Migrating SAP Applications

An WFTCloud Professional Services Case Study

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Executive Summary

A Canadian Transportation Giant, based in Calgary, AB, owns approximately 14,000 miles (22,500 km) route miles of rail track all across Canada and into the United States, stretching from Montreal to Vancouver, and as far north as Edmonton. Its rail network also serves major cities in the United States, such as Minneapolis, Chicago, and New York City.

In the last five years the clients IT requirements are dramatically increased and demand for a dynamic IT environment to support the business has grown. Unfortunately the current vendor hosting facilities were still based on the legacy IT infrastructure and operational practices. Any new requirement for SAP systems provisioning was fulfilled by the vendor in 1-2 weeks, which was not acceptable to the client anymore.

WFT developed and executed two step approach to address clients current challenges, First to migrate the existing SAP project landscapes to a agile and dynamic WFTCloud, Second to enable a scalable infrastructure for SAP on WFTCloud so that client can provision SAP landscapes on Demand with better reliability and lower cost.

The application migration was highly successful, with the result of better application robustness. In addition, monthly hosting charges were reduced by moving the application into the WFTCloud. This whitepaper discusses the migration process for the client , including:

- Motivations for Migrating to WFTCloud
- Technical aspects of the Migration
- Key issues Faced and How WFT addressed them
- Migration project TCO

Overview of the Client Business

A Canadian Transportation Giant, based in Calgary, AB, owns approximately 14,000 miles (22,500 km) route miles of rail track all across Canada and into the United States, stretching from Montreal to Vancouver, and as far north as Edmonton. Its rail network also serves major cities in the United States, such as Minneapolis, Chicago, and New York City.

Infrastructure Description

To manage its Financials and enterprise resource operations, our client has relied on SAP enterprise resource planning (ERP) software for nearly a decade. The client had become a major customer of SAP, deploying SAP application including SAP ERP, SAP NetWeaver Business Intelligence (BI), CRM, SRM systems, with multiple production instances deployed across the corporation, all of these SAP instances were installed on Microsoft Windows based technologies with SQL Server as the database. The SAP landscape is hosted at a legacy vendor data center and managed by the vendor.

Challenges

In the last five years the clients IT requirements are dramatically increased and demand for a dynamic IT environment to support the business has grown. Unfortunately the current vendor hosting facilities were still based on the legacy IT infrastructure practices. Any new requirement for SAP systems provisioning

was fulfilled by the vendor in 1-2 weeks, which was not acceptable to the client anymore.

Motivation for Migrating to WFTCloud

As stated earlier the client's SAP landscape is hosted at a legacy vendor data center and the applications were managed by the vendor. Even though the vendor is very renowned there were many limitations existed due to legacy infrastructure as well as the rigid operations management practices.

Limited Computing Scalability

The Infrastructure the SAP systems were running were on physical servers and was limited in ability to meet client's new project requirements in a timely fashion. The time to procure, install, configure and ready for client exceeded requirements considerably.

Lack of Elasticity

All new temporary provisioning request from client is treated as new additional servers in the infrastructure, these servers are charged as physical servers and will be charged to the client . There were no provision to "return" the servers to the vendor after temporary or short time requirements are over.

Inflexible Storage Area Network (SAN)

The Storage Infrastructure was unable to fulfill the organic growth of the systems as well as new project requirements in a timely manner. Also the cost of SAN resources were very high compared to comparable facilities like WFTCloud.

Long Provisioning Times

Coupled with inflexible legacy hardware infrastructure and rigid operations management procedures, client faced long provisioning times for SAP landscapes. It was more acute in the case of large landscape request to support large SAP projects.

Risk of Hardware Failure

The Infrastructure SAP systems were hosted are purely physical and legacy High Availability (HA) options used, there were single point of failures and impacted system availability.

Cost of Hosting

The Cost of hosting per server was very high comparable to similar hosting facilities due to physical server based infrastructure. The pricing also was confusing and variable due to vendors billing practices.

Evaluating WFTCloud Hosting

To introduce virtualization in the existing hosting facility with additional hardware would cost client more as well as the client lacked expertise to migrate complex SAP systems. Client agreed to evaluate whether SAP migration to WFTCloud would be appropriate .

WFTCloud internal architecture, uses virtualization, the client is shielded from the risk of hardware failure, also WFTCloud used SAP HA solutions tailored for Virtual Infrastructure provided continuous SAP application availability.

WFTCloud is based a robust SAN infrastructure located in a certified SSAE 16/SAS70 hosting center.

WFTCloud Infrastructure

WFTCloud is the leading virtual private SAP cloud services provider for Intel-based IT infrastructure. It uses a combination of proprietary and off-the-shelf technologies to achieve the operational and economic efficiencies of tenfold the service levels at a fraction of the legacy cost. WFTCloud technology and service offerings combine enterprise-class virtualization, servers and storage systems with top-tier data center facilities to deliver secure, scalable next generation virtual hosting and recovery services. WFTCloud pay-as-you-grow model saves on capital expense, improves service levels over the legacy solutions and drives end-to-end cost and convenience benefits on behalf of mid-market organizations or self-directed divisions of global companies.

WFTCloud is uniquely positioned as one of only three companies to enjoy the prestigious "SAP Certified Cloud Services Partner" designation and discipline from SAP and has used its operational expertise to deliver the largest virtual private cloud SAP landscape in the market.

WFTCloud pioneering record in enterprise-class virtualization, coupled with our status as a certified SAP Cloud Services Partner, make WFTCloud a uniquely qualified provider of next generation SAP Hosting.

- WFTCloud proprietary advantage and IP using distributed virtual resource cluster technology, operationally supported by the proven expertise of former SAP talent (80+ production systems)

- 325x advantage on data center productivity vs. legacy/co-lo hosting, enabling next generation benefits to deliver SAP ERP application as a service, maintaining technology roadmap control

- Hassle-free "limo-ride" to SAP ERP virtual private cloud, including automated on-boarding and WAN/MPLS acceleration, with business focus on easy end-user experience, retaining SAP advantages of transparent integration, robust functionality and flexible configuration

- 100% success in high availability and system recovery and 100% customer retention, with just-in-time resource provisioning using infrastructure-as-a-Service (IaaS, subscription-based) and SLA-driven strategic relationship

SAP Landscape Migration to WFTCloud

The client deployed major customer of SAP applications including SAP ERP, SAP NetWeaver Business Intelligence (BI), CRM, SRM systems, with multiple production instances deployed across the corporation, all of these SAP instances were installed on Microsoft Windows based technologies with SQL Server as the database.

The Migration and management activities include:

- One-time Hosting Start-up and Migration Activities
- Steady State Hosting Activities

One-time Cloud Hosting Start-up Activities

- Implementation plan and timeline
- Dedicated Senior Delivery Manager
- Provisioning of WFTCloud resources for SAP ERP IaaS Solution
  - Specified footprint, networking and bandwidth within N+2™ replicated, hosted infrastructure
    - Virtualized infrastructure with dynamic compute provisioning
    - Servers providing high availability services
    - Zero downtime hardware upgrades
    - Enterprise class, disk storage
    - Scalable network bandwidth

- Provisioning of SAP IaaS solution
  - SAP Landscape Design
  - Virtual Production Plus (VPP) 4-tier landscape

- - Development, Quality, Pre-Production and Production, plus ancillary severs (Solution Manager, Database Backup Server)

- Infrastructure
  - Initial proposed agreed SAP Landscape will be finalized as soon as the contract is signed
- Deployment based on the implementation plan
- Testing, validation and acceptance under WFTCloud Total Quality (WTQ) process
  - WTQ is the internal quality assurance activity occurring prior to system delivery. Internal and external access validation, administration accounts creation, monitoring parameters established.
  - WFTCloud Support Center System, Roles & Responsibility Matrix & co-developed Run Book will be key documents driving the WTQ process.
- Migration Planning and Execution
  - Planning
  - Migration Strategy
  - Technical Migration Solution
  - Migration Test
  - Migration
  - Validation
  - Communication

Steady State Hosting Activities (over the Term)

- WFTCloud shall maintain multiple geographically diverse data centers. Clients SAP Landscape environment will be implemented at WFT data center. These environments will have equivalent compute, facilities capabilities and performance characteristics.
- WFTC loud Infrastructure to support Clients SAP ERP IaaS environment
- Monitoring and OS level maintenance of all provisioned servers (SAP IaaS).
- WFT will perform all OS maintenance and OS patch management as part of steady state activities. The change control and approval process will be defined and agreed upon during the implementation period.
- Backups
    - SAP will be backed up as per Clients SLA
    - Nightly incremental, weekly full server level backups for all servers
    - Local Recovery time objective (RTO) of 6 hours for Production
    - Recovery point objective (RPO), the back-up from prior night, archived for one (1) week on rotating basis
- Support for the steady state infrastructure activities
- SLAs:
    - DEV/ TEST (QA) shall mean 99.5% availability and Production at 99.99% (unplanned downtime) for IaaS availability for SAP Tier 1 applications.
- Account Management
    - Monthly status report and on-premise meeting (if required)
    - SLA performance metrics report
    - Single point of contact
    - Quarterly contract review

Application Hosting Challenges

Large Volume Data Migration

Large Volume data migrations is always a challenge for SAP customers. The challenges are twofold, migrating large volume of data over the WAN as well as using SAP approved or certified tools for Migration.

WFT's SAP migration services provides a robust and tested migration path for SAP systems running on the Physical Servers to WFTCloud. The Physical to Cloud migrations leverage WFT's custom tools and Vendor specific Converters.

WFT approaches include following approaches:

- Database Specific Tools Migration
    - Export /Import
    - Remote Replication
    - Remote Log Shipping
- SAP Tools
- Hypervisor Based Migration Tools
- WFT custom Tools approved by SAP
- Combination of Above Tools

SAP System Monitoring

WFT's Integrated SAP system monitoring responds to SAP systems issues in real time, our dedicated well trained SAP staff can respond to any SAP application or infrastructure issues in a timely and professional manner. All incidents are recorded and managed via our Incident Management System based on ITIL.

Data Protection

WFTCloud provides state of the art data protection for SAP systems,:

- SAP Systems will be backed up as per Clients SLA
- Nightly incremental, weekly full server level backups for all servers
- Local Recovery time objective (RTO) of 6 hours for Production
- Recovery point objective (RPO), the back-up from prior night, archived for one (1) week on rotating basis
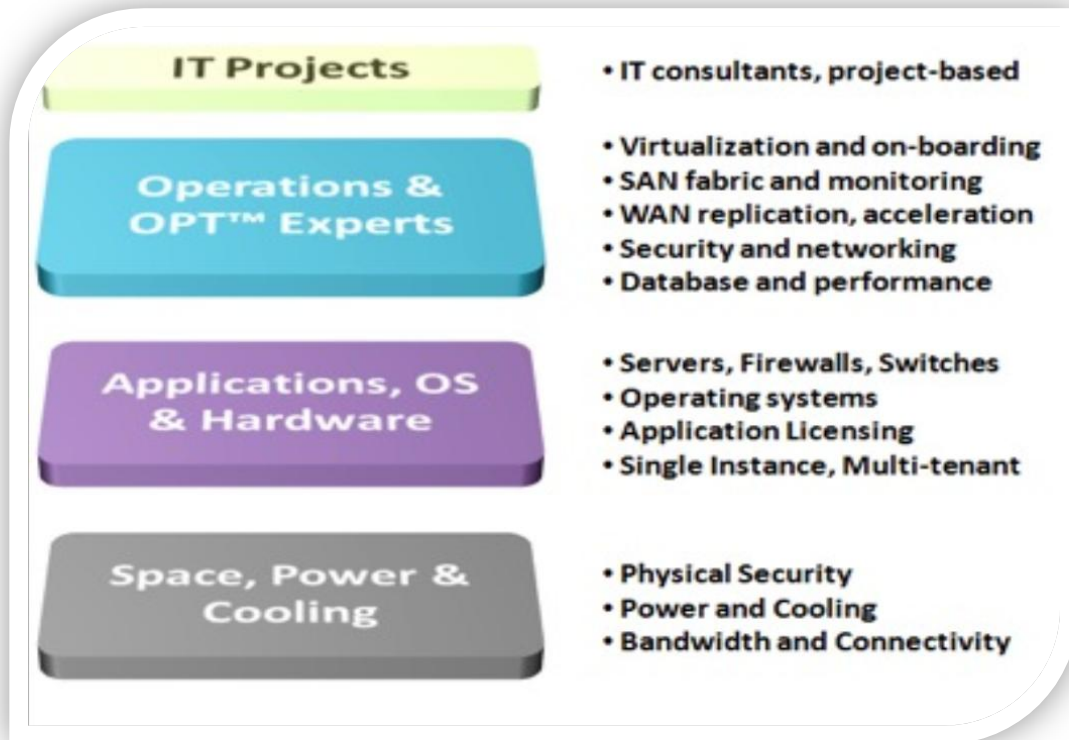
SAP Application High Availability

WFTCloud uses proven advanced High Availability Solutions for SAP on a virtual Environment, in this migration case study WFT deployed Symantec Application HA for SAP on VMware VSpehere Servers. The Symantec Application HA provided application level high availability of 99.9% on the top of Infrastructure High Availability provided by Virtual Infrastructure.

Conclusion (Benefits of Moving to WFTCloud)

WFTCloud pioneering record in enterprise-class virtualization, coupled with our status as a certified SAP Cloud Services Partner, make WFTCloud a uniquely qualified provider of next generation SAP Hosting.

- 100s of SAP Complex heterogeneous Migrations has provided WFT the ability and proven track record to migrate complex SAP systems across globally separate data centers.

- WFTCloud proprietary advantage and IP using distributed virtual resource cluster technology, operationally supported by the proven expertise of former SAP talent (80+ production systems)

- 325x advantage on data center productivity vs. legacy/co-lo hosting, enabling next generation benefits to deliver SAP ERP application as a service, maintaining technology roadmap control

- Hassle-free "limo-ride" to SAP ERP virtual private cloud, including automated on-boarding and WAN/MPLS acceleration, with business focus on easy end-user experience, retaining SAP advantages of transparent integration, robust functionality and flexible configuration

- 100% success in high availability and system recovery and 100% customer retention, with just-in-time resource provisioning using infrastructure-as-a-Service (IaaS, subscription-based) and SLA-driven strategic relationship

At a high level, WFTCloud envisions the following Roles and Responsibilities

- Client is to focus on core business value, user experience and application roadmap, including application performance objectives and operational efficiencies

- WFTCloud to deliver SAP ERP virtual private cloud, with flexibility to align unified support discipline across IaaS delivery, Basis and a fully managed AMS, as needed, with predictable economics.

- Rapidly available DEV and QUALITY environments ready for on-boarding with SAP ERP baseline sets to accelerate deployment times, leveraging

one Basis lead and a proven strategic relationship to deliver manifold value

WFTCloud additional operational advantages include:

- Flexibility to fine-tune SAP production and ancillary compute resources with minimal downtime
- Rapid provisioning with no delay for hardware procurement
- Ability to clone and copy SAP systems quickly and affordably; this is particularly useful for:
    - Diagnosing problems that can only be reproduced in Production or copies of Production
    - Creating and refreshing training systems
- No buy-back/termination fees for temporary systems
- Ability to inexpensively provision small systems for secure network endpoints such as
    - Secure web dispatchers
    - Proxy servers
    - Mail gateways
    - SAProuters
- Disaster recovery solution built into virtualized, geographically dispersed infrastructure
- Integrated Total Quality Commitment for service delivery across IaaS, Basis and AMS
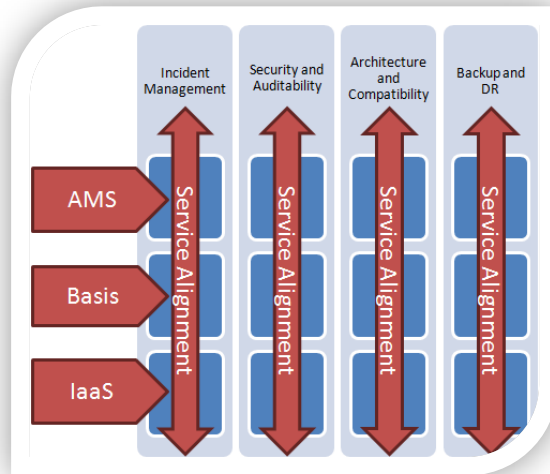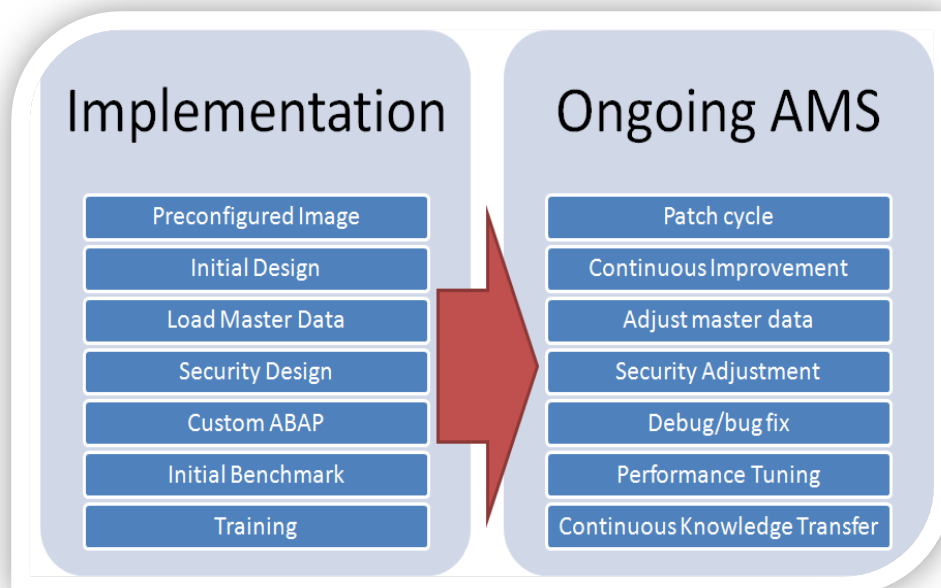
Proven efficiencies in SAP Stack Operations

WFTCloud assigns a Basis technical lead to own the delivery of the Basis platform. The Basis technical lead is backed up by the rest of WFTCloud Basis team, database administrators, network architects, virtualization experts, and OS administrators.
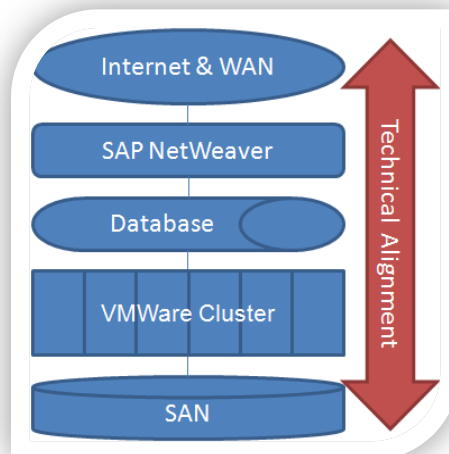
WFTCloud comprehensive support extends to for all SAP components including ABAP stack, Java stack, TREX, Content Server, LiveCache, BusinessObjects, SAProuter, Web Dispatcher, and the SAP Unwired Platform. As part of the support fabric, WFTCloud unified incident management includes 24x7 coverage, time and severity-based escalations, comprehensive SAP stack monitoring (Integrated with tools, deep database monitoring, ABAP, Java performance indicators, application component availability, and reporting and trending.

Implementation

- Preconfigured Image
- Initial Design
- Load Master Data
- Security Design
- Custom ABAP
- Initial Benchmark
- Training

Ongoing AMS

- Patch cycle
- Continuous Improvement
- Adjust master data
- Security Adjustment
- Debug/bug fix
- Performance Tuning
- Continuous Knowledge Transfer

WFTCloud services could offer further benefits including individually tailored, tunable ancillary infrastructure, configurable Basis platform, and hardened, tailored security. These additional configurations may optionally include loosely coupled or private networked integration with existing corporate landscape (on premise or on-cloud), secure optimized and accelerated MPLS/VPN, SAProuter mediated connectivity, enabling BI, PI/XI integration or interfacing with heterogeneous systems, LDAP, CUA integration with user administrators and single sign-on options.

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A WFTCloud White Paper

www.wftcloud.com

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WFTCloud.

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