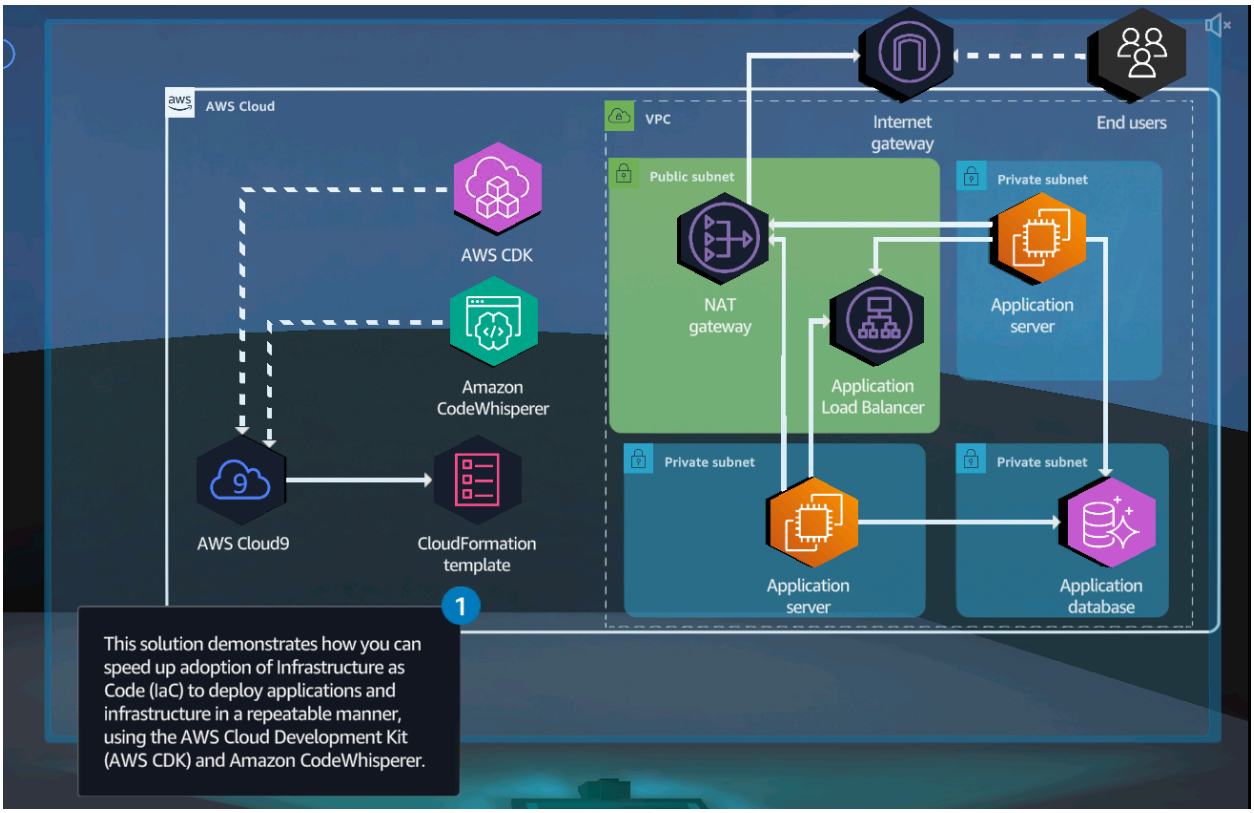
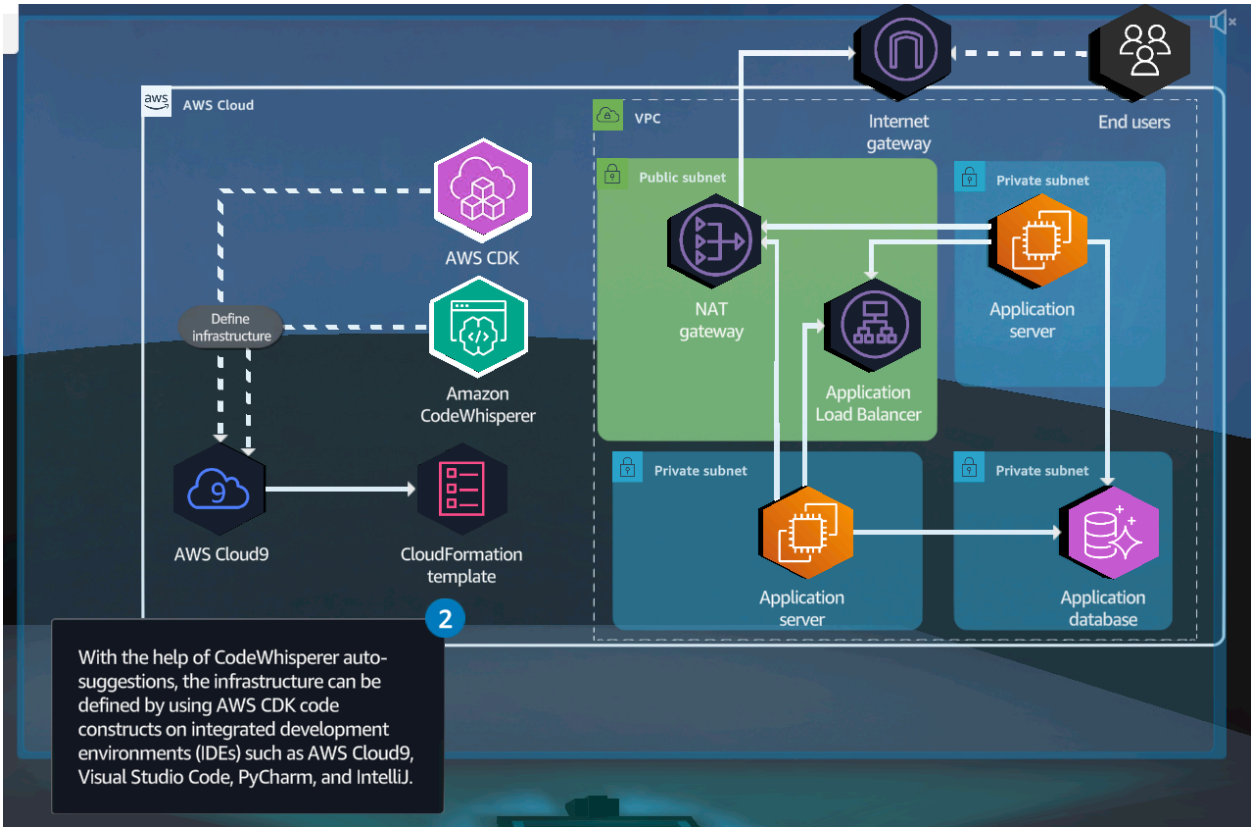
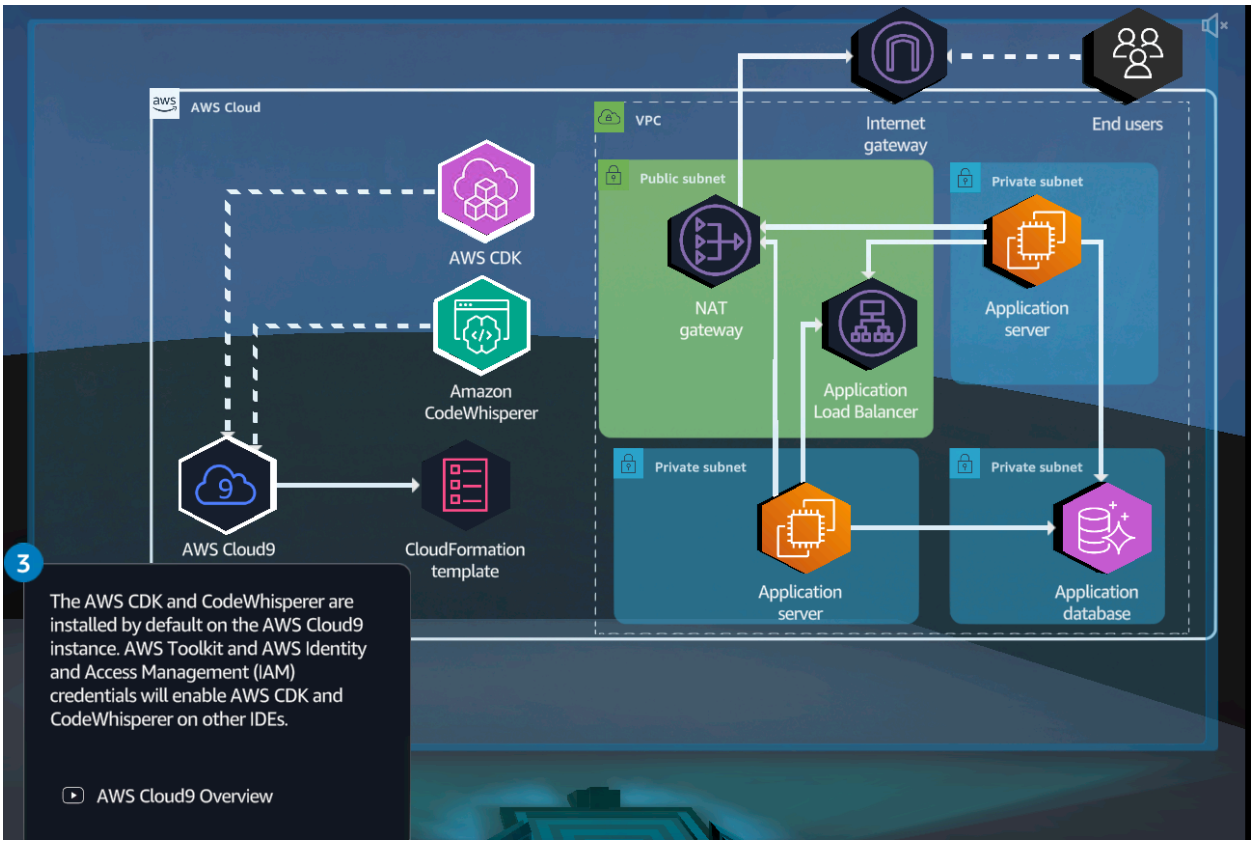
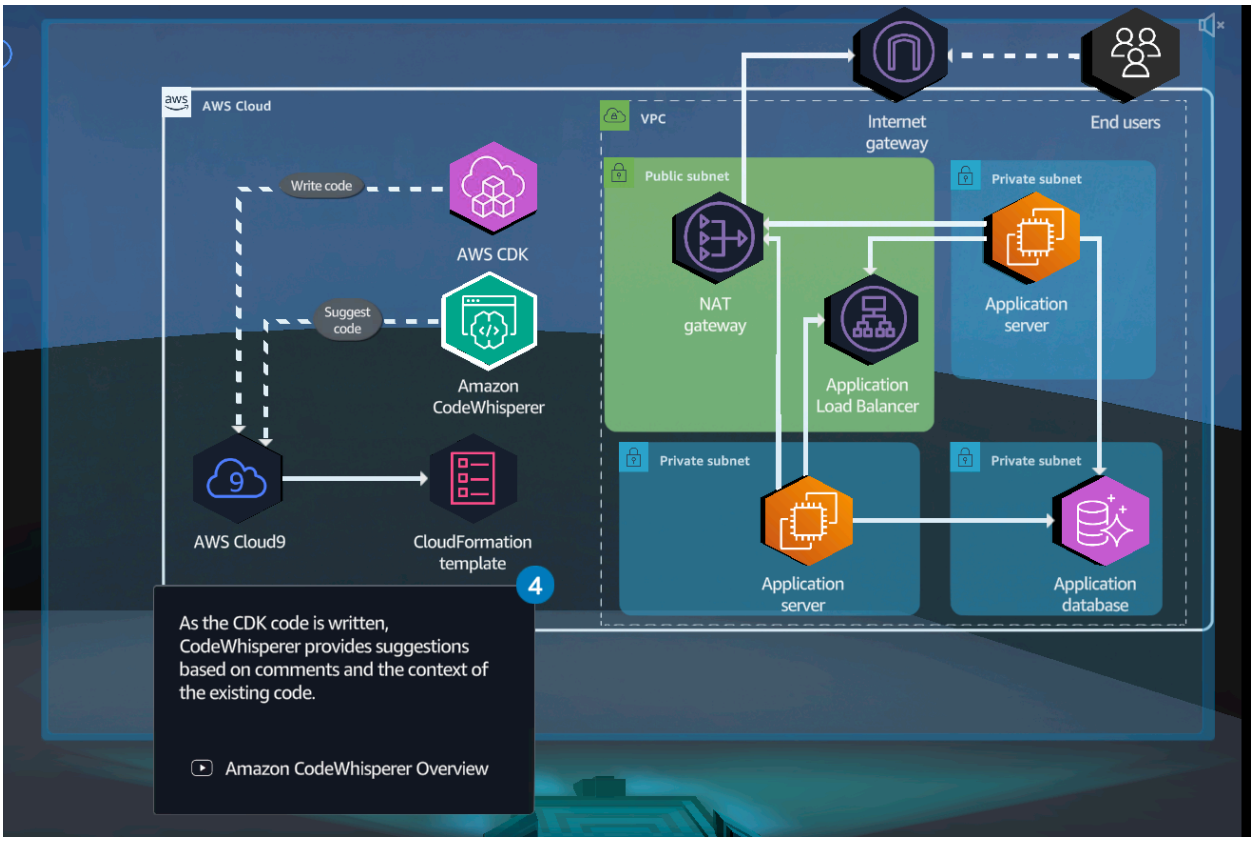
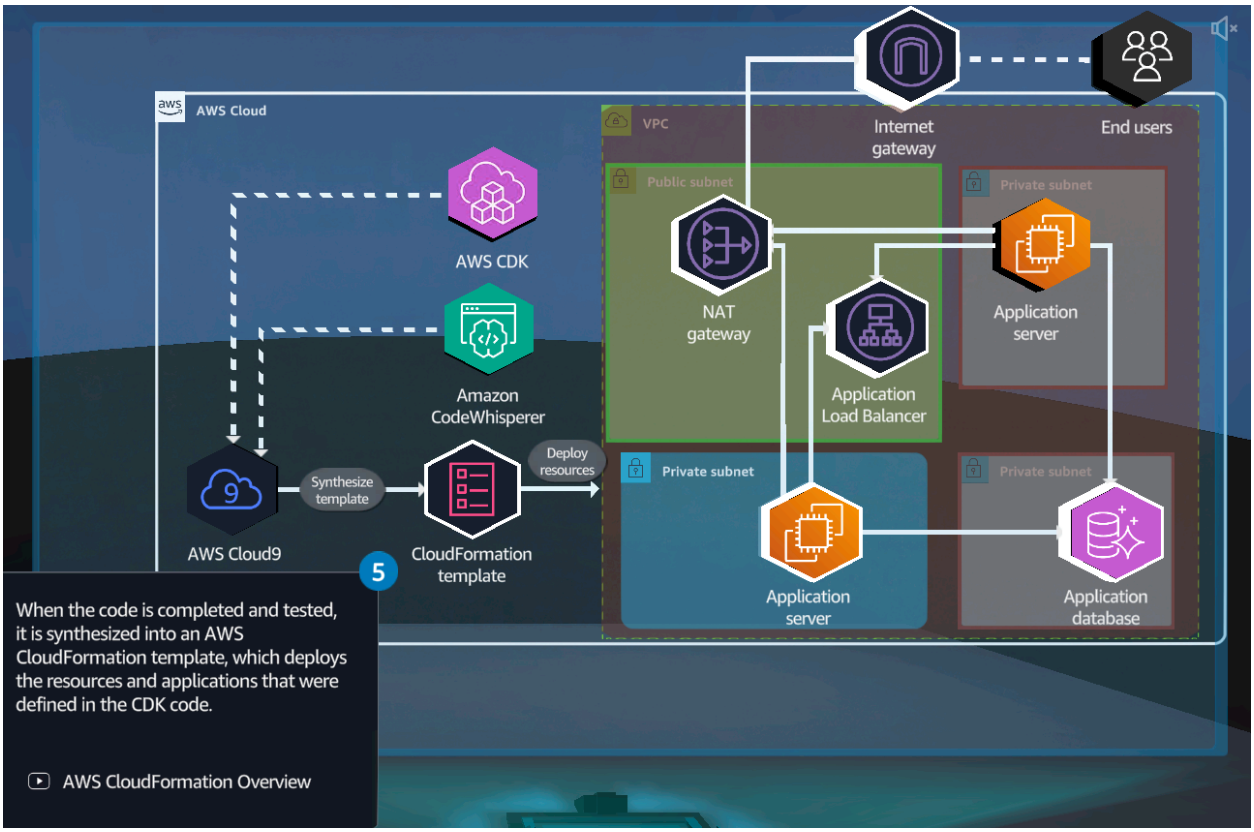
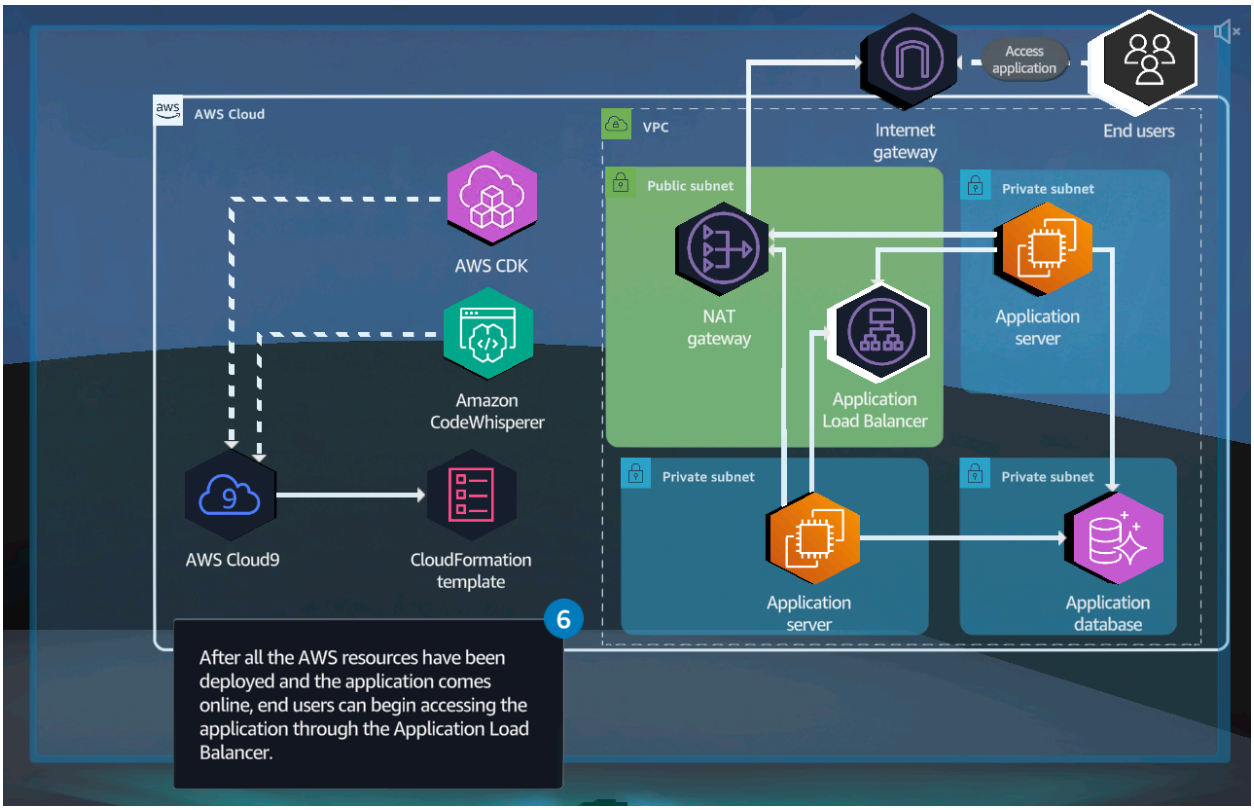

AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
1
This solution demonstrates how you can speed up adoption of Infrastructure as Code (IaC) to deploy applications and infrastructure in a repeatable manner, using the AWS Cloud Development Kit (AWS CDK) and Amazon CodeWhisperer.

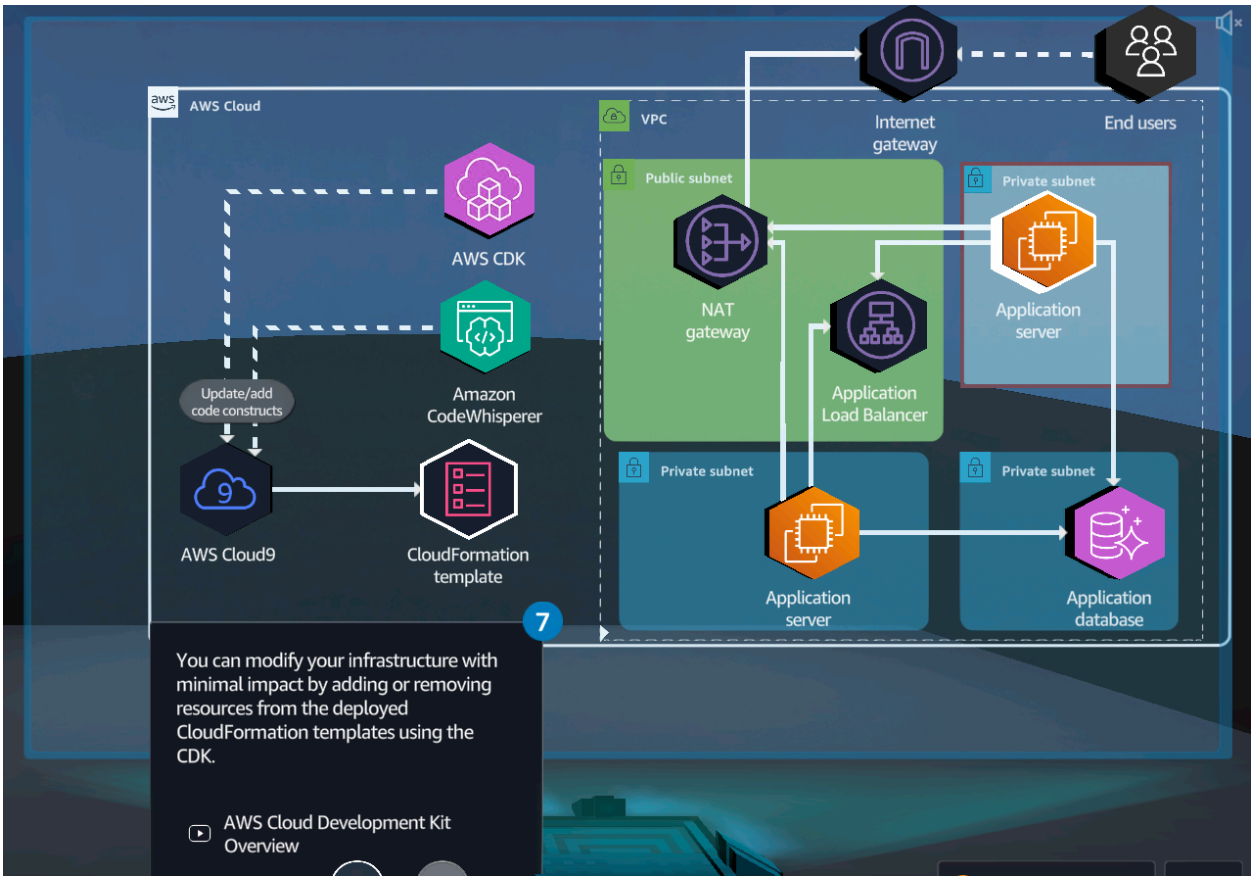

AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
Define infrastructure
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
2
With the help of CodeWhisperer auto-suggestions, the infrastructure can be defined by using AWS CDK code constructs on integrated development environments (IDEs) such as AWS Cloud9, Visual Studio Code, PyCharm, and IntelliJ.


AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
3
The AWS CDK and CodeWhisperer are installed by default on the AWS Cloud9 instance. AWS Toolkit and AWS Identity and Access Management (IAM) credentials will enable AWS CDK and CodeWhisperer on other IDEs.
AWS Cloud9 Overview


AWS Cloud
VPC
Internet gateway
End users
Write code
AWS CDK
Suggest code
Amazon CodeWhisperer
Public subnet
NAT gateway
Application Load Balancer
Private subnet
Application server
Private subnet
Application server
Private subnet
Application database
AWS Cloud9
CloudFormation template
4
As the CDK code is written, CodeWhisperer provides suggestions based on comments and the context of the existing code.
Amazon CodeWhisperer Overview


AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Synthesize template
Deploy resources
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
5
When the code is completed and tested, it is synthesized into an AWS CloudFormation template, which deploys the resources and applications that were defined in the CDK code.
AWS CloudFormation Overview


Access application
AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
6
After all the AWS resources have been deployed and the application comes online, end users can begin accessing the application through the Application Load Balancer.


AWS Cloud
VPC
Internet gateway
End users
Public subnet
Private subnet
AWS CDK
NAT gateway
Application server
Amazon CodeWhisperer
Application Load Balancer
Update/add code constructs
Private subnet
Private subnet
AWS Cloud9
CloudFormation template
Application server
Application database
7
You can modify your infrastructure with minimal impact by adding or removing resources from the deployed CloudFormation templates using the CDK.
AWS Cloud Development Kit Overview