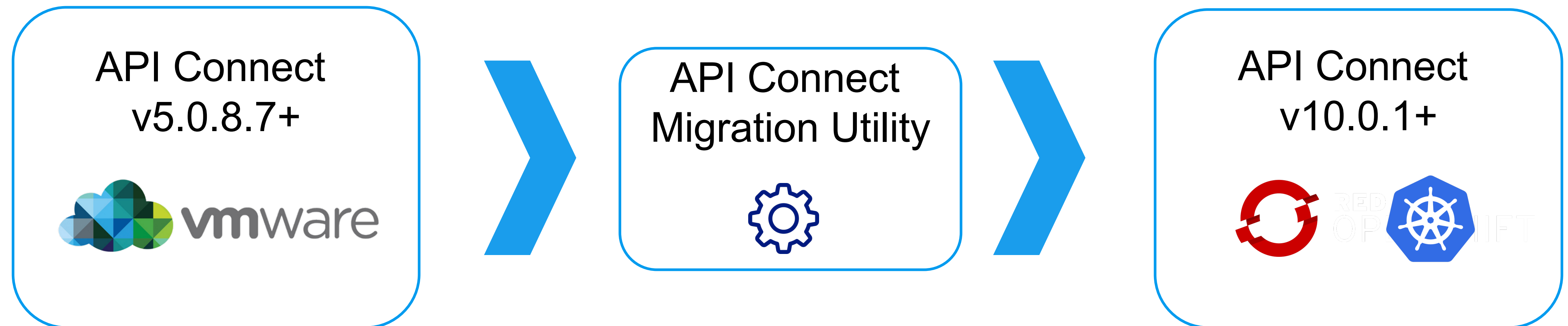
Infrastructure configuration such as server definitions, analytics data, transient data such as invitations etc.



Overview: VMware OVA to VMware OVA

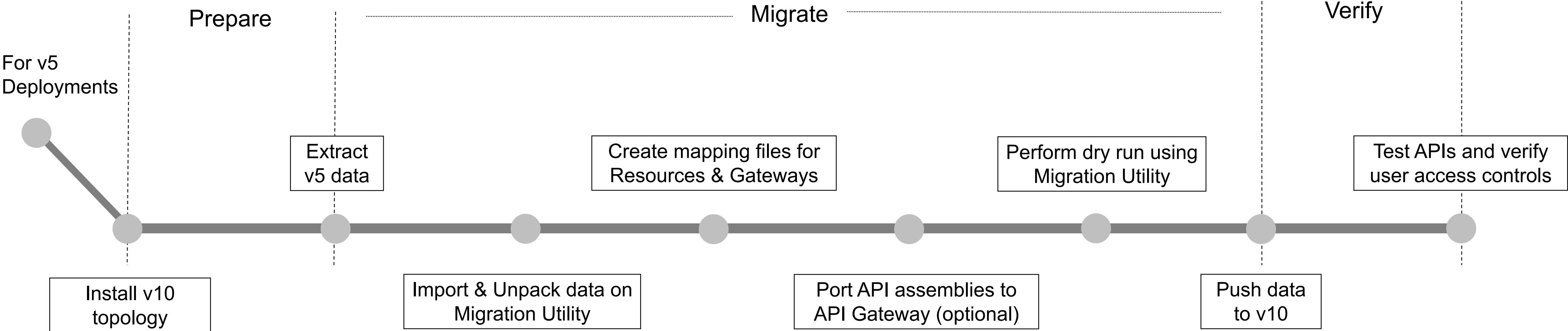


Overview: VMware OVA to OpenShift or other K8s platforms



You can move from v5 on VMware OVA to v10 on OpenShift 4.x or other K8s platforms using the API Connect Migration Utility (AMU)

Version migration process summary



Best Practices for Incremental Migrations

- Migration process allows you to migrate as much or as little content as required
- Migrate data over iteratively (e.g. by provider organization, catalog, application area, etc.)
- Push data iteratively as many times as needed
- Content already present will not be overwritten

Simple vs Advanced Migration Paths

	<i>Simple, Quicker</i>	<i>Advanced</i>
Recommended for...	Where ease of migration is most important	Where API call performance (throughput, latency, etc.) is most important
Selected gateway runtime	v5-compatible gateway service	v10 API gateway service
Performance	Performance improvement of ~5-15%	Significant performance improvement ~5x-10x
Process	Entirely handled by AMU, no development required	Porting steps and additional development required to use new capabilities
API source migration	No modifications required	Some modification of existing API assemblies required
Policies	Full coverage of legacy policies	Some differences in supported policies

Table of Contents

1. Migration Planning
2. Migration Overview
 - Simple Migrations
 - Advanced Migrations
3. Detailed Migration Steps & Checklists
4. Additional resources

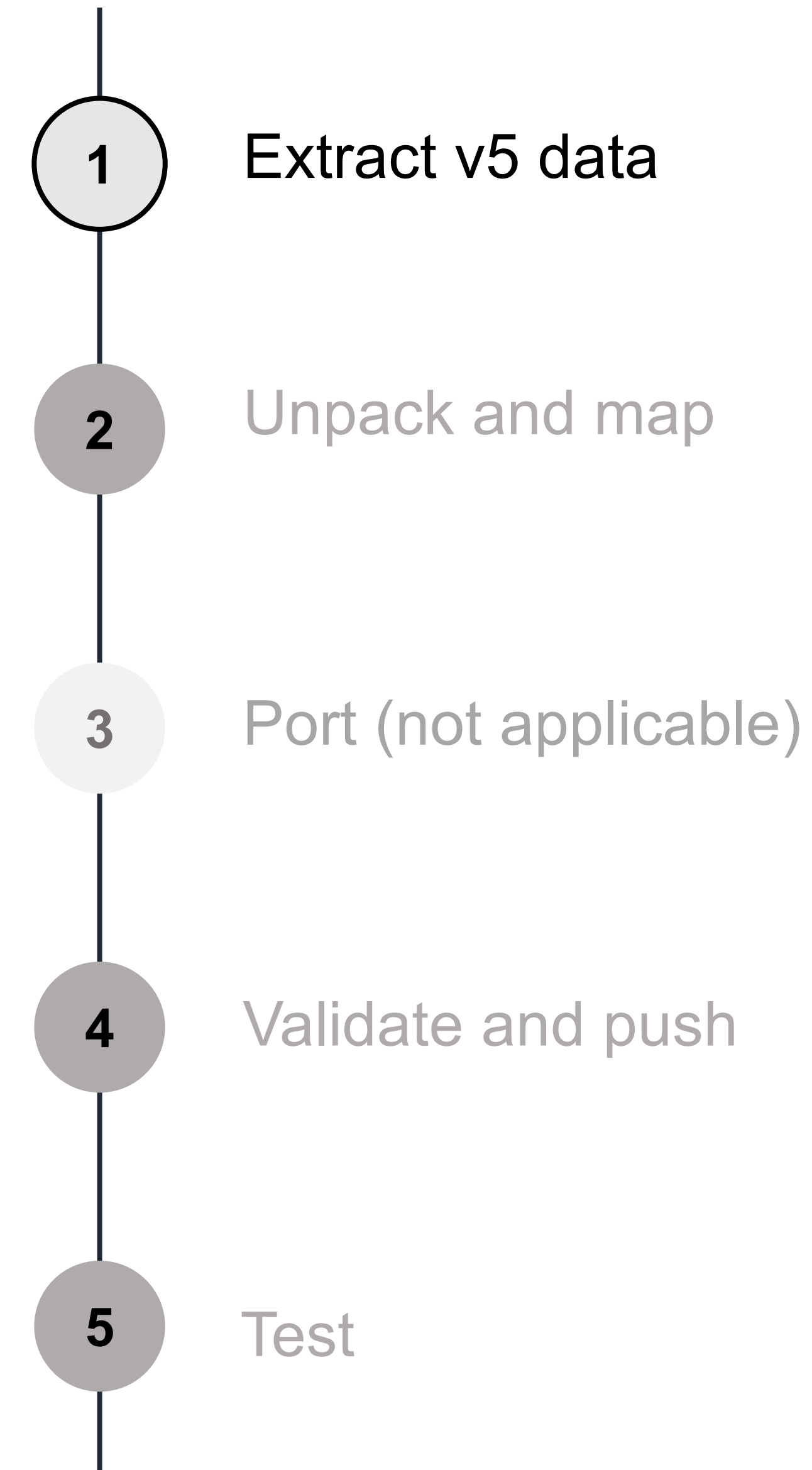
The simpler, quicker path to migration

- Recommended for scenarios where ease of migration is top priority
- Takes advantage of v5 compatibility built into gateway service
- ~5-15% performance improvement over v5
- No modifications to existing API assemblies required

Simple Migration Step 1: Extract v5 data

Extract v5 configuration on v5.0.8.7+ including APIs/Products etc. using the *dbextract* command on the enhanced v5 CLI

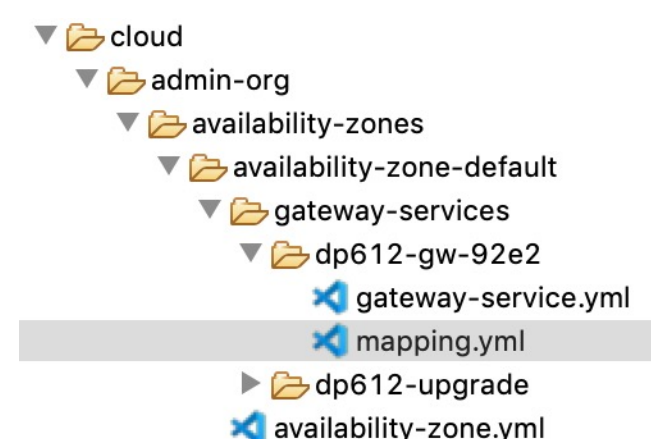
If using Portal Delegated User Registry (PDUR), use the *pdur_user_export* command on the Developer Portal CLI to export data



Simple Migration Step 2: Unpack and Map

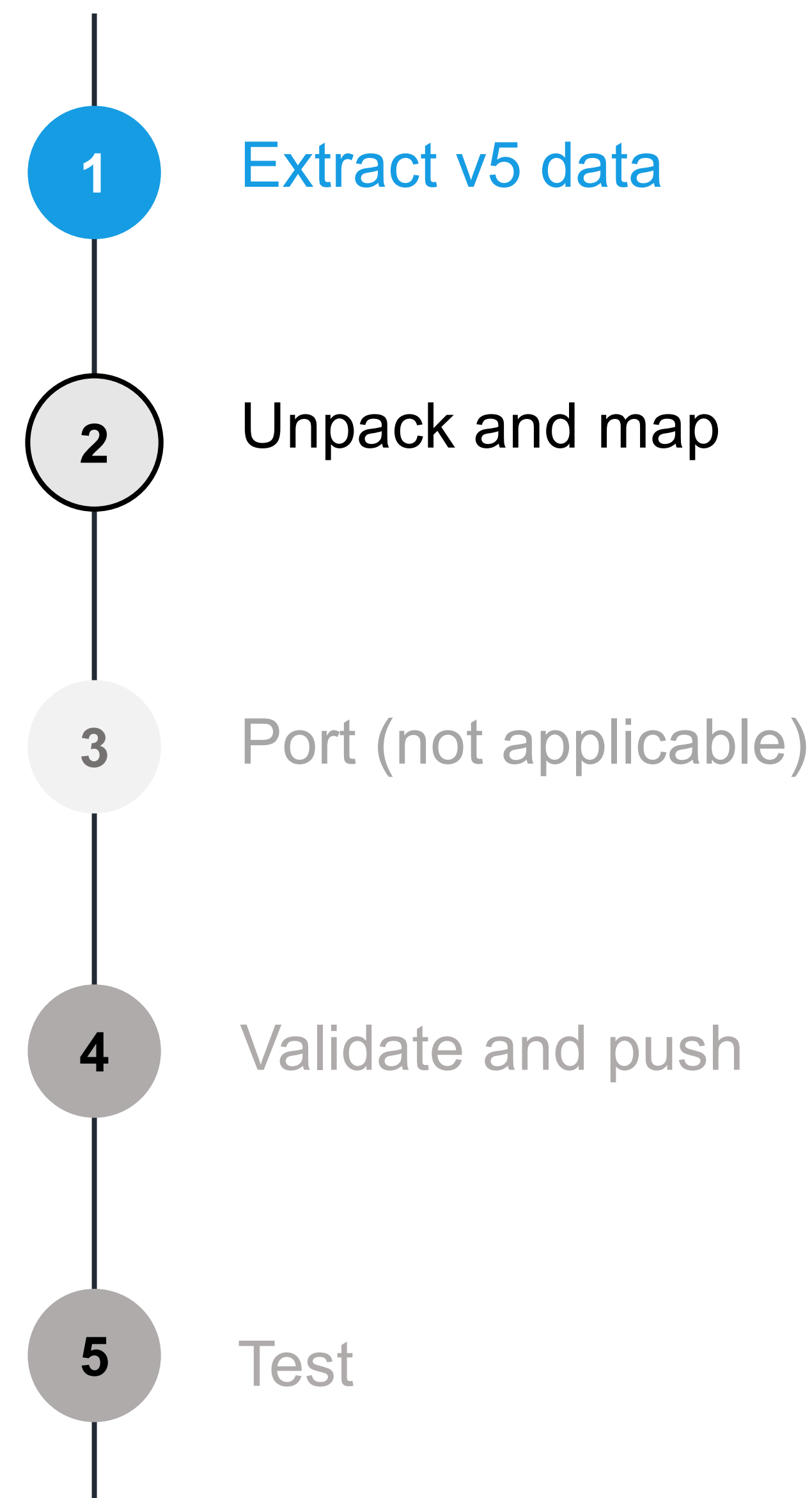
Import and unpack the backup to human-readable YAML files using *archive:unpack* command in AMU

Specify which gateway service from v5 should be mapped to which gateway service on v10



```
gateway-service:
  name: myv5c-gateway
```

Flexibility to map to new resources to reflect any changes on V10 setup topology through mapping files, if desired

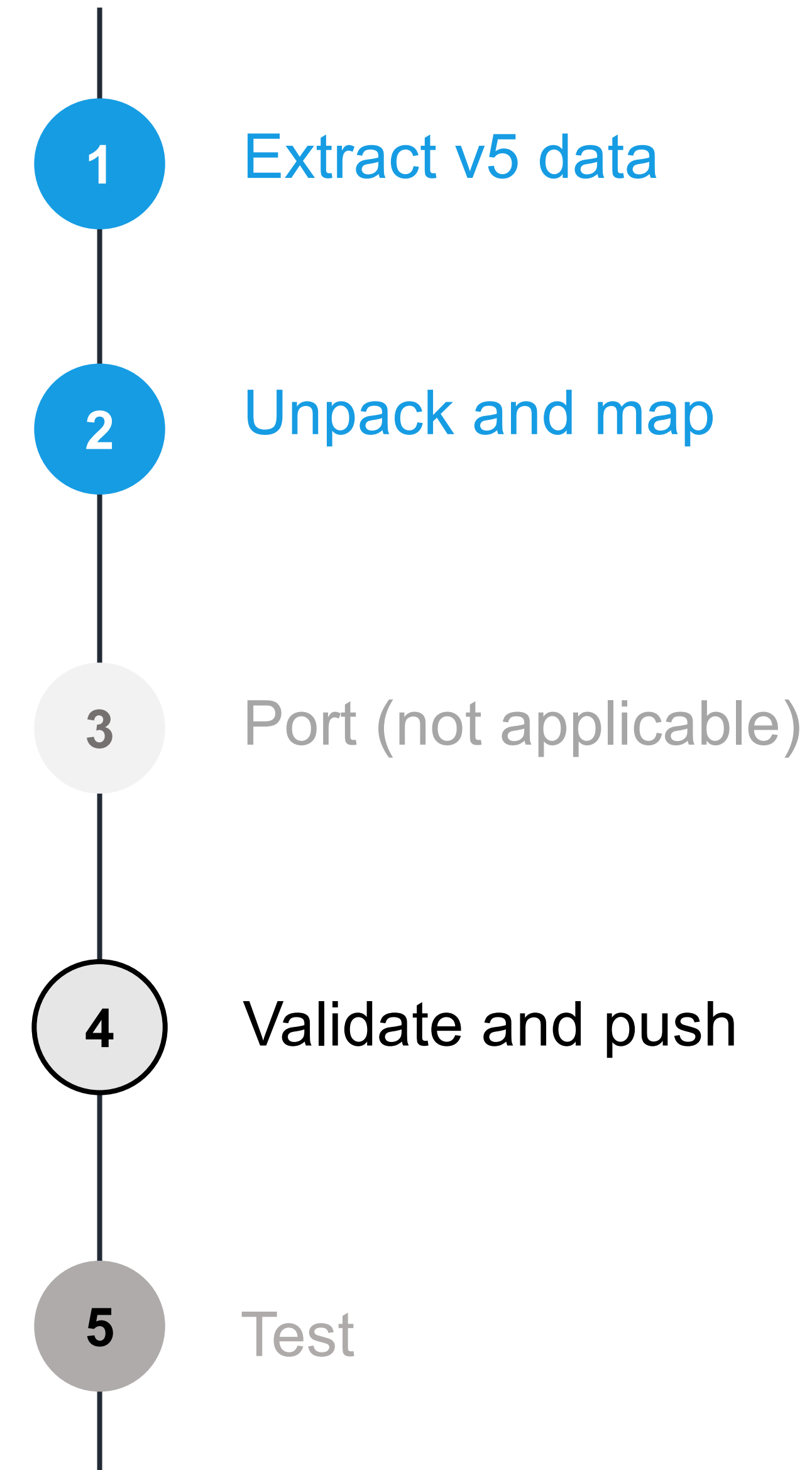


Simple Migration Step 4: Validate and Push

Validate the mapping and prerequisites using AMU

Simulate a migration with *dry-run* AMU command

Move the APIs and configuration to v10 using the *push* command on the AMU to complete migration



Simple Migration Step 5: Test

Test the API endpoints to ensure successful migration

Verify user access, on-boarding, etc

Reference the v5 to v10 Migration Runbook Section 4 for verification and testing tips

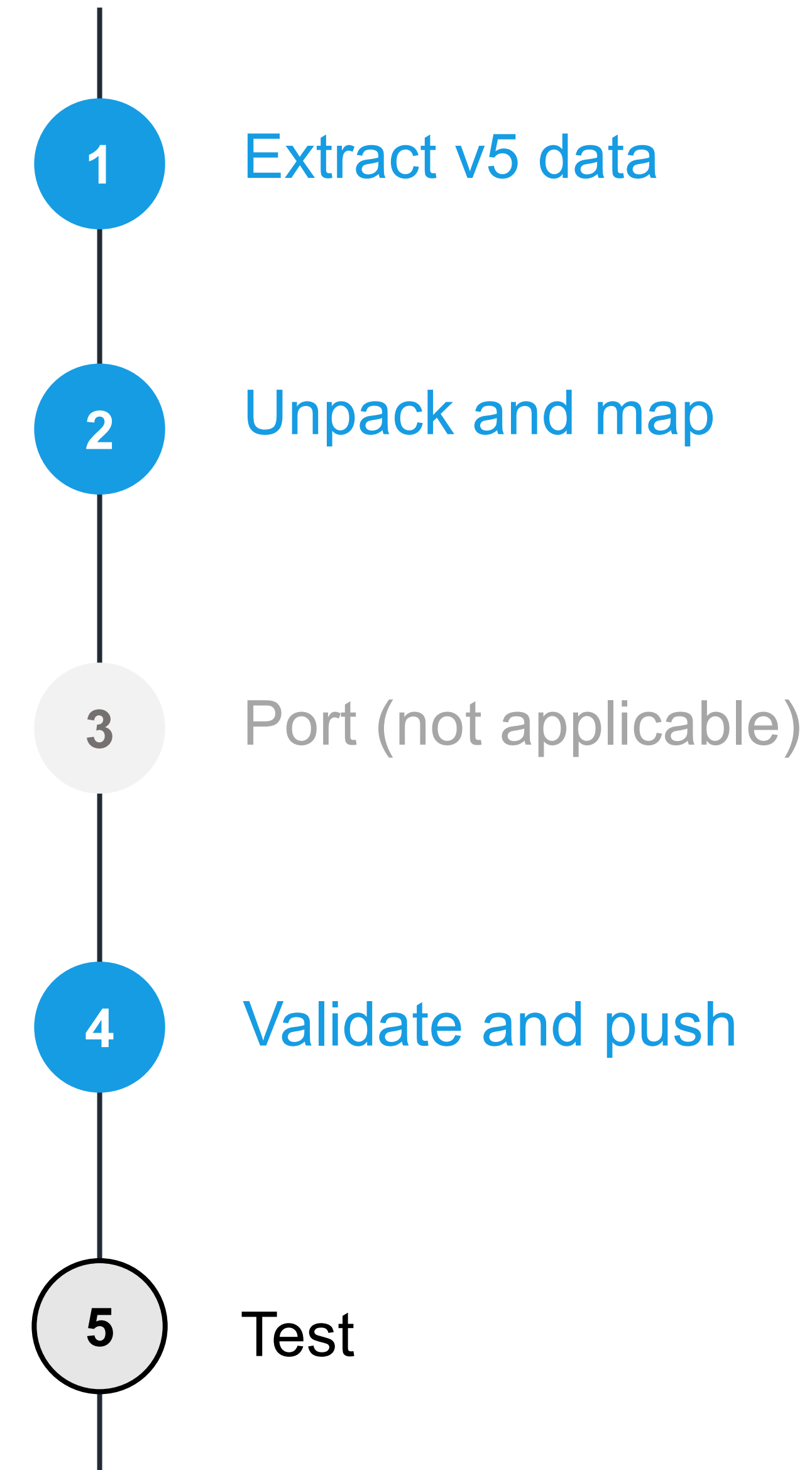


Table of Contents

1. Migration Planning
2. Migration Overview
 - Simple Migrations
 - Advanced Migrations
3. Detailed Migration Steps & Checklists
4. Additional resources

Advanced migration path

- **Recommended for scenarios where performance increase is critical**
- **Takes advantage of new gateway technology** for larger workloads
- **Porting step required**, involves manual work
- **Development required**, but tooling will assist

Convert API assemblies to new gateway format

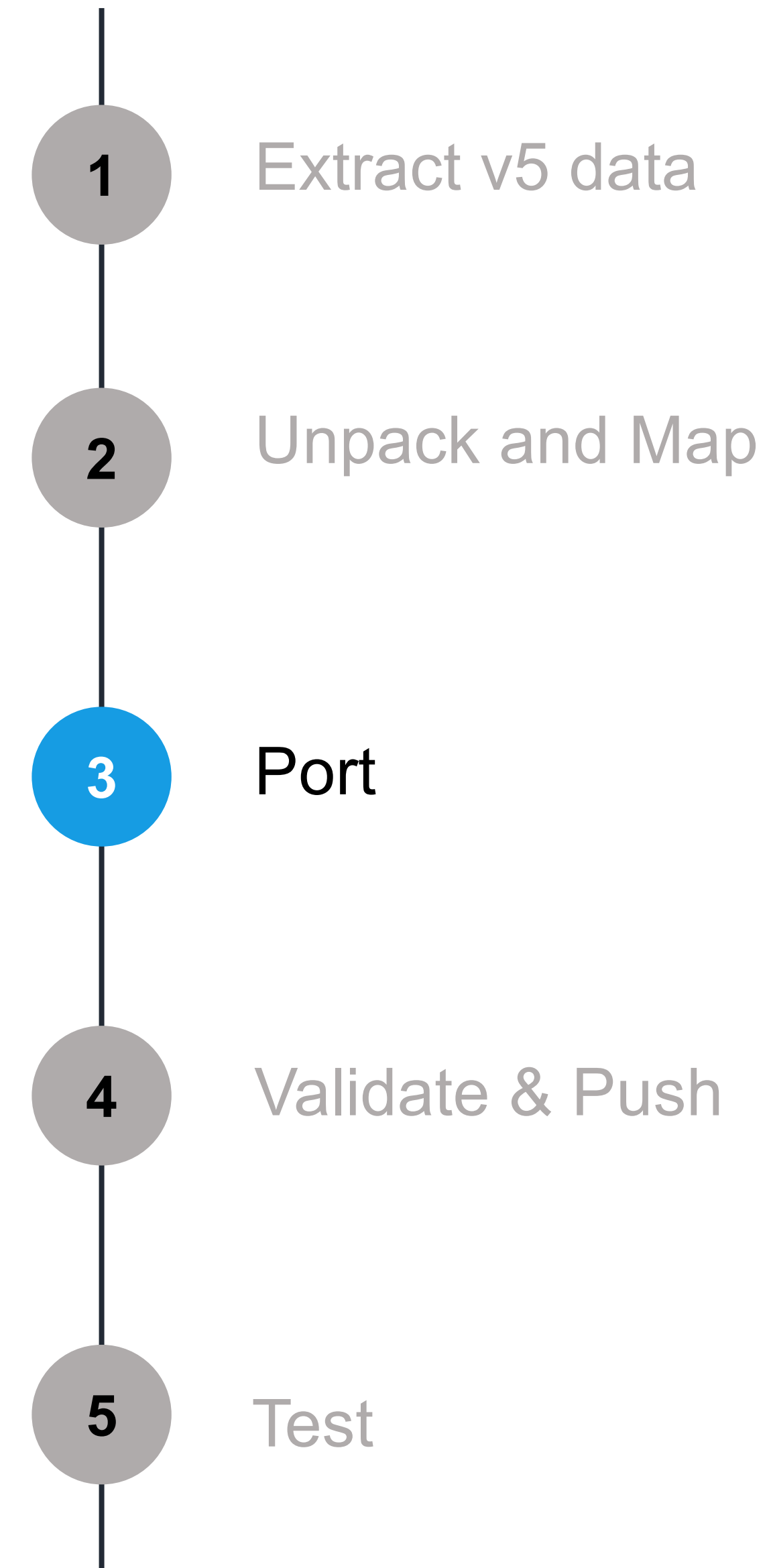
All other steps are identical as in Simple Migration Path

Run porting command *port-to-apigw*

Will reshape API assembly content to take advantage of new gateway features

Updates to assembly code may be required (e.g. gatewayscript code within policies)

Reference [documentation](#) for further guidance on how to update

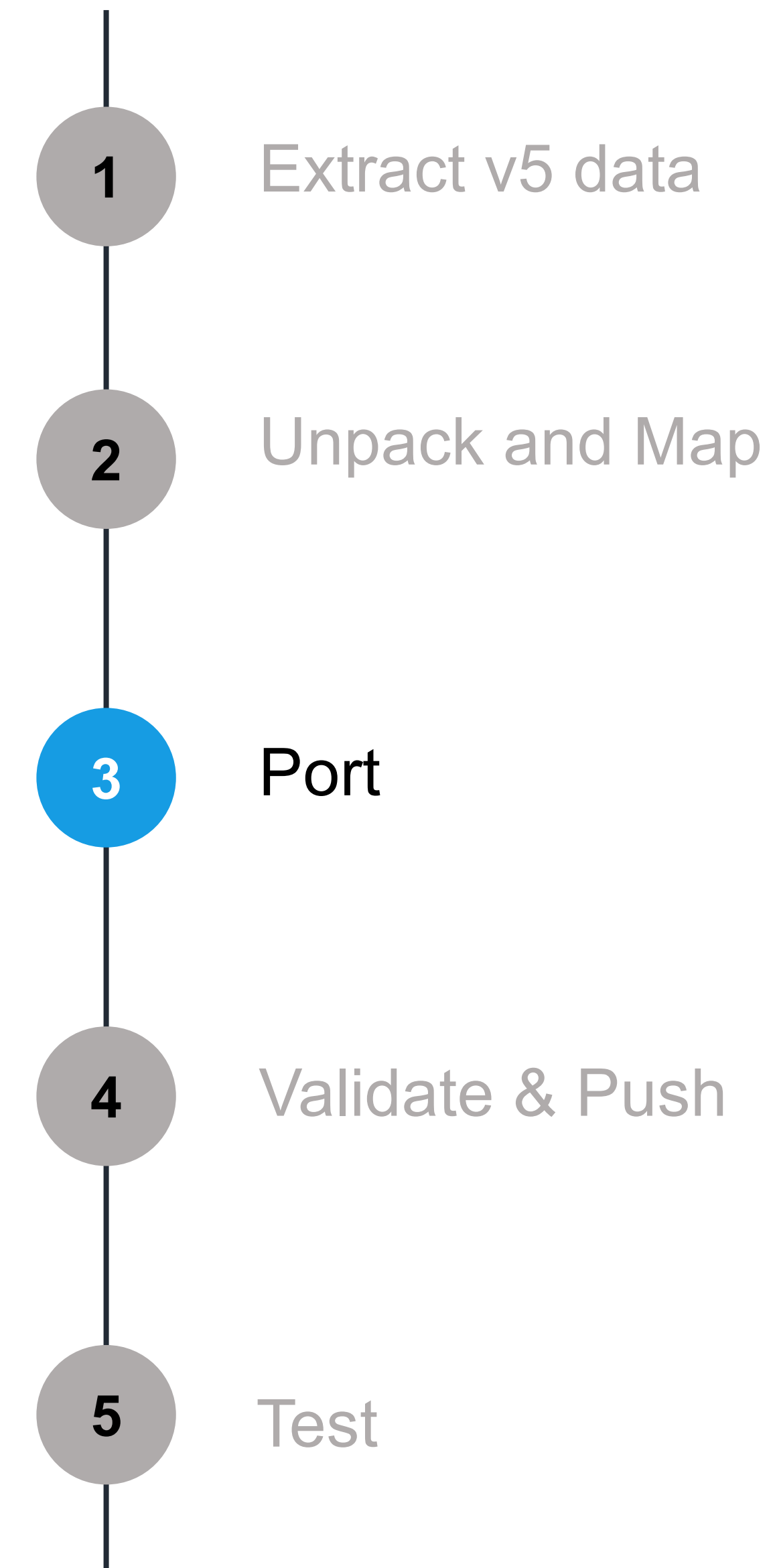


Additional Porting Options

- Several command line options supported for this command

Flags:

```
--deploy-policies strings
--enable-api-logging
-h, --help
--invoke-policy string
--no-rename
--optimize-gws
--proxy-policy string
--saveDebugLog string[="default"]
--saveErrorLog string[="default"]
--saveInfoLog string[="default"]
--use-config-file
```



Migration-Related Enhancements in v10 API Gateway Service

Reduce manual changes required to port v5 API assemblies

- ✓ **Policy Emulation** framework
- ✓ Enhanced **gateway extensions** support
- ✓ Enhanced **user-defined policies** support
- ✓ Support for **legacy 1.x policies**
- ✓ Enhanced **compatibility layer** for Gatewayscript policies
- ✓ Support for **flexible preflow** policies

Simple vs Advanced Migration Paths

	<i>Simple, Quicker</i>	<i>Advanced</i>
Recommended for...	Where ease of migration is most important	Where API call performance (throughput, latency, etc.) is most important
Selected gateway runtime	v5-compatible gateway service	v10 API gateway service
Performance	Performance improvement of ~5-15%	Significant performance improvement ~5x-10x
Process	Entirely handled by AMU, no development required	Porting steps and additional development required to use new capabilities
API source migration	No modifications required	Some modification of existing API assemblies required
Policies	Full coverage of legacy policies	Some differences in supported policies

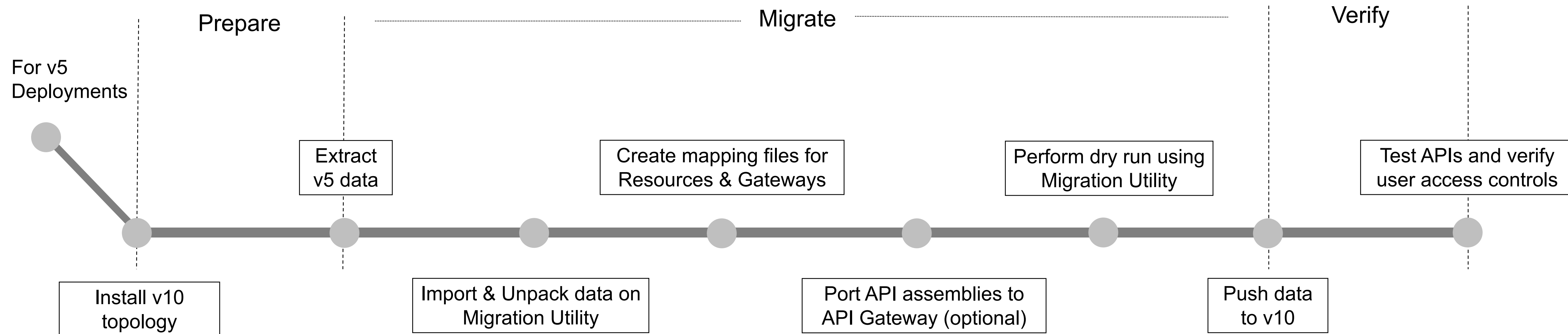
Table of Contents

1. Migration Planning
2. Migration Overview
 - Simple Migrations
 - Advanced Migrations
3. Detailed Migration Steps & Checklists
4. Additional resources

Detailed migration steps and checklists

Purpose of this section: Providing the next level of detail to prepare and execute key decisions for migrations from v5 to v10

Let's revisit: Migration process summary



Downtime considerations

Migration from API Connect v5 to v10 requires two separate API Connect environments to be setup. As such, the v5 environment being replaced can remain up and running while the v10 migration is taking place.

After migration is completed, routing can simply be switched to the new v10 installation without downtime.

Details of how to change this API traffic will depend on your specific networking infrastructure

Deployment decisions

Prior to extracting data from v5, consider what sort of changes you will be making in v10. This can include...

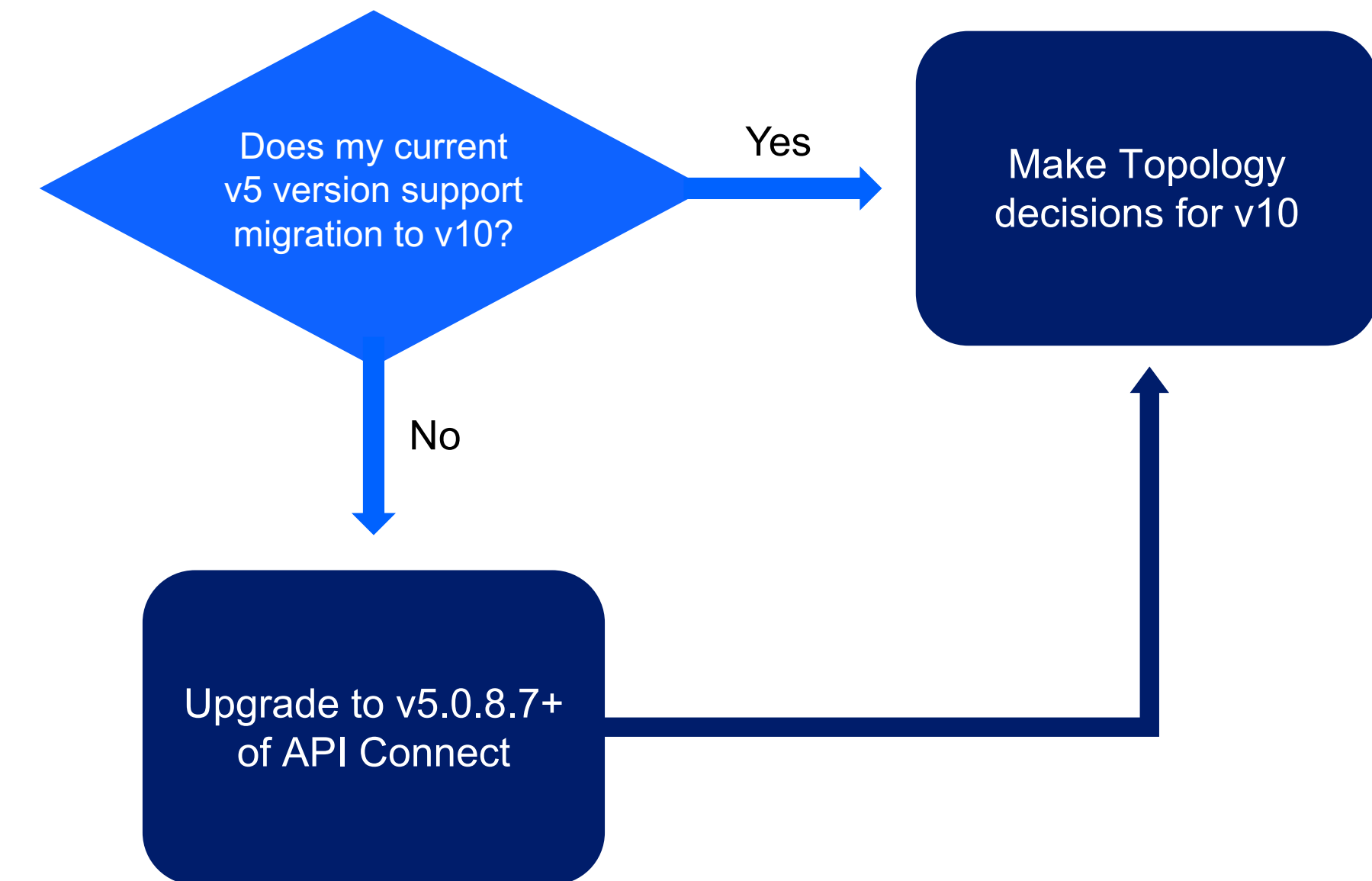
Location: On-premise, cloud deployment, or a hybrid deployment

Deployment form factor: VMware OVAs, OpenShift Container Platform, or other Kubernetes platforms

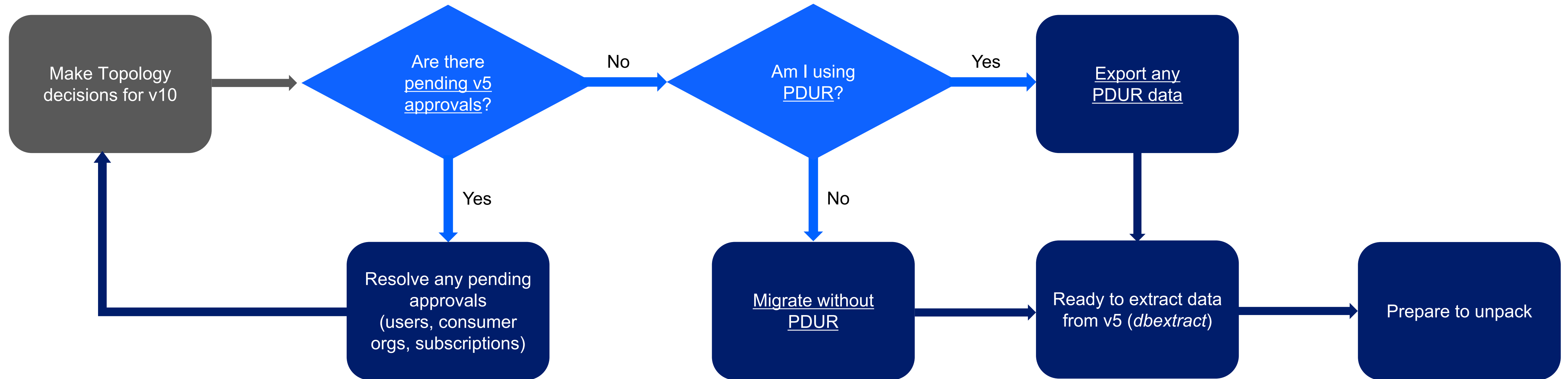
Gateway service: v5c gateway service or v10 API gateway service

Others: See the API Connect Upgrade Central Resource on v10 decision points that need to be made prior to migrating data from v5

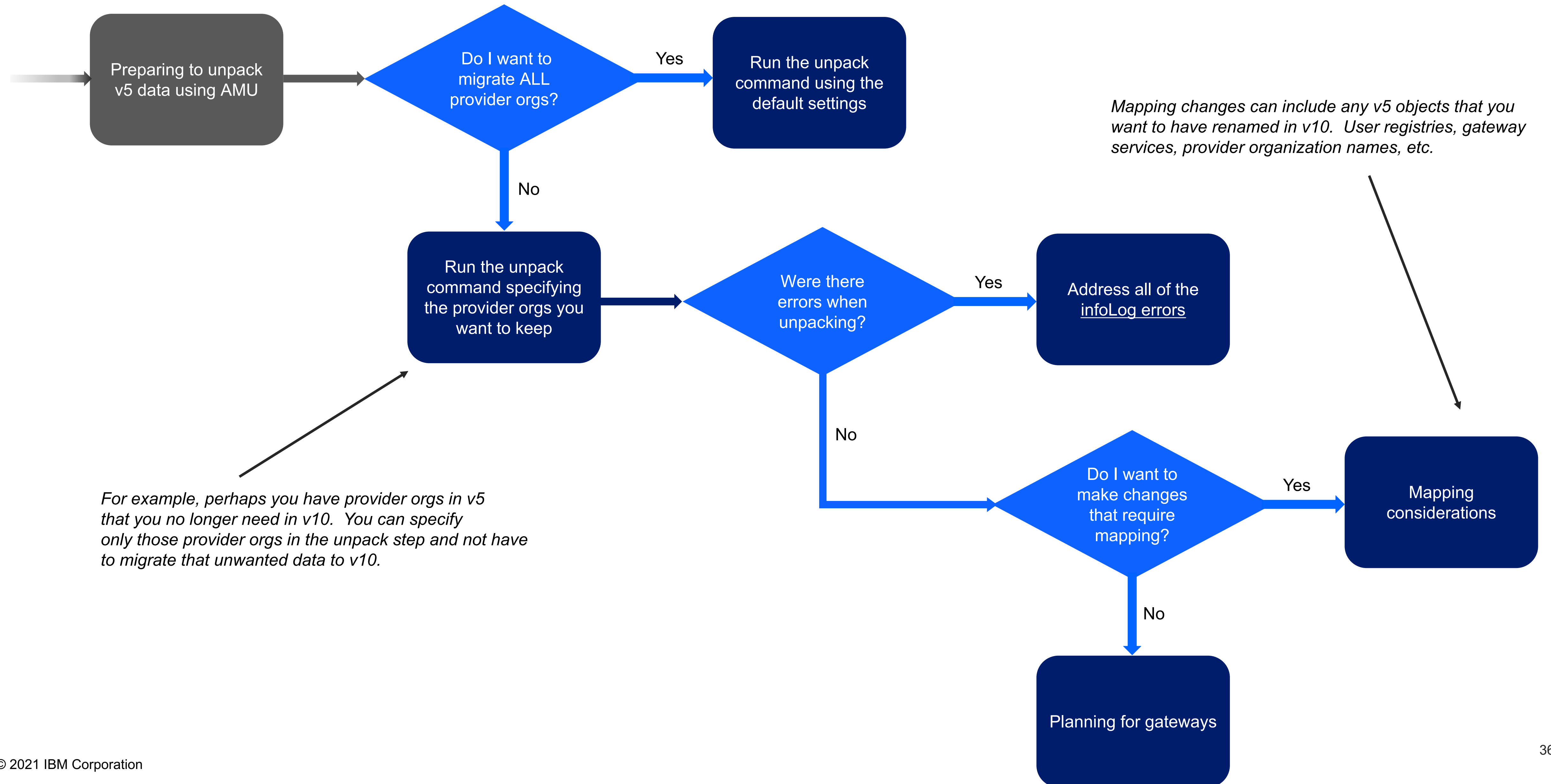
These topology decisions will impact the subsequent migration steps, beginning with preparation to extract the v5 data.



Decisions to make prior to data extraction



Unpacking v5 data



Mapping considerations (Optional)

The migration process allows you to **optionally make modifications to the configuration** information after it has been extracted from the source v5 system and before it is uploaded to the target v10 system. The steps and decisions are heavily dependent on the topology choices you made earlier!

Some structures can be modified before pushing data to v10. For example:

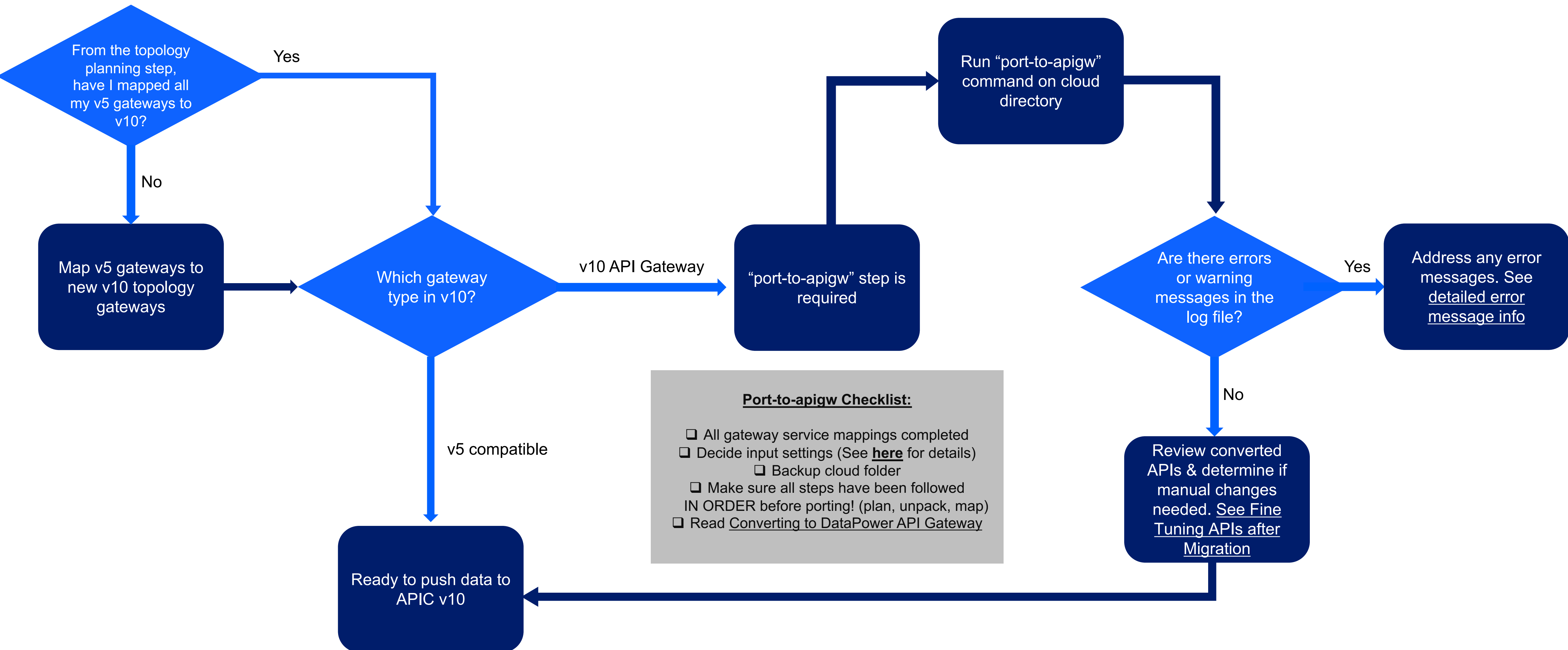
- User registries

- Gateway services (v5c or v10 API Gateway)

- OAuth shared secret keys

For details on mapping files and how they can be used, refer to the [IBM API Connect Knowledge Center](#) article on Migration mapping files

Planning for gateway services



Gateway migration considerations

Custom policies in v10

- v5-compatible (v5c) gateway in v10 will run any custom policy that v5 gateways run
- Custom policies can also be ported to the v10 DataPower API Gateway with some limitations

Gateway extensions in v10

- Gateway extensions are migrated by the AMU. There are limitations for v10 DataPower API Gateway scenarios. For more details, see Migrating Gateway Extensions

Migrating OAuth providers & OAuth secured APIs

- In v5 OAuth Providers are a specialized type of API that are published within products. In v10 OAuth Providers are first class objects that are directly published in the provider organization, **and are not APIs that are published within products.**
- It is possible that you may have some v5 products that only contained OAuth Provider APIs. Since these products do not contain any Open API definitions in v10, they are not published, as all products in v10 must contain at least one Open API definition.
- The AMU migrates all v5 OAuth providers to the new first class OAuth object type for both v5c and API DataPower Gateways.
- The AMU attempts to determine the correct matching OAuth provider for Open API definitions in v10 by calculating the base path and matching the scopes. If multiple OAuth providers match you will need to choose the correct OAuth Provider manually. See Common errors with OAuth Providers for more details.

Pushing data to v10

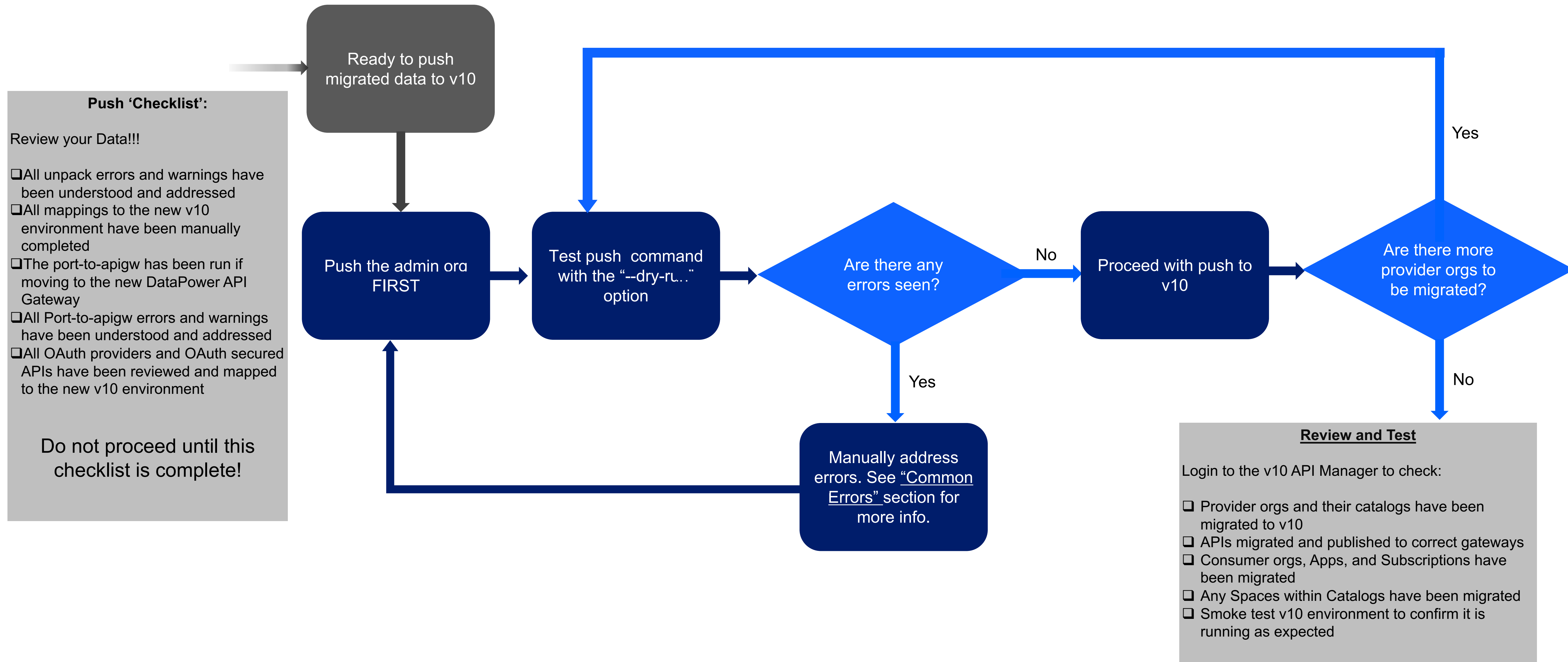


Table of Contents

1. Migration Planning
2. Migration Overview
 - Simple Migrations
 - Advanced Migrations
3. Detailed Migration Steps & Checklists
4. Additional resources

Resources Available

1. Documentation to plan and execute:

- ✓ **Reference** [API Connect: Upgrade Central](#) for a master list of resources and guidance
- ✓ **Technical runbook:** Nearly 50 pages of detailed technical guidance available. <http://ibm.biz/amu10oh-rb>
- ✓ **Knowledge Center** with step-by-step guidance for v5 to v10

2. Tooling: API Migration Utility (AMU) for v5 to v10 migrations

Access the latest AMU tool on [IBM Fix Central](#)

3. Need Help?

Open a [Support Ticket](#) with IBM

Please read: IBM Support [Must-Gather](#) guidance on what to submit with your ticket

