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Overview

This setup and deployment guide provide step-by-step instructions for deploying ThreatModeler and integrating it with your AWS environment.

This guide is for users who are planning to threat model their workloads – to be deployed and workloads that are deployed already.

Prerequisites for Deploying ThreatModeler in an AWS Account

The following are prerequisites for launching ThreatModeler through CloudFormation.

- ThreatModeler Support has relevant contact details (email address) of the person in-charge of setup and deployment of ThreatModeler for future references. Please contact support via support@threatmodeler.com.
- License files
  - After you complete the process of subscription to ThreatModeler on AWS Marketplace, please reach out to our support team (support@threatmodeler.com) for the getting the required license files. These are the required files for logging into ThreatModeler initially after the CloudFormation stack for launching ThreatModeler is Complete. ThreatModeler Support will send these files to you via email.
- An Amazon EC2 key pair (for logging into the ThreatModeler Instance) needs to be created prior running the CloudFormation stack.
  - To do this, in the navigation pane of the Amazon EC2 console, under Network & Security, choose Key Pairs, and then click Create Key Pair.
- If this solution is being launched in an existing VPC
  - Please make sure each AZ has one public and one private subnet. ThreatModeler requires a selection of two AZ’s.
    - Ex: For example, If ThreatModeler is being launched in an existing VPC in the North Virginia Region, that VPC should have a public and private subnet in us-east-1a AZ and public and private subnet in us-east-1b AZ (AZ’s us-east-1a and us-east-1b are considered for example purposes).
  - NAT gateway in public subnet and the routes added to private subnet (where ThreatModeler will be launched) route table is required for content updates within the platform.
- ThreatModeler uses ALB to serve traffic. To create an HTTPS listener while ALB is being created, we require an ARN of an existing certificate in the Amazon Certificate Manager (ACM) service.
  - If a certificate ARN is provided, please use the same domain name (for creating record sets in your DNS provider) that was used during the certificate creation for domain name resolution purposes to access ThreatModeler on custom domain name.
  - If your organization doesn’t use ACM for certificate management, you could use the "Import a Certificate" feature in ACM to Import SSL/TLS certificates from third-party issuers into AWS Certificate Manager (ACM) to easily provide ARN for ALB creation with HTTPS creation.
- If no ARN is provided, ALB is created with HTTP listener. If you are willing to install SSL certificate within the ThreatModeler (windows) server, please reach out to your SSL certificate management team.
• VPC Peering knowledge is required.
  o Since all the resources (except NAT Gateway) created during this setup are
    launched in private subnets for secure architecture creation (with access only to
    these subnets from CIDR you specify during CFN launch).
    ▪ If ThreatModeler is being launched in a new VPC, VPC peering needs to be
      done between the new VPC (where ThreatModeler is launched) and
      Corporate VPC (where VPN is deployed for accessing private resources
      across your enterprise).
    ▪ If ThreatModeler is being launched in an existing VPC, we assume VPN
      connectivity is established for that VPC (for logging and accessing private
      resources across the enterprise).
• This product requires an internet connection to deploy properly. The following
  ThreatModeler packages are downloaded on deployment:
  o main.ps1 – For setting up ThreatModeler configuration during run-time
  o AWSTMInitialRun.exe
  o Newtonsoft.Json.dll

Costs

You are responsible for the cost of AWS services used while running this deployment guide. The
AWS CloudFormation templates for this deployment guide include configuration parameters that
you can customize. Some of these settings, such as instance type, will affect the cost of
deployment. For cost estimates, see the pricing pages for each AWS service you will be using.
Prices are subject to change.

Deployment Options

• Option 1: Deploy ThreatModeler on Microsoft Windows Server into a new VPC
• Option 2: Deploy ThreatModeler on Microsoft Windows Server into an existing VPC
ThreatModeler Server Standalone setup

Architecture

This setup and deployment guide will help you to deploy ThreatModeler software in your AWS environment.

- Note The following resources are not shown: associations, route tables, route table entries, security groups, IAM roles, and instance profiles.
CloudFormation template deploys the following resources:

- **VPC** (the VPC deployment is based on the AWS QuickStart found [here](#)).
  1. Internet Gateway
  2. Two public and two private subnets
  3. NAT Gateway in public subnet in AZ1
  4. Elastic IP for the NAT Gateway

- **Note:** VPC will only be created for deployment Option 1 (Deploy ThreatModeler on Microsoft Windows Server into a new VPC).

- **S3 bucket** – created temporarily to store the RDS database snapshot and then deleted later.

- **RDS** – will either be created in the same subnet as the ThreatModeler EC2 or in a secondary private subnet based on your parameter selection during CFN launch.
  1. RDS instance
    - Deployed in private subnet
  2. RDS Option Group (SQLSERVER_BACKUP_RESTORE)
  3. DB Security Group (Port 1433 ingress for MS SQL)

- **IAM**
  1. EC2 Role with following policies attached:
    - AmazonSSMManagedInstanceCore Managed policy for SSM Agent
    - Read-only access to the account in which it is deployed
    - Access quick start S3 bucket resources
    - Access database snapshot bucket to delete after Restore
    - Access all accounts to assume a Read-only role
  2. RDS role to restore snapshot from S3

- **EC2**
  1. For Option 1 Deployment, one EC2 instance will be created in private subnet (ThreatModeler-server)
    - ThreatModeler server Deployed from the subscribed AMI
    - Instance type from CFN parameters, EBS Root volume size of 90 GB (gp2)
    - ThreatModeler server Instance Security Group (ingress ports 3389 for RDP, 443 for HTTPS respectively)
  2. For Option 2 Deployment, one EC2 instance will be created with a ThreatModeler-server instance launched in private subnet.
    - ThreatModeler server Deployed from the subscribed AMI
    - Instance type from CFN parameters, EBS Root volume size of 90 GB (gp2)
    - ThreatModeler server Instance Security Group (ingress ports 3389 for RDP, 443 for HTTPS respectively)
- Application Load Balancer (Internet-Facing)
  1. Deployed in Public Subnet to send traffic to EC2 Instance in Private Subnet.
  2. Deployed with HTTP for default communication (if SSL ARN is not provided while launching the CloudFormation stack) or HTTPS listener secure communication (if SSL ARN is provided while launching the CloudFormation stack).
ThreatModeler Deployment

Option 1: Deploy ThreatModeler on Microsoft Windows Server into a new VPC

1. Login to the AWS Console of the AWS account where you want to deploy ThreatModeler. We recommend deploying this CloudFormation stack in Security/Audit account.
2. Select Services → CloudFormation → Stack → Create Stack → With new resources (standard).

3. Select Amazon S3 template URL in the Specify template window to launch the ThreatModeler Application in New VPC.
4. Copy and paste the S3 template link into the field under Amazon S3 URL and click Next.

Specify stack details

Stack name

Stack name

Stack name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters

Parameters are optional in your template and allow you to input custom values when you create or update a stack.

AWS environment and machine configuration

key pair name

Name of an existing EC2 KeyPair to enable SSH access to the instance.

Availability Zone

Select an Availability Zone to use for the subnet in the VPC. Pick exactly 2 AZs.

ThreatModeler RDS Availability Zone

Select an Availability Zone to launch ThreatModeler RDS. Pick exactly 2 AZs. If deploying RDS instance in the same subnet as ThreatModeler EC2, please select first Availability Zone you selected from the previous parameter: Availability Zone. If not, environment is deployed among two subnets in two AZs.

Public subnet 1 CIDR

CIDR Block for the public subnet located in Availability Zone 1.

10.0.128.0/20

Public subnet 2 CIDR

CIDR Block for the public subnet located in Availability Zone 2.

10.0.144.0/20

Private subnet 1 CIDR

CIDR Block for the private subnet located in Availability Zone 1.

10.0.160.0/20

Private subnet 2 CIDR

CIDR Block for the private subnet located in Availability Zone 2.

10.0.176.0/20

VPC CIDR

CIDR Block for the VPC

10.0.0.0/16

Source CIDR for access

Please set CIDR to 0.0.0.0/0 to allow one specific IP address access. 0.0.0.0/0 to allow all IP addresses access, or another CIDR range.

SSL Certificate ARN (Requires matching DNS name)

This Amazon Resource Name for the existing SSL cert you wish to use enabled for secure connections.

Log in

Please enter your first name. This product collects first name for creating the first user in our database for your initial login to the ThreatModeler platform.

John

Please enter your last name. This product collects last name for creating the first user in our database for your initial login to the ThreatModeler platform.

Smith

Please enter your email address. This product collects email address for creating the first user in our database for your initial login to the ThreatModeler platform.

jrsmt@ghost.com

RDS Database User Name

The Username for the RDS instance for ThreatModeler database. (Must start with a character: 1 to 64 characters in length)

RDS Database User Password

The Password for the RDS instance for ThreatModeler database. Must be between 8 to 127 printable ASCII characters (including 7, and 8).

AWS Quick Start configuration

Quick Start 1V8 bucket name

Use bucket name for the Quick Start bucket. Please name this as default and don’t make any changes.

Quick Start S3 key prefix

Use key prefix for the Quick Start bucket. Please name this as default and don’t make any changes.

Create a new entity and start ThreatModeler
5. Enter a stack name and fill out the rest of the fields. The fields and their descriptions are as follows:

**AWS Environment and Machine Configuration**

<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key pair name</td>
<td>Requires Input</td>
<td>Public/private key pair, which allows you to connect securely to your instance after it launches. When you created an AWS account, this is the key pair you created in your preferred region.</td>
</tr>
<tr>
<td>Availability Zones</td>
<td>Requires Input</td>
<td>List of AZ's to use for the subnets in the VPC. Pick exactly 2 AZ's.</td>
</tr>
<tr>
<td>ThreatModeler RDSAvailabilityZone</td>
<td>Requires Input</td>
<td>Availability Zone to launch ThreatModeler RDS.</td>
</tr>
<tr>
<td>Public Subnet 1 CIDR</td>
<td>Requires Input</td>
<td>CIDR block for public subnet located in Availability Zone 1.</td>
</tr>
<tr>
<td>Public Subnet 2 CIDR</td>
<td>Requires Input</td>
<td>CIDR block for public subnet located in Availability Zone 2.</td>
</tr>
<tr>
<td>Private Subnet 1 CIDR</td>
<td>Requires Input</td>
<td>CIDR block for private subnet located in Availability Zone 1 to Allocate Private IP address to ThreatModeler Application Server.</td>
</tr>
<tr>
<td>Private Subnet 2 CIDR</td>
<td>Requires Input</td>
<td>CIDR block for private subnet located in Availability Zone 2 to Allocate Private IP address to ThreatModeler Database Server.</td>
</tr>
<tr>
<td>VPC CIDR</td>
<td>Requires Input</td>
<td>The CIDR range for the VPC that is to be created.</td>
</tr>
<tr>
<td>Source CIDR for access</td>
<td>Requires Input</td>
<td>The CIDR Address from which you will connect to the instance. This is typically, A range of addresses. It can be entered as a single IP address or CIDR range. Add more singular IP Addresses to the EC2 security group post-deployment if necessary.</td>
</tr>
<tr>
<td>SSL Certificate ARN</td>
<td>Optional</td>
<td>The Amazon Resource Name (ARN) of the existing SSL Certificate you want to use for creating HTTPS listener on ALB. If no SSL Certificate ARN is provided ALB will be created with HTTP listener.</td>
</tr>
<tr>
<td>ThreatModeler Amazon EC2 Instance Type</td>
<td>Requires Input</td>
<td>Amazon EC2 Instance type where ThreatModeler will be installed.</td>
</tr>
</tbody>
</table>

**ThreatModeler Configuration**

<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>Requires Input</td>
<td>First name of the customer used for creating the first user on ThreatModeler platform.</td>
</tr>
<tr>
<td>Last Name</td>
<td>Requires Input</td>
<td>Last name of the customer used for creating the first user on ThreatModeler platform.</td>
</tr>
<tr>
<td>Email</td>
<td>Requires Input</td>
<td>Valid email of the customer which is used as the username for accessing ThreatModeler platform.</td>
</tr>
<tr>
<td>Organization</td>
<td>Requires Input</td>
<td>Organization of the customer.</td>
</tr>
<tr>
<td>RDS Database Master</td>
<td>Requires Input</td>
<td>Master username for the ThreatModeler database. Must start with Username a character 1-16 characters in length.</td>
</tr>
<tr>
<td>RDS Database Master Password</td>
<td>Requires Input</td>
<td>Master password for the ThreatModeler database. Must be between 8-128 printable ASCII characters (excluding /,&quot;, &amp; and @)</td>
</tr>
</tbody>
</table>

**AWS QuickStart Configuration**
<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Start S3 bucket name</td>
<td>threatmodeler-setup-quickstart</td>
<td>The bucket name used to store quick start assets like scripts and executables. Please leave them as default.</td>
</tr>
<tr>
<td>Quick Start S3 key prefix</td>
<td>createanewvpc/quickstart-threatmodeler/</td>
<td>The folder/prefix in the bucket used to store the quick start assets. Please leave them as default.</td>
</tr>
</tbody>
</table>

6. (Optional) Configure stack options.
7. Review the stack details and click on the checkboxes next to the following:
   - "I acknowledge that AWS CloudFormation might create IAM resources with custom names."
   - "I acknowledge that AWS CloudFormation might require the following capability: CAPABILITY_AUTO_EXPAND"

![Capabilities](image)

- Click on Create Stack.
- The deployment typically takes around 30-40 minutes to complete.
- Take a note of the twelve-digit AWS Account ID of this account. It will be required for Multi-account setup. This can be done through the following steps:
  - Click your name located on the top right navigation pane. Select “My Account.”
  - Your AWS ID is the twelve-digit number located underneath the Account Settings section.
• The deployment is completed once the CloudFormation displays a "CREATE_COMPLETE" message.
• At this point, click on the stack and click on the "Outputs" tab to view the deployment endpoints and identifiers.

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
<th>Description</th>
<th>Export name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBEndpoint</td>
<td></td>
<td>Endpoint Address of database instance</td>
<td>-</td>
</tr>
<tr>
<td>InstanceID</td>
<td></td>
<td>EC2 InstanceID of the instance running ThreatModeler Server</td>
<td>-</td>
</tr>
<tr>
<td>PrivateIPAddress</td>
<td></td>
<td>Private IP Address of ThreatModeler Instance</td>
<td>-</td>
</tr>
<tr>
<td>VPCID</td>
<td></td>
<td>VPC ID</td>
<td>-</td>
</tr>
</tbody>
</table>
Launching ThreatModeler (When Deployed Into a New VPC)

- Assumptions:
  - VPC peering is successfully established between the new VPC (where ThreatModeler is launched) and Corporate VPC (where VPN is deployed for accessing private resources across your enterprise), so that you can RDP into ThreatModeler server.
  - After VPC peering is established, you need to be on VPN to login and access the ThreatModeler instance.

1. Go to Services → EC2 → Instances. Locate the instance starting with the Stack name you specified. Please copy private IP address of "****-ThreatModelerStack-****" instance we would need this information going ahead.
2. While "****-ThreatModelerStack-****" instance is selected Click on "Get Password" and then click on "Choose File."
3. Locate the KeyPair (.pem) file that you provided while launching the CloudFormation stack and upload it. Click on Decrypt Password and copy the password to your clipboard.
4. Select the "****-ThreatModelerStack-****" instance and click Connect at the top.

5. Click on "Download Remote Desktop File." This will download a file that will connect to the instance using a remote desktop client installed on your local desktop. Once downloaded, launch the Remote Desktop file and enter the password that you copied in step 3 into the client.
6. You should now see the Windows desktop of the instance (ThreatModeler server) to which you just connected.

7. Launch Google Chrome.

8. In the URL address bar, enter https://private-ip-address. (Copied in step 1. If you can't find it, you can also look at the Outputs section of your CloudFormation stack.)
9. You will encounter a security warning. This occurs due to not having an SSL certificate installed on the system. A self-signed SSL certificate is currently installed and this causes the error.

10. Click on Advanced.

11. Click on "Proceed to ... (unsafe)"
12. The first thing you see when you access ThreatModeler is a prompt to upload your License Files.

13. Logging into the ThreatModeler platform requires license files to be uploaded. Please open another tab and navigate to your Email inbox. Look for an email from ThreatModeler support (support@threatmodeler.com) with the license files.

14. For limited (10 Licenses) licensing model you should have four files to access ThreatModeler:
   a. tm.lic – file used by ThreatModeler
   b. validation key.txt – validates the above .lic file
   c. environmentguid.txt - file used by ThreatModeler
   d. tm_lic_10.txt – file used by ThreatModeler for licensing ThreatModels.

15. As you see the screen below, please click on upload and upload tm.lic, environmentguid.txt and validation key.txt files. (tm_lic_10.txt file will be uploaded after logging into the ThreatModeler platform).
16. After successfully uploading ThreatModeler License files, you should see a success message with the page redirected to a login page as follows.

17. Use the same email-id provided while launching CloudFormation stack and the password as “admin@123” (without the quotes) to login to the platform.

18. After logging successfully into platform, please click Accept on “License Agreement” page and you will be navigated to the ThreatModeler landing page.

19. To upload `tm_lic_10.txt` file into the platform, click on settings icon.

20. Select “Enterprise Management” from the slider window.
21. From the Enterprise Management screen, click the “+” symbol in the Licenses section and upload `tm_lic_10.txt` file. After you successfully upload the license file you should see a message saying “ThreatModeler Licenses Uploaded Successfully.”

22. Before you proceed any further, please change the default password. To change the password, Click on Account.

23. Click on Change Password. Enter "admin@123" (without the quotes) for current password. Enter a new password and click Submit.
Option 2: Deploy ThreatModeler on Microsoft Windows Server Into an Existing VPC

1. Log in to the AWS Console of the AWS account where you want to deploy ThreatModeler. We recommend deploying this CloudFormation stack in Security/Audit account.
2. Select Services → CloudFormation → Stacks → Create Stack → With new resources (standard).
3. In the Specify template field, select Amazon S3 template URL to launch ThreatModeler Application in existing VPC.
4. Copy and paste the S3 template link into the field under Amazon S3 URL and click Next.

https://s3.amazonaws.com/awsmp-fulfillment-cf-templates-prod/393cc493-d838-4cc6-bf62-8793532d6a66/8a397edc-3e13-40b1-a4eb-19c0ad9f19de.template
Specify stack details

Stack name

Stack name
Order a stack name
Hook name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters
Parameters are defined in your template and allow you to input custom values when you create or update a stack.

AWS environment and machine configuration

Key pair name
None of an existing EC2 KeyPair to enable RDP access to the instance.

Availability Zones
Use of Availability Zones to use for the subnets in the VPC. Pick exactly 2AZs.

Existing VPC ID
This ID can be used to deploy the ThreadMediator server into an existing VPC.

Private subnet 1 ID
Please select only the subnet ID which is in one of the Availability zones specified in `Availability Zones` parameter. The subnet must not be a member with `Public subnet 1 ID` or `Public subnet 2 ID`.

Private subnet 2 ID
Please select only the subnet ID which is in one of the Availability zones specified in `Availability Zones` parameter. The subnet must not be a member with `Public subnet 1 ID` or `Public subnet 2 ID`.

Public subnet 1 ID
Please select only the subnet ID which is in one of the Availability zones specified in `Availability Zones` parameter. Please make sure a NAT gateway is created at least in one of public subnets or specified in parameters. `Public subnet 1 ID` and `Public subnet 2 ID`.

Public subnet 2 ID
Please select only the subnet ID which is in one of the Availability zones specified in `Availability Zones` parameter. Please make sure a NAT gateway is created at least in one of public subnets or specified in parameters. `Public subnet 1 ID` and `Public subnet 2 ID`.

ThreadMediator not available
Availability zone to launch ThreadMediator WDS. To deploy WDS instance in same subnet as ThreadMediator WDS, please select a ID where `Private subnet 1 ID` is created. If not, architecture is deploying new subnet in one AZ.

Source CIDR for access
Please set [10.0.0.0/16] to allow one specific IP address access to allow IP address access or another CIDR range.

SSL certificate ARN requires matching DNS name
The Amazon Resource Name for the existing DNS, sent you wish to use; empty for none

ThreadMediator Amazon EC2 instance type
Amazon EC2 instance type where ThreadMediator will be installed.

SQL medium

ThreadMediator Configuration

First name
Please enter your first name. This product collects/first name for creating the first user in our database for your initial login to the ThreadMediator platform.

John

Last name
Please enter your last name. This product collects/last name for creating the first user in our database for your initial login to the ThreadMediator platform.

Smith

Email
Please enter your email address. This product collects email address for creating the first user in our database for your initial login to the ThreadMediator platform.

johndsmith@gmail.com

Organization
None of the organization

KDS database Master Username
The master username of the KDS instances for ThreadMediator database. Specify username (must start with a character, 1-16 characters in length)

KDS database Master Password
The master password of the KDS instances for ThreadMediator database. Must be between 8-16 printable ASCII characters (excluding [ ] and ")

AWS Quick Start configuration

Quick Start S3 bucket name
S3 bucket name for the Quick StartBucket. Please leave this as default and don't make any changes.

threemediator-quickstart

Quick Start S3 lay prefix
S3 lay prefix for the Quick StartBucket. Please leave this as default and don't make any changes.

/threemediator/quickstart/threemediator
5. Enter a stack name and fill out the rest of the fields. The fields and their descriptions are as follows:

**AWS Environment and Machine Configuration**

<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key pair name</td>
<td>Requires Input</td>
<td>Public/private key pair, which allows you to connect securely to your instance after it launches. When you created an AWS account, this is the key pair you created in your preferred region.</td>
</tr>
<tr>
<td>Availability Zones</td>
<td>Requires Input</td>
<td>List of AZ's to use for the subnets in the VPC. This is based on on the region in which the stack is deployed. Pick exactly 2 AZ's where one public subnet and one private subnet is available in each AZ.</td>
</tr>
<tr>
<td>Existing VPC ID</td>
<td>Requires Input</td>
<td>Select one VPC ID where ThreatModeler to be created in.</td>
</tr>
<tr>
<td>Private Subnet 1 ID</td>
<td>Requires Input</td>
<td>Existing ID of the private subnet located in first chosen AZ. Please select only the subnet ID which is in one of the Availability zones you specified in 'Availability Zones' parameter.</td>
</tr>
<tr>
<td>Private Subnet 2 ID</td>
<td>Requires Input</td>
<td>Existing ID of private subnet located in second chosen AZ. Please select only the subnet ID which is in one of the Availability zones you specified in 'Availability Zones' parameter.</td>
</tr>
<tr>
<td>Public Subnet 1 ID</td>
<td>Requires Input</td>
<td>Existing ID of the public subnet located in first chosen AZ. Please select only the subnet ID which is in one of the Availability zones you specified in 'Availability Zones' parameter.</td>
</tr>
<tr>
<td>Public Subnet 2 ID</td>
<td>Requires Input</td>
<td>Existing ID of the public subnet located in second chosen AZ. Please select only the subnet ID which is in one of the Availability zones you specified in 'Availability Zones' parameter.</td>
</tr>
<tr>
<td>ThreatModeler RDSAvailabilityZone</td>
<td>Requires Input</td>
<td>Availability Zone to launch ThreatModeler RDS.</td>
</tr>
<tr>
<td>Source CIDR for access</td>
<td>Requires Input</td>
<td>The CIDR Address from which you will connect to the instance. This is typically, A range of addresses. It can be entered as a single IP address or CIDR range. Add more singular IP Addresses to the EC2 security group post-deployment If necessary.</td>
</tr>
<tr>
<td>SSL Certificate ARN</td>
<td>Optional</td>
<td>The Amazon Resource Name (ARN) of the existing SSL Certificate you want to use for creating HTTPS listener on ALB. If no SSL Certificate ARN is provided ALB will be created with HTTP listener.</td>
</tr>
<tr>
<td>ThreatModeler Amazon EC2 Instance Type</td>
<td>Requires Input</td>
<td>Amazon EC2 Instance type where ThreatModeler will be installed.</td>
</tr>
</tbody>
</table>
**ThreatModeler Configuration**

<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>Requires Input</td>
<td>First name of the customer used for creating the first user on ThreatModeler platform.</td>
</tr>
<tr>
<td>Last Name</td>
<td>Requires Input</td>
<td>Last name of the customer used for creating the first user on ThreatModeler platform.</td>
</tr>
<tr>
<td>Email</td>
<td>Requires Input</td>
<td>Valid email of the customer which is used as the username for accessing ThreatModeler platform.</td>
</tr>
<tr>
<td>Organization</td>
<td>Requires Input</td>
<td>Organization of the customer.</td>
</tr>
<tr>
<td>RDS Database Master</td>
<td>Requires Input</td>
<td>Master username for the ThreatModeler database. Must start with Username a character 1-16 characters in length.</td>
</tr>
<tr>
<td>RDS Database Master Password</td>
<td>Requires Input</td>
<td>Master password for the ThreatModeler database. Must be between 8-128 printable ASCII characters (excluding /,, &amp; and @)</td>
</tr>
</tbody>
</table>

**AWS QuickStart Configuration**

<table>
<thead>
<tr>
<th>Parameter Label (Name)</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Start S3 bucket name</td>
<td>threatmodeler-setup-quickstart</td>
<td>The bucket name used to store quick start assets like scripts and executables. Please leave them as default.</td>
</tr>
<tr>
<td>Quick Start S3 key prefix</td>
<td>chooseanexistingvpc/quickstart-threatmodeler/</td>
<td>The folder/prefix in the bucket used to store the quick start assets. Please leave them as default.</td>
</tr>
</tbody>
</table>

6. (Optional) Configure stack options.
7. Review the stack details and click on the checkboxes next to the following:

- "I acknowledge that AWS CloudFormation might create IAM resources with custom names."
- "I acknowledge that AWS CloudFormation might require the following capability: CAPABILITY_AUTO_EXPAND"

- Click on Create Stack.
- The deployment typically takes around 30-40 minutes to complete.
- Take a note of 12-digit AWS Account ID of this account. It will be required for Multi-account setup. This can be done through the following steps:
o Click your name located on the top right navigation pane. Select “My Account.”
o Your AWS ID is the twelve-digit number located underneath the Account Settings section.

- The deployment is completed once the CloudFormation displays a "CREATE_COMPLETE" message. At this point, click on the stack and click on the "Outputs" tab to view the deployment endpoints and identifiers.

![CloudFormation Outputs](image-url)
Launching ThreatModeler (When Deployed Into an Existing VPC)

- Note: Assuming VPN connectivity is established (for connecting to instances in private subnet) for the VPC where ThreatModeler instance is created. If not, please create a Bastion-Host in public subnet to access the ThreatModeler instance created in private subnet.
- If VPN connectivity is already established, you need to be on VPN to log in to ThreatModeler instance.

1. Go to Services → EC2 → Instances. Locate the instance starting with the Stack name you specified. Copy the private IP address of "****-ThreatModelerStack-****" instance.

2. While "****-ThreatModelerStack-****" instance is selected, click on "Get Password" and then click on "Choose File."
3. Locate the KeyPair (.pem) file that you provided while launching the CloudFormation stack and upload it.
4. Click on Decrypt Password and copy the password to your clipboard.
5. Select the "****-ThreatModelerStack-****" instance and click on Connect at the top.

6. Click on "Download Remote Desktop File." This will download a file that will connect to the instance using a remote desktop client installed on your local desktop.
7. Launch the Remote Desktop File you downloaded in step 6 and enter the password that you copied in step 4 into the client.
8. You should now see the Windows desktop of the instance to which you just connected.

9. Launch Chrome.
10. In the URL address bar, enter https://private-ip-address. (Copied in step 1. If you can't find it, you can also look at the Outputs section of your CloudFormation stack.)
11. You will encounter a security warning. This occurs due to not having an SSL certificate installed on the system. A self-signed SSL certificate is currently installed and this causes the error.
12. Click on Advanced...

13. Click on "Proceed to ... (unsafe)"

14. The first thing you see when you access ThreatModeler is a prompt to upload your License Files.

15. Logging into the ThreatModeler platform requires license files to be uploaded. Please open another tab and navigate to your email inbox. Look for an email from ThreatModeler support (support@threatmodeler.com) with the license files.

16. For limited (10 Licenses) licensing model you should have four files to access ThreatModeler:
   a. tm.lic – file used by ThreatModeler
   b. validation key.txt – validates the above .lic file
   c. environmentguid.txt - file used by ThreatModeler
   d. tm_lic_10.txt – file used by ThreatModeler for licensing ThreatModels.
17. As you see the screen below, please click on upload and upload *tm.lic, environmentguid.txt and validation key.txt* files. (*tm_lic_10.txt* file will be uploaded after logging into the ThreatModeler platform).

![ threaten license file upload](image)

18. After successfully uploading ThreatModeler License files, you should see a success message with the page redirected to a login page as follows.

![ threaten license file login](image)

19. Use the same email-id provided while launching CloudFormation stack and the password as "admin@123" (without the quotes) to login to the platform.

20. After logging successfully into platform, please click Accept on “License Agreement” page and you will be navigated to the ThreatModeler landing page.

21. To upload *tm_lic_10.txt* file into the platform, click on settings icon.
22. Select “Enterprise Management” from the slider window.

23. From the Enterprise Management screen, click the “+” symbol in the Licenses section and upload tm_lic_10.txt file. After you successfully upload the license file you should see a message saying “ThreatModeler Licenses Uploaded Successfully.”
24. Before you proceed any further, please change the default password. To change the password, Click on Account.

25. Click on Change Password. Enter "admin@123" (without the quotes) for current password. Enter a new password and click Submit.
AWS Multi Account Deployment Through AWS Organization

Configure Multi-Account Setup

Note:

- For multi-account setup, your accounts need to be a part of an AWS Organization.

Deploy AWS Organizations Master Read-only Role

1. Login to the Master account in AWS Organizations.
2. Select Services → CloudFormation → Stacks → Create Stack → With new resources (standard).
3. Select Specify an Amazon S3 template URL.
4. Copy and paste the following S3 template link into the page and click Next.


5. Enter the AWS Account ID where the ThreatModeler Application was deployed.

6. (Optional) Configure stack options.
7. Review the stack details and click on the checkboxes next to the following:

   - "I acknowledge that AWS CloudFormation might create IAM resources with custom names."
8. Click Create Stack.

Allowing Read-Only Access to Each Account for Which You Want to Build Threat Models

1. Login to the member AWS accounts that are part of your AWS Organization.
2. Select Services → CloudFormation → Stacks → Create Stack → With new resources (standard).
3. Select Specify an Amazon S3 template URL.
4. Copy and paste the following S3 template link into the page and click Next.

   https://threatmodeler-setup-quickstart.s3.amazonaws.com/createanewvpc/cross-account/readonly-execution.template

5. Enter the AWS Account ID where the ThreatModeler Application was deployed.
6. (Optional) Configure stack options.
7. Review the stack details and click on the checkboxes next to the following:
   • "I acknowledge that AWS CloudFormation might create IAM resources with custom names."

8. Click Create Stack.
ThreatModeler Configuration

Setup SSO

1. Click on the Settings icon in the Primary Navigation bar.

2. Click on SSO & SMTP Config.

Configuration items are the most basic structural unit of a configuration management system. The login work is delegated to what types of access an individual user needs, e.g., write, read write, etc.

Federated Access and SAML-based Federation

Select the SSO method you would like to use, based on your IT infrastructure needs. There are three supported login types:

- Active directory (AD) login – an enterprise level login. ThreatModeler integrates with a user’s AD Group. AD login is also used to manage access to multiple devices.
- Local login – the local database verifies the login information. By default, local configuration is applied.
- SAML – ThreatModeler integrates with Okta, which is a SAML compliant Identity Provider for single sign on.

By default, Local configuration is already applied.
SSO Login for Active Directory

Note: For the following details please reach out to your internal team responsible for managing your Active Directory.

Active Directory

**AD Connection String** – Provide URI to your Active Directory Server
- `(LDAP://domain-controller/dc=ad,dc=local)`.

**AD Directory Filter By** – Allows to filter user’s information in the active directory server.
- As of now, Threat Model platform only support `sAMAccountName` as LDAP filter.

**AD Group for Corporate Access** – Name of the group inside the active directory server to which, if the current user belongs then that user should be added under the corporate group of the ThreatModeler platform.
- User ABC belongs to Dept XYZ in Active Directory. When the user ABC tries to access ThreatModeler platform for the first time, If AD is set as default authentication and XYZ is set as AD Group for corporate access then user ABC will be created with corporate access inside ThreatModeler.

**AD Service Account Username/ Password** – Active Directory support’s service account authentication. If enabled, the incoming users will be authenticated against that service account username and password.
- ThreatModel assumes that there exists an service account within the Active Directory server

**Default AD Group** – Name of the group to which all users belong. Only the users in this group will have access to ThreatModeler platform.
- User ABC belongs to group JKL in Active Directory. When the user ABC tries to access ThreatModeler platform for the first time, If AD is set as default authentication and JKL is set as Default AD Group, then user ABC will be able to access ThreatModeler.

- If User XYZ doesn’t belong to group JKL in Active Directory, then user XYZ will be denied access to ThreatModeler platform when s/he tries to log in.

- User ABC belongs to Dept XYZ and JKL in Active Directory. When the user ABC tries to access ThreatModeler platform for the first time, If AD is set as default authentication; JKL is set as Default AD Group; and XYZ is set as AD Group for corporate access; then user ABC will be created with corporate access inside ThreatModeler.

**Authentication Type** – Type of authentication supported by your AD server.
- As of now, ThreatModeler platform only supports `ServerBind` and `Secure` as authentication Type.
**SSO Login for SAML**

Okta, a cloud user identity authentication program, is optional to use with SAML for secure login. Users input Properties to verify a user’s admin. We check the user against three required properties – first name, last name and email. If any of the required info is not input, the user will be denied access and receive an Invalid login prompt.

- **Identity ID** – Provide SAML identity provider URL.  
  *For okta, http://www.okta.com/exkh74a746KUleirN0h7*

- **Properties** – are the attribute statements in SAML. You can add multiple attributes. To read more about attribute statements:  
  *please refer to https://help.okta.com/en/prod/Content/Topics/Apps/attribute-statements-saml.htm*

- **SAML Group property** – refers to the name attribute of SAML Group attributes.  
  *please refer to https://help.okta.com/en/prod/Content/Topics/Apps/attribute-statements-saml.htm*

- **SAML Group for Corporate Access** – name of the group configured in SAML to which, if the current user belongs then that user should be added under corporate group of ThreatModeler platform.  
  *User **ABC** belongs to Dept **XYZ** in SAML. When the user **ABC** tries to access ThreatModeler platform for the first time, If **SAML** is set as default authentication; and **XYZ** is set as **SAML Group for Corporate access**; then user **ABC** will be created with corporate access inside ThreatModeler.*

- **Email** – SAML email property.

**Meta Data Location** – Identity provider metadata file in xml format.

**Setup SMTP**

Set up how you handle communications within your system.

1. Click on the Settings icon in the Primary Navigation bar.

2. Click on SSO & SMTP Config.
3. Fill in the details for SMTP setup.

**SMTP**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host</strong></td>
<td>smtp.gmail.com</td>
</tr>
<tr>
<td><strong>From Email</strong></td>
<td><a href="mailto:support@threatmodeler.com">support@threatmodeler.com</a></td>
</tr>
<tr>
<td><strong>SMTP Email</strong></td>
<td><a href="mailto:threatmodeler@appsecurity.org">threatmodeler@appsecurity.org</a></td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td>587</td>
</tr>
<tr>
<td><strong>From Name</strong></td>
<td>Threat Modeler</td>
</tr>
<tr>
<td><strong>SMTP Password</strong></td>
<td>************</td>
</tr>
<tr>
<td><strong>Enable SSL</strong></td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Host** – your email provider. Yahoo and Gmail, for example, are email providers. You can also have your own email provider.

**From Name** – the name with which you want to send an email

**SMTP Email and Password** – the login credentials you use to send emails on your Host account.

**Enable SSL**

**Port** – SMTP requires a port to be opened on your system for communication.
Set Up JIRA (Optional)

The Third-Party screen allows you to manage ThreatModeler integrations with several third-party platforms, including AWS, Jira, Jenkins and more.

1. Click on the Settings icon in the Primary Navigation bar.

![Settings](image)

2. A slider panel will open where you can access the Third-Party screen.

![Third-Party](image)

3. Select the icon in the left pane and select Jira.
4. Fill in the four fields (Name, URL of your Jira instance, and your Jira Username and Password).
5. Click on Save. If the information is entered correctly and login credentials verified, ThreatModeler will integrate with Jira.
6. Click on the icon to Edit the connection.

![Edit Connection](image)

Connect Your Threat Models to Jira

Now that you have set up a bidirectional integration with Jira as a third party, you can connect some or all of your threat models. When your threat model is connected to Jira, you can push individual threats and security requirements into Jira as tickets.

1. Select the threat model you intend to connect with Jira.
2. Go to Overview.
3. Open your threat model and click on the More icon.
4. Toggle the Integrations button to Yes.
5. In Overview, scroll down to the Integrations window.
6. Click the button.
7. Click the Jira instance.
8. Select the Jira project.
9. Input the Threats and Security Requirements to determine how Jira will track identified threats and security requirements.
10. Click Submit. The threat model will be integrated with the selected Jira project.
11. When you go to the Overview screen, you will see the button checked to indicate that the Jira bidirectional integration is active.
12. In the Overview screen, click on to create issues for Jira. Once created, you can search by Jira ticket ID using the Issue filter.

Set Up Jenkins (Optional)
ThreatModeler can help developers to automatically create secure initial builds by integrating with Jenkins. Creating the build with Jenkins requires that the threat model first be completed and approved. To connect with Jenkins:

1. Click on the Settings icon in the Primary Navigation bar.

![Settings icon](image)

2. A slider panel will open where you can access the Third-Party screen.

   ![Settings panel](image)

   **CONFIGURATIONS**

   ![Third Party icon](image)

   The Integrations window displays a list of third-party integration connections for that threat model.

1. Click the + icon.
2. Select Jenkins from the drop-down menu. The Jenkins Integrations dialog box will open.
3. Fill in the four fields (Name, the URL of your Jenkins instance, your Jenkins login credentials).
4. Click the Save icon. ThreatModeler will now be connected to Jenkins.

![Jenkins settings](image)

**Connect Your Threat Models to Jenkins**

1. Select the threat model you intend to connect with Jira.
2. Go to Overview.
3. Open your threat model and click on the More icon.

4. Toggle the Integrations button to Yes.

5. In Overview, scroll down to the Integrations window.

6. Click the button.

7. Click the Jenkins instance.
8. Select the Jenkins job with which you want to link a threat model.
9. Click Submit. The threat model will be integrated with the selected Jenkins job.

Managing the ThreatModeler Platform

Enterprise Management

The Enterprise Management screen allows users to define new departments. Once a department is created, you can associate users through the Users window on the Enterprise Management screen. The Enterprise Management screen also enables you to distribute ThreatModeler licenses amongst the various departments. For access to Enterprise Management a user needs to have at least Read Write permissions in the Administrator Group (defined in the Authorization below).

The Enterprise Management screen, accessible from the General icon in the Primary Navigation bar, has three windows:

1. Departments
2. Users
3. Licenses
Department Window

The Department window lists all of your departments, which can be added to or edited using the icons at the top right-hand corner.

1. Click the icon to add a department.
2. Add the name of the new department.
3. Identify whether you want the associated Library to be Public (Yes or No). Selecting Yes would make the Threat Framework library for the Department available to view/edit by any other department within the organization.
4. Whether it should be Read only (Yes or No).
5. Click the icon to edit an existing department.

Name *

Enter Name

Library Properties

Public *

No

Read Only *

No
Users Window

Note: Users added via SSO will be visible for you to manage under the Users Window. The following description of Users Window allows you to add and manage new users directly from the ThreatModeler platform.

The Users Window lists all the users that belong to the selected department. There are several icons at the top right-hand corner of the Users Window to manage the users for the selected department.

1. Click the icon to add a user to the selected department.
2. Enter the new user’s name, username, email, and role, and check the Department name, which will automatically be populated.
3. To import users from a CSV file, click, browse and select your CSV file of new users then click Submit.

<table>
<thead>
<tr>
<th>CSV File *</th>
<th>Select csv file</th>
</tr>
</thead>
</table>

To download a sample, click the button.

<table>
<thead>
<tr>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name *</td>
</tr>
<tr>
<td>Username *</td>
</tr>
<tr>
<td>Email *</td>
</tr>
<tr>
<td>Department *</td>
</tr>
</tbody>
</table>

Email Notifications

Submit
By default, any user provisioned through the SSO integration will be created under the Corporate Department.

**Working with Licenses**

Users can add or transfer available licenses using the License window Toolbar. The Enterprise Management keeps track of the license usage per department. ThreatModeler also displays a color bar under the department name indicating the number of available licenses consumed.

**Adding a License**

1. Click on the icon.
2. Browse your network or device and select the license file.
3. Click Upload.

**Transferring a License**

1. If there are Licenses available, click the icon to transfer a license from another department. A dialog popup box will open.
2. Select the Department from which to transfer the license.
3. Enter the number of licenses to be transferred. The counter on the top right corner shows the maximum available licenses that can be transferred from the department you have selected.
4. Click Submit to transfer the licenses.

Authorization

You can use permissions to control the type of access each user has from the Authorization screen.

To navigate to the Authorization screen, click on the Settings icon on the Primary Navigation bar, then choose Authorization from the drop-down menu.

User Permissions

You can define one of the following three permissions to a user. Each of these is further explained under System Defined Groups:

1. Read Only
2. Read Write
3. Admin

System Defined Groups

The authorization screen allows you to control which users have access to which models; and control what kind of access they have within a Department (as created in Enterprise Management). The following Platform management groups perform administrative and backend functions for the ThreatModeler platform. As such, they do not provide group members with access to threat models or threat model output. User authorization is specific to the Department to which the user is assigned.

1. **Common Projects for a Department** – Adding users into this entity would allow them to have visibility into the threat model projects within that department. A user can be provided with any of the following three permission levels:
   - **Read Only** – access pre-existing threat models but cannot edit or delete it. Can create a new threat model with edit/ delete permissions.
   - **Read Write** – access and edit threat models but cannot delete it.
   - **Admin** – can access, edit and delete ThreatModeler content.
For the user to be able to use features outside of access to threat model projects, the following permissions may be required.

2. **Administrator** – has access to Third-Party Integrations and Enterprise Management; also provides Authorization to the platform users.
   - **Admin** – Access to view, edit and delete Enterprise Management, Authorization and Third Party.

3. **Content Management** – provides access to the platform’s Threat Framework.
   - **Admin** – Access to view, edit and delete content within Threat Framework.

4. **Template Management** – provides access to the Template Builder.
   - i) **Read Only** – access to view Template Builder and create new templates. Cannot edit/ delete pre-existing templates.
   - iii) **Admin** – Access to view, edit and delete content within Template Management.

The **Corporate Group** is the primary group for access to threat models. The Corporate Group is divided into departments. Organizations can create as many departments as needed. Users can create departments in **Enterprise Management**. The Super User Group has access to all administrative functions and threat models. Therefore, Super Users are not associated with any particular threat model. They have access to all threat models.

**Working with Authorization**

1. Click on the Settings icon in the Primary Navigation bar.
2. Click on Authorization. You will be navigated to the Authorization window.
Adding a Group – In addition to the System Defined Groups, a user with Admin/ Read Write permissions to Administrator Group can create new groups within department to isolate threat models when you click on a Group in Window 1. Window 2 lists all of the associated threat models when you click on a Group in Window 1. Window 3 shows all of the users that have access to that Group, and the type of access that they have. 

Edit Permission

Associate Projects
models created within Common Projects for the Department. For example, there are 2 groups (Group A and Group B) under Common Projects for Department 1. Any user provisioned with permission to Group A will not be able to view/edit threat models created by users of Group B and vice-versa. Further, any member in the parent group (in this case Common Projects for Department 1) will be able to manage threat models created by Group A and Group B members.

1. Click the icon to add a Group.

```

```

2. Fill in the Group name (required).
3. Fill in the Department (required).
4. Select the Parent Group (when appropriate).
5. Click Submit.
6. Click the item to edit a selected Group and click the icon to delete a Group.

**Associate Threat Models to a Group**

1. Click the icon at the top right-hand corner of the Associated Threat Models Window.
2. Find and select the user to which you’d like to associate additional threat models. For longer lists, use the free text search field.
3. Set the Permission level.
4. Click on Associate.
5. Use the icon to remove the association with a threat model.
Editing User Permissions

1. Click the  icon at the top right-hand corner of the Users Window to add users to that Group.

2. Click the  icon in the User Window to edit the permissions for a user in the selected Group. Users with the following permissions can Read Only, Read Write and Admin.

3. Click the  icon in the Users Window to remove a user from that Group.
Next Steps

Once your setup is complete you can get started with your threat modeling exercise. Please access the guides below to gain insight into various threat modeling scenarios and how to accomplish them with ThreatModeler:

**ThreatModeler Interface Guide**: This guide provides in-depth guidance with regards to navigating through the ThreatModeler platform.

**Threat modeling scenarios for AWS**: This guide covers common scenarios with detailed steps of accomplishing the same in ThreatModeler.

**ThreatModeler Hostname Resolution**: This document helps you to set up domain name resolution to access the ThreatModeler application on a custom domain name.