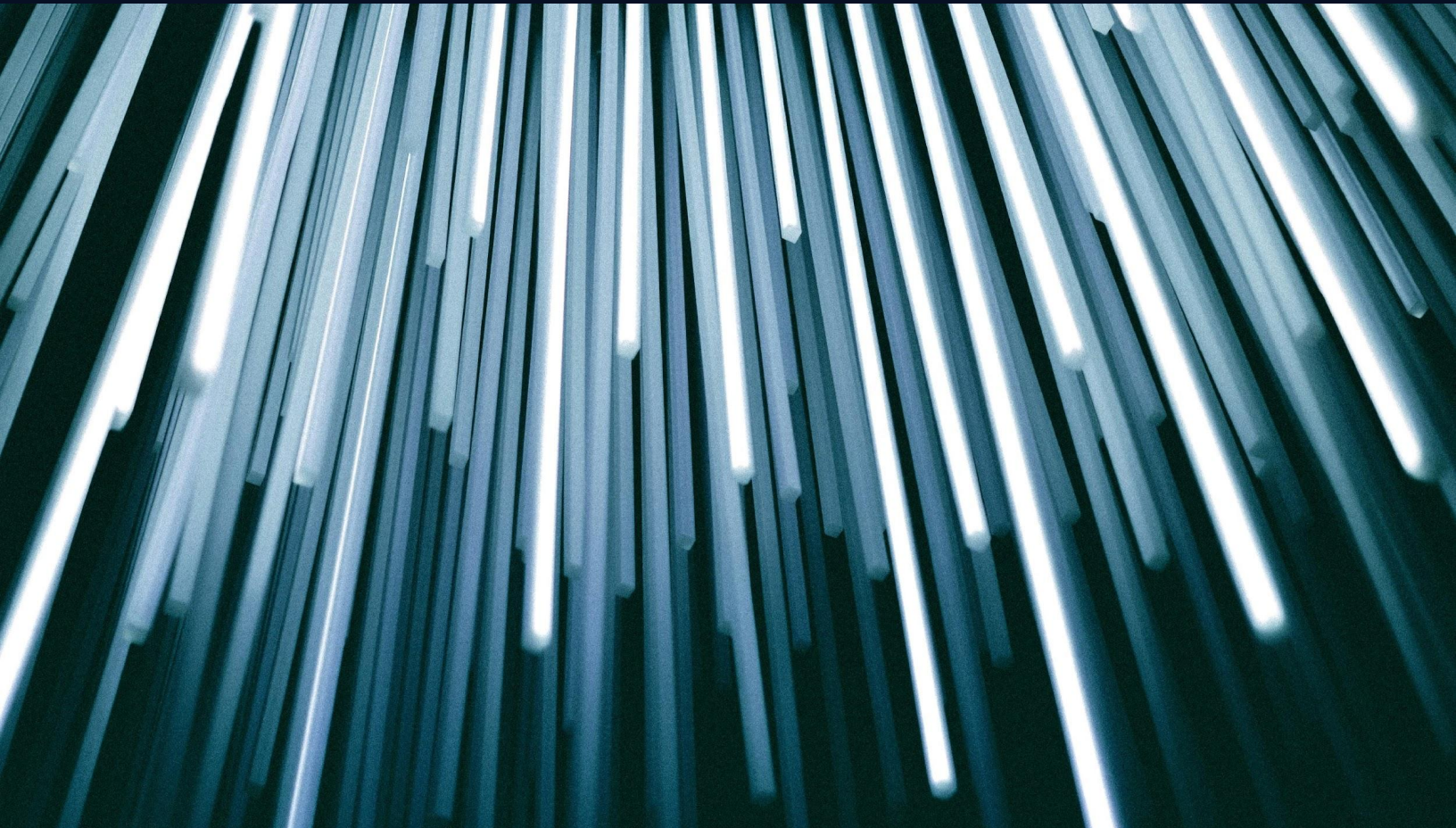# Application Refactoring & Migration

How DayBlink Consulting led hundreds of application migrations to multiple public and private clouds

Introduction

One of the largest telecom providers in North America needed to centralize private cloud capacity as part of an effort to consolidate regional data centers into their national data center footprint to simplify operations and reduce operating costs. Consolidating data centers required extensive application migration planning and execution. DayBlink Consulting was engaged to design and orchestrate the migration of 400+ applications including core infrastructure service applications, customer-facing applications, and numerous private and public cloud hosting solutions.

Problem

Our client wanted to migrate 400+ interdependent applications to various private and public clouds without customer disruptions.

The Cloud organization needed to evacuate a regional data center in less than a year while ensuring business continuity as many of the hosted applications directly supported customer-facing applications. There were several challenges that significantly increased the complexity of the migration: (1) there was no reliable source of truth for an application inventory, application owners, application-specific requirements, cloud platform requirements, or application interdependencies, (2) the applications and services lacked clear destinations due to infrastructure availability, security limitations, and budget, (3) the team had no solutions architect with institutional and cloud knowledge that was able to designate clear migration plans, (4) planning and coordination spanned over 80 application teams involved in the migration responsible for migrations, and (5) all migrations were to be completed in advance of a looming data center lease expiring and strict decommission date.

There are dozens of factors to consider when developing application migration plans. Some challenges, however, are very common across large-scale application migrations plans

Application Interdependencies: Most applications have other upstream and downstream workflows and integrations that they rely on or support

Projected Application Growth: An app's projected footprint growth (e.g. increase, reduction, stagnation) determines capacity requirements

Private Cloud Availability: Private cloud capacity needs to be considered to ensure there is enough room to support a new influx of applications

Geospatial Requirements: Certain applications have specific geographic requirements to ensure certain performance metrics (e.g. latency)

Security Requirements: Some application security requirements can strongly influence which type of cloud an application needs to be hosted on

Budget & Financial Goals: Financial constraints and target financial metrics could possibly impact application team migration preferences

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Solution

We led application consultations to identify requirements, designed a phased migration plan and successfully migrated hundreds of applications to on-prem and cloud platforms.

We were engaged to migrate all applications in the regional data center so the organization could shut down the facility. We needed to understand what applications were in the data center, develop tailored application migration plans, migrate and validate application moves, and remove the application footprint from the source infrastructure.

This migration took shape through the following phases: (1) conducted a discovery effort to develop an inventory of applications, application owners, application-specific requirements (e.g. geographic requirements, footprint, etc.), and interdependencies between applications, (2) evaluated application requirements and determined target platforms and locations, (3) prepared tailored migration approach fit for each application and service needs (e.g., re-platforming, re-factoring, lift-and-shift, etc.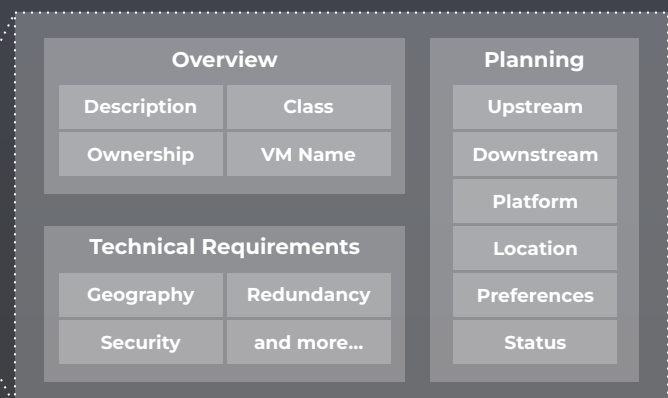), (4) analyzed historical and forecasted application usage and mapped to confirmed capacity availability at various target data centers and platform locations, (5) developed a phased migration approach across all application to accommodate application interdependencies and ensure there were no connectivity impacts, (6) facilitated the migration and onboarding of applications and services to deployed private and public cloud infrastructure, and (7) removed application footprint from the source infrastructure and validated operational continuity.

Throughout the migration, we launched and managed an awareness campaign to ensure clear and consistent communication (e.g. office hours, dedicated messaging channels and spaces, 1-on-1s, intranet update, T-minus email broadcasts, team-specific check-ins, and more).

"Source of Truth" Database

App 1	App 2	App 3	App 4	App 5	App 6	App 7	App 8	App 9	App 10
App 11	App 12	App 13	App 14	App 15	App 16	App 17	App 18	App 19	App 20
App 21	App 22	App 23	App 24	App 25	App 26	App 27	App 28	App 29	App 30
App 31	App 32	App 33	App 34	App 35	App 36	App 37	App 38	App 39	App 40
App 41	App 42	App 43	App 44	App 45	App 46	App 47	App 48	App 49	App 50
App 51	App 52	App 53	App 54	App 55	App 56	App 57	App 58	App 59	App 60
App 61	App 62	App 63	App 64	App 65	App 66	App 67	App 68	App 69	App 70
App 71	App 72	App 73	App 74	App 75	App 76	App 77	App 78	App 79	App 80
App 81	App 82	App 83	App 84	App 85	App 86	App 87	App 88	App 89	App N

Application Profile

Overview
Description	Class
Ownership	VM Name

Technical Requirements
Geography	Redundancy
Security	and more...

Planning
Upstream
Downstream
Platform
Location
Preferences
Status

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A key pillar to ensuring a successful migration involved determining application-specific migration strategies that aligned to the organization's constraints and long-term business objectives. After gathering critical details including application requirements, available private cloud capacity, each application's public cloud footprint, and the organization's technology roadmap, we aligned on a migration approach (e.g., re-platform, re-factor, lift-and-shift, etc.) fit for each application.

For the applications migrating to another on-prem environment, we identified the target on-prem locations to shift the workloads to. For many applications, there wasn't enough available private cloud capacity so a new on-prem environment had to be built out and eventually the workloads were shifted to the new location. In addition applications

migrating to on-prem locations, many others pursued an on-prem to cloud migration. Most of these applications were either re-factored, re-platformed, or re-hosted (i.e. lift-and-shift) depending of factors like estimated level of effort to re-factor vs re-platform, available budget, and technology roadmaps (i.e., future plans to replace applications in the current ecosystem).

Eventually, we sequenced all on-prem and cloud migration plans with a clear path to exit the source environment with migration interdependencies documented and tracked. Once we shifted all application workloads to the target environments, we systematically decommissioned the source environment while monitoring for any operational impacts.

Re-Factor

Re-architecting applications to better leverage cloud-native features

Re-Platform

Moving apps to the cloud with some optimizations to benefit from cloud capabilities

Re-Host

Moving applications to the cloud as-is, without any changes (also referred to as lift-and-shift)

Rebuild

Discarding code for an existing application and rewriting the architecture from scratch

Replace

Retire an application and then replace it with a new cloud-native application

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Outcome

Our client reduced several million dollars in operational costs and now had a repeatable playbook to facilitate future large scale application migrations.

We collaborated with 80+ application teams to successfully migrate and exit 400+ virtualized applications, 12+ bare-metal applications, and 3+ partner organizations from the regional data center without impacting business continuity or uptime.

Application teams migrated and onboarded to new cloud hosting solutions including AWS, VMware, and OpenStack.

A new "source of truth" application database which included application profiles to capture application descriptions, owner information, dependencies, requirements, and more.

A comprehensive strategy & approach playbook documented to support and streamline future data center migrations as the company continued to consolidate its cloud capacity.

80+
Application Teams Involved in Migration

400+
Virtualized Applications Migrated

10+
Bare-metal Applications Migrated

Making the Case for Cloud Migration

We believe that application migrations are more than a technical task—they are an opportunity to unlock agility and reduce costs while ensuring continuity for your customers. Our tailored approach ensures each migration is aligned with business goals and minimizes risk by addressing dependencies and unique application requirements. With a proven playbook, your organization can approach future migrations with confidence and efficiency.

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