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Chapter 1. What is NVIDIA NGC?

NVIDIA NGC™ is the cloud platform offering fully managed services, including NeMo LLM, BioNemo, and Riva Studio for NLU and speech AI solutions. AI practitioners can take advantage of NVIDIA Base Command for model training, NVIDIA Fleet Command for model management, and the NGC Private Registry for securely sharing proprietary AI software. NGC also hosts a catalog of GPU-optimized AI software, SDKs, and Jupyter Notebooks that help accelerate AI workflows and offers support through NVIDIA AI Enterprise.

Enterprises gain access to their AI cloud services through a dedicated virtual NGC organization where their services are enabled.
Chapter 2. Why NGC Software

NGC provides software to meet the needs of data scientists, developers, and researchers with various levels of AI expertise.

Software hosted on NGC undergoes scans against an aggregated set of common vulnerabilities and exposures (CVEs), crypto, and private keys.

In addition to security scanning, NGC software is tested against a broad range of GPU-enabled platforms, including public cloud instances, workstations, and OEM servers targeted for data center or edge deployments. Supported GPUs include H100, V100, A100, T4, Jetson, and the RTX Quadro.

NGC software is tested and assured to scale to multiple GPUs and, in some cases, to scale to multi-node, ensuring users maximize the use of their GPU-powered servers out of the box.

For a select set of containers, NVIDIA offers NGC Support Services for running software on DGX platforms or certified OEM servers. The service gives enterprise IT direct access to NVIDIA subject matter experts to quickly address software issues and minimize system downtime.
Chapter 3. NGC Organizations and Teams

An NGC org (organization) is a dedicated virtual instance used to enable and manage NVIDIA cloud services.

A user can gain access to an NGC org in the following ways:

1) A user can sign up for a free NGC org through the NGC sign-in portal and create a new NVIDIA account.

2) An NVIDIA representative onboards a user through a purchase order, early trial program, or other commercially related offers. The customer provides the users’ contact information to an NVIDIA representative. An NVIDIA NGC org gets created on behalf of the user, and an org owner welcome email is sent to the user’s email address. The user is requested to access NGC via an invite URL embedded in the email.

3) The org owner can onboard a user to an NGC org. The org owner will invite the user through an NGC invitation email or add the user using a corporate AD group membership rule mapped to the NGC org. Note that only ‘enterprise’ type orgs support the ability for org owners to manage additional users.

Users who sign up for an NGC org through the NGC sign-in portal get assigned an individual org that is automatically enabled with the NGC Catalog service and grants authenticated access to the catalog. An individual org is only accessible by a single user, the org owner.

An NVIDIA premium cloud service subscription, such as NVAIE or NeMoLLM, will be granted through purchase, an early access program, or the NGC Activate Subscription portal. Subscriptions get enabled on enterprise NGC orgs created by NVIDIA. Alternatively, an individual org is converted to an enterprise org when a user activates their subscription through the NGC activate subscription portal. An NGC enterprise org supports additional users, teams, and role-based access rules.
3.1. Teams

A team is a virtual sub-unit within an org with its own registry space. Only members of the same team have access to that team’s registry space. Creating teams is useful for allowing users to share images within a team while keeping them invisible to other teams in the same organization. Only the org owner or a user assigned the user admin role can create teams.

To create a team,

1. Log on to the NGC website.
2. Select Organization > Teams from the left navigation menu, then click Create Team menu at the top of the screen.
3. Enter a team name and description, then click Add Team. Team names must be all lowercase.
3.2. NGC Org Owner and Other Org Users

When an org is created, the Org Owner is the role assigned to the initial user.

As mentioned above, an individual org is only accessible by the org owner. Additional users are not supported. To verify the type of org you manage, sign in to NGC to access your org and navigate to the Organization > Organization Profile page from the left navigation menu.

The org owner possesses the highest admin privileges in an org. The org owner of an enterprise org can add/edit/delete teams and users. The org owner can define access control rules against each added user by managing the assignment of teams and roles. When a new user gets added, the org owner will assign access to the entire org or limit the user’s access to a team or a set of teams created within the org. Then, the org owner will control the user’s access by assigning roles based on each user’s required access to perform their functions within the org or team.

3.2.1. Contacting your Org Owner
As a user within an NGC organization, you may need to contact the organization owner to request a new service subscription or add a new user. NGC simplifies this communication with the Contact Admin option in your user account menu.

1. First, sign into the NGC application with your organization. Then click on your user ID in the top right corner to access the user account menu.

2. Select Contact Admin to open the email editor dialog.
Within this editor, you can choose from the following email templates:

- **Product Request**: Use this template when requesting a specific product for your `<org-name>` organization. For example, "I'd like to request the [product name] product for the `<org-name>` organization."

- **Team Access Request**: Select this template if you need to request access to the org or a particular team, such as "[team-name]," within your `<org-name>` organization.

Both templates come with pre-populated message content, but you can edit or delete portions of the message to create a customized message to send to your organization owner.
3. Once you are ready to send the message, click Send.

The organization owner will receive the email from 'noreply-ngc@nvidia.com' and will include your email address. The following is a sample email message:
By following these steps and using the Contact Admin option, you can easily initiate communication with your organization owner.

### 3.2.2. Example of Adding a User to an Org

The following is an example of adding a user to an enterprise org that is enabled with Base Command cloud service.

To add a new user to an org or team, select Organization > Users from the left navigation menu.

On the Users page, click Invite New User to open the Add User page.
In this example, the org owner adds a new user to team "team1", assigns admin roles across all available cloud services within the org, and grants the privilege to add and edit new teams and users by assigning the "user admin" role. To limit the user’s access, the org owner can assign lesser-privileged roles under each cloud service.

To learn more about NGC cloud services user roles, refer to the links below.

- Base Command roles
- Fleet Command roles
- Private Registry roles
- NVAIE viewer role

Note that assigning the user at the team level allows the new user to perform commands within the assigned team. If the new user needs access to the entire org, the user must be assigned at the "Organization" level.

After the org owner assigns the roles to the user being created, the owner must click Add Role to confirm the role assignment. After the roles are assigned, the Create User button becomes enabled for the org owner to select to complete the creation of the user.

### 3.3. New User Accepting an NGC Org Invitation
A newly added user will receive an NGC invite email requesting the user to join the NGC org.

Dear [Username],

Welcome to NVIDIA NGC!

You have been added and are invited to access NGC org mm-test-nfr (s6jzvcl32eb8).

Accept your invitation by clicking the link below. At the NGC sign-in page enter your email address and click Continue to sign-in. If you do not have an account you will be automatically prompted to create a new NVIDIA account to sign-in.

Thanks for joining! We’re excited to have you with us.

ACCEPT INVITATION AND SIGN IN

Copyright © 2023 NVIDIA Corporation. All rights reserved.
NVIDIA Corporation, 2788 San Tomas Expressway, Santa Clara, CA 95051.

For sign-in/sign-up issues contact NVIDIA support https://www.nvidia.com/en-us/support/enterprise/

After clicking the acceptance link in the email message, the user is automatically redirected to their appropriate sign-in method. Suppose this is the user's first time signing into NVIDIA NGC. In that case, they will be automatically prompted to create a new NVIDIA account using their email address or can select More Signup Options in the NVIDIA account creation portal to sign in using an existing social platform user account (e.g., Google, Facebook, Apple, or Discord).

Users who have an existing NVIDIA account are automatically prompted for their password to sign in and access their NGC org. Users whose company has federated their NGC org to an external SSO identity provider are automatically redirected to their SSO
portal to provide authentication credentials to sign in. To learn more about bringing your own SSO/IdP provider, see NGC Org Authentication Using an External SSO Provider.

Important: For a successful user onboarding experience, customers should add the following NVIDIA email addresses to their allow-list in their firewall rules: 'noreply-ngc@nvidia.com', 'account@tmail.nvidia.com', and 'account@nvidia.com'.

3.4. NGC Org Authentication Using an External SSO Provider

An enterprise org can be federated to an external SSO/IdP identity service to centrally manage a company’s rules for user authentication to cloud services.

The setup process to federate an NGC org to an external SSO identity provider requires manual steps between the customer and an NVIDIA representative. To learn more on how to bring your own SSO/IdP service to NGC, email ngc-sso@nvidia.com

After an NGC org is federated against an enterprise SSO/IdP identity service, the users signing into NGC will automatically be prompted to authenticate against their enterprise SSO/IdP service and redirected back to NGC after a successful sign-in. To add new users to an org federated to an external SSO/IdP provider, the org owner follows the same steps described in Example of Adding a User to an Org. Alternatively, suppose the external IdP provider supports OIDC claims to identify the user’s membership to a group or set of groups. In that case, NGC can be configured to map these OIDC claims to NGC org, teams, and role assignments. See the section NGC IdP Membership Rules for more details.

Note the org owner role is created as the break-glass/recovery account and must always authenticate through an NVIDIA account. This provides access to the org in case the external SSO/IdP service is unavailable. See the section Signing In to your NGC Org Owner Account (External SSO IdP) to learn how to sign in to your org owner account.

NVIDIA recommends org owners add themselves to their enterprise org as new users and assign access rules set at the org level with admin roles across all org services. Using the same org owner email address to add themselves as new admin users is supported. The users' new service admin accounts will be authenticated using the external SSO/IdP authentication service and inherit the same role privileges as their org owner account.

3.4.1. NGC IdP Membership Rules

An enterprise org can be federated to an external SSO/IdP identity service to centrally manage a company’s rules for user authentication to cloud services.

When the NGC org is linked to an external IdP, the org owner will see the ability to start creating membership rules under the Organization > External IdP configuration page.

Important: Only the org owner role is permitted to create membership IdP Rules.
If the NGC org is not linked to an enterprise-owned SSO IdP provider, the 'External IdP' web prompt is disabled with a message stating the org is not linked to an IdP. You can request to link your org to an enterprise-owned SSO IdP by emailing ngc-sso@nvidia.com.
The membership rules feature uses Open ID Connect (OIDC) claims containing the user's membership attributes, either included in the ID token or retrieved from the OIDC user-info endpoint. Here is an example of an OIDC claim that carries membership attributes.

```
Unset
An ID-token retrieved after a successful user authentication
{
    "sub": "@0uixa271s6x7qt8I0h7",
    "ver": 1,
    "iss": "https://{MyDomain}",
    "aud": "28dn4g32287AD709hgea",
    "iat": 1574201516,
    "exp": 1574205116,
    "jti": "ID.ewMNfSvcpuqyS930gVeCN3F2LseqR0kyYjz7DNb9yhs",
    "amr": [
        "pwd",
        "mfa",
        "kba"
    ],
    "idp": "@0oixa26ycdNcX0VT0h7",
    "nonce": "ubgw",
    "auth_time": 1574201433,
    "groups": [
        "Everyone",
        "NGC_Admin"
    ]
}
```

The ID-token contains several claims that carry attributes associated with the user. Specifically, we are interested in the "groups" claims values that map users to specific membership groups in their Active Directory (AD) service.

It's important to note that the external IdP uses the name "groups" to carry membership attribute values in the example above. However, other IdP providers may use a different name for their membership attribute claim. If your IdP provider uses a different claim name, check that NGC supports it by emailing ngc-sso@nvidia.com.

An org owner will create membership rules by mapping the name (alias) value of the IdP 'groups' claim to NGC org roles and permissions. Within the enterprise AD service, users assigned to these groups will receive the roles and permissions assigned to the group name in the NGC IdP rules.

Example
In this example, we are using Okta as the enterprise-owned SSO IdP provider. It is assumed the same person managing Okta also has NGC org owner permissions.

Okta Settings
First, the NGC org gets linked as a client application to the Okta IdP service.

On Okta, managed users get assigned to the NGC client application, enabling them to sign in to NGC using their Okta SSO account.

At this point, users have not been assigned to a ‘group’.
On Okta, secure AD groups are created, and users can be assigned to a group or a set of groups.
In this example, Adam and Amy are assigned to the NGC_AIE_PR_Admin group. Note that this is being done manually using the Okta user management feature, but this is typically managed automatically by using an enterprise active directory integrated into the IdP provider.
At this point, Adam and Amy can sign into NGC, but there isn't an IdP rule that assigns them NGC org roles and permissions. The next section covers creating the NGC IdP membership rules that will grant Adam and Amy their roles.

Configuring NGC

After the IdP groups are created and users are assigned to secure AD groups on the Okta IdP side, the administrator (org owner) is ready to configure NGC IdP membership rules.

NGC

In the NGC web application, go to NGC External IdP settings and click Create Rule.

Type in a Rule Name that describes the purpose of the rule.

Then, under the If group equals field, enter the name of the IdP 'group' claim that will map to this rule. Note that the name must match exactly and is case-sensitive.

Finally, assign the NGC team or org-level access, and assign cloud service roles to grant to users that are assigned to the group. Click Save.
Rule Name
NVAIE and Private Registry admin

If group equals
NGC_AIE_PR_Admin

This field is case sensitive. Please ensure the group name entered matches the one in your IdP.

then assign to
TB2-org (no team)

as

NVIDIA AI Enterprise

Viewer

Private Registry
Admin

Organizations and Teams
Once the rule is saved, the org owner must activate the rules to apply the membership roles to Adam and Amy when they sign in.

This completes the creation of an NGC IdP membership rule.

The org owner can create multiple rules to support multiple group claim values from the IdP. An example of multiple IdP membership rules created can be seen below.
Important: The NGC IdP membership rules do not go into effect until they are "activated". Users’ accounts that were added using the manual method will continue to use NGC role permissions assigned through 'Users' invite user membership configurations.

When the Activate Rules button is clicked, the org owner is prompted to confirm activation of the IdP rules. When the rules are activated, the NGC IDP rule system reviews user memberships previously added to the org using the "user invitation" method. The NGC IdP rule system will check if the user account maps to a new IdP membership rule. If one does, the previous account membership is deleted, and a new user account membership using the same email address and IdP association will be created. The permissions and roles that get assigned to the new account membership are based on the IdP 'groups' claim attribute.

Note: Previous user accounts that are determined not to have an associated IdP rule remain as active user accounts under "Users" account memberships.
Chapter 4. Accessing NGC Org

The following are ways to access an NGC org.

**Org owner**
A user must create a new NVIDIA account and register a new NGC individual org against it. Alternatively, the user receives an NGC welcome email and is invited to accept and sign in as the org owner of a new enterprise org.

**Org user**
The org owner, or an org user admin, adds a new user to the org (or team) and sends an NGC welcome email inviting the user to sign in.

**Subscription**
To access subscription-based software, users must provide Business Address details and a token (serial number, activation code, and so on.). Note that this category also requires Authenticated Access.
Chapter 5. Accessing NGC as Org Owner

Instructions for accessing NGC org as org owner.

5.1. Signing Up for an NVIDIA Account and Activating a New NGC Org

This section describes the steps to sign up for an individual NGC org.

1. Go to the NGC sign-in page from your browser, enter your email address, and then click Continue.
2. At the Create your Account screen, create a password, make sure to review the NVIDIA Account Terms of Use and Privacy Policy and click Create Account to accept and proceed with account creation. You will receive an email to verify your email address.
A verification email is sent to your email address.

3. Open the NVIDIA account creation email and click Verify Email Address.
You are automatically directed to nvidia.com and see an Email verified successfully page.

4. At the Almost done! dialog, set your communications preferences, and then click Submit.

5. Complete your user profile at the Set Your Profile screen, agree to the NVIDIA GPU Cloud Terms of Use, and then click Submit.
Your NVIDIA account is created, and you will be automatically logged in to your NGC org.

5.2. **Accessing an Org as Owner (from Welcome Email)**

This section describes accessing a new NGC org where the user is invited to join as the org owner.

After NVIDIA creates an NGC org, the designated user will receive a welcome email that invites them to continue the activation and sign-in process.
In the email, the user selects the SIGN IN TO NGC button and is redirected to the NGC sign-in page.

5.2.1. Existing NVIDIA User

This section describes signing in if you already have an NVIDIA account.

If you are a user with an existing NVIDIA account, click on Use alternate method to be redirected and sign in with your NVIDIA account credentials. If you don’t own an NVIDIA account, go straight to section New NGC User.
At the Your NVIDIA Account sign-in page, enter your email address and click Continue. Alternatively, if the NVIDIA account was created using a social platform IdP the user can select the social platform provider to sign in.
After clicking Continue the user is prompted to enter their password and select Log In.
After successfully signing in, the user may need to accept new cloud service subscription terms of use, and if the org owner is part of multiple orgs will need to select the new org from the list.
Terms of Use

Please review and accept the following Terms of Use

☐ I agree to the NVIDIA Privacy Policy

☐ I agree to the NVIDIA GPU Cloud Terms of Use

Agree
Organizations within NVIDIA GPU Cloud allow you to share registries and resources with colleagues.

Set Your Organization

Search

TB4-org

TB3-org

Continue
5.2.2. New NGC User

This section describes signing in if you are new to NGC.

New users are automatically prompted to create a new NVIDIA account.

Take note of the following important information in the email.

- "TB3-org" is the display name for your org. The display name identifies your org in the NGC web UI.
- "njdfzzqagzno" is the unique identifier for your org. This identifier represents your org namespace. You can use this identifier in some CLI commands.

1. Click the SIGN IN TO NGC button in the email, or using a browser, navigate to the NGC sign in page.

2. Type in your email address and click Continue
3. You will be presented with a create account screen.

Create Your Account

Email
novisc1@gmail.com

Password
*******

Confirm password
*******

Stay logged in

By proceeding, I agree to the NVIDIA Account Terms Of Use and Privacy Policy

Create Account

More Signup Options

Verify your email and create a password. Review NVIDIA Account Terms of Use and Privacy Policy, and click “Create Account”

A verification email is sent.
4. Open the email and click Verify Email Address.
5. In the Almost done! dialog, select your communication preferences, and then click Submit.
6. At the Your NVIDIA Account sign-in page, enter your email address and click Continue. Alternatively, if the NVIDIA account was created using a social platform IdP the user can select the social platform provider to sign in.

7. After clicking Continue the user is prompted to enter their password and select Log In.
You can always change to a different org or team that you are a member of after logging in. Refer to Switching Orgs or Team After Logging into NGC for more information.

The NGC web UI opens to the NGC Catalog landing page.

5.2.2.1. Signing In to your NGC Org Owner Account (External SSO IdP)
NVIDIA accounts always handle an NGC org owner authentication. If your org is federated to an external SSO/IdP service as explained in NGC Org Authentication Using an External SSO Provider, the company email address used to create the org owner account will be redirected to the company’s external SSO provider when the email address is entered at the NGC sign-in page. This prevents access to the org owner account. To gain access to your org owner account, you must go through NGC’s alternate sign-in method.

1. At the NGC sign-in page, select Use alternate method to access the NVIDIA account login page.

2. At the Your NVIDIA Account sign-in page, enter your email address and click Continue. You will be prompted to enter your password. Click Log in when done.
Your NVIDIA Account

Enter your email to log in or create an account.

Email
Enter your email address

Stay logged in
Continue

or

Log In With Google
Log In With Discord
Log In With Apple
Log In With Facebook

Show More

By proceeding, I agree to the NVIDIA Account Terms of Use and Privacy Policy

Log In With Security Device
Return To Account List

Login Help
Chapter 6. Accessing NGC as an Org User

6.1. Joining an NGC Org or Team with an Existing NVIDIA Account

This section describes joining an org or team when your email address is already associated to an NVIDIA account.

After NVIDIA or your organization administrator adds you to a new org or team within an organization, you will receive a welcome email that invites you to continue the activation and sign in process.
1. Click the Accept Invitation and Sign In link to open the NGC sign-in page. Enter your email address and sign in using your NVIDIA account credentials.
The Set Your Organization screen appears.
2. Select the new organization and team you have been invited to. Click Continue.

You can always change to a different org or team that you are a member of after logging in. Refer to Switching Orgs or Team After Logging into NGC for more information.

The NGC web UI opens to the NGC Catalog landing page.
Chapter 7. Activating Your Subscription (Offer Dependent)

This section describes activating a subscription and linking it to your NGC Account.

Note: These steps are only required for customers who have been given an activation code as part of the purchase of a GPU or DPU.

1. Access the activation page directly via Activate Subscription.
2. Sign in to NGC with your email address and password if prompted. If you have not created an NGC account, create one now.
3. On the Activate Subscription page, enter your Business Information using your company’s headquarters address and the serial number or activation code described by the specific offer.
   If entering multiple serial numbers or activation codes, use a comma to separate each.
4. Click Activate Subscription.
5. Once the system validates the serial numbers, review the information displayed and click Request Activation.
6. The Subscriptions page will display for your organization with the active NVIDIA AI Enterprise subscription.
7. Use the left navigation and click Enterprise Catalog to access the NVIDIA AI Enterprise software suite.
Chapter 8. Switching Orgs or Team After Logging into NGC

This section describes switching to a different org or team after logging in.

In the top menu bar, click your user account icon. Then, select your org menu to expand the view to other available orgs. If you manage many orgs, you can use the search field to find the specific org you want to select. Select the desired org by clicking it once.

Depending on the org or team you select, your current page may also refresh.
Chapter 9. Generating Your NGC API Key

This section describes obtaining an API key to access locked container images from the NGC Registry.

1. Sign in to the NGC website.
   From a browser, go to https://ngc.nvidia.com/signin/email and then enter your email and password.
2. Click your user account icon in the top right corner and select Setup.
3. Click Get API key to open the Setup > API Key page.
   The API Key is the mechanism to authenticate your access to the NGC container registry.
4. Click Generate API Key to generate your API key.
   A warning message shows that your old API key will become invalid if you create a new one.
5. Click Confirm to generate the key.
   Your API key appears.
   You only need to generate an API Key once. NGC does not save your key, so store it securely.

Tip: You can copy your API Key to the clipboard by clicking the copy icon to the right of the API key.

You can generate a new one from the NGC website if you lose your API Key. When you generate a new API Key, the old one is invalidated.
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