

## Create and Configure IBM Cloud Services

### Create Node-RED Service

|              |  |
|--------------|--|
| Date         | 4 November 2022                                      |
| Team ID      | PNT2022TMID32826                                     |
| Project Name | Smart farmer - IoT Enabled Smart Farming Application |

The screenshot shows the Node.js download page in a web browser. The browser's address bar displays `nodejs.org/en/download/`. The page features the Node.js logo and a navigation menu with links to HOME, ABOUT, DOWNLOADS, DOCS, GET INVOLVED, SECURITY, CERTIFICATION, and NEWS. Below the navigation bar, the 'Downloads' section highlights the 'Latest LTS Version: 18.12.0 (includes npm 8.19.2)'. It instructs users to download the Node.js source code or a pre-built installer for their platform. Two main tabs are visible: 'LTS Recommended For Most Users' and 'Current Latest Features'. Under the 'LTS' tab, three download options are presented: 'Windows Installer' (node-v18.12.0-x64.msi), 'macOS Installer' (node-v18.12.0.pkg), and 'Source Code' (node-v18.12.0.tar.gz). Below these, a table lists additional download options for Windows and macOS, including 32-bit and 64-bit versions. The Windows section lists 'Windows Installer (.msi)', 'Windows Binary (.zip)', and 'macOS Installer (.pkg)'. The macOS section lists 'macOS Installer (.pkg)'. The table also includes a row for '64-bit / ARM64'. The browser's taskbar at the bottom shows the time as 10:52 AM on 11/3/2022.

Download | Node.js

nodejs.org/en/download/

node

HOME | ABOUT | DOWNLOADS | DOCS | GET INVOLVED | SECURITY | CERTIFICATION | NEWS


### Downloads


Latest LTS Version: **18.12.0** (includes npm 8.19.2)


Download the Node.js source code or a pre-built installer for your platform, and start developing today.

**LTS**  
Recommended For Most Users

**Current**  
Latest Features

  
Windows Installer  
node-v18.12.0-x64.msi

  
macOS Installer  
node-v18.12.0.pkg

  
Source Code  
node-v18.12.0.tar.gz

|                          |                |        |
|--------------------------|----------------|--------|
| Windows Installer (.msi) | 32-bit         | 64-bit |
| Windows Binary (.zip)    | 32-bit         | 64-bit |
| macOS Installer (.pkg)   | 64-bit / ARM64 |        |

<https://nodejs.org/dist/v18.12.0/node-v18.12.0-x64.msi>

Activate Windows  
Go to Settings to activate Windows.

10:52 AM  
11/3/2022

Download | Node.js

nodejs.org/en/download/

Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS  
Recommended For Most Users

Current  
Latest Features

Windows Installer  
node-v18.12.0-x64.msi

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node-v18.12.0.pkg

Source Code  
node-v18.12.0.tar.gz

Windows Installer (.msi)  
Windows Binary (.zip)  
macOS Installer (.pkg)  
macOS Binary (.tar.gz)  
Linux Binaries (x64)  
Linux Binaries (ARM)  
Source Code

|                      |        |
|----------------------|--------|
| 32-bit               | 64-bit |
| 32-bit               | 64-bit |
| 64-bit / ARM64       |        |
| 64-bit               | ARM64  |
| 64-bit               |        |
| ARMv7                | ARMv8  |
| node-v18.12.0.tar.gz |        |

Additional Platforms

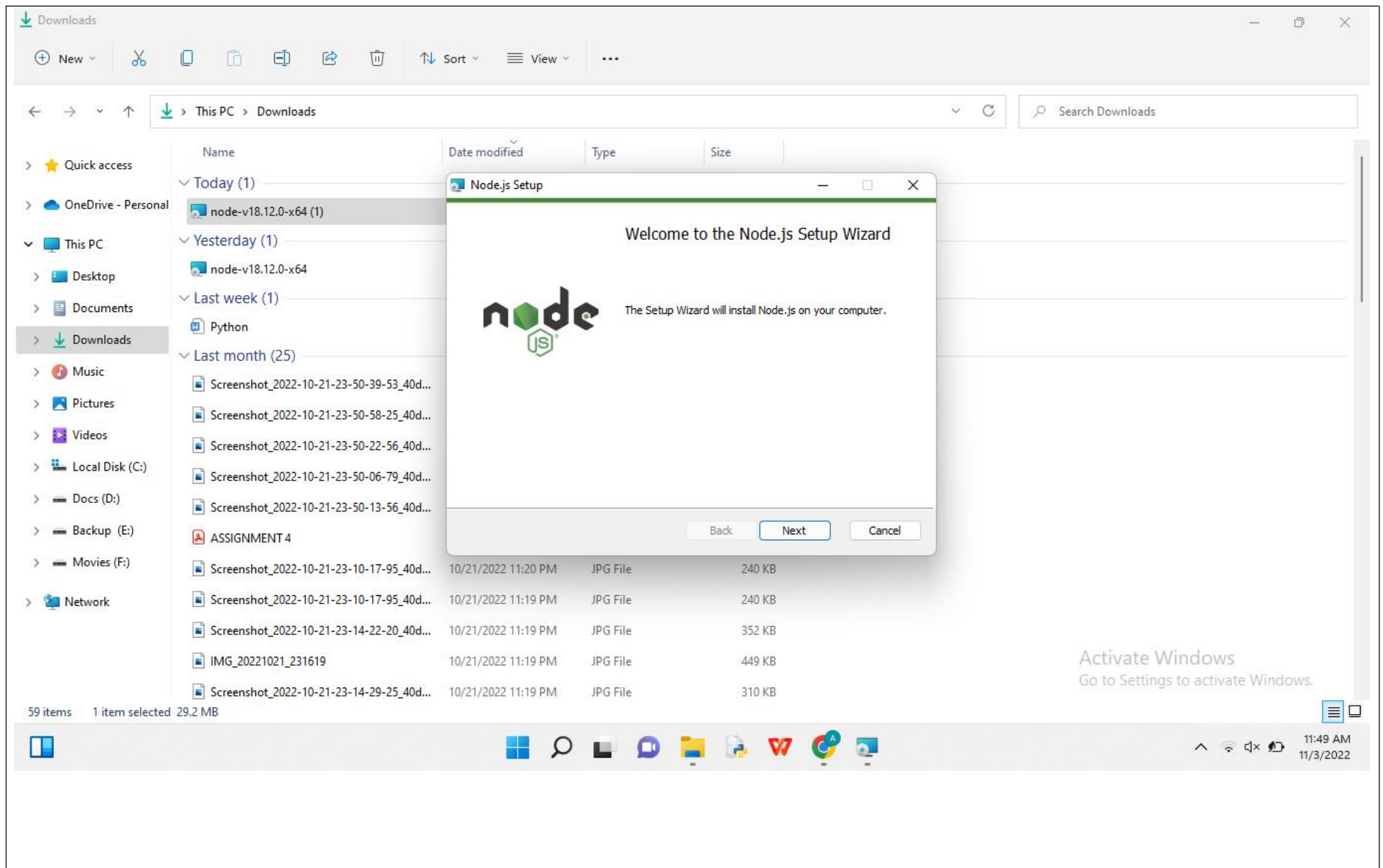
https://nodejs.org/dist/v18.12.0/node-v18.12.0-x64.msi

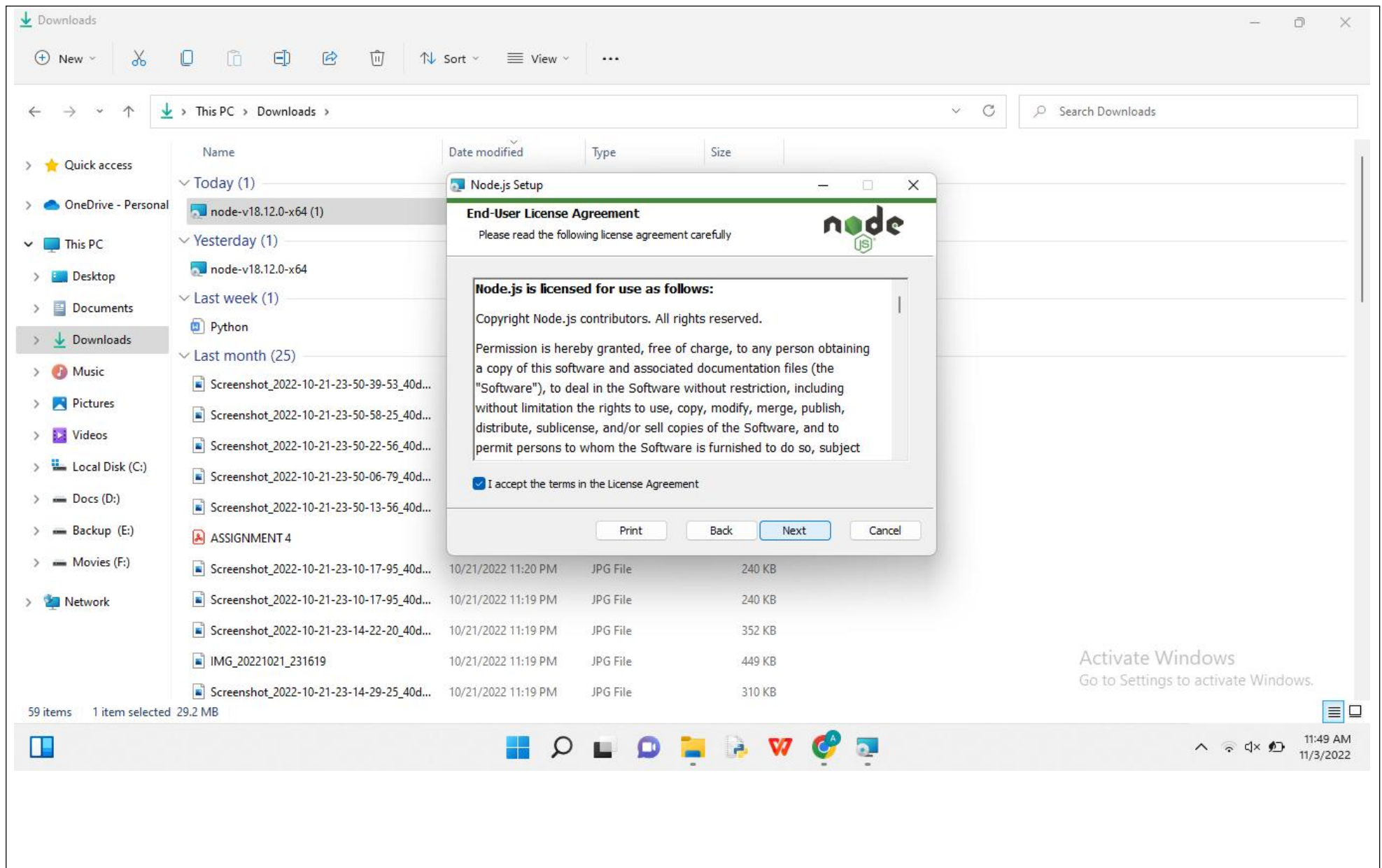
node-v18.12.0-x64....msi

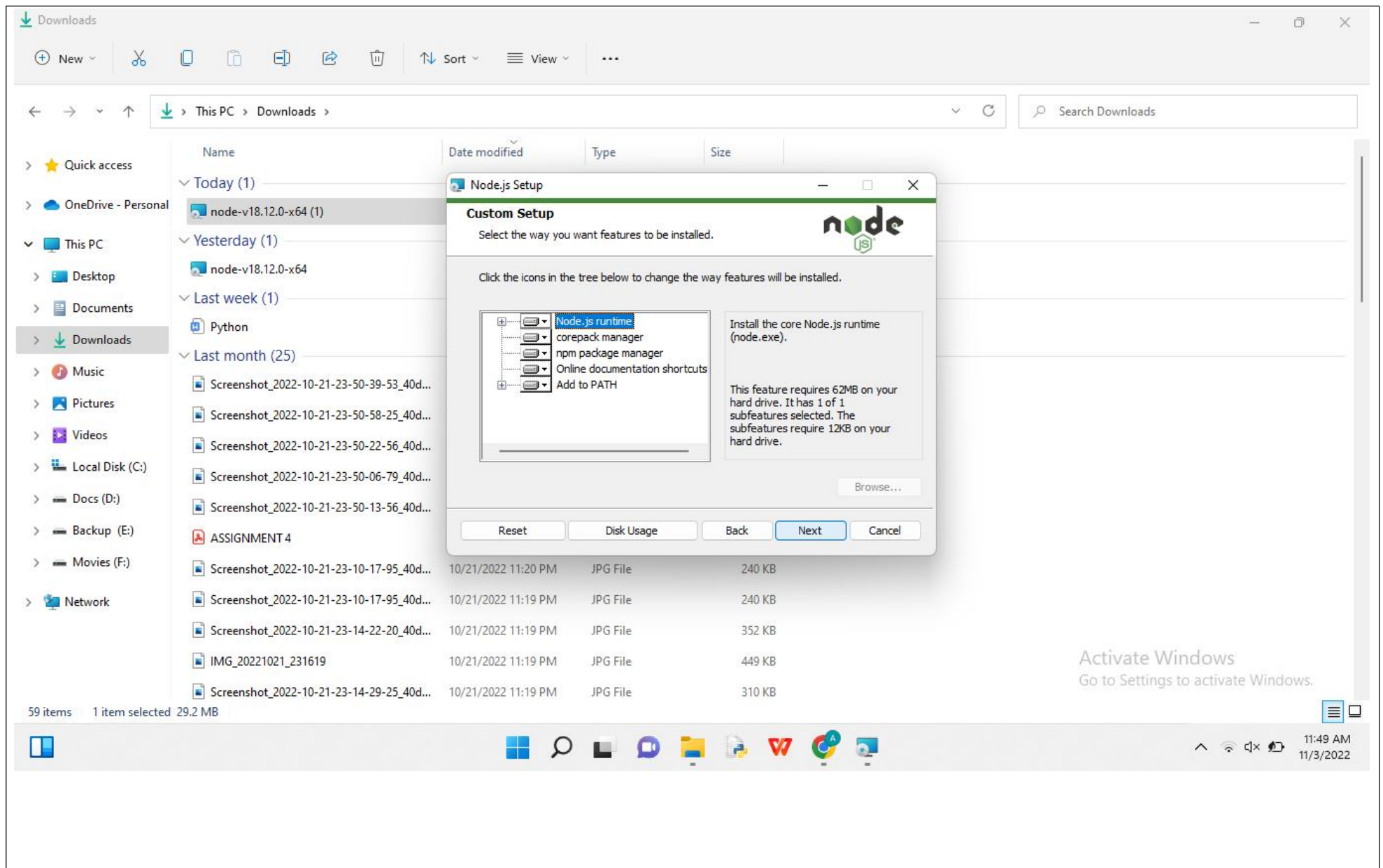
Activate Windows  
Go to Settings to activate Windows.  
Show all

Taskbar icons: File Explorer, Search, Task View, Edge, Word, etc.

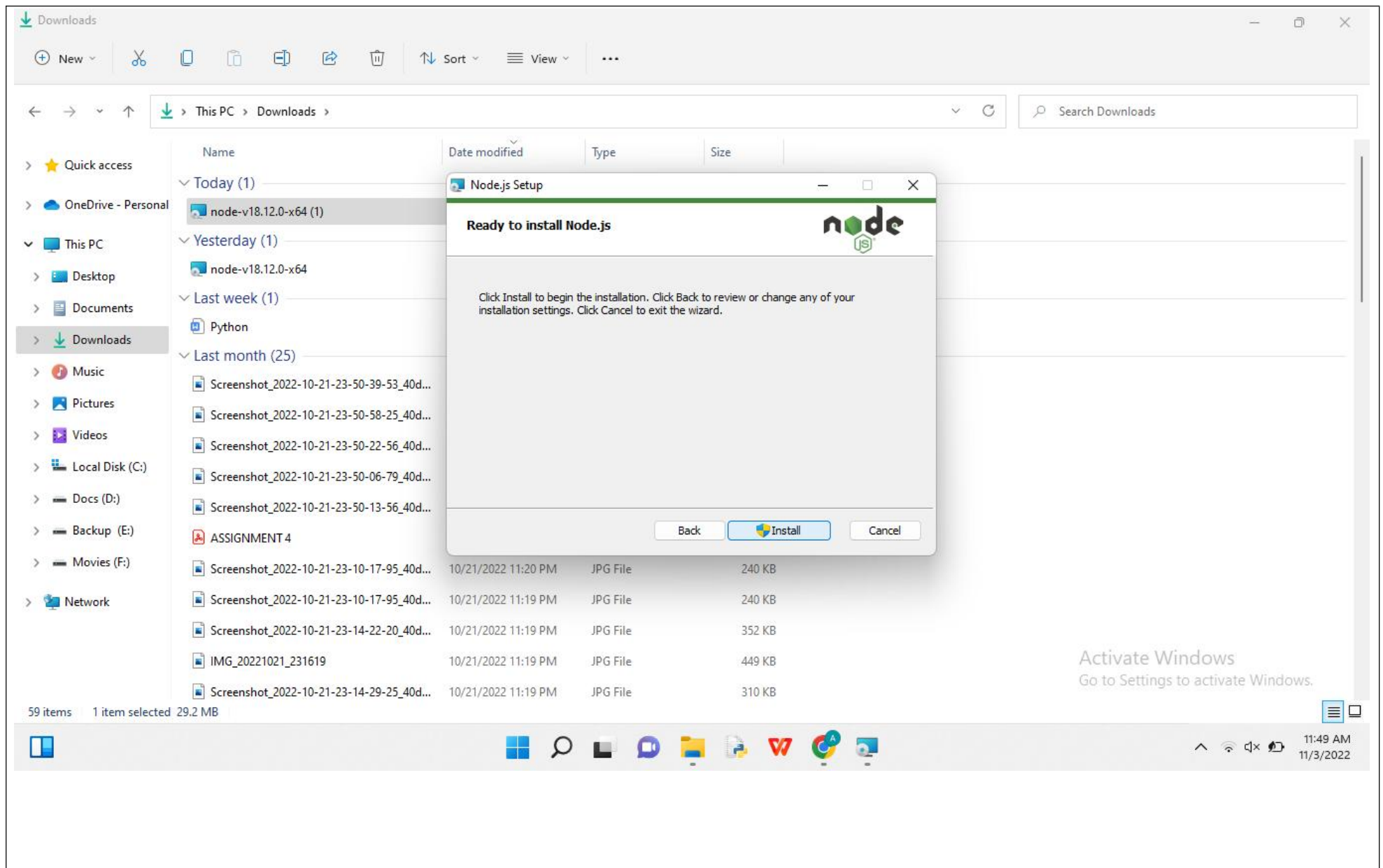
System tray: Network, Volume, Date/Time (11:49 AM 11/3/2022)

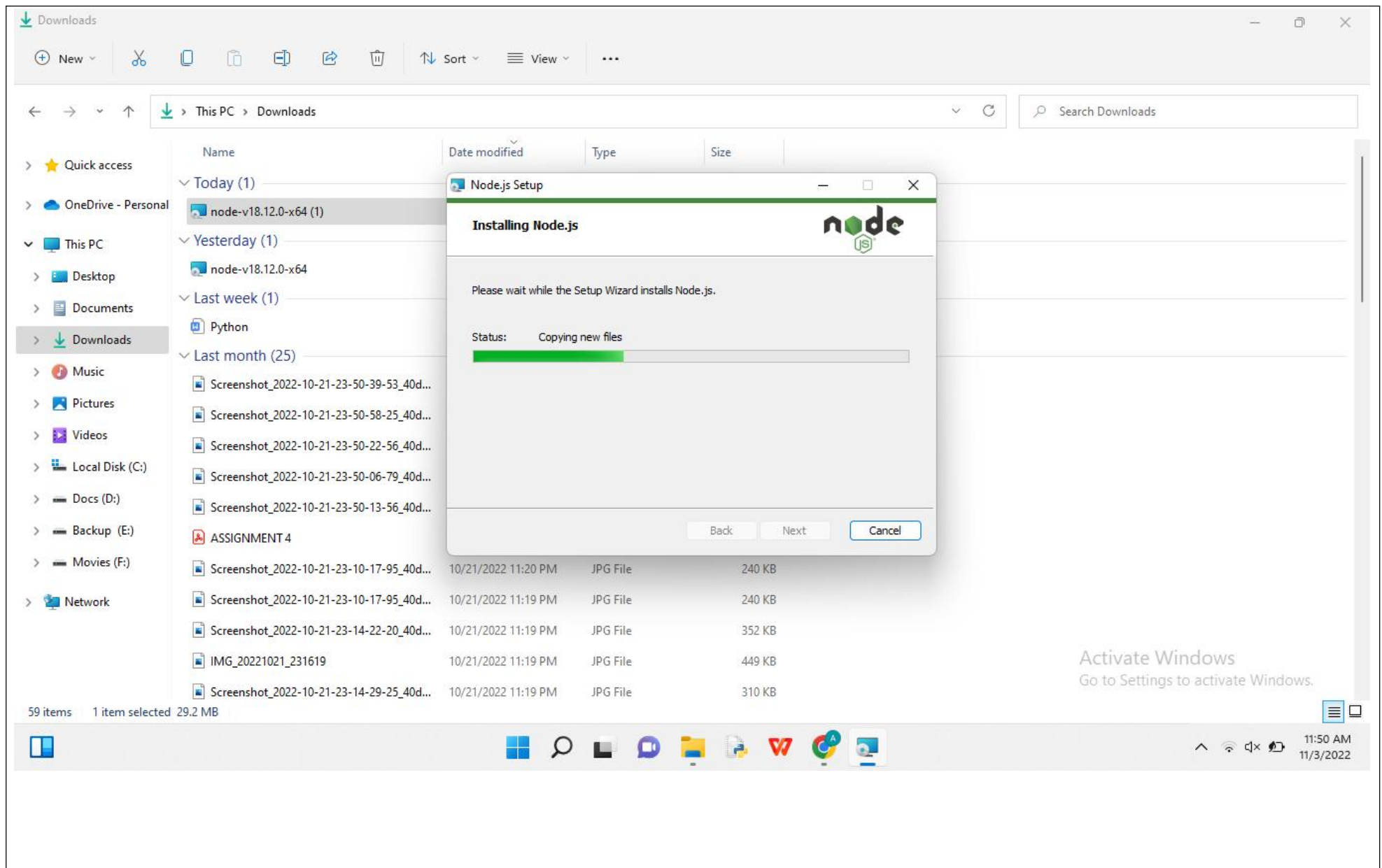


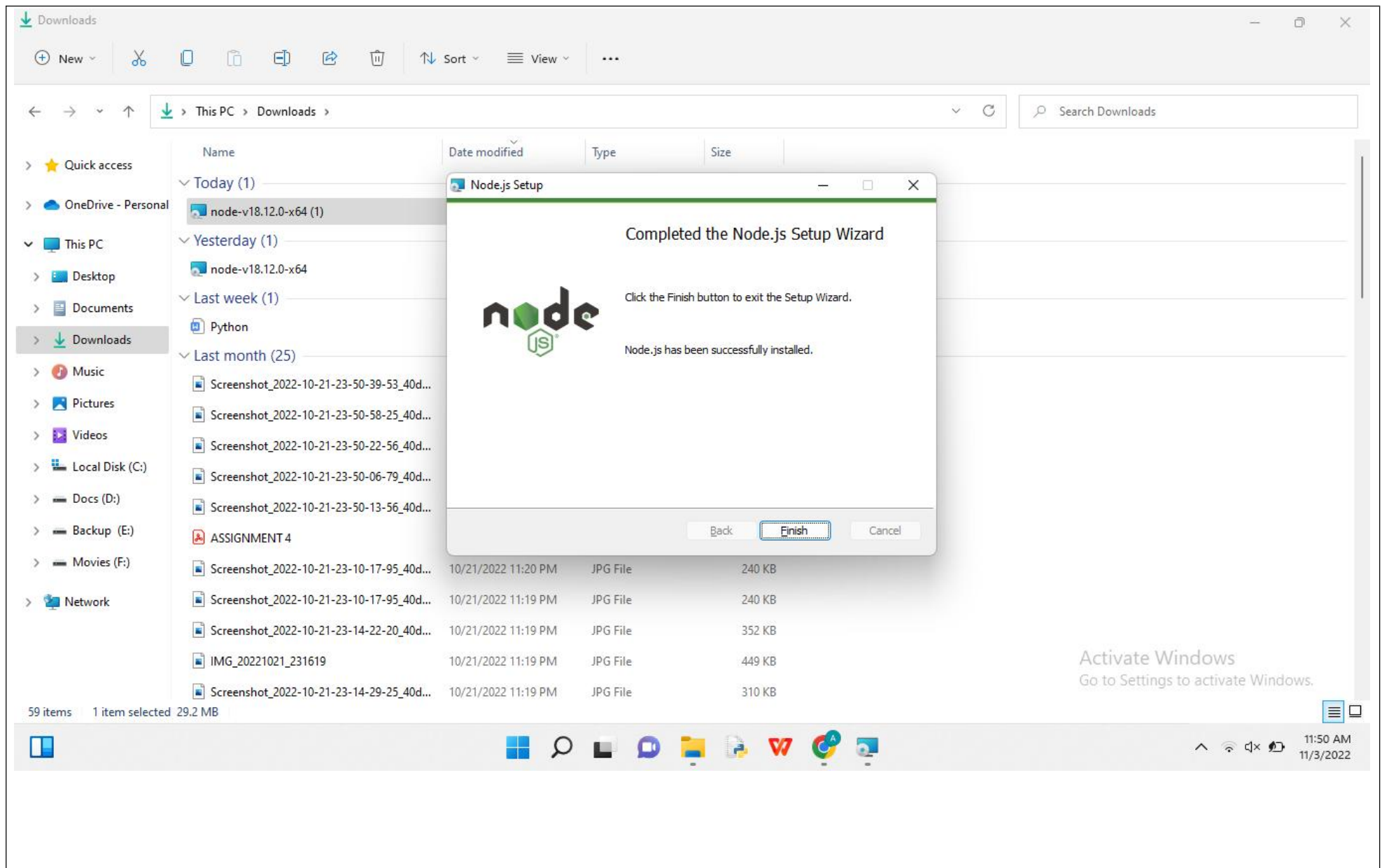














Command Prompt

Microsoft Windows [Version 10.0.22000.856]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\A S ABISHEK>node -h

Usage: node [options] [ script.js ] [arguments]  
node inspect [options] [ script.js | host:port ] [arguments]

Options:

|   |  |
|---|--|
| -   | script read from stdin (default if no file name is provided, interactive mode if a tty)  |
| --  | indicate the end of node options   |
| --abort-on-uncaught-exception   | aborting instead of exiting causes a core file to be generated for analysis  |
| --build-snapshot  | Generate a snapshot blob when the process exits. Currently only supported in the node_mksnapshot binary.   |
| -c, --check   | syntax check script without executing  |
| --completion-bash   | print source-able bash completion script   |
| -C, --conditions=...  | additional user conditions for conditional exports and imports   |
| --cpu-prof  | Start the V8 CPU profiler on start up, and write the CPU profile to disk before exit. If --cpu-prof-dir is not specified, write the profile to the current working directory.            |
| --cpu-prof-dir=...  | Directory where the V8 profiles generated by --cpu-prof will be placed. Does not affect --prof.  |
| --cpu-prof-interval=...   | specified sampling interval in microseconds for the V8 CPU profile generated with --cpu-prof. (default: 1000)  |
| --cpu-prof-name=...   | specified file name of the V8 CPU profile generated with --cpu-prof  |
| --diagnostic-dir=...  | set dir for all output files (default: current working directory)  |
| --disable-proto=...   | disable Object.prototype.__proto__   |
| --disallow-code-generation-from-strings                                   | disallow eval and friends  |
| --dns-result-order=...  | set default value of verbatim in dns.lookup. Options are 'ipv4first' (IPv4 addresses are placed before IPv6 addresses) 'verbatim' (addresses are in the order the DNS resolver returned) |
| --enable-fips   | enable FIPS crypto at startup  |
| --enable-source-maps  | Source Map V3 support for stack traces   |
| -e, --eval=...  | evaluate script  |
| --experimental-global-customevent   | expose experimental CustomEvent on the global scope  |
| --experimental-global-webcrypto   | expose experimental Web Crypto API on the global scope   |
| --experimental-import-meta-resolve  | experimental ES Module import.meta.resolve() support   |
| --loader, --experimental-loader=...                                       | use the specified module as a custom loader  |
| --experimental-network-imports  | experimental https: support for the ES Module loader   |
| --experimental-policy=...   | use the specified file as a security policy  |
| --es-module-specifier-resolution, --experimental-specifier-resolution=... | Select extension resolution algorithm for es modules; either 'explicit'  |

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11/3/2022

Command Prompt

```
--update-assert-snapshot    update assert snapshot files
--use-bundled-ca            use bundled CA store (default)
--use-largepages=...       Map the Node.js static code to large pages. Options are 'off' (the
                           default value, meaning do not map), 'on' (map and ignore failure,
                           reporting it to stderr), or 'silent' (map and silently ignore failure)

--use-openssl-ca           use OpenSSL's default CA store
--v8-options               print V8 command line options
--v8-pool-size=...         set V8's thread pool size
-v, --version              print Node.js version
--watch                   run in watch mode
--watch-path=...          path to watch
--zero-fill-buffers        automatically zero-fill all newly allocated Buffer and SlowBuffer
                           instances
```

Environment variables:

```
FORCE_COLOR               when set to 'true', 1, 2, 3, or an empty string causes NO_COLOR and
                           NODE_DISABLE_COLORS to be ignored.
NO_COLOR                  Alias for NODE_DISABLE_COLORS
NODE_DEBUG                ','-separated list of core modules that should print debug information
NODE_DEBUG_NATIVE         ','-separated list of C++ core debug categories that should print debug
                           output
NODE_DISABLE_COLORS       set to 1 to disable colors in the REPL
NODE_EXTRA_CA_CERTS       path to additional CA certificates file. Only read once during process
                           startup.
NODE_NO_WARNINGS          set to 1 to silence process warnings
NODE_PATH                ','-separated list of directories prefixed to the module search path
NODE_PENDING_DEPRECATION  set to 1 to emit pending deprecation warnings
NODE_PENDING_PIPE_INSTANCES set the number of pending pipe instance handles on Windows
NODE_PRESERVE_SYMLINKS    set to 1 to preserve symbolic links when resolving and caching modules
NODE_REDIRECT_WARNINGS    write warnings to path instead of stderr
NODE_REPL_EXTERNAL_MODULE path to a Node.js module which will be loaded in place of the built-in
                           REPL
NODE_REPL_HISTORY         path to the persistent REPL history file
NODE_SKIP_PLATFORM_CHECK  set to 1 to skip the check for a supported platform during Node.js
                           startup
NODE_TLS_REJECT_UNAUTHORIZED set to 0 to disable TLS certificate validation
NODE_V8_COVERAGE         directory to output v8 coverage JSON to
TZ                        specify the timezone configuration
UV_THREADPOOL_SIZE        sets the number of threads used in libuv's threadpool
```

Documentation can be found at <https://nodejs.org/>

C:\Users\A S ABISHEK>

Activate Windows

Go to Settings to activate Windows.



11:54 AM  
11/3/2022

Command Prompt

Microsoft Windows [Version 10.0.22000.856]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\A S ABISHEK>npm -h  
npm <command>

Usage:

npm install       install all the dependencies in your project  
npm install <foo>   add the <foo> dependency to your project  
npm test         run this project's tests  
npm run <foo>       run the script named <foo>  
npm <command> -h    quick help on <command>  
npm -l            display usage info for all commands  
npm help <term>     search for help on <term> (in a browser)  
npm help npm       more involved overview (in a browser)

All commands:

access, adduser, audit, bin, bugs, cache, ci, completion,  
config, dedupe, deprecate, diff, dist-tag, docs, doctor,  
edit, exec, explain, explore, find-dupes, fund, get, help,  
hook, init, install, install-ci-test, install-test, link,  
ll, login, logout, ls, org, outdated, owner, pack, ping,  
pkg, prefix, profile, prune, publish, query, rebuild, repo,  
restart, root, run-script, search, set, set-script,  
shrinkwrap, star, stars, start, stop, team, test, token,  
uninstall, unpublish, unstar, update, version, view, whoami

Specify configs in the ini-formatted file:

C:\Users\A S ABISHEK\.npmrc  
or on the command line via: npm <command> --key=value

More configuration info: npm help config

Configuration fields: npm help 7 config

npm@8.19.2 C:\Program Files\nodejs\node\_modules\npm

C:\Users\A S ABISHEK>

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12:19 PM  
11/3/2022



Select node-red

```
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSI-HardwareMonitor] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susi\nodes\0.0.9\win32\x64\node_SUSI.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSI-GPIO] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susi\nodes\0.0.9\win32\x64\node_SUSI.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSI-Backlight] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susi\nodes\0.0.9\win32\x64\node_SUSI.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSI-WatchDog] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susi\nodes\0.0.9\win32\x64\node_SUSI.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSIIoT-Info] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susiiot\nodes\0.0.8\win32\x64\node_SUSIIoT.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSIIoT-Data] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susiiot\nodes\0.0.8\win32\x64\node_SUSIIoT.node
3 Nov 12:22:09 - [warn] [node-red-contrib-susi/SUSIIoT-Control] Error: The specified module could not be found.
\\?\C:\Users\A S ABISHEK\AppData\Roaming\npm\node_modules\node-red-contrib-susi\node_modules\node-susiiot\nodes\0.0.8\win32\x64\node_SUSIIoT.node
3 Nov 12:22:09 - [warn] -----
3 Nov 12:22:09 - [info] Settings file : C:\Users\A S ABISHEK\.node-red\settings.js
3 Nov 12:22:09 - [info] Context store : 'default' [module=memory]
3 Nov 12:22:09 - [info] User directory : C:\Users\A S ABISHEK\.node-red
3 Nov 12:22:09 - [warn] Projects disabled : editorTheme.projects.enabled=false
3 Nov 12:22:09 - [info] Flows file : C:\Users\A S ABISHEK\.node-red\flows.json
3 Nov 12:22:09 - [info] Creating new flow file
3 Nov 12:22:09 - [warn]
```

-----  
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials file will not be recoverable, you will have to delete it and re-enter your credentials.

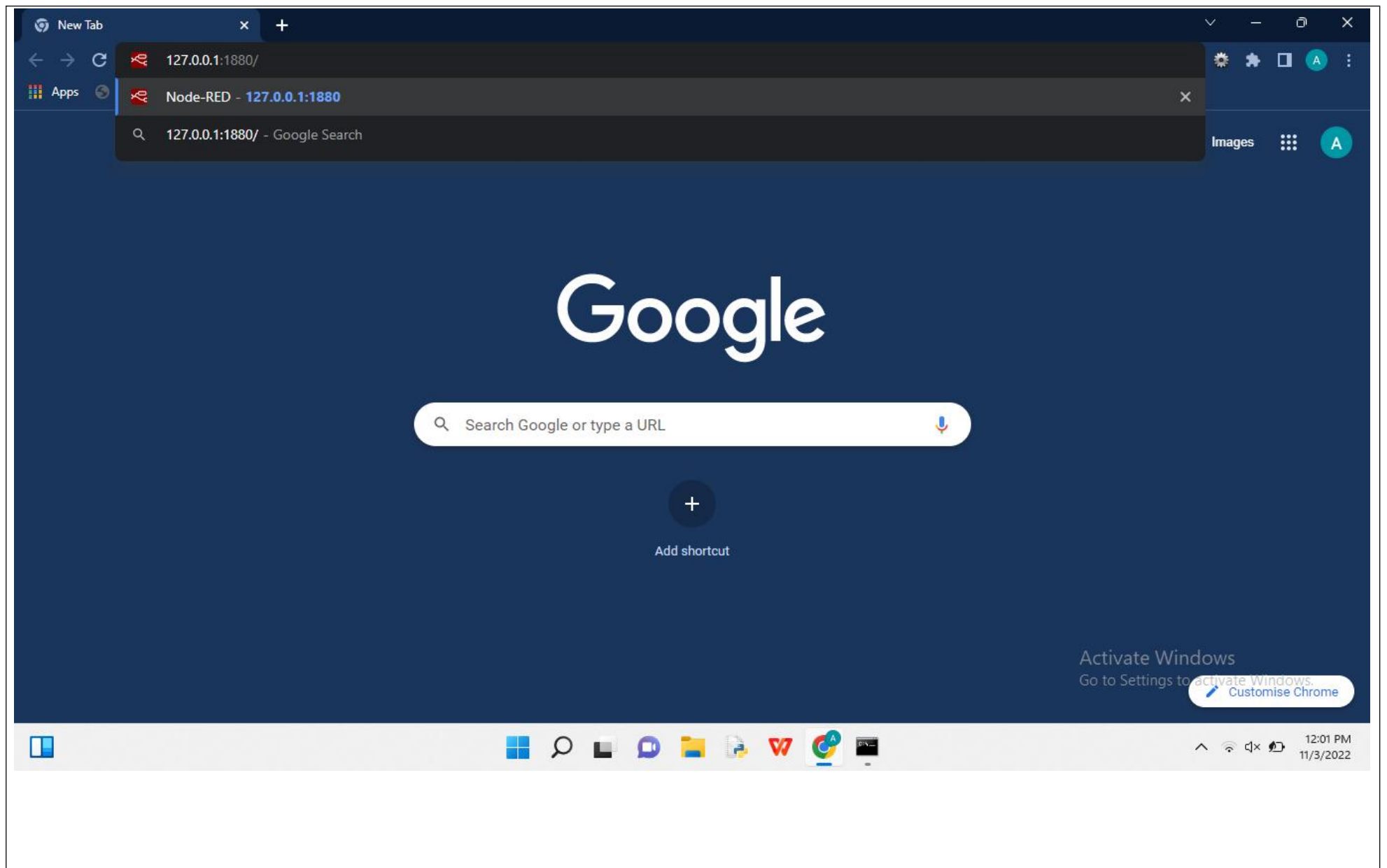
You should set your own key using the 'credentialSecret' option in your settings file. Node-RED will then re-encrypt your credentials file using your chosen key the next time you deploy a change.

-----  
3 Nov 12:22:10 - [info] Server now running at <http://127.0.0.1:1880/>  
3 Nov 12:22:10 - [warn] Encrypted credentials not found  
3 Nov 12:22:10 - [info] Starting flows  
3 Nov 12:22:10 - [info] Started flows

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12:22 PM  
11/3/2022





Node-RED

127.0.0.1:1880/#flow/ba14cf69d5255d7f

Node-RED

Deploy

filter nodes

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

Flow 1

timestamp

debug 1

info

Search flows

Flows

Flow 1

Subflows

Global Configuration Nodes

debug 1

Node"898550888ee16d3b"

Typedebug

show more

You can remove the selected nodes or links with delete

Activate Windows

Go to Settings to activate Windows.

12:02 PM

11/3/2022

Node-RED

127.0.0.1:1880/#flow/ba14cf69d5255d7f

Node-RED

Deploy

filter nodes

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

Flow 1

timestamp

debug 1

info

Search flows

Flows

Flow 1

Subflows

Global Configuration Nodes

Flow 1

Flow

"ba14cf69d5255d7f"

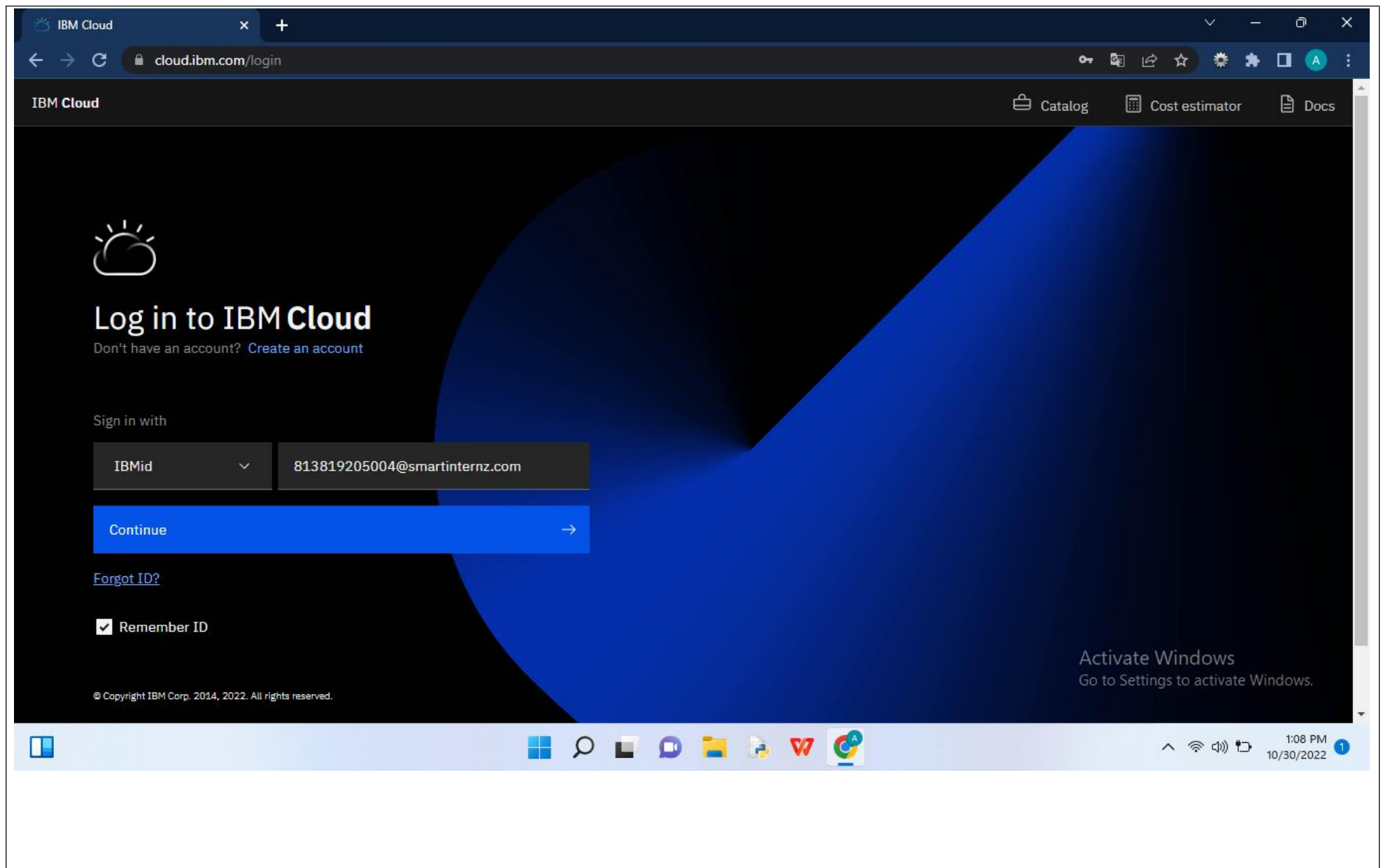
You can remove the selected nodes or links with delete

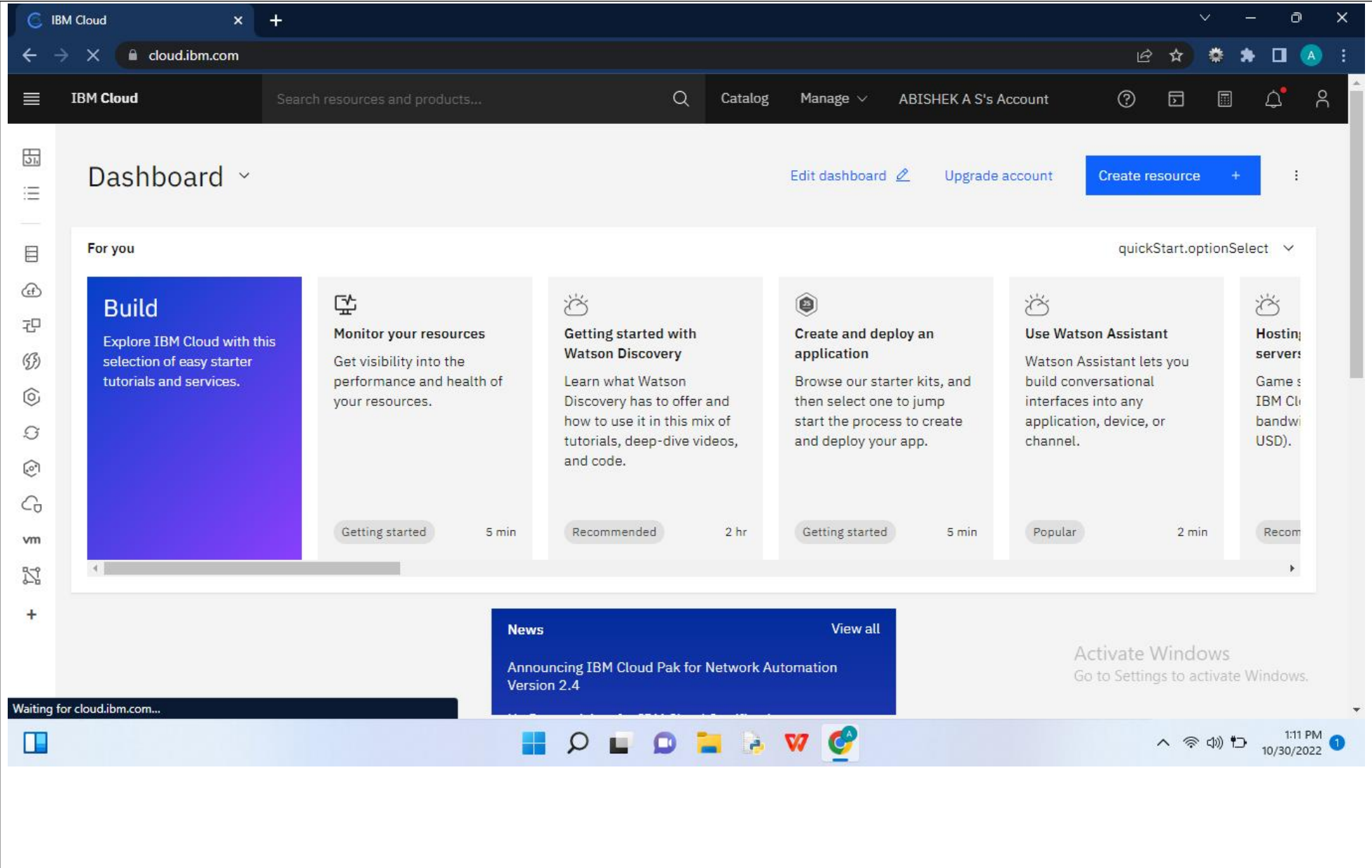
Activate Windows

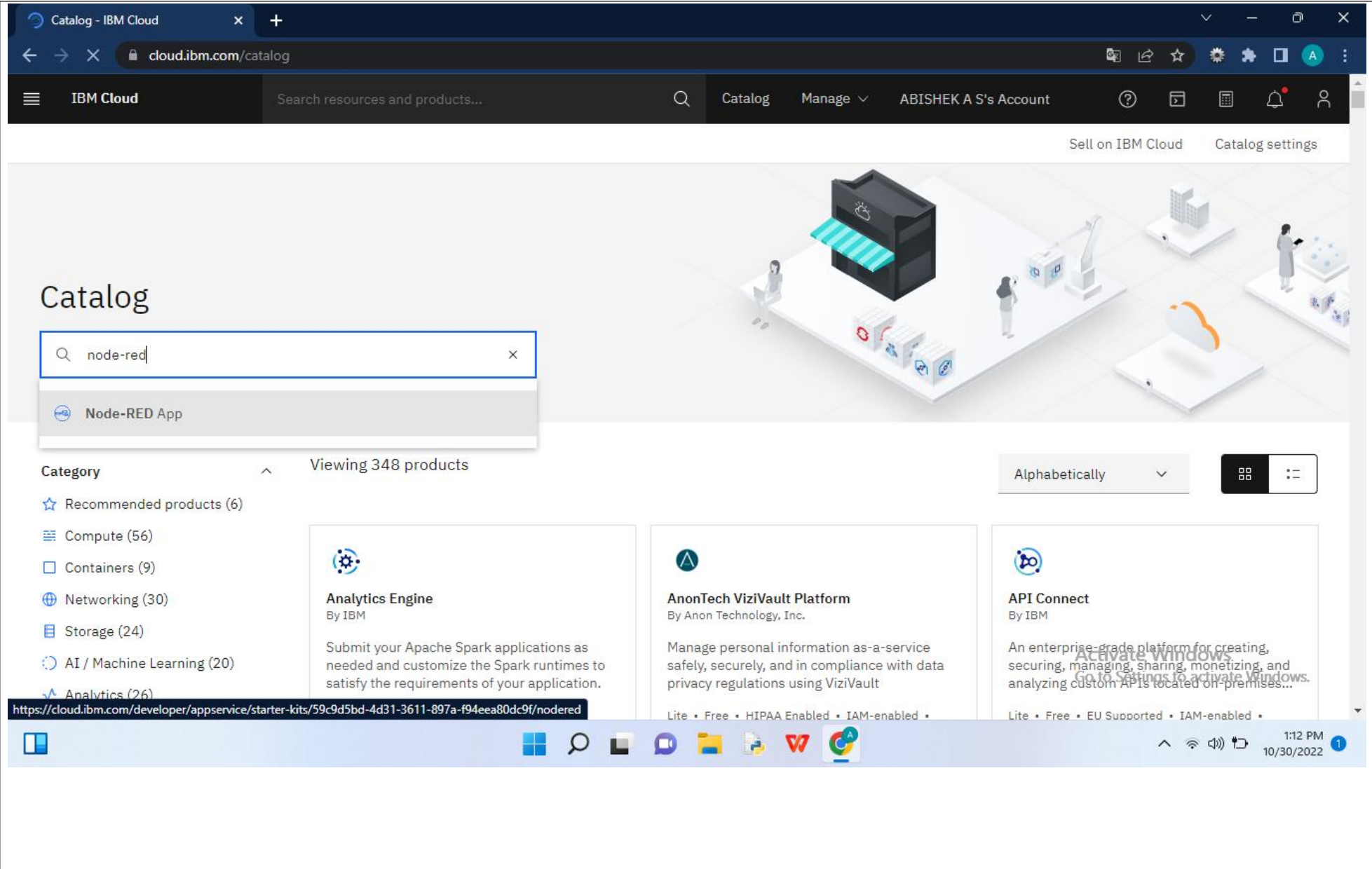
Go to Settings to activate Windows.

12:02 PM

11/3/2022









IBM App Development

cloud.ibm.com/developer/appservice/create-app?starterKit=59c9d5bd-4d31-3611-897a-f94eea80dc9f&defaultLanguage=undefined

IBM CloudSearch resources and products...CatalogManageABISHEK A S's Account

AboutCreate

Details

AuthorIBMUpdated2/11/2020TypeStarter kit

Source code

GitHub

Helpful links

Terms

Tutorial

Overview

This starter kit provides a pre-configured Node-RED application, including a Cloudant service to store the application flow configuration. Add services, generate and download the code, use the IBM Cloud Developer Tools CLI to run and debug locally, then deploy to Cloud Foundry or a DevOps Pipeline.

This starter kit will help you

- Generate an application with Node-RED
- Generate an application with files for deploying to Cloud Foundry or a DevOps Pipeline
- Connect to provisioned services

What's included?

Cloudant

Free to start

View pricing

View docs

View API reference

Get started

Activate Windows

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1:22 PM10/30/2022



IBM App Development

cloud.ibm.com/developer/appservice/apps/1cde7a9b-d991-43ae-bb5f-c7d9bd42f924

IBM Cloud

Search resources and products...

Catalog

Manage

ABISHEK A S's Account

Resource list / App details /

Node RED NTBBT 2022-10-30

Add tags

Actions...

Details

App URL

You must deploy your app first

Source

Download code

Resource group

Default

Deployment target

You must deploy your app first

Created

10/30/2022

Services

Cloudant

Open dashboard

Documentation

API reference

Credentials

Connect existing services

Create service

Deployment Automation

Configure Continuous Delivery

Continuous Delivery is not enabled for this app. Enable Continuous Delivery to automate builds, tests, and deployments through Delivery Pipeline, GitLab, and more.

Deploy your app

ASK A QUESTION

Activate Windows


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1:27 PM 10/30/2022

## Deployment Automation


Select your deployment target and configure your DevOps toolchain. After you click **Create**, the toolchain is created, and the deployment process is started automatically.

## Deployment target




**Kubernetes Service**  
IBM

Deploy, scale, and manage your containerized application workloads to highly available clusters.




**Red Hat OpenShift**  
IBM

Deploy your apps on highly available clusters that come installed with Red Hat OpenShift on IBM Cloud.



**Cloud Foundry**  
IBM

Deploy and run your applications without managing servers or clusters. A Lite plan is available for quick and easy deployment.



**Code Engine**  
IBM

Run your app, job, or container  
on a managed serverless  
platform. Auto-scale  
workloads, and pay only for the

[s://cloud.ibm.com/account/cloud-foundry](https://cloud.ibm.com/account/cloud-foundry)

<https://cloud.ibm.com/account/cloud-foundry>

## Getting started with apps


### Step 1. Select the deployment target

Select your deployment target, and then provide the configuration information.

IBM Cloud Foundry

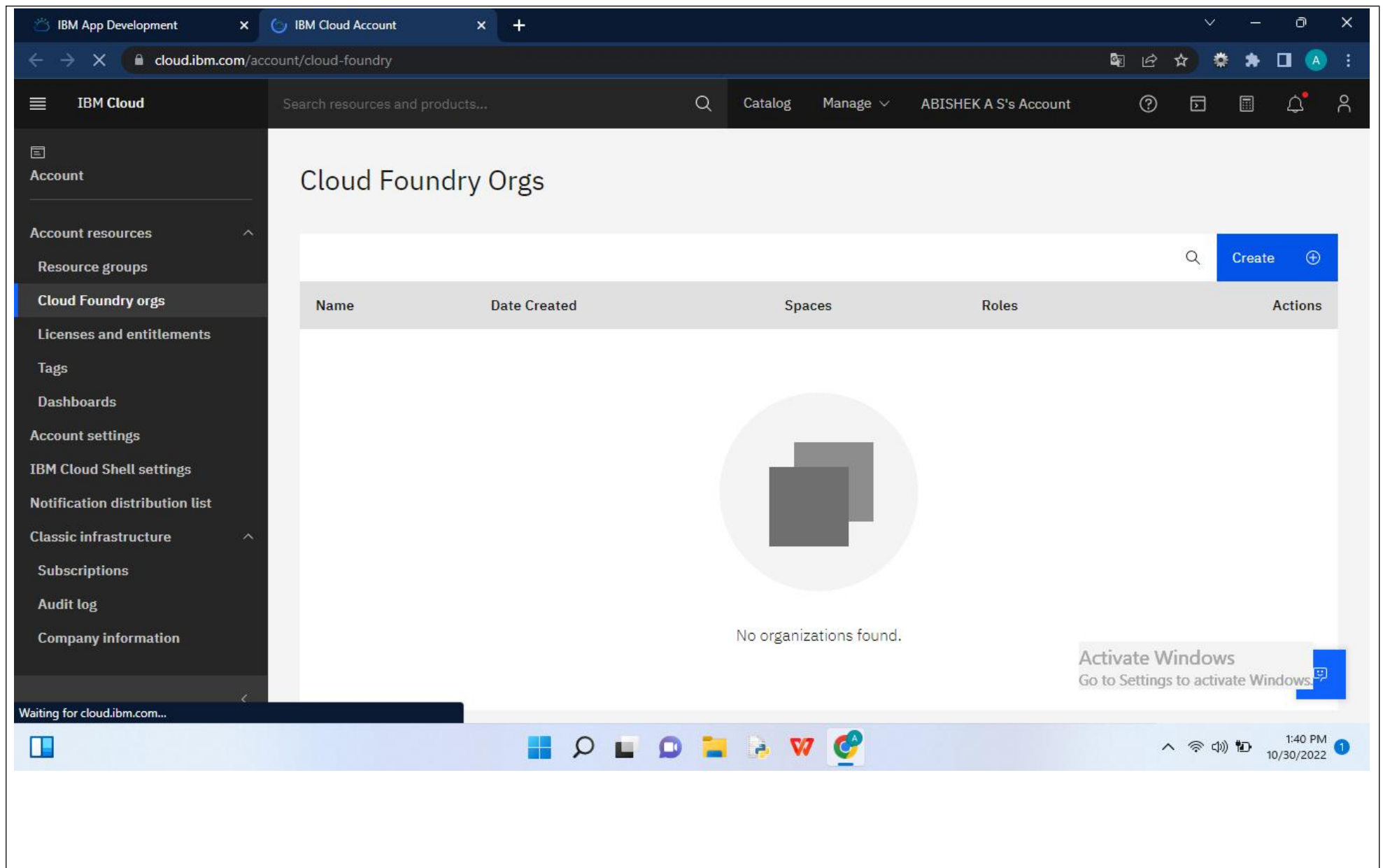
Cloud Foundry is the premier industry standard Platform-as-a-Service (PaaS) that ensures fast, easy, and reliable deployment of cloud-native apps. Cloud Foundry ensures that the build and deploy aspects of coding remain carefully coordinated with any attached services — resulting in quick, consistent and reliable iterating of applications. Cloud Foundry has a Lite plan that allows quick deployments for testing purposes.

## Before you begin

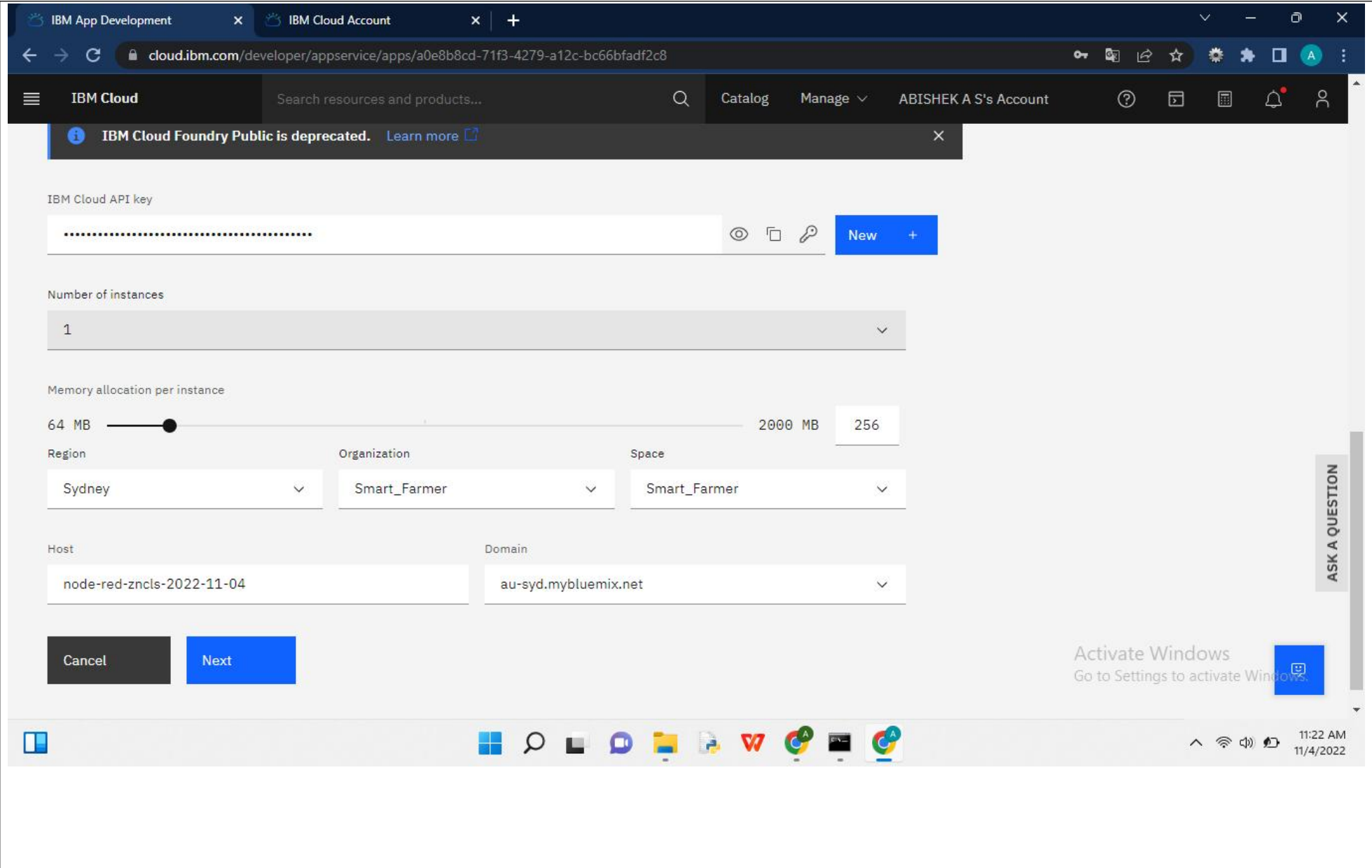
- If your account doesn't have a Cloud Foundry org, you must create one.  
[Create org.](#) 

### Steps

1. Select the number of instances, memory allocation, **region**, **org**, and **space**.
2. Select the **domain** and provide a **host** name.







IBM App Development

IBM Cloud Account

cloud.ibm.com/developer/appservice/apps/a0e8b8cd-71f3-4279-a12c-bc66bfadf2c8

IBM Cloud

Search resources and products...

CatalogManageABISHEK A S's Account

[Resource list](#) / [App details](#)

## Node RED ZNCLS 2022-11-04

Select the deployment target

Configure the DevOps toolchain

Configure the DevOps toolchain

Give your toolchain a name and select the region to create your toolchain in.

DevOps toolchain name

NodeREDZNCLS2022-11-04

Accept the default name, or enter a value up to 100 characters.

Region

Sydney

Back

Create

Getting started with apps

Activate Windows  
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ASK A QUESTION

IBM App Development

IBM Cloud Account

cloud.ibm.com/developer/appservice/apps/a0e8b8cd-71f3-4279-a12c-bc66bfadf2c8

IBM Cloud

Search resources and products...

Catalog

Manage

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?

Resource list / App details /

Node RED ZNCLS 2022-11-04

Add tags

Actions...

Details

App URL

You must deploy your app first

Source

Download code

Resource group

Default

Deployment target

You must deploy your app first

Created

11/4/2022

Services

Cloudant

Open dashboard

Documentation

API reference

Credentials

Connect existing services

Create service

Deployment Automation

Configure Continuous Delivery

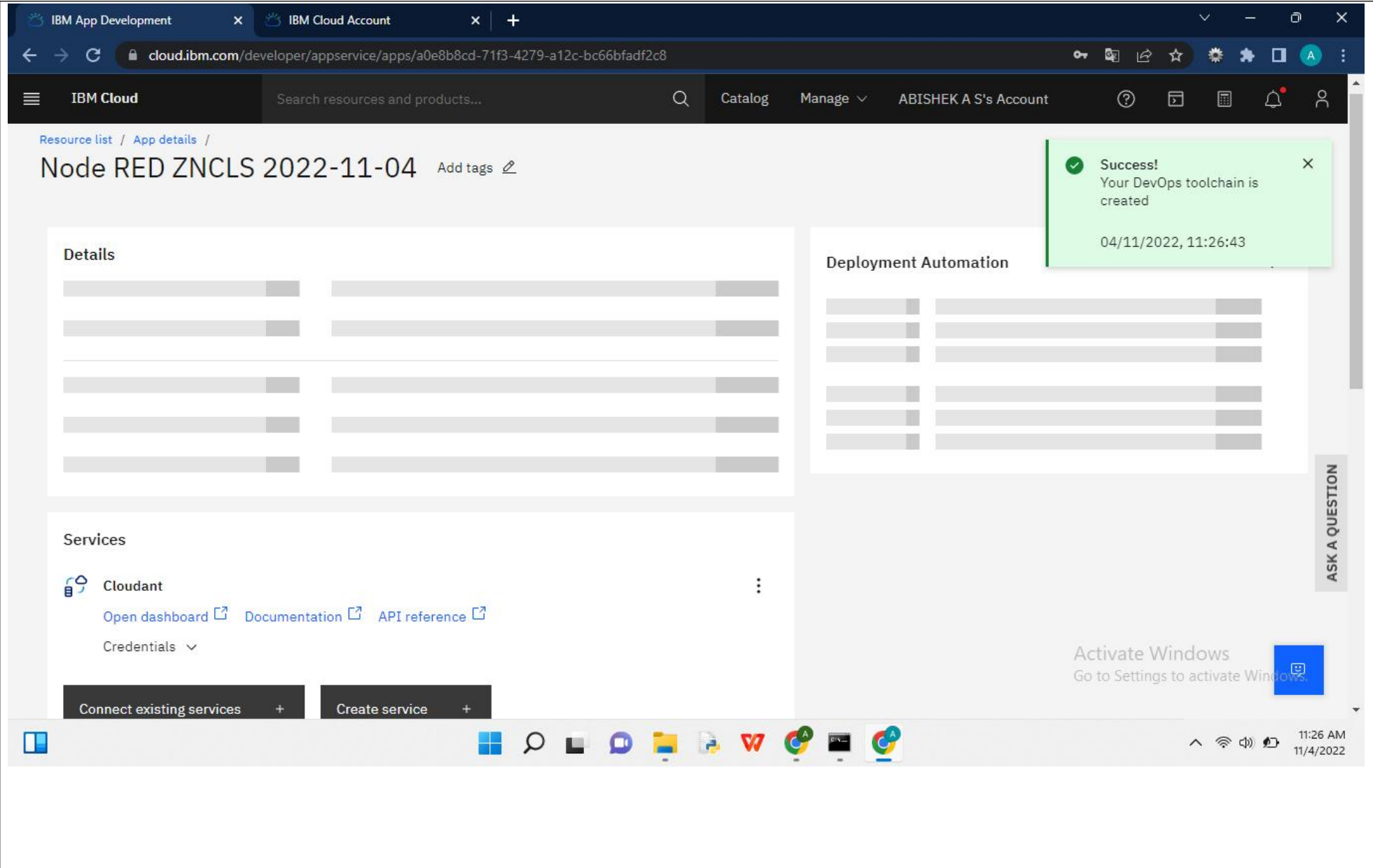
Continuous Delivery is not enabled for this app. Enable Continuous Delivery to automate builds, tests, and deployments through Delivery Pipeline, GitLab, and more.

Generating code...

ASK A QUESTION

Activate Windows

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IBM App Development x IBM Cloud Account x +

cloud.ibm.com/developer/appservice/apps/a0e8b8cd-71f3-4279-a12c-bc66bfadf2c8

IBM Cloud Search resources and products... Catalog Manage ABISHEK A S's Account

Resource list / App details /

## Node RED ZNCLS 2022-11-04 Add tags

Actions...

### Details

App URL You must deploy your app first

Source <https://au-syd.git.cloud.ibm.com/813819205004/NodeREDZNCLS2...>

Resource group Default

Deployment target You must deploy your app first

Created 11/4/2022

### Services

Cloudant

[Open dashboard](#) [Documentation](#) [API reference](#)

Credentials

Connect existing services + Create service +

### Deployment Automation

Name NodeREDZNCLS2022-11-04

Location Sydney

Tool integrations

### Delivery Pipelines

Name ci-pipeline

Status Success

Name pr-pipeline

Status No stages detected

Activate Windows Go to Settings to activate Windows

ASK A QUESTION

11:43 AM 11/4/2022



IBM App Development

IBM Cloud Account

cloud.ibm.com/developer/appservice/apps/a0e8b8cd-71f3-4279-a12c-bc66bfadf2c8

IBM Cloud

Search resources and products...

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?

Resource list / App details /

Node RED ZNCLS 2022-11-04

Add tags

Actions...

Details

App URL

Source

Resource group

Deployment target

Created

https://node-red-zncls-2022-11-04.au-syd.mybluemix.net

https://au-syd.git.cloud.ibm.com/813819205004/NodeREDZNCLS2...

Default

Node RED ZNCLS 2022-11-04

11/4/2022

Services

Cloudant

Open dashboard

Documentation

API reference

Credentials

Connect existing services

Create service

Deployment Automation

Name

Location

Tool integrations

NodeREDZNCLS2022-11-04

Sydney

Delivery Pipelines

Name

Status

Name

Status

ci-pipeline

Success

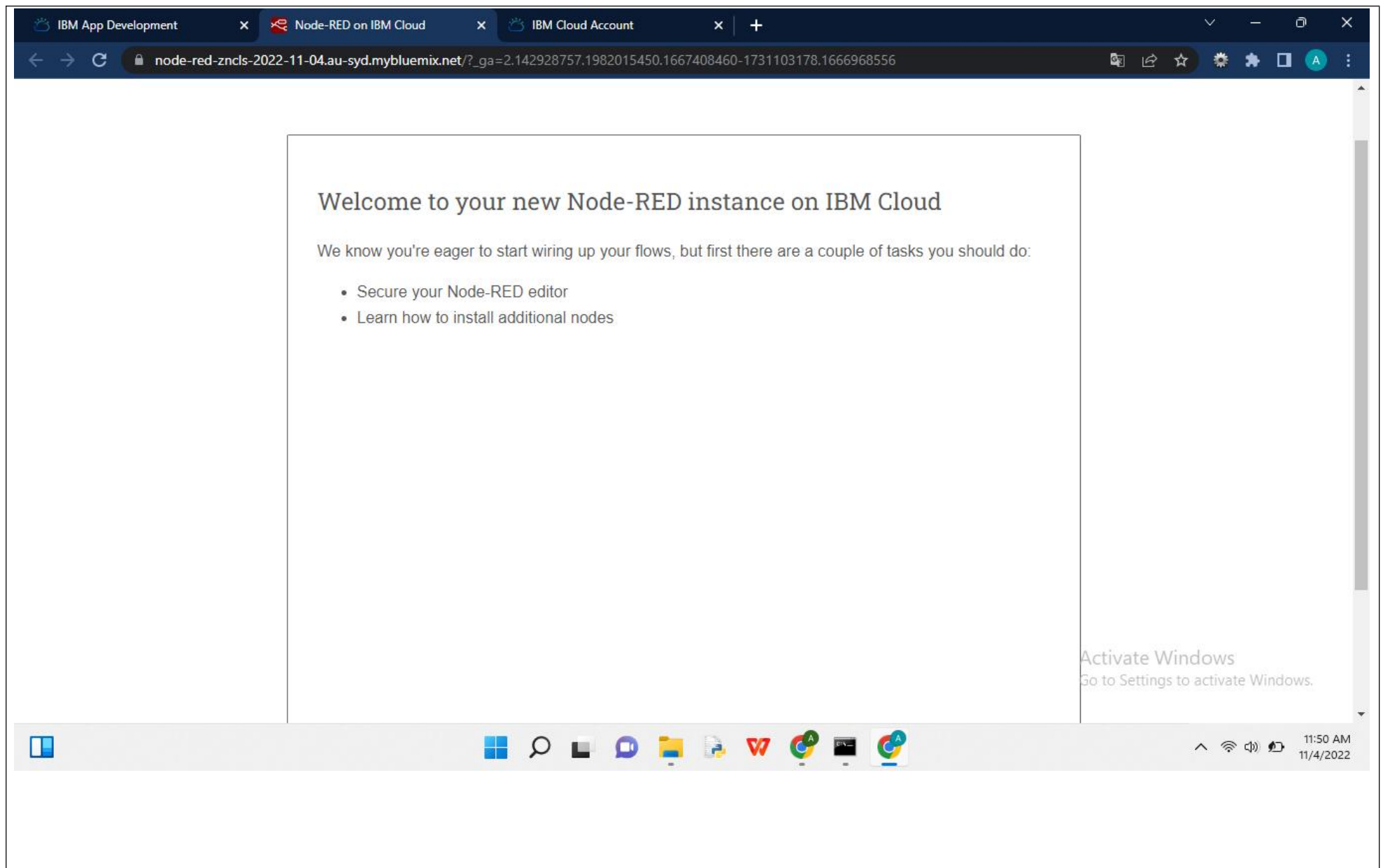
pr-pipeline

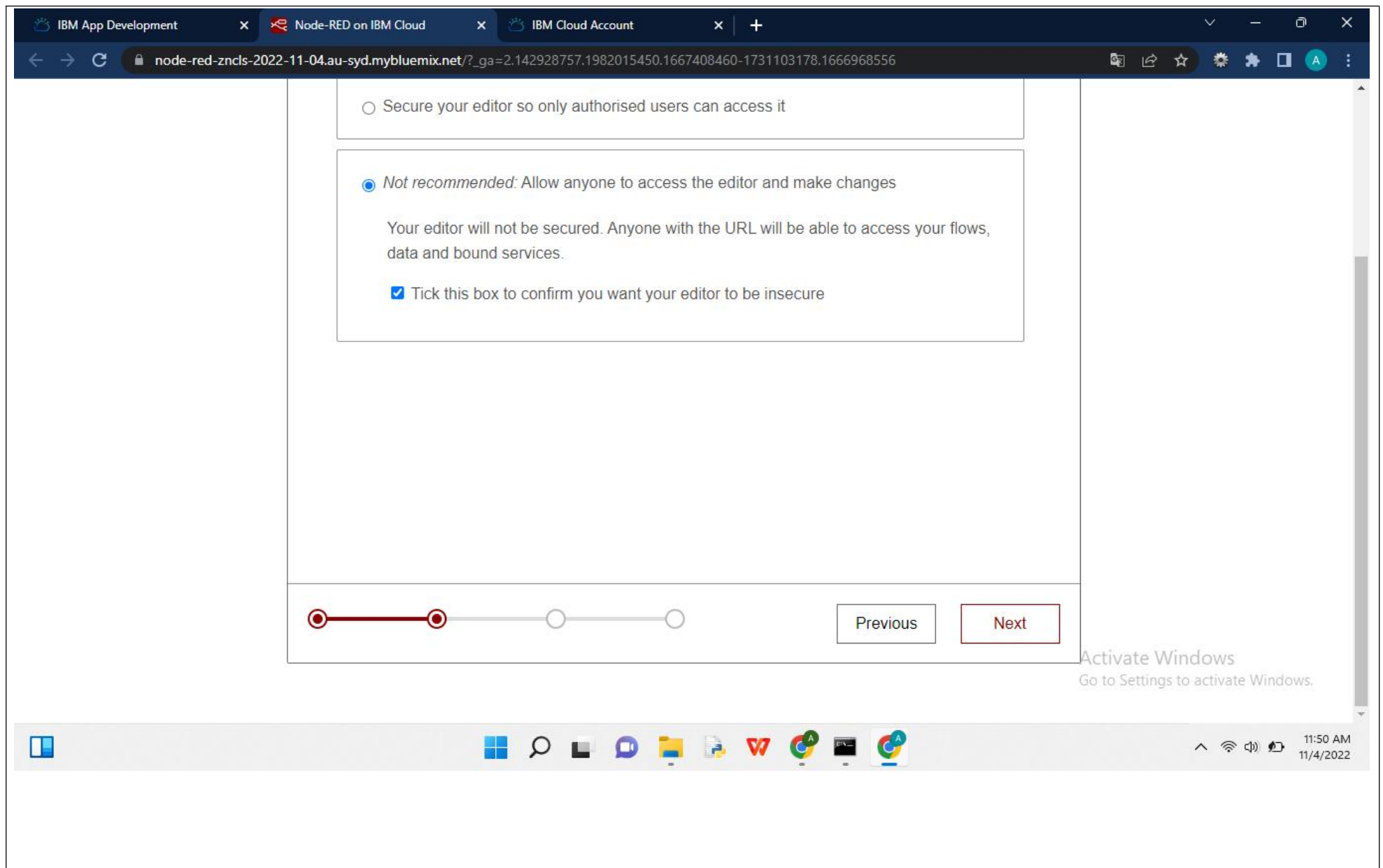
No stages detected

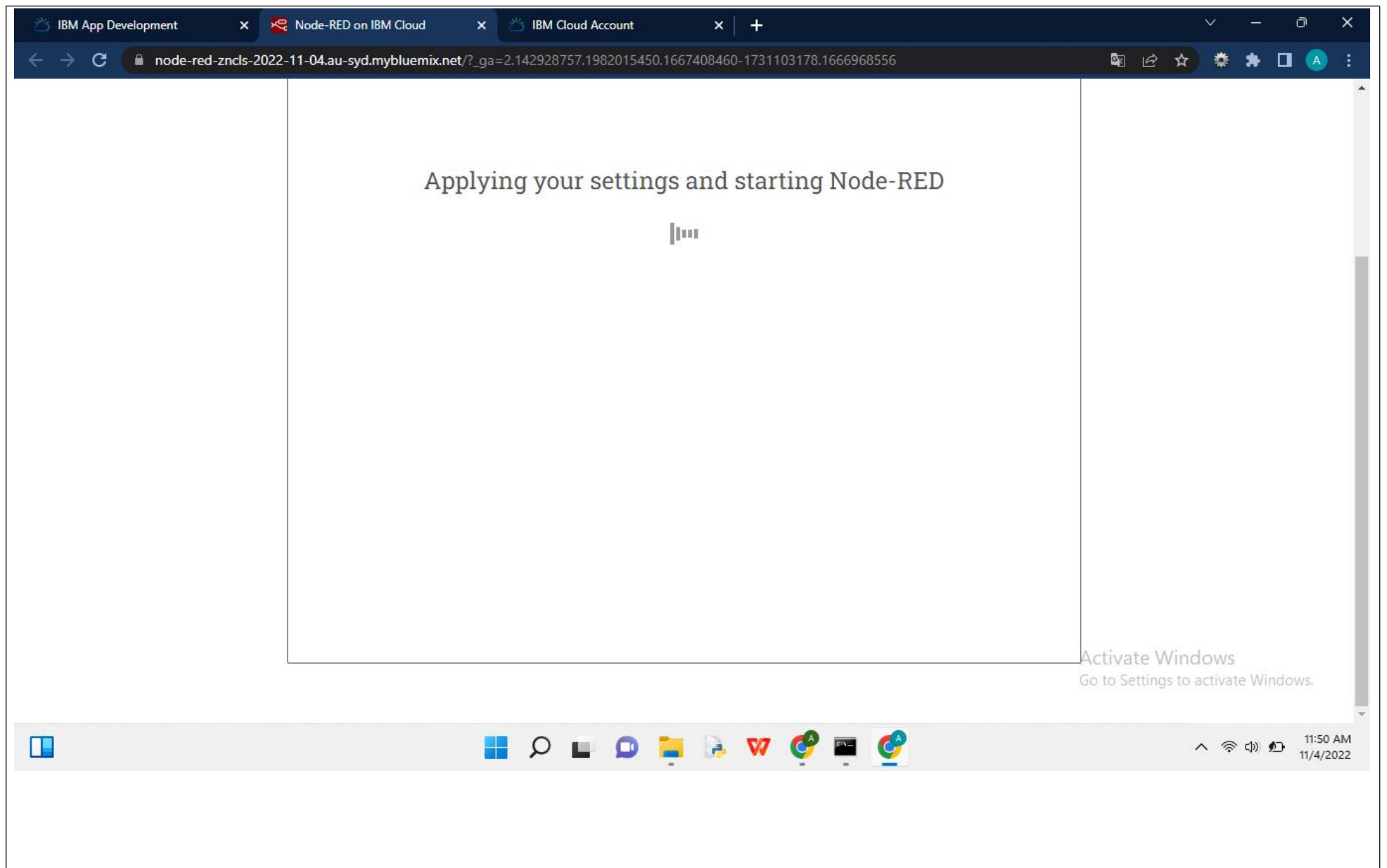
ASK A QUESTION

Activate Windows

Go to Settings to activate Windows.









Node-RED

127.0.0.1:1880/#flow/ba14cf69d5255d7f

Node-RED

Deploy

filter nodes

common

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

Flow 1

timestamp

debug 1

info

Search flows

Flows

Flow 1

Subflows

Global Configuration Nodes

Flow 1

Flow

"ba14cf69d5255d7f"

You can remove the selected nodes or links with delete

Activate Windows

Go to Settings to activate Windows.

12:02 PM

11/3/2022