Welcome to Assessing the Source Environment module.

Learn how to...

Discover and analyze your source environment

Identify virtual machines to migrate

Predict total cost of ownership in the cloud

Rightsize virtual machines based on their performance

In this module, you will learn how to discover and analyze your source environment via an assessment automation tool. The tool will assist you in identifying virtual machines to migrate to the cloud, predict the total cost of ownership of running Virtual Machines in the Cloud, as well as optimize your Cloud bill by providing Virtual Machine recommendations based on their actual utilization.

Agenda

Assess Phase

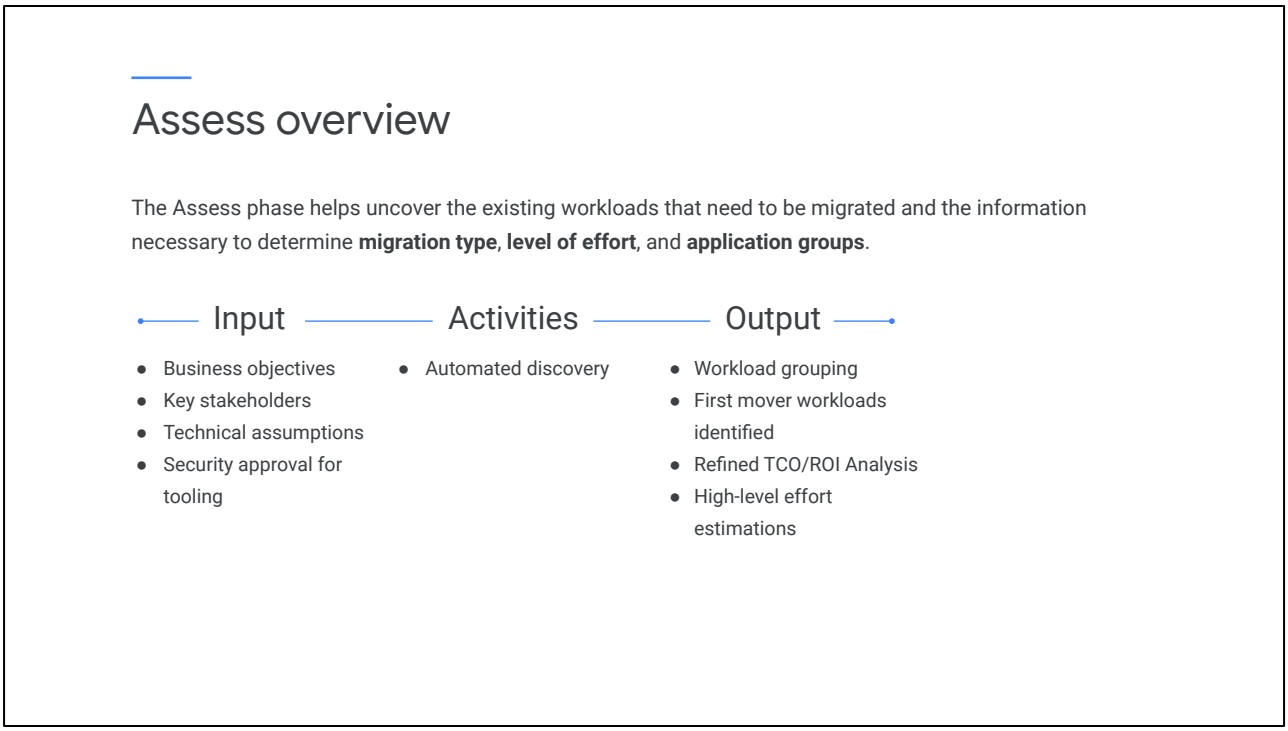
StratoZone

Choosing VMs to Migrate

Demo: Assessment Walkthrough

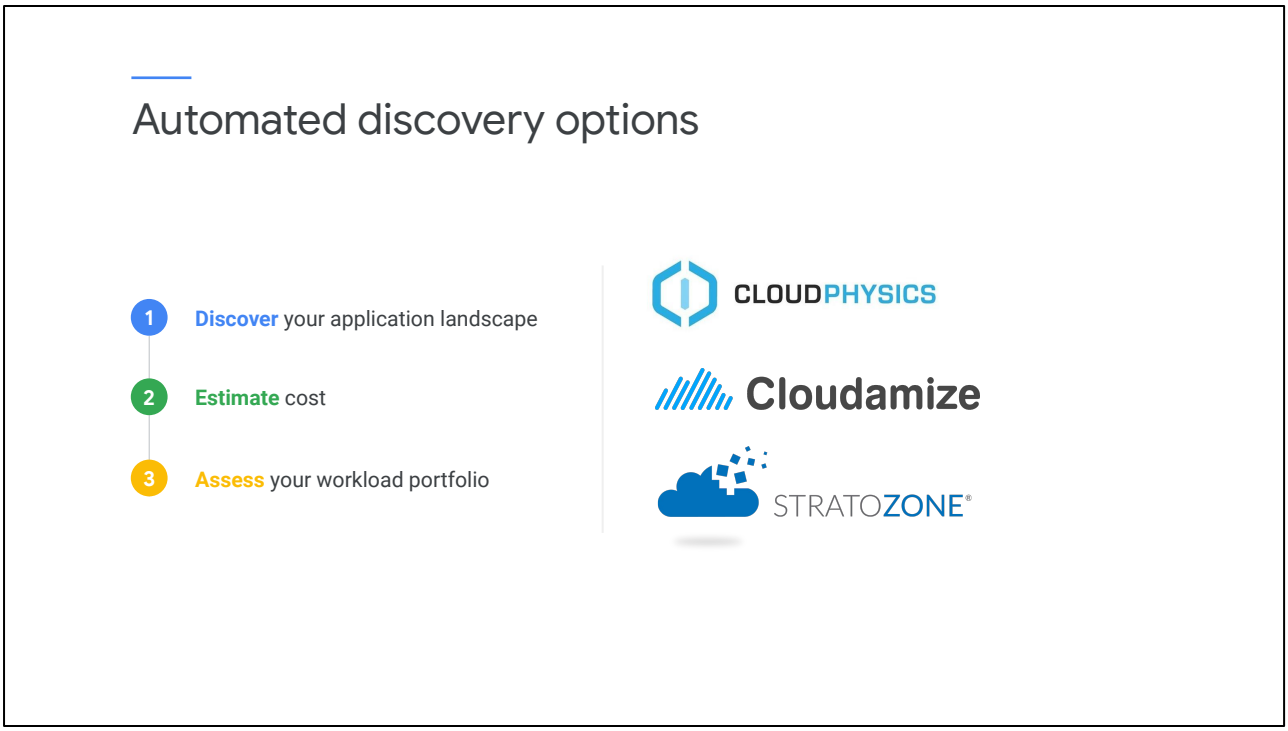
Lab

In this module, you will learn about the Assess phase and the automation tools you can use in order to discover your environment.



In this course we will focus on a specific task in the Assess phase, which includes discovering and assessing which VMs to Lift and Shift. This process will help uncover existing workloads and determine a group of VMs for the first wave of migration.

When determining which VMs to migrate, you'll probably work with other members of your organization, like security and application teams. Doing so early in the process can help you identify and remediate or bypass issues that might otherwise occur mid-migration.



There are many automation tools in the market that can help list your VM inventory, predict total cost of ownership post-migration, and spot migration challenges and obstacles. Google partners with CloudPhysics, StratoZone, and Cloudamize to provide you with free automated discovery tools to help you assess your environment. Each tool has distinct advantages and disadvantages, but for this course, we will introduce StratoZone.

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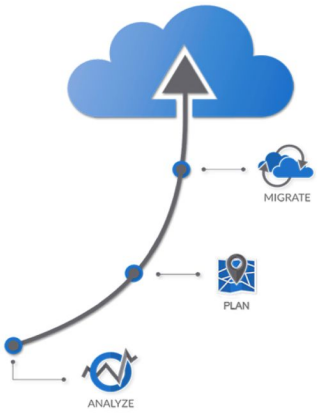
In this video, you will learn about StratoZone, a solution you can use to automatically discover your environment.

StratoZone

- Supports multiple hypervisors/CSPs
- Scans networks & queries VMs without agent
- Deploys in 45 minutes, gives results in <1 week
- Provides inventory, TCO projections, right-sizing recommendations, dependency analysis, etc.



StratoZone uses an agentless design, querying the environmental APIs and making WMI/SSH queries to individual machines. It works in multiple clouds and on multiple hypervisors. You can deploy it in less than an hour, and get results quickly. The inventory results can be used for estimating cost of operation, ideal target machine sizes, how applications relate to one another, etc.

The dependency challenge

- Applications typically involve multiple VMs
  - Load balancers, web and app servers, DB servers, dev pipelines
  - Multiple microservices

Many applications involve not just one machine, but a whole group of VMs. It might be a multi-tier application with web, middleware, and database servers, or it might be an application that uses microservices, each running on its own VM.

The dependency challenge

- Applications typically involve multiple VMs
  - Load balancers, web and app servers, DB servers, dev pipelines
  - Multiple microservices
- As a result, groups of machines will need to migrate together
  - A migration wave is a group of related machines moved together

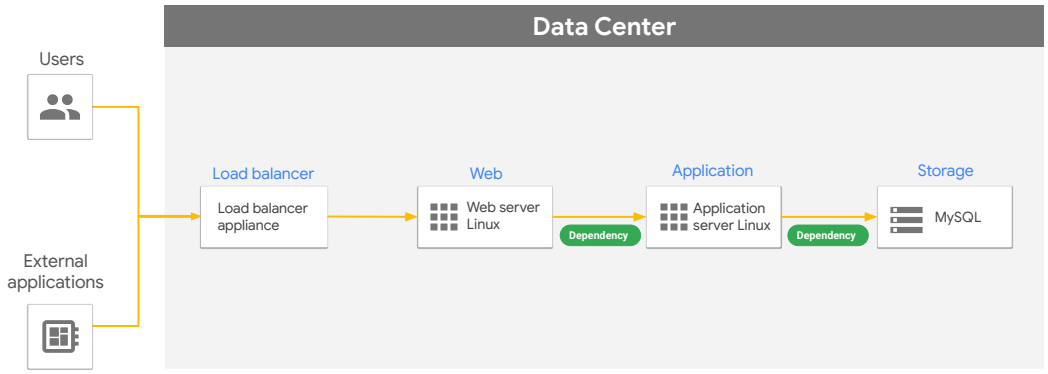
To move the application, you would need to move the entire group of VMs together; you wouldn't want to move one of the VMs and leave the others on-prem. Thus, as part of discovery, it's important not just to find out that VMs exist, but that they work together, that some are dependent on others.

The dependency challenge

- Applications typically involve multiple VMs
  - Load balancers, web and app servers, DB servers, dev pipelines
  - Multiple microservices
- As a result, groups of machines will need to migrate together
  - A migration wave is a group of related machines moved together
- Dependency information should be collected over a business cycle
  - 7-30 days typically

If you use a tool to observe inter-VM traffic and infer dependencies, that tool should have the opportunity to observe machines over a typical business cycle. Sometimes, a VM may only interact with other VMs periodically, say at the end of the week or the end of the month.

Application with dependencies



Here's an example multi-tier application. The diagram shows the dependencies between the Web and Application tiers, and the Application and Storage tiers. You could identify these dependencies by talking to the application owners, or by using a tool that watches for network traffic between the VMs.

Dependency mapping

- StratoZone's StratoProbe is installed on a Windows machine in the data center
  - Granted access to vSphere for infrastructure
  - Granted SSH/WMI access to machines (credentials, firewall)

Stratozone's StratoProbe module is the data collection appliance. You must give it credentials that have permissions in vSphere and on the source VM OSes so that it can make its queries. You will also need to configure the network to allow the network queries to be made. You can install multiple probes in multiple locations if necessary. It does the dependency detection and reporting that can be helpful in your project.

Dependency mapping

- StratoZone's StratoProbe is installed on a Windows machine in the data center
  - Granted access to vSphere for infrastructure
  - Granted SSH/WMI access to machines (credentials, firewall)
- Collected data sent to StratoZone cloud via SSL

Once the data has been collected, it is forwarded to the SaaS backend via SSL.

Agenda

Assess Phase

StratoZone

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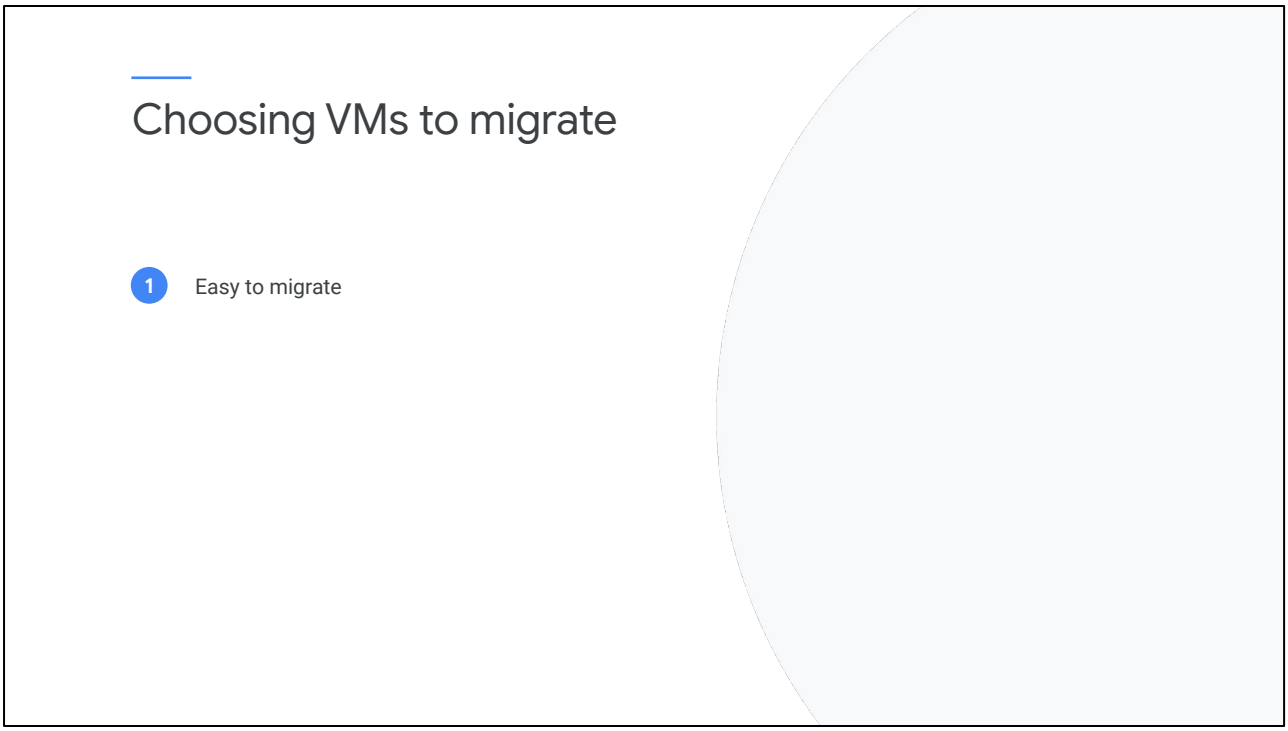
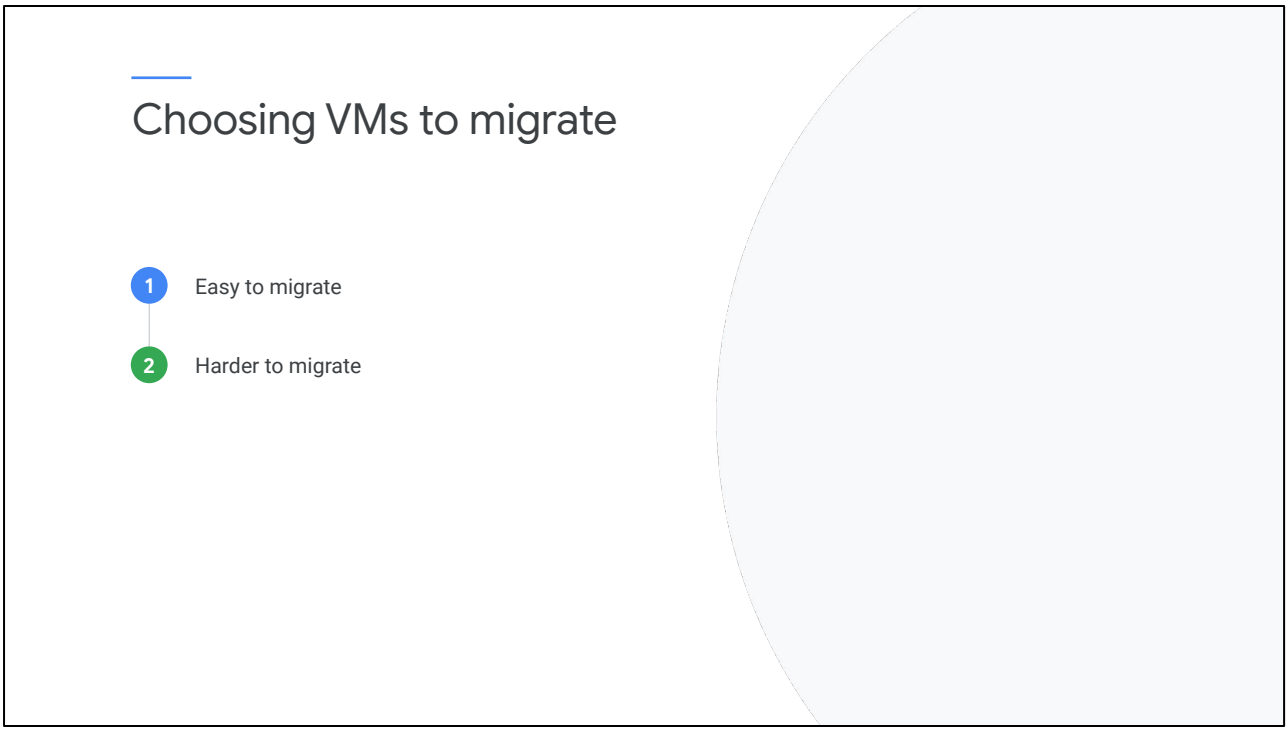
After installing StratoZone you will be able to gain insight into your environment which will help you choose the right Virtual Machines to migrate. In this video, you will learn how to run reports and choose the right virtual machines to migrate.



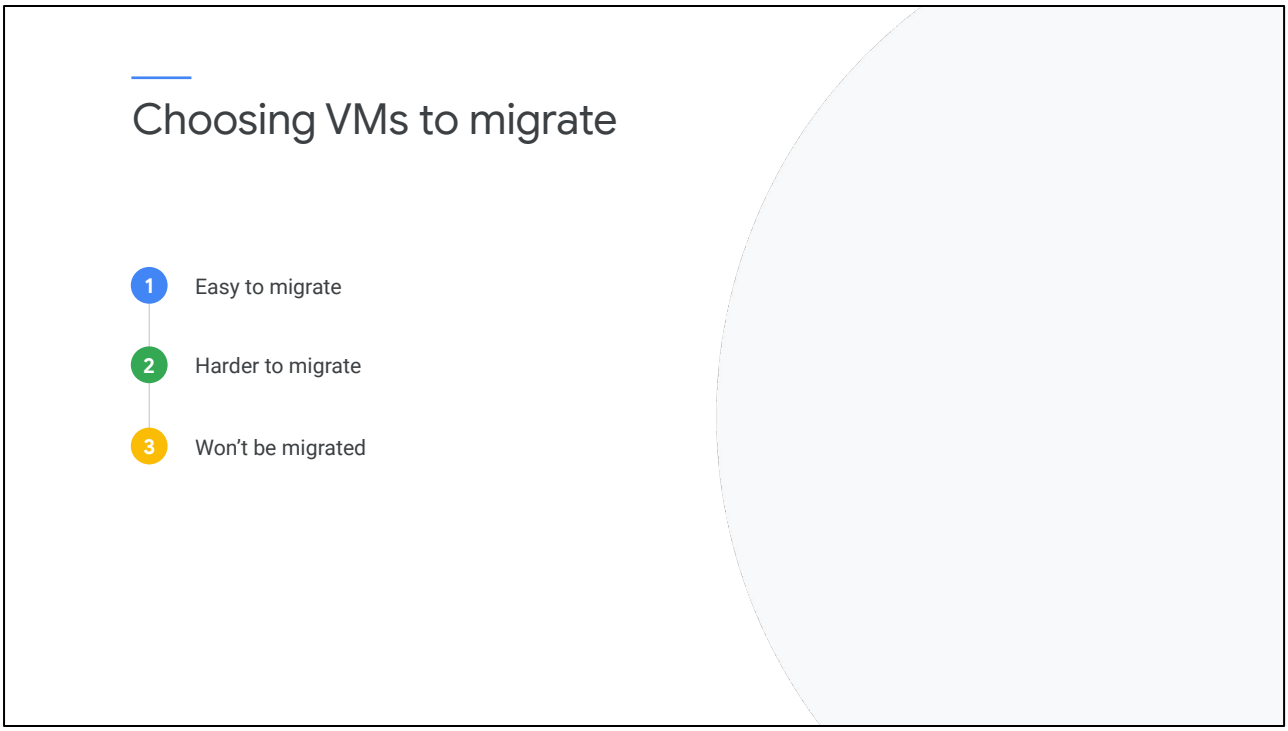
In this module you will learn strategies and considerations for choosing which VMs to migrate to the cloud. There are many different kinds of apps running inside VMs, for instance, customer-facing apps, back office, developer tools, and experimental apps.

There are 3 categories to keep in mind when choosing VMs to migrate:

Apps that are easy to move: These have fewer dependencies, are newer, are written internally so have no licensing considerations, and are more tolerant to scaling and other cloud patterns.

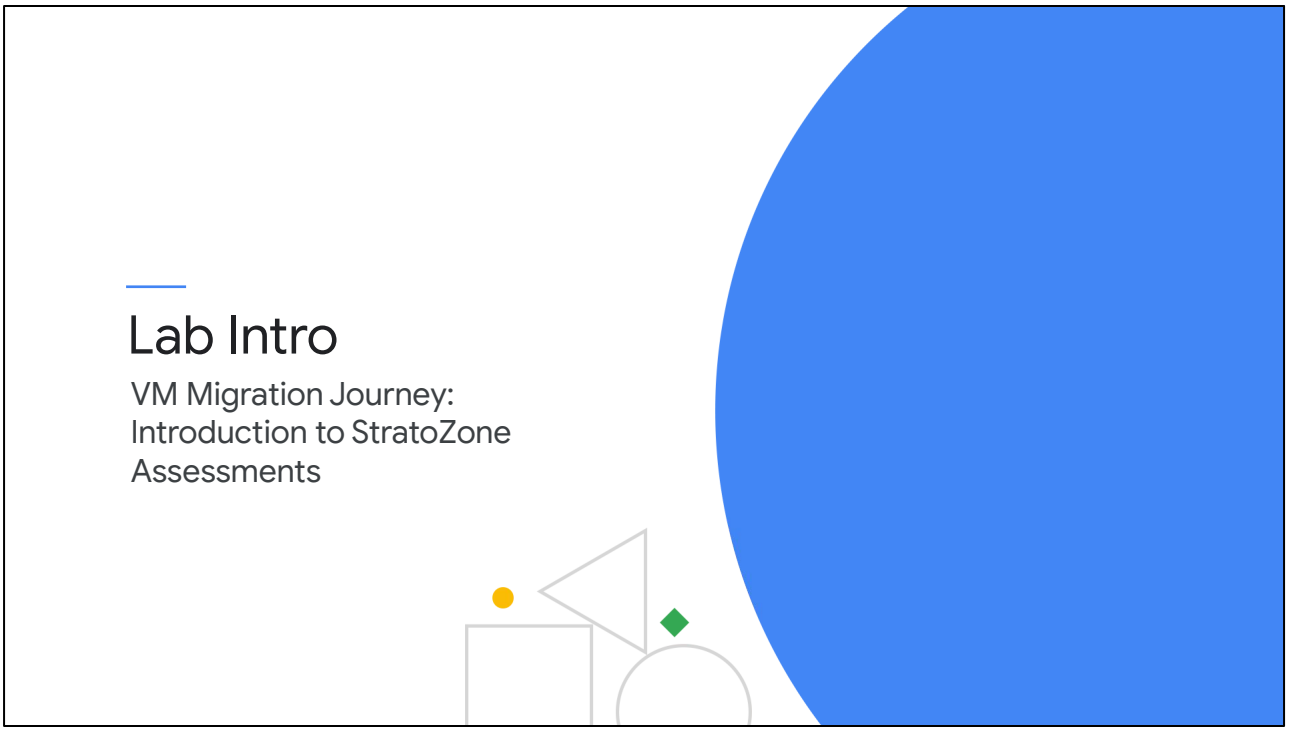


Apps that are difficult to move: These have more dependencies, are less tolerant to scaling, or have complex license requirements.



Apps that won't be moved: Some apps that might not be good candidates to migrate run on specialized or older hardware, have business or regulatory requirements that make it necessary for them to stay in your data center, or have complex licensing requirements that don't allow them to move to the cloud.

One of the ways to sort VMs for migration is to tag them by the level of migration difficulty the application that runs on them imposes.



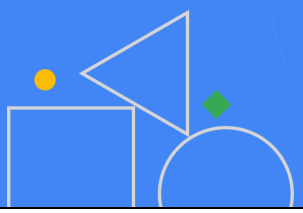
In this lab, you'll learn how to assess a customer's current environment with StratoZone's scalable discovery. The tasks that you will perform include:

- Creating a new assessment,
- Deploying a collector and starting a scan of the deployed environment,
- Grouping assets based on defined criteria,
- Reviewing collected data, and
- Running reports

Lab Solution

VM Migration Journey: Introduction to StratoZone Assessments

Chris Lupone



In the lab, you completed an assessment for a sample customer. You scanned an environment within Google Cloud in the same way you would discover physical or virtual servers on a customer's network within their datacenter(s). You also loaded an inventory list of assets to be analyzed without the scan.

You also navigated through some of the key areas of delivery such as forming groups, optimizing around utilization of assets, and generating reports (inventory, TCO/ROI).

You are welcome to stay for a lab walkthrough, but remember that the Google Cloud user interface can change, so your environment might look slightly different.

In this module, you discovered how to analyze your source environment via an assessment automation tool and how it assists you in identifying which virtual machines to migrate to the cloud. You also learned how the automation tool predicts the total cost of ownership of running Virtual Machines in the Cloud, and optimizes your Cloud bill by providing Virtual Machine recommendations based on their actual utilization.

In the next module, we will discuss the destination environment for your workloads, which is Google Cloud. We will introduce you to some Google Cloud terminology, how resource hierarchy works in the Google Cloud environment, and share ways to control permissions using Cloud Identity and Access Management.

Move on to the next module to learn more.