



ACCELERATE YOUR DIGITAL JOURNEY – A PROVEN APPROACH TO MOVE YOUR SAP APPLICATION ECOSYSTEM FROM ON PREMISE DATA CENTER TO CLOUD PLATFORM

Abstract

This whitepaper will provide necessary insights for application migration from on-premise hosting to cloud hosting platform. Moving your complete application portfolio from an on-premise hosting to cloud is a big transformation exercise for an organization. The whole migration project should be prepared and executed in a controlled way. You can use this document as a guide for such complex projects. The whitepaper answers some of the unknowns to embark into that journey and highlights areas where Infosys can help accelerate your journey for SAP application transformation.

Moving your complete application portfolio from an on premise hosting to cloud is a big transformation and involves business risk. You start the project with many unknowns and associated risks. The **top five unknowns** include:

1. **Knowledge on cutover downtime:** You cannot stop a running business. Hence, only time window to do production system migration is weekends or extended weekends. How could you be sure to achieve this target for all your systems unless you have a base line?

2. **Overall project scoping:** How do you package the whole project? Should you do only migration or combine migration plus additional improvements (e.g. upgrades, patching etc.)?

3. Breadth of the scope and effort necessary for **re-establishing the integration**

4. **Testing scope:** When you do implementation or upgrades, you know what to test? For this type of project, you are moving the complete infrastructure

plus applications layer. So, what should be the depth and breadth of **testing scope?**

5. **Right sizing and time planning:** What is the right level of understanding on the time to allocate for the project, whole inventory of activities and best approach of sequencing for entire system one after another? Lot of activities depend on right level of access at the source system. If you do not get that, how do you proceed with plan B?

Drivers for cloud migration projects and how you should adapt the scope for execution

Application migration projects will have multiple scope elements:

- Movement of applications and linked instances (i.e. development, quality, production etc.)
- Movement of all the layers to support the application, i.e. **operating system, database, infra security, application security, integration layer**

The above could just be a start. You can increase the scope to bring additional improvements, for example-

- Improvements already identified for each of the layers, i.e. operating system (**change operating system type**), **upgrading or changing the data base** (sort of phasing out old DB to a different DB or version upgrade), applying specific security solutions (more

adaptive to cloud ecosystem)

- You can also combine **application upgrade** - Typically this is done as a separate project but nowadays wherever application ecosystem is supporting, you can do this as a combined approach
- Lastly, **upgrading the integration** layer in case the older version is not cloud compatible



During preparation phase, you will encounter issues due to compatibility mismatch i.e. a given combination of OS-DB-Apps version will not work or a given

version of OD-DB-Apps is not supported on the cloud set up. Compatibility linked version adaptation becomes an incremental 7th scope element. The

compatibility check should be project preparation phase deliverable.

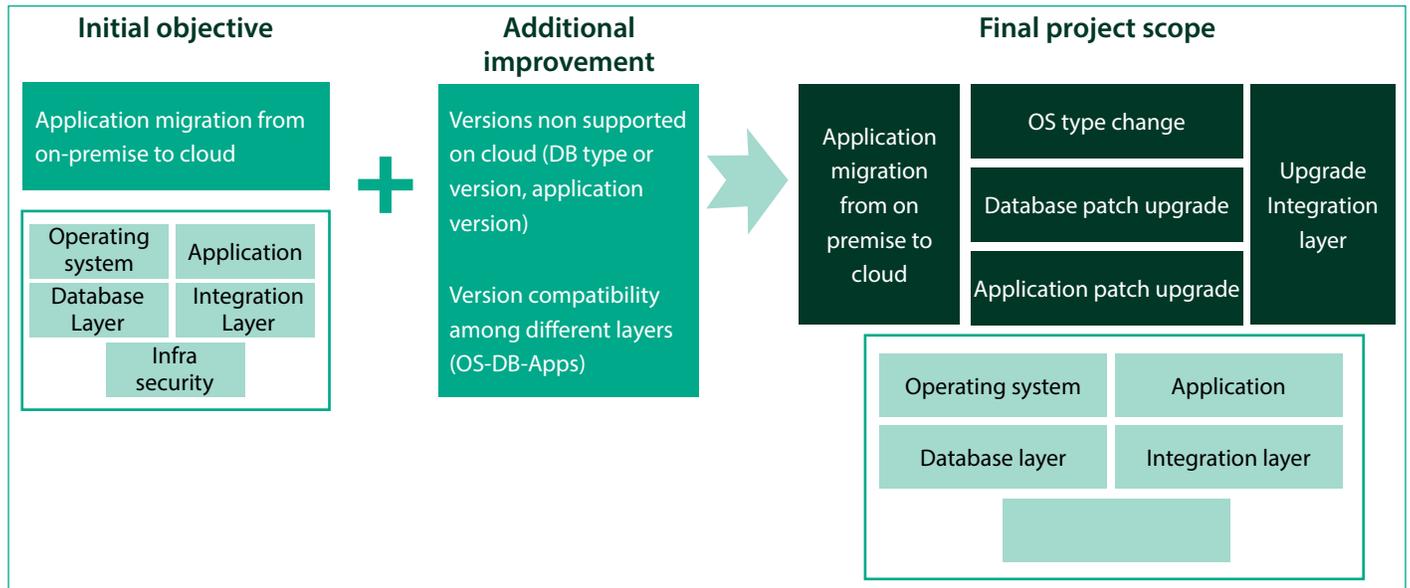


Figure 1: Scope expansion

Once you complete the project preparation/scoping phase, you end up with four sets of requirements:

- 1. Application migration from on premise to cloud**
- 2. Upgrades to DB and security layers**
- 3. Upgrade of applications**
- 4. Upgrade of integration layer**

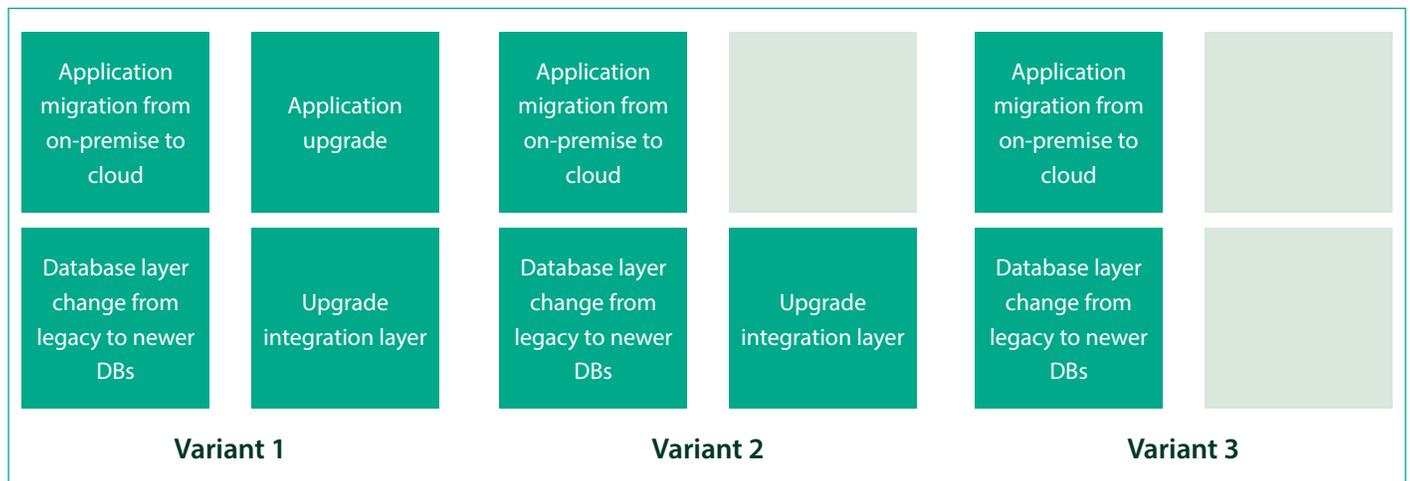


Figure 2: Project execution variants

If you have to rank based on complexity, variant 1 will be most complex followed by 2 and 3. For SAP S/4HANA conversion projects, we are adopting variant 1 scenario with a guided approach and tool set that covers risk free movement of all the four scope elements.

What kind of preparation activities you should consider?

Following four preparation prerequisite activities for application migration projects

are highly recommended. While you may include other activities, the below four

are key to de-risk project execution, bring clarity on approach, resource and schedule.



Figure 3: Preparation activities

1. Hardware sizing: Input/output processing speed (IOPS) is critical for migration as it determines the speed of reading/writing the data from/to disk. When it comes to IOPS, for Azure migration you should adopt strategy to:

- Choose the VM configuration based on IOPS requirement
- Do not go for fixed IOPS size, keep it flexible and tailor it based on development, quality and production system
- Best practice is to choose the right VM type to match the source configuration or more to avoid performance issues. At a later point, you can come down to lower configuration.

2. Compatibility check: Knowledge of OS, DB and **application compatibility** is one of the key preparation activities. Please check things that will not work and accordingly finalize the overall project inclusions

- Knowledge of **appliance provisioning bundles** and related **compatibility**. This is dependent on what cloud hosting you want to go for and check the provisioning mechanism upfront from the partner. Based on the bundling provisioning, the project scope should be adjusted

3. Integration scoping: You should complete your integration preparation before starting the migration.

- Knowledge of complete **integration**

schema, interface type, count and active ones. In case it is readily available, the information will reduce lot of project preparation activity. Unless you have this information, you will not know the skills required, scope of the work and how much collaboration with external parts should be factored in. You should include it as part of project preparation and you should look for some tooling option from your implementation partner to reduce the execution duration and to bring accuracy.

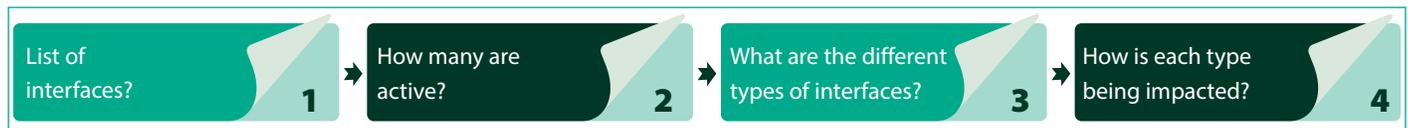


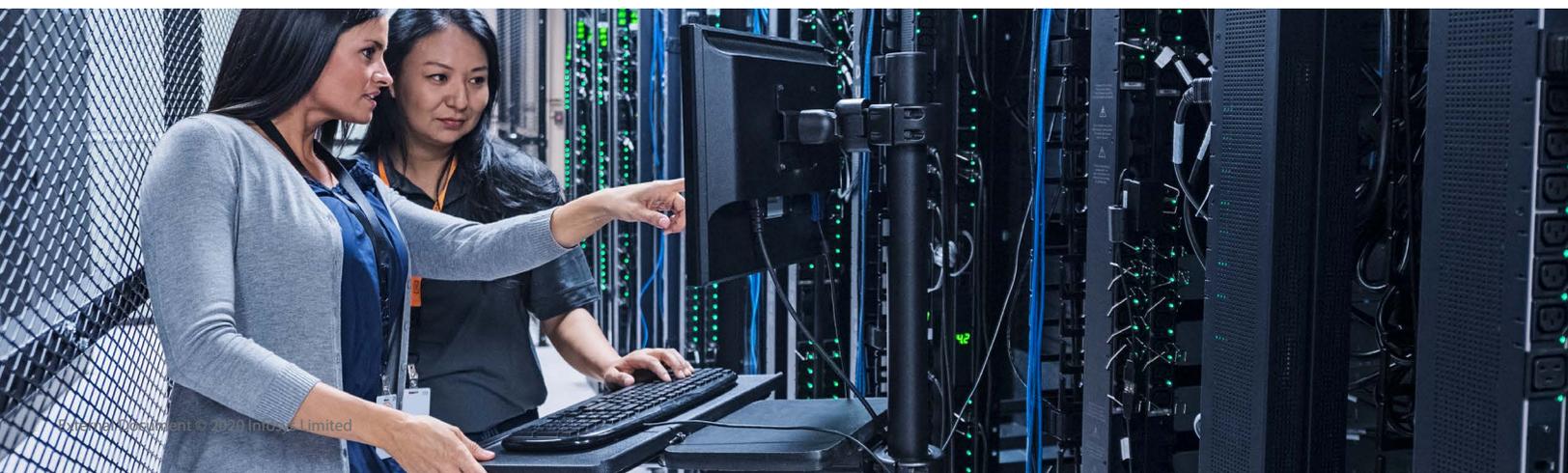
Figure 4: Integration preparation – deep dive

4. Application exposure analysis: You should know **application exposure to external systems** (outside your firewall)

and how outside customer or external users access the application. The degree of your application exposure will drive

your security set up provisioning scope and requirements for its upgrade and improvements.

At Infosys, we have accelerators and tool sets to help you fast track execution of above four set of preparation activities.



How do you approach such projects for execution?

You are familiar with project execution in waterfall model or agile delivery model. Application migration projects involves **bundling concept** and for each bundle one complete thread of waterfall project phases. With **application bundling approach**, you:

- Take application bundling approach

to execute this project. You can bundle applications by region or by business types

- Move applications used centrally at the end
- Application bundling can combine multiple productive, development and quality systems at one go live. Combine

application DR and high availability set up into ongoing bundles. Don't perform DR set up separately at the end

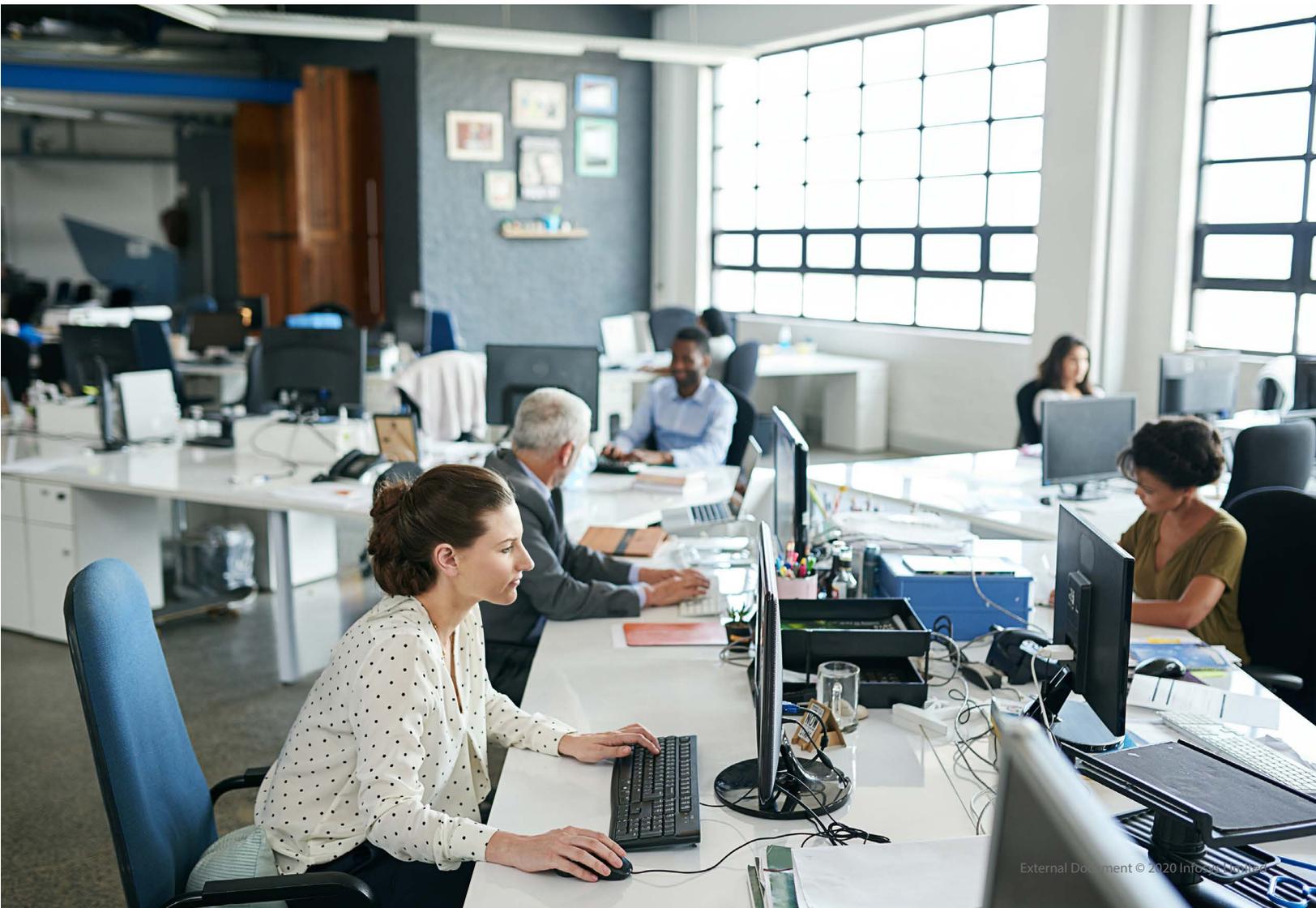
- Take an application bundle as **pilot** where daily operational transactional volume is lowest and application critically is lowest

How do you perform testing for this type of project?

You should perform end-to-end testing for all the five layers (Operating system, Database, Application, Security and Integration). You should perform testing for following:

- Cloud platform readiness validation before you start moving your application
- Cloud infrastructure testing
- Cloud security testing
- Application performance testing
- Application integration testing
- Business operation testing

At Infosys, we have a robust testing framework with tools and accelerators to cover cloud readiness and infrastructure testing, application validation and integration testing.



Production cutover and downtime optimization

Production system downtime drives the decision whether you can do this type of project or not. Run time optimization topic consumes lot of efforts to achieve desired

downtime window. You need a clear strategy to start, followed by multiple trial runs and innovative approach on the way to incorporate learns as you progress. You

can apply below techniques to cut down your downtime by up to 60%.

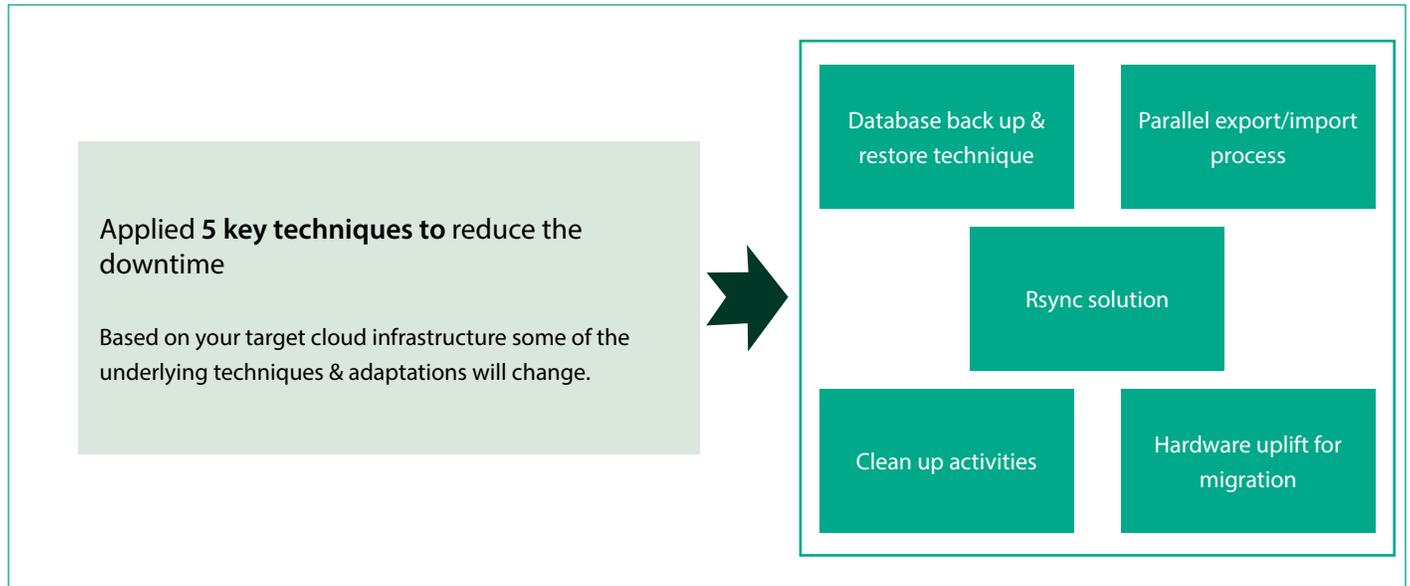
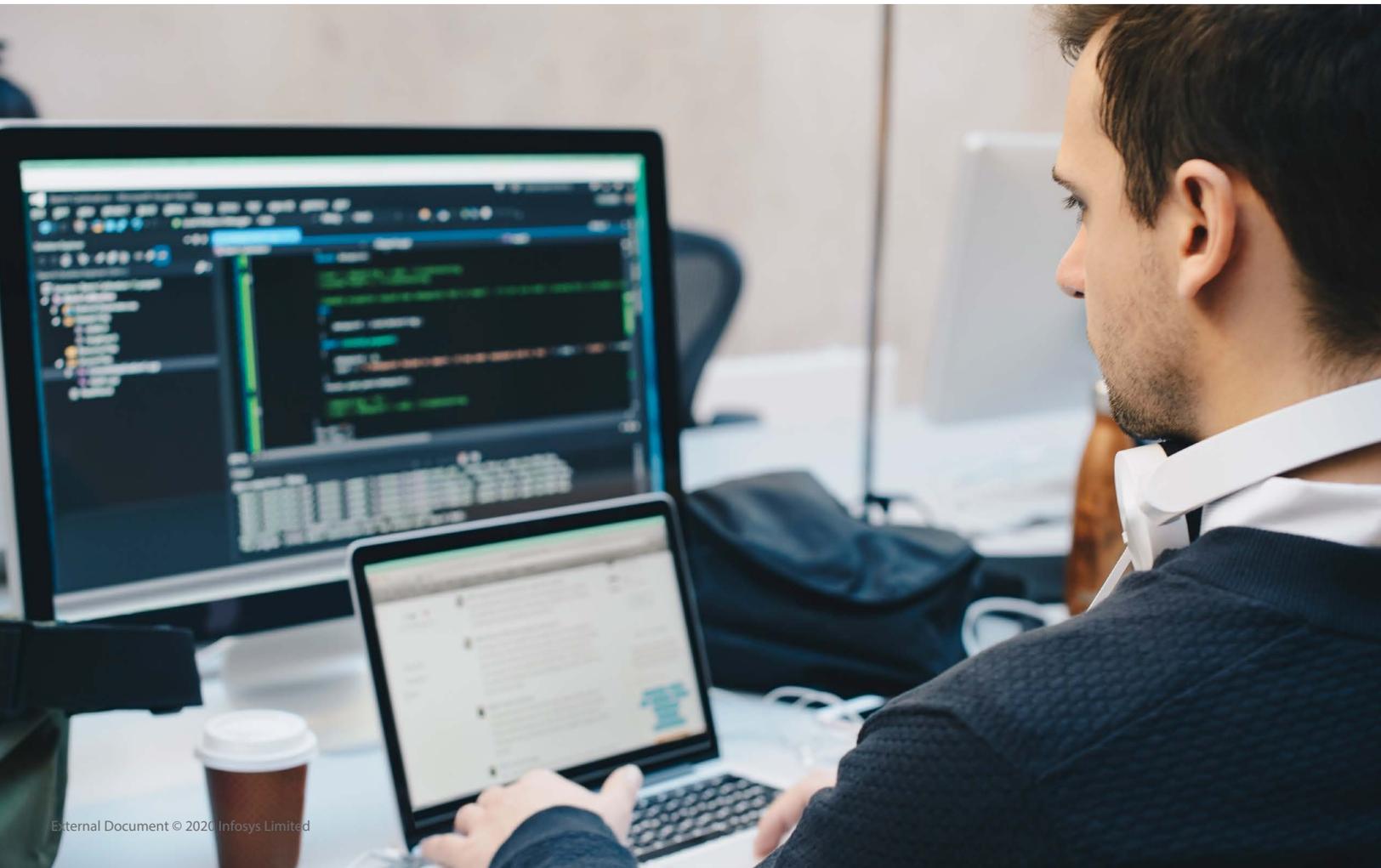


Figure 5: Run time optimization





Case study

Our client is a global leader in dyes and specialty chemicals. Client's IT headquarter is in Switzerland with presence in 35 countries with 25 product sites. Client's SAP landscape comprises of 4 different core SAP production systems running for 4 different regions with peripheral application ecosystem for APO, EHS, BW, SRM etc.

The project scope involved adding an additional integration layer upgrade, OS upgrade, OS type change, and DB upgrade and security layer improvement.

The complete application portfolio of SAP and non-SAP systems were moved to Azure cloud in record 10 months' time.

About the Author



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Ram has over 19 years of experience in SAP transformation programs. In his current role, he advises customers in transformation programs to help them stream line their project journey with robust preparation and risk free execution with help of Infosys tools, accelerators and cloud migration end-to-end execution framework.

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