

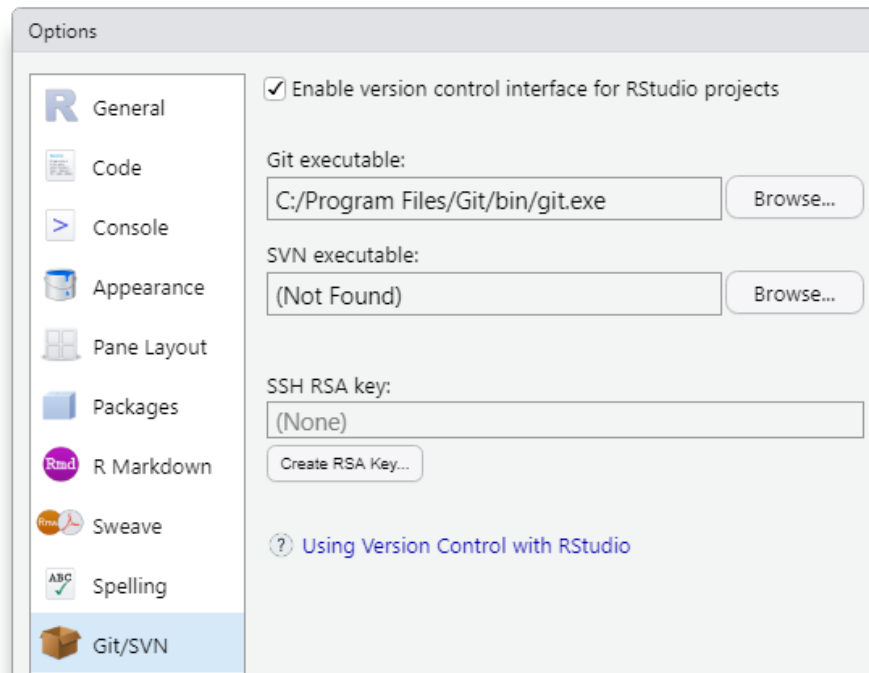
SSH Keys and Token Authentication for Git Operations

Why?

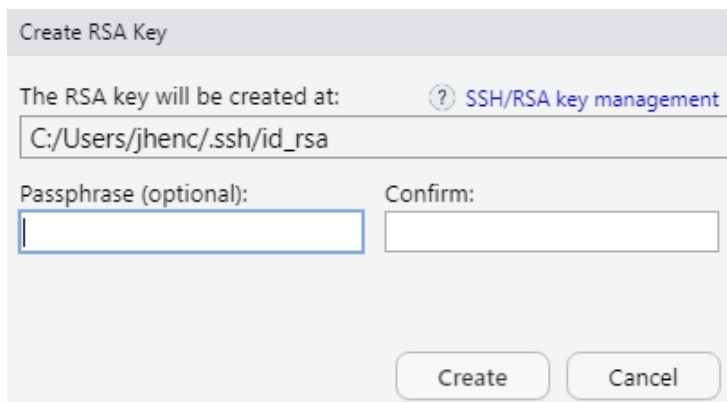
- Starting August 13th, account passwords will no longer be accepted for Git operations
- Tokens and SSH keys provide a more secure way of logging on than using a password alone

CREATING SSH KEYS (preferred method)

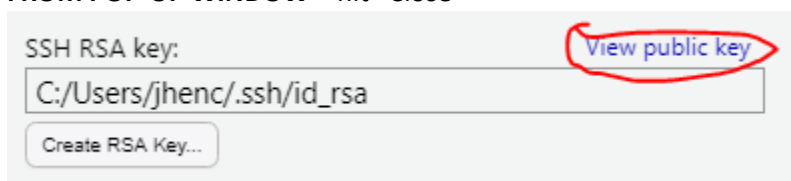
- Open RStudio > Navigate to “Tools” > “Global Options” > “Git/SVN” tab
 - If you have not previously created a SSH key, the “SSH RSA key” field should read “(None)”



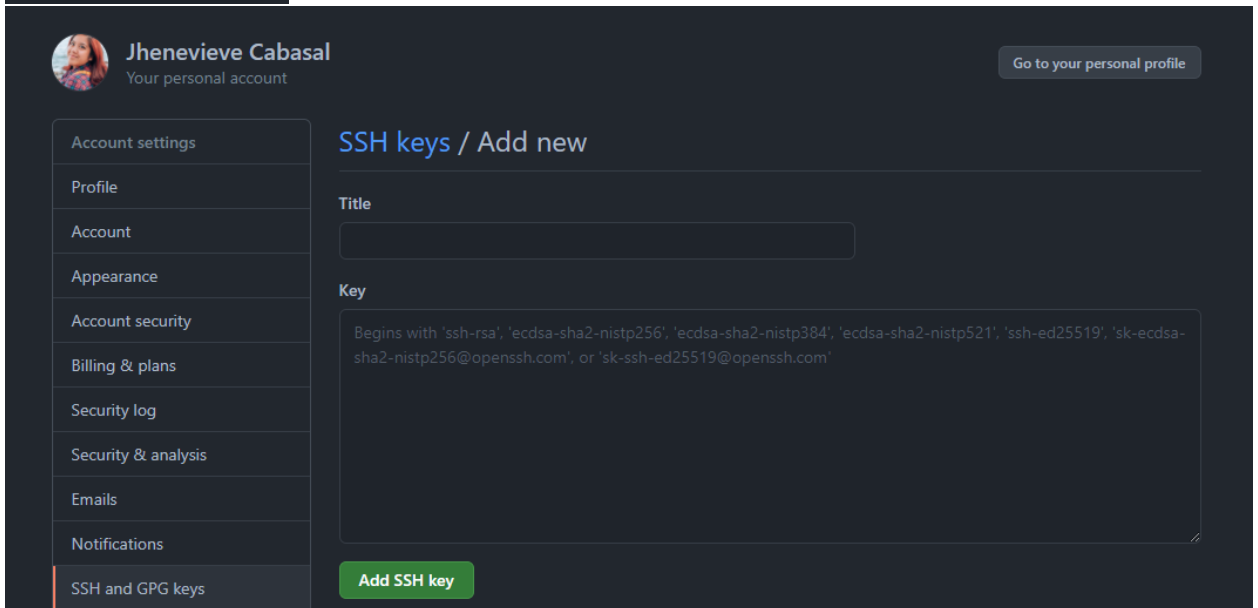
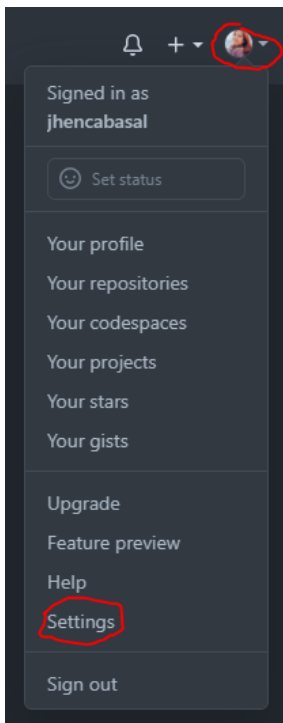
- Click “Create RSA Key...” > **IGNORE** “Passphrase (optional)” and “Confirm” fields > click “Create” > hit “Close”



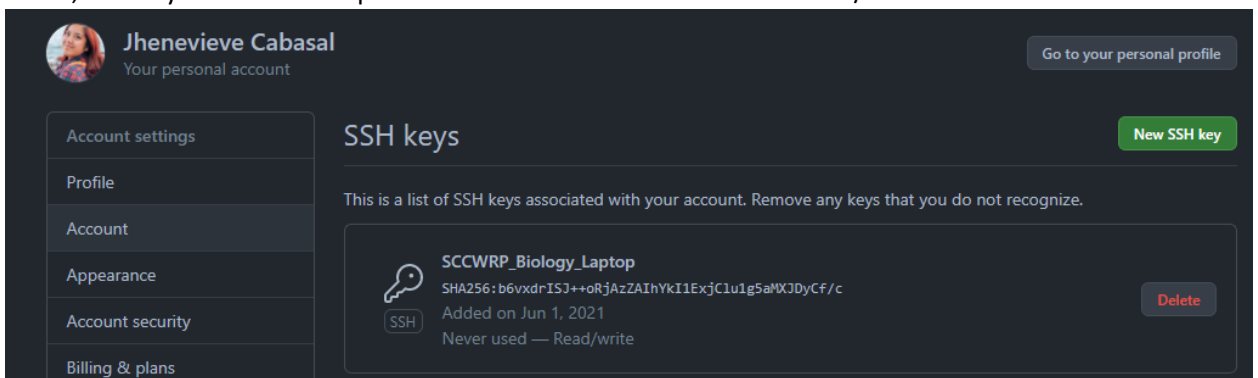
- Your newly generated SSH key should show up now > click “View public key” > **COPY ALL TEXT FROM POP-UP WINDOW** > hit “Close”



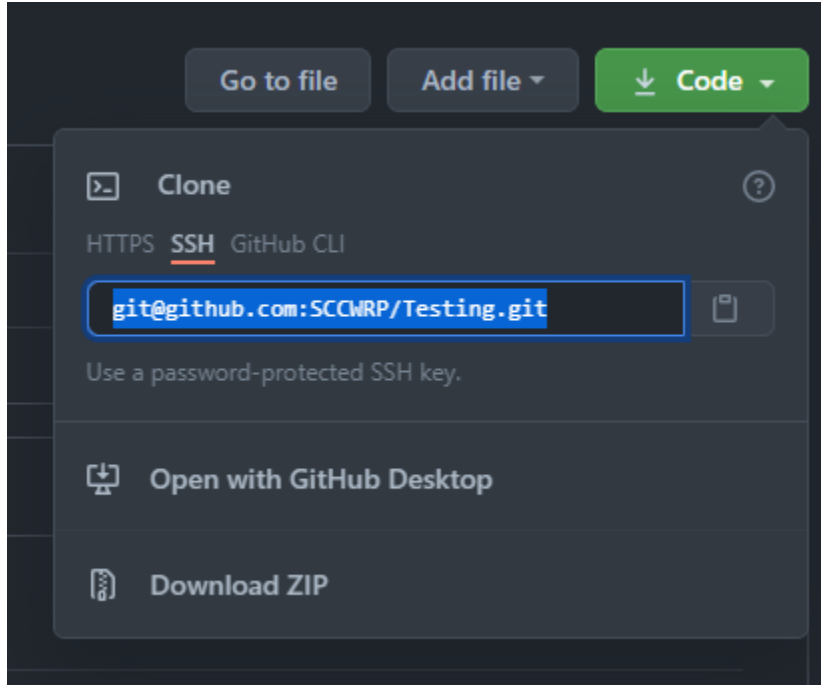
- Open up & login to GitHub on your browser: navigate to your profile in the top right corner > “Settings” > “SSH and GPG keys” > “New SSH key”



- For "Title", put any useful name for the computer you are using (ex: SCCWRP_Desktop_JC); **in the "Key" field, paste text copied from previous step** > click "add SSH key" and GitHub might ask to confirm password
- TADA, SSH key should show up! You'll also receive an email notification/confirmation.



- Cloning a repository:
 - Visit the main page of the repository > Select green “Code” option > Instead of copying HTTPS url to clone, you will now be using SSH



- Follow same procedure of cloning through preferred method using Version Control of RStudio or command line of GitBash
 - NOTE: RStudio will generate a pop-up asking for your permission to move forward once you’ve pasted SSH key > Type “yes” in text box; you should only need to do this step once per device
 - Suggestion: Generate an SSH for each computer/device you want to connect to GitHub from

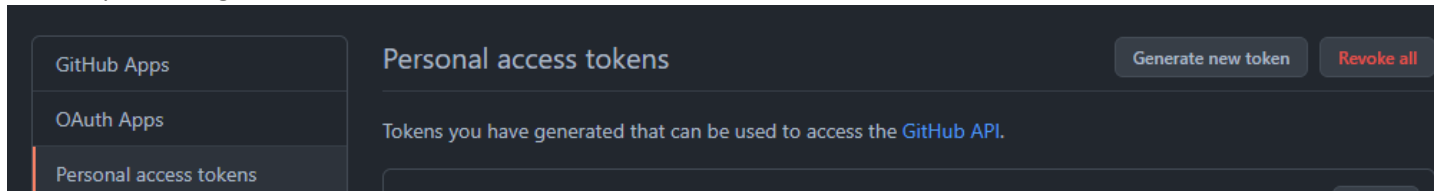
CHANGING URL (preferred method)

If you have already cloned your repository, but want to change from the HTTPS to the new SSH url:

- Visit the main page of the repository > Select green “Code” option > copy the SSH url as shown previously
- Open your local GitHub repo in RStudio > Navigate to ‘Terminal’ panel
 - Make sure the automatically populated path is the local location of your cloned repository
- Type in ‘git remote -v’ and hit ‘Enter’ to see what url your repo is currently using
- Type in ‘git remote set-url origin <paste new SSH url>’ and hit ‘Enter’ to update to the new SSH connection
- Again type ‘git remote -v’ and hit ‘Enter’ see confirm the new SSH url is now being used

CREATING A PERSONAL ACCESS TOKEN (PAT)

- Open up & login to GitHub on your browser: navigate to your profile in the top right corner > “Settings” > “Developer settings” > “Personal access tokens”



- Click “Generate new token” > give token a descriptive name > use your token to access repositories from the command line by selecting “repo” and “read:repo_hook” > click “Generate token”

<input checked="" type="checkbox"/> repo	Full control of private repositories
<input type="checkbox"/> repo:status	Access commit status
<input type="checkbox"/> repo_deployment	Access deployment status
<input type="checkbox"/> public_repo	Access public repositories
<input type="checkbox"/> admin:org	Full control of orgs and teams
<input type="checkbox"/> write:org	Read and write org and team membership
<input type="checkbox"/> read:org	Read org and team membership
<input type="checkbox"/> admin:public_key	Full control of user public keys
<input type="checkbox"/> write:public_key	Write user public keys
<input type="checkbox"/> read:public_key	Read user public keys
<input type="checkbox"/> admin:repo_hook	Full control of repository hooks
<input type="checkbox"/> write:repo_hook	Write repository hooks
<input type="checkbox"/> read:repo_hook	Read repository hooks
<input type="checkbox"/> admin:org_hook	Full control of organization hooks
<input type="checkbox"/> gist	Create gists
<input type="checkbox"/> notifications	Access notifications
<input type="checkbox"/> user	Update all user data
<input type="checkbox"/> user:email	Access user email addresses (read-only)
<input type="checkbox"/> user:follow	Follow and unfollow users
<input type="checkbox"/> delete_repo	Delete repositories

- Generated tokens can now be used instead of a password when performing Git operations (only over HTTPS)
- If you are not prompted for your username and password, your credentials may be cached on your computer.

For more information, view these resources:

- <https://github.blog/2020-12-15-token-authentication-requirements-for-git-operations/>
- <https://docs.github.com/en/github/authenticating-to-github/keeping-your-account-and-data-secure/creating-a-personal-access-token>
- <https://happygitwithr.com/ssh-keys.html>
- <https://happygitwithr.com/credential-caching.html#credential-caching>