Running a Git Server

on the AS/400

Agenda

- Introduction
- Git Basics
- Git Server Basics
- GitHub
- Installing a Git Server on the AS/400

Introduction

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CTO – Remain Software
TD/OMS and Gravity

All around techno freak
3D printing, IoT, Programming, DevOps, Web Graphics, Git fanboy.

Sloeber Committer, an IoT IDE

Eclipse Nebula Lead,
Committer for E4 Incubator.

In my free time I like to ..

Introduction

- Who are you
- Why are you here
- What is your skill level in
  - Windows command line
  - Unix command line
  - Git
- What are your goals

Introduction

What are my goals.

Show you the featuresof a Git Server.

Deploy and use a Git server on your IBMi

Teach you how to think when facing a similar challenge.

Introduction

- Did You:
  - Install Git?
  - Install Putty ?
  - Create a GitHub account ?
  - Get your account on the magic-ug machine ?

Git Basics

Git Basics

- What is Git
  - Repositories
  - The Working Directory
  - The Index
  - Commits

What is Git

Git Basics

Git Basics – What is Git

- Git is a Source Version Control System (VCS)

- What are the features of a VCS?
  - Notion of a repository
  - Check-in / Check-out
  - Keep a change history

Git Basics – What is Git

- Git is a Distributed (VCS)

A Distributed VCS is able to have a shared state across multiple remote machines.

Git Basics – What is Git

- Initial commands after installing

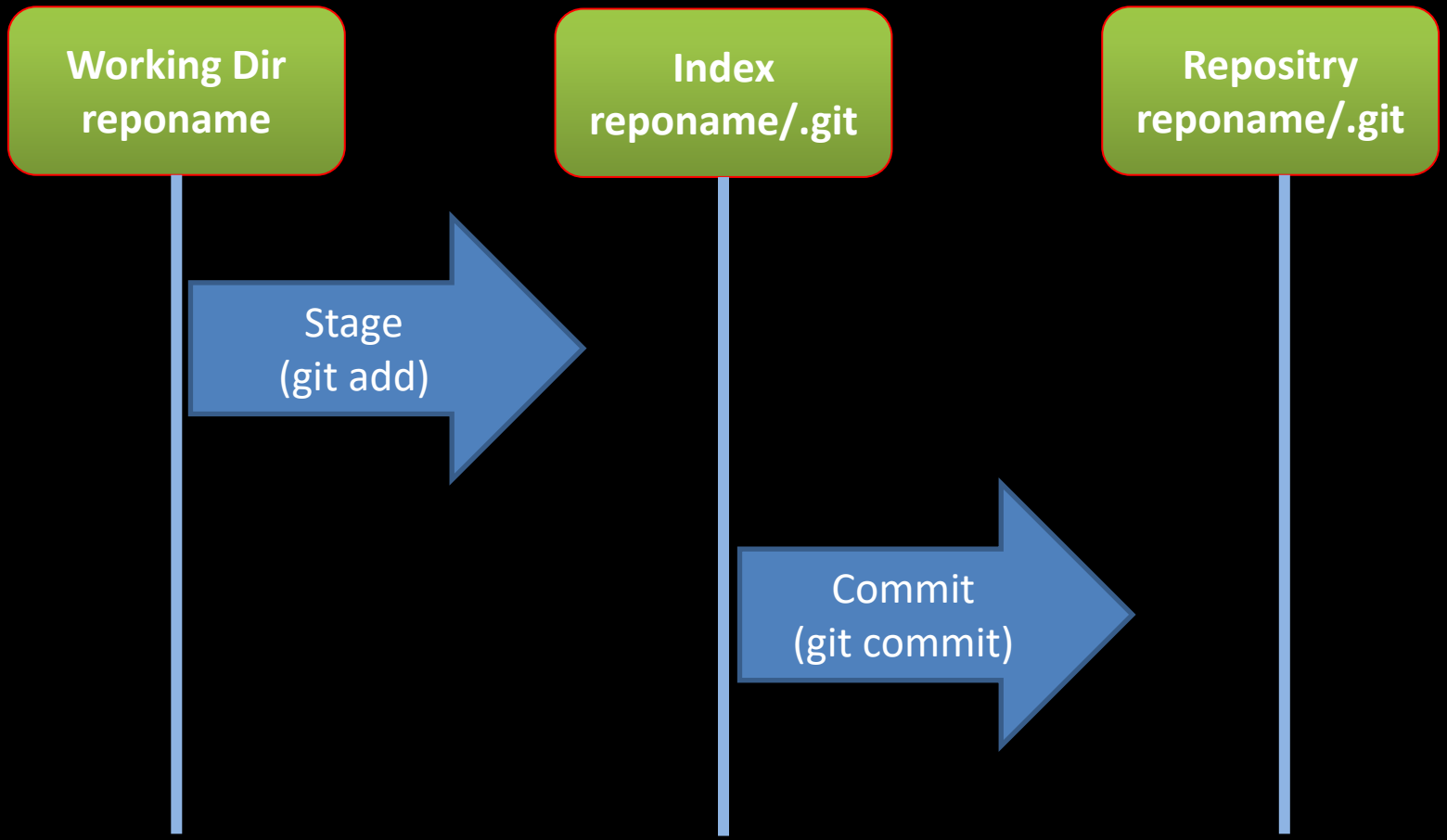
```
git config --global user.name “Your Name"
git config --global user.email user@example.com
```

Git Basics – What is Git

- The Git “Database”
  - **Working Directory**: Where your sources are
  - **Index**: Staging Area (in .git)
  - **Repository**: Final destination (in .git)

Git Basics – What is Git

- Change/Stage/Commit workflow



Git Basics – What is Git

- Create a repository
  - git init <*reponame*>
- Go into that Directory
  - cd <*reponame*>
- Create a file in whatever way
- Check the status often
  - git status
- Add it to the Index
  - git add <*filename*|*>
- Commit it to the repository
  - git commit –m “*commit message*”

Git Basics

Exercise

Git Basics – Exercise

- Tell Git who you are

git config --global user.name “*Your Name*"
git config --global user.email *user@example.com*

Git Basics – Exercise

- Create a git directory in your home directory
  - **mkdir c:\users*yourname*\git**
- Create some repositories in this directory
  - Use: **git init <*reponame*>**
- Go into this directory
  - **cd <*reponame*>**
- Create a file
- Check the status
  - **git status**
- Add to the index
  - **git add <*filename*>**
- Commit
  - **git commit –m "*message*"**

Git Server Basics

Git Server Basics

A git server:

is used to centralize commits from collaborators into a central repository;

enables users to copy (fork) the repositories to their own area on the server;

enables users to download (clone) the repositories to their laptops and upload (push) the changes back into the server;

is sometimes used for merging changes from collaborators into the master repository.

GitHub

GitHub

- Creating a GitHub account.
- Creating a Repository
- Cloning the Repository
- Pushing changes

GitHub

Exercise

GitHub

- Create a GitHub account
- Create a Repository (initialize with README)

Cloning

GitHub

GitHub - Cloning

Cloning is the act of downloading a repository from the Git Server.

Cloning is done from your git directory.

The cloning process will automatically create the repository directory.

The cloning process will associate the remote repository with the cloned (local) repository/

GitHub - Cloning

- Open the command line
- Go to your git directory
- Use: **git clone <*url*>**

```
C:\Users\jongw\git>git clone https://admin@localhost:8443/r/reponame.git
Cloning into 'reponame'...
remote: Counting objects: 3, done
remote: Finding sources: 100% (3/3)
remote: Getting sizes: 100% (2/2)
remote: Compressing objects: 100% (37/37)
remote: Total 3 (delta 0), reused 0 (delta 0)
Unpacking objects: 100% (3/3), done.
Checking connectivity... done.

C:\Users\jongw\git>cd reponame

C:\Users\jongw\git\reponame>ls
README.md
```

Cloning

Exercise

GitHub - Cloning

- Find the GitHub repository URL
- Open your command line
- Go to your git directory
- Use: **git clone <*url*>**
- Change into that directory
- Change or add a file
- Stage and commit that change

Pushing

GitHub

GitHub - Pushing

Pushing is the act of uploading committed changes into the remote repository.

GitHub - Pushing

- Open the command line
- Go to your git directory
- Change, stage and commit files

GitHub - Pushing

- Use: **git push origin master**
- **origin**: The remote repository
- **master**: The current branch

```
C:\Users\jongw\git\reponame>git add test.txt

C:\Users\jongw\git\reponame>git commit -m "my change"
[master 540d0de] my change
 1 file changed, 1 insertion(+)
 create mode 100644 test.txt

C:\Users\jongw\git\reponame>git push origin master
Counting objects: 3, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 296 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote: Updating references: 100% (1/1)
To https://admin@localhost:8443/r/reponame.git
   121b3ef..540d0de  master -> master
```

Pushing

Exercise

GitHub - Pushing

- Open your repository directory
- Change, Stage and Commit one or more files
- Push your changes: **git push origin master**
- Check your GitHub Repository

Installing GitBlit

Installing GitBlit

- Logging in with **putty**
- Download GitBlit with **wget**
- Unpack GitBlit with **jar**
- Changing the port properties
- Running GitBlit
- Working with GitBlit

Installing GitBlit

Exercises

Installing GitBlit - Putty

- Download **putty**
- Open your magic account
  putty <user>@magic.magic-ug.org
- Paste and enter these lines
  echo 1
  echo 2
  exit

Installing GitBlit - wget

- Open your magic account
  putty <*user*>@magic.magic-ug.org
- Download GitBlit
  wget <*url*>

http://dl.bintray.com/gitblit/releases/gitblit-1.8.0.zip

Installing GitBlit - jar

- Enter:
  jar -xcf gitblit-1.8.0.zip

Installing GitBlit - properties

- Go into the gitblit directory
- Find the file gitblit.properties
- Ask your teacher for free ports
- Add the following lines:

  server.httpPort = <port1>

  server.httpsPort = <port2>

```
include = defaults.properties
server.httpPort=9500
server.httpsPort=9501
```

Installing GitBlit – Run GitBlit

- Make sure you are in the gitblit-1.8.0 directory
- Run the following line
  java -jar gitblit.jar --dataFolder data
- Wait until the following lines appear:
  repositories identified with calculated…
- Press CTRL+C
- Run the server again
- Wait until the following lines appear:
  repositories identified with calculated…

Installing GitBlit – Working with GitBlit

- Open a browser
  http://magic.magic-ug.org:<*port*>
- Login with admin/admin
- Create a repository

The GitLab Server - Cloning

- Open the command line
- Go to your git directory
- Use: **git clone <*url*>**

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Cloning into 'reponame'...
remote: Counting objects: 3, done
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Unpacking objects: 100% (3/3), done.
Checking connectivity... done.

C:\Users\jongw\git>cd reponame

C:\Users\jongw\git\reponame>ls
README.md
```

Cloning

Exercise

GitHub - Cloning

- Find the GitBlit repository URL
- Open your command line
- Go to your git directory
- Use: **git clone <*url*>**
- Change into that directory
- Change or add a file
- Stage and commit that change

Pushing

GitHub

GitHub - Pushing

Pushing is the act of uploading committed changes into the remote repository.

GitHub - Pushing

- Open the command line
- Go to your git directory
- Change, stage and commit files

The GitBlit Server - Pushing

- Use: **git push origin master**
- **origin**: The remote repository
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Pushing

Exercise

GitHub - Pushing

- Open your repository directory
- Change, Stage and Commit one or more files
- Push your changes: **git push origin master**
- Check your GitLab Repository

RECAP

Thank You!!