DEPLOYMENT QUICK GUIDE

NDI® Discovery Server AMI Quick Deployment Guide

MASTER YOUR VIDEO PRODUCTION WORKFLOW WITH THE NDI DISCOVERY SERVER AMI QUICK DEPLOYMENT GUIDE. THIS GUIDE ENSURES EASY SETUP OF THE NDI® DISCOVERY SERVER ON AWS. IDEAL FOR ENVIRONMENTS WHERE MULTICAST IS IMPRACTICAL, THIS SERVER MANAGES NDI SOURCES USING A UNICAST METHOD TO ENHANCE VISIBILITY AND CONTROL ACROSS YOUR PRODUCTION NETWORK. FROM BROADCASTERS TO LIVE EVENT PRODUCERS, THIS GUIDE FACILITATES THE CONFIGURATION OF THE NDI DISCOVERY SERVER, BOOSTING THE EFFICIENCY AND RELIABILITY OF YOUR VIDEO WORKFLOWS.

MARCH 2025

Contents

1 Welcome

This guide is crafted to streamline the setup of your NDI® Discovery Server using the AWS Marketplace AMI, ensuring quick and efficient deployment. Whether integrating NDI® Discovery Server into your existing AWS infrastructure or establishing a new live production setup, the steps provided here will guide you through a hassle-free installation.

Before You Begin:

- Ensure you have an active AWS account. New to AWS? Check out the AWS Getting Started Resource Center for guidance.
- Familiarize yourself with basic AWS service concepts to follow the deployment steps smoothly.

About This Guide:

- **Quick Setup:** Ready to get started? You'll be operational in just about 30 minutes! Perfect for grabbing a coffee while setting up.
- **Version Notice:** This AMI is provided and configured directly by NDI.

2 Prerequisites

Before diving into the deployment of NDI Discovery Server via AWS Marketplace, there are a few things you'll need to ensure are in place. This chapter outlines the essential requirements needed to get started.

2.1 AWS Account Requirements

- **AWS Account:** You must have an active AWS account. If you don't have one, sign up at aws.amazon.com.
- **Permissions:** Ensure you have administrative access or sufficient permissions within your AWS account to create and manage EC2 instances, AMIs, and related resources.

2.2 Knowledge and Skills Required

- **AWS Basics:** Familiarity with navigating the AWS Management Console is crucial. You should know how to locate and use services like EC2 (Elastic Compute Cloud) and IAM (Identity and Access Management).
- **Networking Fundamentals:** Understanding basic networking concepts such as subnets, security groups, and IP addressing will be helpful.

2.3 Software and Tools Preparations

- **Web Browser:** Ensure you have a modern web browser installed, as you will manage AWS services through the AWS Management Console, which is web-based.
- **Secure Network:** Ensure your internet connection is secure and stable, as you'll be setting up and managing cloud resources.
- **NDI Tools**: Ensure the latest version of NDI Tools is installed on your local machine.
- **Remote Desktop Connection**: Remote Desktop Protocol (RDP) client.

2.4 Security Responsibilities and Best Practices

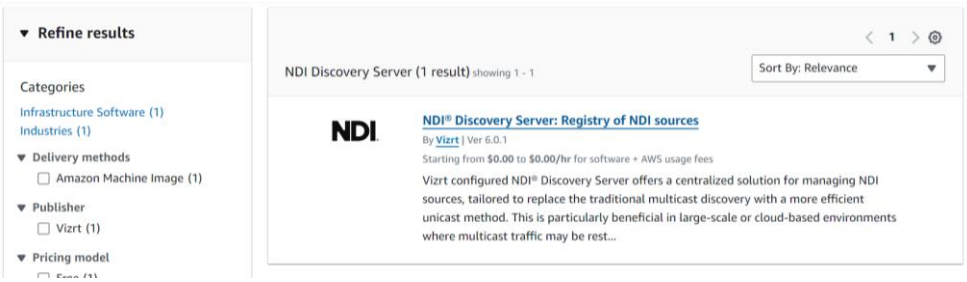
The deployment process involves setting up various AWS resources. While this guide includes security tips and recommendations, it is ultimately your responsibility to ensure the security of your cloud resources. We strongly advise referring to the AWS security documentation and best practices for each resource deployed.

3 AMI Deployment Process

Deploying NDI Discovery Server from the AWS Marketplace is straightforward. This chapter walks you through each step, from finding the AMI to launching your EC2 instance with NDI Discovery Server installed.

3.1 Accessing the AWS Marketplace

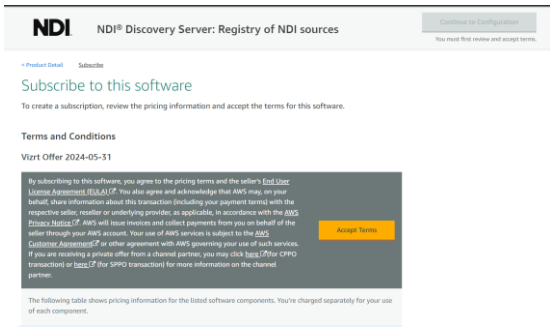
- **Search for NDI Discovery Server:** Open the AWS Management Console, go to AWS Marketplace, and search for "NDI Discovery Server." Select the AMI provided by NDI.



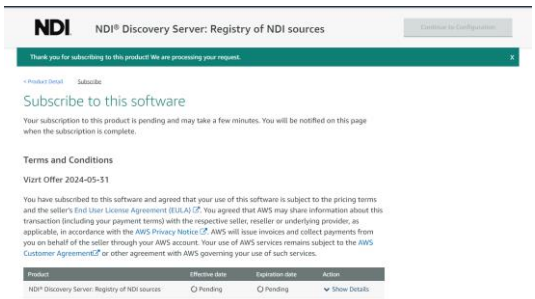
- **Review AMI Details:** On the product page, review the AMI details and click "View purchase options.".

3.2 Selecting the NDI Discovery Server AMI

- **Subscribe:** Click on 'Accept Terms'. After subscribing, wait momentarily for the AMI to become available for configuration.



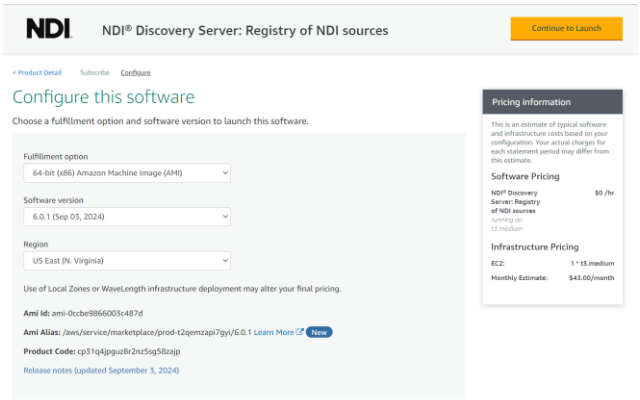
- **Proceed with Configuration:** Click on 'Continue to Configuration' to begin setting up your instance.



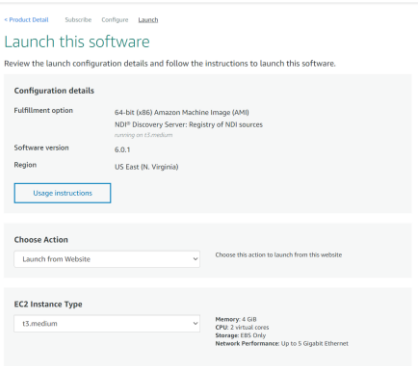
3.3 Configuring Instance Details

- **Choose the Version**: Select the desired software version of NDI Discovery Server for deployment.
- **Select the Region**: Choose the AWS region nearest your location to reduce latency and enhance performance.

- **Continue to Launch**: Click 'Continue to Launch' to configure your instance, including network and security settings.



- **Confirm Launch Method**: Verify that 'Launch from Website' is selected in the 'Choose Action' dropdown to continue with the web-based deployment.



3.4 Network and Security Settings

Configure Virtual Private Cloud (VPC)

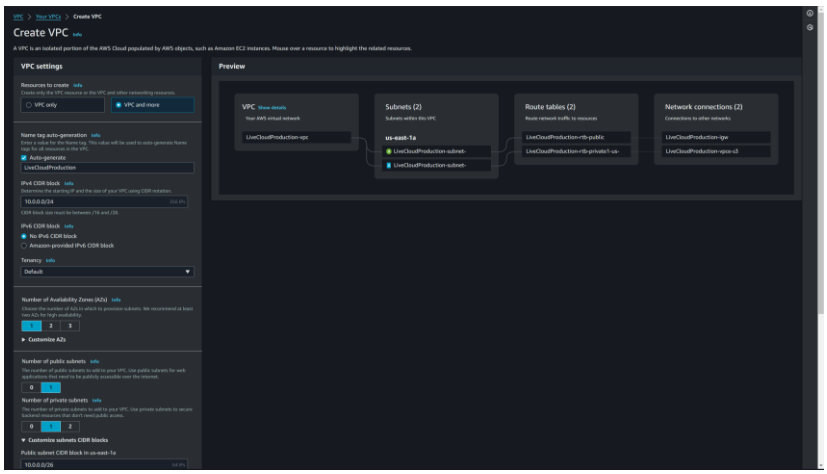
When deploying NDI Discovery Server, decide whether to use an existing VPC or establish a new one based on whether you prefer integrating with your current network infrastructure or creating a dedicated environment for live production.

- **Select an Existing VPC**: During the AWS Marketplace setup, choose the appropriate VPC from the dropdown list to deploy NDI Discovery Server within an existing network.

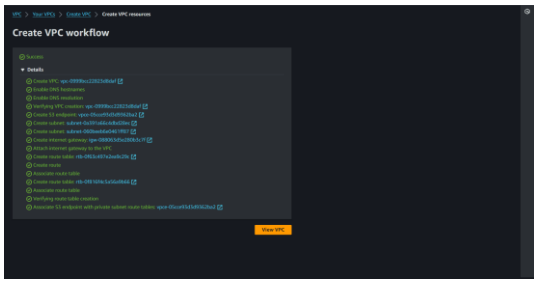
To set up a new VPC for your NDI Discovery Server deployment, follow these detailed steps to ensure proper configuration:

- **Navigate to the VPC section:** click 'Create a VPC in EC2' to access the VPC dashboard in the AWS Management Console.

- **Begin VPC creation:** Click 'Create VPC' at the top right of the dashboard.
- **Proceed with setup:** Select 'VPC and More' to continue the configuration process.".
- **Name your VPC**: Enter a descriptive name like 'LiveCloudProduction' for easy identification.
- **Set the IPv4 CIDR block**: Assign a CIDR block such as 10.0.0.0/24 to the VPC. This size is typically adequate for most needs unless a larger or segmented network is necessary.
- **Select Availability Zones**: Choose one Availability Zone for your VPC.
- **Define Public Subnets**: Input 10.0.0.0/26 for the public subnet's CIDR block within your chosen Availability Zone.
- Review and confirm your settings to ensure they are correct before proceeding.
- Click **Create VPC** to establish your new VPC with the specified configurations.

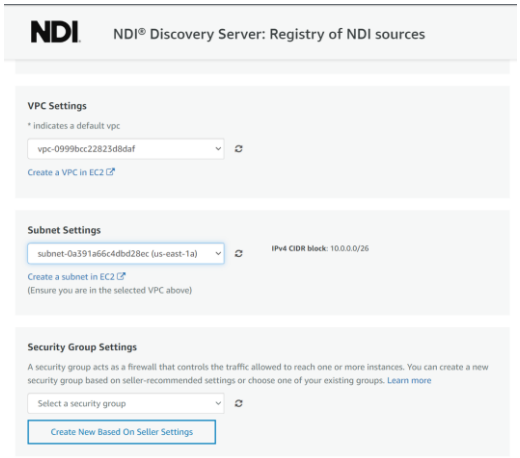


- Click on 'View VPC' to return to the VPC dashboard.



- Return to AWS Marketplace and refresh the VPC list. Select your newly created VPC from the dropdown menu.

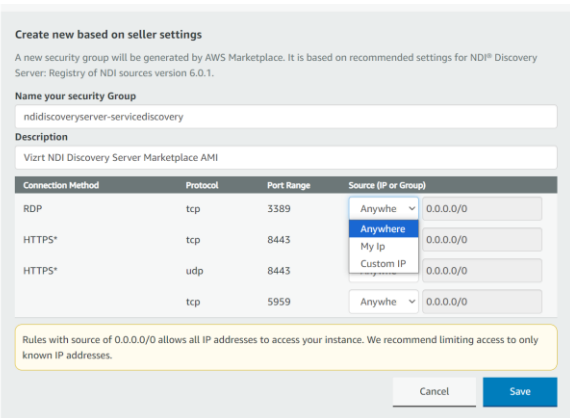
- Choose the newly created public subnet from the dropdown menu.



Configure Security Group

Security groups serve as virtual firewalls that manage the inbound and outbound traffic for your EC2 instance.

- **Use Seller Settings**: click 'Create New Based on Seller Setting'.
- **Name and Describe Your Security Group**: To identify the security group's scope and purpose, assign a name like "ndidiscoveryserver-servicediscovery" and provide a clear description, such as 'NDI Discovery Server Marketplace AMI', to identify the group's purpose.
- **Customize IP Restrictions**: Enhance security by limiting access to the security group. Restrict access to your current IP or specify a custom list of IPs, ensuring only authorized users can connect to your instance.



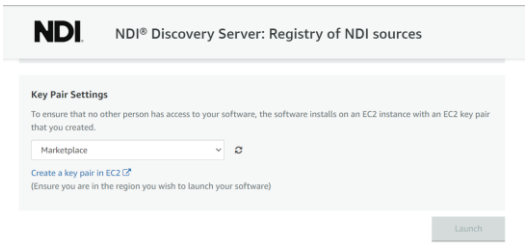
- Open port 5959 TCP to those IP addresses that will be using NDI discovery services.

- Open port 3389 TCP to those IP addresses connecting to the EC2 instance using RDP.
- In the interests of least privilege security, only allow access to IP addresses that require connectivity.

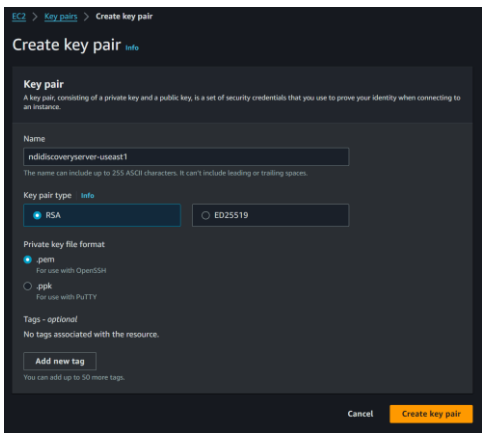
Setting Up Key Pairs

Key pairs are crucial for secure access to your EC2 instances, as they are used primarily to decrypt the administrator password.

- **Access Key Pair Creation**: Click 'Create a key pair in EC2' to open the Key Pairs section in the EC2 console."



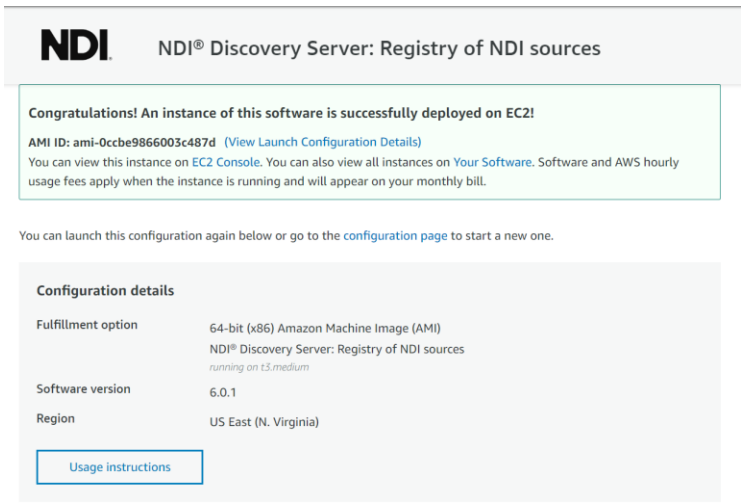
- **Region Selection**: Ensure you're in the correct AWS region for deploying NDI Discovery Server, as key pairs are specific to the region they're created in.
- **Create Your Key Pair**: Click on 'Create key pair'. Name it descriptively, such as 'ndidiscoveryserver-useast1', reflecting its purpose and region.
- **Select File Format**: Choose the .pem format from the available options.
- **Optional Tagging**: Add tags if needed to organize and quickly identify your AWS resources then click **Create key pair**.



- **Download Key Pair**: After creation, immediately download the .pem file. Store this file securely as AWS does not keep a copy, and it cannot be downloaded again.
- **Refresh Key Pair List**: After creating and downloading your key pair, return to the AWS Marketplace where you started the instance setup.
- **Select the New Key Pair**: Refresh the list to see your newly created key pair. Choose the new key pair from the dropdown menu, named 'ndidiscoveryserver-useast1'.

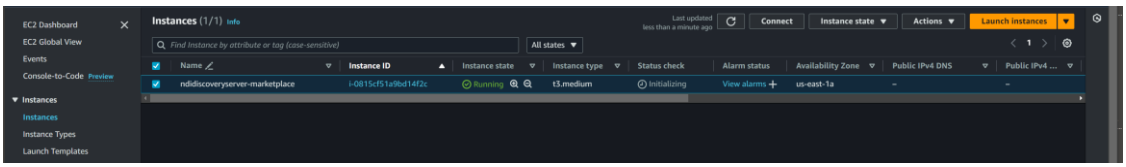
3.5 Launching the Instance

- **Review Configuration**: Double-check all settings, including the EC2 instance type, VPC, subnet, and security group to confirm they meet your requirements.
- **Initiate Launch**: Once all configurations are verified, click ‘Launch’.



- **Navigate to EC2 Dashboard**: Once the instance launch is initiated, go to the AWS Console and select the EC2 service.
- **View Instances**: Click on ‘Instances’ to see a list of all EC2 instances, including the newly launched one.
- **Name Your Instance**: Select your new instance, click the ‘Name’ column, and assign a clear name like ‘ndidiscoveryserver-marketplace’ to help distinguish it from other resources.

- **Monitor Deployment Status**: Once you've initiated the launch, monitor the progress of your EC2 instance in the AWS EC2 Management Console. The instance may take a few minutes to become fully operational.

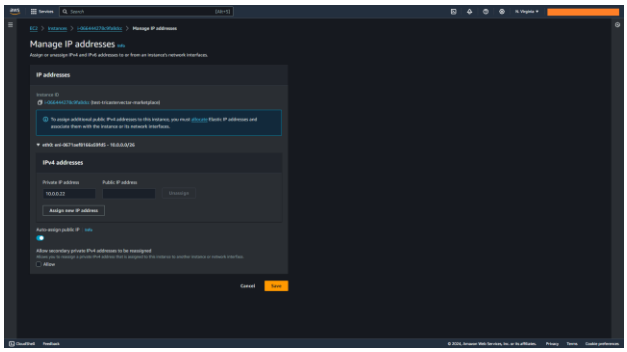


4 Initial Setup and Configuration

4.1 Setting Auto-assigned IP Address in the EC2 Console

To ensure your EC2 instance can communicate effectively with the internet, you need to enable auto-assignment of public IP addresses, especially if your instance operates within a public subnet. Follow these steps to configure this setting:

1. **Access EC2 Management Console:** Open the AWS Management Console and navigate to the EC2 dashboard.
2. **Locate the Instance:** Identify the EC2 instance for which you want to enable auto-assigned IP addressing and click its checkbox.
3. **Adjust Network Settings:** Select the instance, then choose Networking > Manage IP addresses from the Actions dropdown menu.
4. **Enable Auto-Assign Public IP:** Within the network interfaces section, select the primary network interface (typically labeled as eth0). Find and enable the Auto-assign Public IP option.
5. Click **Save** to apply the new network settings.

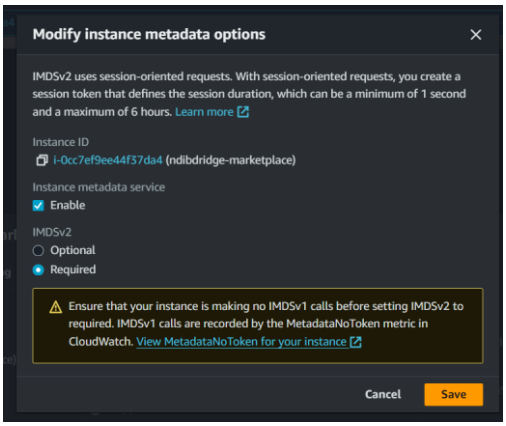


Understanding Auto-Assigned IP Addresses: Auto-assigned IP addresses are straightforward and cost-effective since they incur no additional charges. However, these IP addresses change every time the instance is stopped and restarted. If your operations require a stable IP address, consider using an Elastic IP. Elastic IPs maintain the same IP address across starts and stops, providing consistency for your workflows. For details on how to allocate and associate an Elastic IP with your EC2 instance, consult the AWS documentation.

4.2 Enabling IMDSv2 Metadata

For enhanced security, enabling the Instance Metadata Service Version 2 (IMDSv2) on your EC2 instances is important. Follow these steps to configure IMDSv2:

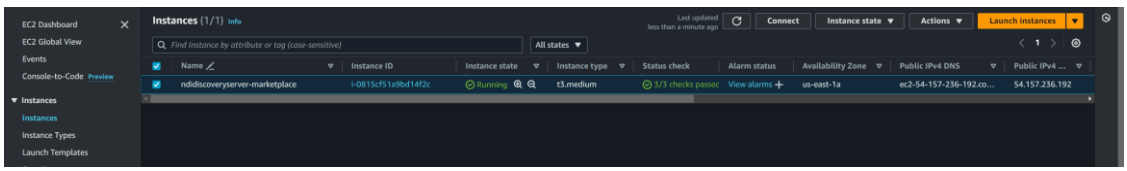
- **Access the EC2 Management Console:** Open the AWS Management Console. Navigate to the EC2 service dashboard.
- **Locate and Select Your Instance:** Find the EC2 instance you wish to modify. Select it by clicking the checkbox next to the instance name.
- **Modify Instance Settings:** With the instance selected, open the 'Actions' dropdown menu. Navigate to 'Instance Settings' and select 'Modify Instance Metadata Options'.
- **Configure IMDSv2:** change the state to 'Required'. Confirm your changes by clicking 'Save'.



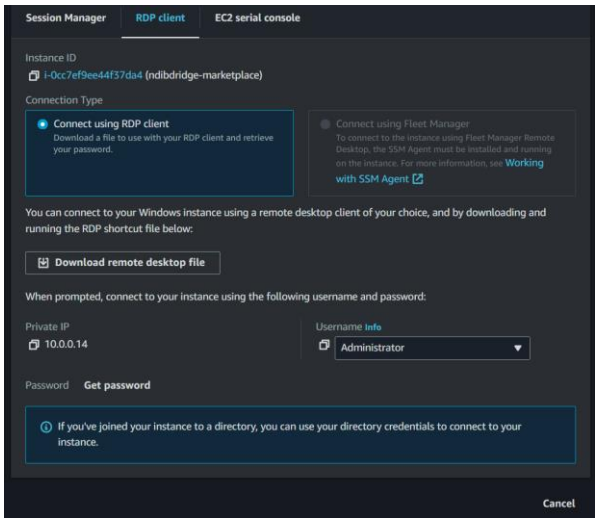
4.3 Starting and Connecting to Your EC2 Instance

Follow these steps to start your EC2 instance and connect to it using an RDP client, such as Remote Desktop Connect.

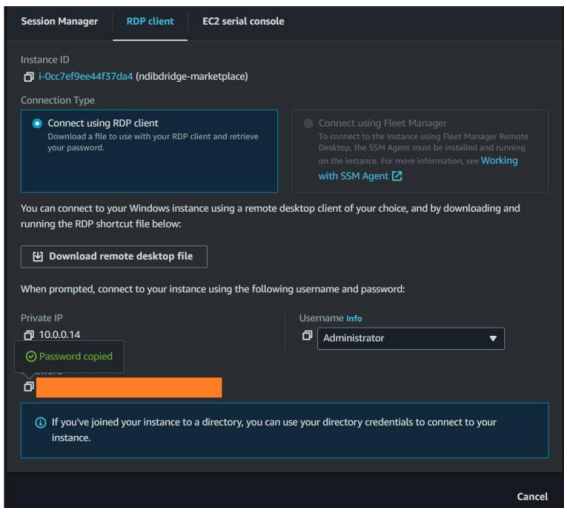
1. **Start the EC2 Instance:** Open the AWS EC2 Console and navigate to the 'Instances' section. Select your instance by clicking the checkbox next to it. Under the 'Instance State' drop-down, choose 'Start Instance'.



2. **Access the RDP Client Connection Details:** Once the instance is running, select 'Connect' at the top of the EC2 console. Choose the 'RDP client' tab on the 'Connect to instance' page.



3. **Decrypt and Obtain the Administrator Password:** Click 'Get Password' and upload the private key file you saved during key pair creation. Click 'Decrypt Password' to display the administrator password, then copy it for later use.



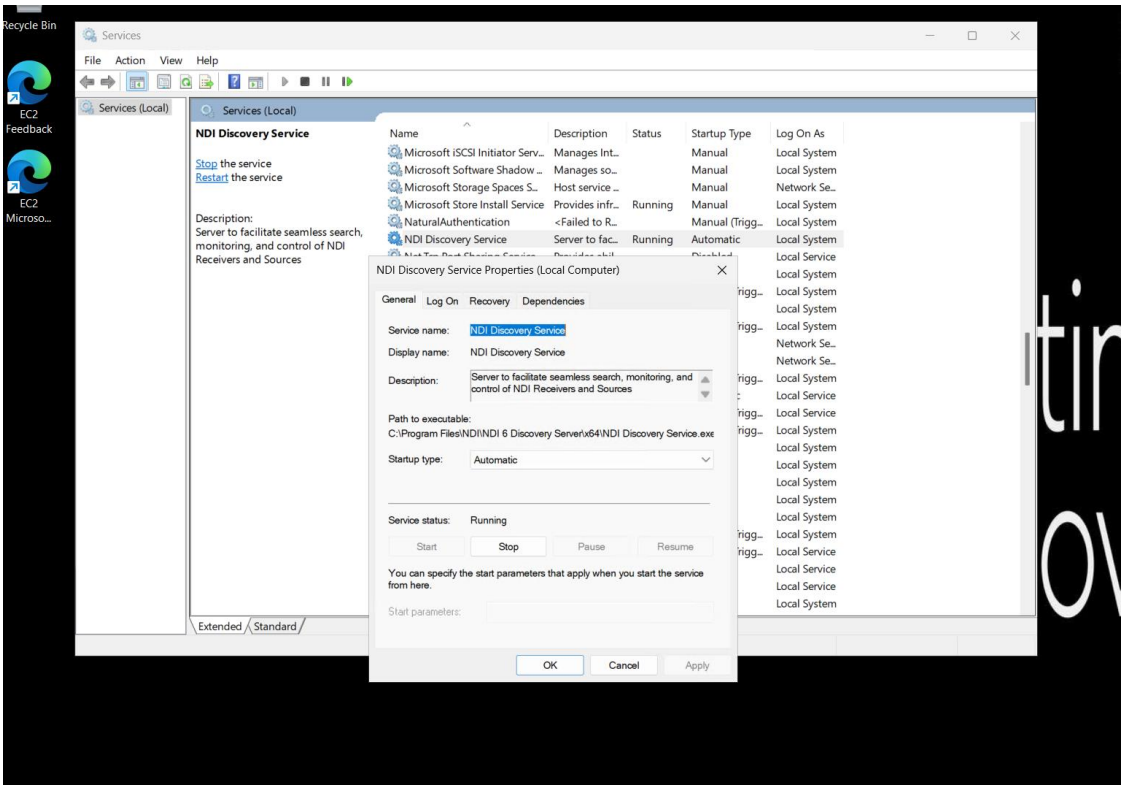
4. **Copy the Public DNS:** Copy the Public DNS or IP address displayed on the EC2 dashboard.

5. **Connect Using Remote Desktop Connect Client:**

    - Launch the Remote Desktop Connect client on your local machine.
    - Enter the copied Public DNS or IP address and Click ‘Connect’.

- Enter *Administrator* as your administrator username along with the decrypted administrator password.
- If prompted, you can view the certificate and click *Yes* to confirm that you wish to connect.

6. **Check Service Status:** Once connected, you can verify the NDI Discovery Server is running properly by using the Services application in Windows. Search for the "NDI Discovery Server" to see if it is active and running.
7. **Note the Private IP Address:** Document the private IP address displayed either on the Windows desktop or in the AWS EC2 console. This IP address will be crucial for configuring NDI Bridge to communicate with the Discovery Server.



Refer to the [NDI Discovery Service documentation] for more detailed information and troubleshooting.

5 Additional Resources

For those new to AWS or needing a refresher, consider the following resources to get up to speed:

- AWS Training and Certification: Offers courses to enhance your understanding of AWS services.
- AWS Documentation: Provides comprehensive guides and tutorials on using AWS services.

For those looking to deepen their knowledge and skills in operating NDI and other related technologies, the following resources are invaluable:

- **NDI Documentation and Setup Help:** For more detailed information and advanced configurations, visit the official NDI documentation at NDI Tools Documentation (https://docs.ndi.video/tools).
- **NDI Discovery Tool:** A desktop client tool offering a discovery dashboard. The Windows release is documented here.
- **NDI Connected Community:** A platform to connect developers, systems integrators, resellers, thought leaders, and users. Stay ahead of the connectivity curve with insightful courses, participate in our forums and access technical support. Visit the NDI Connected Community at Connected Community – NDI.