Migrating only specific repositories from Nexus3 to Artifactory is explained in this document.

In order to do so, you would have to run the migration in multiple steps:
Run the migration tool in multiple stages
This document assumes the latest version of the tool is jfrog-nexus-migrator-0.9.1.sh (check for the latest version in Migrating from Sonatype Nexus Repository Manager to Artifactory)

Let's go over these steps one by one:

1)Run

```
C/C++
 ./jfrog-nexus-migrator-0.9.1.sh config
```

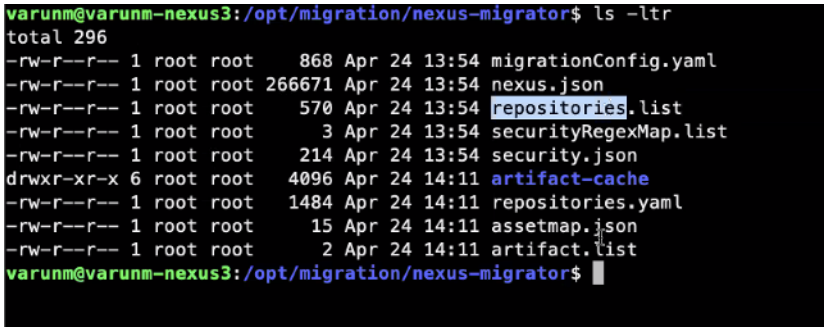
This will ask how to connect to Artifactory (and saves the details to /opt/migration/nexus-migrator/jfrog-cli.conf.v5) and Nexus (and saves the details to /opt/migration/nexus-migrator/migrationConfig.yaml) .

Note: In the migrationConfig.yaml the default threads is 12. You can monitor the migration and and increase the threads if monitoring shows everything is fine in Nexus and Artifactory during the migration .

2) Run

```
C/C++
./jfrog-nexus-migrator-0.9.1.sh getConfig
```

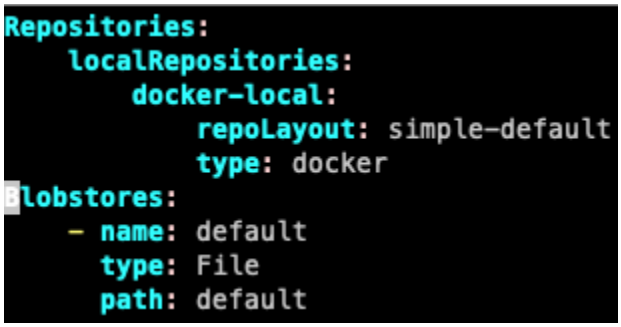
3) After running (1) and (2), a migration folder would be created (under the path where the script is located), you should navigate into the “migration” folder -> and then into the nexus-migrator folder.



4) In the nexus-migrator folder, you should edit the file named "repositories.yaml" and delete any repository which you do not want to be created in Artifactory, an example from my end:

```
Repositories:
    localRepositories:
        docker-local:
            repoLayout: simple-default
            type: docker
        maven-releases:
            repoLayout: maven-2-default
            type: maven
            handleReleases: "true"
        maven-snapshots:
            repoLayout: maven-2-default
            type: maven
            handleReleases: "true"
        nuget-hosted:
            repoLayout: simple-default
            type: nuget
    remoteRepositories:
        maven-central:
            type: maven
            repoLayout: maven-2-default
            url: https://repo1.maven.org/maven2/
            handleReleases: "true"
        nuget.org-proxy:
            nuget:
                downloadContextPath: api/v2/package
                feedContextPath: api/v2
            type: nuget
            repoLayout: simple-default
            url: https://api.nuget.org/v3/index.json
    virtualRepositories:
        maven-public:
            type: maven
            repositories:
                - maven-releases
                - maven-snapshots
                - maven-central
            repoLayout: maven-2-default
        nuget-group:
            type: nuget
            repositories:
                - nuget-hosted
                - nuget.org-proxy
            repoLayout: simple-default
Blobstores:
    - name: default
      type: File
      path: default
```

The picture above shows the repositories.yaml file after running the getConfig step.
If you wish to only migrate the "docker-local" repository, delete everything else in the repositories.yaml **:**



```
Repositories:
    localRepositories:
        docker-local:
            repoLayout: simple-default
            type: docker
Blobstores:
    - name: default
      type: File
      path: default
```

Note: if you want the target repository in artifactory to be a different name change that in the /opt/migration/nexus-migrator/repositories.list where we map the source and target repos.

For example here is mapping of a source repo npm (in Nexus) which will be migrated to target repo npm (in Artifactory):

```
C/C++
    - source: npm
      target: npm
```

Slack , slack repositories.list reponame syntax,

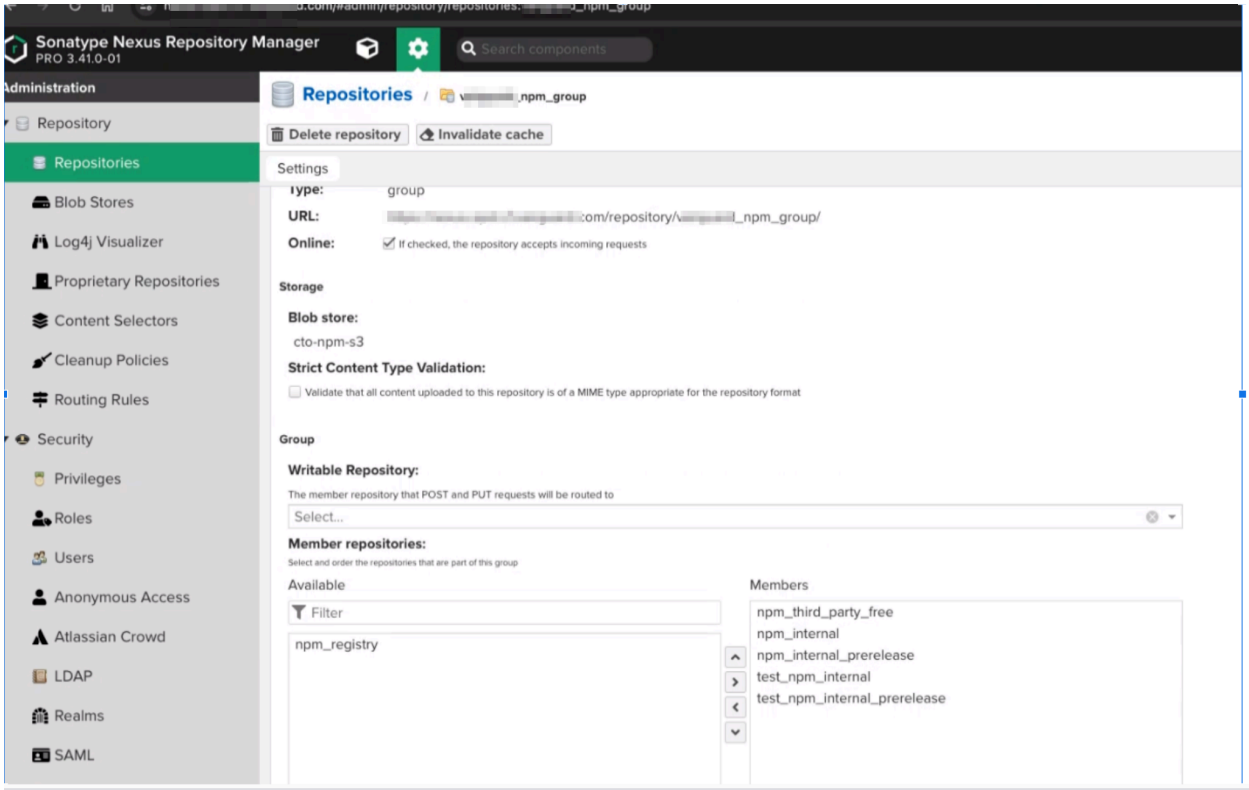
```
repoName:
  - source: <repo name in nexus>
    target: <repo name to be created in artifactory>
```

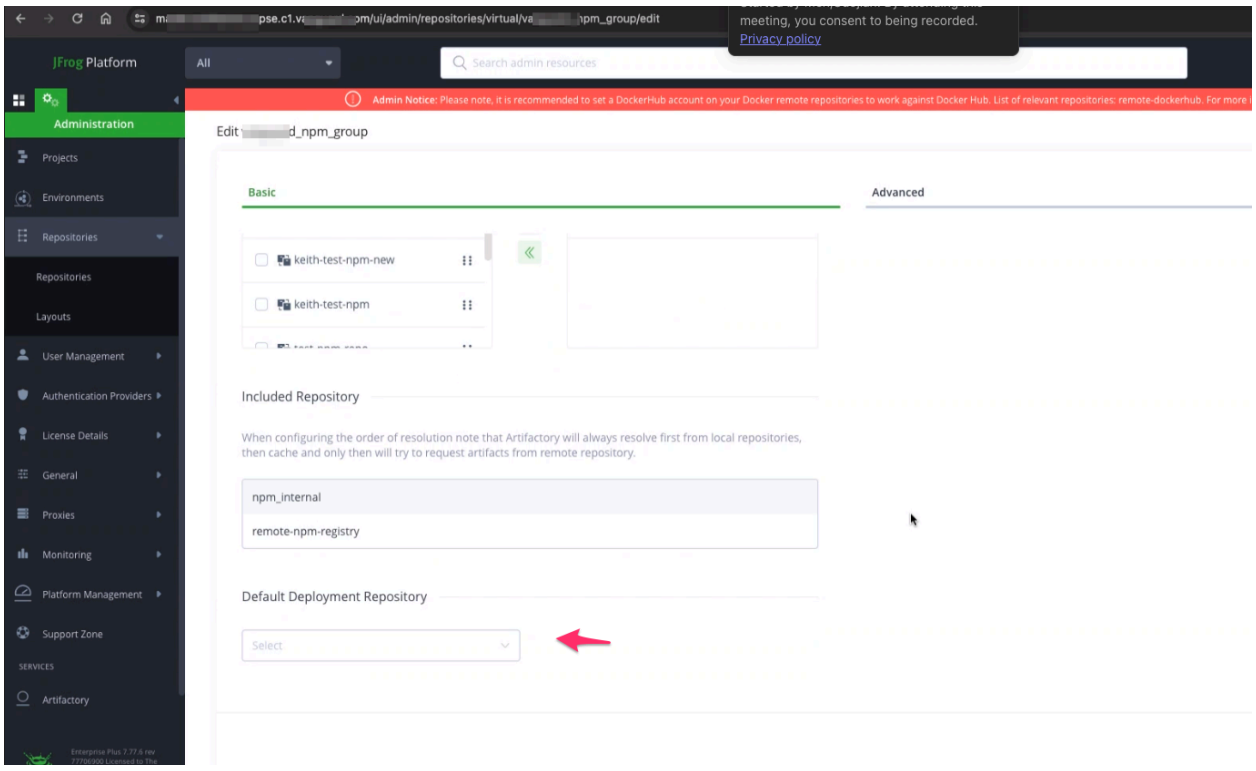
repositories.yaml reponame syntax,

```
Repositories:
  localRepositories:
   <repo name in nexus>:
    repoLayout: simple-default
    type: generic
```

Note: the value of target (in repositories.list) is used to indicate the name in artifactory. repositories.list file is the only place where new reponame of artifactory is used . In other files such as repositories.yaml the original repo name in Nexus should be used for reference.

5) After editing the repositories.yaml file, you may run the next step:
./jfrog-nexus-migrator-0.9.1.sh createRepo
This will only create the repositories specified in the repositories.yaml file in your target Artifactory instance (based on the repo name you wnat to use for the target repo in repositories.list)
Note: The nexus group will map to a virtual repo in Artifactory. You can choose to configure the “Default Deployment Repository” in the virtual repo as that is not configured in the repositories.yaml





6) Now we can migrate the Artifacts to the specific repositories that you created with the createRepo step, in my example, I only created a "docker-local" repository, hence on this step -> I will only migrate the "docker-local" repository content:

./jfrog-nexus-migrator-0.9.1.sh migrateArtifact **--repos="docker-local"**
This is explained in detail in Run the migration tool in multiple stages

Note: The syntax for `--repos` with `ma` is,

```
./jfrog-nexus-migrator-0.9.2.sh ma --repos="<repo name in nexus>"
```

Another option is to use the asset file as explained in later steps .

7) Now, you may finish the migration by running the last step to migrate the users , permissions etc::
./jfrog-nexus-migrator-0.9.1.sh migrateSecurity

8) If you want to redo the migration for any repo (say repo named npm) or do a delta migration then change the status of the repo in
/opt/migration/nexus-migrator/repositories.yaml

```
C/C++
From
    npm:
      repoLayout: simple-default
      type: npm
      status: completed

to

    npm:
      repoLayout: simple-default
      type: npm
      status: pending
```

And do a transfer using the asset file which just has the files you want to transfer to the target npm repo:
Note: An asset file with name as **<repo-name>**_assetmap.json should be created in /opt/migration/nexus-migrator folder . See steps in nexus_asset_file_creator/blob/master/README.md . Here the **repo-name (in the <repo-name>**_assetmap.json) is name of your **target** repo **(** based on log below) .

```
C/C++
2024/05/21 18:56:10 [DEBUG] : Source repository name - npm, Target repository
name - sv-npm-local
2024/05/21 18:56:10 [DEBUG] : Getting the repository migration status for
sv-npm-local
2024/05/21 18:56:10 [INFO] : Starting artifact migration for sv-npm-local [5/6]
2024/05/21 18:56:10 [ERROR] :sv-npm-local_assetmap.json does not exist in
migration/nexus-migrator/ directory.
```

When running migrate with the “--repos” option internally we generate the asset file using the Nexus public API to get the file list - https://help.sonatype.com/en/assets-api.html

For example , if you run the API against any npm repos with scoped packages in it we could see it.
example :

```
C/C++
curl -u admin:Jfrog@2022 -X GET
'http://localhost:8081/service/rest/v1/assets?repository=npm'  >
npm_assetmap.json
```

You will get:

```
C/C++
{
  "items" : [ {
    "downloadUrl" :
"http://localhost:8081/repository/npm/@parcel/markdown-ansi",
    "path" : "@parcel/markdown-ansi",
    "id" : "bnBtOmQ4MzMwMDVkNDljMzQ4ZThjZmUyOTNiM2EwYzZiOGJi",
    "repository" : "npm",
    "format" : "npm",
    "checksum" : {
      "sha1" : "f732ac870b0887f6788aa9ab43e611ad2358d2a3"
    },
    "contentType" : "application/json",
    "lastModified" : "2024-05-21T16:29:20.030+00:00",
```

```
    "lastDownloaded" : null,
    "uploader" : "admin",
    "uploaderIp" : "172.16.1.6",
    "fileSize" : 832,
    "blobCreated" : null,
    "blobCreated" : "2024-05-21T16:29:20.030+00:00"
  }, {
    "downloadUrl" :
"http://localhost:8081/repository/npm/@parcel/markdown-ansi/-/markdown-ansi-2.1
2.0.tgz",
    "path" : "@parcel/markdown-ansi/-/markdown-ansi-2.12.0.tgz",
    "id" : "bnBtOjI3YjkwNGJhNDMxZDllNWVkODExZDYyZjRlZjI4NTIw",
    "repository" : "npm",
    "format" : "npm",
    "checksum" : {
      "sha1" : "a4301321fa784a28ba817e65e41432fe8b3b3192",
      "sha512" :
"599cf7af32fc9341f7591e2a4c75fa21cf03944b35ee478ef60b43e0c346c8c3506ea404bd0eb5
95625a207d2702d8047adbb448e213895a9d66b6fccf1fccef",
      "sha256" :
"7bdc6c5f379e9f5b257a3856a52be90be4e335018f805a156f6ad382d5d1b050",
      "md5" : "6d3c05d7040971e18ab1804f6edb9a9d"
    },
    "contentType" : "application/octet-stream",
    "lastModified" : "2024-05-21T16:29:20.051+00:00",
    "lastDownloaded" : null,
    "uploader" : "admin",
    "uploaderIp" : "172.16.1.6",
    "fileSize" : 2056,
    "blobCreated" : null,
    "blobCreated" : "2024-05-21T16:29:20.051+00:00",
    "npm" : {
      "name" : "@parcel/markdown-ansi",
      "version" : "2.12.0"
    }
  } ],
  "continuationToken" : null
}
```


But when running the migrateasset command using `ma --use-existing-asset-file="true"` the `<repo-name>_assetmap.json` the asset list should be in below format:

```
Unset
{
        "assets": [
                {
                        "source": "SOURCE_REPO_NAME_IN_NEXUS/testgp/testad/v12/testad-v12.jar",
                        "fileblobRef": ""
                },
                {
                        "source": "SOURCE_REPO_NAME_IN_NEXUS/testgp/testad/v12/testad-v12.jar.sha256",
                        "fileblobRef": ""
                },
    ..
    ...
  ]
}
```

`Note: the` "fileblobRef": "" and SOURCE_REPO_NAME_IN_NEXUS

`Example:`

```
C/C++

{
       "assets": [

       {
              "source": "npm/@parcel/markdown-ansi/-/markdown-ansi-2.9.3.tgz",
              "fileblobRef": "",
              "lastDownloaded": "null",
              "lastUpdated": "1693320901754",
              "createdDate": "1693320901754"
       }

       ]
 }
```

You can run it as:

```
C/C++
./jfrog-nexus-migrator-0.9.2.sh ma --use-existing-asset-file="true" && tail -F
migration.log
```

You should see “`Success - 1`” as shown in migration.log snippet below:

```
C/C++
2024/05/21 23:00:47 [DEBUG] : Source repository name - npm, Target repository
name - npm
2024/05/21 23:00:47 [DEBUG] : Getting the repository migration status for npm
2024/05/21 23:00:47 [INFO] : Starting artifact migration for npm [5/6]
2024/05/21 23:00:47 [INFO] : Reading assets from
migration/nexus-migrator/npm_assetmap.json
2024/05/21 23:00:47 [DEBUG] : Creating temporary directories for artifacts
migration
2024/05/21 23:00:47 [INFO] : Generated final artifact list for migration
2024/05/21 23:00:47 [INFO] : Starting artifacts migration
2024/05/21 23:00:47 [DEBUG] : Setting the number of threads for migration
2024/05/21 23:00:47 [INFO] : [Thread 3] [1/1]  Fetching artifact :
npm/@parcel/markdown-ansi/-/markdown-ansi-2.9.3.tgz
2024/05/21 23:00:47 [INFO] : [Thread 3] [1/1]  Deploying artifact :
npm/@parcel/markdown-ansi/-/markdown-ansi-2.9.3.tgz
2024/05/21 23:00:47 [INFO] : Artifact migration got completed for npm


              Artifact Migration Report

npm : Failed - 0 | Success - 1
```

Troubleshooting1 (Nexus mIgrator tool) :

298077 We're only planning to migrate a subset of repositories from Nexus, so it's easier for us to just generate repositories.yaml and repositories.list for those ones. I think getConfig is trying to generate configs for all the repos in Nexus, which we don't really need and that takes house if you have 1800+ repos in Nexus as per getConfig_hanging_in_Vanguard

With command :

```
C/C++
./jfrog-nexus-migrator-0.9.2.sh [jfrog-nexus-migrator-0.9.2.sh] ma
--repos="<repo name in nexus>"
```

It looks like if we use this, we might not need to create the assetmap.json. But when I tried it with a large repository, it seemed to take “longer than” the steps where we generate assetmap.json and use ./jfrog-nexus-migrator-0.9.2.sh ma --use-existing-asset-file="true".

So, I'm wondering if there's a performance issue when we use --repos=<nexus-repo-name>? I don't mind creating assetmap.json and using it, even if it's a few extra steps, if it helps avoid any performance problems.

Let me clarify the steps involved in the migration process and provide instructions for your reference:

1. The "getConfig" step retrieves configuration information from Nexus Repository, including repository information (repositories.yaml and repositories.list) and security entities (security.json and securityRegexMap.list) such as users, groups, and permissions.
2. Since our focus is primarily on migrating repositories and their contents, we can disregard the security entity files.
3. Regarding the "use-existing-asset-file" option, please follow these steps:

- Keep the asset file with the name "**<repo-name>_assetmap.json**" inside the "migration/nexus-migrator" folder.
- Set the flag "--use-existing-asset-file="true"" while executing the "migrateArtifacts" step.

./jfrog-nexus-migrator-<version>.sh ma --use-existing-asset-file="true"

4. For each repository, create an assetmap.json file with the name "**<repo-name>_assetmap.json**" and follow the mentioned steps to run the "migrateArtifacts" step.

Troubleshoot2

For your convenience, please send all the following requested information to further investigate this:

1.Confirm the Nexus Version you are using
2.The migration/nexus-migrator/**repositories.yaml** file
3.The exact command that was used to trigger the Migration tool
4.The Artifactory Support Bundle from the last migration time frame attempt （I guess one hour around 2023/08/02 19:32:45 UTC) for further analysis
5. Resource allocated to Nexus server:
-> RAM.
-> CPU.
->Free memory on the nexus server.
-> Storage.

-> What is the filestore type.

6. Please share the migration.log from the last time it failed

7.If possible you can increase the debug level of the tool using the following before trying the migration again to see if it gives additional details as mentioned in https://jfrog.com/help/r/jfrog-installation-setup-documentation/edit-migration-configuration-optional:

```
a) modify the migrationConfig.yaml file and update the value of "logging: INFO"
   under  migrator in the YAML file to "logging: DEBUG" i.e set the
   config.migrator.logging to DEBUG

b)Make changes to the repositories.yaml file located in the working
   directory>/migration/nexus-migrator folder to limit migration to just this 1
   repo which fails and rerun the test.

c) Share with us the newly migration.log for further inspection.
```

Troubelshoot3

Issue: The getconfig command hangs and generates an empty nexus.json Nexus configuration file.

>>
The Nexus migrator tool relies on Nexus script execution feature to get the Nexus configuration and writes to the nexus.json file. One of the drawbacks with this script execution is it will return 200 OK from the nexus side even when there are some errors in fetching the details on nexus side(like OOM, db connectivity issues). Hence the tool will report as successful but the returned info will be empty.
Only increasing the logging on nexus would give us much info in such cases.

Check if there is any connectivity issue to Nexus from the instance where you run the next migrator script using APIs in Nexus_api_fetch.txt

This file has the details of the APIs (with required payload) which the migrator tool is using to fetch the Nexus configuration. Kindly run those APIs manually on the customer end and get the response output.

Better monitor the nexus.log as well while we run these APIs.
For example if you see error like the following when running the 2nd API which get list of repos to output to the nexus.json:

```
C/C++
<html>
<head><title>504 Gateway Time-out</title></head>
<body>
<center><h1>504 Gateway Time-out</h1></center>
</body>
</html>
```

They need to resolve this issue on their end (it is not related to the tool). Once the issue is fixed, please re-run the tool.

If the Nexus URL is being accessed via a reverse proxy (which appears to be the case), consider changing it to connect directly using the private IP and port.

Troubleshoot4

Q1:
The migration is being done in batches, and sometimes the migration tool can time out. I'd like to know if this batch process applies only to the `ma –repos` option. How does it work when migrating using `assetmap.json`?
If we do have a large number of assets in the asset json file how long it will take before the timeout happens. Based on the current speed for 3706 npm assets will take around 5 mins to complete.
Please correct me if I misunderstand.
>> If you are running the migrateasset command using `ma --use-existing-asset-file="true"` then there should not be any timeouts . The Timeout can occur only when running migrateasset command using `ma --repos" option where internally the tool generates the asset file using the Nexus public API to get the file list - https://help.sonatype.com/en/assets-api.html and that may timeout . So with `ma --use-existing-asset-file="true"` option you should be fine.

Q2:
During the migration, I noticed that the newly created repository requires permissions for anonymous downloads and read-only access. We have a 'read_only' permission that is applicable to most repositories. However, during the migration, as we create a new repository, I added the repository to the permission manually via the User Interface (UserManagement->Permission->select the permission->edit repositories and add the repository from filter).

I would like to know is there is a JFrog CLI command or an option during the migration stage that can automatically add the new repository to the permission list. This would ensure that we do not miss this step during the migration.
>> To add a new repository to permission list use the add_or_remove_repos_in_permission_target.sh as mentioned in **add_or_remove_repos_in_permission_target.md**

Q3:
Also, would like to know the impact of "Client did not publish a checksum value. If you trust the uploaded artifact you can accept the actual checksum by clicking the 'Fix Checksum' button.". Is it blocking any artifacts to download Or its just a warning.
>> It is only a warning shown in UI. Does not block artifact downloads from Artifactory.

Q4:
I ran the SQL query to find assets with missing checksums based on the KB article Change Checksum Policy . However, I haven't run the query to fix them yet. Is this the best approach to update a large number of assets after migration? I believe we should take a database backup before running this query and assess the potential impact of the error before proceeding with the database update.
>> Yes, running the update SQL after taking a DB backup is recommended.
