

NorthCode Integration Guide

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Overview

[NorthCode](#) is the only complete BDD (Behaviour-driven development) testing solution for Amazon Connect. NorthCode provides its own SIP Trunking solutions to integrate with PSTN (Public switched telephone network). NorthCode uses Amazon Poly and Amazon Transcribe to deliver programmable voice capabilities to develop BDD test cases.

NorthCode also provides a BDD code editor that uses industry standard Gherkin syntax. Ubiquitous language provided by Gherkin syntax helps to involve all parties in the project, including non-technical ones. This strong collaboration improves visibility.

NorthCode on AWS

This Quick Start reference deployment guide provides step-by-step instructions for integrating your Amazon Connect instance with NorthCode on the AWS Cloud.

In our SaaS model all users sharing the same domain name can work on the projects together by sharing the projects with their colleagues. For SaaS offering details please visit <https://northcode.dev/>

To integrate your Amazon Connect instance on your AWS account with NorthCode please follow our Quick Start guide.

This Quick Start is for users who have already configured an Amazon Connect instance in their AWS account and want to integrate NorthCode which provides BDD testing functionality for Amazon Connect.

You will need to contact NorthCode to onboard your AWS account.

Cost & licences

You are responsible for the cost of the AWS services used while running this Quick Start reference deployment. There is no additional cost for using the Quick Start.

The instructions for this Quick Start includes configuration parameters that you can customise. For cost estimates, see the pricing pages for each AWS service you will be using. Prices are subject to change.

Tip After you deploy the Quick Start, we recommend that you enable the AWS Cost and Usage Report to track costs associated with the Quick Start. This report delivers billing metrics to an Amazon Simple Storage Service (Amazon S3) bucket in your account. It provides cost estimates based on usage throughout each month and finalises the data at the end of the month. For more information about the report, see the AWS documentation.

You do not need any licence to integrate NorthCode with your Amazon Connect instance.

Subscription fee

Please note that NorthCode requires a \$6,000 per month subscription fee. The Subscription fee is charged and collected in advance.

Cost for the on-demand usage

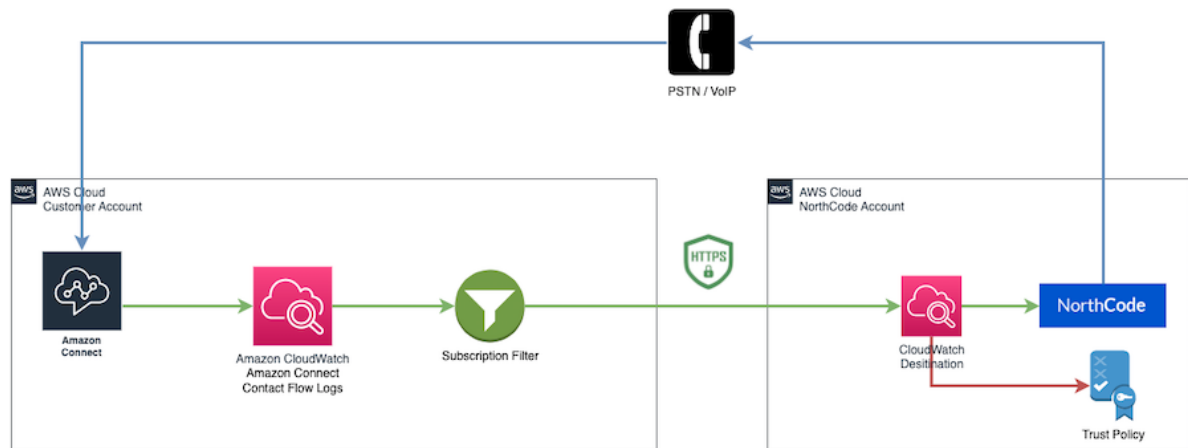
You are also charged for the duration of your test runs. Please see the [pricing](#) document for details.

Discounts

You could get discounts if your usage goes over certain limits or if you commit certain minutes of use. Please contact your account team for more details.

Architecture

Deploying this Quick Start with your Amazon Connect instance builds the following environment in the AWS Cloud to serve NorthCode.



The Quick Start sets up the following:

- Subscription filter on your Amazon Connect instance's CloudWatch log group

With these subscriptions, you can access a near-real time feed of the log events being delivered to NorthCode. The log events are delivered to an CloudWatch destination that you will provide

Streaming of CloudWatch Logs data to other destinations results in usage charges. With Amazon CloudWatch Logs subscriptions, standard Amazon CloudWatch charges apply. For more information, see [Managing Your Costs with Budgets](#)

Planning the deployment

Knowledge

This deployment guide also requires a moderate level of familiarity with AWS services. If you're new to AWS, visit the [Getting Started Resource Centre](#) and the [AWS Training and Certification](#) website for materials and programs that can help you develop the skills to design, deploy, and operate your infrastructure and applications on the AWS Cloud.

AWS account

If you don't already have an AWS account, create one at <https://aws.amazon.com> by following the on-screen instructions. Part of the sign-up process involves receiving a phone call and entering a PIN using the phone keypad. Your AWS account is automatically signed up for all AWS services. You are charged only for the services you use.

Technical requirements

Before you launch the Quick Start, your account must be configured as specified in the following table. Otherwise, deployment might fail.

Resources : If necessary, request [service quota increases](#) for the following resources. You might need to do this if an existing deployment uses these resources, and you might exceed the default quotas with this deployment. The [Service Quotas console](#) displays your usage and quotas for some aspects of some services. For more information, see the [AWS documentation](#)

- NA

Regions: You must deploy this Quick Start in the region that you have your Amazon Connect instance

IAM Permissions: To deploy the Quick Start, you must log in to the AWS Management Console with IAM permissions that can execute “`logs:PutSubscriptionFilter`” action on CloudWatch log groups. The *AdministratorAccess* managed policy within IAM provides sufficient permissions, although your organisation may choose to use a custom policy with more restrictions.

Deployment options

This Quick Start provides integration with the NorthCode SaaS solution. This option will create all resources illustrated in the architectural diagram above.

Deployment Steps

Create an Amazon Connect Instance

1. If you do not already have an Amazon Connect instance, navigate to <https://console.aws.amazon.com/connect/home?region=us-east-1#>, choose Add an instance, and follow the prompts to create a new Amazon Connect instance
2. Note the Amazon Connect instance alias.
3. Start developing your Amazon Connect flows. You must use “Set logging behavior” to enable logging. When logging is enabled, data for each block in your contact flow is sent to Amazon CloudWatch Logs. [Info](#)
4. You could use your sample NorthCodeBanking flow. You can download the code [here](#) and import this flow on your Amazon Connect instance.

Onboard your account on NorthCode

Please contact [Support](#) to onboard your AWS Account. Our support team will create the required cross account trusts for your AWS account. You must provide your AWS Account ID and AWS Region that your Amazon Connect instance is running on.

Please wait for the confirmation from NorthCode for your AWS Account onboarding.

Sign into your AWS Account

Please note that you should use AWS CLI to create the subscription filter

1. Install the latest version of [AWS CLI](#).
2. Ensure that your AWS account is configured correctly. Please see the [link](#) for details.
3. Get your access key and secret key. You could use;
 - a. AWS SSO to generate temporary keys (Simply click “*Command line or programmatic access*” link on your SSO page and follow the instructions)
 - b. Or you could use [IAM user’s keys](#). (Please make sure you delete these keys after you completed installation for NorthCode if you created the keys only to deploy NorthCode)
4. Make sure IAM user/role that has the necessary permissions. For details, see [Planning the deployment](#) earlier in this guide

Create subscription filter on your CloudWatchLogGroup

1. Using AWS CLI please execute the command below. Please replace “{LogGroup}” with the CloudWatch log group name you use for your Amazon Connect instance. E.g. “/aws/connect/caffeine”. The command below will create the subscription filter.

```
aws logs put-subscription-filter \  
  --log-group-name {LogGroup} \  
  --filter-name "NorthCode" \  
  --filter-pattern "NorthCode"
```

```
--filter-pattern "" \
--destination-arn "arn:aws:logs:us-east-1:707364453287:destination:CWDestinationNorthCode" \
--output "json"
```

Validating the installation

1. On AWS Console please check the subscription filter. You should see the subscription filter as below

Log group	Data protection	Sensitive data	Retention	Metric filters	Contributor insights	Subscription filters
<input type="checkbox"/> /aws/connect/caffine	Inactive	-	Never expire	-	-	1 subscription

Log streams	Metric filters	Subscription filters	Contributor insights	Tags	Data protection - new
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Subscription filters (1)
Refresh
Delete
Create

We now support up to 2 subscription filters per log group.

Filter subscription filters

Filter name	Filter pattern	Destination ARN
<input type="checkbox"/> NorthCode	-	arn:aws:logs:us-east-1:707364453287:destination:CWDestinationNorthCode

Testing the integration

Please login to your account on <https://northcode.dev/>

You should now see the Amazon Connect integration on NorthCode when you execute your BDD test cases.

[Back to the project](#)
 Working project : Pin Transactions

+ Add new feature

FEATURES
 Pin Transactions
 Welcome message
 Email the last statement

Feature : Pin Transactions
 English
 Feature: Pin Transactions
 I want to get my credit card statements
 So I can see my spendings
 Scenario: Welcome message
 Given I'm logged on the telephone banking
 When I press two for credit card transactions
 Then I hear "welcome to CC menu"
 Scenario: Email the last statement
 # some comments here
 Given I'm logged on the telephone banking
 and I'm in the Credit Cards menu
 When I press one
 or I say "statements"
 Then I get my last statement as an email
 And I hear "your statement has been emailed to you"

Scenario execution logs
 5:18:24 PM STARTING SCENARIO EXECUTION
 5:18:34 PM SCENARIO "WELCOME MESSAGE" STARTING THE NEW CALL TO TODD-PROJECTPHONE

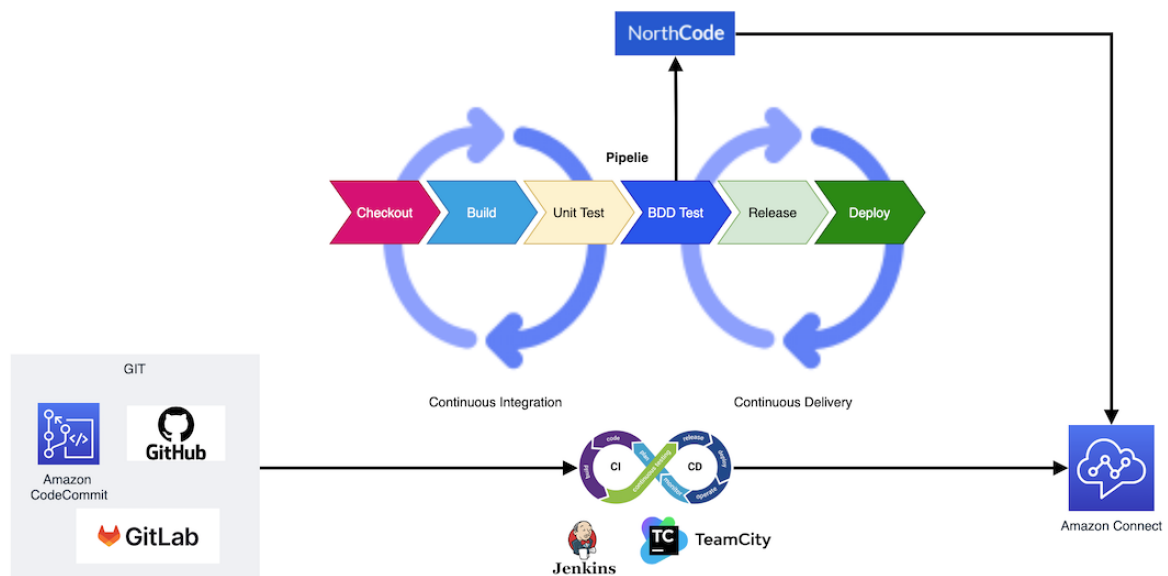
Provider : Amazon Connect
 Set logging behavior
 PlayPrompt

```
{
  "ContactId": "90ad98ac-b7e1-4642-8d61-",
  "ContactFlowId": "arn:aws:connect:us-e.",
  "ContactFlowName": "NorthCodeBanking",
  "ContactFlowModuleType": "PlayPrompt",
  "Timestamp": "2022-12-30T17:18:35.949Z",
  "Parameters": {
    "TextToSpeechType": "text",
    "SpeakingStyle": "",
    "Text": "Thank me for calling NorthC",
    "Voice": "Joanna",
    "GlobalEngine": "Standard"
  }
}
```

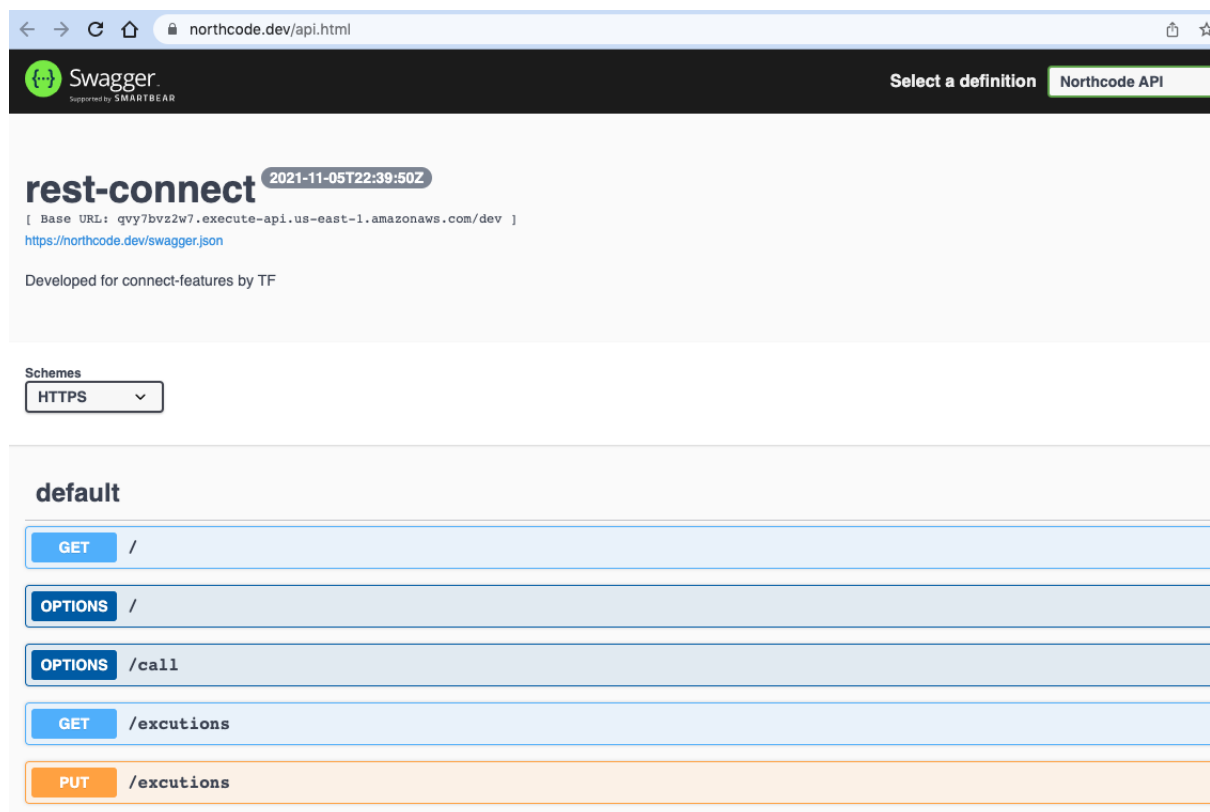
 PlayPrompt

CI/CD Integration

NorthCode provides API interface for you to integrate your CI/CD pipelines with NorthCode BDD test engine. In your pipelines you can define as new stage, e.g. “Run BDDs”, and call NorthCode APIs to execute your BDD test cases



Please see the [link](#) for API interfaces. Once you have deployed NorthCode you can access to API interface by using <https://northcode.dev/api.html>



Security

NorthCode is designed to provide a secure, high-performant and resilient BDD testing solution. Security for us is the highest priority. NorthCode is built on cloud first principles. As a NorthCode customer, you benefit from a data centre and network architecture that is built to meet the requirements of the most security-sensitive organisations.

Some of the points are ;

- SaaS offering also exposes HTTPS endpoints only.
- All communications use TLS protocol to ensure encryption in transit at all times.
- Encryption is enabled at rest for all services
- Identity and access management modules ensures secure access to resources
- Continuous security thread posture is defined
- Continuous compliance monitoring is in place.

Support

For more information please see the Getting [Started](#) guide.

Please use support@northcode.dev for support

Feedback

For all your general enquiries and feedback you can use northcode@cornerstone-consulting.io

Additional Resources

[NorthCode](#)

[Amazon Connect](#)

[AWS IAM](#)