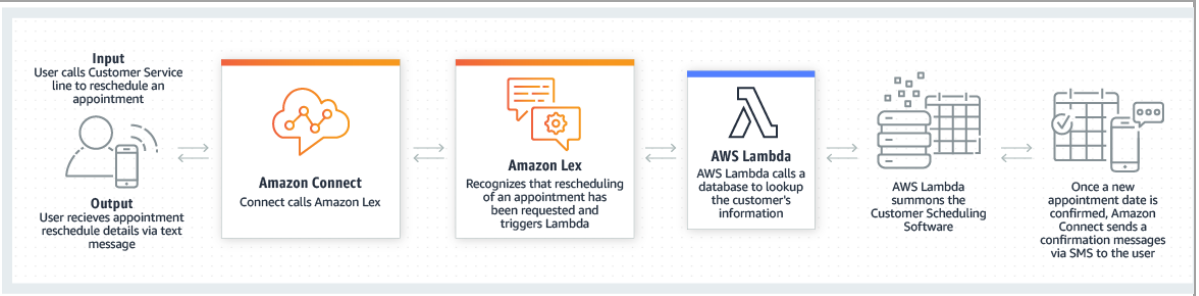
AWS - Connect and LEX

Amazon Connect provides a seamless omnichannel experience through a single unified contact center for voice and chat. Contact center agents and managers don't have to learn multiple tools, because Amazon Connect has the same contact routing, queuing, analytics, and management tools in a single UI across voice, web chat, and mobile chat.

Amazon Lex is a service for building conversational interfaces into any application using voice and text. Amazon Lex provides the advanced deep learning functionalities of automatic speech recognition (ASR) for converting speech to text, and natural language understanding (NLU) to recognize the intent of the text, to enable you to build applications with highly engaging user experiences and lifelike conversational interactions. With Amazon Lex, the same deep learning technologies that power Amazon Alexa are now available to any developer, enabling you to quickly and easily build sophisticated, natural language, conversational bots ("chatbots").



Contact flows define the experience your customers have when they interact with your contact center. These are similar in concept to Interactive Voice Response (IVR). Contact flows are comprised of blocks, with each block defining a step or interaction in your contact center. For example, there are blocks to play a prompt, get input from a customer, branch based on customer input, or invoke an AWS Lambda function or and Amazon Lex bot.

By using an Amazon Lex chatbot in your Amazon Connect call center, callers can perform tasks such as changing a password, requesting a balance on an account, or scheduling an appointment, without needing to speak to an agent. These chatbots use automatic speech recognition and natural language understanding to recognize the intent of the caller. They are able to recognize human speech at an optimal (8 kHz) telephony audio sampling rate, and understand the caller's intent without requiring the caller to speak in specific phrases. Amazon Lex uses AWS Lambda functions to query your business applications, provide information back to callers, and make updates as requested. Amazon Lex chatbots also maintain context and manage the dialogue, dynamically adjusting responses based on the conversation.

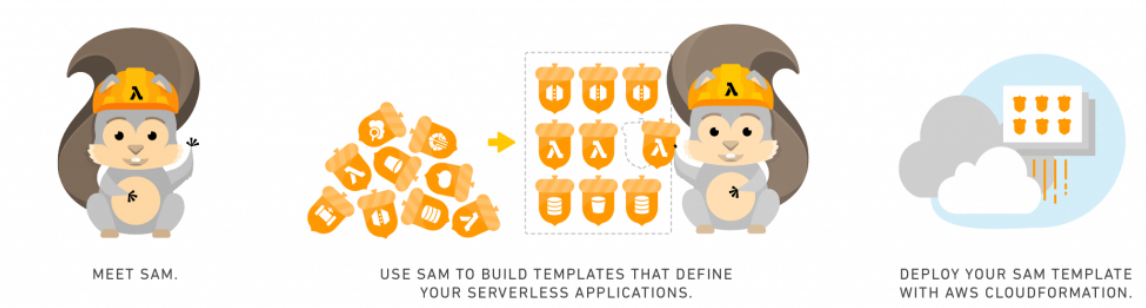
References:

https://aws.amazon.com/connect/

https://aws.amazon.com/lex/

AWS - Serverless Application Model (SAM)

The ***AWS Serverless Application Model (AWS SAM)*** is an open-source framework that you can use to build serverless applications on AWS. It consists of the AWS SAM template specification that you use to define your serverless applications, and the AWS SAM command line interface (AWS SAM CLI) that you use to build, test, and deploy your serverless applications.



Because AWS SAM is an extension of AWS CloudFormation, you get the reliable deployment capabilities of AWS CloudFormation. You can define resources by using AWS CloudFormation in your AWS SAM template. Also, you can use the full suite of resources, intrinsic functions, and other template features that are available in AWS CloudFormation.

You can use AWS SAM with a suite of AWS tools for building serverless applications. To build a deployment pipeline for your serverless applications, you can use CodeBuild, CodeDeploy, and CodePipeline. You can also use AWS CodeStar to get started with a project structure, code repository, and a CI/CD pipeline that's automatically configured for you. To deploy your serverless application, you can use the Jenkins plugin, and you can use Stackery.io's toolkit to build production-ready applications.

References:

https://docs.aws.amazon.com/serverless-application-model/latest/developerguide/what-is-sam.html

https://docs.aws.amazon.com/serverless-application-model/latest/developerguide/automating-updates-to-serverless-apps.html

Check out this AWS Serverless Application Model Cheat Sheet:

https://tutorialsdojo.com/aws-cheat-sheet-aws-serverless-application-model-sam/

AWS - Server Migration Server (SMS)

AWS Server Migration Service (SMS) is an agentless service which makes it easier and faster for you to migrate thousands of on-premises workloads to AWS.

AWS SMS allows you to automate, schedule, and track incremental replications of live server volumes, making it easier for you to coordinate large-scale server migrations.

AWS Server Migration Service is a significant enhancement of the EC2 VM Import/Export service.

The AWS Server Migration Service provides automated, live incremental server replication and AWS Console support, unlike the VM Import/Export service.

Hence, deploying the AWS Server Migration Service Connector virtual appliance on your on-premises VMware vCenter environment and using the AWS Server Migration Service for the migration process is the best answer.

VM Import/Export enables you to easily import virtual machine images from your existing environment to Amazon EC2 instances and export them back to your on-premises environment.

This offering allows you to leverage your existing investments in the virtual machines that you have built to meet your IT security, configuration management, and compliance requirements by bringing those virtual machines into Amazon EC2 as ready-to-use instances.

You can also export imported instances back to your on-premises virtualization infrastructure, allowing you to deploy workloads across your IT infrastructure.

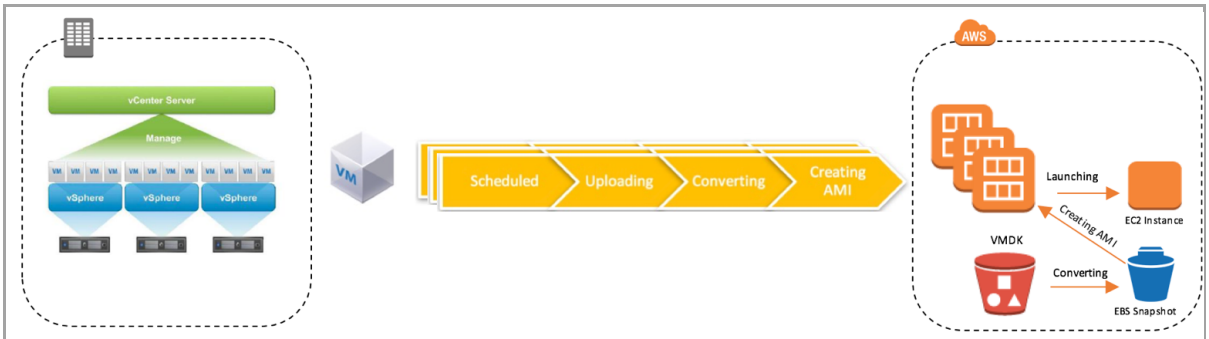
Additional notes:

It is recommended by AWS to use the Server Migration Service (SMS) to migrate VMs from a vCenter environment to AWS.

SMS automates the migration process by replicating on-premises VMs incrementally and converting them to Amazon machine images (AMIs).

You can continue using your on-premises VMs while migration is in progress. The Server Migration Connector is a FreeBSD VM that you install in your on-premises virtualization environment

Hence, the correct answers are: using the AWS Server Migration Service (SMS) and installing the Server Migration Connector to your on-premises virtualization environment.



Reference:

https://aws.amazon.com/server-migration-service

https://aws.amazon.com/ec2/vm-import/

Check out this AWS Server Migration Service Cheat Sheet:

https://tutorialsdojo.com/aws-cheat-sheet-aws-server-migration-service-sms/

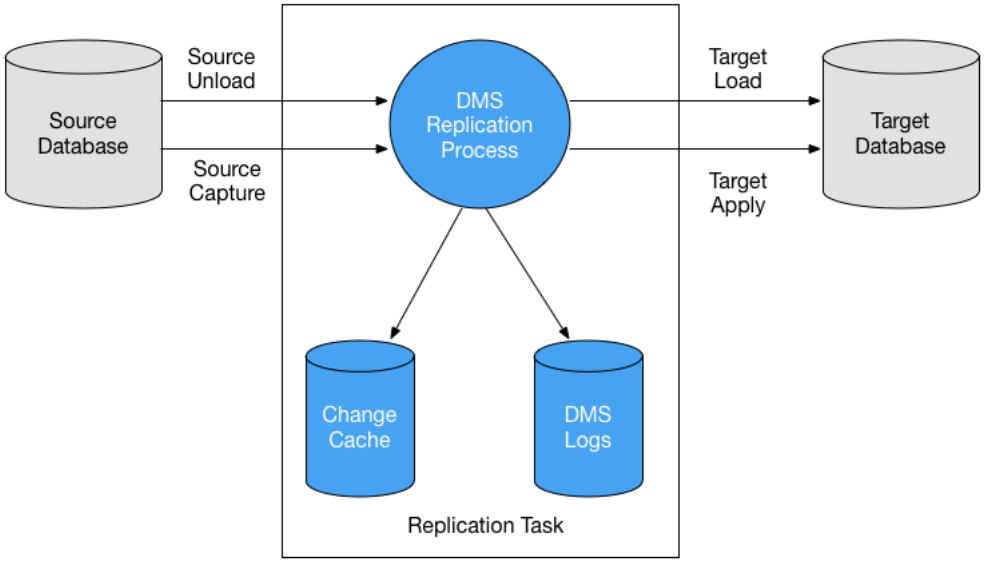
Here is a deep dive on AWS Server Migration Service:

https://youtu.be/11IHvxjy4hw

AWS - Database Migration Service (DMS)

AWS Database Migration Service helps you migrate databases to AWS quickly and securely. The source database remains fully operational during the migration, minimizing downtime to applications that rely on the database.

The AWS Database Migration Service can migrate your data to and from the most widely used commercial and open-source databases. AWS Database Migration Service supports homogeneous migrations such as Oracle to Oracle, as well as heterogeneous migrations between different database platforms, such as Oracle or Microsoft SQL Server to Amazon Aurora. With AWS Database Migration Service, you can continuously replicate your data with high availability and consolidate databases into a petabyte-scale data warehouse by streaming data to Amazon Redshift and Amazon S3.



Cold HDD volumes provide low-cost magnetic storage that defines performance in terms of throughput rather than IOPS. With a lower throughput limit than Throughput Optimized HDD, this is a good fit ideal for large, sequential cold-data workloads. If you require infrequent access to your data and are looking to save costs, Cold HDD provides inexpensive block storage. Take note that bootable Cold HDD volumes are not supported.