

MERLIN

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Getting Started

MERLIN Getting Started Guide

Admin Part

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Author	:	FGR



North America & LATAM
70 Main Street, Suite 203
Peterborough NH 03458
USA
1-800-676-4709 (toll free)
1-603-371-9074
sales-us@arcadsoftware.com

EMEA (HQ)
55, rue Adrastée - Parc Altaïs
F-74650 Chavanod/Annecy
FRANCE
+33 450 578 396
sales-eu@arcadsoftware.com

Asia Pacific
c/o Pramex Intl Ltd
1 Austin Rd West Intl Commerce Centre
7107B 71/F Tsim Sha Tsui HONG KONG
Yau Ma tei
Hong Kong
+852 3618 6118
sales-asia@arcadsoftware.com

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1 Goal

The goal of this document is to help the end user to get started with MERLIN.

It describes how to configure an IBM i application in Merlin and how to develop with the product.

This is not a training guide, meaning that all features are not listed here.

This Getting Started Guide is based on the ARCAD Demo application.

2 Important information

2.1 Prerequisites

Before you start, make sure that you:

- have access to the Merlin environment.
- know how to use enGit.
- have some knowledge of ARCAD.

2.2 ARCAD Products used in MERLIN

The products installed and used in MERLIN are the following:

- ARCAD Server and Elias.
 - o ARCAD Server 23.02.11
 - o Elias 2.0.1
- ARCAD Extension vsix.
- ARCAD Observer.
- ARCAD Builder Server.
- ARCAD Builder Client.
- ARCAD Skipper.
- ARCAD Transformer RPG.

2.3 Other information

2.3.1 Arcad demo application

This document uses the ARCAD demo application.

If it was installed during the installation of ARCAD skipper, you can create your own copy by following this procedure:

- Enter ARCAD product with the command ARCAD_ENG/ARCAD.
 - Add the ARCAD_DEMO library in your library list with the command ADDLIBLE ARCAD_DEMO.
 - Restore the Arcad demo application by prompting the command RSTDemo.
- This screen will be displayed.

```

Restore libraries for the demo (RSTDemo)

Type choices, press Enter.

Library Prefix & app Name . . . . SAMCO      Name, SAMCO
Create application Y/N . . . . Y          Y, N
Prefix for lib application . . . .          Name
Prepare Declare 1 . . . . . N          N, N, Y
Prepare Declare 2 . . . . . N          N, N, Y
Load repository . . . . . Y          Y, N, Y
Complete LIBL with demo lib . . . . Y          Y, N, Y
Create env D & T . . . . . N          N, N, Y
Create a training Library . . . . N          N, N, Y

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

Bottom
MA A MW 05/037

```

Fill the Library Prefix & app Name (here we indicated FRMAPP. This value is used for the rest of the document) and put N for other parameters.

```

Restore libraries for the demo (RSTDemo)

Type choices, press Enter.

Library Prefix & app Name . . . . FRMAPP     Name, SAMCO
Create application Y/N . . . . N          Y, N
Prefix for lib application . . . .          Name
Prepare Declare 1 . . . . . N          N, N, Y
Prepare Declare 2 . . . . . N          N, N, Y
Load repository . . . . . N          Y, N, Y
Complete LIBL with demo lib . . . . N          Y, N, Y
Create env D & T . . . . . N          N, N, Y
Create a training Library . . . . N          N, N, Y

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

Bottom
MA A MW 13/037

```

The Library prefix & app Name must be unique. It is possible to check the availability of a code by using the command AWRKAPP *SELECT when you are in ARCAD.

2.3.2 Default branch in your Git repository

By default, the product is configured to work with a default branch named **master**.

If the name of your default branch is different, for example **main**, you must indicate this with a specific parameter in the application attributes.

You can do that when at this step: [Update application operational attributes](#).

So, from the AEDTAPPATR screen, press F15=GIT config to go to the Git menu.

```

AEDTAPPATR          Edit Operational Attributes          3/11/24 09:51:00
                  FRMAPP                                ROMAXIBM
Type or modify, then press ENTER.                      1/5

Application Information
Application text . . . . . : From an IBMi Application
Application status . . . . . : *MNT (*DEV, *MNT)
Library name prefix. . . . . : FRA
Application managers. . . . . : ARCAD_PGMR + Name F14=More
Owner. . . . . : QPGMR Name
Database administrators . . . . . : *NONE + Name,*NONE F14=More

Active version number. . . . . : 01.00.00
Reference level. . . . . : 01.00.00
Language(s) used . . . . . : RPG, CBL...
Case Tool used . . . . . : *NONE *NONE, ADELIA, SYNON
                                   GEODE, SILVERDEV

Library Information
ASP group. . . . . : *SYSBAS *SYSBAS, name
Verify library attachment. . . . . : *ALL *NONE, *APP, *ALL
Arcad lists library. . . . . : ARC_FRALST Name, *L01,..., *N50
                                   More...

F3=Exit    F12=Cancel    F15=GIT config    F21=Command line

MA  A  MW  06/048

```

On this menu, select option 1 Configure a remote Git repository.

```

GIT          SCM - Configuration/Parameter menu          3/11/24 09:52:17
                                   ROMAXIBM
Select one of the following options, then press ENTER.

1. Configure a remote Git repository
2. Configure a proxy
3. Work with Git users
4. Other parameters
5. MERLIN parameters

Option      1
Bottom

F3=Exit    F12=Cancel    F21=Command line

MA  A  MW  20/078

```

Then, change the default branch name if needed.

```
SCM - Configure a remote repository                               3/11/24 09:54:02
                                                                ROMAXIBM

Type or modify, then press ENTER.

Remote repository information :
Repository URI . . . . . git@github.com:fgrumeau/ERMAPP.git
_____
_____
Default branch . . . . . main_
_____

F3=Exit    F12=Cancel

MA  A      MW                                     11/043
```

2.4 ARCAD concepts

2.4.1 ARCAD application

An ARCAD application brings together the libraries forming a coherent whole (libraries of source files, + libraries of objects, libraries of data files, etc.) more in the logistical sense than in the functional sense.

An application has a code, some operational attributes, in particular the application libraries and a liblist.

This liblist will contain the application libraries and all other libraries needed to compile the source member of the application.

This list of libraries will be used to load the cross references between components.

2.4.2 ARCAD environment

An ARCAD environment is a complete and independent work context.

There are different types of environments:

- Production (or operational): environment in which users work.
- Reference: environment that includes the elements used in the production environment. It is used to create the ARCAD repository.
- Development: environment in which programmers develop. They also perform their unit tests in this environment.
- Tests: environment that allows you to carry out tests while remaining independent of the production environment.

2.4.3 ARCAD version

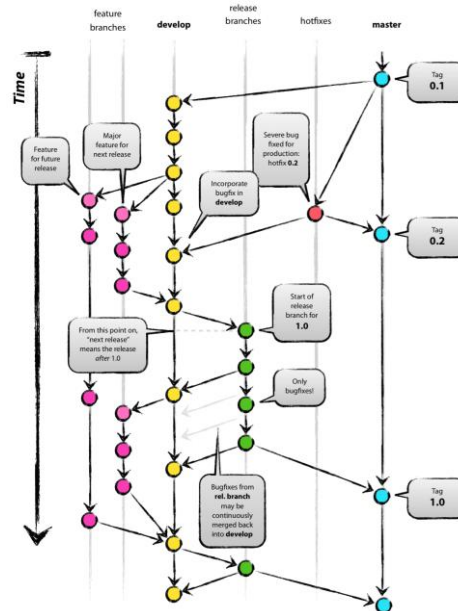
An ARCAD version is a library linked to a development environment, and, with MERLIN, linked to a Git branch.

This library will be used to receive the source members modified in a Git environment and to recompile them.

This library will be used for unit tests and also as a starting point to send these compiled objects to a test or a production environment.

2.5 Development workflow with Merlin

The development with Merlin is freely inspired on the GitFlow workflow but you can adapt it to your own needs.



Gitflow is based on Git Branches.

There are two branches where direct changes are forbidden.

- The first one is the **master** branch which is a picture of the production sources.
- The second one is the **development** branch where all new features will be brought together.

Three other types of branches can be used:

- **Feature:** used by developers to create new feature for an application. New features are made in feature branches. When a development is done, it can be merged into the development branch, and the feature branch can be deleted.
- **Release:** used to bring together several features. This branch will be used by developers to apply patches after tests. A new release will receive changes from the development branch, and when tests are done, the new release can be merged into the master branch, as well as the development branch to keep it up to date. The release branch can then be deleted.
- **Hotfix:** used by developers to fix a bug in production.

A hotfix is made to fix a production bug. When it is done, the hotfix can be merged into the master branch, as well as the development branch to keep it up to date. The fix branch can then be deleted.

With Merlin, each new branch will automatically create a new ARCAD version.

2.6 Setup MERLIN from an IBM i application

In this section, we will see how to start with Merlin if you already have an IBM i application declared or not in ARCAD Skipper.

Other ways to configure the product exist, in particular when you start from scratch.

2.6.1 Without an existing ARCAD application

In that case, you have an IBM i application not declared in ARCAD Skipper.

Change type of RPGLE copies

The first thing to do is to change the RPGLE copies type to have the new RPGLEINC value.

It is possible to use PDM to do that.

```

Work with Members Using PDM                                RDMER01

File . . . . . QPROTOSRC
Library . . . . FRMAPP_SRC                                Position to . . . . .

Type options, press Enter.
2=Edit      3=Copy  4=Delete 5=Display      6=Print      7=Rename
8=Display description 9=Save 13=Change text 14=Compile 15=Create module...

Opt  Member      Type      Text
---  ---
---  APICALL      RPGLE      Prototypes for Ibm API
---  ARTICLE      RPGLE      Function Article
---  COUNTRY      RPGLE      Functions Country
---  CUSTOMER      RPGLE      Function Customer
---  FAMILLY      RPGLE      Functions article familly
---  LOG          RPGLE      Log functions
---  PARAMETER     RPGLE      Parameters functions - Prototypes
---  PROVIDER     RPGLE      Functions Provider
More...

Parameters or command
===>
F3=Exit      F4=Prompt      F5=Refresh      F6=Create
F9=Retrieve  F10=Command entry F23=More options F24=More keys

MA  A      MW      11/002

```

Figure 1:RPGLE before the modification

```

Work with Members Using PDM                                RDMER01

File . . . . . QPROTOSRC
Library . . . . FRMAPP_SRC                               Position to . . . . .

Type options, press Enter.
2=Edit      3=Copy  4=Delete 5=Display  6=Print  7=Rename
8=Display description 9=Save 13=Change text 14=Compile 15=Create module...

Opt  Member      Type      Text
---  ---
---  APICALL      RPGLEINC  Prototypes for Ibm API
---  ARTICLE      RPGLEINC  Function Article
---  COUNTRY      RPGLEINC  Functions Country
---  CUSTOMER     RPGLEINC  Function Customer
---  FAMILLY      RPGLEINC  Functions article familly
---  LOG          RPGLEINC  Log functions
---  PARAMETER    RPGLEINC  Parameters functions - Prototypes
---  PROVIDER     RPGLEINC  Functions Provider
More...

Parameters or command
==>
F3=Exit      F4=Prompt  F5=Refresh  F6=Create
F9=Retrieve  F10=Command entry F23=More options F24=More keys

MA  A      MW      11/002

```

Figure 2: RPGLEING type after the modification

Declare an ARCAD application

The second step is to declare a new ARCAD application.

To do so, open the ARCAD product in your IBM i using the ARCAD_ENG/ARCAD command.

The following screen is displayed.

```

ARCAD_ENG                                ARCAD - General menu (ARCAD)      System:  RDMER01

Select one of the following options:

  1. ARCAD-Audit      IBM i Audit & Restructuring      (ARAUDIT)
  2. ARCAD-Observer   Application analysis              (OBSERVER)
  3. ARCAD-Integrator Software reception              (INTEGRATER)
  4. ARCAD-Transformer IBM i refactoring tools          (TRANSFORM)
  5. ARCAD-Skipper     Software configuration management (SKIPPER)
  6. ARCAD-Datachanger Data configuration management   (ARDTC)
  7. ARCAD-Verifier     Regression testing                (VERIFIER)
  8. ARCAD-Extract     Data extraction and scrambling    (EXTRACT)
  9. ARCAD-Drops for i Release Management              (DROPS)

Common options
  90. Sign off      SIGNOFF
  91. Macro-command menu (ARMACCMD)
More...

Option or command
==>

F3=Exit  F4=Prompt  F9=Retrieve  F10=Cmd entry  F12=Cancel  F13=Repos.
F14=List F15=Macro  F20=Function F21=Setup    F22=Main Menu

MA  A      MW      20/007

```

Select the option 5 **ARCAD-Skipper Software configuration management (SKIPPER)**.

```

ARCAD_ENG          ARCAD - General menu (ARCAD)          System:  RDMER01
Select one of the following options:

  1. ARCAD-Audit      IBM i Audit & Restructuring      (ARAUDIT)
  2. ARCAD-Observer   Application analysis             (OBSERVER)
  3. ARCAD-Integrator Software reception              (INTEGRATER)
  4. ARCAD-Transformer IBM i refactoring tools         (TRANSFORM)
  5. ARCAD-Skipper     Software configuration management (SKIPPER)
  6. ARCAD-Datachanger Data configuration management  (ARDTC)
  7. ARCAD-Verifier     Regression testing              (VERIFIER)
  8. ARCAD-Extract     Data extraction and scrambling  (EXTRACT)
  9. ARCAD-Drops for i Release Management             (DROPS)

Common options
  90. Sign off                      SIGNOFF
  91. Macro-command menu           (ARMACCMD)
                                   More...

Option or command
==> 5_

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List  F15=Macro   F20=Function  F21=Setup      F22=Main Menu

MA  A      MW      20/008

```

And then the option 1 **Declare an application ADCLAPP**.

```

ARCAD_ENG          ARCAD - Software Configur. Management menu (SKIPPER) System:  RDMER01
Select one of the following options:

Application
  1. Declare an application      ADCLAPP
  2. Work with applications      AWRKAPP
  3. Loading the repository menu (ARREP)

Environments
  10. Declare a new environment  ADCLENV
  11. Generate an environment    -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment ADSPCURENV
                                   More...

Option or command
==> 1_

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List  F15=Macro   F20=Function  F21=Setup      F22=Main Menu
(C) Copyright 1992,2022 ARCAD Software

MA  A      MW      20/008

```

On the new screen, fill the following fields:

- Application ID (if your **Application ID** is longer than three characters, fill the Library name prefix field as well),
- Brief description,
- Application manager, and,
- Operational libraries,

Press ENTER.

```

                                Declare an application (ADCLAPP)

Type choices, press Enter.

Application ID . . . . . > FRMAPP      Character value
Brief description . . . . . > 'From an IBMi Application'
Application manager . . . . . > ARCAD_PGMR Name
ASP group . . . . . > *SYSBAS      Name, *SYSBAS
Operational library list . . . . . > FRMAPP_DTA Name, *NONE, *LST
                                   > FRMAPP_OBJ
                                   > FRMAPP_SRC
                                   + for more values >
Verify library attachment . . . > *ALL      *ALL, *APP, *NONE
Library name prefix . . . . . > FRA      Name, *DFT
Lists library . . . . . > *GEN      *GEN, *L01, *L02, *L03, *L04,,
Owner . . . . . > QPGMR      Name
Database administrator . . . . . > *NONE      Name, *NONE
Case tool used . . . . . > *NONE      *NONE, ADELIA, SYNON...
Initial version # . . . . . > '01.00.00' Character value
Modify library text field . . . > *NO      *YES, *NO

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

Bottom
MA A MW 15/041

```

Complete the library list for your application to make it usanaable and press ENTER.

```

AEDTAPPLBL      Work With Library Lists      3/11/24 08:45:33
List name . . . . . : APP:FRMAPP      ROMAXIBM
Application . . . . . : FRMAPP      From an IBMi Application
ASP Group . . . . . : *SYSBAS
Current library . . . . . : *NONE      Name, *NONE,
Select your modifications, then press ENTER
Seq.  Library      Seq.  Library      Seq.  Library
 10  FRMAPP_DTA      90  _____      170  _____
 20  FRMAPP_OBJ      100  _____      180  _____
 30  FRMAPP_SRC      110  _____      190  _____
 40  ARCAD_DEMO      120  _____      200  _____
 50  QTEMP           130  _____      210  _____
 60  QGPL            140  _____      220  _____
 70  _____      150  _____      230  _____
 80  _____      160  _____      240  _____
More...

F3=Exit  F5=Refresh  F12=Cancel
F19=Info  F21=Command Line
(C) Copyright 1992,2023 ARCAD Software

MA A MW 18/012

```

The declaration of the application is now finished.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
                                     System:  RDMER01
Select one of the following options:

  Application
    1. Declare an application           ADCLAPP
    2. Work with applications          AWRKAPP
    3. Loading the repository menu     (ARREP)

  Environments
    10. Declare a new environment      ADCLENV
    11. Generate an environment       -GENENV
    12. Work with application environments AWRKENV

  Current Environment
    20. Re-initialize the current environment AINZCURENV
    21. Display current environment     ADSPCURENV
                                     More...

Option or command
==>

F3=Exit   F4=Prompt  F9=Retrieve  F10=Cmd entry  F12=Cancel  F13=Repos.
F14=List  F15=Macro  F20=Function F21=Setup     F22=Main Menu
Application FRMAPP declared in maintenance: run the initialization macros.
MA  A      MW 20/007

```

As you see in the screenshot above, the next steps should be to run the initialization macros i.e.

- DECLARE1/DECLARE1B to search/delete qualified names.
- DECLARE2/DECLARE2B to compare source members and objects in order to find duplicate source members, duplicate objects, source members without object, objects without source members.
- DECLARE3 to load the ARCAD Repository.

After each run of these macro-command, the results should be analyzed, and errors should be corrected.

But in this document, only the DECLARE3 is launched without analysis of the results and no corrections of problems.

Generate Sources for SCM

Before loading the ARCAD repository, the third step is to generate a source for components that usually do not need it, such as *DTAARA, *MSGF, *SRVPGM, etc.

This is mandatory for an SCM like Git which only manages sources.

To do that, use the GENSCMSRC macro-command.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
System:      RDMER01
Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu    (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment      ADSPCURENV
                                         More...

Option or command
==> GENSCMSRC_

F3=Exit    F4=Prompt  F9=Retrieve  F10=Cmd entry  F12=Cancel  F13=Repos.
F14=List   F15=Macro  F20=Function F21=Setup     F22=Main Menu

MA  A      MW      20/016

```

If you have many objects like this, it is recommended to launch this macro in batch.

Fill the **Application ID** field and change the **Source file library** field (by default set to QTEMP) to put the source library of your application, then press ENTER.

```

Generate Sources for SCM (GENSCMSRC)

Type choices, press Enter.

Application ID . . . . . FRMAPP          Character value, *CURENV
*DTAARA source file . . . . . QDTASRC      Name, QDTASRC
*BNDDIR source file . . . . . QBNSDRC      Name, QBNSDRC
ILE program source file . . . . . QILESRC   Name, QILESRC
*SRVPGM source file . . . . . QILESRSVRC  Name, QILESRSVRC
*DTAQ source file . . . . . QDTAQSRC      Name, QDTAQSRC
*JOBQ source file . . . . . QJOBDSRC      Name, QJOBDSRC
*JOBQ source file . . . . . QJOBQSRC      Name, QJOBQSRC
*MSGF source file . . . . . QMSGFSRC      Name, QMSGFSRC
*MSGQ source file . . . . . QMSGQSRC      Name, QMSGQSRC
*OUTQ source file . . . . . QOUTQSRC      Name, QOUTQSRC
*CLS source file . . . . . QCLSSRC        Name, QCLSSRC
*SBSD source file . . . . . QSBSDSRC      Name, QSBSDSRC
Source file library . . . . . FRMAPP_SRC   Name, QTEMP

F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
F13=How to use this display   F24=More keys

MA  A      MW      05/037

```

When the macro-command is finished, it will be possible to load the ARCAD repository.

Load the ARCAD repository

Use the option 3 **Loading the repository menu (ARREP)** displayed on the screen.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
System:      RDMER01

Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu    (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment      ADSPCURENV
More...

Option or command
==> 3

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List   F15=Macro   F20=Function  F21=Setup      F22=Main Menu

MA  A      MW      20/008

```

Then the option 10 **Loading the repository for an application -DECLARE3**.

```

ARCAD_ENG          ARCAD - Repository Loading Menu (ARREP)          System:  RDMER01
Select one of the following options:

  Insert an application in ARCAD
    1. Declare an application          ADCLAPP
    2. Work with applications          AWRKAPP

  Loading the ARCAD repository
    10. Loading the repository for an application  -DECLARE3
    11. Loading the repository for several applications -DECLARALL

    14. Work with components not loaded in the repository -ERROBJREF
    15. Work with components not loaded in cross-references -ERRXREF

    17. Repository audit          -AUDOBJREF
    18. Check program parameters  -DECLARE4
                                         More...

Option or command
==> 10_

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List   F15=Macro   F20=Function  F21=Setup      F22=Main Menu
(C) Copyright 1992,2022 ARCAD Software
MA  A      MW 20/009

```

Fill the **Application ID** field and press ENTER.

```

                          Declare an application (phase (DECLARE3))
Type choices, press Enter.

Application ID . . . . . FRMAPP_ Character value, *CURENV
Modify objects ownership . . . . . '*NO' *YES, *NO
Src type/src file consistency . . . . . '*UPDATE' *CTL, *NOCTL, *UPDATE
Src type/library consistency . . . . . '*NO' *YES, *NO
Update cross references . . . . . '*YES' *YES, *NO
Load field X-ref . . . . . '*YES' *YES, *NO, *DBF
Only used fields . . . . . '*YES' *YES, *NO
Stamp components . . . . . '*NO' *YES, *NO
Validate the list ? . . . . . '*NO' *YES, *NO
Reorganize database . . . . . '*NO' *YES, *NO
Select source by *LIBL or Date . . . . . '*DATE' *DATE, *LIBL

F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
F13=How to use this display   F24=More keys

MA  A      MW Bottom 05/043

```

Type Y and then press ENTER to submit the job to load the ARCAD repository.

```

      Declare an application (phase (DECLARE3))
Type choices, press Enter.
Application ID . . . . . FRMAPP      Character value, *CURENV
Modify objects ownership . . . . . '*NO'      *YES, *NO
Src type/src file consistency . . . . . '*UPDATE'      *CTL, *NOCTL, *UPDATE
Src type/library consistency . . . . . '*NO'      *YES, *NO
Update cross
Load field X
Only used fi
Stamp compon
Validate the
Reorganize d
Select sourc

      Confirm submission to batch of the command:  DECLARE3
      Submit command ? . . . . . Y Y, N
Press ENTER to confirm execution.
F3=Exit      F10=Modify submission parameters      F12=Cancel

Bottom
F3=Exit      F4=Prompt      F5=Refresh      F10=Additional parameters      F12=Cancel
F13=How to use this display      F24=More keys
(C) Copyright 1992,2022 ARCAD Software
MA  A      MW      13/066

```

While the job is running you can go to the next step, so press F12 to come back to the previous screen (SKIPPER menu).

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
System:      RDMER01
Select one of the following options:

Application
1. Declare an application      ADCLAPP
2. Work with applications      AWRKAPP
3. Loading the repository menu      (ARREP)

Environments
10. Declare a new environment      ADCLENV
11. Generate an environment      -GENENV
12. Work with application environments      AWRKENV

Current Environment
20. Re-initialize the current environment      AINZCURENV
21. Display current environment      ADSPCURENV
More...

Option or command
==>

F3=Exit      F4=Prompt      F9=Retrieve      F10=Cmd entry      F12=Cancel      F13=Repos.
F14=List      F15=Macro      F20=Function      F21=Setup      F22=Main Menu

MA  A      MW      20/007

```

Create development environment

A development environment is mandatory to create a version in ARCAD.

To put it simply, a version is a library which will contain the result of a build of the source members modifications.

On the SKIPPER menu, use the option 12. **Work with application environments AWRKENV**, fill the **Application ID** field and press ENTER.

```

Work with environments (AWRKENV)

Type choices, press Enter.

Application ID . . . . . FRMAPP      Character value, *SELECT
Environment ID . . . . . *ALL        Character value, *ALL

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

Bottom
MA  A  MW  05/043

```

There is no existing environment, so press F6 to add a new one.

```

AWRKENV                      Work With Environments          4/11/22 11:54:13
                                RDMER01

Application. . . . . : FRMAPP      From an IBMi Application

Select an option, then press ENTER.
2=Work with      3=Copy      4=Delete      5=Display
6=Print          7=Rename     10=Lock      11=Unlock
12=Generate      13=Macro Generation 14=Linked context

Impl
Opt Env          Type mode Site      *LCK Text
(No environments have been defined for this application)

F3=Exit  F4=Prompt  F5=Refresh  F6=Add      F12=Cancel  F21=Cmd line
(C) Copyright 1992,2022 ARCAD Software

MA  A  MW  01/001

```

Fill the following fields:

- Environment ID,
- Type of environment,
- Implementation mode,
- Brief description, and
- Prefix for version library

Press ENTER to manage the library list for this environment.

```

                                Declare an environment (ADCLENV)
Type choices, press Enter.

Application ID . . . . . > 'FRMAPP'      Character value
Environment ID . . . . . DEV            Character value
Type of environment . . . . . *DEV      *DEV, *TST, *PRD
Implementation mode . . . . . *NRM      *NRM, *EXT, *DTA
Usable by Deliver Server . . . . . > *NO *YES, *NO
Site . . . . . *LCL
Environment owner . . . . . *NOCHG      Name, *NOCHG
Brief description . . . . .             Development Environment
ASP group . . . . . *APP                Name, *APP, *SYSBAS
Prefix for version library . . . . . FRAD Name, *DFT, *NONE
Operational library list . . . . . *ALLNONE Name, *ALLNONE, *ALLGEN...
      + for more values
Create the libraries . . . . . *YES      *YES, *NO
Modify library text field . . . . . *NO  *YES, *NO

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display      F24=More keys

Bottom
MA  A MW 14/041
```

By default, the library list of the application is used. Add, remove, or change libraries if needed and then press ENTER.

```

AEDTAPPLBL      Work With Library Lists      4/11/22 11:59:31
List name. . . . . : ENV:000688              - ENVIR. -
Application. . . . . : FRMAPP      From an IBMi Application
Environment ID . . . . . : DEV      *DEV Development Environment

ASP Group . . . . . : *SYSBAS
Current library. . . . . : *NONE      Name, *NONE,
Select your modifications, then press ENTER

Seq.  Library      Seq.  Library      Seq.  Library
20    FRMAPP_DTA    100             180
30    FRMAPP_OBJ    110             190
40    FRMAPP_SRC    120             200
50    ARCAD_DEMO    130             210
60    QTEMP         140             220
70    QGPL          150             230
80    _____    160             240
90    _____    170             250
More...

F3=Exit  F5=Refresh  F12=Cancel
F19=Info  F21=Command Line
(C) Copyright 1992,2022 ARCAD Software

MA  A MW 13/008
```

MERLIN

Getting Started – v 02.00.00

A development environment is now created.

```
AWRKENV                      Work With Environments                      4/11/22 11:54:13
                                RDMER01

Application. . . . . : FRMAPP      From an IBMi Application

Select an option, then press ENTER.
2=Work with          3=Copy          4=Delete          5=Display
6=Print              7=Rename         10=Lock           11=Unlock
12=Generate          13=Macro Generation 14=Linked context

Opt Env              Impl
  Type mode Site      *LCK Text
  ___ DEV             *DEV *NRM *LCL      Development Environment

Bottom

F3=Exit  F4=Prompt  F5=Refresh  F6=Add  F12=Cancel  F21=Cmd line
Environment DEV for application FRMAPP declared.

MA  A  MW  12/002
```

Press F3 to go back to the SKIPPER menu.

```
ARCAD_ENG    ARCAD - Software Configur. Management menu (SKIPPER)
                                System:  RDMER01

Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu    (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment      ADSPCURENV
                                      More...

Option or command
===>

F3=Exit  F4=Prompt  F9=Retrieve  F10=Cmd entry  F12=Cancel  F13=Repos.
F14=List  F15=Macro  F20=Function  F21=Setup      F22=Main Menu

MA  A  MW  20/007
```

Create version type

Finally, you need to create a version type for your application.

In the SKIPPER menu, enter the AWRKVERTYP command and press ENTER.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)      System:  RDMER01
Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu     (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment     ADSPCURENV
                                     More...

Option or command
==> AWRKVERTYP

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List  F15=Macro   F20=Function  F21=Setup      F22=Main Menu

MA  B      MW      20/017

```

Enter Option 3 **Copy** for the three standard version types *FEATURE, *RELEASE and *SANDBOX.

```

AWRKVERTYP      Work with version types      4/12/22  13:01:50
                                     RDMER01

Application : *NONE      Version type : *ALL

Select an option, then press ENTER.
2=Edit      3=Copy      4=Delete      5=Display
8=Duplicate the types of an application

Opt Application  Version  Version  number  Lock  Edit  Transf.  Update  Level
              Type      Min.    Max.    Obj.  Src.  to Ref  XRef  XRef
3 *NONE        *FEATURE  FT.00.00 FT.99.99 *NO   *YES  *NO   *DAILY *REFVERS
3 *NONE        *RELEASE  *GEN     *GEN     *YES  *YES  *YES  *NO   *CURRENT
3 *NONE        *SANDBOX  SB.00.00 SB.99.99 *NO   *YES  *NO   *DAILY *REFVERS

                                     Bottom

F3=Exit  F5=Refresh  F6=Add type  F11=Other view  F12=Previous screen

MA  B      MW      11/002

```

For these three types, fill the **Application** field and set the **Check-out from reference** parameter to *SCM.

```

AWRKVERTYP                                Add a version type                                4/12/22 13:04:37
                                                                 RDMER01

Application . . . : FRMAPP
Version type . . . : *FEATURE
Text . . . . . : Development of Feature with temp. number

Min. version number . . . . . : FT.00.00 (Character value, *GEN)
Max. version number . . . . . : FT.99.99 (Character value, *GEN)
Generate "not used" nbr. . . . . : *YES (*YES, *NO)
Generate after max nbr. . . . . : *YES (*YES, *NO)
Part to increment (for *GEN) . . . : *ITEM (*VER, *REL, *ITEM)
Lock objects at check out. . . . : *NO (*YES, *NO)
Check-out from reference . . . . : *SCM (*YES, *NO, *SCM)
Allow to edit the sources. . . . : *YES (*YES, *NO)
Transfer to reference . . . . . : *NO (*YES, *NO)
Update cross refs . . . . . : *DAILY (*YES, *NO, *DAILY)
Xref level . . . . . : *REFVERS (*CURRENT, *LASTPRD, *REFVERS)
Default loc for change storage: . . : *VERLIB (*ENV, *VERLIB)
Open version for Libr. . . . . : *APP (*APP, *YES, *NO)
Open version for Devel. . . . . : *APP (*APP, *YES, *NO)
Sequence for prompt . . . . . : 2 (0 - 999)
F3=Exit                                     F12=Cancel

MA B MW 15/039

```

When it is done, stay on the AWRKVERTYP menu, and press F3 to go back to the SKIPPER menu.

```

AWRKVERTYP                                Work with version types                                4/12/22 13:08:23
                                                                 RDMER01

Application : *NONE                                Version type : *ALL

Select an option, then press ENTER.
2=Edit      3=Copy      4=Delete      5=Display
8=Duplicate the types of an application

Opt Application  Version  Version  number  Lock  Edit  Transf.  Update  Level
Type            Min.      Max.      Obj.  Src.  to Ref  XRef  XRef
- *NONE *FEATURE FT.00.00 FT.99.99 *NO *YES *NO *DAILY *REFVERS
- *NONE *RELEASE *GEN *GEN *YES *YES *YES *NO *CURRENT
- *NONE *SANDBOX SB.00.00 SB.99.99 *NO *YES *NO *DAILY *REFVERS

Bottom

F3=Exit F5=Refresh F6=Add type F11=Other view F12=Previous screen
Version type *FEATURE of application FRMAPP added
MA B 13/002

```

When the copy is created, you can use the AWRKVERTYP command for your application code to check and/or to change these types.

2.6.2 With or without an existing ARCAD application

Change type of RPGLE copies, Generate Sources for SCM and create version type.

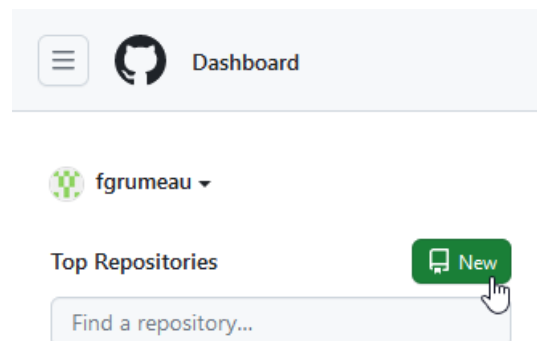
If you just come from the previous chapter [Without an existing Arcad application](#), this part is not necessary, as it is already done.

If not, do the same modifications as in the [Change type of RPGLE copies](#) chapter. If you never used another SCM than ARCAD Skipper, follow the steps described in the [Generate Sources for SCM](#) chapter and reload your ARCAD repository. Finally, create version types as it was explained in the [Create version type](#) chapter.

Create a remote Git repository

The next step of setup is to create a Git Repository.

Go to the solution you want to use and create a new project/repository.



Enter a repository name, a description, choose the visibility level, create the new repository with a README file and click on the **Create project** or **Create repository** button.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk ().*

Owner * Repository name *

 fgrumeau / FRMAPP

✓ FRMAPP is available.

Great repository names are short and memorable. Need inspiration? How about **literate-fiesta** ?

Description (optional)

From an IBM i application

- ☒  **Public**
Anyone on the internet can see this repository. You choose who can commit.
- ☐  **Private**
You choose who can see and commit to this repository.

Initialize this repository with:

- ☒ **Add a README file**
This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore

.gitignore template: None

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license

License: None

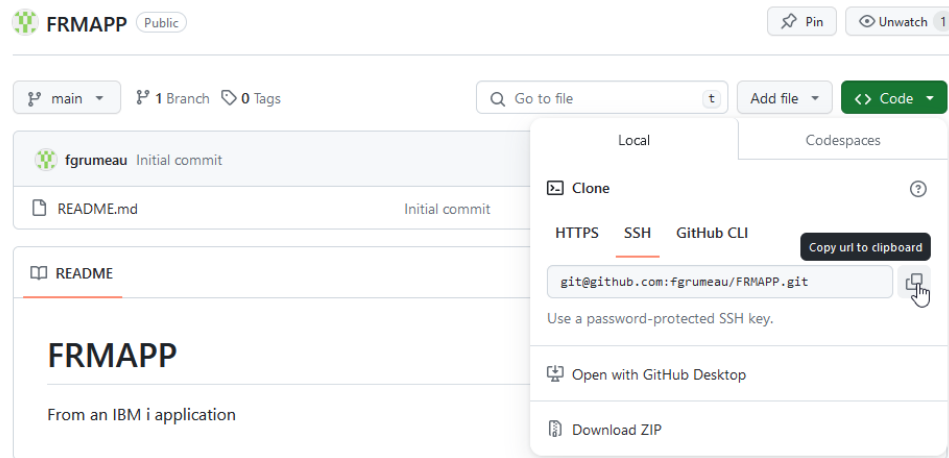
A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

This will set  **main** as the default branch. Change the default name in your [settings](#).

 You are creating a public repository in your personal account.

Create repository

An empty repository was created. It is possible now to copy the SSH URL to add it into the ARCAD application.



Update application operational attributes

Go back to the SKIPPER menu on your 5250 session and use the option 2 **Work with applications AWRKAPP**.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
System:      RDMER01
Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu     (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment      ADSPCURENV
                                      More...

Option or command
==> 2_

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List  F15=Macro   F20=Function  F21=Setup      F22=Main Menu

MA  A      MW      20/008
  
```

Find your application ID and enter 1 in the Option parameter, then press Enter.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
System:      RDMER01
Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu    (ARREP)

Environments
  10. Declare a new envir
  11. Generate an environ
  12. Work with applicati

Current Environment
  20. Re-initialize the c
  21. Display current env

Option or command
==> 2

List of applications
1=Select
Opt ID      Text
- BBS400    BBS400 Demo
- ELIASTEST Elias test application
1 FRMAPP    From an IBMi Application
- JHMRL     Arcad Demo
- JHNEW     test new project
More...
F3=Exit F12=Cancel

F3=Exit  F4=Prompt  F9=R
F14=List F15=Macro  F20=Function F21=Setup  F22=Main Menu
MA  A      MW 17/033

```

Then choose the option 3. **Operational attributes and configuration parameters AEDTAPPATR** and press ENTER.

```

AWRKAPP      Work With Application      4/11/22 12:56:37
RDMER01
Application. . . . . : FRMAPP    From an IBMi Application
Manager. . . . . : ARCAD_PGMR

Select one of the following options :

  1. Operational libraries          AEDTAPPLIB
  2. I.F.S. Directories linked to the application AWRKAPPIFS
  3. Operational attributes and configuration parameters AEDTAPPATR
  4. Library list                  AEDTAPPLBL

  5. Component Repository          ADSP0BJREF
  6. Field Repository             ADSPFLDDCT
  7. Literals Repository          ADSPPLITREF
  8. Procedure repository          ADSPPRCREF

More...

Option or command
==> 3

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13= Lock
(C) Copyright 1992,2022 ARCAD Software
MA  A      MW 20/008

```

Set the Source member header update to *NONE.

```

AEDTAPPATR          Edit Operational Attributes          3/11/24 09:34:30
                   FRMAPP                                ROMAXIBM
Type or modify, then press ENTER.                        3/5

Information journal
Journal option . . . . . *MANUAL      *NONE, *AUTO, ...
Application journal. . . . . *NONE      Name,*NONE
Library. . . . .
Record image . . . . . *AFTER        *AFTER, *BOTH
Journal entry to omit. . . . . *OPNCLO  *NONE, *OPNCLO

Archive information
Last archived version . . . . . at 00:00:00
Archived repository . . . . . at 00:00:00

Source Update Parameters
Source member lock level . . . . . *NORMAL  *NORMAL, *HIGH
Source member header update. . . . . *NONE    *FIRST, *ANY, *NONE
Insert sys/func/tree in source text. . . . . N      Y,N
Insert version number in source text . . . . . N      Y,N
Lock coding checks . . . . . N      Y,N

F3=Exit    F12=Cancel    F15=GIT config    F21=Command line    More...

MA  A      MW      18/053

```

Set the **Mandatory attachment of document/component** to N (No) because we will not use the ARCAD maintenance report in this getting started.

```

AEDTAPPATR          Edit Operational Attributes          3/11/24 09:35:46
                   FRMAPP                                ROMAXIBM
Type or modify, then press ENTER.                        4/5

Authorizations
Grant authorization for:
For: - version management. . . . . N      N      Y,N
     - application management. . . . . N      N      Y,N

Grant authorization to app.manager.
for CHECK-IN. . . . . N      Y,N
Grant transfer to test authority. . . . . Y      Y,N

Version reference documents
Mandatory attachment of document/component . . . . . N      Y,N
Type of document to attach. . . . . *MNRPT  *USRDOC, *MNRPT
Automatic mngt of document/version link . . . . . Y      Y,N

F3=Exit    F12=Cancel    F15=GIT config    F21=Command line    More...

MA  A      MW      16/051

```

Set the **Name of the External SCM product** parameter to GIT and paste the SSH URL of your Git repository in the **Repository URI** parameter and press ENTER.

```

AEDTAPPATR          Edit Operational Attributes          3/11/24 09:28:14
                    FRMAPP                               ROMAXIBM
Type or modify, then press ENTER.                    5/5

Parameters for the functional tree
  Attachment to the branch is required                N      Y,N
  Multiple functional tree. . . . .                   N      Y,N

Version development staff
  Automatic staff management. . . . .                 Y      Y,N
  Automatic tester/version link management            N      Y,N

Message description management
  Work with message descriptions as components:        N      Y,N

External source code Management
  Name of the External SCM product. . . GIT           *NONE, GIT, RTC
  Repository URI . . . . . git@github.com:fgrumeau/FRMAPP.git

Keep line date. . . . . N      Y,N

F3=Exit    F12=Cancel    F21=Command line    Bottom
MA  A      MW      18/041

```

Your application is updated.

```

AEDTAPPATR          Edit Operational Attributes          3/11/24 09:31:44
                    FRMAPP                               ROMAXIBM
Type or modify, then press ENTER.                    5/5

Parameters for the functional tree
  Attachment to the branch is required                N      Y,N
  Multiple functional tree. . . . .                   N      Y,N

Version development staff
  Automatic staff management. . . . .                 Y      Y,N
  Automatic tester/version link management            N      Y,N

Message description management
  Work with message descriptions as components:        N      Y,N

External source code Management
  Name of the External SCM product. . . GIT           *NONE, GIT, RTC
  Repository URI . . . . . git@github.com:fgrumeau/FRMAPP.git

Keep line date. . . . . N      Y,N

F3=Exit    F12=Cancel    F15=GIT config    F21=Command line    Bottom
Application FRMAPP attributes updated.
MA  A      MW      06/061

```

Press F15=GIT config to finish the Git Configuration

```
GIT          SCM - Configuration/Parameter menu          3/11/24 10:09:55
                                                         ROMAXIBM
Select one of the following options, then press ENTER.

  1. Configure a remote Git repository
  2. Configure a proxy
  3. Work with Git users
  4. Other parameters
  5. MERLIN parameters

                                                         Option  _
                                                         Bottom

F3=Exit      F12=Cancel      F21=Command line

MA  A  MW  20/078
```

Use option 5 to change MERLIN parameters.

```
GIT          SCM - Configuration/Parameter menu          3/11/24 10:09:55
                                                         ROMAXIBM
Select one of the following options, then press ENTER.

  1. Configure a remote Git repository
  2. Configure a proxy
  3. Work with Git users
  4. Other parameters
  5. MERLIN parameters

                                                         Option  5
                                                         Bottom

F3=Exit      F12=Cancel      F21=Command line

MA  A  MW  20/078
```

MERLIN

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Put *YES for the parameter Define as a MERLIN project and change if you want the generation IFS directory.

```
SCM - MERLIN parameters                                3/11/24 10:11:52
                                                         ROMAXIBM

Select an option, then press ENTER.
Define as a MERLIN project. . . . . : *YES      *YES, *NO
Generation IFS directory . . . . . : /home/FGRUMEAU/
MERLIN_FRMAPP_

Metadata generation parameters
Externalize the metadata. . . . . : *NO        *YES, *NO
Add the optional metadata. . . . . : *NO        *YES, *NO

F3=Exit      F12=Cancel

MA  A  MW  07/015
```

The press F3 twice and then press ENTER to go back to the **Work With Application** screen.

```
AWRKAPP                                Work With Application  4/11/22 14:10:51
                                                         RDMER01

Application. . . . . : FRMAPP      From an IBMi Application
Manager. . . . . : ARCAD_PGMR

Select one of the following options :

1. Operational libraries                      AEDTAPPLIB
2. I.F.S. Directories linked to the application  ARWKAPPIFS
3. Operational attributes and configuration parameters  AEDTAPPATR
4. Library list                                AEDTAPPLBL

5. Component Repository                      ADSP0BJREF
6. Field Repository                         ADSPFLDDCT
7. Literals Repository                      ADSPLITREF
8. Procedure repository                     ADSPPRCREF

More...

Option or command
===>

F3=Exit      F4=Prompt      F9=Retrieve      F12=Cancel      F13= Lock

MA  A  MW  20/007
```

Press F3 to go back to the SKIPPER menu.

```

ARCAD_ENG      ARCAD - Software Configur. Management menu (SKIPPER)
                                     System:  RDMER01
Select one of the following options:

Application
  1. Declare an application          ADCLAPP
  2. Work with applications          AWRKAPP
  3. Loading the repository menu    (ARREP)

Environments
  10. Declare a new environment      ADCLENV
  11. Generate an environment        -GENENV
  12. Work with application environments AWRKENV

Current Environment
  20. Re-initialize the current environment AINZCURENV
  21. Display current environment     ADSPCURENV
                                     More...

Option or command
===>

F3=Exit   F4=Prompt  F9=Retrieve  F10=Cmd entry  F12=Cancel  F13=Repos.
F14=List  F15=Macro   F20=Function F21=Setup     F22=Main Menu

MA  A      MW                                     20/007

```

Generate SSH keys and add them to your Git profile

If you did not have SSH keys for your profile on your IBM i, you need to calculate one and add it to your Git profile.

To create SSH keys, you can use the **AGENSSSHKEY** ARCAD Command or the **SSH-KEYGEN** command in a QSH session.

With the ARCAD Command, fill the Key type you want to generate, set the **Action** parameter to ***GEN** and then press ENTER.

```

Generate a RSA key (AGENSSSHKEY)

Type choices, press Enter.

User profile . . . . . *CURRENT      Name, *CURRENT
Key Type . . . . . *EDDSA          *EDDSA, *RSA
Action . . . . . *GEN              *CHK, *GEN

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

MA  A      MW                                     Bottom
                                                05/037

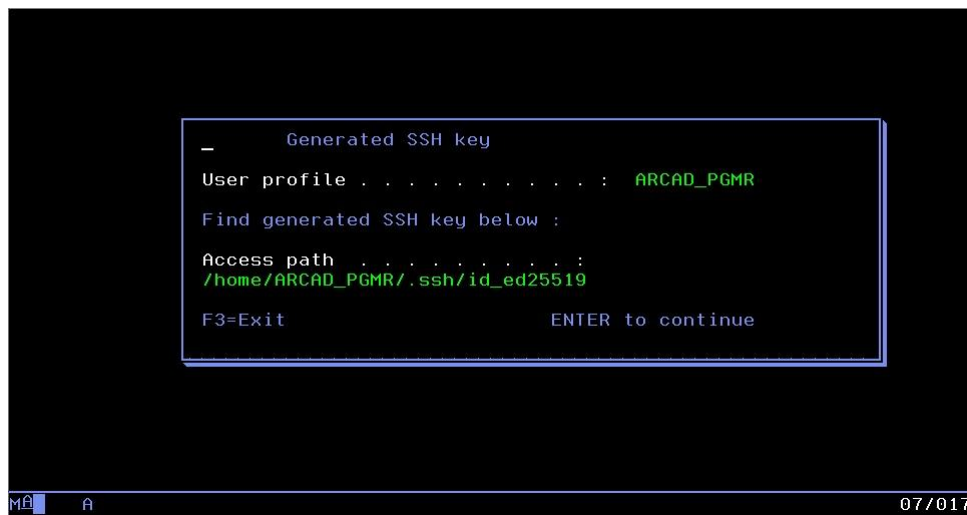
```

You can use this command to check if SSH Keys already exist or not.
In that case, this command will display these kind of messages (for example for the user profile ARCAD_PGMR):

- id_ed25519 private key was not found in IFS folder /home/ARCAD_PGMR/.ssh.
- An EdDSA key pair already exists in IFS folder /home/ARCAD_PGMR/.ssh.
- id_rsa private key was not found in IFS folder /home/ARCAD_PGMR/.ssh.
- An RSA key pair already exists in IFS folder /home/ARCAD_PGMR/.ssh.

The command indicates that the Keys are generated and where you can find them.

Press us finish the Keys creation.



```

_      Generated SSH key
User profile . . . . . : ARCAD_PGMR
Find generated SSH key below :
Access path . . . . . : /home/ARCAD_PGMR/.ssh/id_ed25519
F3=Exit                  ENTER to continue
MA A 07/017
```

Display and copy the public key, by using for example the cat command in a QSH session (or the WRKLNK command).

```
QSH Command Entry

[@roma-ibmi ^~]\$
> cd .ssh
[@roma-ibmi ^~/ .ssh]\$
> cat id_ed25519.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIJKvh2C2/nZ4c1Rs0zPr1F56MqxPmIuw2sm1lZ1U2
vmp[@roma-ibmi ^~/ .ssh]\$

==> _____
_____
_____
_____
F3=Exit  F6=Print  F9=Retrieve  F12=Disconnect
F13=Clear F17=Top   F18=Bottom  F21=CL command entry

MA  A  MW 18/007
```

Paste this key in your Git profile.

 **FRÉDÉRIC GRUMEAU** (fgrumeau)
Your personal account [Switch settings context](#)

[Go to your personal profile](#)

Public profile

Account

Appearance

Accessibility

Notifications

Access

Billing and plans

Emails

Password and authentication

Sessions

SSH and GPG keys

Organizations

Enterprises

Moderation

Code, planning, and automation

Add new SSH Key

Title

SKIPPER_ROMA

Key type

Authentication Key

Key

ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIJKvh2C2/nZ4c1Rs0zPr1F56MqxPmIuw2sm1lZ1U2vmp

Add SSH key

Getting Started – v 02.00.00

Now you are ready to send all the source members from the ARCAD Skipper repository to the Git repository.

Loading the remote Git repository

To send all the source members to the Git repository use the ARCAD macro-command **LODSCMREP**.

```

ARCAD_ENG                      ARCAD - General menu (ARCAD)                      System:  RDMER01

Select one of the following options:

1. ARCAD-Audit      IBM i Audit & Restructuring      (ARAUDDIT)
2. ARCAD-Observer   Application analysis              (OBSERVER)
3. ARCAD-Integrator Software reception              (INTEGRATER)
4. ARCAD-Transformer IBM i refactoring tools          (TRANSFORM)
5. ARCAD-Skipper     Software configuration management (SKIPPER)
6. ARCAD-Datachanger Data configuration management   (ARDTC)
7. ARCAD-Verifier     Regression testing               (VERIFIER)
8. ARCAD-Extract      Data extraction and scrambling  (EXTRACT)
9. ARCAD-Drops for i  Release Management              (DROPS)

Common options
90. Sign off                      SIGNOFF
91. Macro-command menu            (ARMACCMD)
                                   More...

Option or command
==> LODSCMREP_

F3=Exit   F4=Prompt   F9=Retrieve   F10=Cmd entry   F12=Cancel   F13=Repos.
F14=List   F15=Macro   F20=Function  F21=Setup      F22=Main Menu

MA  B                               MW                               20/016

```

Fill the **Application ID** parameter and press Enter.

```

Load reference to external SCM (LODSCMREP)

Type choices, press Enter.

Application ID . . . . . FRMAPP          Character value, *CURENV
Step . . . . . '*ALL*'          *ALL, *PRP, *STAGE...
Export Group . . . . . '*SRCFIL'      *SRCFIL, *AUTO

F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
F13=How to use this display   F24=More keys

MA  A                               MW                               05/044

```

If you have many source members in your application, it is recommended to launch this macro in batch.

When the macro-command is finished, all the source members are visible in Git.

FRMAPPPublic

PinUnwatch1

main1 Branch0 Tags

Go to file

Add fileCode

FGRUMEAU

ARCAD Commit: Initial load of the repositoryde3c7de · 3 minutes ago17 Commits

FRMAPP_SRC

ARCAD Commit: Initial load of the repository3 minutes ago

README.md

Initial commit1 hour ago

iproj.json

ARCAD Commit: Initial load of the repository4 minutes ago

README

FRMAPP

From an IBM i application

Files

main+Q

Go to file

FRMAPP_SRC

- QBNDSRC
- QCBLSRC
- QCLSRC
- QCMSDRC
- QDDSSRC
- QDTASRC
- QILESRC
- QILESRSVSR
- QMSGFSRC
- QPNLSRC
- QPROTOSRC
- QRPGLSRC
- QRPGRSRC
- QSQLSRC
- QSRVSR
- QTRGSR
- README.md
- iproj.json

FRMAPP / FRMAPP_SRC

FGRUMEAU

ARCAD Commit: Initial load of the repository

Name	Last commit message
..	
QBNDSRC	ARCAD Commit: Initial load of the repository
QCBLSRC	ARCAD Commit: Initial load of the repository
QCLSRC	ARCAD Commit: Initial load of the repository
QCMSDRC	ARCAD Commit: Initial load of the repository
QDDSSRC	ARCAD Commit: Initial load of the repository
QDTASRC	ARCAD Commit: Initial load of the repository
QILESRC	ARCAD Commit: Initial load of the repository
QILESRSVSR	ARCAD Commit: Initial load of the repository
QMSGFSRC	ARCAD Commit: Initial load of the repository
QPNLSRC	ARCAD Commit: Initial load of the repository
QPROTOSRC	ARCAD Commit: Initial load of the repository
QRPGLSRC	ARCAD Commit: Initial load of the repository
QRPGRSRC	ARCAD Commit: Initial load of the repository
QSQLSRC	ARCAD Commit: Initial load of the repository
QSRVSR	ARCAD Commit: Initial load of the repository
QTRGSR	ARCAD Commit: Initial load of the repository

MERLIN

Getting Started – v 02.00.00

Files

main

Go to file

FRMAPP_SRC

QBNDSRC

QCBLSRC

QCLSRC

QCMDSRC

QDDSRC

QDTASRC

QILESRC

QILESRVSR

QMSGFSRC

QPNLSRC

QPROTOSRC

QRPGLSRC

ART200.PGM.SQLRPGLE

ART201.PGM.RPGLE

ART202.PGM.RPGLE

ART250.PGM.SQLRPGLE

ART300.RPGLE

ART301.SQLRPGLE

ART302.SQLRPGLE

COU300.RPGLE

COU301.RPGLE

CUS200.PGM.SQLRPGLE

CUS250.PGM.RPGLE

CUS300.RPGLE

FRMAPP / FRMAPP_SRC / QRPGLSRC /

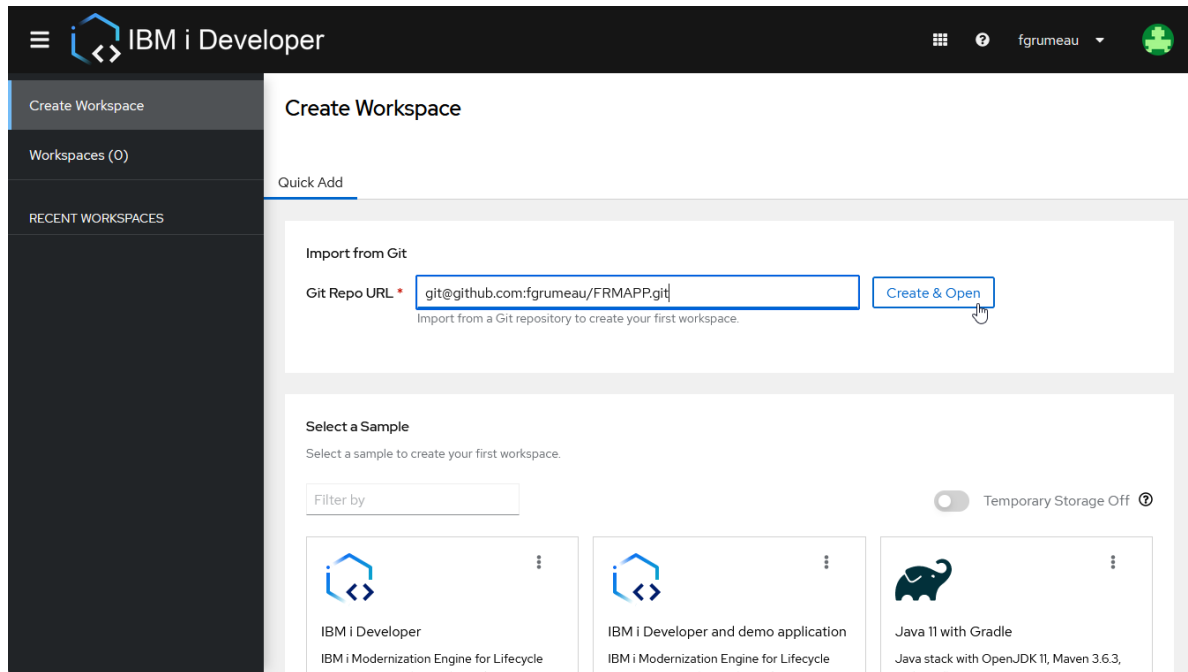
FGRUMEAU

ARCAD Commit: Initial load of the repository

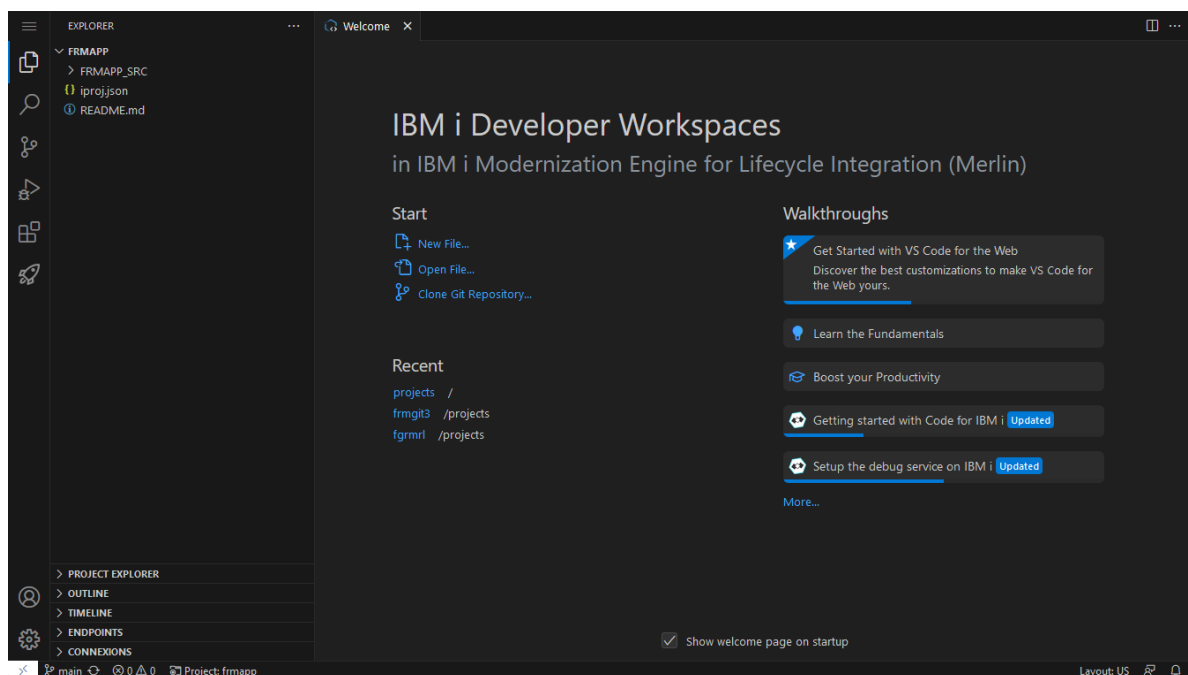
Name	Last commit message
..	
ART200.PGM.SQLRPGLE	ARCAD Commit: Initial load of the repository
ART201.PGM.RPGLE	ARCAD Commit: Initial load of the repository
ART202.PGM.RPGLE	ARCAD Commit: Initial load of the repository
ART250.PGM.SQLRPGLE	ARCAD Commit: Initial load of the repository
ART300.RPGLE	ARCAD Commit: Initial load of the repository
ART301.SQLRPGLE	ARCAD Commit: Initial load of the repository
ART302.SQLRPGLE	ARCAD Commit: Initial load of the repository
COU300.RPGLE	ARCAD Commit: Initial load of the repository
COU301.RPGLE	ARCAD Commit: Initial load of the repository
CUS200.PGM.SQLRPGLE	ARCAD Commit: Initial load of the repository
CUS250.PGM.RPGLE	ARCAD Commit: Initial load of the repository
CUS300.RPGLE	ARCAD Commit: Initial load of the repository
CUS301.SQLRPGLE	ARCAD Commit: Initial load of the repository
DAT001.PGM.RPGLE	ARCAD Commit: Initial load of the repository
DAT002.PGM.RPGLE	ARCAD Commit: Initial load of the repository
FAM300.RPGLE	ARCAD Commit: Initial load of the repository
FAM301.RPGLE	ARCAD Commit: Initial load of the repository
LOG100.PGM.RPGLE	ARCAD Commit: Initial load of the repository

Clone the Git repository in your workspace

Go to the IBM i Developer IDE in Merlin, select the option Create Workspace, paste the URL of your git repository in the part **Import from Git** and click on **Create & Open**.



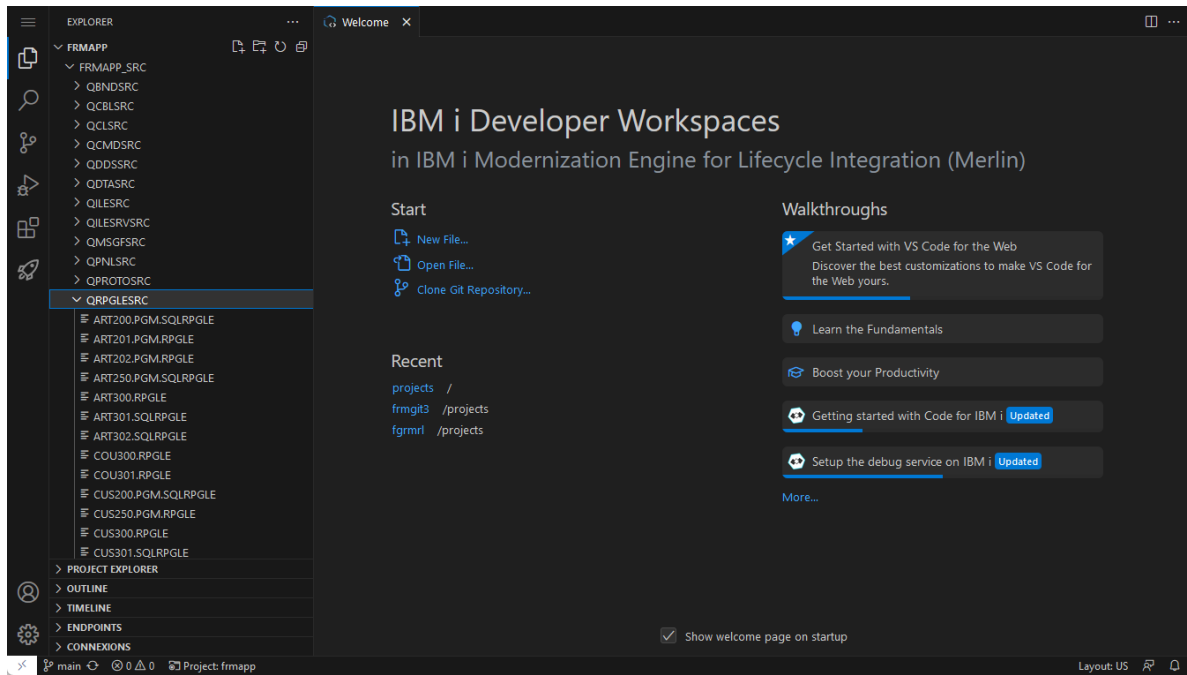
When it is finished, your Git repo was cloned.



MERLIN

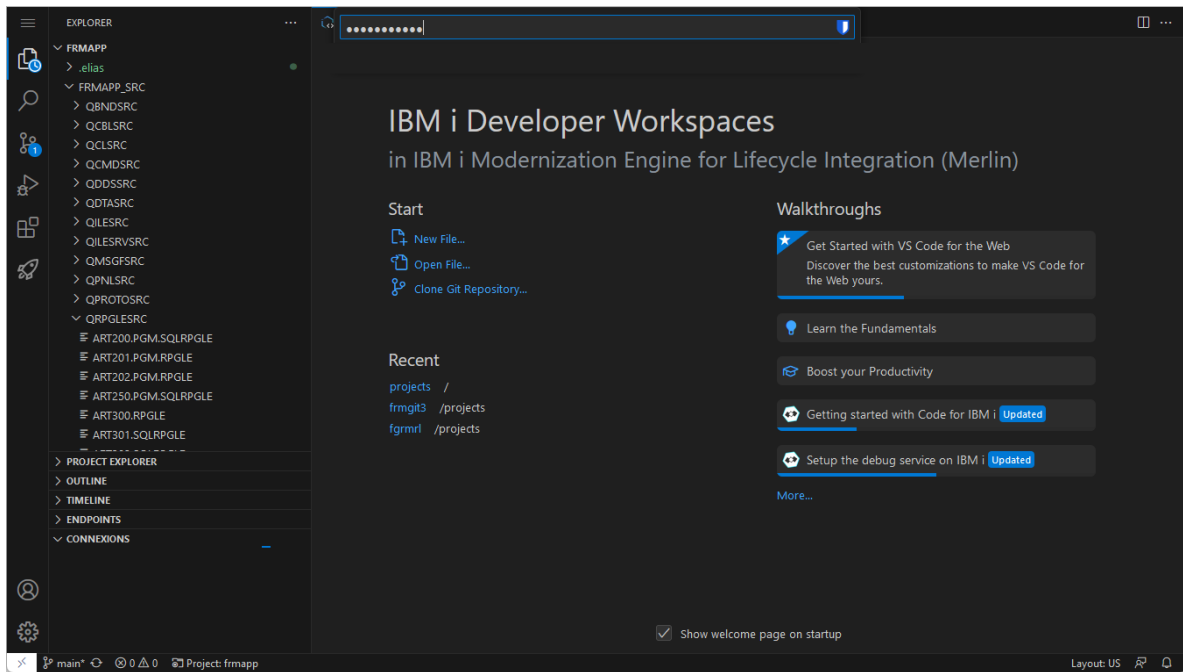
Getting Started – v 02.00.00

And you can see all the source members in your workspace.

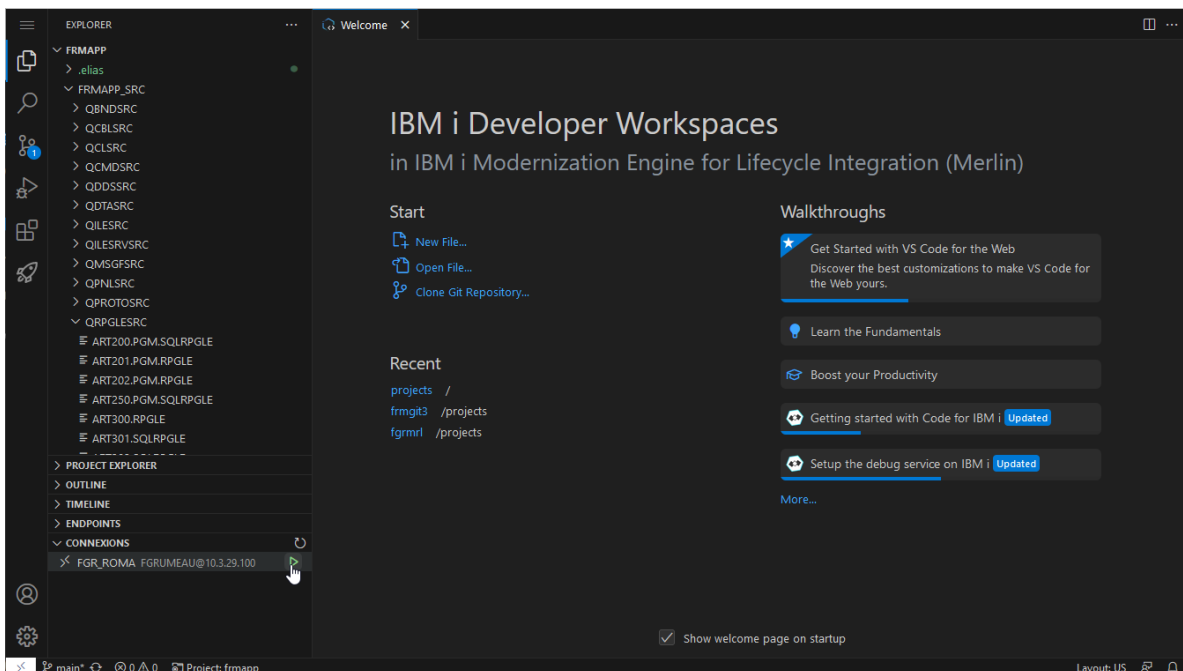


Connect to the IBM i

Go to the node **CONNECTIONS** and enter your Merlin password to see the connection to IBM i you can use.



Then click on the triangle icon to connect.

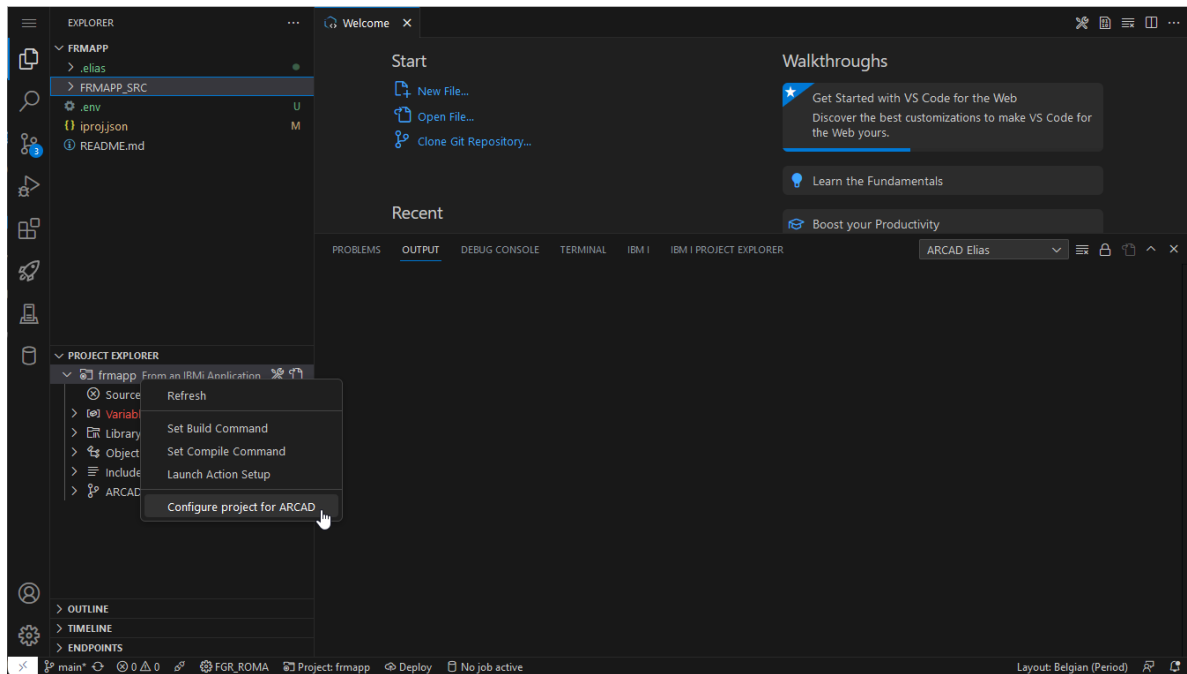


MERLIN

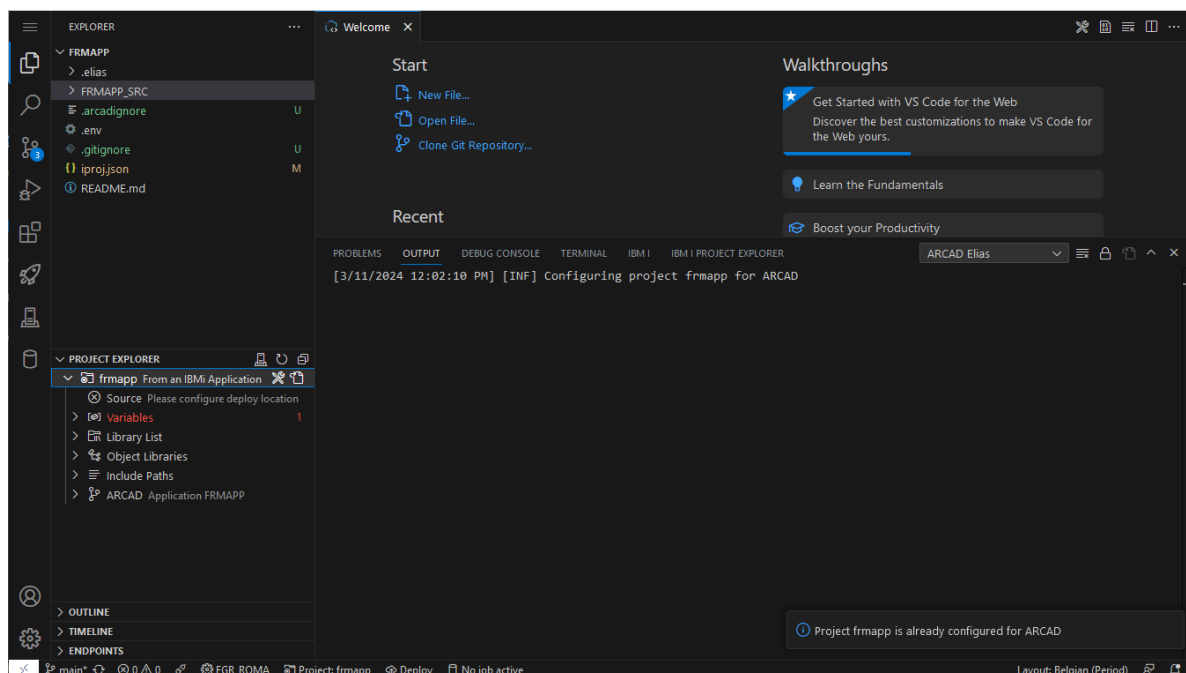
Getting Started – v 02.00.00

Complete the setup

When the connection is done, go to the node PROJECT EXPLORER, and after a right click on the project, select the option Configure project for ARCAD.

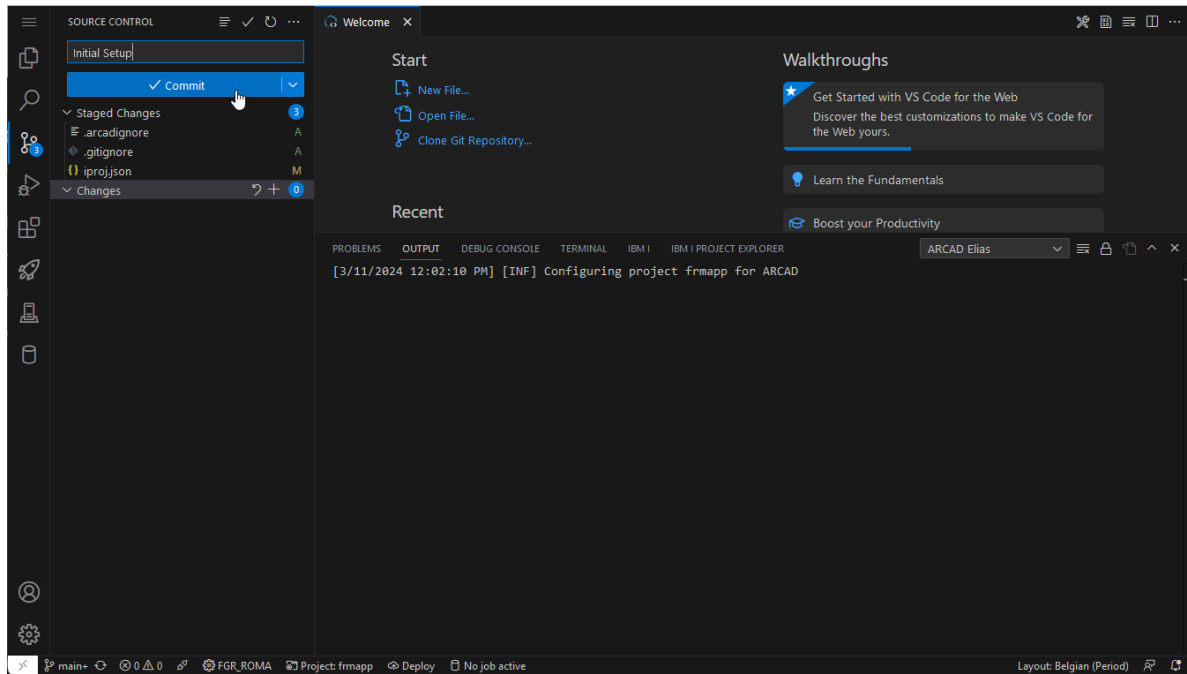


That will create some new files (.gitignore and .arcadignore)

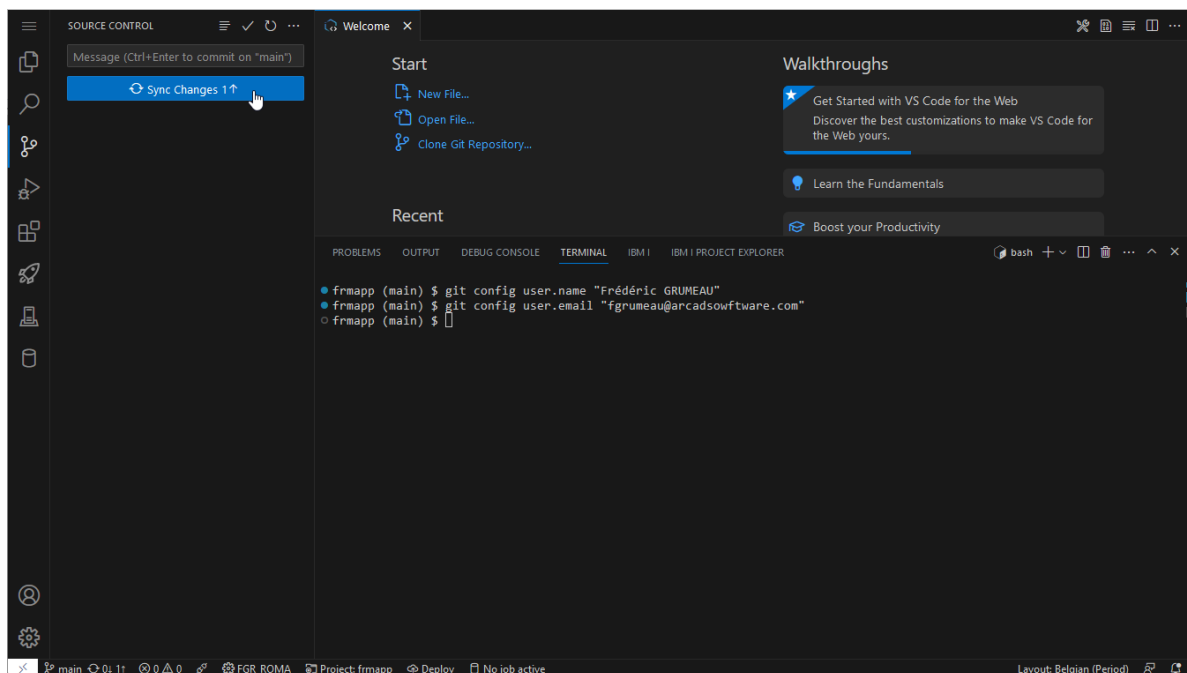


Go now in the Git extension to commit and push all changed and added files.

Stage the files, add a commit message and press on Commit.

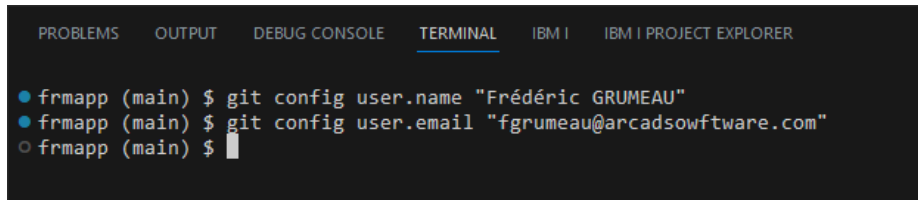


Then click on Sync Changes to push these files into the remote Git repo.



You may need to configure your name and email address for Git to perform these actions.

To do this, simply go to a terminal and run the commands **git config user.name "Your Name"** and **git config user.email "Your email"**

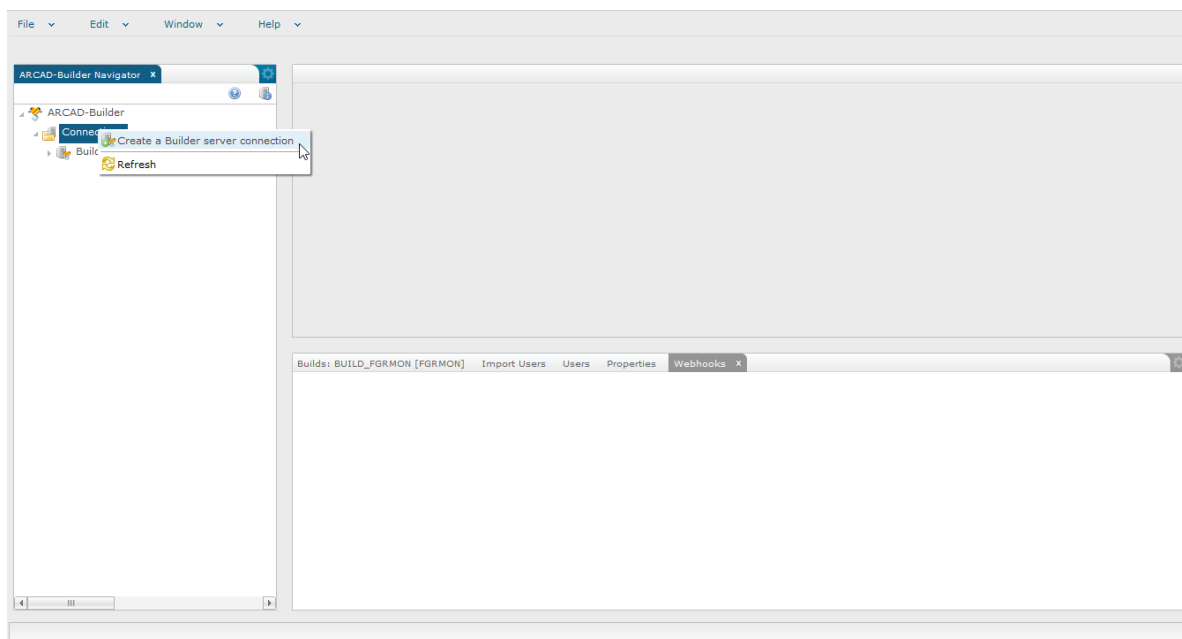
A screenshot of a terminal window within an IDE. The terminal has a dark background with light-colored text. At the top, there is a tab bar with several tabs: 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected and underlined), 'IBM I', and 'IBM I PROJECT EXPLORER'. The terminal content shows three lines of text, each preceded by a colored circle icon (blue, blue, and grey respectively). The first two lines are commands to configure Git user information, and the third line is a prompt for a new command.

```
● frmapp (main) $ git config user.name "Frédéric GRUMEAU"
● frmapp (main) $ git config user.email "fgrumeau@arcadsowftware.com"
○ frmapp (main) $
```

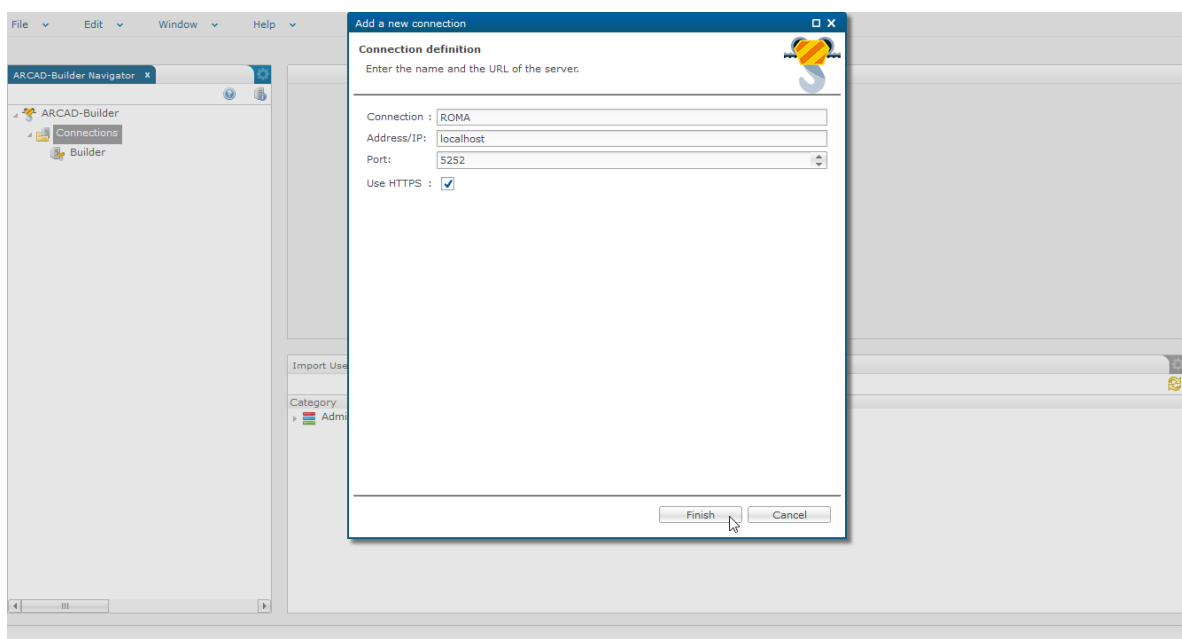
Configure ARCAD Builder

The last thing to do before using the IBM i Developer workspace is to configure ARCAD Builder for your application and add Builder webhooks to your Git repository.

Go to **Builder** and click on **Create a new Builder server connection** if needed.



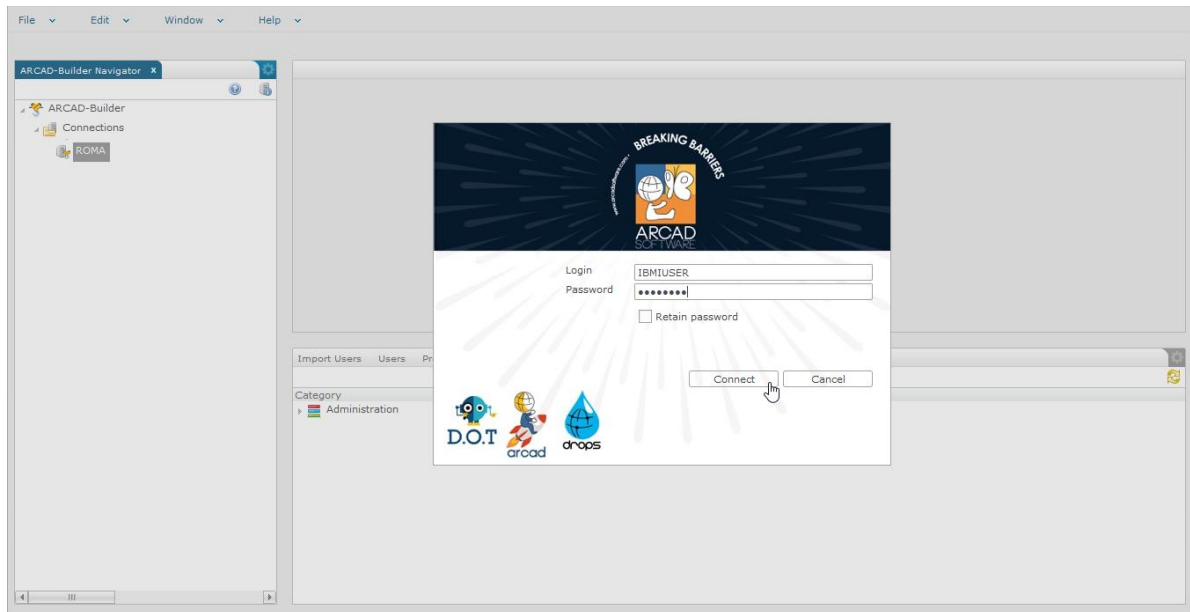
Fill the fields to connect to the Builder server and click on **Finish**.



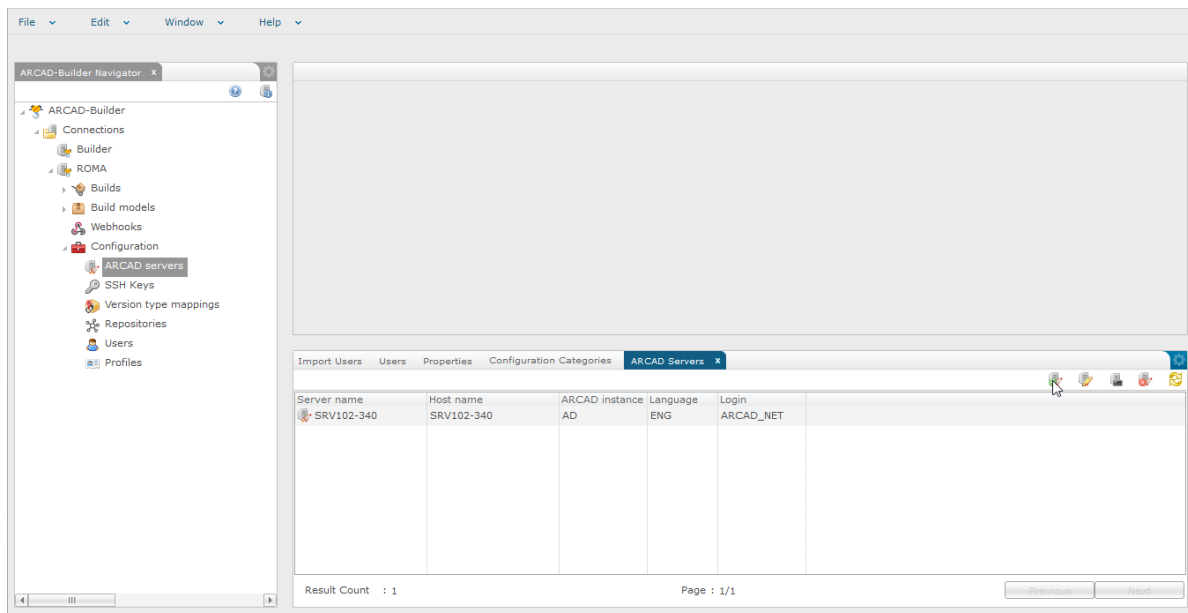
MERLIN

Getting Started – v 02.00.00

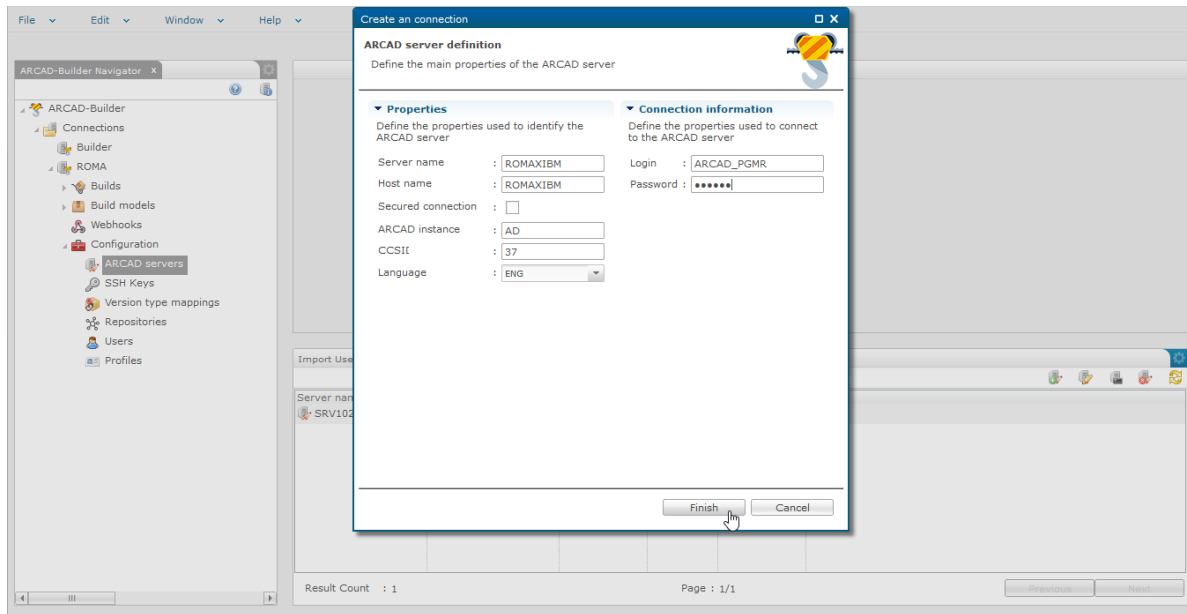
Connect to the server using your IBM i user.



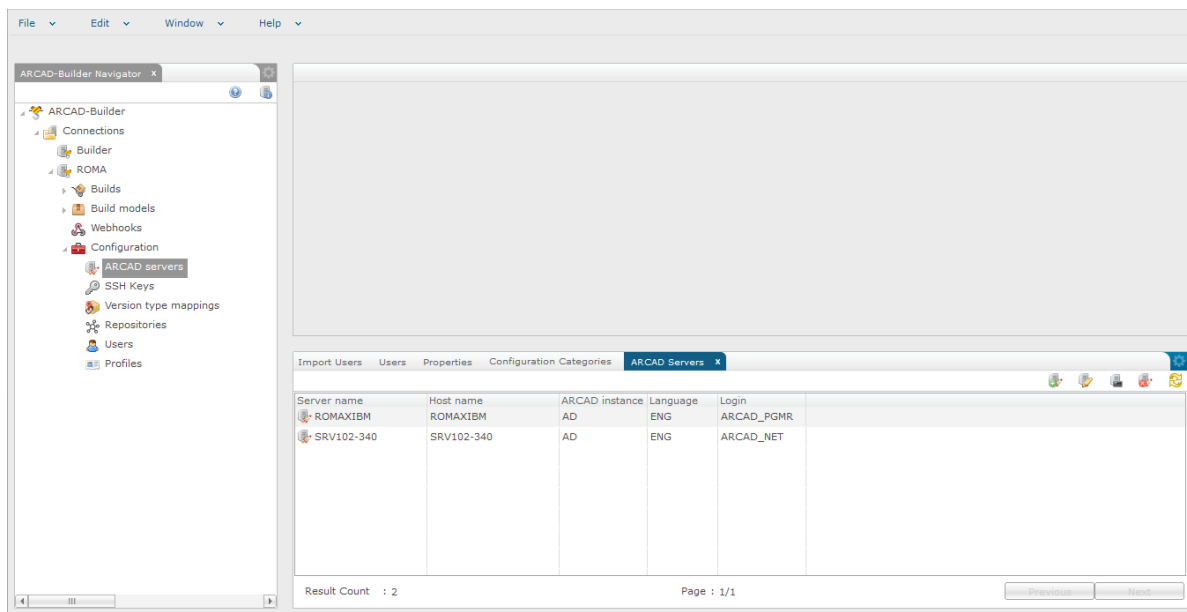
Go to the **Configuration** node and open the **ARCAD servers** view to add a connection to your development IBM i server if needed (if Builder was installed on an IBM i, the connection already exists).



Fill all information that are needed to complete the connection and click on **Finish**.



Your ARC4D Server is now displayed.

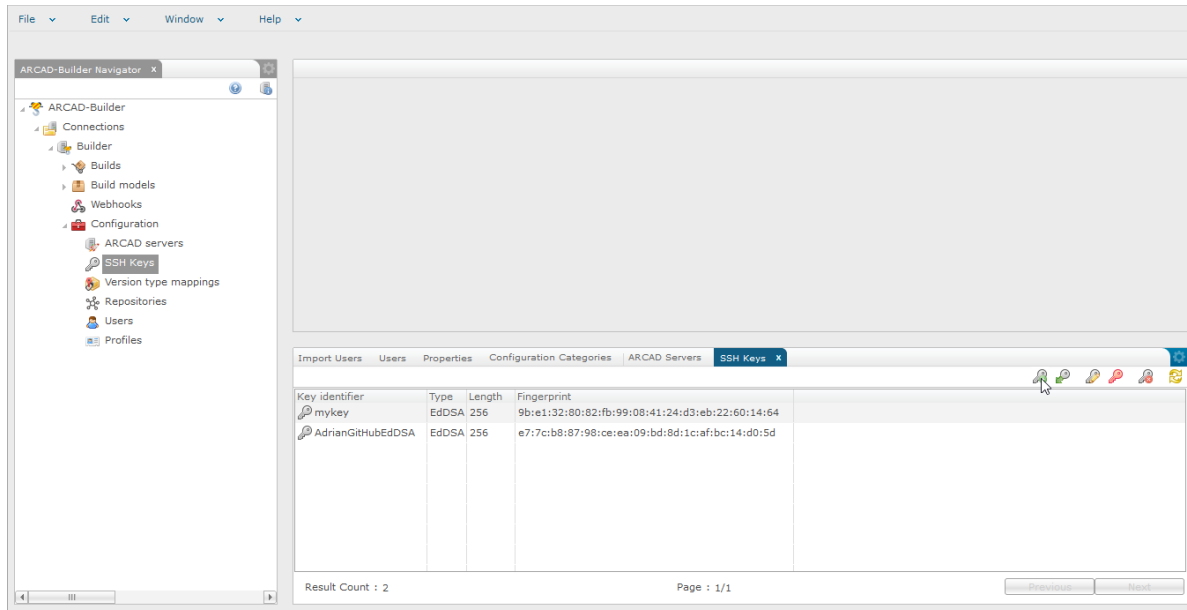


MERLIN

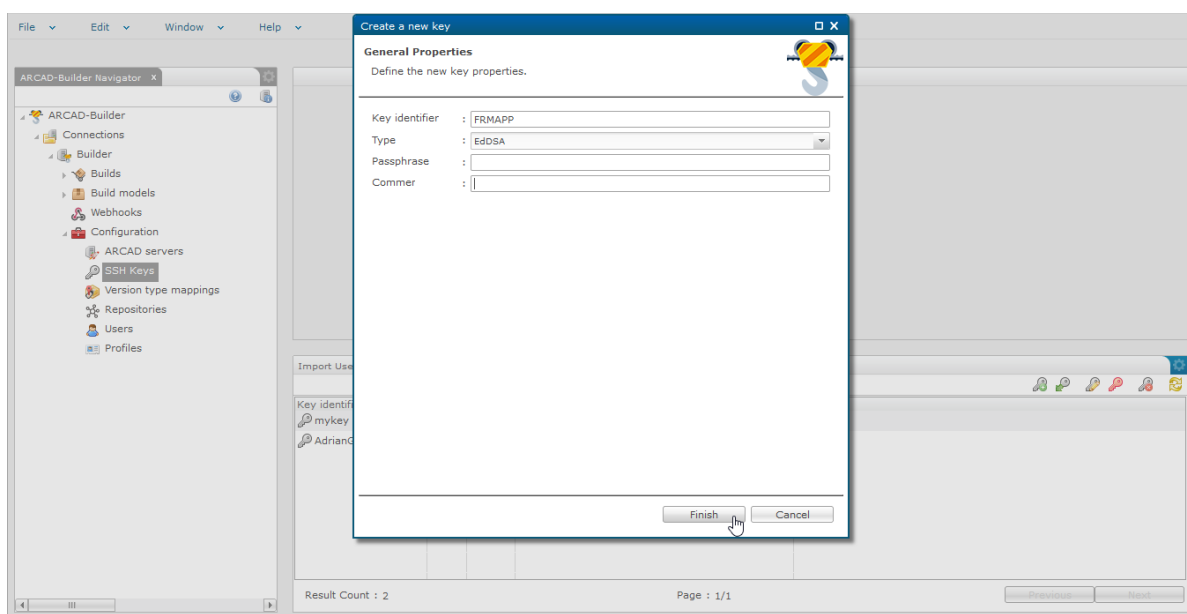
Getting Started – v 02.00.00

The next step of the Builder configuration is to create SSH Keys, that will be used later to connect to your Git repository.

On the SSH Keys part of the configuration, right-click or use the icon to create the SSH keys.

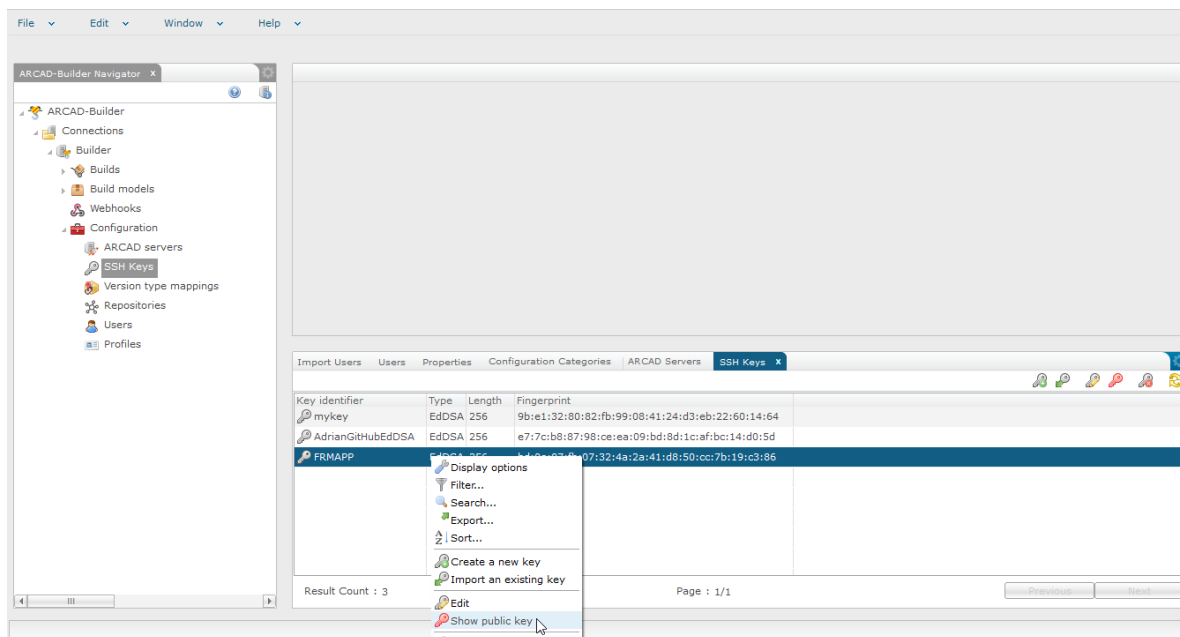


Fill the Key identifier and Type parameters and click on Finish.

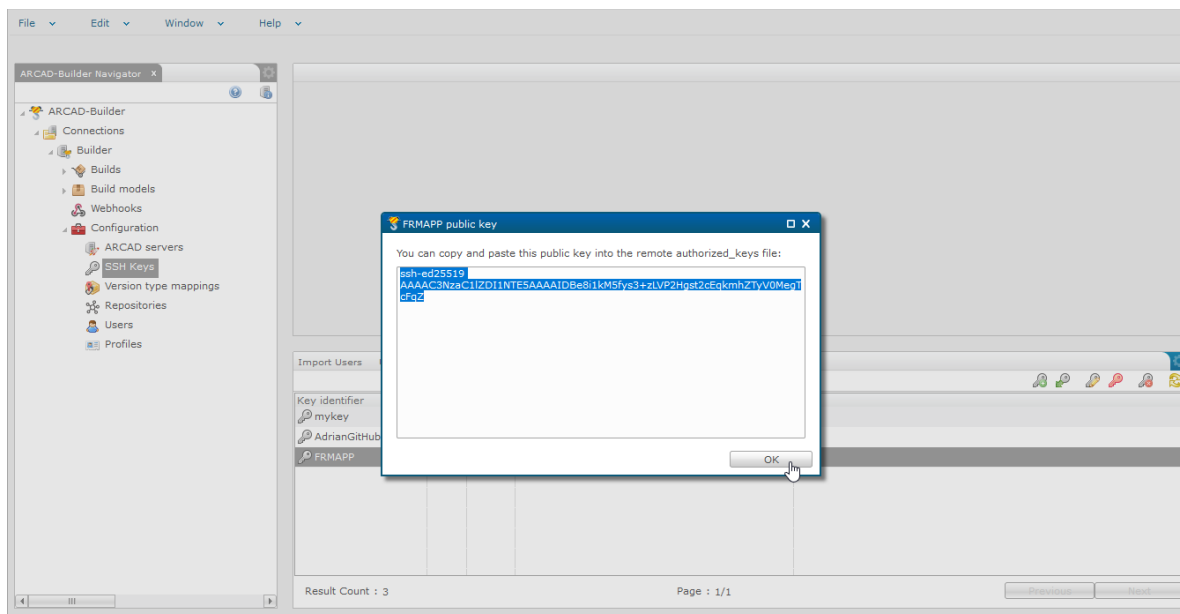


The new SSH keys are created. Display them to copy the public key.

Right-click on the Key and select the **Show public key** option.



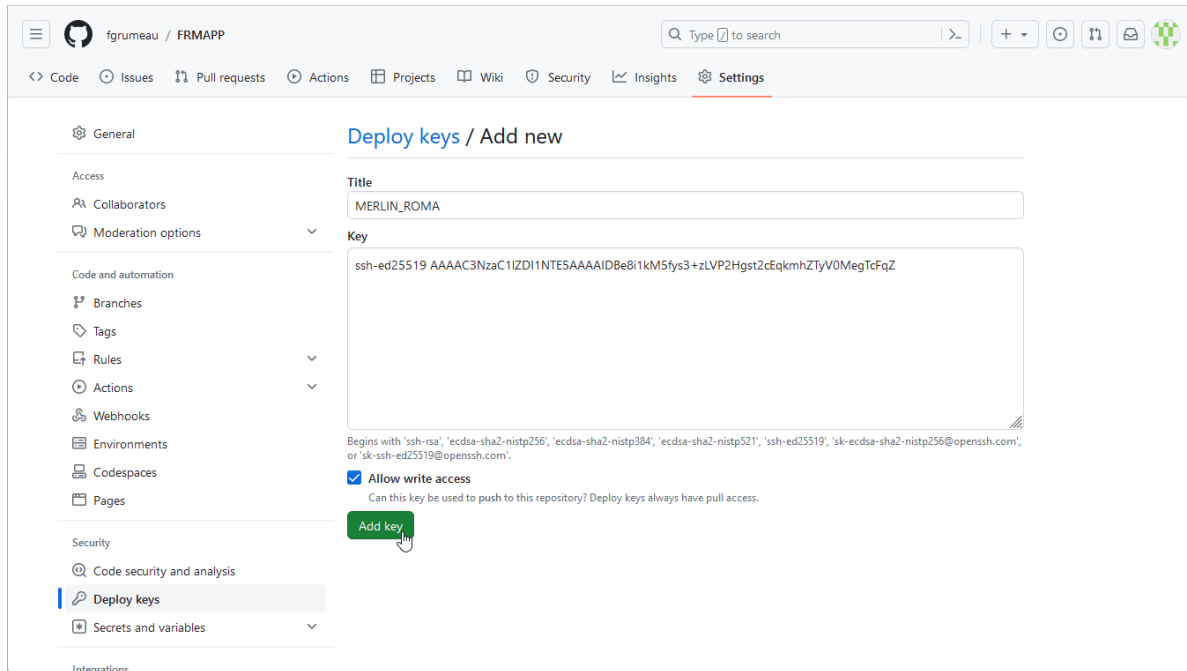
Select and copy the value of the key and click **OK**.



MERLIN

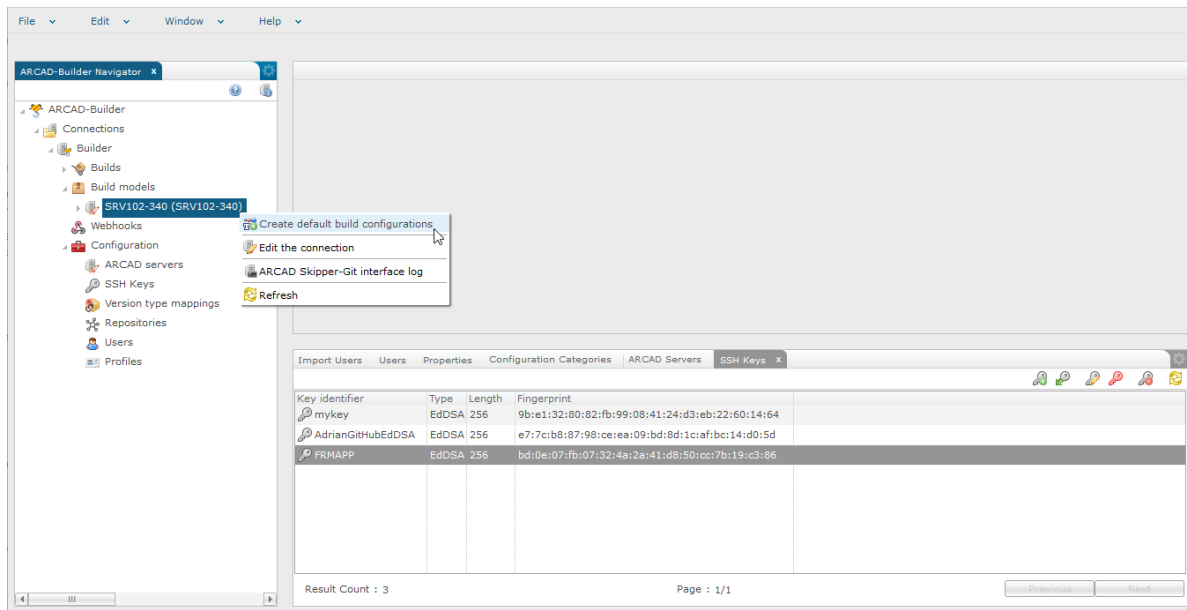
Getting Started – v 02.00.00

In your Git repository, go to Settings/Deploy keys part to add this new Key, then set a **Title**, paste the SSH key in the Key field, give the write permissions and click on **Add key**.



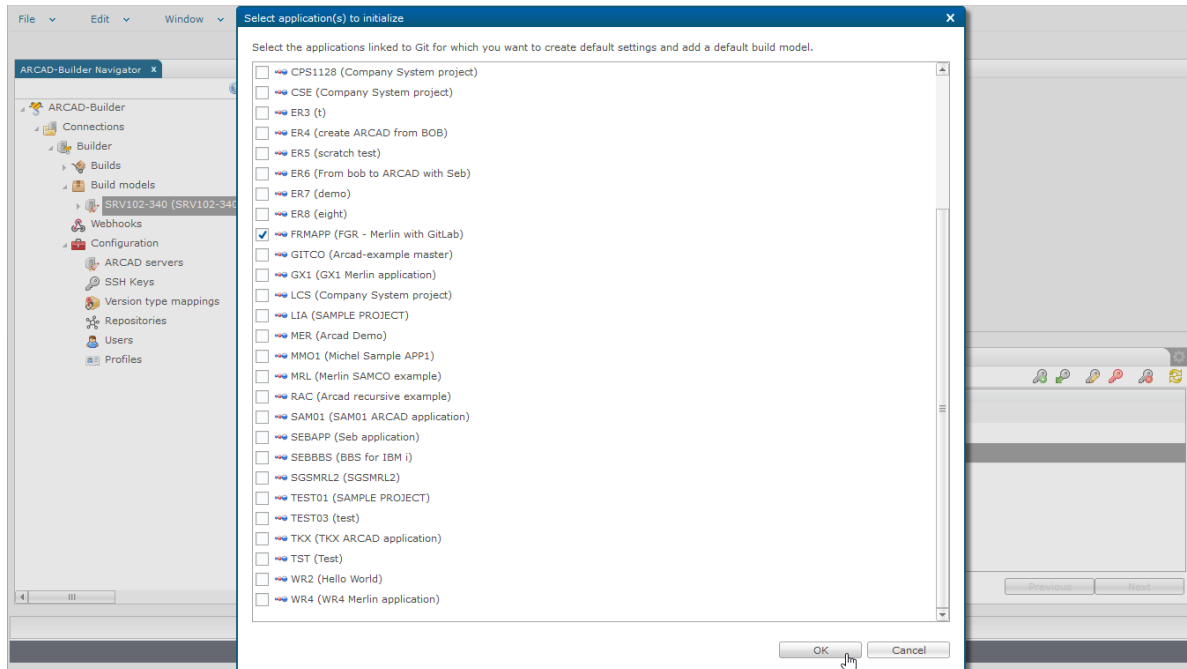
Return to Builder, on the Build models part, right-click on the IBM i server and select the **Create default build configurations** option.

This option allows you to automatically create a build model and the application settings.



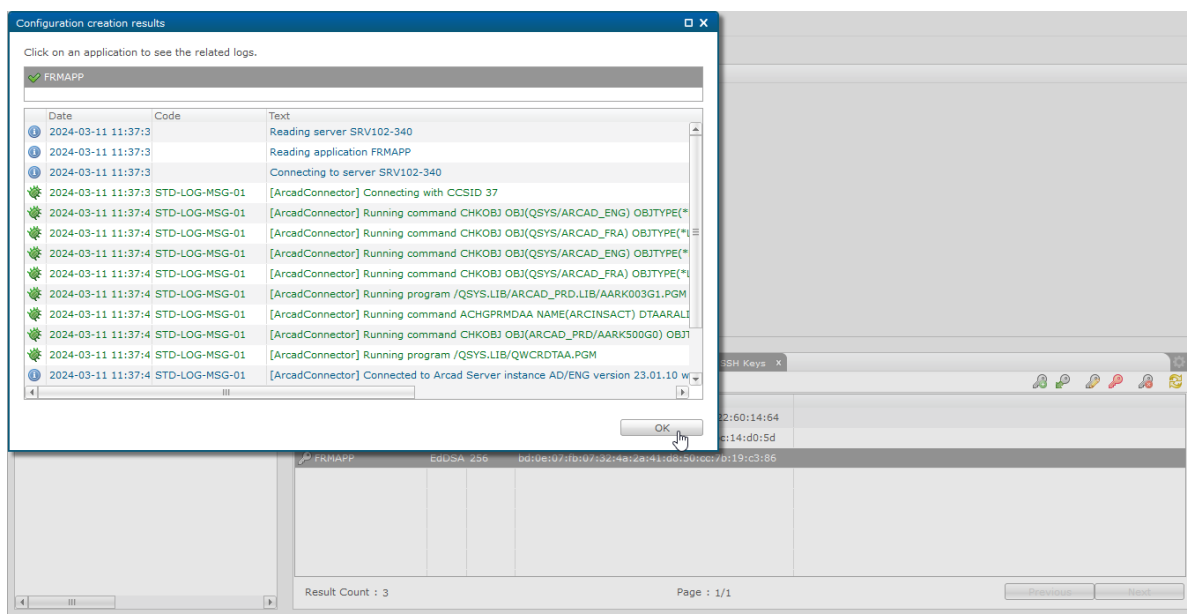
On the new window, you can see all the existing applications on the IBM i server.

Check the applications linked to a Git repository, in particular the application created before and click **Ok**.



A new window appears with the result of the creation of the default build configuration.

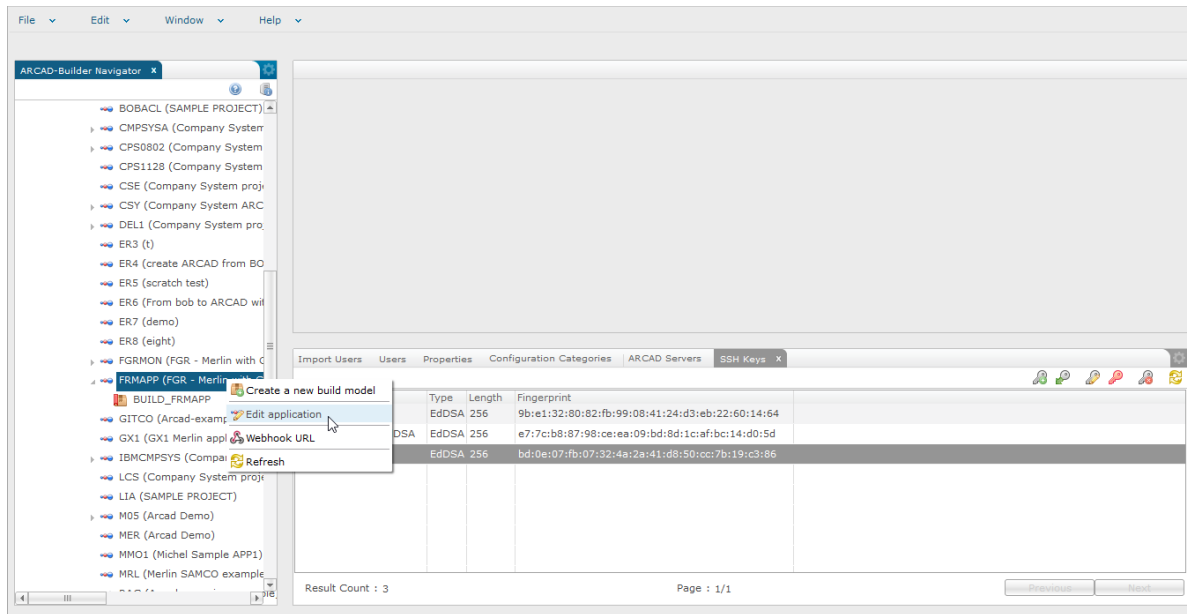
Check that everything is correct and click **OK**.



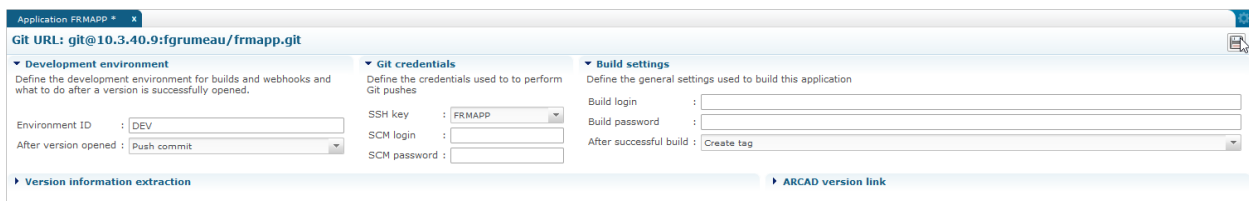
MERLIN

Getting Started – v 02.00.00

You have now a default build model for your application. Right-click on your application to edit it.



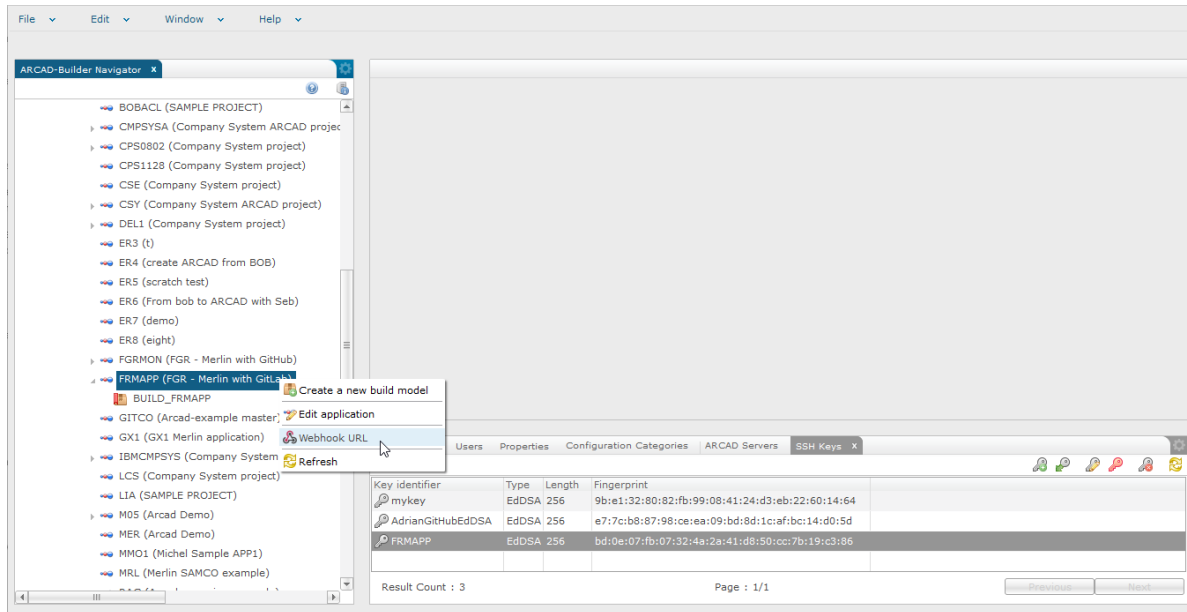
Fill the SSH key field with the SSH key previously calculated and save this modification.



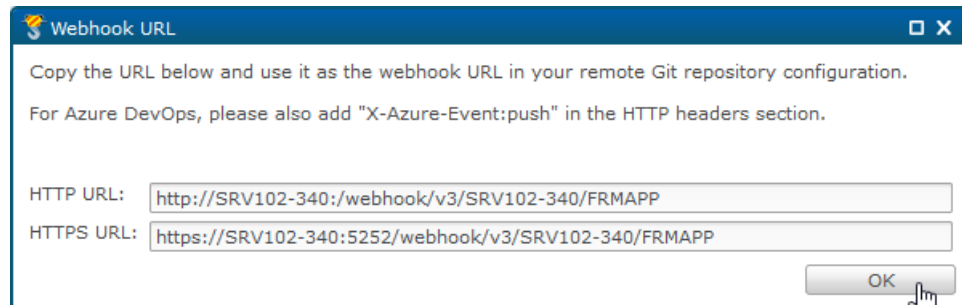
To use another profile than the one associated to the Builder job on IBMi, you must indicate a build login and a build password in the build settings part, but in that case you will need to have generated SSH keys for this profile and added them to your Git repository.

And now do a right-click on your application to display the URL of the webhooks.

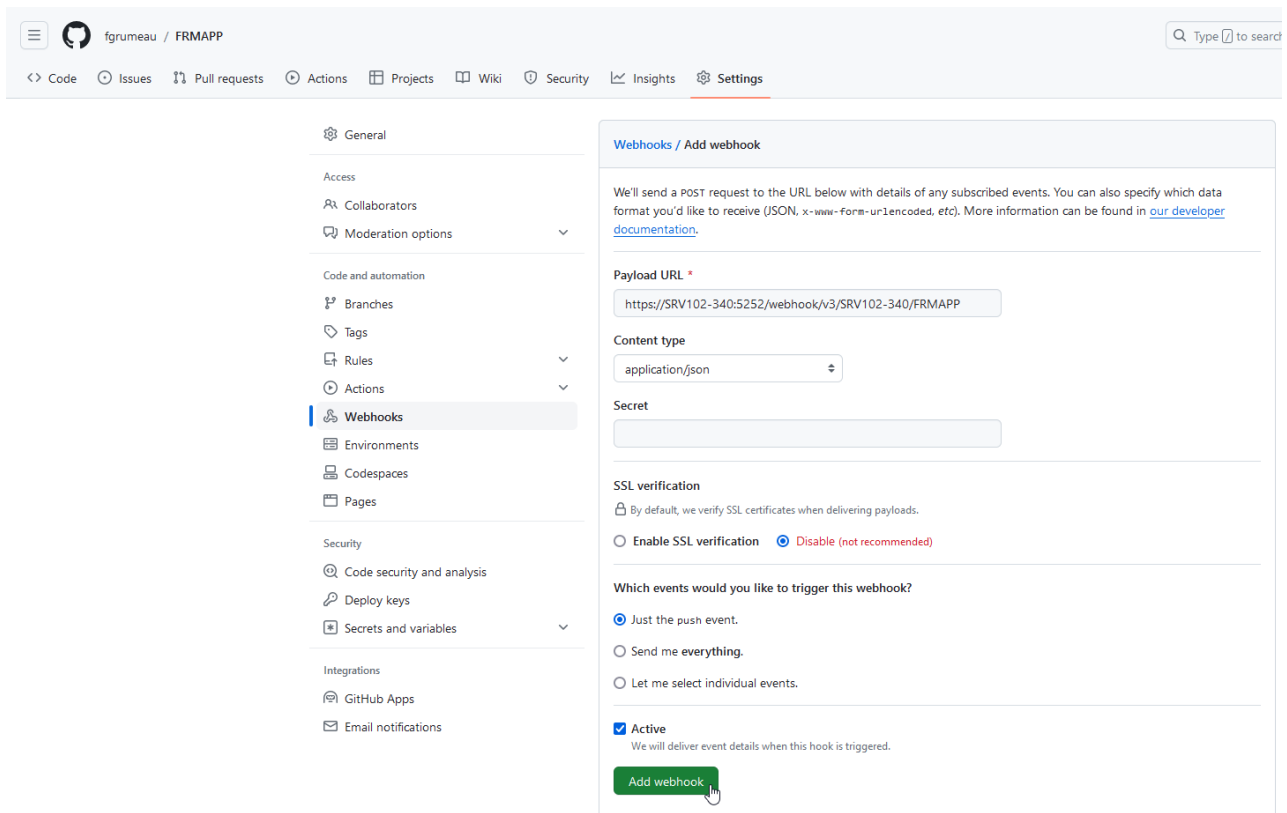
These webhooks are used to automatically create an Arcad version when creating a branch.



Copy the link you must use and click on **OK**.



In your Git repository, go to **Settings > Webhooks**, create a new webhook using the webhook URL and enable the **Push events** option.



With the v3 of the webhook, it is possible to use the complete URL or just the beginning part of the URL as shown in the screen above.

Here we use a repository on GitHub. On GitLab, it is more or less the same configuration.

It is possible not to use Webhooks.

In that case, the creation of a branch will not open a version and a deletion of a branch will not delete the corresponding version.

Because a version linked to a branch is mandatory, without Webhook this version will be created during the first build or the first compilation from the IBM i developer workspace.

In the same vein, if you don't setup Builder, it will be done automatically but without Git credentials or Build settings.

Now it is possible to use this setup for development.