



BBD's guide to migrating to the cloud

Towards improved agility, increased uptime and near instant scalability



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“The benefits that come with the cloud are just too great to ignore.”

It seems nearly impossible to avoid the cloud as a business these days, and for many companies, the benefit of improved agility, increased uptime and near instant scalability that come part and parcel with cloud computing are just too great to ignore.

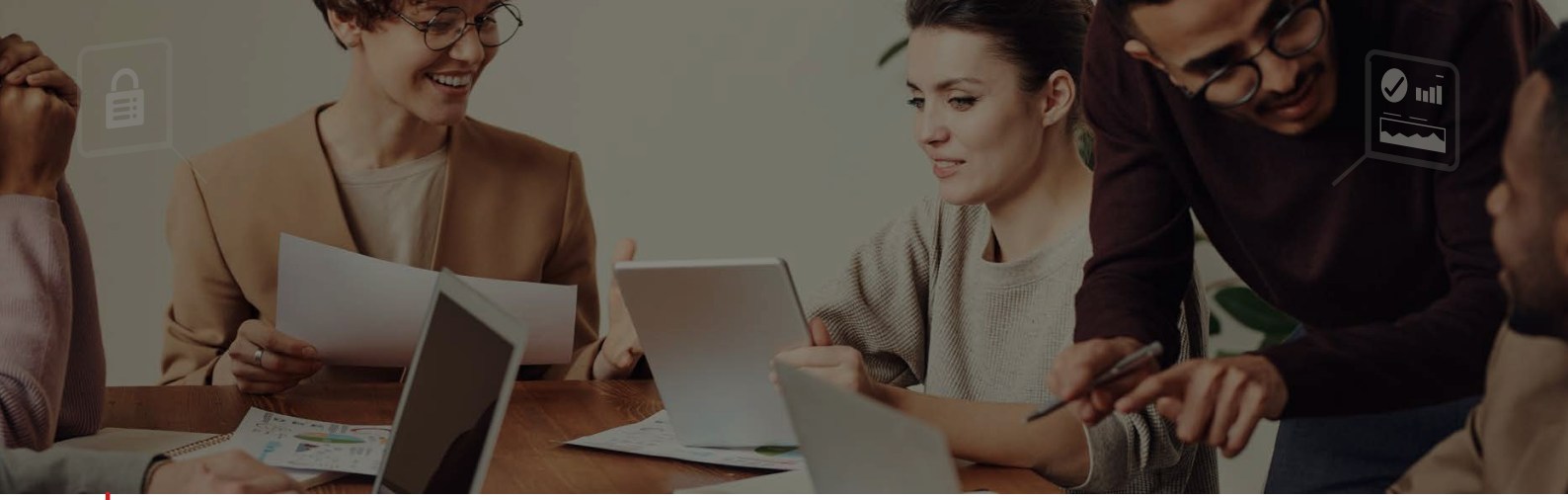


Luckily, the plethora of tools and techniques available to those with the skills to implement them have made kicking off a cloud migration journey much faster – whether building onsite workloads or developing cloud-native solutions from the get-go.

Although these tools and techniques make your journey easier, there are multiple pitfalls, obstacles, and routes you must travel to gain a true competitive advantage in how you're utilising the cloud. Having the right partner at hand who has experience advising, migrating, architecting, managing and optimising workloads in the cloud has never been so crucial.

With experience delivering across a full spectrum of cloud solutions coupled with expertise in a suite of cloud enablement offerings, we deeply understand the nitty gritty involved in what you need to consider before you take the plunge. Below we've outlined a few key steps necessary in your successful journey to the cloud.





1

Security and compliance

Considering your security and compliance from the start often helps establish whether your initial migration plan is viable or not, and if so, in which direction. For this reason, we often advise understanding these two fundamentals upfront.

Security

Understanding your security goals and how you should be handling data will create a solid foundation on which to understand which services to use when architecting your environment.

For this there are two conversations you need to have with your cloud solutions partner: ‘*How do we keep your customer’s information secure*’ and ‘*How do we ensure your applications do not get compromised*’. Both can be addressed by planning for and implementing an architecture that includes best practices.

Ask us about our Well-Architected Reviews on client environments.

Compliance

Understanding the compliance frameworks your organisation must comply with is a recommended starting point as it will influence a lot of the architecture you’ll need to devise before your cloud migration. An example of this is when the customers you service are in a country with data residency restrictions / laws (such as GDPR, POPIA, PCI, ISO, etc.). You will need to plan for how you’ll handle and process those customers’ data versus the data of your customers in other countries where those restrictions don’t apply.

Compliance will often dictate where you can or cannot deploy your workloads, and which services you can or cannot use.

PRO TIP

Understanding the services you plan to leverage as part of your architecture can make it easier to comply to the relevant compliance frameworks.





Portfolio discovery and planning

Next, you need to know everything that is running in your current environment and what the dependencies are. Armed with this information you'll be in a better position to decide what to migrate first, and then work on how you'll actually move it.

For your portfolio discovery and planning, we recommend using a tool that can access your setup and discover the various servers and applications currently running. Some of these tools will additionally show you what resources are presently allocated and how they are being utilised. When planning to migrate, this information becomes vital because you would want to make sure that you move your applications in an optimised state. Remember, the cloud allows you to deploy only what you need and then increase your resources when you identify additional demand or if your applications require change.

Using this step as an opportunity to identify what workloads would be easiest to migrate and which would have the highest level of complexity means that you're putting your team one step ahead of your plans from the start.

QUESTIONS TO ASK



> What servers are running?



> What applications are running?



> What databases are running?



> What are the storage requirements?



< And can these licences only be used on certain cloud providers?



< What licencing is currently in place?



< Does the connectivity consistently allow for reliable access to cloud services?





3

Migration strategies

In order to begin planning your architecture in earnest, you'll need to understand and plan how your migration team will handle each application throughout your migration journey. Here you're shifting your focus from a portfolio level to an individual application level.

There are six core migration strategies – known as the 6 Rs.

Rehost – otherwise known as “lift-and-shift”

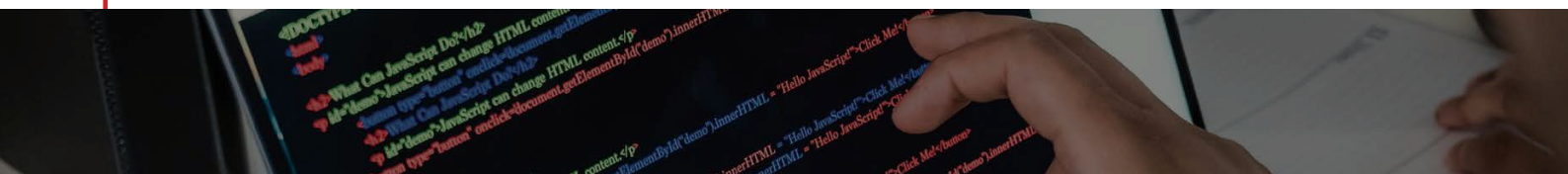
When you rehost, you are essentially moving applications into the cloud without making any changes to them. It is the equivalent of carefully lifting your application and shifting it into the cloud. This is often a go-to strategy when you're looking to quickly meet business objectives because it can be simpler to optimise and re-architect once an application is already in the cloud, mostly because the difficult part – the actual migration of the application, data and traffic – has already been done.

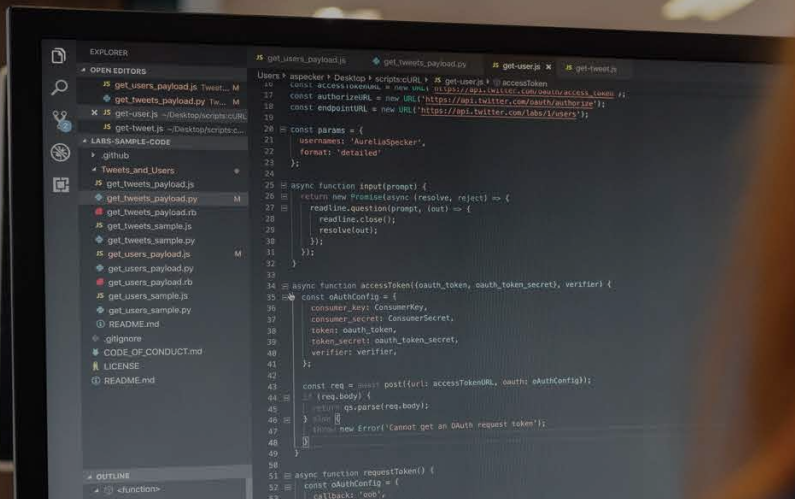
Replatform – also known as “lift-tinker-and-shift”

Replatforming is when you make a few cloud (or other) optimisations to achieve some tangible benefit, but you aren't otherwise changing the core architecture of the application you're looking to migrate. This is often one of the options BBD prefers when helping clients plan for their migrations as it results in improvement in performance, resiliency and operational costs.

Repurchase

The third migration strategy involves moving a legacy system from a perpetual licence to a SaaS (Software as a Service) model that provides similar capabilities. Replacing your outdated on-premise software allows you to quickly migrate live data with little effort and moves you away from needing to manage installed applications. If you're looking to swap products or vendors for these services, this is an ideal opportunity.





Refactor / re-architect

Rearchitecting is a strategy that allows you to re-imagine how an application is architected and developed using cloud-native features. This is typically driven by a strong business need to add features, scale, or improve performance that would otherwise be difficult to achieve with the application's current architecture.

This strategy would see you moving from a monolithic to a microservice oriented and server-less architecture to boost agility and improve business continuity. Refactoring tends to be the most expensive, but it is often the most rewarding as it could considerably decrease operational costs.

Retire

The best strategy often involves cutting the fat and rather focussing on what drives value for your business. After completing the discovery phase, it's advisable to ask each functional area who owns each application. AWS is quoted as "Finding as much as 10 – 20% of an enterprise's IT portfolio is no longer useful and can simply be turned off". This allows the organisation to reduce the overall complexity of the system, it's running costs and future maintenance.

Retain

Maybe you're still riding out some depreciation, you aren't ready to prioritise an application that was recently upgraded or are otherwise not inclined to migrate some of the applications in your environment. When this is the case, a workable strategy is to retain the situation as is, for now.

Remember though, you should only migrate what sense for your business; and, as the gravity of your portfolio changes from on-premise to the cloud, you'll probably have fewer reasons to retain anyway.

CHECK POINT:

By now you should have a table listing each running application, linked it to a migration strategy that dictates the relevant architectures needed and what you're going to do with each application.



4

Operations

Often forgotten are the operational changes that you have to make – and what impact these have on your business. Below are some of the operational changes you'll need to factor in before you move. This is not about changing *what* you do, just *how* you do what you do.

Consumption billing

It's important to know how you're going to structure the necessary payments for your cloud environment.

Consider:

CONSIDER:

Do you understand what your Total Cost of Ownership (TCO) is?

Do you know what your Cloud TCO is for your new environment?

Do you have a budget for total cloud spend in place?

Is there a company credit card that can be linked?

Is your company able to handle variable billing?

What controls will you have to avoid bill shock?

Will you have least privileged access in place?

Shared Responsibility

An important process to tackle is ensuring that your environment will run optimally so that your cloud team can effectively manage them in the long run while making sure you are not at risk from a security point of view. To understand which processes are involved for this, it's beneficial to understand what the Shared Responsibility Model looks like. The model details what the cloud provider is responsible for, and in turn, what you are responsible for. Interestingly, most breaches that occurred within public clouds did not lack the necessary security technology. Instead, there was a lack of understanding about the roles and responsibilities of each party. In a nutshell, the provider is responsible for the overall security of the cloud while you would be responsible for everything you put into the cloud.

Optimising your environment

On-going optimisation is key to a successful cloud project and assists in understanding what operational effort may be affected as your business grows and changes. Not only that, but cloud providers release new services and features on a regular basis. When you consider these in relation to how your users leverage your systems, you may find yourself in a position where to leverage your cloud environment as optimally as possible, you'll need to fully review your environment, and then make adjustments to accommodate any necessary changes.

We recommend keeping an eye on:

- > Compute utilisation
- > Saving Plans / Reserved Instances
- > Unused services

PRO TIP:

Your migration plan should always be evolving. The trick to making it a true success is to make sure your operations are evolving right along with it.



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Minimise downtime

Here's a couple tips and tricks we've learnt along the way.

- > Make use of tools which allow you to maintain normal business operations throughout the replication process while you migrate. This limits performance impact while you simultaneously move operations to the cloud
- > Continuous replication makes it easy to conduct non-disruptive tests and shorten cutover windows while you move the network identity to the cloud "computer"
- > Ensure that your launched instances are operating properly before decommissioning your source servers
- > Make use of routing services and capabilities to manage what environment your users will connect to during our migration. This helps ensure no disruptions or break in what your users are viewing
- > Make it easy to roll back if you need to (it happens – so make sure you've planned for it)
- > Ensure your migration plan has clearly defined metrics for what "good" looks like.
- > Understand at what point you should deem a project a success, and when to roll back
In the month or so after your migration, it really helps to monitor performance as you'll find that more often than not your new cloud environment will outperform your planned resource requirements – making room for additional optimisation opportunities with the unused resources

Optimise, optimise, optimise

The goal once you're in the cloud is to run as leanly as possible, while not spending more than you must.



Tip 1: Use tools to deploy

To help save time on operational overhead, consider utilising tools that manage your systems while deploying to automate the maintenance of your servers and centrally manage backups and patching, freeing your team up to focus on innovation and build new workloads that can accelerate the growth of your business.

This type of tool keeps track of:

- > Operations management
- > Application management
- > Change management
- > Node management



Tip 2: Rightsizing

Rightsizing is an important process that we often encourage our clients to adopt because it can result in saved time and costs. It is the process of matching instance type and sizes to your workload performance and capacity requirements at the lowest possible cost. Its also the process of looking at deployed instances and identifying opportunities to eliminate or downsize without compromising capacity or other requirements.



Rightsizing is the most effective way to control cloud costs as it involves continually analysing instance performance and usage needs and patterns, and then turning off idle instances and rightsizing instances that are either overprovisioned or poorly matched to the workload. Because your needs are always changing rightsizing must become an ongoing process to continually achieve cost optimisation. Our certified team of cloud experts deeply understand the ins and outs of how to align your operations to your migration strategy, and partner with you to leverage the cloud for your business.



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Get the right team in place

With extensive expertise creating scalable, reliable and secure solutions in the cloud, BBD is an experienced cloud enablement partner for businesses looking to move leverage the benefits cloud computing has to offer.

Our suite of cloud offerings covers the full spectrum of end-to-end services – from guiding and realising business strategies using the cloud, advising on best approaches to keep businesses at the forefront of scalable innovation, to using a Well-Architected Framework-first approach to ensure best practices and then assisting with the deployment and migration is new or existing workloads. We also offer a DevOps-first approach to managed cloud services and follow through with the management of service usage and billing.

BBD is a Microsoft Azure Gold certified and Advanced AWS Partner, part of the AWS Well-Architected, Public Sector, MAP, Microsoft on EC2 and Amazon CloudFront Service Delivery Programs. Moreover, BBD was awarded a place the Crown Commercial Service's Digital Marketplace and the Digital Outcomes and Specialists (DOS5) framework, providing cloud-based services to the UK's public sector. In 2021, we won the AWS Social Impact Partner of the Year – SSA award.



Quick fire words of wisdom

- > Consider your security goals and compliance requirements upfront
- > Understand what servers and applications you have running before you go down the migration route
- > Understand your current portfolio
- > Understand the six migration strategies and where they're best suited
- > Ensure your operations are ready for the move
- > Know your role in the Shared Responsibility Model
- > Use tools to help minimise downtime during the migration
- > Enlist the help of a partner experiences in migrating and optimising workloads on the cloud

Get in touch

If you'd like to engage with us, we'd love to hear from you.

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