



# From Cypher to Conversation

How WestJet Democratized Flight Network Data with MCP

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**Anton Lysov**

Software Developer, WestJet Airlines

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# WestJet: Then vs Now

Turns 30 in 2026. The only Canadian discount carrier launched since the '90s still flying

1996

3

used 737s

225

employees

5

destinations in Western Canada

2026

~200

aircraft

15K+

employees

100+

destinations across 23 countries

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# Digital APIs Team

Full-cycle development: build, test, and run microservices powering westjet.com, mobile apps and internal systems



**Schedule (today's topic)**

Routes, airports, amenities



**Trip Information**



**Pricing**

# Seasonality & Flight Amenities

SPS also powers route availability messaging and per-flight service information

Trip type  
**One way** ✓

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From  
**Calgary, AB** ↕ **Switch**

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Going to  
**Reykjavik (Keflavik), Iceland**


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Service to Reykjavik (Keflavik) resumes on Sun May 17 2026 and ends on Sun Oct 4 2026

## Seasonality

Calgary (YYC) To Tokyo (Narita) (NRT)  
10 hrs. 35 min.

**Flight WS80** Operated by WestJet • Boeing 787-9  
Depart: Wed., Apr. 22, 2026, 14:45 • Arrive: Thu., Apr. 23, 2026, 16:20



Economy cabin	Premium cabin	Business cabin
Meal	Meal	Meal
Meal	Meal	Meal

Inflight services

- ✓ Entertainment on demand
- ✓ Wi-Fi
- ✓ 110V AC Power
- ✓ In-seat video player / library
- ✓ Lie-flat seat - Business cabin
- ✓ USB Power

ⓘ Amenities subject to change

## Inflight Services

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# Only Valid City Pairs

Trip type

One way



From

Calgary, AB

↕ Switch

Going to

Sao Paulo, Brazil

Clear

~ 35%

of the theoretical network is  
actually routable

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# Why Is Airline Scheduling Hard?

## Cabotage

LAS → YYZ → JFK? A Canadian carrier can't operate a domestic US route. Entire OD pairs eliminated.

## Minimum Connection Times

If the math doesn't work, that connection isn't published.

## Circuitry

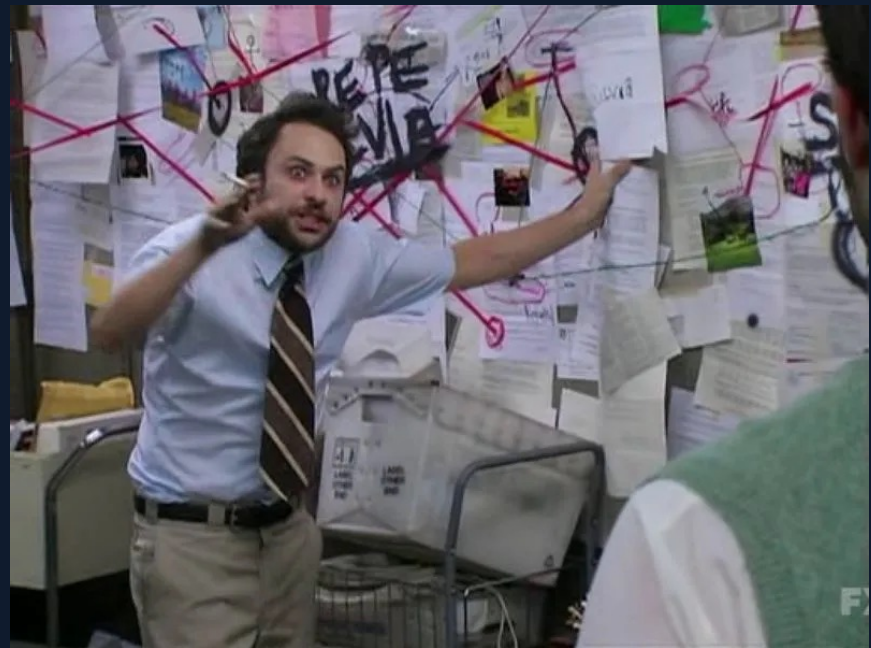
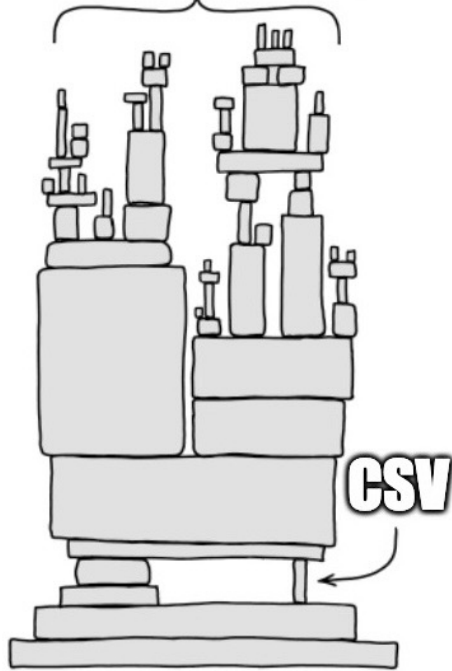
YYZ → YVR → DUB? Flying west across Canada to then go east across the Atlantic. Nobody wants that.

## Seasonality & Volume

Thousands of flights/day, hundreds of airports. Summer and winter schedules. Everything changes.

# The Old Way™

**AIRLINE SCHEDULE**



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# Schedule Publication Service (SPS)

## SSIM Files

WestJet + partner airlines

## Amenities Feed

WiFi, seat configuration, etc.

## MCT File

Min connection times

## Business Rules

cabotage, seasons etc.

# SPS

Process + Filter

Neo4j Graph DB



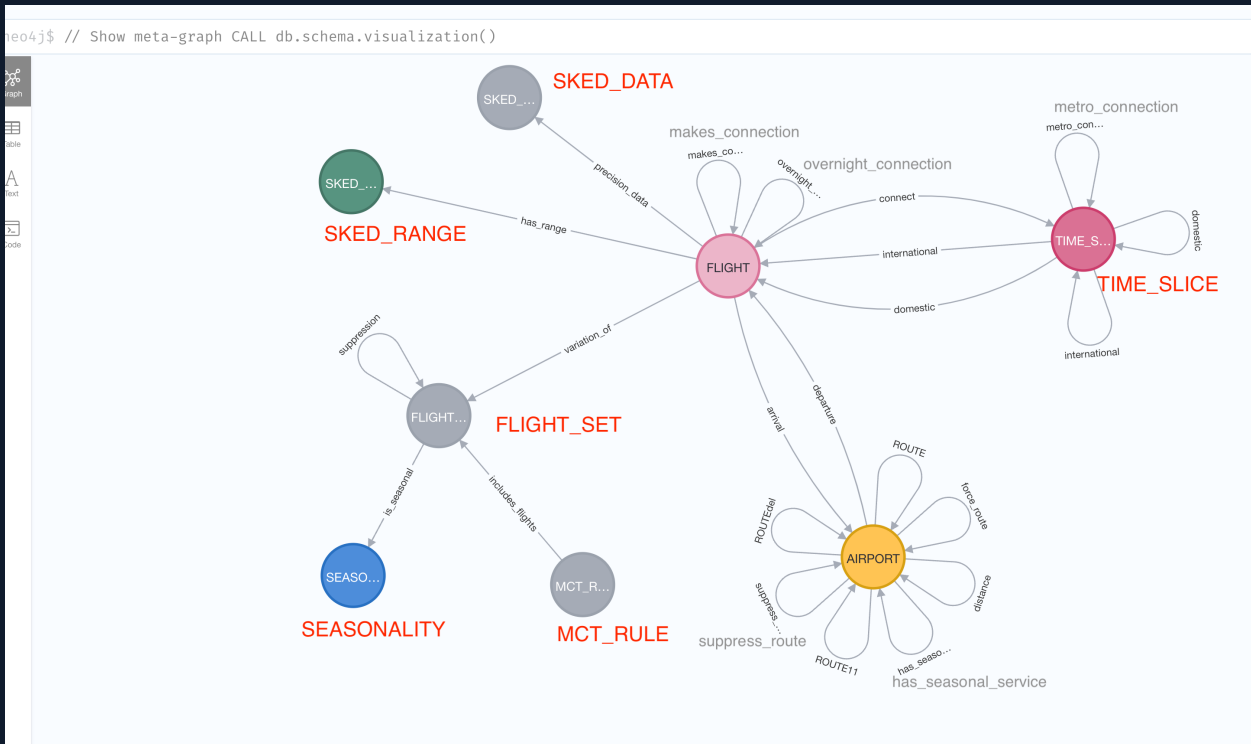
# The Problem

Rich flight network data in Neo4j.

Powerful graph queries with Cypher.

**The people who need it most can't access it.**

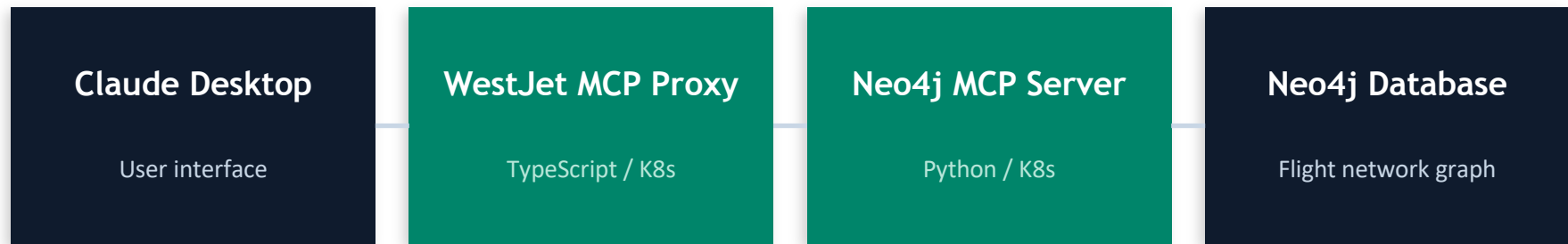
# The Flight Network Graph



~350 airport nodes | 38,000+ flight edges | Properties: times, distances, equipment, MCT

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# Architecture





**Demo Time**



Q & A

