

Git refresh

Version control in Districon Solutions



Share best practices of working with GIT

1. Explain the story of GIT
2. Describe guidelines/principles for Districon Solutions
3. Use offline
4. Review code changes
5. Show examples of GIT trees

1. Explain the story of GIT

- ... a system that records changes to a file over time so you can recall specific versions later
- Instead of saving hundreds of copies like v1, v1a, _old, 181022_old_, etc.
- Districon first used GIT in the Nampak GOBSS project (Q1-2015)

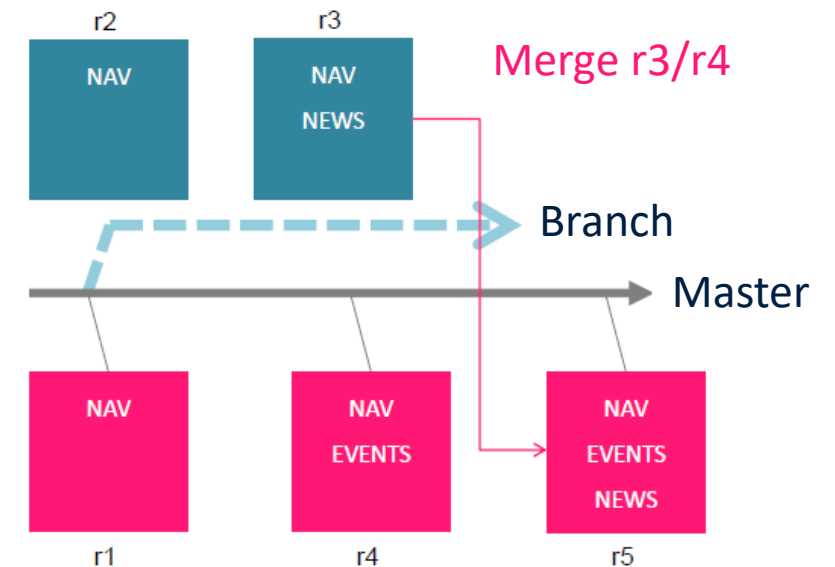
Main benefits

- Backup and restore
- Sync with multiple computers
- Work in a team
- Safely create and test new features

1. Explain the story of GIT

Vocabulary

- GIT = version control software (=> within DISTRICON often used as synonym for version control)
- Repository = database where files are stored (=> DISTRICON09, Martijn/Erik/Imke have admin access rights)
- Master = main trunk of GIT tree
- Head = latest revision in the repository
- Origin = refers to a version pulled from the central (server) repository
- Pull = retrieve all commits from central repository
- Push = store local changes to central repository
- Revert/stash = throw away your working copy and restore last revision
- Branch = duplicate copy of code used for a feature/development
- Merge = integrate changes from two different branches
- Resolve = manual fix conflicts in a merge action



2. Describe guidelines/principles for Districon Solutions

- Fix two bugs => two separate commits
- Make small commits
 - Easier to understand
 - Easier to roll back
 - Less conflicts
- Commit/update often
- Write **good** commit messages (see next slide)

But... do not commit

- Broken code
- Something that is half done (split in smaller chunks)
- Untested work



	COMMENT	DATE
○	CREATED MAIN LOOP & TIMING CONTROL	14 HOURS AGO
○	ENABLED CONFIG FILE PARSING	9 HOURS AGO
○	MISC BUGFIXES	5 HOURS AGO
○	CODE ADDITIONS/EDITS	4 HOURS AGO
○	MORE CODE	4 HOURS AGO
○	HERE HAVE CODE	4 HOURS AGO
○	AAAAAAA	3 HOURS AGO
○	ADKFJ\$LKDFJSDKLFJ	3 HOURS AGO
○	MY HANDS ARE TYPING WORDS	2 HOURS AGO
○	HAAAAAAAANDS	2 HOURS AGO

AS A PROJECT DRAGS ON, MY GIT COMMIT MESSAGES GET LESS AND LESS INFORMATIVE.

2. Describe guidelines/principles for Districon Solutions

- “A diff will tell you *what* changed, but only the commit message can properly tell you *why*.”
 - (<http://who-t.blogspot.co.at/2009/12/on-commit-messages.html>)

Answer three questions in a **good** commit message:

- Why it is necessary? E.g. bug-fix, add feature, improve performance, etc.
- How does it address the issue? Explain the approach.
- What effects does the patch have? E.g. side effects, etc.

Proposed ‘standard’ way of working for Districon Solutions:

- [Prefix] to denote type of commit; where we distinguish ‘bugfix’, ‘new feature’, ‘restructure’, ‘merge’
- After prefix describe the subject in the first line
- In the body <after new line> write the approach and effects
- Use tags to refer to deployed versions at the customer, like **GOBSS 1.8.3**

3. Use offline

- Check out same (master) version before starting separate developments
- Copy to a USB stick and paste on local laptops

One user should execute all GIT actions

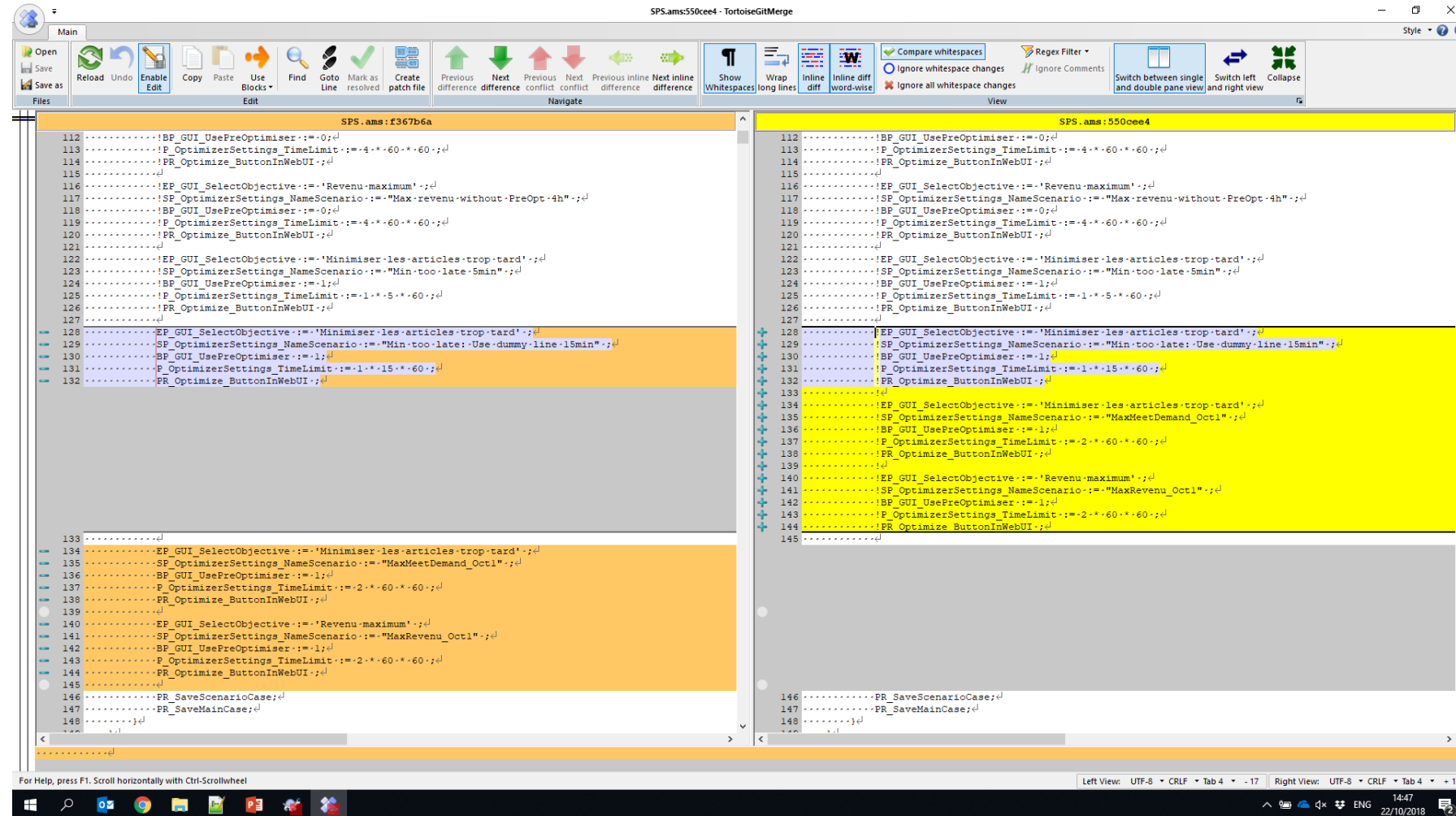
- Go back to start version, create branches for all developers, e.g. their 3-digit abbreviations TBU, IGE, KHU, EHO
- If someone does a 'commit', copy/paste using USB in the developers' branch
- Redo until all features of all developers are part of the local GIT tree
- Merge all commits to a new master version (to be pushed if network access is available again)
- All local developments can be removed/deleted as they are part of the pushed revisions in the master commit

Warning: Please make sure all USB sticks are formatted after the offline work cycle

Workaround method if Districon server is not accessible or if pull/push is too slow

4. Review of code changes

- Open **GIT Show Log**
- Select a revision/commit
- Check below which files are added/deleted/modified
- Double-click a modified file to review code changes



5. Show examples of GIT trees

Nampak GOBSS

- First Districon GIT project
- Large commits
- Too many commits
- Messages not useful for colleagues

C:\Users\eho\Documents\AIMMS projects\Nampak GOBSS GIT - Log Messages - TortoiseGit

<All Branches> From: 26/02/2015 To: 06/04/2018 Filter by Subject, Messages, Paths, Authors, Emails, SHA-1, Refname Author Email

Graph

Actions

Message

Author

Date

Merge branch 'ProfitOptimization' of //districon09/Nampak GOBSS GIT into ProfitOptimization	Maartje Jacobs	01/05/2015 15:18:26
fixed jobs in optimization (not finished yet)	Maartje Jacobs	01/05/2015 15:17:16
Latest version Erik	Erik Hoving	01/05/2015 16:15:53
Optimize button adjusted	Erik Hoving	01/05/2015 09:46:45
Procedures linked to optimize button	Erik Hoving	01/05/2015 08:38:25
Prepared for combined 1 and 2 run.	Erik Hoving	30/04/2015 21:53:42
Merge branch 'ProfitOptimization' of //districon09/Nampak GOBSS GIT into ProfitOptimization	Erik Hoving	30/04/2015 18:23:05
Merge branch 'master' into ProfitOptimization	Maartje Jacobs	30/04/2015 17:02:14
begin met fixed job	Maartje Jacobs	30/04/2015 16:59:16
Merge branch 'ProfitOptimization' of //districon09/Nampak GOBSS GIT into ProfitOptimization	Maartje Jacobs	30/04/2015 15:25:21
Optimization page, select optimization horizon, select parameters, optimization button	Maartje Jacobs	30/04/2015 15:19:10
Mould Costs and Overhead Recovery Costs added to Step 2	Erik Hoving	30/04/2015 18:18:38
- Step 2 works and gives explainable results	Erik Hoving	30/04/2015 14:38:15
Merge branch 'BottleScheduling' into ProfitOptimization	Erik Hoving	30/04/2015 08:14:42
All constraints do work, 13 weeks optimization for 3 furnaces takes infinite time. This should...	Erik Hoving	30/04/2015 08:07:34
Almost finished with translating current Campaigns to Input for Bottle Scheduling (basic 13 ...	Erik Hoving	28/04/2015 18:25:26
Step2 according to mathematical description added to M4 Optimization in separate book	Erik Hoving	28/04/2015 14:17:01
Profit optimization step 1	Maartje Jacobs	29/04/2015 18:13:40
stap 1 verder uitgewerkt	Maartje Jacobs	29/04/2015 09:39:01
meer kosten toegevoegd (nog niet compleet)	Maartje Jacobs	24/04/2015 13:29:51
poep	Maartje Jacobs	24/04/2015 08:52:23
gepruts	Maartje Jacobs	23/04/2015 14:56:41
aanpassingen nieuwe variabelen	Maartje Jacobs	23/04/2015 10:28:11
Profit optimization with $X_{f,w,c}$ as binary variables	Maartje Jacobs	22/04/2015 15:54:11
update optimalisatie	Maartje Jacobs	22/04/2015 12:44:50
Merge branch 'master' of //districon09/Nampak GOBSS GIT into Optimization	Maartje Jacobs	22/04/2015 09:16:12
Merge branch 'master' of //districon09/Nampak GOBSS GIT into Optimization	Maartje Jacobs	22/04/2015 09:09:49
Start optimalisatie	Maartje Jacobs	22/04/2015 09:03:24
wegschrijven naar DB, dan wordt versie nu ook "Current_Database" versie	Inger	19/06/2015 15:28:42
Merge branch 'DR Latest Adjustments'	Inger	19/06/2015 11:08:14

SHA-1: 06808e2cda4b398a443204f686117368305070d3

* Step2 according to mathematical description added to M4 Optimization in separate book

Path	Extension	Status	Lines added	Lines removed
MainProject\GOBSS GIT.ams	.ams	Modified	467	2
MainProject\GOBSS GIT.ndh	.ndh	Modified	65	0

Showing 753 revision(s), from revision 8d4eba9 to revision a58479a - 1 revision(s) selected, 0 file(s) selected

☐ Show Whole Project ☒ All Branches

Filter paths

Refresh Statistics Walk Behaviour View

Help OK

5. Show examples of GIT trees

Saverglass

- Version names in message
- Commit messages can still be improved

C:\Users\eho\Documents\AIMMS projects\Saverglass GIT - Log Messages - TortoiseGit

<All Branches> From: 24/08/2018 To: 05/10/2018 Filter by Subject, Messages, Paths, Authors, Emails, SHA-1, Refname

Graph

Actions

Message

Author

Date

Working dir changes		
origin/RTE10 commit	Robbert Teixeira	05/10/2018 16:50:57
Temp commit	Robbert Teixeira	05/10/2018 14:05:15
master origin/master Verified in AIMMS version 4.59.4.1 that Gantt chart bug ...	Erik Hoving	05/10/2018 13:34:54
Merge remote-tracking branch 'remotes/origin/Youssef0410'	Erik Hoving	05/10/2018 13:03:35
origin/Youssef0410 Small update Color Campaign	Youssef Touri	04/10/2018 10:54:02
Merge remote-tracking branch 'remotes/origin/Youssef0110'	Erik Hoving	05/10/2018 13:03:08
origin/Youssef0110 Translation	Youssef Touri	01/10/2018 15:52:32
Youssef small Translation	Youssef Touri	01/10/2018 15:51:40
v4.0 Version for demonstration at Saverglass management meeting	Erik Hoving	02/10/2018 00:08:53
Result after 2 hours (with orders on dummy line or produced to full extend)	Erik Hoving	01/10/2018 22:34:01
Plan on dummy line is possible	Erik Hoving	01/10/2018 16:51:17
1 run per order (not line dependent)	Erik Hoving	01/10/2018 10:10:32
After long runs overnight	Erik Hoving	01/10/2018 08:30:58
Before running a few scenarios with local optimizer	Erik Hoving	30/09/2018 20:33:37
Percentage of ordered demand planned after 4 hours in Max Revenue scenario is 90%.	Erik Hoving	29/09/2018 20:51:24
Merge remote-tracking branch 'remotes/origin/TestMAJ'	Erik Hoving	29/09/2018 18:18:23
origin/TestMAJ Push did not succeed, perhaps with new branch?	Maartje Jacobs	29/09/2018 12:22:45
Min fraction of order produced, initialized on 0. Start adjusting domain (BP_OrderAllowedOn...	Maartje Jacobs	28/09/2018 18:13:27
Fix jobs and period fixed	Maartje Jacobs	28/09/2018 17:34:46
Max Revenue scenario for 4 hours. Gap < 10%!	Erik Hoving	29/09/2018 18:06:49
Sellable over production	Erik Hoving	28/09/2018 18:03:44
v3.7 Final prototype without optimization in the case file	Erik Hoving	28/09/2018 15:26:06
v3.6.2 Send Correct Identifiers (including optimization results)	Erik Hoving	28/09/2018 15:16:20
v3.6.1 (ind 3 optimization results) and v3.6 (without the optimization)	Erik Hoving	28/09/2018 14:38:12
few checks, still not merged correctly	Erik Hoving	28/09/2018 13:42:58
Merge remote-tracking branch 'remotes/origin/MAJ'	Erik Hoving	28/09/2018 13:37:07
New data available in standard read and in DDF_update.xlsx	Erik Hoving	28/09/2018 13:33:57
Merge remote-tracking branch 'remotes/origin/RTE_29092018_1132'	Erik Hoving	28/09/2018 11:49:22
origin/RTE_29092018_1132 Add I/O logic to optimization Max Revenue - Min Items Too late	Robbert Teixeira	28/09/2018 11:32:17

SHA-1: 485855678288ed288510a14f281b52d126da20e5

* v3.7 Final prototype without optimization in the case file

Path	Extension	Status	Lines added	Lines removed
Cases/MainCase.data	.data	Modified	-	-
MainProject/SPS.ams	.ams	Modified	3	6
MainProject/Settings/Options.txt	.txt	Modified	1	1
MainProject/Tools/ProjectExport.xml	.xml	Modified	3	2

5. Show examples of GIT trees

Aurubis

- Use of tags
- Refer to issue in branch names 'SES-211'
- Frequent, small commits

CA\Users\jbr\Documents\Git\Aurubis SCOPE GIT - Log Messages - TortoiseGit

<All Branches> From: 14-11-2016 To: 20-10-2018 Filter by Subject, Messages, Paths, Authors, Emails, SHA-1, Refname, Notes

Graph Actions Message Author Date

origin/mho-ASUAT-57 Change display domain for tables on Understanding Decision page. Martijn Hoogendoorn 12-9-2018 11:04:36

Merge branch 'mho-ASUAT-122' into dev Martijn Hoogendoorn 20-9-2018 14:01:05

origin/mho-ASUAT-122 Remove custom css for masterdata and scenario name inputs. Martijn Hoogendoorn 12-9-2018 12:28:58

Merge branch 'mho-SES-211' into dev Martijn Hoogendoorn 20-9-2018 14:00:35

origin/mho-SES-211 Fix a parameter being modifiable when it should not be. Martijn Hoogendoorn 12-9-2018 14:49:30

Merge remote-tracking branch 'remotes/origin/JOB_SES_288' into dev Martijn Hoogendoorn 20-9-2018 14:00:14

JOB_SES_288 origin/JOB_SES_288 attempt to solve it by rearranging the page Johan den Breejen 18-9-2018 11:10:25

Merge branch 'mho-SES-130/SES-109' into dev Martijn Hoogendoorn 20-9-2018 13:59:56

Add visibility rights to new widgets. Martijn Hoogendoorn 18-9-2018 15:53:09

Fix layout for stock inventory page. Martijn Hoogendoorn 18-9-2018 15:39:42

Add textbox to Start Inventory screen to show starting timeslot. Martijn Hoogendoorn 10-9-2018 15:48:55

Add WebUI for Stock Overview Martijn Hoogendoorn 10-9-2018 15:35:22

Add calculation of stock levels. Martijn Hoogendoorn 10-9-2018 13:17:23

Merge remote-tracking branch 'remotes/origin/JOB_SES_138' into dev Martijn Hoogendoorn 20-9-2018 13:59:39

JOB_SES_138 origin/JOB_SES_138 added SQL scripts Johan den Breejen 18-9-2018 16:21:59

Merge branch 'SES-75' into dev Martijn Hoogendoorn 20-9-2018 13:58:13

origin/SES-75 Add displaydomain for Concentration Analysis table. Martijn Hoogendoorn 19-9-2018 10:28:54

Warnings on concentration analysis screen. Filter is not yet working, too much data to use display do... Iris Meesters 14-9-2018 14:11:13

Merge remote-tracking branch 'remotes/origin/JOB_SES_83' into dev Martijn Hoogendoorn 20-9-2018 13:57:05

JOB_SES_83 origin/JOB_SES_83 - removed two columns via CSS Johan den Breejen 20-9-2018 10:16:57

fixed the sorting issue by adding the indices to the table as a column Johan den Breejen 18-9-2018 13:52:54

Merge remote-tracking branch 'remotes/origin/job_SES_290' into dev Martijn Hoogendoorn 20-9-2018 13:56:01

job_SES_290 origin/job_SES_290 Made small adjustments to have last possible year_month chosen fo... Johan den Breejen 20-9-2018 10:49:45

Merge branch 'mho-SES-129/SES-72' into dev Martijn Hoogendoorn 20-9-2018 13:54:01

origin/mho-SES-129/SES-72 Only allow contracts containing only numbers on 'Selection Criter... Martijn Hoogendoorn 20-9-2018 11:17:30

qa Merge branch 'dev' into qa Johan den Breejen 5-9-2018 13:23:24

v2.9.1 Merge branch 'dev' into qa Johan den Breejen 3-9-2018 07:50:17

v2.4.x origin/v2.4.x v2.4.4 Change display domain for tables on Understanding Decision page. Martijn Hoogendoorn 12-9-2018 11:04:36

Remove custom css for masterdata and scenario name inputs. Martijn Hoogendoorn 12-9-2018 12:28:58

Merge branch 'job_SES_290' into v2.4.x Johan den Breejen 17-9-2018 06:01:47

Added a button and a procedure (and some other things) to give the user the possibility to limit the r... Johan den Breejen 15-9-2018 22:18:56

v2.4.3 Merge branch 'dev' into qa Johan den Breejen 3-9-2018 07:24:53

version 4.2 Johan den Breejen 6-8-2018 08:44:16

Merge branch 'dev' into qa Johan den Breejen 6-8-2018 08:40:41

Merge branch 'dev' into qa Iris Meesters 20-7-2018 15:49:47

Merge branch 'dev' into qa Johan den Breejen 18-7-2018 13:34:31

Merge branch 'dev' into qa Johan den Breejen 12-7-2018 10:26:28

Merge branch 'dev' into qa Johan den Breejen 5-7-2018 16:23:58

Merge branch 'dev' into qa Johan den Breejen 3-7-2018 17:32:21

SHA-1: f901e1d31273edfa54cd53a3e739a4f2a024f674

Path	Extension	Status	Lines added	Lines removed
SCOPE/Data/roles_rights_mapping.xlsx	.xlsx	Modified	-	-
SCOPE/Data/used_widgets.xlsx	.xlsx	Modified	-	-
SCOPE/MainProject/SCOPE.ams	.ams	Modified	12	8
SCOPE/MainProject/SCOPE.nch	.nch	Modified	2819	2819

Showing 495 revision(s), from revision 471352b to revision 46a9f59 - 1 revision(s) selected, 0 file(s) selected; line: 2831(+) 2827(-) files: modified = 4 added = 0 deleted = 0 replaced = 0

☐ Show Whole Project

☒ All Branches

Refresh Statistics Walk Behaviour View