

Final Report

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At Royal Civil Service Commission (RCSC)

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**Thailand International Cooperation Agency
(TICA)**

Contents

Quarter 1: October 3, 2015 - January 2, 2016	1
Bhutan Civil Service Examination Bug Fixed (BCSE).....	2
Civil Service Welfare Scheme (CSWS) – Specification Review	3
Development Environment SETUP for MISD – Planning and Design.....	3
Import candidate’s information from BCSE to CSIS in Recruitment Module	4
Quarter 2: January 3, 2016 - April 2, 2016.....	5
Civil Service Welfare Scheme (CSWS) – Testing.....	6
Development Environment SETUP for MISD – JIRA and SVN	7
Carrier Progression for Civil Service Information System (CSIS).....	9
Quarter 3: April 3, 2016 - July 2, 2016	12
Career Progression for Civil Service Information System (CSIS) – PD Report.....	13
Bhutan Civil Service Examination 2016 – Registration Module.....	14
Development Environment SETUP for MISD – Additional Design Phase	15
Support requirement gathering and system impact study for Supper Structure in CSIS	15
Quarter 4: July 3, 2016 – September 30, 2016	16
Bhutan Civil Service Examination 2016.....	17
Merging Bhutan Civil Service Examination System.....	20
Development Environment SETUP for MISD	20
Term of Reference (TOR).....	25
Work Plan Schedule	26
Progress Report.....	27
Quarter 1 : October 3, 2015 – January 2, 2016.....	27
Quarter 2 : January 3, 2015 – April 2, 2016	30
Quarter 3 : April 3, 2015 – July 2, 2016.....	33
Quarter 4 : July 3, 2015 – September 30, 2016	36
ปัญหา/อุปสรรค.....	38
ข้อเสนอแนะ.....	41
Reference	44
Appendices.....	45
Appendix 1: Project.....	46
Appendix 2: Software Development Environment System for MISD	56
Appendix 3: Bhutan Civil Service Examination System 2016 Specification	111

Quarter 1: October 3, 2015 - January 2, 2016

Objective

- Bhutan Civil Service Examination Bug Fixed (BCSE)
- Civil Service Welfare Scheme (CSWS) – Specification Review
- Development Environment SETUP for MISD – Planning Phase
- Import candidates information from Bhutan Civil Service Examination (BCSE) system to Civil Servant Information System (CSIS) in Recruitment Module

Output/Activities

- Bhutan Civil Service Examination system study, analyst and resolved the problem for BCSE(B.Ed) 2015.
- BCSE(B.Ed) update latest feature from BCSE
- Civil Service Welfare Scheme (CSWS) Specification Review
- Development Environment SETUP for MISD Planning
- Import candidates data from BCSE to CSIS

Key Performance Indicators

- BCSE System and tools information, understanding the issue to resolve the system.
- Input and suggestion for CSWS system for specification.
- Input and suggestion for division's planning and structure.
- System study for BCSE and CSIS.

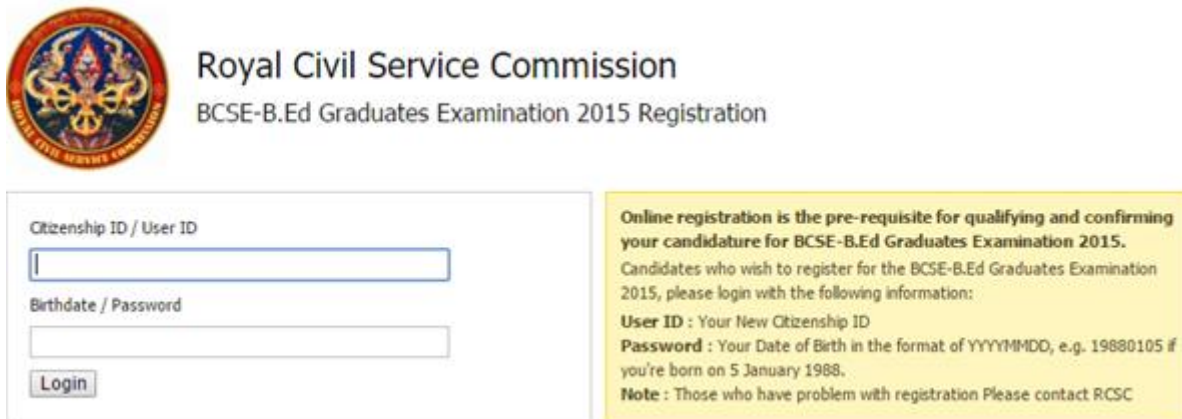
Critical Success Factors

- Input from volunteer
- Support from counterpart
- Researching for information of tools implemented

Counterpart Personnel

- Kuenga Zam (Sr. ICT Officer)
- Rigzin Namgay Tamang (Sr. ICT Officer)

Bhutan Civil Service Examination Bug Fixed (BCSE)



Royal Civil Service Commission
BCSE-B.Ed Graduates Examination 2015 Registration

Citizenship ID / User ID

Birthdate / Password

Login

Online registration is the pre-requisite for qualifying and confirming your candidature for BCSE-B.Ed Graduates Examination 2015.
Candidates who wish to register for the BCSE-B.Ed Graduates Examination 2015, please login with the following information:
User ID : Your New Citizenship ID
Password : Your Date of Birth in the format of YYYYMMDD, e.g. 19880105 if you're born on 5 January 1988.
Note : Those who have problem with registration Please contact RCSC

Figure 1. Online registration system Bhutan Civil Service Examination (BCSE)

The initiate Bhutan Civil Service Examination system was developing by Singapore Volunteer on 2009 with Anthem Framework. Until now the new technology coming and the Anthem Framework not support for the latest web browser and some issue in the system has to be resolved for BCSE(B.Ed) 2015.

The bugs fixed have following list.

- Web browser compatible issues.
- After closing date shouldn't allow submitting registration form.
- Redundant recording systems registration.
- Report "Ranking by Categories" incorrect calculation

During the 2nd month of this quarter, mainly focusing on the BCSE system logic which supported by Volunteer's Counterpart. But the technical part for Anthem Framework learning by searching which less information because it's obsolescence without continuous development plan. The solution for the system won't be use Anthem.NET Framework for new feather and fixed the existing issue.

Next phase implementation is merging latest feature for 1 week. Due to the online examination application has separators system, 1st is General as BCSE and 2nd is Teacher as BCSE(B.Ed). The implementation has to merge the latest feature in BCSE system to BCSE(B.Ed) system which announce on December 2015.

Civil Service Welfare Scheme (CSWS) – Specification Review

The first analyst system phase for 2 week of work is document review. Review Business/Software Requirements Specification by add the additional functionality and information of the CSWS system for sake of system covered. Also attended a meeting with other agencies; RCSC, RICB, PEM to discussion and adaptation the system properly.

The project plans to release all agencies for each Dzongkhag (Province) to know the details and benefits of civil servant. On November 29, 2558 - December 3, 2558 I accompany with CSWS team in the Zhemgang. (Zhemgang is a province in Bhutan.)



Figure 2. Civil Servants Welfare Scheme conference in Zhemgang

On December 7th 2015 , the meeting organized by RCSC with all agency involved, RICB, CIB to understand the functions and responsibilities of each participant. In the meeting has adjust and adapt system requirements from the RICB and offer technical concept using Web services to communicate and exchange information between various departments. However, depending on the decision of the agency's authority for techniques. The conclusion for the proper implementation and because of risk factors of each agency, the RCSC decide to outsourcing software development company in Bhutan because of limited duration and no staff available in order that the system can be launch in beginning of 2016.

Development Environment SETUP for MISD – Planning and Design

After discussion and planning with the Chief of Division (Kuenga Zam). We plan for MISD(Management Information Services Division) that main focal point for software development process include waterfall, prototyping, iterative and incremental development, extreme programming and various types of agile methodology.

The counterpart and volunteer decide to setup for software development environment. Kuenga Zam suggested the volunteer to use TRAC for tracking system. (TRAC system is web application which not compatible with latest Windows version then it will change to JIRA system later in implementation phase.) The division should have the standard for planning, developing/technical and testing as well.

* Chief of Division change from Mrs. Kuenga Zam (October 2015 – March 2016) to Mr. Khandu (March 2016 – Now)

Import candidate's information from BCSE to CSIS in Recruitment Module

Import candidate's information from Bhutan Civil Service Examination (BCSE) system to Civil Servant Information System (CSIS) in Recruitment Module. This process will occur when the candidate has selected for civil servant from examination system. The candidate information should be the same in Civil Servant Information System (CSIS). The function to import the data from BCSE should be automatically and it's in the future plan for CSIS Enhancement Phase 3 in 2016.

Workaround imported solution is manual script generator by excel which the system need all correct information. Some data was wrong because master data (KEY) for both system is not the same then we have to map data before import it.

The screenshot shows the CSIS interface for 'Candidate Selection' under 'Recruitment Through BCSE'. It features a search form with fields for Name, CID, Year of Examination (set to 2014), and Candidate Type (set to TECHNICAL INCLUDING PGDNL). Below the search form is a table titled 'LIST OF CANDIDATE' with columns for Candidate Name, Gender, Date Of Birth, CID, Nationality, and Candidate Type. The table lists 10 candidates, all of whom are Bhutanese and of the type 'TECHNICAL INCLUDING PGDNL'.

Candidate Name	Gender	Date Of Birth	CID	Nationality	Candidate Type
Tshering Choden	Female	25-10-1988	11907000666	Bhutanese	TECHNICAL INCLUDING PGDNL
Kama Wangchuk	Male	11-07-1991	11312003339	Bhutanese	TECHNICAL INCLUDING PGDNL
Sonam Tobgay	Male	12-09-1967	10209004430	Bhutanese	TECHNICAL INCLUDING PGDNL
Kama Wangchuk	Male	15-11-1967	11509002053	Bhutanese	TECHNICAL INCLUDING PGDNL
Sangay Tshering	Male	22-06-1969	12007001036	Bhutanese	TECHNICAL INCLUDING PGDNL
Suresh Chhetri	Male	07-07-1969	21201000112	Bhutanese	TECHNICAL INCLUDING PGDNL
Nima Tshering	Male	05-07-1968	10402000258	Bhutanese	TECHNICAL INCLUDING PGDNL
Thinley Tenzin	Male	15-10-1979	11605003321	Bhutanese	TECHNICAL INCLUDING PGDNL
Sonam Tshering	Male	16-04-1992	10901000250	Bhutanese	TECHNICAL INCLUDING PGDNL
Ugyen Tshomo	Female	23-10-1969	11516001295	Bhutanese	TECHNICAL INCLUDING PGDNL

Figure 3. CSIS interface after imported data from BCSE to qualify candidate's information.

Quarter 2: January 3, 2016 - April 2, 2016

Objective

- Civil Service Welfare Scheme (CSWS) – Testing
- Development Environment SETUP for MISD – JIRA and SVN
- Career Progression for Civil Service Information System (CSIS)

Output/Activities

- The test rule has defined and uses for test the CSWS system.
- Software development system planning and installation for JIRA (Tracking system) and Source Control
- Software development rule and JIRA use in MISD.
- Career progression has implemented in CSIS.

Key Performance Indicators

- Understanding the CSWS system and workflow.
- Input and suggestion for CSWS system for specification.
- Input and suggestion for MISD system.
- System study and implement for Career Progression.

Critical Success Factors

- Input from volunteer
- Support from counterpart
- Researching for testing phase and software development tools
- Cooperation with colleagues for new system

Counterpart Personnel

- Kuenga Zam (Sr. ICT Officer)
- Rigzin Namgay Tamang (Sr. ICT Officer)
- Lhamo (Sr. HR Officer)
- Kuenzang Choden (Asst. HR Officer)

Civil Service Welfare Scheme (CSWS) – Testing

Continuous development in CSWS's testing phase to have the proper test document in excel format for testing which defined the testing standard version 1. The testing standard can define the template for testing for all projects, however the particular project have to design test case depends on the functionality and the workflow of the system owns. (A test case has components that describe an input, action or event and an expected response, to determine if a feature of an application is working correctly.)

The testing phase postpone from the end of December 2015 to beginning of January 2016 for 2 weeks of work. The testing result in the first phase has some bug or the application work not proper base on System Requirement Specification document. After 1st period of testing completed will take time to development and fix the problem by outsource, then the tester will test again in next phase. (The volunteer will hand over the task to other colleague for next phase because of the critical task. (Related with Career Progression Project in next topic)

Civil Servant's Welfare Online Claim System

Module: Family Update
Function: Update Family and Member Detail
Description: Updated by HRO

Tester: Thassaneeya Sodasoi
Test Date: 26.01.2016
Status: Incomplete

Step #	Description	Expected Results	Actual Results
1	HRO to log in CSIS Go to MISD Master -> Update Information ->	Successful login	
2	Update Family	Update Family details appers Search Successful, Accurate display of memebr detail	
3	Search Using EID or CID Update CSWS Membership check box (if updating		
4	membership for the first time)	Successful update of member	
5	Update email and contact detail if any changes	Successful update of email and contact Add Family details drop down boxes are displayed accurately and Successful addation of the new family details. New family member detail to be displayed in grid	Update is Not working - If there has more than 1 entry with the same relation, the result show duplicate result.
6	Update new family detail		
7	Edit family detail	On click of edit button,Old Detail of the individual is displayed and details are editable and can be successfully updated	Old details are not displayed. Old details of Dzongkhag, Dungkhang and Gewog are cleared.
8	Delete Family Detail	The memebrs should be deleted from Family list	

Figure 4. Example testing document in Excel file.

* This project implemented by outsources, finally this project released on April 2016.

* Standard testing tools use Zephyr (Add on JIRA) attached in Quarter 4.

Development Environment SETUP for MISD – JIRA and SVN

In this quarter, the volunteer installed JIRA system which is tracking web application use by whole section of software development workflow, including source control for JIRA that show the log of developer's file committed. And the last part of this quarter, the volunteer presented to MISD "How to use JIRA in MISD". The main focus is for developer to use SVN source control.

JIRA (Project management and tracking system)

The suggestion and discussion with MISD about software development environment system and collaborator work, the conclusion in the division will use TRAC system but it is not compatible with MISD Environment because TRAC system is open source which obsolete for Windows server 64 bits version. The volunteer had researched the tracking system tools to compare efficiency and effectiveness as selected "JIRA" system because of functionality and support system which cover needed function and provide more additional tools for future technology.

*JIRA is commercial software and therefore the volunteer created for Mini Project.

For more information "Why we choose JIRA for MISD" refer to *Appendix 2* to understand the workflow and apply for MISD. After presentation, MISD had defined the JIRA Workflow together then we optimized and designed recommendations as follows.

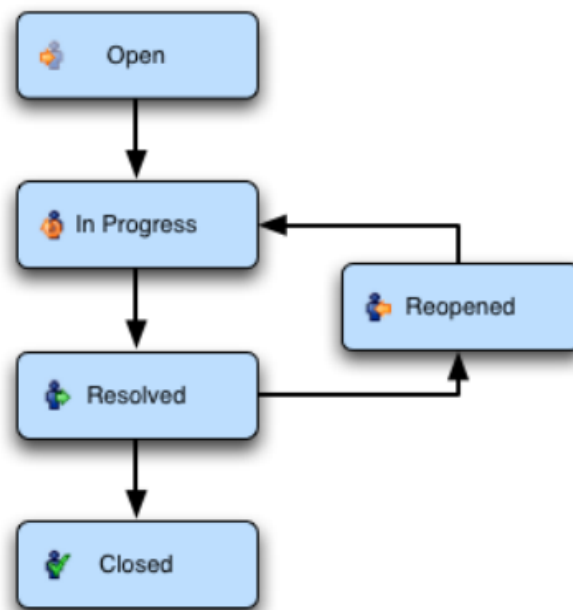


Figure 5. JIRA Ticket Workflow

How to use JIRA in our Organization.

1. Upcoming project will create and set up in JIRA system. At the beginning, we start with Career Progression Project and configuration the project following listed below :
 - Issue Type : Requirement, Task, Bug, Sub question.
 - Workflow refers to Figure 5.
 - JIRA Administrator configures for SVN that will synchronize with the project and the code changed.
2. Project management will create ticket for Requirement, Task, Sub-Task, Sub-Question and Bug list.
 - **Requirement Ticket** for the history of project information from beginning to the complete project. Project manager will create the ticket and attached information into the ticket and report every change in the ticket for the log information.
 - **Task Ticket** will be separate for each functionality or module that will be easy for project manager and developer to track the task in development process.
 - **Bug / Change Request Ticket**, after completed implementation and then the testing phase might be bugs or the changes and it will attach into the main ticket for history. The system can check the code change in subversion tab for detail. (See Appendix 2)
3. Tracking and reporting in JIRA system that project manager can track the status for the whole project and the detail for each task to control and manage the factors which affect the project to find the problem immediately with the team for collaborator work.

SVN (Source control for Developer)

MISD use SVN Source Control and TortoiseSVN for client. The volunteer has integration JIRA system with SVN add-on that can be track the subversion information in the ticket for the code change in "Subversion" tab. The advantage of SVN add-on when the issue occur and this will be easy to find who/code change then in the team can analyst the problem together and it will be improve and learn the lesson from the mistake. The additional task for new project have to configure in JIRA Administrator refer to Appendix 2.

The suggestion from volunteer for development tools by installing "AnkhSvn" Plugin for Visual Studio easy manage the changed file which control by source control. (See Appendix 2)

MISD STANDARD RULE

The suggestion and discussion with the team, the conclusion for the rule following listed:

- Use JIRA system in MISD for upcoming project and get use to the new Collaborative working environment.
- Developers must use source control and it should sync with JIRA system. The optional tools for developer is "AnkhSvn" Visual studio plugin.



Figure 6. Presentation and Discussion with MISD for JIRA workflow

Carrier Progression for Civil Service Information System (CSIS)

The main objective of this reform is to allow smooth career progression by addressing the current issue of stagnation especially in the Supervisory and Support category (S&S). The reform recommends three proposals:

- The concept of Senior Supervisor (SS2 to SS4) shall replace the overlapping Position Level of P5, P4 & P3 refer to Figure 7.
- Additional career advancement up to SS1 which is equivalent to P2
- Smooth career movement for civil servants in the S&S category is allowed till SS1 with increase in promotion duration to five years for promotion to SS4 and above

Current PL	New PL
P2	SS1
P3	SS2
P4	SS3
P5	SS4

Figure 7. The overlapping position

Accordingly changes in CSIS are to be made based on the three proposals for 1 month implementation. The implementation process following step :

1. Understanding the requirements and policy
2. System analyst and design the functionality and the change
3. Development phase



Figure 8. Collection and analysis data and information to implications Career Progression Project

DATABASE LEVEL

Clean up CSIS PD

- Insert New Positions
- Remove redundant Positions (Put the CS in those position in the correct position)
- Deactivate Position Title with (Remapped...) and Insert them in Position title change table
- qualification to be inserted/Replaced

Update Latest PD

- Create SS position level
- Create SS Position Title
- Insert change in qualification
- Insert new entry position at Operational category
- Entry positions to be mentioned for S&S category
- Clean up enter level position

Remap CS to SS positions

- Remap CS in overlapping Plevel positions to SSlevel Positions (insert into Position Title Change Table)
- Remap CS in All Eligibility position of S1 to positions of P5 B
- Remap CS in the right position if there has been changes to the PD due to SS position insertion.

- Deactivate the overlapping position
- Deactivate all Eligibility positions

APPLICATION LEVEL

- Broad band concept to be implemented in System PD, need to enhance the isBroadbanded field and create new Group of position for new PD.

Change login and validation in Recruitment Paged

- Recruitment through BCSE-Allow selection of only Officer level Entry Position in dropdown, Not to display SS positions
- P5 Recruitment (B.Ed Teachers)- Allow selection of only Officer level Entry Position, Not to display SS positions
- In-service requirement BCSE and B.Ed (if S1 display Entry position or if already in SS level the equivalent P position)
- S1 and Below recruitment (Do not show SS position level and Title)

Change login and validation in Promotion Paged

- In-service Open competition (P1 & Below) - Do not allow movement of CS from P&M to SS category and SS to P&M category.
- Broad Banded Position - Allow promotions only to broadbanded positions.
- Meritorious/Fast-Track -
- Allow movement only within their carrier track S&S Category and P&M in P&M Category only.
- Do not allow those who have been remapped to P5B to avail Fasttrack Promotion(Fixed List)
- Meritorious promotion – 4 years (S1 to SS4,SS3,SS2,SS1)

Change login and validation in Transfer Paged

- Allow transfer only within the same carrier track. Do not allow S&S positions and SS positions to move to P&M positions.

Change login and validation in Separation Paged

- Superannuation P1 and Below : Add SS superannuation age in logic (58 years)
Smooth career movement till SS1 with Increase in promotion duration to five years in Broad branded promotion

4. Testing phase based on system requirements specification.
5. Installation and Deployment

* This project will test with JIRA system to track the status and overall performance with this project.

Quarter 3: April 3, 2016 - July 2, 2016

Objective

- Carrier Progression for Civil Service Information System (CSIS) – PD Report
- Bhutan Civil Service Examination 2016 – Registration Part
- Development Environment SETUP for MISD – Additional Design Phase
- Support requirement gathering and system impact study for Supper Structure in CSIS

Output/Activities

- Position Directory (PD) report generator.
- BCSE2016 system for registration phase implemented and deployed.
- Additional tools designed for software development system.
- Participate and gather for requirement Supper Structure in CSIS

Key Performance Indicators

- Understanding the report tools generator (SSRS : SQL Server Reporting Services)
- Input and suggestion for BCSE2016 system
- Input and suggestion for Supper Structure
- Input and suggestion for MISD system

Critical Success Factors

- Input from volunteer
- Support from counterpart
- Researching for software development tools

Counterpart Personnel

- Kuenga Zam (Sr. ICT Officer)
- Rigzin Namgay Tamang (Sr. ICT Officer)
- Ganga Ram Ghimiray (Sr. ICT Officer)
- Pasang Wangdi (ICT Associate)
- Lhamo (Sr. HR Officer)
- Kuenzang Choden (Asst. HR Officer)

Career Progression for Civil Service Information System (CSIS) – PD Report



Figure 9. Human Resource conference for Bhutan Reform 2016 at GASA

On 11th – 15th April volunteer had participated with HR conference at GASA in point of view Human Resource workflow discussion with Human Resources for all agency and RCSC for Bhutan Civil Services System Reform which including CSIS, Career progression, Management Information System workflow for suggestion to improve the system.

Career progression project continued Report implementation. (PD Report) The agency require the system with the report Position Directory (PD Report) in accordance with the new policy. In development phase, MISD never created or modified Report by themselves that developed by outsource. The volunteer studied SSRS and how to implementation to create report as follows:

System Requirement Tools

- Microsoft Visual studio 2005 onwards.
- Microsoft SQL Server 2005 onwards.
- SQL Server Reporting Services (SSRS)
- Microsoft SQL Business intelligence Development Studio for Report Server.

Install a report tools for the developer in topic 1 so that CSIS can generate in local machine. The installation instructor wrote to internal websites. (Refer to Confluence in Appendix 2) Create a new report based on a report format given by Human Resource Management Division (HRMD). The system should display and export data in Excel format or Pdf. The results of the report refer to Figure 10.

ROYAL GOVERNMENT OF BHUTAN

Royal Civil Service Commission

Position Directory 2016

MOG	SUBGroup	Position Title	PL	B/B	M/S	Minimum	Professional Training	Additional	
Administration & Support Services Group	Administration Services	Chief Admin. Officer	P1	no	Managerial	Bachelors	Adm Management		
		Dy. Chief Admin. Officer	P2	yes		Bachelors	Adm Management		
		Sr. Admin. Officer	P3				Bachelors	Adm Management	
		Admin. Officer	P4				Bachelors	Adm Management	
		Asst. Admin. Officer	P5				Bachelors	Training in relevant field	
		Committee Secretary I	P1	no	Specialist		Bachelors	NA	
		Committee Secretary II	P2	yes			Bachelors	NA	
		Committee Secretary III	P3				Bachelors	NA	
		Committee Secretary IV	P4				Bachelors	NA	
		Committee Secretary V	P5				Bachelors	NA	
		Sr. Drungpa	P1	no	Managerial		Bachelors	Management/ Public administration.	
		Drungpa	P2				Bachelors	PG Diploma in Management and Adm	
		Sr. Dzongrab	P1	no	Managerial		Bachelors	PG Diploma in Management and Adm	
		Dzongrab	P2				Bachelors	PG Diploma in Management and Adm	
		Sr. DT Secretary I	P2	yes	Managerial		Bachelors (BA Dzonokha preferred)	Training in relevant field	
		Sr. DT Secretary II	P3				Bachelors (BA Dzonokha preferred)	Training in relevant field	
		DT Secretary	P4		Managerial		Bachelors (BA Dzonokha preferred)	Training in relevant field	
		Asst. DT Secretary	P5				Bachelors (BA	Training in relevant field	

Figure 10. The Position Directory report for Bhutan Civil Servant after structural reform system.

Bhutan Civil Service Examination 2016 – Registration Module



Figure 11. Meeting with Civil Service Examination Division to discuss and understand the requirement to improve the Bhutan Civil Service Examination System 2016.

The agency has discussed with IT division and Examination Division who has responsibility for the Bhutan civil service examination (BCSE) to develop and improve the system. The volunteers attended to get the conclusion of specification requirement for BCSE 2016 to improve the system performance. (See Figure 11.)

One of the requirements will integrate 2 systems which currently has two systems separate for general candidate (BCSE) and teacher candidates (BCSE(B.Ed)). Volunteers and staff planned to work on it after BCSE2016 requirement complete.

This quarter implemented in the before registration process (BR: Before Registration), the list of issue refer to Appendix 3: Specification Requirement Document.

Development Environment SETUP for MISD – Additional Design Phase

MISD Environment system continued improvement collaborator works and studied for initial step in the design and research for tools. The volunteer analyzed and found the tools which appropriate tools to installed and deployed for division into next phase. The tool's information and proposal project refer to Appendix 1. Then next quarter after installation phase, the volunteer presented and conveyed to other colleagues to get in used with the system including whole division who involved project; project manager, development and tester. In 1st quarter, the main focus for developers but in the final stage will considered beneficial for all user.

Support requirement gathering and system impact study for Supper Structure in CSIS

The requirements of the project had postponed, presumption base on work plan might be late than last date of volunteer agreement. Volunteer was not implement this project. Therefore this project has implemented by MISD team. The volunteer will advise other developer for 1st phase implementation that will be good to practice with leaning by doing after trained in C# programming course. In order to achieve the goal of developing in the team instead of outsourcing.



Figure 12. Meeting with HRAS(Human Resource Audit Service) to understand the policies and requirements of the Super Structure system in Bhutan Civil Service System Reform.

Quarter 4: July 3, 2016 – September 30, 2016

Objective

- Bhutan Civil Service Examination 2016
- Bhutan Civil Service Examination Merging System – BCSE and BCSE(B.Ed)
- Development Environment SETUP for MISD – COMPLETE

Output/Activities

- BCSE2016 system has implement and deploy base on requirement document.
- BCSE Merging system has implemented. (BCSE and BCSE(B.Ed))
- MISD Software development system install additional tools.
- Complete all Tutorial and Transfer Knowledge.

Key Performance Indicators

- Input and suggestion for BCSE2016 system.
- Understanding BCSE and BCSE(B.Ed) for input and suggestion to implement merging 2 system.
- Input and suggestion for MISD system.
- Transfer Technical Knowledge

Critical Success Factors

- Input from volunteer
- Support from counterpart
- Cooperation with colleagues for new system
- Major change or change request from user

Counterpart Personnel

- Kuenga Zam (Sr. ICT Officer)
- Rigzin Namgay Tamang (Sr. ICT Officer)
- Ganga Ram Ghimiray (Sr. ICT Officer)

Bhutan Civil Service Examination 2016

Development phase in BCSE System from the last quarter had implemented in registration part for candidates. In this quarter, the volunteer and counterpart implemented all remaining issues of the entire system. The major issues are as following:

- Admin User: Candidate Photo Update

Initially, the process to get registration information of candidate will pull master data (Name, Citizen ID, Family Detail and Address Information) and Photo from G2C. (Government to Citizen Services : Royal Government of Bhutan) The problem was that photo couldn't update because the data will fetch photo once time from G2C and it's not allow to update again. In case the candidate is in process of citizen card creating and the photo is not update in master data center from G2C, the candidate has to contact RCSC's administrators to coordinate and update photo.

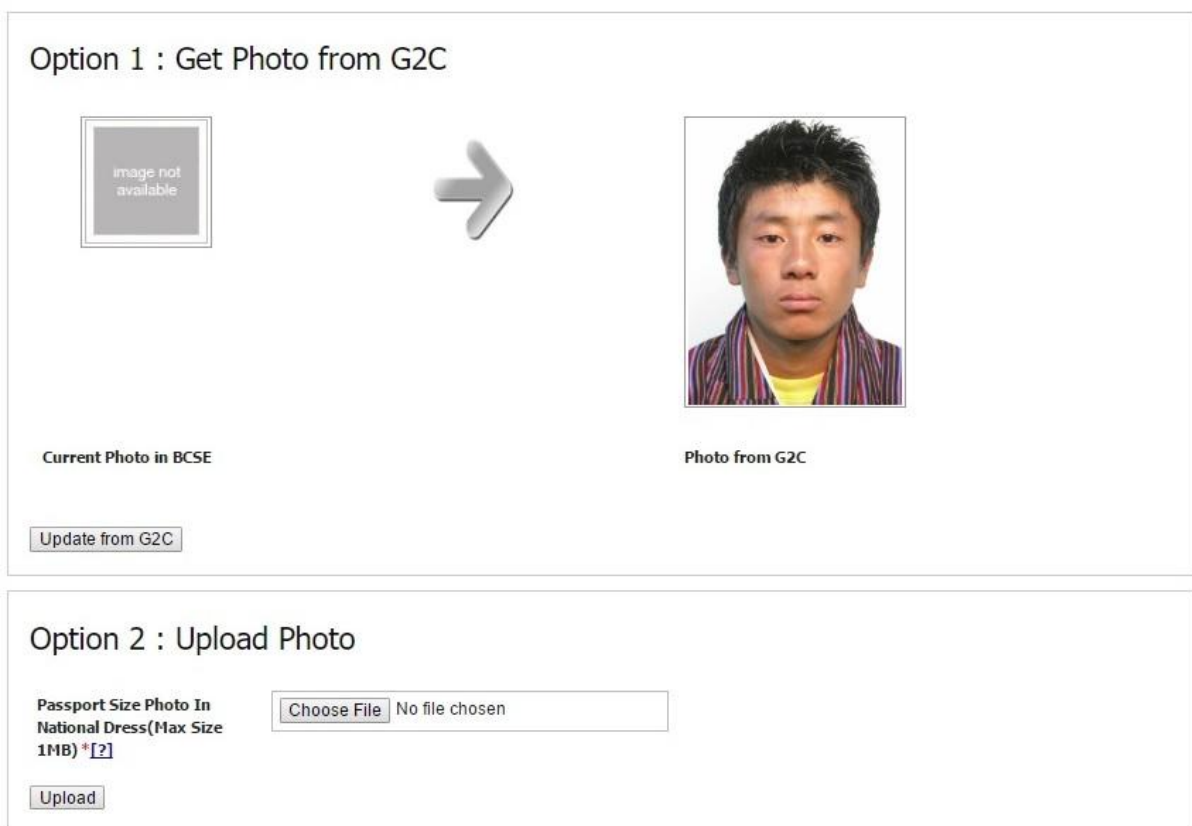


Figure 13. Candidate Photo upload by Admin.

- Login Session: BCSE system has to import citizen information with candidate's data who eligible to apply with the age below 35 or additional every year because the age condition. The solution to optimize this process instead of imported data, volunteer developed a system in Login part which get real time data from G2C and validate for candidate by user entered data username and password equivalent with date of birth so no need to import data manually into the database.
- User Right: ADD_CANDIDATE_SCORE and EDIT_CANDIDATE_SCORE : The user right require the new logic authorization for 1st time entered score and the other one is reviewer who allow to edit the score.

- Change request in the Candidate Score process when the candidate type change then the system should be clear the exiting score otherwise, calculating score will be wronged because of duplication information.
- Screen to enter scores for candidates has 3 parts as follows Academic, Written and Viva. Legacy systems has all parts in the same screen. It must be modified to separate and relate to the rights of the user.
- Provision to upload the PE score in Excel format.
- Report PE score (Implemented by Counterpart)
- Attendant sheet configuration with the data of center, room and the candidate registration number and system can generate attendant sheet automatically for PE (Preliminary Examination) and ME (Main Examination).

Examination Attendant Configuration PE

Please select Center before add the candidate into the Room.

Center :

Center and Room configuration for the Candidate

Center	Room No.	Room Capacity	RegistrationFrom	RegistrationTo
Center1	2 (C1R2)	10	<input type="text" value="18452"/>	<input type="text" value="18461"/>
Center1	3 (C1R3)	20	<input type="text" value="18462"/>	<input type="text" value="18482"/>
Center1	4 (C1R4)	20	<input type="text" value="18483"/>	<input type="text" value="18502"/>
Center1	5 (C5R5)	20	<input type="text" value="18503"/>	<input type="text" value="18523"/>
Center1	6 (C1R6)	20	<input type="text" value="18524"/>	<input type="text" value="18543"/>

Figure 14. Attendant Sheet configuration Page to Enter Center, Room and Candidate Registration number.

Examination Attendant Configuration

Please select Center!

Center :

Center and Room configuration for the Candidate

Center	Room No.	Room Capacity	RegistrationFrom	RegistrationTo	Action
Center1	2 (C1R2)	10	18452	18461	<input type="button" value="View"/> <input type="button" value="Print"/>
Center1	3 (C1R3)	20	18462	18482	<input type="button" value="View"/> <input type="button" value="Print"/>
Center1	4 (C1R4)	20	18483	18502	<input type="button" value="View"/> <input type="button" value="Print"/>
Center1	5 (C5R5)	20	18503	18523	<input type="button" value="View"/> <input type="button" value="Print"/>
Center1	6 (C1R6)	20	18524	18543	<input type="button" value="View"/> <input type="button" value="Print"/>

Figure 15. Display the result and Export Attendant sheet in Pdf format.

Bhutan Civil Service Examination 2016 Preliminary Examination Attendance Register Center :Center1 Hall : C1R2






Sl.#	Photo	Candidate Name	Registration Number	CitizenshipID	Category	Candidate's Signature	Remarks
1		Tandin Bidha	BCSE-2016-18452	11008000086	TECHNICAL INCLUDING PGDNL		
2		Norbu	BCSE-2016-18453	11411001762	PUBLIC ADMINISTRATION(PGDPA)		
3		Phub Dorji	BCSE-2016-18454	11411000885	TEACHING(PGDE)		
4		Tashi Wangmo	BCSE-2016-18455	10903000786	TECHNICAL INCLUDING PGDNL		
5		Dorji Lhaden	BCSE-2016-18456	10708000682	TECHNICAL INCLUDING PGDNL		

Figure 16. The attendant sheet for the candidates result list.

- Retrieval historical data for candidate information including Registration information, PE and ME scores.
- Bug fixed for report rank. There was a problem in the sequence of the candidates who have equal points with repeated sequences. The next candidate rank should not be the next value in a sequence. But considering the number of repeats as well and jump to the number of repeat sequences. For example, 8th rank has 3 persons with the same score and the next list should be 11th rank.

The calculation logic based on the type of candidate which calculates difference.

- General (PGDPA, PGDFM, PGDE) sum of paper / 300 * 70%.
- Technical (Including Dzongkhag) - individual paper *% and sum at the end.

The implementations base on specification requirement document in Appendix 3.

Merging Bhutan Civil Service Examination System

The Examination system in Bhutan Civil Service has 2 system with different types of candidates as general candidate (BCSE) and the teacher candidates (BCSE(B.Ed)). Both applications are almost similar except name, the identity (Candidate Type, Institute, Degree Type List, and Qualification) and percentage calculations. BCSE(B.Ed) has no Preliminary Exam. But the system has application and database own it. We planned to optimize by integrating two systems. The system will be analyzed and redesigned the system to make 2 systems collaborator work.

After analyzing the system, changed request are the following:

- Modifying Master data such as title, candidate type, qualification, list of institute and so on.
- Registration configuration require then new field for the exam type to specify for BCSE or BCSEED.
- Display on the screen such as topics/title of exams or item list which depend on the exam type for example a list of educational institutions, E-Admit Card title and so on.
- The percentage scores for each section ACADEMIC, VIVA, WRITTEN depending on the exam type so exam type logic have to consider for Section, Component of score as well.
- Difference conditions for 2 systems such as BCSEED do not need Preliminary Exam, the candidate registration data should be the same for standard because existing 2 systems had difference field for example the address field added in BCSEED has no field in BCSE, the address field is difference and it should be the same field with 2 system for standard information. Or the different issue in declaration is 'Keyword' that should be dynamic.
- The Reports retrieve data from database has to modify in function or procedure so that support both systems.

After development and testing 1st version in this quarter, the problem is the major changed request has required by project manager and the system has to redesign and develop such a huge part. The incident is that the user can use either of two system simultaneously (BCSE and BCSEED). This issue had discussed in the beginning and confirmed the workflow, therefore the volunteer didn't design in 1st version. The requirement is firm late that volunteer was not able to develop within two weeks before the expiry of the contract. Volunteers analyzed and redesigned the system so that the counterpart will further develop.

Development Environment SETUP for MISD

According to the design phase in the 3rd quarter, this phase installed and tested new tools for a new server including presentation to user.



Figure 17. Final presentation for MISD software development environment system

Additional tools apply for all user groups as follows:

Project Management

- EazyBI Reports and Charts for JIRA : this tool can generate report to track and analyst their status and progress directly from project plan. This allows you to see the percentage of work done on estimated items.

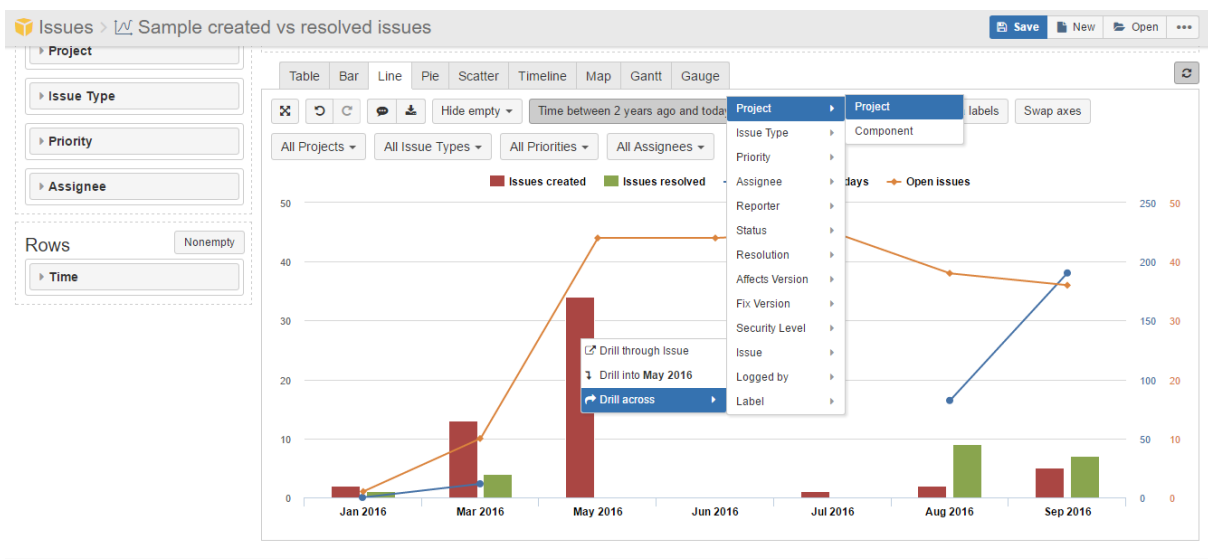


Figure 18. Annual report between resolved and in progress status.

Tester

- Zephyr for JIRA - Zephyr's real-time Test Management solutions transform how development and QA teams collaborate to release higher quality software on time. Testing is integrated into the project cycle, allowing you to track software quality and make empowered go/no-go decisions. Test issues can be created, executed, tracked and reported on just like any other JIRA issue.

BCSE-2016 / BCSE2016-39
BCSE2016TEST1 Login

Edit Comment Admin Clone More Actions Execute

Test Details

Test Step	Test Data	Expected Result
1 Go to 10.10.0.7/csce		Go to login page successful.
2 Enter data and click Submit	Username = CandidateCID Password = Dob	Validation and Successful Login

Add

Test Executions

Version	Test Cycle	Status	Defects	Executed By	Executed On
This test has not been executed yet. Click here on the Execute button above to start.					

Figure 19. Test ticket for Login Registration Page.

Test Details

Test Step	Test Data	Expected Result	Status	Comment	Attachments	Defects
1 Go to 10.10.0.7/csce		Go to login page successful.	UNEXECUTED	Enter Comment	+	Enter Defects
2 Enter data and click Submit	Username = CandidateCID Password = Dob	Validation and Successful Login	UNEXECUTED	Enter Comment	+	Enter Defects

Figure 20. Test ticket detail in testing phase.

Developer

At the beginning the volunteer mainly focus on source control for the developer. But this part we will use the Confluence for technical design of the system which will be easy for next developer to understand the functionality for implementation.

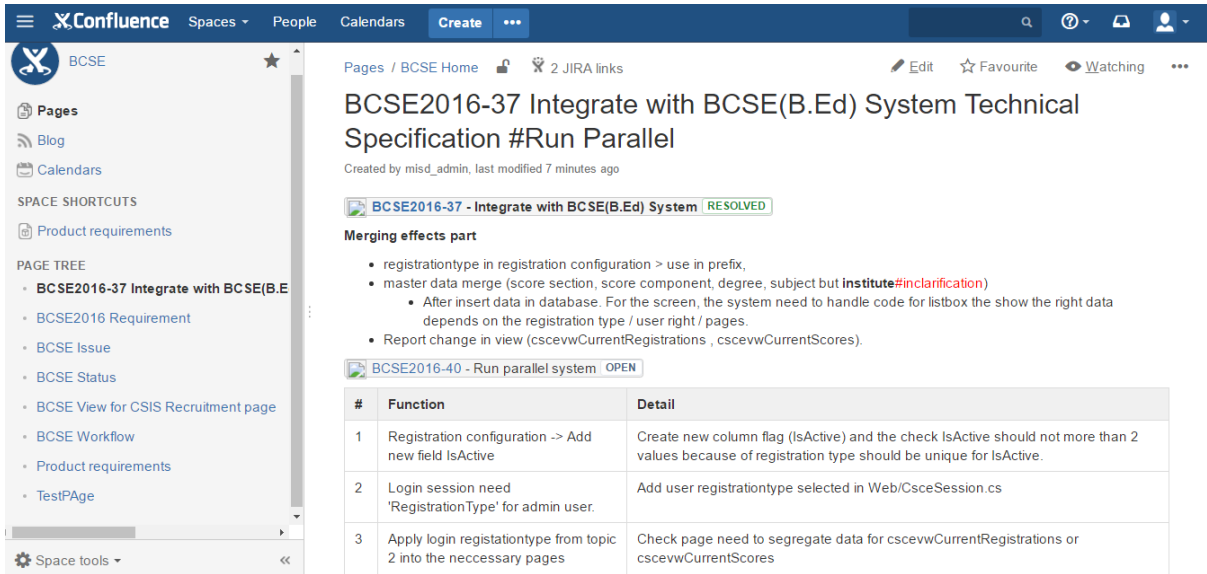


Figure 21. Technical design for developer to implement and store in Confluence (Knowledge base website).

All User

Additional tools for JIRA and Confluence installed (Add Ons) as details below:

- Team Calendars for Confluence
- Gliffy Diagrams for Confluence
- PDF View Plugin for JIRA (PDF Exporter).
- Table Grid Editor for JIRA
- Email This Issue for JIRA
- Structure - The Issue Organizer for JIRA.

Overview of JIRA system, project manager will create project and all issue like requirement, task, bug, test in 'Ticket'. Then the ticket will assign to developer, tester or related person. After the implementation phase completes the task, it will reassign to reporter or QA team. The system will link with Zephyr for JIRA - Test Management mentioned above. In this section, the add-ons installation will be brought into the system for the 'PDF Exporter' so that the system can export in PDF format. Table Grid Editor can add table details in the ticket to make it easier to understand. Email This Issue for information in the ticket to pass the details to the concern person.

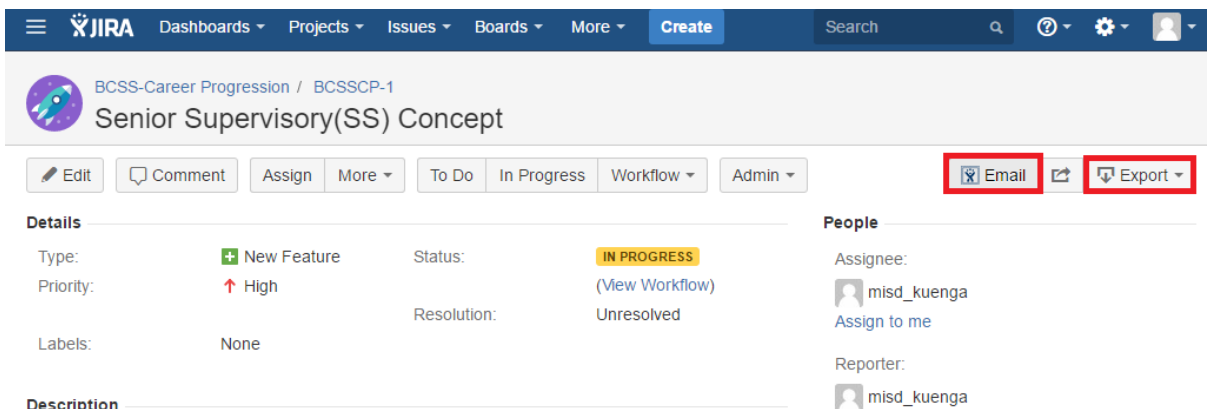


Figure 22. Exporting data inside the Ticket via email or file Pdf.

The Structure - The Issue Organizer for JIRA for project managers or relevant users to view data in JIRA such as developers find their committed ticket or 'assign to me' ticket , the project manager will check the ticket 'in progress', 'resolved' or other condition checked.

Confluence (Knowledge base internal website) was installed add-ons in below list.

- Team Calendars can import existing or new calendars that the user can check the date while development process including the schedule for conference, settlement, testing, delivery dates, etc.
- Gliffy Diagrams for Confluence to design graphs the same as Microsoft Visio.

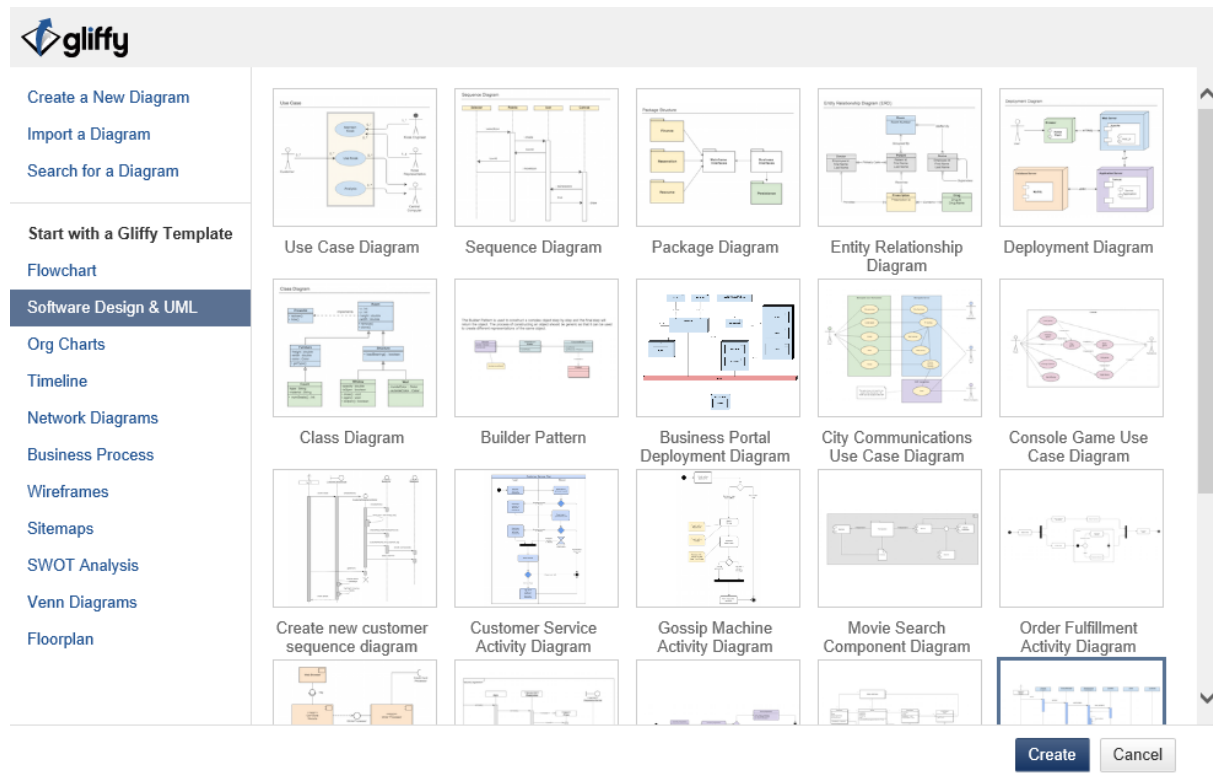


Figure 23. Gliffy Diagram template design variations.

The implementation in this quarter as following details:

- Installation additional tools (add-ons) as mention above.
- Testing Phase
- Presentation and discussion about applications and benefits associated with the agency in topic 'MISD Software development system Final" that mainly focused for all user, tester, project manager in Reporting part and administrator in configuration part.

The recommendation with agency, tracking system (JIRA) can be used in all types of projects, it might not only in software project but it is able to use for track the status for logging all project as well. The workflow and how to use the system refer to Appendix 2 JIRA and Confluence tutorials.

Term of reference (TOR)

Royal Civil Service Commission requested TICA for Thai volunteer who help Management Information Services Division (MISD) for software development however the responsibilities of the volunteer after discussion with Chief of the division then the annual work plan changed or added with some point base on previous request form document for detail of work as follows:

1. The goal of the project is to re-engineer process of existing ICT systems in the RCSC for personal information management and common exams systems so that the system's processes are in line with existing rules and regulations as well as learned so that the web-based system is efficient.

Result:

- Complete Personal information system enhancement see the detail in Career Progression in Civil Service Information System. (CSIS)
- Complete common exams system that Bhutan Civil Service Examination System enhanced the system for requirement in 2016 and re-design for merge two system BCSE and BCSE(B.Ed).

2. The project also seeks to adopt e-Gif (e Governance interoperability framework) standards and interoperate with other national ICT systems to improve efficiency and effectiveness of civil service management.

Result:

- E-Gif didn't implement for plan of this year, the requested by the person who on extra leave for study and it is low priority for the implementation for RCSC with e-Governance interoperability framework but the volunteer implemented new request with the part of interoperability in Client side (RCSC) communicate with Government to Civil Service (G2C) to get the center data to use in CSIS (Civil Service Information System) and BCSE system (Bhutan Civil Service Examination).

3. The volunteer is expected to contribute to the technical aspects of process re-engineering and development of the software system as well as interoperation with other national Information systems.

Result: Volunteer has mainly responsibility for design and development the system with the team but when we face out with the project so volunteer has responsibility to complete the whole process such as review the specification for the input and the test process as well.

4. The last part is the additional request by the division to set up the division to have the standard of the software development environment system and volunteer installed the knowledge base system for the division as well to link both systems for collaborator work.

Work Plan Schedule

Detailed Output / Activities	Year 1 (2015-2016)				Counterpart Personal	Budget	Remark
	Q1	Q2	Q3	Q4			
Bhutan Civil Service Examination system (BCSE)	X		X	X	Kuenga Zam, Rigzin Namgay Tamang, Passang Wangdi, Ganga Ram	\$400	
- Bug fixed	X						
- BCSE2016 Enhancement			X	X			
- BCSE Merging with BCSE(B.Ed)				X			
Civil Service Welfare Scheme(CSWS)	X	X					
- Review specification	X						
- Testing phase and defined Testing structure		X					
Civil Service Information System (CSIS)	X	X	X				
- CSIS update to accommodate Carrier Progression changes	X	X					
- CSIS update to implement Super Structure concept		X	X				
- CSIS Enhancement		X	X				
Software development system for MISD (Confluence and Rule)	X	X	X	X			
- MISD Standard	X	X	X	X			
- Tracking system integration (JIRA)		X					
- Source control software (SVN)		X					
- knowledge base website (Confluence)				X			

Progress Report

Quarter 1 : October 3, 2015 – January 2, 2016

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. BCSE Project bug fixed and testing	<ul style="list-style-type: none"> - Study BCSE system - Analyzing the existing problem of the system - Fixed the problem for BCSE(B.Ed) 2015 - Testing 	<ul style="list-style-type: none"> - Be able to understand the system and existing problem then share the solution how to fix it for counterpart. - Be able to solve the problem and the user can use online registration application without error. 	<p>The problem resolved. (A) The BCSE system can use proper functionality to register BCSE(B.ED) 2015</p>	<p>Through the website http://bcse.rcsc.gov.bt/bcse(B.Ed) to register BCSE(B.ED) 2015 on 10-23 December 2015.</p>	<p>Relate with the additional task assigned in topic 2.</p>
2. CSWS Review requirement specification document	<ul style="list-style-type: none"> - Understanding requirement of the system - Review the specification for functionality and technical design for CSWS system 	<ul style="list-style-type: none"> - Be able to understand the system, change request, gathering requirement, analyst and design the for proper functionality and technology to use in the application. 	<p>Review of requirements, design and operation of the system in the first version completed (A).</p>	<p>Business/Software Requirements Specification document version 1: Civil Servant's Welfare Online Claim System</p>	<p>After Meeting with 3rd Party agency has modified the functionality in specifications and requirements documents. The latest version of the welfare system postponed the development and testing phase base on year plan schedule. (See more details in the next section).</p>

<p>3. CSWS testing phase and define Testing structure</p>	<ul style="list-style-type: none"> - Define the standard testing process for software development in MISD - Testing the welfare system by standard testing rule for MISD 	<ul style="list-style-type: none"> - Studying and Gathering appropriate standard testing structure - Be able to use testing standard structure for CSWS project 	<p>The success of the project delayed (D) due to meeting with the other agencies involved (3rd Party) has modified and change the functionality of the system.</p>	<p>-</p>	<p>The project plans to postpone because of the changes in system requirements.</p>
<p>4. CSIS update to accommodate Carrier Progression changes</p>	<ul style="list-style-type: none"> - Understanding new requirement for the system - Support requirement gathering and system impact study - System enhancement and development - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Be able to implement and test the system base on the user requirement. - The user can use new enhancement in CSIS "Carrier Progression" and the process is in line with new reform rule. 	<p>This task delayed (D) because gathering requirements of the Carrier Progression was not completed.</p>	<p>-</p>	<p>The project will postpone because the conclusion of system requirements is pending.</p>

Additional Task in Quarter 1

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. Import candidates data from BCSE to CSIS	<ul style="list-style-type: none"> - Study concerned with BCSE and CSIS system - Import and optimized the correct data from BCSE (Common) to the CSIS. 	<ul style="list-style-type: none"> - Be able to understand the import data and data link system between BCSE and CSIS system - Correct Information for both system which the same master data. - Be able to get the information in CSIS from BCSE system for candidate information 	The system can import data (CSIS) for candidate's information into BCSE (Bhutan Civil Service Examination). (A)	http://csis.rcsc.gov.bt for Recruitment Module in CSIS	CSIS Enhancement Phase 3 will import data through the system automatically by outsourcing.
2. Update the functionality in the BCSE system to BCSE (B.Ed) and test the system.	<ul style="list-style-type: none"> - Understanding the function of the system and the work of two different systems. - The condition and functionality necessary to meet the needs of BCSE (B.Ed) based system BCSE. 	<ul style="list-style-type: none"> - Be able to understand BCSE system and compare the differences between BCSE and BCSE (B.Ed) to merge the changes - Integration and testing system 	The BCSE system can be use to register BCSE-B.ED. GRADUATES EXAMINATION 2015 successful (A).	http://bcse.rcsc.gov.bt/bcse(B.Ed)	The examination system (BCSE) separating two systems which is BCSE and BCSE (B.Ed) and include the functionality in BCSE to BCSE (B.Ed) then test the system.

Quarter 2: January 3, 2015 – April 2, 2016

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. “Civil Servant's Welfare Online Claim System” (CSWS) testing and Testing structure	<ul style="list-style-type: none"> - Define standard rule for testing process for software development in MISD - Testing the welfare system by standard testing rule for MISD 	<ul style="list-style-type: none"> - Studying and Gathering appropriate standard testing structure - Be able to use testing standard structure for CSWS project 	<ul style="list-style-type: none"> - Testing structure document for starting phase has been defined.(A) - Tested CSWS system first version successful (A) 	http://csis.rcsc.gov.bt in CSWS Module	Testing Standard rule can define for concept and the template of testing document.
2. Development Environment Set up for MISD: Tracking system integration (TRAC -> JIRA)	<ul style="list-style-type: none"> - Study for tracking system and TRAC - Set up for Tracking system integration (TRAC) - Testing the TRAC in test system - Deploy TRAC for production system 	<ul style="list-style-type: none"> - Understanding the advantage of tracking system and the tool TRAC for organization - The tracking system (TRAC) install in the system - Use TRAC system for organization 	<ul style="list-style-type: none"> - Research appropriate tool tracking system for MISD that changed from TRAC to JIRA System and - set up for JIRA successful (Tracking and project management tools) (A) - Sharing knowledge how to use JIRA and discussion with workflow to adapt for MISD 	Access Internal website http://test.rcsc.gov.bt:8100/jira with JIRA Account created for MISD member (See appendix 2)	Change TRAC system to JIRA system because Windows server version is not compatible with TRAC installation and obsolescence.
3. Development Environment Set up for MISD : Source control software (SVN)	Study and Migrate and adopt SVN for all software development project in the division.	<ul style="list-style-type: none"> - Understanding the advantage of Source control software and SVN for organization - The source control software (SVN) set up in the system - The developer can use SVN in and enforce with MISD. 	Developer can be able to use source control with “TortoiseSVN” or AnkhSvn (plugin in Visual Sudio) successful (A)	Developer apply source control with all project for development.	Jira system synchronize with TortoiseSVN that can be easy tracking and check for any task.

<p>4. CSIS update to accommodate Career Progression changes</p>	<ul style="list-style-type: none"> - Understanding new requirement for the system - Support requirement gathering and system impact study - System enhancement and development - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Implementation and testing the system base on the user requirement. - The user can use “Carrier Progression” for online application and the process is in line with new reform rule. 	<p>Career Progression can be launch on Production successful. (A)</p>	<p>Career Progression has attached into CSIS System http://csis.rcsc.gov.bt/</p>	<p>-</p>
<p>5. CSIS update and implement Super Structure concept</p>	<ul style="list-style-type: none"> - Understanding new requirement for the system - Support requirement gathering and system impact study - System enhancement and development - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Be able to implementation and testing the system base on the user requirement. - The user can “Super Structure” in CSIS for online application and the process is in line with existing rule. 	<p>The level of achievement is delay (D) because requirements of the Super Structure is not complete in this phase.</p>	<p>-</p>	<p>The project will postpone because the conclusion of system requirements is pending.</p>

<p>6. CSIS Enhancement</p>	<ul style="list-style-type: none"> - Study CSIS System - Manage and facilitate CSIS Enhancement - Support requirement gathering and system impact study - Enhancement and Integration System - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Implementation and testing the system base on the user requirement. - The user can CSIS Enhancement for online application and the process is in line with existing rule. 	<p>Transfer function implemented by Outsource tested in UAT list since end of 2015 successful. (A)</p>	<p>Transfer function test Attached File : UAT_Checklist_Transfer.xls (Report Progress Detail Quarter 2)</p>	
<p>7. Software development system in MISD</p>	<ul style="list-style-type: none"> - Defined structure or the rule for software development system in MISD - Install tools - Support and share the knowledge of software development process such as pair programming, wiki for knowledge sharing and so on. 	<ul style="list-style-type: none"> - Be able to define proper standard development system to use in the organization in order that knowledge exchange, software development process and collaborator work. - Tools installation - The cooperation in the division for new system 	<p>Software development structure defined new rule and the standard successful with brainstorm in the team. (A)</p>	<ul style="list-style-type: none"> - Access Internal website http://test.rcsc.gov.bt:8100/jira - Source control can be use for developer with internal network. 	<ul style="list-style-type: none"> - For all User had discussion with JIRA workflow in MISD to manage the project together. - For Developer: in Database Level to store procedure have to use source control as well so that the advantage in the future for tracking system.

Quarter 3: April 3, 2015 – July 2, 2016

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. CSIS update to implement Super Structure concept	<ul style="list-style-type: none"> - Understanding new requirement for the system - Support requirement gathering and system impact study - System enhancement and development - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Be able to implementation and testing the system base on the user requirement. - The user can “Super Structure” in CSIS for online application and the process is in line with existing rule. 	Volunteer have held discussions with the agency after assessment of the project found that the volunteers will not able to implement this project because the late requirement and working hour of volunteer was not available. Unsuccessful (U)	-	-
2. CSIS Enhancement	<ul style="list-style-type: none"> - Learning CSIS System - Manage and facilitate CSIS Enhancement - Support requirement gathering and system impact study - System Enhancement / Integration - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Implementation and testing the system base on the user requirement. - The user can CSIS Enhancement for online application and the process is in line with existing rule. 	Apply with web service technology in CSIS to get Citizen information from Government (G2C) successful (A)	http://csis.rcsc.gov.bt/	-

<p>3. CSIS update to accommodate Career Progression changes</p>	<ul style="list-style-type: none"> - Understanding new requirement for the system - Support requirement gathering and system impact study - System enhancement and development - System Testing 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology for the system. - Implementation and testing the system base on the user requirement. - The user can use “Carrier Progression” for online application and the process is in line with new reform rule. 	<p>Implement and Generate Dynamic Report for New Position Directory 2016</p>	<p>http://csis.rcsc.gov.bt/ in Civil Servant Information and Position Directory Report</p>	<p>Continued with quarter 2 in Carrier Progression for New Position Directory Dynamic Report Generator.</p>
<p>4. Bhutan Civil Service Examination System (BCSE2016) Enhancement</p>	<ul style="list-style-type: none"> - Understanding new requirement for the BCSE216 enhancement - System enhancement and development for examination system with new requirement and the changed - Implementing and testing the changed request 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology. - Implementation and test the system appropriate base on the requirement. - The user (candidate and administrator) can use BCSE system for new enhancement and the process are in line with existing rule. 	<p>BCSE2016 registration phase can be install on Production successful (A)</p>	<p>http://bcse.rcsc.gov.bt/</p>	<p>Continue to the next phase for all of requirement of BCSE2016.</p>

<p>5. Software development system in MISD</p>	<ul style="list-style-type: none"> - Defined structure or the rule for software development system in MISD - Install tools - Help and share the knowledge of software development for example; pair programming, wiki for knowledge sharing. 	<ul style="list-style-type: none"> - Be able to define proper standard development system to use in the organization in order that knowledge exchange, software development process and collaborator work. - Tools installation - The cooperation in the division for new system 	<p>This phase designed the system and tools successful. (A) In terms of project managers, developers, testers and system to use JIRA and retention in MISD which will focus on testing process as well.</p>	<p>Reference with Mini project document on 21 June 2016</p>	<p>Continue to the next phase for installation and testing process.</p>
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Quarter 4: July 3, 2015 – September 30, 2016

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. Bhutan Civil Service Examination System Enhancement (BCSE-2016)	<ul style="list-style-type: none"> - Learning BCSE system - Understanding new requirement for the system - System enhancement and development for examination system with new requirement and the changed - Implementing and testing the changed request 	<ul style="list-style-type: none"> - Be able to understand the system, changed request, gathering requirement and system analyst with proper functionality and technology. - Implementation and test the system appropriate base on the requirement. - The user (candidate and administrator) can use BCSE system for new enhancement and the process are in line with existing rule. 	Bhutan Civil Service Examination System base on new requirement 2016 enhancement has implement and testing successful (A)	http://bcse.rcsc.gov.bt/	-
2. Software development system in MISD	<ul style="list-style-type: none"> - Defined structure or the rule for software development system in MISD - Install tools - Help and share the knowledge of software development for example; pair programming, wiki for knowledge sharing. 	<ul style="list-style-type: none"> - Be able to define proper standard development system to use in the organization in order that knowledge exchange, software development process and collaborator work. - Tools installation - The cooperation in the division for new system 	<ul style="list-style-type: none"> - Software development system set up for MISD successful.(A) - Documentation and all tutorial for MISD added in Confluence (internal website) to transferring and sharing knowledge. 	JIRA : http://test.rcsc.gov.bt:8090 Confluence: http://test.rcsc.gov.bt:8100	Refer to Mini Project by TICA Volunteer

Additional Task in Quarter 4

Objectives	Output/Actives	Key Result Area / Key Performance Indicators	Degree of Achievement (A), (D), (U)	Mean of Verification (for Achievement)	Remark
1. Bhutan Civil Service Examination System (BCSE) Merge with BCSE(B.Ed) System	<ul style="list-style-type: none"> - Learning BCSE and BCSE(B.Ed) system - Understanding merging part for both system - Implementing and testing the changed request 	<ul style="list-style-type: none"> - Be able to understand the both system and analyst the functionality to implement merging 2 system. - Implementation and test the system appropriate. - The user (candidate and administrator) can use BCSE and BCSE(B.Ed) system in one system and the process are in line with existing rule. 	The implementation version 1 successful. (A)	http://bcse.rcsc.gov.bt/	After development and testing 1 st version in this quarter, the problem is the major changed request has required by project manager and the system has to redesign and develop such a huge part. The volunteer was not able to implement because of last date volunteer's agreement and other pending task then it'll implement by counterpart in next phase.

ปัญหา/อุปสรรค

การปฏิบัติหน้าที่อาสาสมัครในตำแหน่งนักออกแบบและพัฒนาระบบ (System Analyst and Design) หน่วยงาน Royal Civil Service Commission ณ ราชอาณาจักรภูฏาน หน้าที่หลักที่ข้าพเจ้าได้รับมอบหมายคือการออกแบบและพัฒนาโปรแกรม จากการทำงานที่ได้เข้ามาช่วยปฏิบัติงานกับแผนก MISD (Management Information Services Division) อาสาสมัครได้รับมอบหมายให้มีส่วนร่วมในทุกขั้นตอน ตั้งแต่เริ่มต้นถึงสิ้นสุดโครงการ ได้แก่ การพูดคุยเพื่อเก็บรายละเอียดความต้องการระบบ การออกแบบการใช้งานโปรแกรมหรือตรวจเช็คเอกสารความต้องการระบบ การออกแบบทางเทคนิคในส่วนของโปรแกรม การพัฒนาโปรแกรม จนกระทั่งการทดสอบระบบเพื่อส่งมอบโครงการ รวมถึงงานในส่วนอื่นๆ ภายในหน่วยงานซึ่งจะมีการขอคำแนะนำและให้คำปรึกษาร่วมด้วย เนื่องด้วยหน่วยงานเห็นว่าอาสาสมัครมีประสบการณ์การทำงานที่สามารถช่วยได้ อาสาสมัครสามารถช่วยเหลือได้ในส่วนที่มีประสบการณ์และประยุกต์ใช้ความรู้ที่มีร่วมแก้ไขปัญหาด้วย แต่ถ้าหากเป็นปัญหาที่ไม่เคยเจอหรือไม่รู้มาก่อนก็จะต้องช่วยกันค้นคว้าหาคำตอบ ดังนั้นแล้วการทำงานในลักษณะที่เน้นการทดลองหาคำตอบด้วยตนเองจึงเป็นสิ่งสำคัญ เพื่อให้การทำงานในแต่ละระบบประสบความสำเร็จ และถือเป็นทักษะพื้นฐานสายงานไอทีที่มีเทคโนโลยีใหม่ๆ ที่ต้องเรียนรู้อยู่ตลอดเวลา

ดังนั้นแล้วปัญหาที่พบในการทำงานคือเริ่มจากขั้นตอนแรกๆของโครงการที่เป็นการประชุมเพื่อหาบทสรุปหรือร่วมหารือในความต้องการระบบ ไม่ว่าจะจากหน่วยงานภายในหรือภายนอก การพูดคุยเพื่ออภิปรายปัญหาเพื่อหาบทสรุปหรือความคิดเห็นของอาสาสมัครนั้น ตลอดการประชุมอาสาสมัครพบว่าปัญหาการพูดคุยด้วยภาษาท้องถิ่นทำให้อาสาสมัครไม่เข้าใจภาพรวมทั้งหมด ถึงแม้จะมีการแจ้งไปแล้วก็ตามว่าในระหว่างการประชุมพูดคุยได้ขอให้ใช้ภาษากลางในการประชุมเพื่อให้เกิดความเข้าใจที่ตรงกันตั้งแต่เริ่มต้น จนถึงสิ้นสุดการประชุม การพูดคุยให้อาสาสมัครเข้าใจเฉพาะในส่วนที่ต้องการจะซักถามหรือขอความคิดเห็นนั้นจึงอาจจะขาดข้อมูลที่ไม่สามารถมองภาพรวม ณ ที่ประชุมได้ทั้งหมด แต่ปัญหานี้ถือว่าเป็นผลกระทบที่ไม่มากนัก เพราะหลังจากการประชุมจะมีการซักถามเพื่อทำความเข้าใจอีกครั้งได้

ขั้นตอนที่ 2 คือ การออกแบบระบบเพื่อให้ตรงกับความต้องการระบบของผู้ใช้ ในส่วนนี้หัวหน้าแผนกเป็นผู้ทำหน้าที่หลักในการรวบรวมความต้องการและเขียนเอกสารความต้องการระบบ อาสาสมัครมีหน้าที่ในการตรวจสอบหากมีคำแนะนำเพิ่มเติมจากเอกสารเบื้องต้นก็มีการปรับเปลี่ยนให้เหมาะสม แต่เนื่องด้วยนโยบายในรายละเอียดปลีกย่อยที่นอกเหนือจากการทำงานหลัก หากไม่มีการแจ้งทั้งในเอกสาร

หรือปากเปล่าแล้ว อาสาสมัครก็ไม่สามารถทราบข้อมูลหรือข้อมูลไม่ครบถ้วนด้วยเช่นกัน เช่นปัญหาที่เกิดขึ้นคือการรวมระบบสอบออนไลน์ (Merging Bhutan Civil Service Examination for General and Teacher System) ที่มีการสอบถามไปเบื้องต้นและได้รับการยืนยันแล้วว่าทั้งสองระบบจะไม่สามารถเกิดขึ้นพร้อมกัน แต่หลังจากการพัฒนาเสร็จสิ้นไปประมาณ 80% แล้ว มีความต้องการปรับแก้ความต้องการระบบ ซึ่งอาสาสมัครพิจารณาเห็นว่าในไตรมาสสุดท้ายที่เหลือเวลาเพียง 1 เดือนนั้น อาสาสมัครไม่สามารถปรับแก้ส่วนนี้ให้ทันได้ เนื่องจากต้องมีการปรับแก้ระบบที่ส่งผลกระทบต่อในการพัฒนาในหลายส่วนและใช้เวลานาน อาสาสมัครจึงแก้ไขปัญหาด้วยการออกแบบส่วนที่ต้องแก้ไขและให้แจ้งให้นักพัฒนาที่มีหน้าที่ในการพัฒนาต่อได้เข้าใจอย่างถ่องแท้เพื่อพัฒนาระบบด้วยตนเองได้ต่อไป แม้ว่าอาสาสมัครจะไม่อยู่ช่วยเหลือได้แล้วก็ตาม ซึ่งหน่วยงานต้องแก้ไขปัญหาตรงจุดนี้โดยการพัฒนาต่อเนื่องโดยหน่วยงานเองที่เกิดจากการออกแบบความต้องการระบบไม่ครอบคลุม ส่งผลให้การพัฒนาต้องยืดระยะเวลาพัฒนาต่อไปอีก โดยปกติแล้วความต้องการเพิ่มเติมสามารถเกิดขึ้นได้ภายหลัง แต่การออกแบบที่ดีเพื่อให้ครอบคลุมการทำงานเพื่อให้ระบบมีความสมบูรณ์มากที่สุด จึงถือว่าเป็นการดีและลดความเสี่ยงของปัญหาการพัฒนา

ขั้นตอนที่ 3 เป็นส่วนของการพัฒนาโปรแกรมซึ่งหลักๆ แล้วอาสาสมัครเป็นผู้รับผิดชอบ ปัญหาหลักเกิดจากเทคโนโลยีใหม่ๆ เครื่องมือใหม่ที่พัฒนา แต่หากเกิดปัญหาก็จำเป็นต้องค้นคว้าหาข้อมูลด้วยตนเอง ซึ่งโลกอินเทอร์เน็ตในทุกวันนี้ทำให้การหาข้อมูลสะดวกรวดเร็วตรงจุดยิ่งขึ้น รวมถึงการฝึกฝนการพัฒนาโปรแกรมโดยบุคคลากรภายในองค์กร โดยหลังจากการพัฒนาโปรแกรมแล้วจะมีการตรวจสอบหรือช่วยแนะนำการเขียนโปรแกรมเพื่อปรับให้โค้ดสั้น ง่าย มีประสิทธิภาพหรือตามเหมาะสมในการพัฒนาโปรแกรมร่วมกัน

รวมถึงขั้นตอนสุดท้ายในการทดสอบระบบที่อาสาสมัครไม่มีประสบการณ์ในการออกแบบการทดสอบระบบ ดังนั้นแล้วอาสาสมัครจึงต้องหาข้อมูลเพิ่มเติมและหารือกับทีมงาน ผลสรุปในการแก้ปัญหาในการค้นหาข้อมูลในส่วนการทดสอบระบบคือ อาสาสมัครช่วยให้การทำงานในส่วนของการจัดการการทดสอบเป็นไปได้อย่างสะดวกในขั้นตอนของการประเมินและตรวจสอบผลจากการทดสอบระบบ แต่การออกแบบการทดสอบระบบก็ต้องวิเคราะห์จากความต้องการและฟังก์ชันการทำงานของแต่ละระบบโดยผู้ทดสอบระบบเอง ผลจากการทดสอบระบบอาจจะมีความต้องการเพิ่มเติมหรือปัญหาจากการใช้งานโปรแกรมซึ่งการพัฒนาโครงการจำเป็นต้องวางแผนช่วงเวลาหลังการทดสอบระบบเพื่อเผื่อเวลาในการ

แก้ปัญหาโปรแกรมหลังจากการทดสอบด้วย เพื่อลดความเสี่ยงในการที่จะกระทบไปยังแผนการส่งมอบ ดังนั้นการวางแผนให้ครอบคลุมปัญหาที่เกิดขึ้น และการออกแบบทางเทคนิคเพื่อการพัฒนา ระบบที่มีประสิทธิภาพ จึงจะช่วยให้การพัฒนาโครงการเป็นไปตามแผนที่วางไว้และไม่ส่งผลกระทบต่อแผนที่วางไว้ หรือทำให้เกิดปัญหาและส่งผลกระทบต่อแผนงานน้อยที่สุด

ปัญหาอื่นๆ เช่น งานที่ได้ถูกมอบหมายหลังจากขั้นตอนการวางแผนโครงการแล้ว หากมีปัจจัยภายนอกเข้ามาส่งผลกระทบต่องานหลัก เช่น มีงานเร่งด่วนเข้ามาแทรกแซงการพัฒนา งานหลัก การลา งานหรือหยุดงานกระทันหัน ตลอดจนมีปัจจัยอื่นๆ ที่ส่งผลให้การพัฒนาตามระยะเวลาประเมินไว้ต้องยืด ระยะเวลาออกไป ดังนั้นอาสาสมัครจึงต้องวางแผนสำรองและเผื่อเวลาไว้เสมอ เพื่อให้การพัฒนาเสร็จสิ้น เป็นไปตามกำหนด และปัญหาในการมอบหมายงานในแผนกให้กับผู้รับผิดชอบที่ปัญหาจากจำนวนงาน ที่มากกว่าจำนวนคนที่จะสามารถรับผิดชอบงานได้ ทำให้งานไหลลื่นไปที่บุคคล รวมถึงการขาดบุคลากรไม่ว่าจะจากสาเหตุการลาไปเรียนต่อหรือขาดแหล่งความรู้ จึงต้องแก้ปัญหาโดยการแชร์ข้อมูล การส่ง บุคลากรไปเทรนงาน หรือทำงานร่วมกันเป็นทีมเพื่อที่ว่าหากขาดบุคลากรคนใดคนหนึ่งแล้วอีกคนจะ สามารถแทนกันได้ และหัวหน้าแผนกต้องวางแผนงานและประเมินแผนโครงการกับบุคลากรในการ ทำงานแต่ละส่วนเพื่อความสำเร็จของโครงการ ซึ่งบางโครงการพัฒนาทางหน่วยงานได้ว่าจ้างการพัฒนา ระบบโดยหน่วยงานภายนอกมาพัฒนาระบบเพื่อแก้ปัญหาตรงจุดนี้

ข้อเสนอแนะ

MISD (Management information services division) มีหน้าที่จัดเก็บข้อมูลบุคคลของข้าราชการภายในราชอาณาจักรภูฏาน ดังนั้นแล้วข้อมูลต่าง ๆ จะต้องมีความแม่นยำสูงรวมถึงระบบการจัดการกับข้อมูลภายในของแต่ละระบบด้วยเช่นกัน อาสาสมัครจึงได้นำเสนอช่องทางในการจัดเก็บข้อมูลเป็นเว็บไซต์ภายในเพื่อเป็นส่วนกลางข้อมูลของทุกระบบร่วมกัน เริ่มตั้งแต่การจัดเก็บข้อมูลเบื้องต้นของระบบ ฟังก์ชันการทำงาน การพัฒนา ปัญหาและการแก้ไขสิ่งที่เคยเกิดขึ้น เพื่อเป็นแหล่งข้อมูลในการอ้างอิงหรือและป้องกันปัญหาการคลาดเคลื่อนหรือปัญหาการลืมนำข้อมูลไปได้ ทั้งยังเป็นประโยชน์กับผู้เข้ามาศึกษาระบบใหม่เพื่อการเรียนรู้ที่สะดวกและรวดเร็ว หรือในกรณีที่ผู้รับผิดชอบหลักไม่สามารถให้ข้อมูลได้อันเนื่องจากผลงานหรือไม่สามารถติดต่อได้ จึงเป็นอีกช่องทางในการสำรองข้อมูลและเพื่อแก้ปัญหาล่วงหน้าที่มีประสิทธิภาพค่อนข้างสูง โดยใช้เครื่องมือที่เรียกว่า Confluence และติดตั้งสำหรับหน่วยงานภายใต้การนำเสนอโครงการย่อยของอาสาสมัคร ข้อมูลเพิ่มเติมสามารถดูได้ในหัวข้อ Development Environment SETUP for MISD

การพัฒนาโครงการเริ่มตั้งแต่ขั้นตอนการหารือและเก็บรวบรวมความต้องการระบบของทุก ๆ ฝ่ายที่เกี่ยวข้องกับระบบเพื่อนำมาวิเคราะห์ระบบร่วมกัน จากนั้นในขั้นตอนของการพัฒนาโปรแกรมที่ผ่านมาโดยมากแล้วทางหน่วยงานจะจ้างบริษัทภายนอก (Outsourcing) และทดสอบระบบโดยหน่วยงานเอง ทางหน่วยงานจึงมีนโยบายในการสร้างนักพัฒนาภายในองค์กรเอง เป้าหมายคือเพื่อลดค่าใช้จ่ายโดยองค์กรมีนโยบายส่งพนักงานไปอบรมการพัฒนาโปรแกรมที่ประเทศอินเดีย เพื่อที่จะนำความรู้กลับมาพัฒนาโปรแกรมได้ด้วยตัวเอง ในช่วงเวลาที่อาสาสมัครได้เข้ามาร่วมทำงานจึงเป็นโอกาสดีที่ผู้ร่วมงานจะเริ่มต้นฝึกฝนการพัฒนาและอาสาสมัครได้ตรวจสอบผลงานพร้อมทั้งให้คำแนะนำเพิ่มเติมในการเขียนโปรแกรม เพื่อเป็นการฝึกทักษะในการเขียนโปรแกรมไปในแนวทางที่ก่อให้เกิดการพัฒนายิ่งขึ้น การเรียนรู้ที่ดีเริ่มต้นจากการค้นคว้าและลงมือปฏิบัติ แต่เมื่อลงมือปฏิบัติงานตามแผนงานจริงแล้วพบว่าจะต้องวางแผนและใช้เวลาในการพัฒนาสำหรับเผื่อเวลาในการพัฒนาสำหรับระยะเริ่มต้นในการพัฒนารวมทั้งปัจจัยอื่นๆ ที่อาจจะส่งผลต่อกำหนดการของโครงการ ในประเด็นเรื่องการวางแผนการพัฒนา ระบบ อาสาสมัครได้พบว่าหลายครั้งที่ความต้องการระบบและการออกแบบไม่ครอบคลุมการใช้งานทั้งระบบอย่างสมบูรณ์ มีประเด็นที่เพิ่มเติมเข้ามาและต้องความต้องการในการพัฒนาเพิ่มหลังจากการทดสอบระบบทำให้ต้องขยายระยะเวลาการพัฒนาออกไป การทดสอบระบบโดยองค์กรหลังจากที่ว่าจ้าง

บริษัทภายนอกจะมีขึ้นหลังจากการพัฒนาทุกส่วนเสร็จสิ้น ทำให้เมื่อมีปัญหาหรือความต้องการเพิ่มเติมเกิดขึ้นจะใช้เวลาขยายออกไป อาสาสมัครจึงนำเสนอให้มีการแบ่งระยะเวลาในการทดสอบเป็นส่วน ๆ ไป รวมทั้งปรับใช้หากมีการพัฒนาภายในองค์กรเองด้วยเช่นกัน ทั้งนี้ในส่วนของบริษัทาหน้าที่ของผู้จัดการโครงการ (Project Manager) อาจจะต้องละเอียดรอบคอบในการวางแผนการจัดการระบบทุกระบบภายในหน่วยงานและเพิ่มการติดตามการพัฒนาโครงการกับผู้พัฒนาโปรแกรม เพื่อติดตามความคืบหน้าและร่วมกันแก้ปัญหาในการพัฒนาโครงการร่วมกับทีมงาน อาสาสมัครจึงติดตั้งระบบติดตามโครงการ JIRA เพื่อให้การติดตามโครงการทั้งระบบเป็นไปอย่างสะดวกมากยิ่งขึ้น รายละเอียดเพิ่มเติมดูได้จาก Appendix 2 ที่รวมไปถึงการทำงานในขั้นตอนการทดสอบระบบด้วยเช่นกัน สามารถกำหนดรูปแบบเอกสารหรือจัดเก็บข้อมูลการทดสอบระบบได้จากเครื่องมือที่อาสาสมัครได้ติดตั้งไว้ (Zephyr – Test management tool)

หลังจากการติดตั้งระบบ JIRA และ Confluence ให้กับทางหน่วยงาน อาสาสมัครและผู้ร่วมปฏิบัติงานหลักพยายามผลักดันหรือเริ่มต้นการใช้งานระบบให้ผู้ใช้ได้ใช้งานร่วมกันอย่างจริงจัง การใช้งานระบบจึงได้ปรับใช้ร่วมกับโครงการใหม่ๆ เพื่อก่อให้เกิดการเรียนรู้และความเข้าใจในการประยุกต์ใช้งาน เนื่องจากในเบื้องต้นอาจจะเป็นการเพิ่มภาระให้กับผู้ใช้งานระบบ เพราะเดิมทีเมื่อมีปัญหาจากระบบแล้วผู้ปฏิบัติงานจะสื่อสารและแก้ปัญหากันโดยสื่อสารกันโดยตรง ไม่มีการเก็บข้อมูลใดๆ จึงต้องพยายามเน้นการทำงานที่ใช้ระบบเข้ามาเพื่อจัดเก็บข้อมูล และชี้แนะให้เห็นถึงประโยชน์และความสะดวกสำหรับการจัดการโครงการเพื่อประโยชน์ในภายภาคหน้าด้วยเช่นกัน

ระบบงานหลักของหน่วยงานที่อาสาสมัครได้เข้ามามีส่วนร่วมในการพัฒนา คือ CSIS (Civil Service Information System), Career Progression in CSIS และ BCSE (Bhutan Civil Service Examination System) การทำงานหลักคือ ออกแบบ พัฒนาส่วนเพิ่มเติม ปรับปรุง แก้ไขปัญหา ให้คำแนะนำในการปรับปรุงระบบที่มีอยู่เพื่อทำให้ระบบสมบูรณ์และมีประสิทธิภาพยิ่งขึ้น เนื่องจากหัวหน้าหน่วยงานมีมุมมองการทำงานที่กว้างไกลในส่วนของจัดการองค์กร สิ่งที่ต้องเน้นคือการลงมือพัฒนาเนื่องด้วยบุคลากรในการพัฒนามีน้อยกว่าโครงการที่อยู่ในแผนการพัฒนา การปรับปรุงระบบจึงเป็นไปได้ค่อนข้างช้า เช่น ในระบบ CSIS โครงสร้างของระบบที่มีอยู่ค่อนข้างซับซ้อนเพราะเป็นระบบเก่า เครื่องมือที่ใช้เป็นรุ่น 2005 ดังนั้นเมื่อเทคโนโลยีในการพัฒนาโปรแกรมใหม่ๆ เข้ามา เซิร์ฟเวอร์ใหม่มีการอัปเดต ดังนั้นแล้วเครื่องมือในการพัฒนาจึงควรอัปเดตด้วย เนื่องจากปัญหาเรื่องการติดตั้งเครื่องมือในฝ่าย

นักพัฒนาในบ่อยครั้ง รวมถึงสมรรถนะและความปลอดภัยของระบบ แต่เนื่องจากการอัปเดตเครื่องมือในการพัฒนา รวมถึงโครงสร้างระบบเป็นความสำคัญอันดับรองจากการพัฒนาฟังก์ชันการทำงานใหม่ ๆ ของนโยบายใหม่ การอัปเดตเครื่องมือในการพัฒนาจึงถูกนำเข้าพิจารณาในขั้นตอนการพัฒนาขั้นต่อไป

ประเด็นสำคัญคือการแชร์ข้อมูล เนื่องจากงานที่ค่อนข้างโหดในองค์กร การจัดการด้านเวลาหรือให้ความสำคัญการแบ่งปันข้อมูลจึงไม่มากเท่าการที่จะต้องรับผิดชอบงานหลักให้เสร็จก่อน อาสาสมัครจึงต้องวางแผนกำหนดให้เดือนสุดท้ายของการปฏิบัติหน้าที่เป็นส่วนของการแชร์ข้อมูลเป็นงานหลัก เพื่อแชร์ข้อมูลและโอนงานไปยังผู้ที่เกี่ยวข้องเพื่อให้ดูแลต่อไปในทุกส่วนของโปรแกรม เพื่อที่ว่าเมื่ออาสาสมัครไม่ได้อยู่ปฏิบัติหน้าที่แล้ว หากมีปัญหาหรือความต้องการเพิ่มเติมจากทดสอบระบบก็จะสามารถแก้ไขกันเองได้ ทั้งยังมีการนำเสนอต่อหน่วยงานรวมถึงการสร้างข้อมูลและเอกสารคู่มือระบบต่างๆ ที่เกี่ยวข้องที่อาสาสมัครได้พัฒนา เพื่อจัดเก็บไว้ในระบบ Confluence ที่อาสาสมัครได้ติดตั้งไว้ใช้งานภายในหน่วยงาน เพื่อเป็นแหล่งความรู้ภายในองค์กร พร้อมทั้งกำหนดเงื่อนไขให้ผู้ร่วมงานได้เพิ่มเติมความรู้ที่ตนเองมี ระบบที่ตนเองเกี่ยวข้องหรือทำหน้าที่หลักเพื่อเก็บข้อมูลในระบบและป้องกันข้อมูลคลาดเคลื่อนหรือลืมนั่นเอง เพื่อที่ว่าหากคนหลักที่ดูแลระบบไม่อยู่ ผู้ที่สานต่อสามารถค้นคว้าหาข้อมูลในส่วนที่เกี่ยวข้องนี้ได้ เป็นการแก้ปัญหาล่วงหน้าในช่วงปลายปีอาสาสมัครหมดสัญญาและบุคลากรที่ปฏิบัติงานหลักต้องไปศึกษาต่อ ทำให้คนหลักที่ดูแลระบบขาดไป จึงต้องเน้นเรื่องการแชร์ข้อมูลให้ผู้ที่เกี่ยวข้องได้ทำงานได้อย่างมีประสิทธิภาพ

จากข้อสังเกตการทำงานร่วมกับหน่วยงานตั้งแต่เริ่มต้นแล้วทำให้อาสาสมัครต้องเน้นให้เห็นถึงความสำคัญในการผลักดันการค้นคว้าหาข้อมูลด้วยตนเอง เพราะลักษณะงานนั้นปัญหาที่อาสาสมัครและผู้ร่วมงานได้เจอบ่อยๆ คือ เทคโนโลยีใหม่ๆ ปัญหาใหม่ๆ การค้นหาข้อมูลด้วยตนเองจึงเป็นเรื่องที่สำคัญในการทำงาน การแก้ปัญหาที่ดีที่สุดในการคิดเห็นของอาสาสมัครก็คือให้เพื่อนร่วมงานได้ลองค้นหาเนื่องจากในปัจจุบันนี้ในโลกยุคอินเทอร์เน็ต การค้นคว้าหาข้อมูลต่างๆ ทำได้ง่าย ขอเพียงให้ผู้ผู้ได้ลองค้นคว้าหาข้อมูลเพื่อแก้ปัญหาด้วยตนเองก่อนเพื่อประโยชน์และเป็นทักษะในการทำงานต่อไป

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Appendices

Project Proposal

Project Title: Set up software development system for MISD

Implementing Agency: Royal Civil Service Commission (RCSC), Thimphu Bhutan

1. Background Information and Justification for the Project

In operation works at Royal Civil Service Commission (RCSC), Thimphu Bhutan volunteers found the issues that can help MISD, RCSC through the mini project, which has two main issues:

1. MISD will set up software development information of the agency itself. Formerly employed by outsource which make high cost event though the small changed. MISD try to use their resource for software development that will implement by them. By this point I think that JIRA will be helpful for organization to manage the project for the team. JIRA system is tracking system for the whole process of the project from gathering requirement information, design, implement till testing and QA phase. The system can be track and generate report status for project manager and the team. Also for developer can sync with subversion for source control (Committed code). This will be good benefit for team; Project manager, Developer, tester, support for collaboration works.

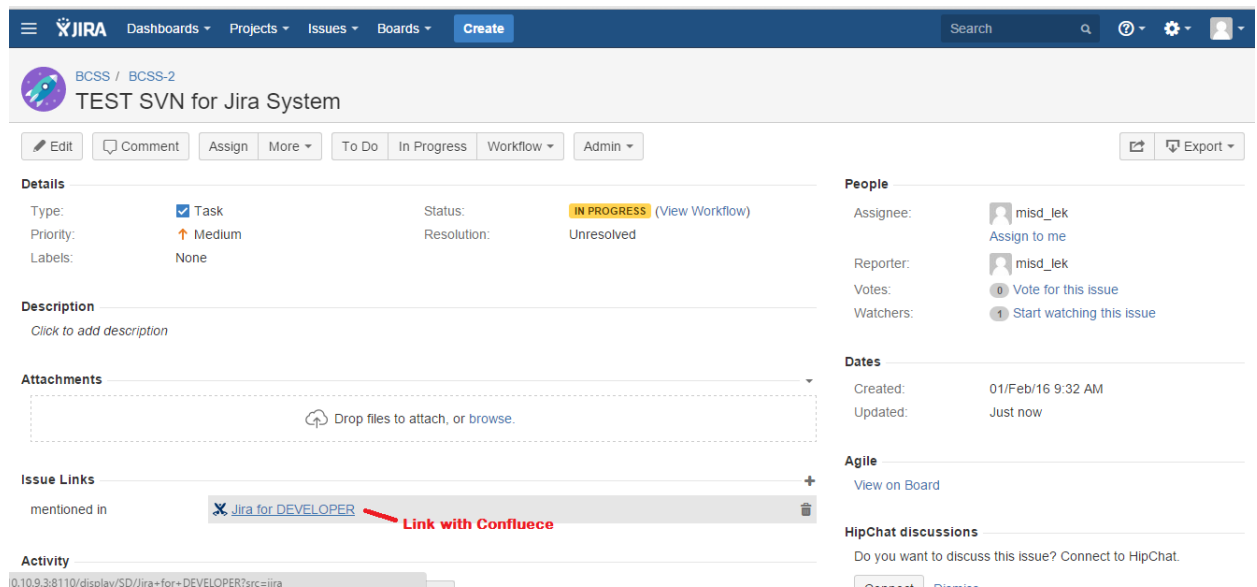


Figure A1-1: JIRA System for Software development system.

- Lack of knowledge management in organization for example, only one person know CSIS system and functionality , if that person is not available then no one know it. The suggestion is sharing information in organization will be useful for lack of information and the new employee can learn from internal resource by themselves. Information Resource will be helpful for search and

it is the start up for answer to find the result. “Confluence” is a tool for internal knowledge base that decided to set up in organization. And it will connect with JIRA system for any issue information such as technical information, related information from implementation or requirement.

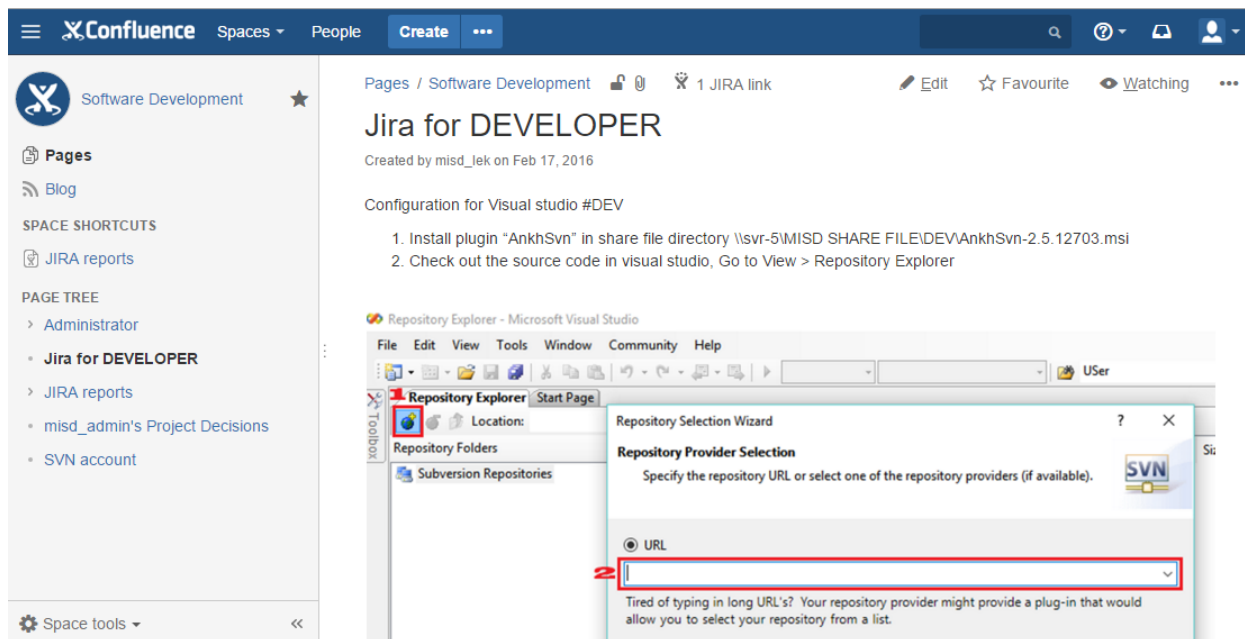


Figure A1-2: Confluence (Internal knowledge sharing).

3. The standards and requirements require in testing process, in the division have to do test process before deploy on the Main server. Normally in the organization has less detail or missing information. The volunteer searching tools for test process improvement and the conclusion that the JIRA system can integration with Add-ons “Zephyr” for Test Management tool. It will collect since the details of the test design, expected results and the results. If the error occurs, the system can be redirect from test ticket to the developer in task ticket who has responsible for that.

2. Details of the Project

2.1. Project Objectives

1. To install ‘JIRA’ , tools for MISD to manage and track the project.
2. To install ‘Confluence’, knowledge base with Internal sharing website.
3. To install Add-On ‘Zephyr’ in the JIRA’ System for “Test Process”.
4. To install Add-Ons in the JIRA’ System for Project Manager such as Report , Calendar and so on.

2.2. Project Outputs

1. Install JIRA tracking system.
2. Install Confluence for internal sharing website.
3. Install Add-Ons for Testing Process (“Zephyr for JIRA Test Management”)
4. Install Add-Ons for Project Manager and All User (Team Calendar, Diagram, Grant Chart Tools, Report/Exporter, Chat)

2.3. Duration of the Project

During the time of July 1, 2016 - September 30, 2016.

Cost Estimation

List	Detail	Price (US Dollar)
1. JIRA	3 Year/10 User	\$30
2. Confluence	3 Year/10 User	\$30
Add-ons	3 Year/10 User	
3.1 User: Project Manager (Report/Tracking Information) - EazyBI Report and Charts for JIRA	3 Year/10 User	\$200
3.2 User: Tester (Test structure and tracking information for test process) - Zephyr for JIRA Test Management	3 Year/10 User	\$20
3.3 All User (Chat, Diagram) - HipChat - Gliffy Diagram - Pdf Exporter - Table Grid Editor - Team Calendars for Confluence	3 Year/10 User	\$30 \$20 \$20 \$20 \$30
Summary		\$400

* Condition of System can be use lifetime, but only 3 year for support and maintenance by Atlassian company with 10 Accounts. (Updating latest version)

3. Project Work Plan

Project duration: July 1st 2016 – Sep 30, 2016

Detailed Output / Activities	Year 1 (2015-2016)				Counterpart Personal	Budget	Remark
	Q1	Q2	Q3	Q4			
BCSE Project bug fixed and testing					Kuenga Zam, Rigzin Namgay Tamang, Passang Wangdi, Ganga Ram	400	
Welfare Project review specification							
Welfare testing and defined Testing structure							
Development Environment Set up for MISD: Tracking system integration (JIRA)*		X					
Development Environment Set up for MISD : Source control software (SVN)							
CSIS update to accommodate Carrier Progression changes							
CSIS update to implement Super Structure concept							
CSIS Enhancement							
BCSE Project Enhancement							
Software development system for MISD				X			

* We designed to change TRAC to JIRA which not supported with MISD Server versions.(Referred to work plan document) .

Objectives	Detailed Output / Activities	Key Result Area (KRA)	Key Performance Indicators (KPI)	Critical Success Factor (CSF)
1. Set up MISD for software development environment system 2. Improvement MISD Standard Structure	1. JIRA system install for tracking system 2. Confluence system Installed for knowledge base (internal website) 3. Zephyr for JIRA Installed for Test Management 4. Install other Add-Ons for Project Manager and All User (Team Calendar, Diagram, Grant Chart Tools, Report/Exporter, Chat)	Improve collaborator work in Management Information Services Division (MISD) for software development environment system	<ul style="list-style-type: none"> - Complete setup software for MISD - Understanding the software's advantage and adapt with MISD 	<ul style="list-style-type: none"> - Input from volunteer, support from counterparts, collaborator work for new tools - The employee adapt and get used to the tools

4. Project Work Progress

#	Activities	Estimate (Day)	Progress (September)			
			Week1	Week2	Week3	Week4
1	Study, analyst and design with proper tools	3				
2	simulation testing in local machine	8				
3	Define and adapt the tools for MISD standard	3				
4	Installation tools in MISD Server	3				
5	Test tools for whole workflow	5				
6	Presentation and discussion with MISD	3				
7	Knowledge Transfer and summarization	5				

This project starting by volunteer and Management Information Services Division (MISD) has the concept with standard structure and manage all of systems in Royal Civil Service Commission (RCSC) for MISD as software development environment system. Volunteer had designed to set up tools for MISD base on project proposal as following are the steps to follow in order to setup environment for MISD.

1. Install JIRA (Project managing and tracking for collaborator works Software)
2. Install Confluence (Knowledge base Software)
3. Install Extra functionality tools for JIRA
 - Zephyr for JIRA (Test Management)
 - easyBI Reports and Charts for JIRA (Report)
 - PDF View Plugin for JIRA (PDF Exporter)
 - Table Grid Editor for JIRA (Content Editor Tool)
 - Email This Issue for JIRA (Collaborator Works)
 - Structure - The Issue Organizer for JIRA (Project Management)
4. Install Extra functionality tools for Confluence
 - Team Calendars for Confluence
 - Gliffy Diagrams for Confluence (Online Design Tool)

First, installation part will setup in local machine to avoid the risk on the server then when the simulation and testing done and stable for the tools and structure design for MISD, finally it will setup in the server. The result of the project after the simulation test, some tools changed because of functional suitability assessment for the user as 'HipChat' removed from installation and replace with Add-Ons 'Email This Issue' and 'Structure'. Then the server setup the same as simulation machine.

After the installation complete, the important is to participate with user in MISD by presentation and discussion session to understand the concept and how to use software then define standard structure together. After discussion, all request resolved for JIRA workflow to optimize for MISD such as after ticket resolved, it will auto reassign to reporter or who create ticket.

The understanding of concept of the tools and how to adapt with the upcoming project as details below.

1. JIRA System for tracking and manage for all user depends on the right

➤ **Project manager**

- Create new project in JIRA
- Create issue with type : Task/Requirement/Change /Bug
- Add detail of requirement in issue created above as Requirement issue
- Tracking status of the project by JIRA Filter/ JIRA Structure
(JIRA can search the issue by the condition for example project manager can check the JIRA issue with status: Resolves or Open or In Progress to check how many % of project complete.)
- Reporting (eazyBI) and management the project flow
- Track status for all JIRA Issue

➤ **Developer**

- Get/Create JIRA Issue (Task, Bug, Chang Request create or assign by project manager)
- Update detail of functionality and the implementation logic
(Require Source control for Developer Rule)
- Update and track status JIRA Issue assign to Developer (In progress, Resolved)

➤ **Tester**

- Get/Create JIRA Issue (Test Ticket with Add-On Zephyr in JIRA)
- Update test instruction and result
- Create JIRA issue 'Bug' and assign to Developer
- Update and track status of the resolved task
- Discuss with Developer or Project manager

➤ **All User**

- JIRA Feature 'Email This Issue' for concern person
- JIRA Feature 'Table Grid Editor' add detail in table form in JIRA Issue
- Pdf Exporter for JIRA Issue

2. Confluence system use for knowledge base with all information mention below added here.

- Organization Information; Structure, Rule, Network Design
- Systems
- Project document; Requirement
- Technical Design by Developer
- Knowledge Related Work or Task Responsibility
- Personal Blog
- All information whatever you want to sharing

Other Feature in Confluence for Content management such as Gliffy Diagram for online design tools, Team calendar for Confluence to manage the time schedule of the project will use in the organization.

3. Mainly focus on Development which MISD will contribute developer team to implement new project instead of outsourcing because of the cost and co-worker. MISD and volunteer setup the Developer first, trained people by took class of programming and then volunteer will support for co-programming, review the code and advise in programming part. The development rule has defined including subversion that volunteer suggest to use helper tools. (See more detail for the tools in Tutorial Appendix 2.)

Final phase of this project will focus on sharing knowledge for user and technical part for administrator about the tools. Volunteer shared information and technical part for counterpart and related person face to face and updated the information in Confluence for knowledge base as well.

5. Conclusion

Software development environment tools installed for Management Information Services Division (MISD) for collaborator work which need the cooperative for all user to participate with the new system. Volunteer created tutorial for 'How to use tools for MISD' refer to Appendix 2 and volunteer hope that this Guide will help the organization to work with project team. The division start up for development and the functionality or tools from new idea can happened with new technology in the future to support organization workflow.

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**Software Development Environment System
For Management Information Services Division
(JIRA and Confluence for MISD)**

By

**Miss Thassaneeya Sodasoi
(System Analyst and Developer)
TICA Volunteer 2015**

**Royal Civil Service Commission (RCSC)
Management Information Services Division
(MISD)**

Thimphu, Bhutan

Contents

Overview	1
JIRA.....	2
Why we decide to use JIRA and How it work with MISD?	2
JIRA Features.....	2
Created Issue.....	3
Report	3
Notification	3
Powerful Search	3
Other	4
JIRA Concepts.....	4
Ticket (JIRA Issue).....	5
Subtask.....	6
Assign Task	7
Linked Issue.....	7
Workflow.....	8
Workflow (admin).....	9
Email this Issue.....	14
Confluence	17
Confluence Features	17
How to use Confluence?	19
Addition tools.....	22
Gliffy Diagram	23
Zephyr for JIRA (Test Management Tools).....	25
EazyBI Report	30
Developer.....	34
Development Rule in MISD	34
Source control : Visual studio Plugin for Developer	35
How to change your SVN account in your local!.....	39
Source Control : SQL	40
Source Control : New file	41
Administrator.....	42
Deployment process (Publish Website).....	42
JIRA Installation.....	44

Confluence Installation	45
Email Notification Configuration.....	47
Software Updating	48
JIRA Subversion Plugin	48
SVN config for JIRA system	49

Overview

Management Information System Division (MISD) mainly proposes when volunteer participate with the organization on October 2015 – September 2016 in development process. First the concept from start up with training the employees to have the programming skill and practice with real project as the counterpart to co-worker with volunteer. The main purpose is to reduce the cost event though the requirement is small change but the price is quite high from outsourcing so MISD try to develop the software by themselves and it will be much more understand in concepts in terms of the part it plays within the Organization as a whole.

- The volunteer set up MISD for proposing of software development environment system for whole process of software development project for eveJIRA for manage and tracking system
- Confluence for knowledge base internal website
- Add-On set up for all user for example design tools, Calendar for Confluence, EazyBi Report for Project Manager, Source control for developer.
- Standard structure for MISD Developer
- e for MISD Developer

Other requested by the division is test standard and test management to improving the overall quality of IT Software development and support through the lifecycle with 'Zephyr' Test Management tool in JIRA.

This document will focus on how to use JIRA and Confluence in MISD system including extra functionality and configuration part for administrator. Finally after presented to MISD and the conclusion of discussion, the volunteer will adapt the workflow for the organization for example the task will reassign automatically to report after assignee resolved the ticket. Volunteer hope that tools will help collaborator works in MISD for upcoming project to support with new technology in the future as well.

JIRA

Why we decide to use JIRA and How it work with MISD?

- JIRA lets you prioritize, assign, track, report and audit your 'issues', from software bugs to project tasks and change requests
- More than just an issue tracker, JIRA is an extensible platform that you can customize to match your business processes with a custom workflow or Issue type.
- Customizable reporting allows you to monitor the progress of your issues with detailed graphs and charts.
- JIRA improves quality by ensuring all tasks are recorded down with all the details and followed up till completion
- JIRA improves productivity by cutting down on time wasted on tracking issues and coordination

How to use JIRA in our Organization?

1. Upcoming project will create and set up in JIRA system. At the beginning, we start with Career Progression Project and configuration the project following listed below :
 - Issue Type : Requirement, Task, Bug, Sub question
 - Workflow
 - JIRA Administrator configures for SVN that will synchronize with the project and the code changed
2. Project management will create ticket for Requirement, Task, Sub-Task, Sub-Question and Bug list.
 - **Requirement Ticket** for the history of project information from beginning to the complete project. Project manager will create the ticket and attached information into the ticket and report every change in the ticket for the log information.
 - **Task Ticket** will be separate for each functionality or module that will be easy for project manager and developer to track the task in development process.
 - **Bug / Change Request Ticket**, after completed implementation and then the testing phase might be bugs or the changes and it will attach into the main ticket for history. The system can check the code change in subversion tab for detail.
3. Tracking and reporting in JIRA system that project manager can track the status for the whole project and the detail for each task to control and manage the factors which affect the project to find the problem immediately with the team for collaborator work.

JIRA Features

- Bugs
- Change Requests
- Project Management

- Task Tracking
- Requirements Management
- Workflow / Process Management
- Help-desk / Support / Customer Service (MISD N/A)

Created Issue

- Creating tasks, bug reports, feature requests, is a breeze
- No need to transcribe issues from emails to Excel worksheet anymore
- Issue can be easily created via
 - Web: Filling the form on the Web page
 - Email: Sending an email to a preconfigured email address
- Allows customizable items for different issues types

Report

- JIRA delivers real-time, relevant information in a convenient format (Search criteria)
- JIRA enables the management to have clear visibility of the situation

Notification

- JIRA enables you to receive the information you need, when you need it.
- Configurable email alerts as and when issues are updated
- Optional emails to remind on overdue tasks
- Subscribe to weekly/monthly reports on issue status

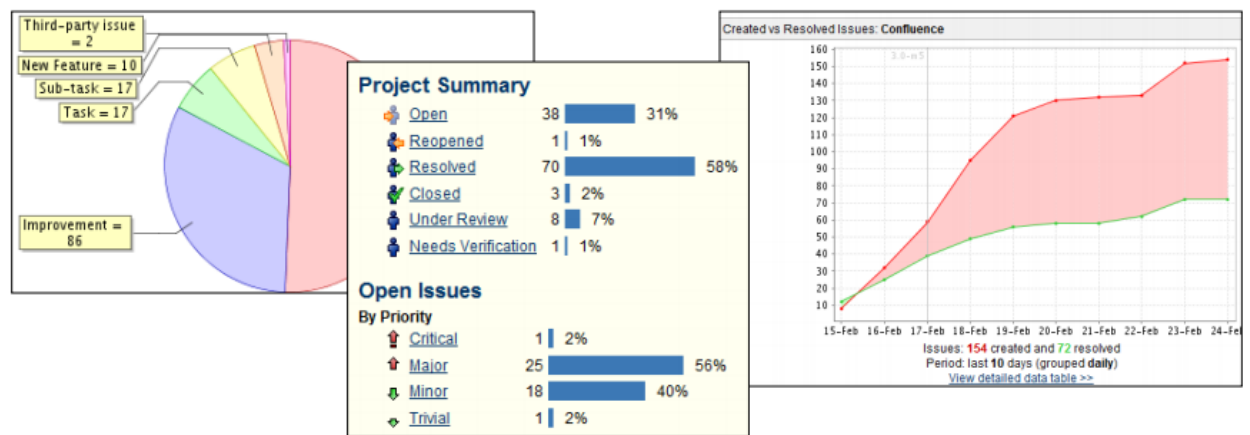


Figure 1. JIRA Report

Powerful Search

- Find precisely what you are looking for in seconds
- Search can be saved as filters and reused
- Powerful and flexible searching
- Supports searching of customized fields too

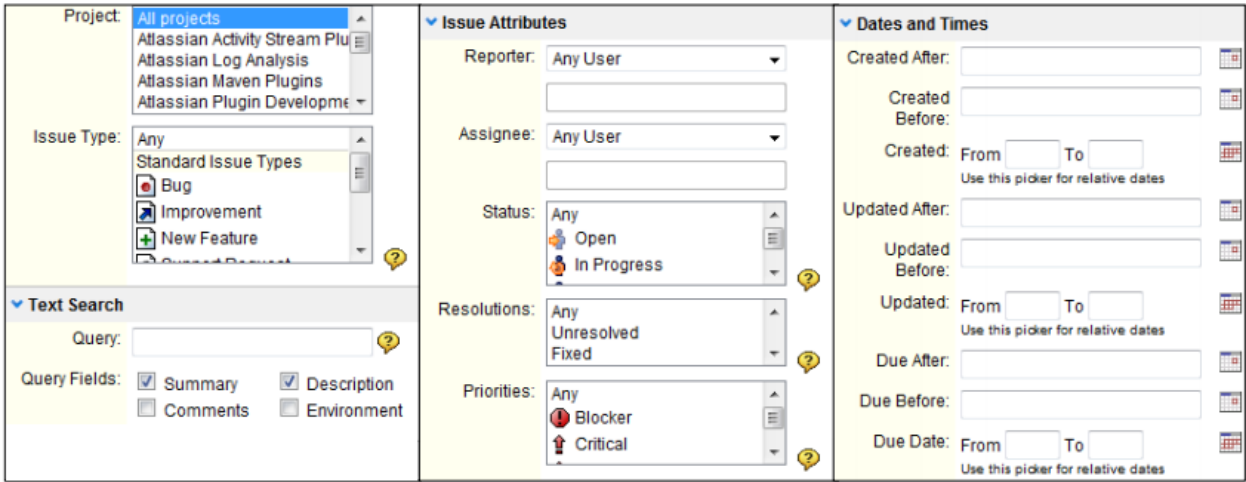


Figure 2. Powerful Search for JIRA Issue

Other

- Secure – JIRA provides fine-grained enterprise level security
- Usable – Intuitive interface designed with both business and technical users in mind
- Track – Keep track of all activities, changes and work logged against issues
- Administration – A low maintenance system with straightforward administration capability
- Extensible – With over 100 plugins contributed by the community
- Open – An open API, full source code access allow for further integration and customization of JIRA functionality

JIRA Concepts

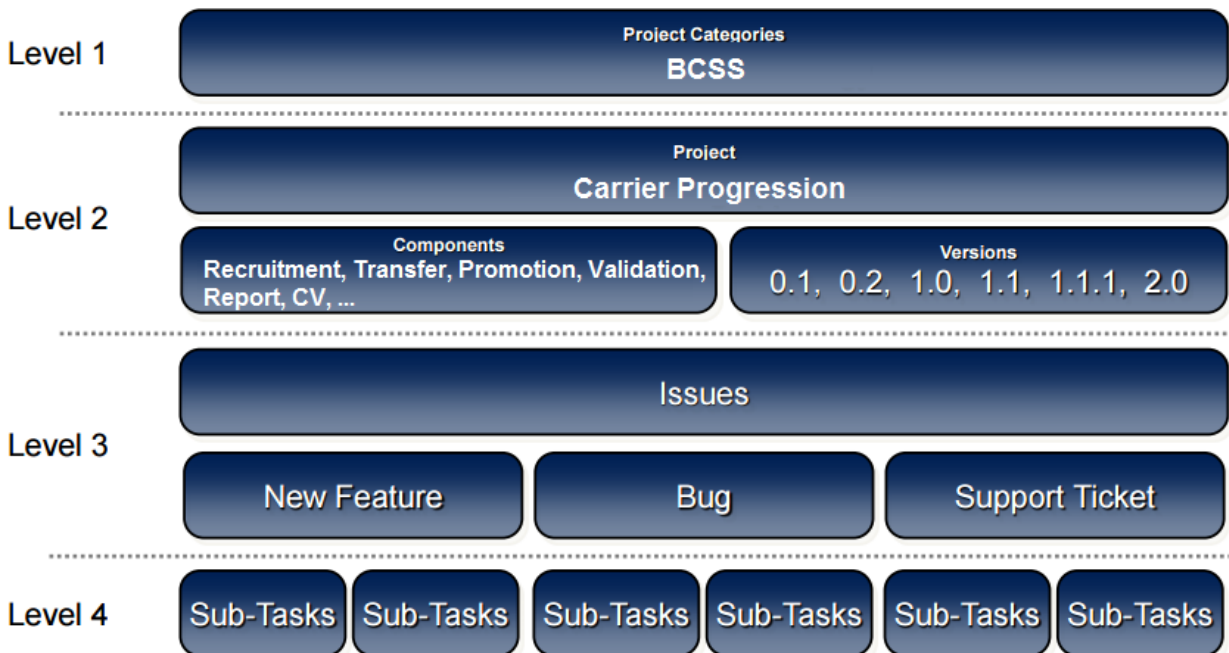


Figure 3. JIRA Structure

JIRA structure for sample project describe by Figure 3. First is project category which name of Main project and the project might be sub project. The component is for each functionality which can define the version as release version. JIRA issue can be new feature, Requirement, change request, Task, Bug, Sub-Task or Sub-Question.

Ticket (JIRA Issue)

1. The user (Project Manager, Developer, tester, reporter) can create ticket for any “Issue Type” as Requirement, Task, Bug and Sub-Task (Question).

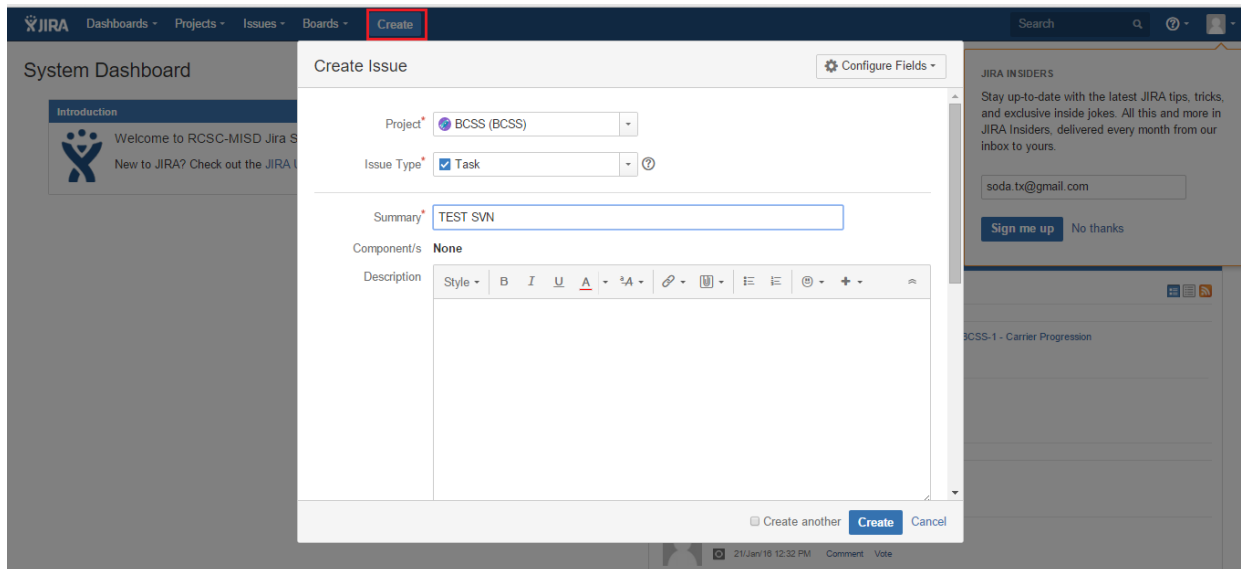


Figure 4. Create Issue

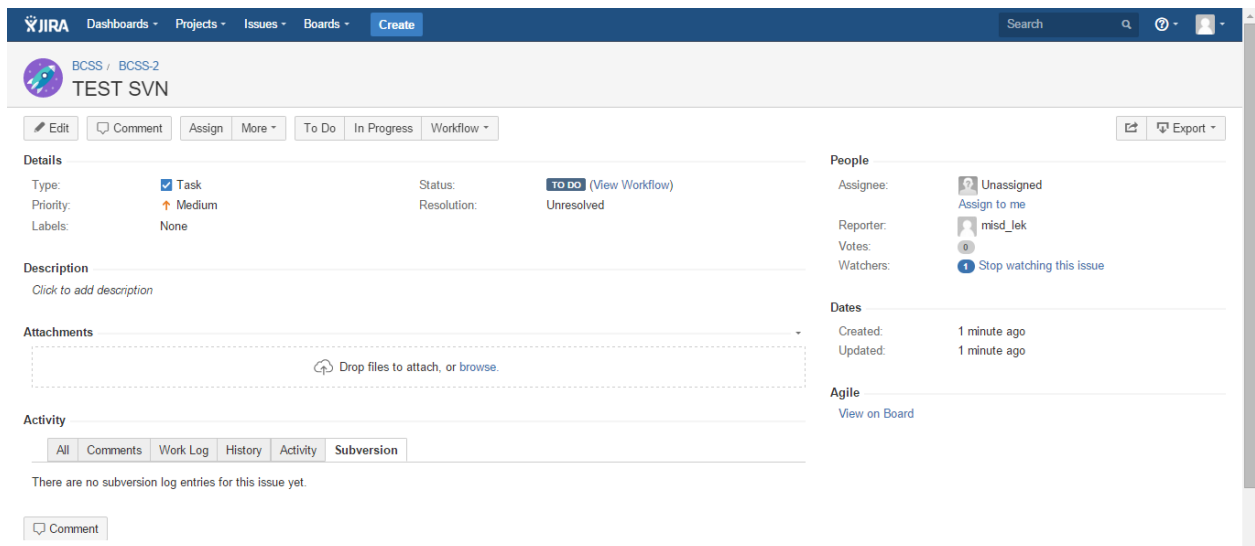


Figure 5. Ticket or Issue

Subtask

Subtask is one of Issue Type under “Main Ticket” on the menu **More > Create Sub-Task** and the value can be Sub-Task or Sub-Question then the window will be the same as other JIRA issue except the issue type will be difference. (See Figure 6.)

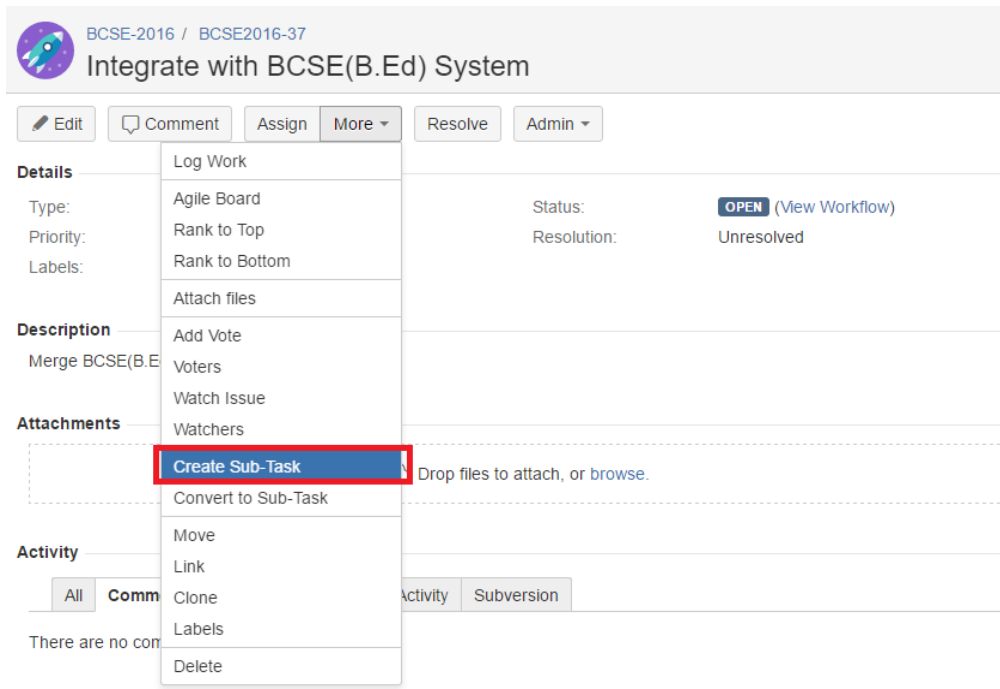


Figure 6. Create Sub Task

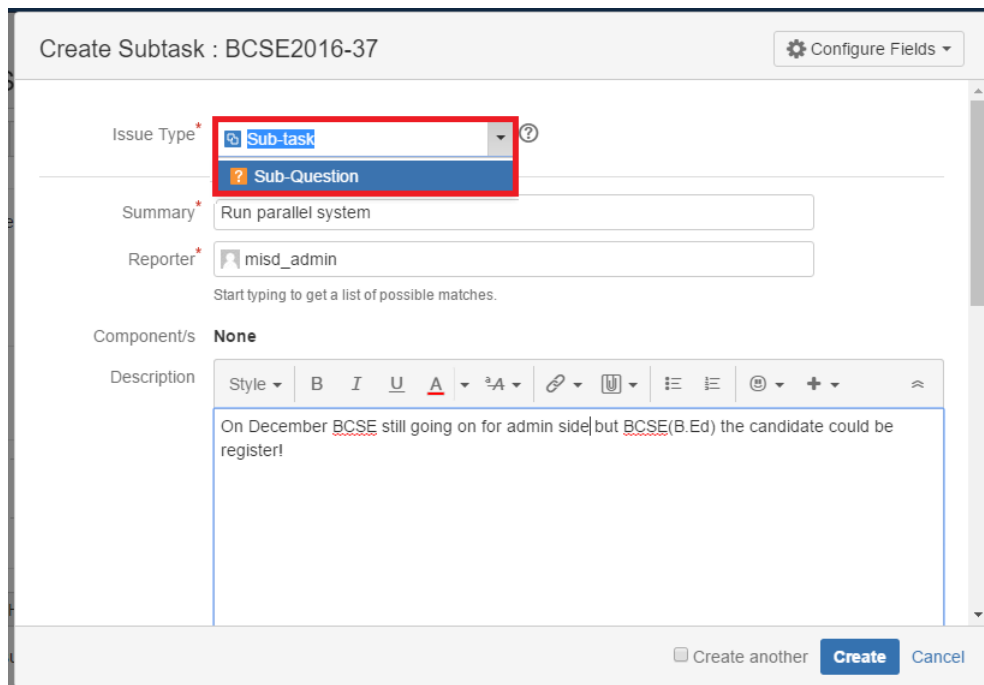


Figure 7. Issue Type for Sub-Task as follows Sub-Task or Sub-Question.

BCSE-2016 / BCSE2016-37
 Integrate with BCSE(B.Ed) System
 18 of 54
 Return to search

Edit Comment Assign More Resolve Admin Export

Details
 Type: Improvement
 Priority: Medium
 Labels: None
 Status: OPEN (View Workflow)
 Resolution: Unresolved

People
 Assignee: misd_lek
 Reporter: misd_lek
 Votes: 0
 Watchers: 1

Description
 Merge BCSE(B.Ed) system into BCSE.

Attachments
 Drop files to attach, or browse.

Sub-Tasks

1. Run parallel system	OPEN	Unassigned
2. Declaration for both System	OPEN	Unassigned

Dates
 Created: 23/Aug/16 12:13 AM
 Updated: 7 minutes ago

Agile
 View on Board

HipChat discussions
 Do you want to discuss this issue? Connect to HipChat.
 Connect Dismiss

Figure 8. The issue created is in the Main Ticket.

Assign Task

The issue should assign the assignee as the person who has responsibility on the task in the ticket, after that the system will send the notification by Email and the Issue list will show in JIRA dashboard in 'Assign to me Task'.

Assign Sub-Task: BCSE2016-41

Assignee: misd_k

Comment: misd_kuenga - kzam@rcsc.gov.bt (misd_kuenga)

All Users

- misd_khandu - test@gmail.com (misd_khandu)
- misd_kiba - test@gmail.com (misd_kiba)

Viewable by All Users

Shortcut tip: Pressing a also opens this dialog box

Assign Cancel

Figure 9. Assignee Field

Linked Issue

The details of JIRA Issue can add other information such as "Linked Issues" which will refer to other related issue.

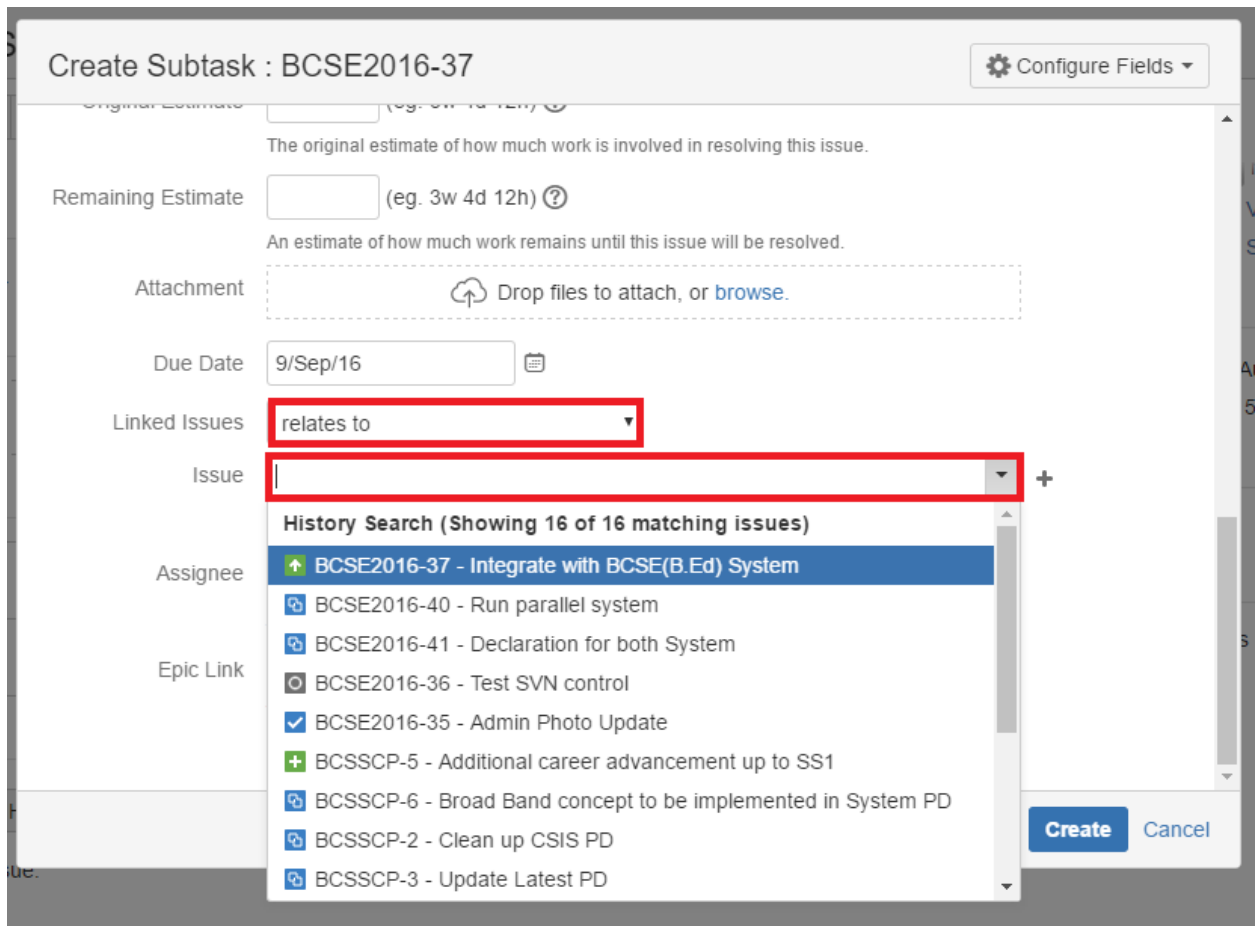


Figure 10. Lined Issues to refer with other issue

Workflow

Customizable workflows to meet business needs -> MISD Software development system

After presentation, MISD had defined the JIRA Workflow together then we optimized and designed recommendations as follows.

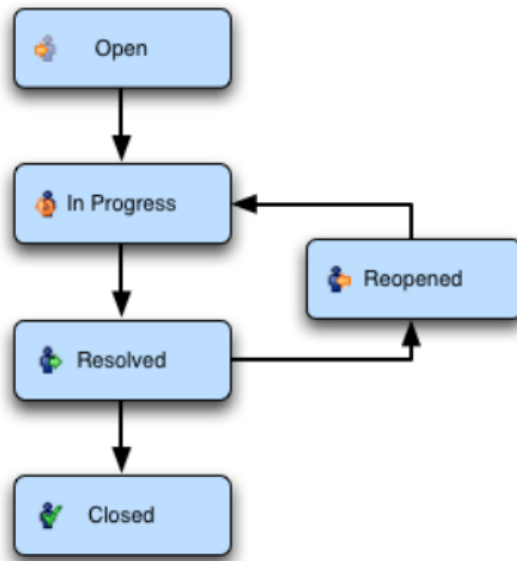


Figure 11. MISD Workflow

Workflow (admin)

A JIRA workflow is a set of statuses and transitions that an issue moves through during its lifecycle and typically represents processes within your organization. There are default built-in workflows that cannot be edited; however, you can copy and use these workflows to create your own.

You can also create your own workflows from scratch, or import workflows from Atlassian Marketplace. Workflows can be associated with particular projects and, optionally, specific issue types, by using a workflow scheme.

You will need to log in as a user with the 'JIRA System Administrators' global permission to access and manage workflows which volunteer create MISD-Workflows as discussion.

See more detail in : <https://confluence.atlassian.com/adminjiraserver072/working-with-workflows-828787890.html>

Applications Projects **Issues** Add-ons User management System Structure

ISSUE TYPES
 Issue types
 Issue type schemes
 Sub-tasks

WORKFLOWS
Workflows
 Workflow schemes

SCREENS
 Screens
 Screen schemes
 Issue type screen schemes

FIELDS
 Custom fields
 Field configurations
 Field configuration schemes

ISSUE FEATURES

Workflows ➕ Add Workflow Import ?

To delete a workflow, you must first unassign it from all workflow schemes and draft workflow schemes.

Active

Name	Last modified	Assigned Schemes	Steps	Operations
BR: Project Management Workflow	16/Feb/16 misd_kuenga	• BR: Project Management Workflow Scheme	3	View · Edit · Copy
IC: Process Management Workflow process-management-workflow	19/Jan/16 misd_admin	• IC: Process Management Workflow Scheme	7	View · Edit · Copy
MISD-WORKFLOW_S ⓘ MISD-WORKFLOW_S	09/Sep/16 misd_admin	• MISD SE Workflow • PROJ: Software Simplified Workflow Scheme • BCSE2016: Software Simplified Workflow Scheme	5	View · Edit · Copy
Software Simplified Workflow for Project BCSSCP Generated by JIRA Software version 7.0.11. This workflow is managed internally by JIRA Software. Do not manually modify this workflow.	01/Mar/16 misd_kuenga	• BCSSCP: Software Simplified Workflow Scheme	4	View · Edit · Copy

Figure 12. JIRA Workflows

SCREENS
 Screens
 Screen schemes
 Issue type screen schemes

FIELDS
 Custom fields
 Field configurations
 Field configuration schemes

ISSUE FEATURES
 Time tracking
 Issue linking

ISSUE ATTRIBUTES
 Statuses
 Resolutions

Diagram **Text** Export

Step Name (id)	Linked Status	Transitions (id)	Operations
Open (1)	OPEN	In Progress (11) >> IN PROGRESS Resolve (61) >> RESOLVED	Add Transition · Delete Transitions · Edit · View Properties
In Progress (2)	IN PROGRESS	Resolve (21) >> RESOLVED	Add Transition · Delete Transitions · Edit · View Properties
Resolved (3)	RESOLVED	Reopen (41) >> REOPENED Closed (81) >> CLOSED	Add Transition · Delete Transitions · Edit · View Properties
Reopened (4)	REOPENED	In progress (51) >> IN PROGRESS	Add Transition · Delete Transitions · Edit · View Properties
Closed (5)	CLOSED	Reopen (71) >> REOPENED	Add Transition · Delete Transitions · Edit · View Properties

Figure 13. JIRA Workflow modified

Menu Workflow which the volunteer create specify for MISD after discussion the workflow hence MISD will adopt the following list:

- Only Reporter allow to close the ticket.
- After the assignee resolved the ticket, it will auto reassign to reporter.

Applications Projects **Issues** Add-ons User management System Structure

ISSUE TYPES
 Issue types
 Issue type schemes
 Sub-tasks

WORKFLOWS
Workflows
 Workflow schemes

SCREENS
 Screens
 Screen schemes
 Issue type screen schemes

FIELDS
 Custom fields
 Field configurations
 Field configuration schemes

ISSUE FEATURES
 Time tracking

You are editing a draft workflow. [Publish Draft](#) [Discard Draft](#) [View original](#)

Workflows
MISD-WORKFLOW_S DRAFT SHARED BY 1 PROJECT

MISD-WORKFLOW_S
Diagram Text Export

[+ Add status](#) [+ Add transition](#) Show transition labels

Figure 14. JIRA Workflow Modified for MISD

Workflows
MISD-WORKFLOW_S DRAFT SHARED BY 1 PROJECT ?

MISD-WORKFLOW_S
Diagram Text Export

[+ Add status](#) [+ Add transition](#) Show transition labels Last edited by you, In 14 minutes

Closed
Screen Closed
[Edit](#) [Delete transition](#)

Options
 Properties (0)
 Triggers (0)
 Conditions (0)
 Validators (0)
 Post Functions (5)

Figure 15. Transition

Administration Search JIRA admin

Applications Projects **Issues** Add-ons User management System

ISSUE TYPES
Issue types
Issue type schemes
Sub-tasks

WORKFLOWS
Workflows
Workflow schemes

SCREENS
Screens
Screen schemes
Issue type screen schemes

FIELDS
Custom fields
Field configurations

Workflows
MISD-WORKFLOW_S **ACTIVE** SHARED BY 1 PROJECT **Edit**

MISD-WORKFLOW_S

This workflow was last edited by you at 06/Apr/16 12:12 PM.

Diagram Text Export

Step Name (id)	Linked Status	Transitions (id)	Operations
Open (1)	OPEN	In Progress (11) >> IN PROGRESS Resolve (61) >> RESOLVED	View Properties Add Post Function
In Progress (2)	IN PROGRESS	Resolve (21) >> RESOLVED	View Properties
Resolved (3)	RESOLVED	Resolve (31) >> CLOSED	View Properties

Figure 16. Add Transition in Work flow

Administration Search JIRA admin

Applications Projects **Issues** Add-ons User management System

ISSUE TYPES
Issue types
Issue type schemes
Sub-tasks

WORKFLOWS
Workflows
Workflow schemes

SCREENS
Screens
Screen schemes
Issue type screen schemes

FIELDS
Custom fields

Update Workflow Transition

This page allows you to update the **Resolve** transition.

Transition Name*

Description

Destination Step

Transition View

The screen that appears for this transition (if any).

Figure 17. Create Transition

JIRA Dashboards ▾ Projects ▾ Issues ▾ Boards ▾ Create Search

Administration Search JIRA admin

Applications Projects Issues Add-ons User management System

- Update issue field > 'Resolution'
- assing to current user
- assing to reporter

Add Post Function To Transition

Name	Description
<input type="radio"/> Assign to Current User	Assigns the issue to the current user if the current user has the 'Assignable User' permission.
<input type="radio"/> Assign to Lead Developer	Assigns the issue to the project/component lead developer
<input type="radio"/> Create Perforce Job Function	Creates a Perforce Job (if required) after completing the workflow transition.
<input type="radio"/> Notify HipChat	Send a notification to one or more HipChat rooms.
<input type="radio"/> Trigger a Webhook	If this post-function is executed, JIRA will post the issue content in JSON format to the URL specified.
<input checked="" type="radio"/> Update Issue Field	Updates a simple issue field to a given value.

Add Cancel

Figure 18. Add Post Function To Transition

Administration Search JIRA admin

Applications Projects Issues Add-ons User management System Structure

Add Condition To Transition

Name	Description
<input checked="" type="checkbox"/> Code Committed Condition	Transition to execute only if code has/has not (depending on configuration) been committed against this issue.
<input type="radio"/> Hide transition from user	Condition to hide a transition from the user. The transition can only be triggered from a workflow function.
<input type="radio"/> No Open Reviews Condition	Transition to execute only if there are no related open Crucible reviews.
<input type="radio"/> Only Assignee Condition	Condition to allow only the assignee to execute a transition.
<input type="radio"/> Only Reporter Condition	Condition to allow only the reporter to execute a transition.
<input type="radio"/> Permission Condition	Condition to allow only users with a certain permission to execute a transition.
<input type="radio"/> Sub-Task Blocking Condition	Condition to block parent issue transition depending on sub-task status.
<input type="radio"/> Unreviewed Code Condition	Transition to execute only if there are no unreviewed changesets related to this issue.
<input type="radio"/> User Is In Group	Condition to allow only users in a given group to execute a transition.
<input type="radio"/> User Is In Group Custom Field	Condition to allow only users in a custom field-specified group to execute a transition.
<input type="radio"/> User Is In Project Role	Condition to allow only users in a given project role to execute a transition.

Add Cancel

Figure 19. Transition Trigger Add Condition in case only reporter can close the ticket.

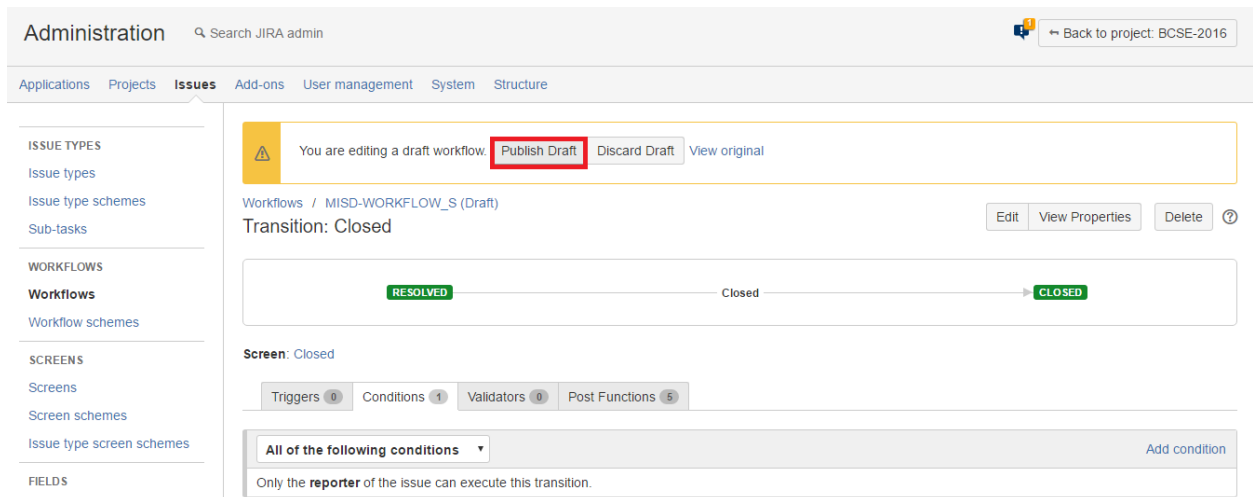


Figure 20. After modified Workflow need publisher.

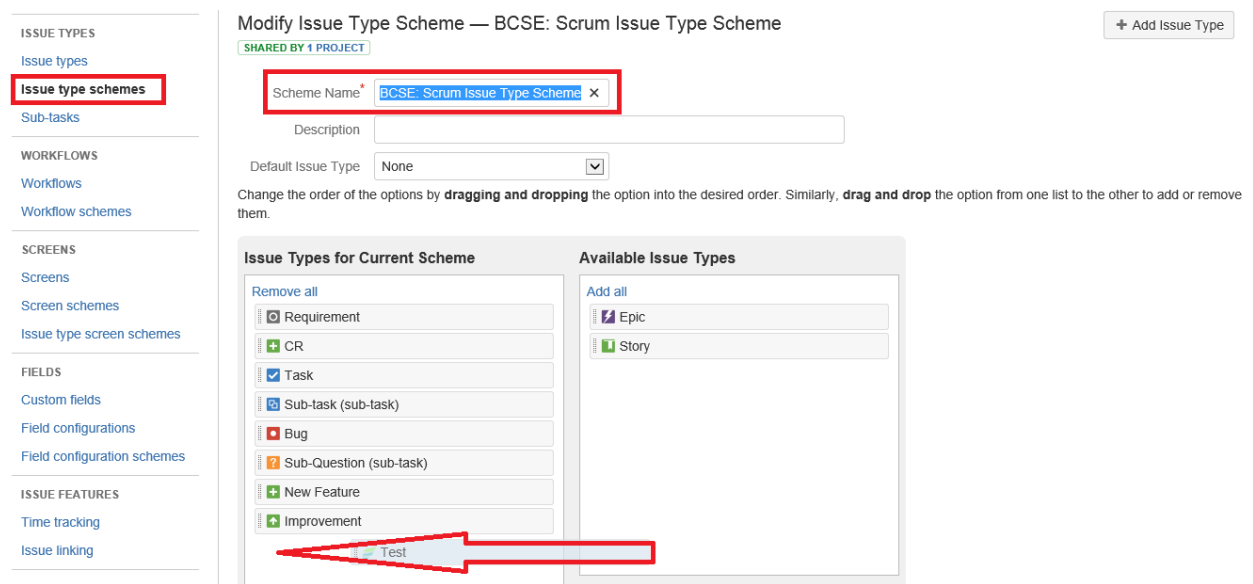


Figure 21. Issue Type Scheme

Email this Issue

The new feature added is 'Email this Issue' which is commercial add-on in JIRA. This will help you to send the information in the ticket to outside or the concerned person including the attachment that might be the existing file in the ticket. Finally the log will show in tab Email to track for history of the ticket.

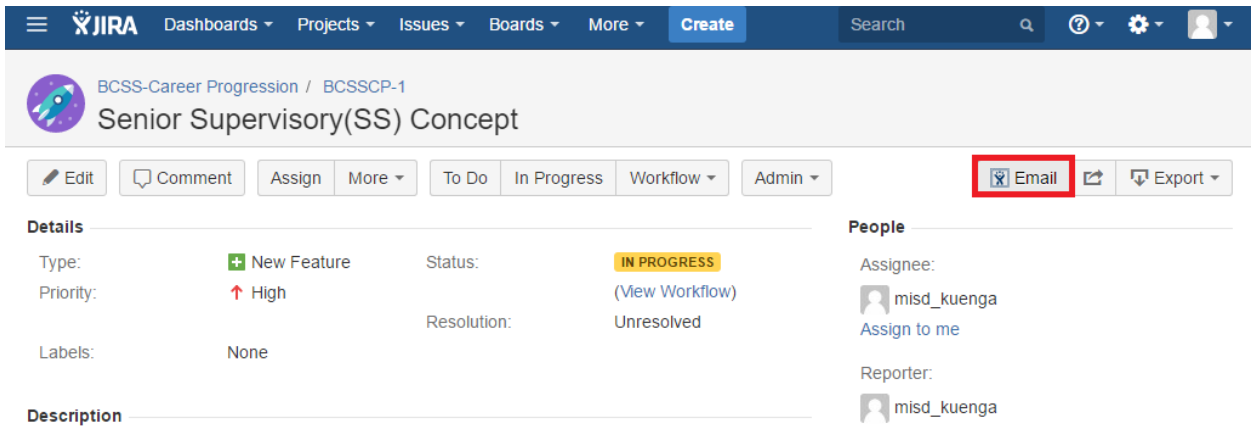


Figure 22. On the Menu "Email"

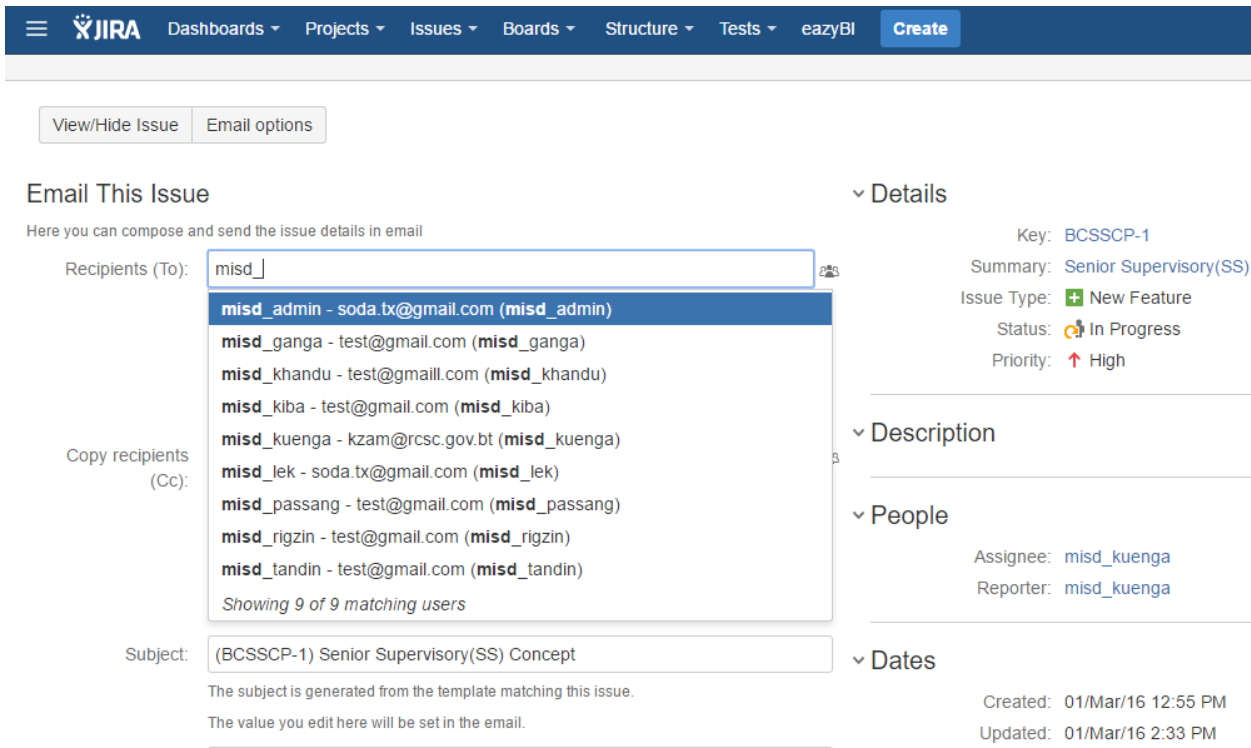


Figure 23. Email This Issue Assignment

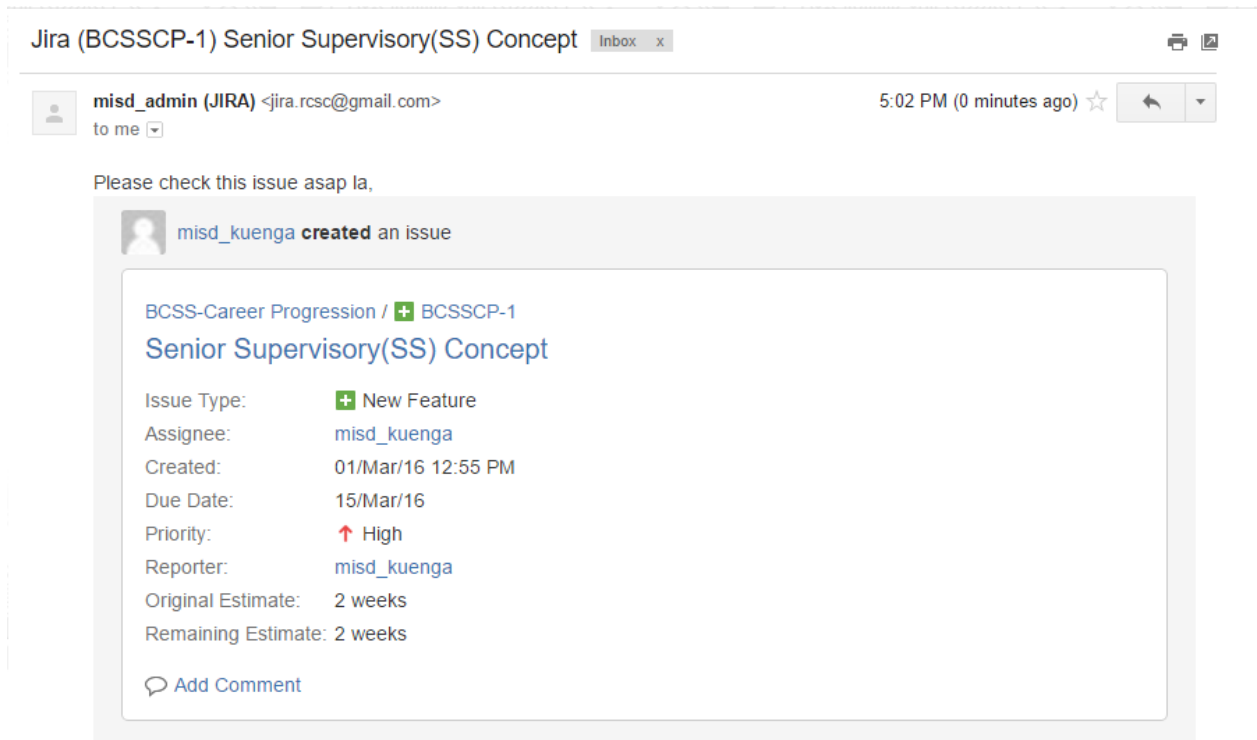


Figure 26. Email Notification in Inbox

Confluence

Confluence installed in MISD so that it will help MISD to manage the information in organization. (Knowledge base) The problem of lack of knowledge management in organization for example, only one person know CSIS system and functionality , if that person is not available then no one know it. The suggestion is sharing information in organization will be useful for lack of information and the new employee can learn from internal resource by themselves. Information Resource will be helpful for search and find the answer in the organization. “Confluence” is a tool for knowledge base that decided to set up in organization. And it will connect with JIRA system for any issue information such as technical information, related information from implementation or requirement.

Confluence Features

- **Organized workspaces**
 - Create a space for every team, department, or major project to share information and keep work organized.
- **Best practice templates (Requirement, technical design, test tractor)**
 - Confluence include best practice templates to help you get started with popular pages, so you don't have to fuss with formatting.

- **Blogs and discussions**
 - Share news and announcements across your company, and have active discussions with comments, @mentions and likes.
- **User and content permissions**
 - Keep your site and your content secure with granular permissions that give you complete control.
- **Page and file versioning**
 - Track every version and change that you make to a page. Files are automatically versioned as well!
- **JIRA integration**
 - Connect to JIRA to provide insight into your development work with automatic linking, quick issue creation and reports in Confluence.

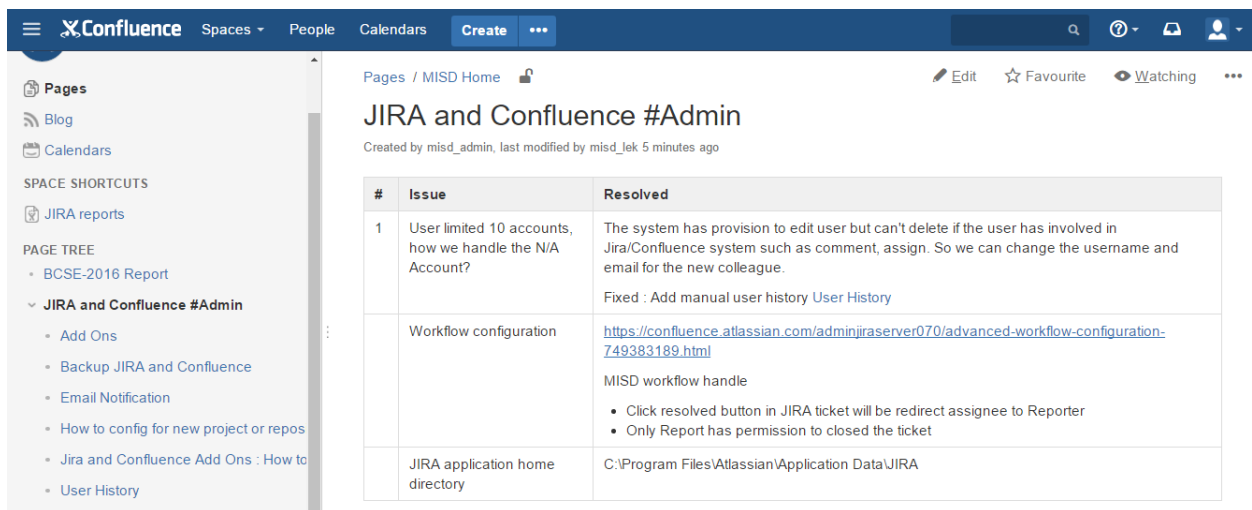


Figure 27. Confluence for Knowledge base in MISD



Figure 28. Confluence for Technical information in MISD

How to use Confluence?

In Confluence has "SPACE" and under spaces can have many pages which Volunteer created spaces and pages as below list:

- Project Management Space
 - For upcoming Project Requirement pages
- Software Engineer Space
 - For knowledge base as pages such as Source control, SQL, Programming skill
- Management Information Service Division (MISD) Space
 - Civil Service Information System (CSIS) Page
 - Bhutan Civil Service Information System (BCSE) Page
 - Software management development Environment Page

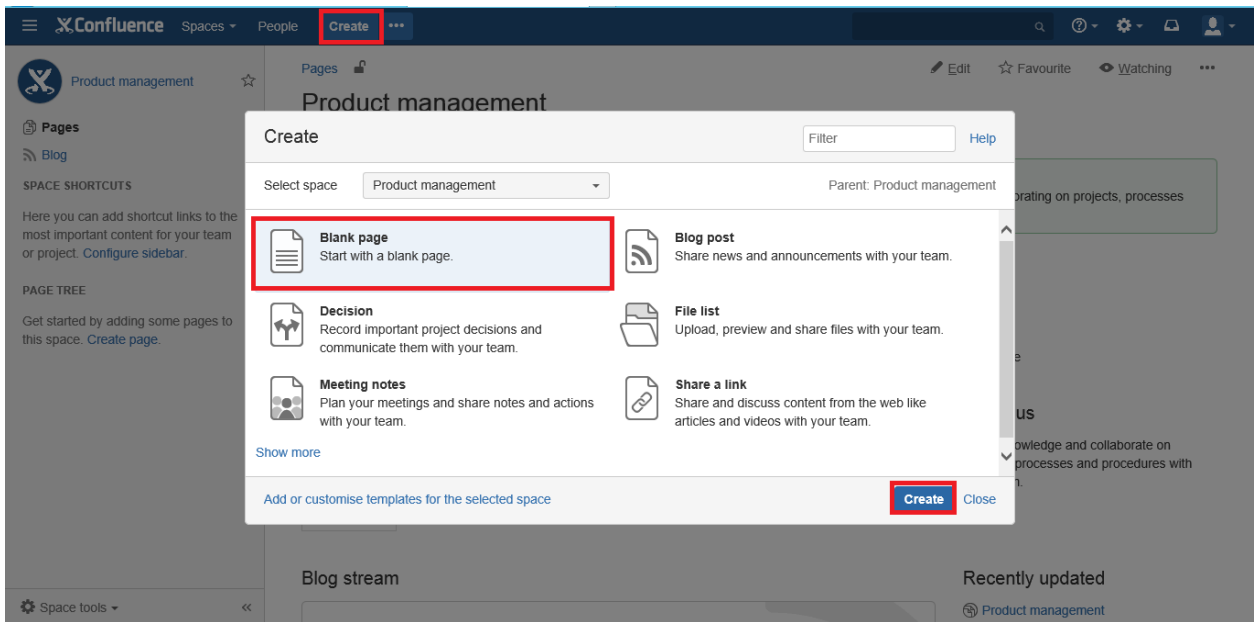


Figure 29. New Page for variety of Default Template

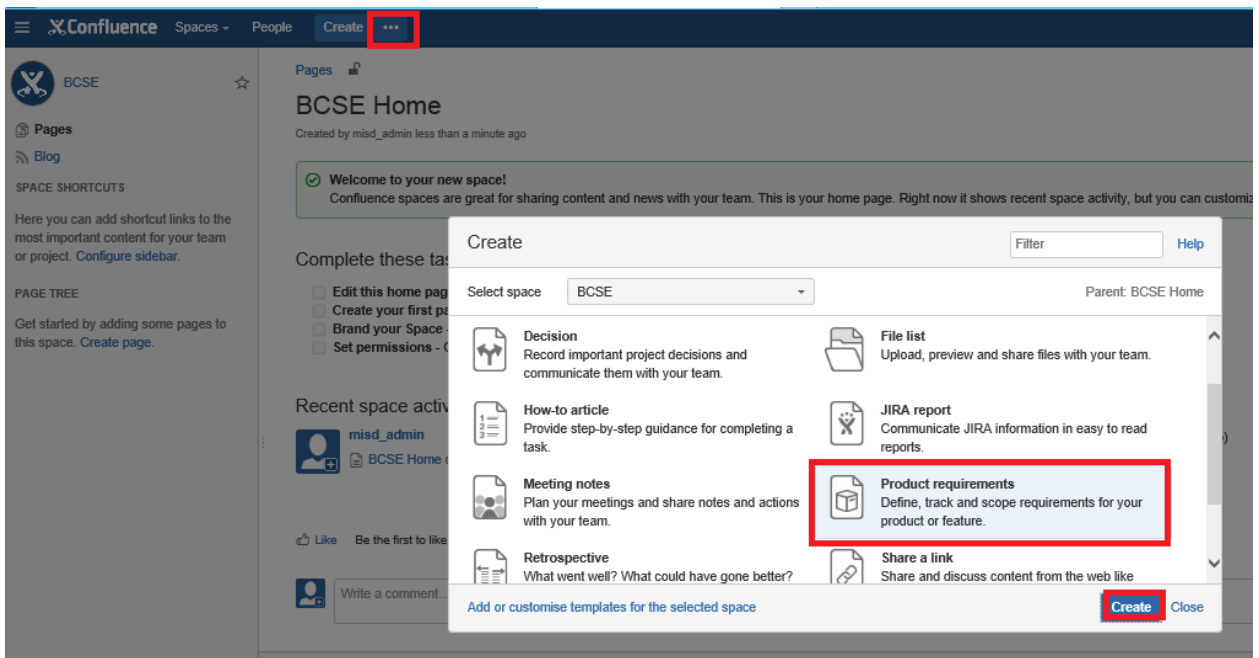


Figure 30. New Page for Template : Product Requirements

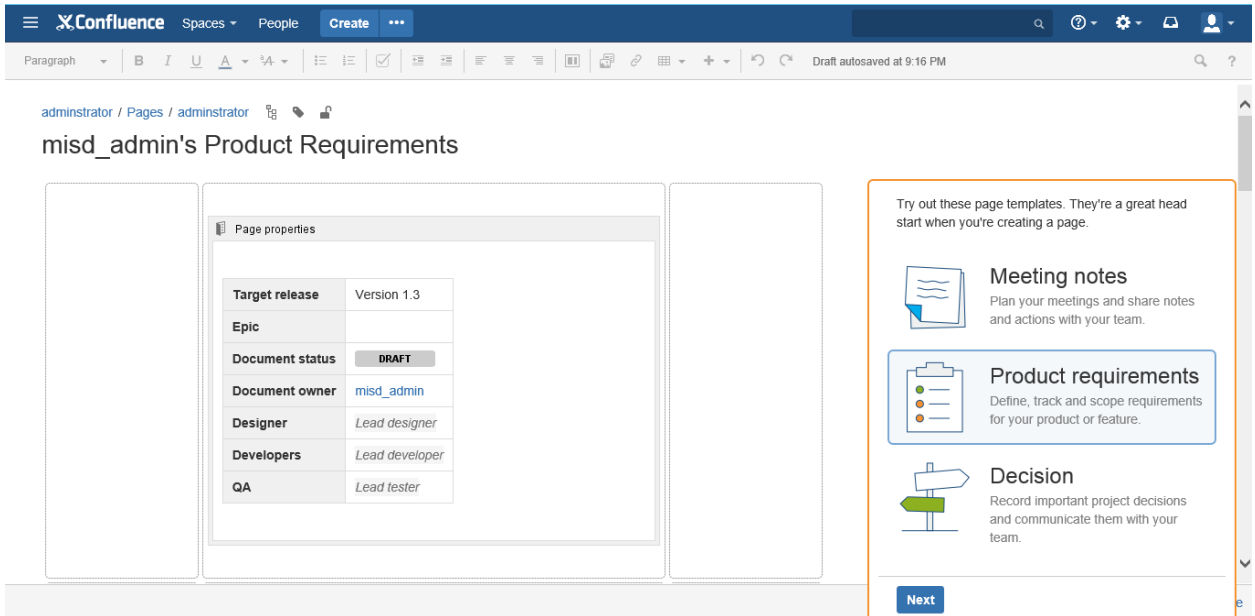


Figure 31. New Page in “Product Requirement” Template

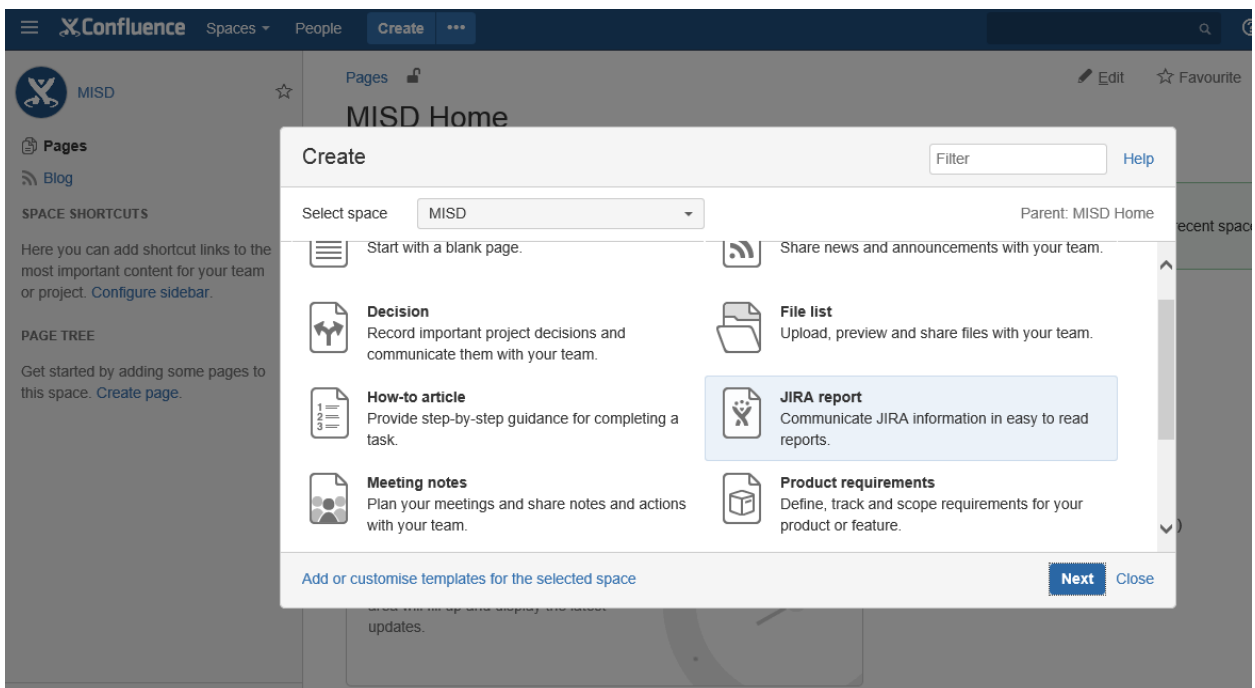


Figure 32. New Page in Template: JIRA Report to track status of the project

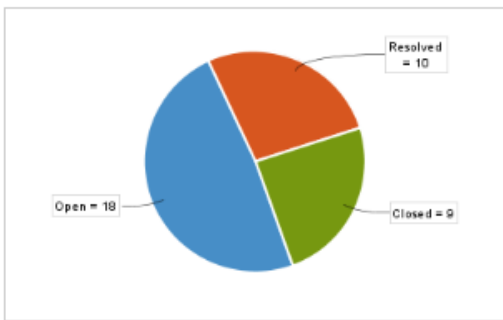
BCSE-2016 Report

Created by misd_admin just a moment ago

Date	Sep 06, 2016
Issues	37 issues
Status	GREEN

Report summary

Overall status for 37 issues



Priority

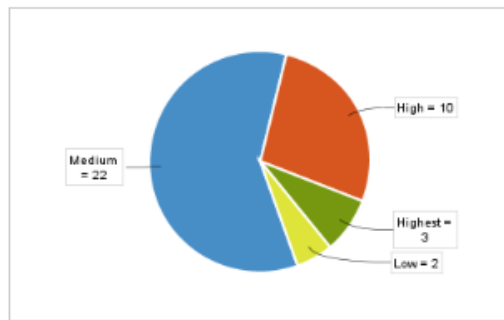


Figure 33. Page in JIRA Report Template

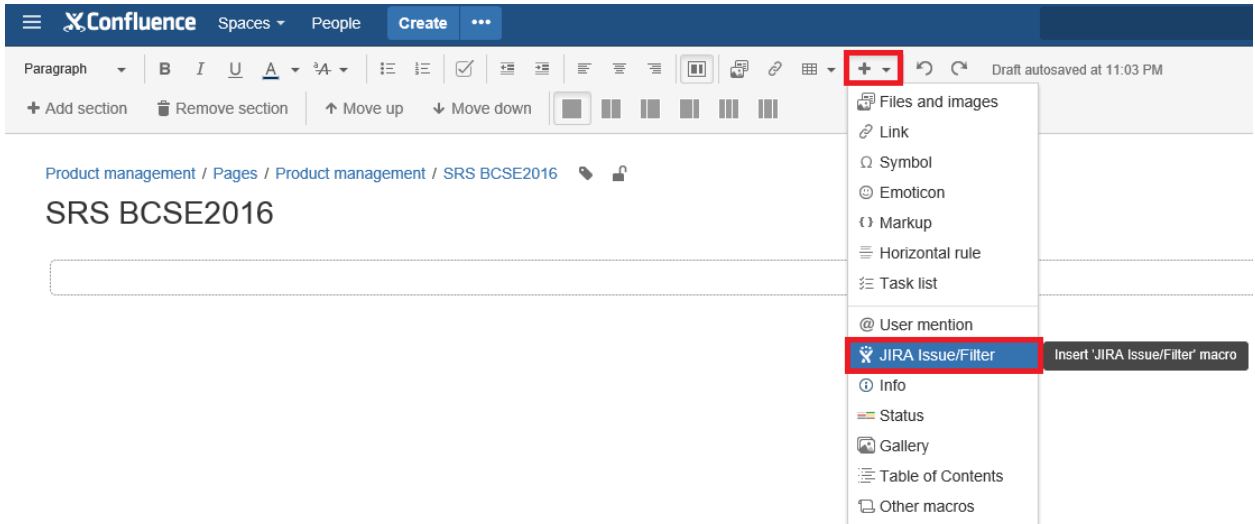


Figure 34. JIRA Issue Filter attached into the Ticket

Addition tools

Add-ons, also known as plugins, add extra functionality to JIRA and Confluence in MSD as follows :

Gliffy Diagram

Gliffy is a web-based diagram editor. Create and share flowcharts, network diagrams, floor plans, user interface designs and other drawings online. Using Gliffy, developers, project managers, system administrators, and others can improve their Confluence documentation, collaborate effectively, and improve productivity.

Use Gliffy to create:

- Flowcharts
- UML and ERD Diagrams
- BPMN / Workflow Processes
- Decision Models
- Network Diagrams
- Business & Home Networks
- Server Rack Designs
- AWS and Cisco Architectures
- UI Wireframes
- Websites and Desktop Applications
- Org Charts
- Product Roadmaps
- Mind Maps
- Import Microsoft Visio *.vsdx and *.vdx Diagrams
- Etc design ..

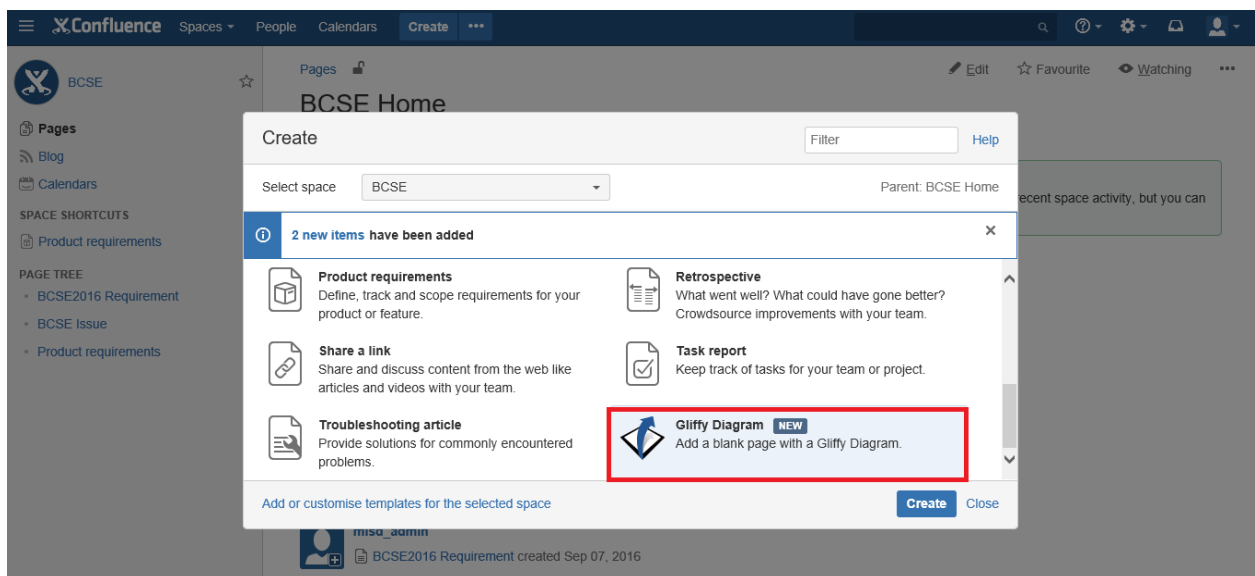


Figure 35. Gliffy Diagram in Confluence

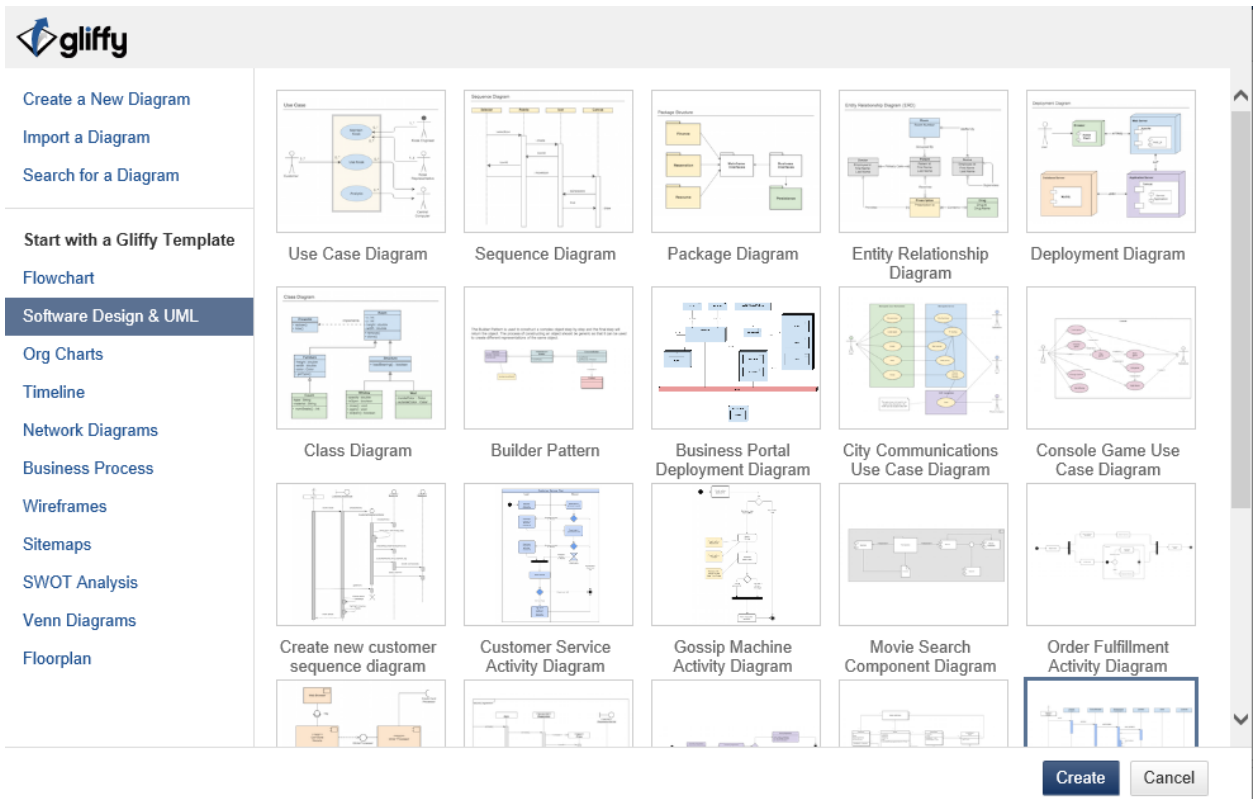


Figure 36. Gliffy Template to Design Diagram or Graph

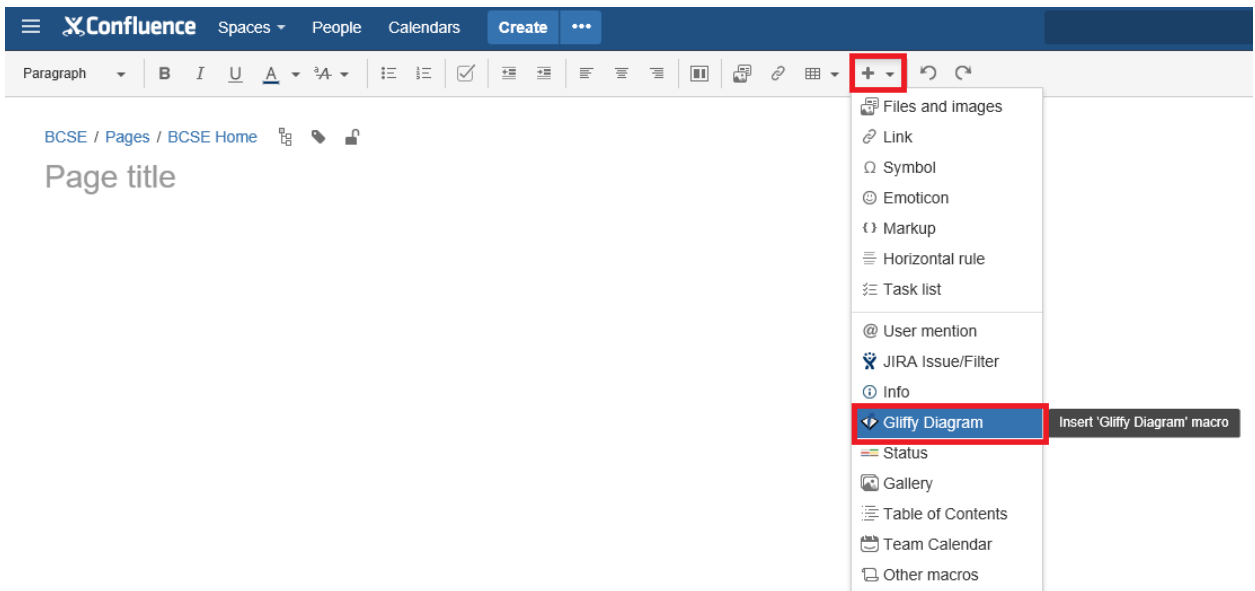


Figure 37. Attached Gliffy Diagram into Pages

Zephyr for JIRA (Test Management Tools)

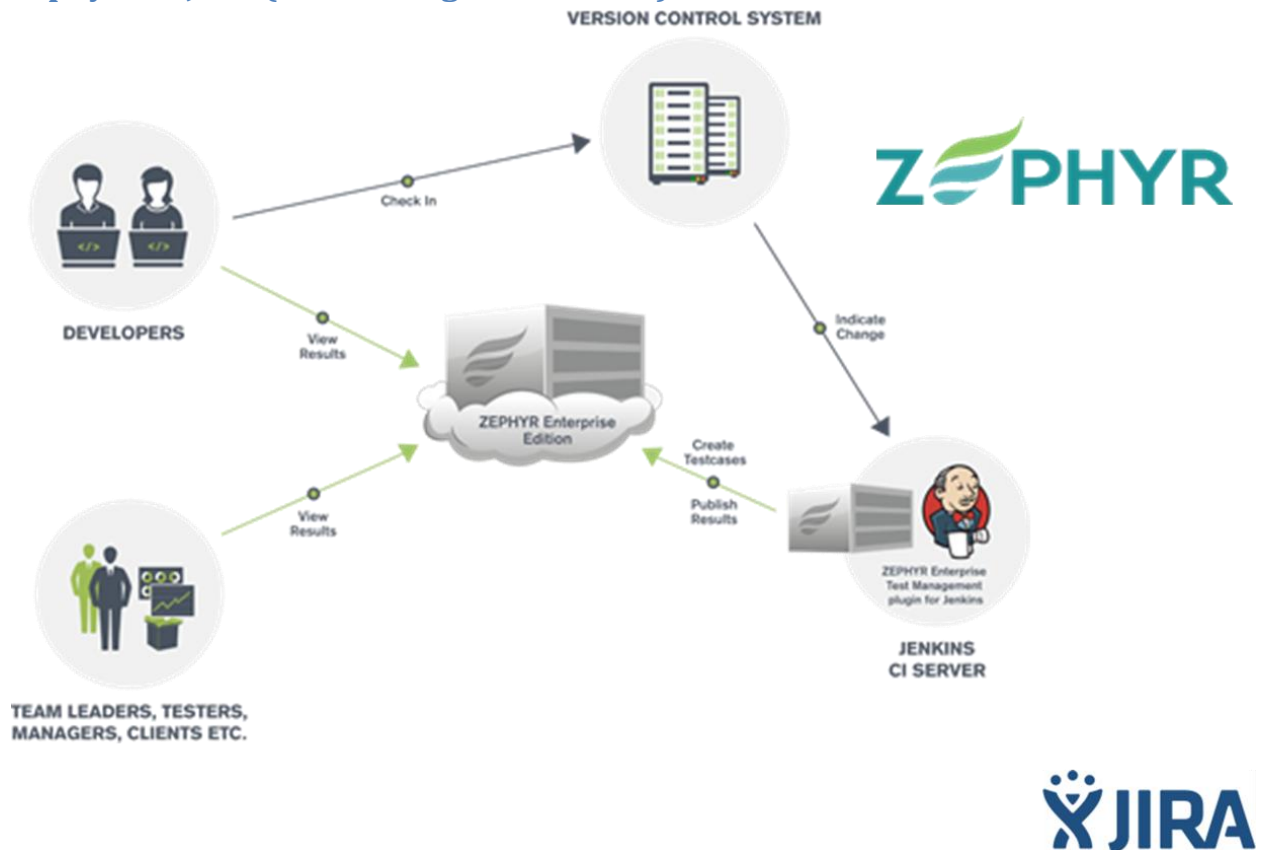


Figure 38. Test management workflow

Together, Zephyr for JIRA and JIRA enable developers, testers and the entire project team to be better prepared at every stage of the software lifecycle and plan, build, test and launch great software.

Major features include:

- Create, view, edit and clone tests
- Link to stories, tasks, requirements etc.
- New Agile integration with Test Boards
- Plan test execution cycles
- Execute tests
- Link defects
- Project-centric navigation
- Execution Navigator with basic/advanced search and pre-defined/saved filters
- Two-way end-to-end traceability reports
- Track quality metrics
- Zephyr Query Language (ZQL) for advanced searching

Full featured test management, integrated into JIRA with the same look-n-feel. Testing is integrated into the project cycle now, allowing you to track software quality and make empowered go/no-go decisions.

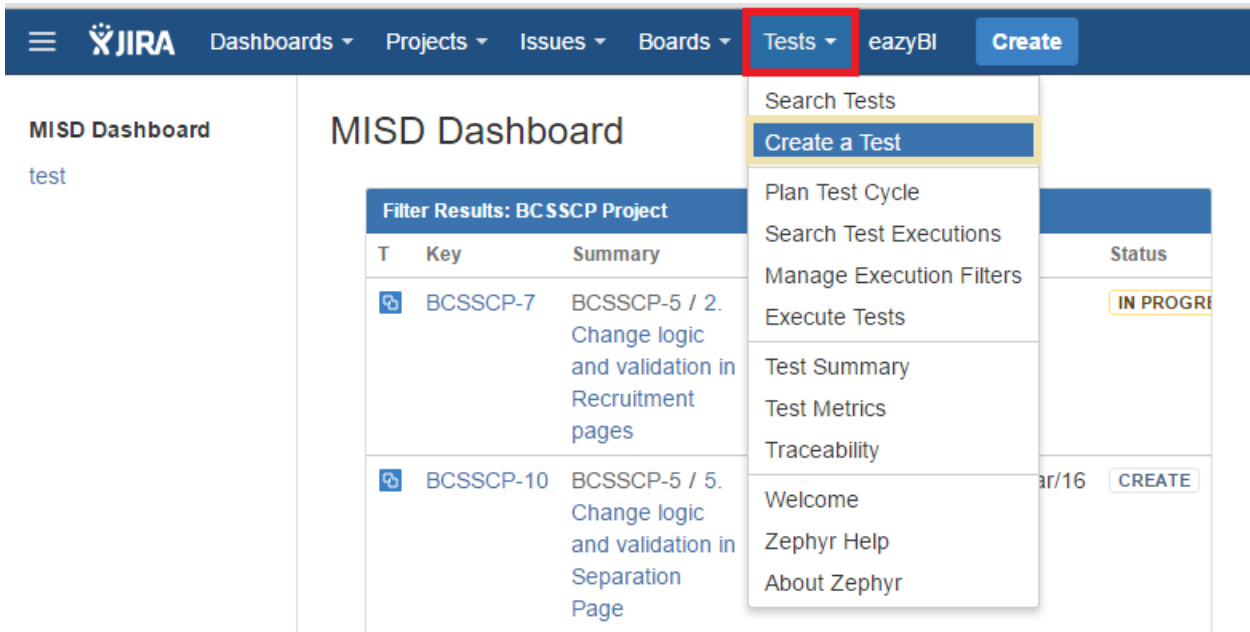


Figure 39. Zephyr The testing management on the menu

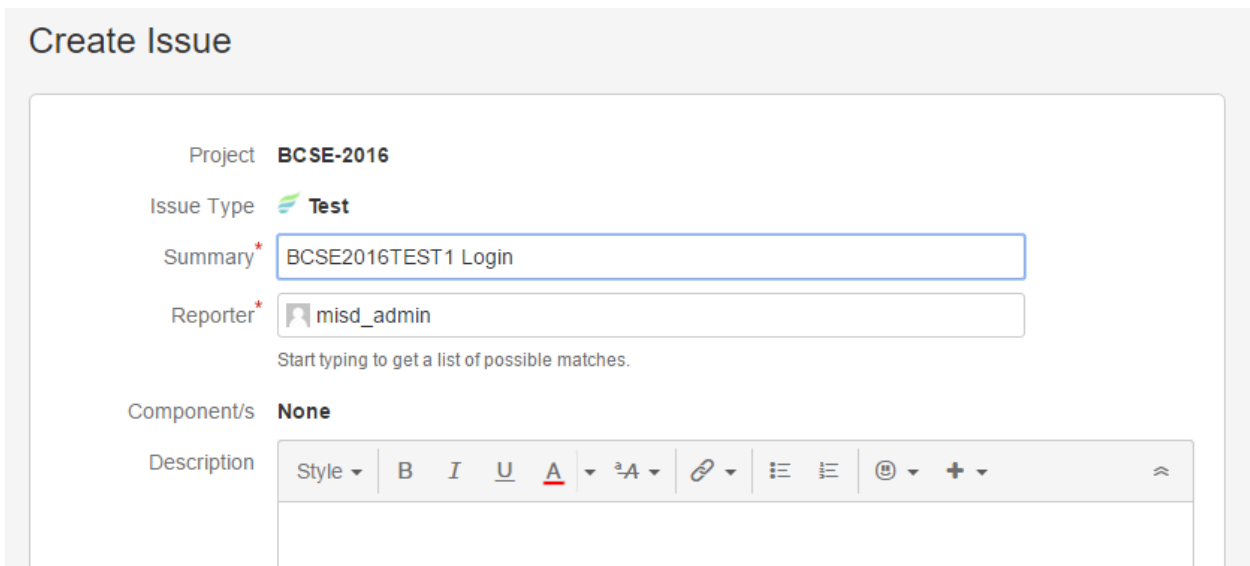


Figure 40. Create Test Issue

The screenshot shows a JIRA Test Ticket interface. At the top, there's a navigation bar with 'JIRA' logo and various menu items like 'Dashboards', 'Projects', 'Issues', 'Boards', 'Tests', and 'easyBI'. A 'Create' button is visible. Below the navigation bar, the ticket title is 'BCSE2016TEST1 Login'. There are action buttons: 'Edit', 'Comment', 'Admin', 'Clone', 'More Actions', and 'Execute'. On the right, there are 'Export' buttons. The 'Details' section shows: Type: Test, Priority: Medium, Status: OPEN (View Workflow), Resolution: Unresolved. The 'Description' section has a link to 'Click to add description'. The 'Test Details' section contains a table with columns: Test Step, Test Data, and Expected Result. A single test step is visible: 'Go to 10.10.0.7/csce', 'Enter data', 'Submit', 'Username = CandidateCID', 'Password = Dob', 'Successful Login'. There is an 'Add' button. The 'People' section shows Assignee: misd_lek, Reporter: misd_admin, and a 'Stop watching this issue' button. The 'Dates' section shows 'Created: Just now' and 'Updated: Just now'. The 'Agile' section has a 'View on Board' button. The 'HipChat discussions' section has a 'Connect' button and a 'Dismiss' button.

Figure 41. Test Ticket

This screenshot shows a detailed view of a test step in the JIRA Test Ticket. The ticket title is 'BCSE2016TEST1 Login'. The 'Description' section has a link to 'Click to add description'. The 'Test Details' section features a table with the following data:

Test Step	Test Data	Expected Result
1	Go to 10.10.0.7/csce	Go to login page successful.
2	Enter data and click Submit	Username = CandidateCID Password = Dob
3		Validation and Successful Login

Below the table, there are three empty rows for additional test steps. A red box highlights a settings icon (gear) in the top right corner of the third row, which has opened a dropdown menu with 'Clone' and 'Delete' options. The 'Test Executions' section is visible at the bottom but is empty.

Figure 42. Step Test Detail



[Edit](#) [Comment](#) [Admin](#) [Clone](#) [More Actions](#) [Execute](#)

Test Details

	Test Step	Test Data	Expected Result
1	Go to 10.10.0.7/csce		Go to login page successful.
2	Enter data and click Submit	Username = CandidateCID Password = Dob	Validation and Successful Login

[Add](#)

Test Executions

Version	Test Cycle	Status	Defects	Executed By	Executed On
This test has not been executed yet. Click here or on the Execute button above to start.					

Figure 43. On the menu test executions

Execute Test

Evaluation license.
This license will expire on 06/Oct/16 7:00 PM. Do you like Zephyr for JIRA? Please consider [buying it](#) today.

Execute Ad Hoc

Add to Existing Test Cycle and Execute

Version:

Test Cycle:

Assignee

Assign To: Me Person

[Cancel](#)

Figure 44. Execute test

Test Step	Test Data	Expected Result	Status	Comment	Attachments	Defects
1	Go to 10.10.0.7/csce	Go to login page successful.	UNEXECUTED	Enter Comment	+	Enter Defects
2	Enter data and click Submit Username = CandidateCID Password = Dob	Validation and Successful Login	UNEXECUTED	Enter Comment	+	Enter Defects

Figure 45. Test Result

Attachments **Defects**

+ Enter Defects

+ [Input Field]

History Search (Showing 5 of 5 matching issues)

- BCSE2016-39 - BCSE...
- BCSE2016-38 - BCSE...
- BCSE2016-1 - Link Ca...
- BCSE2016-36 - Test S...
- BCSE2016-24 - System...

Create New Issue

Figure 46. Test Result : Defects

BCSE-2016 / Unscheduled / Ad hoc / BCSE2016-39

BCSE2016TEST1 Login

▼ Description

▼ Test Execution

Execution Status: UNEXECUTED

Assigned To: PASS, FAIL, WIP, BLOCKED, UNEXECUTED

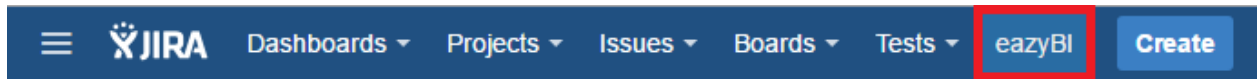
Defects:

Comment:

Figure 47. Test Result : Execution Status

EazyBI Report

eazyBI is a powerful reports, charts, and dashboards add-on for JIRA. It is an easy-to-use drag-and-drop tool for analyzing and visualizing your JIRA issues data. See more detail on the website.



System Dashboard

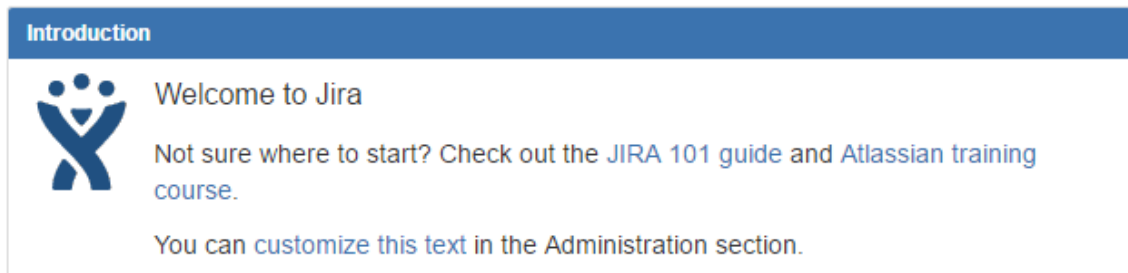


Figure 48. On the menu 'eazyBI' in JIRA

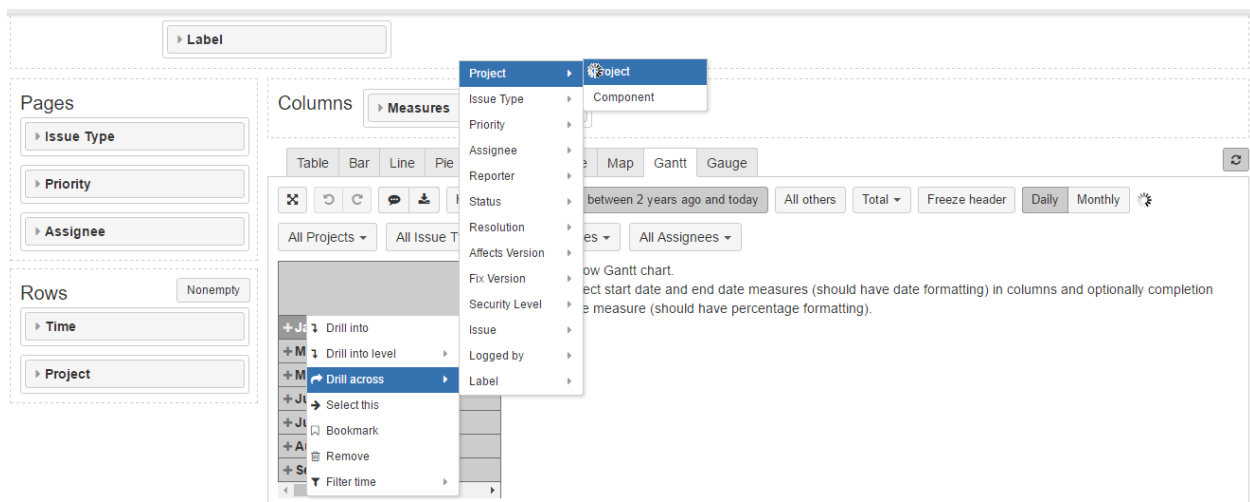


Figure 49. eazyBI Report in JIRA

eazyBI Report has own database in the server and first the user has to import the source data from JIRA project to eazyBI Report as details below.

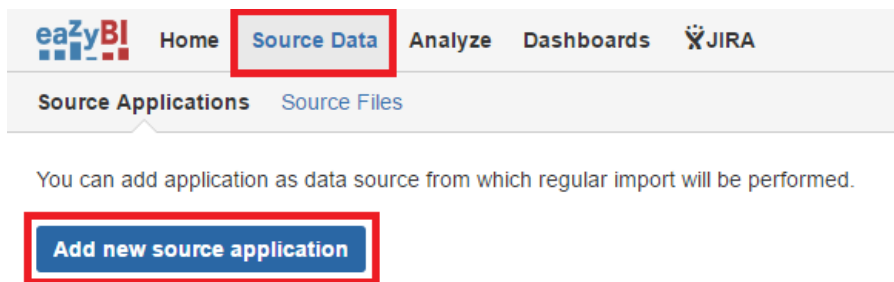


Figure 50. Add Source data

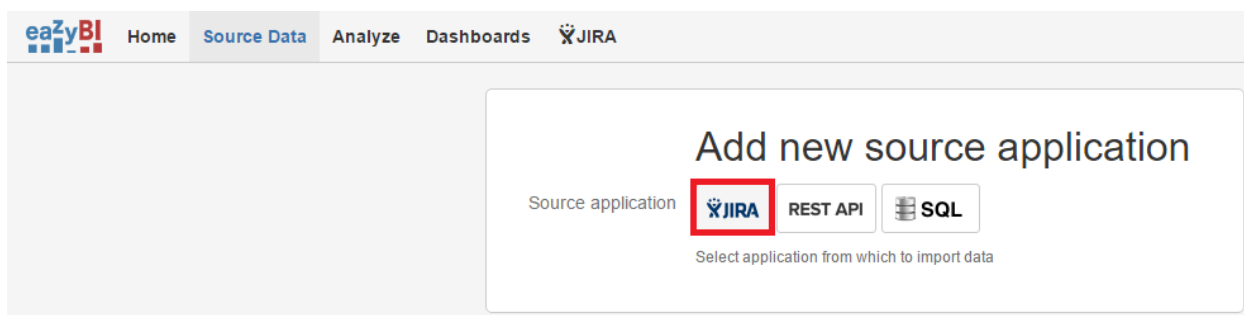


Figure 51. Import source data from JIRA system to eazyBI Report

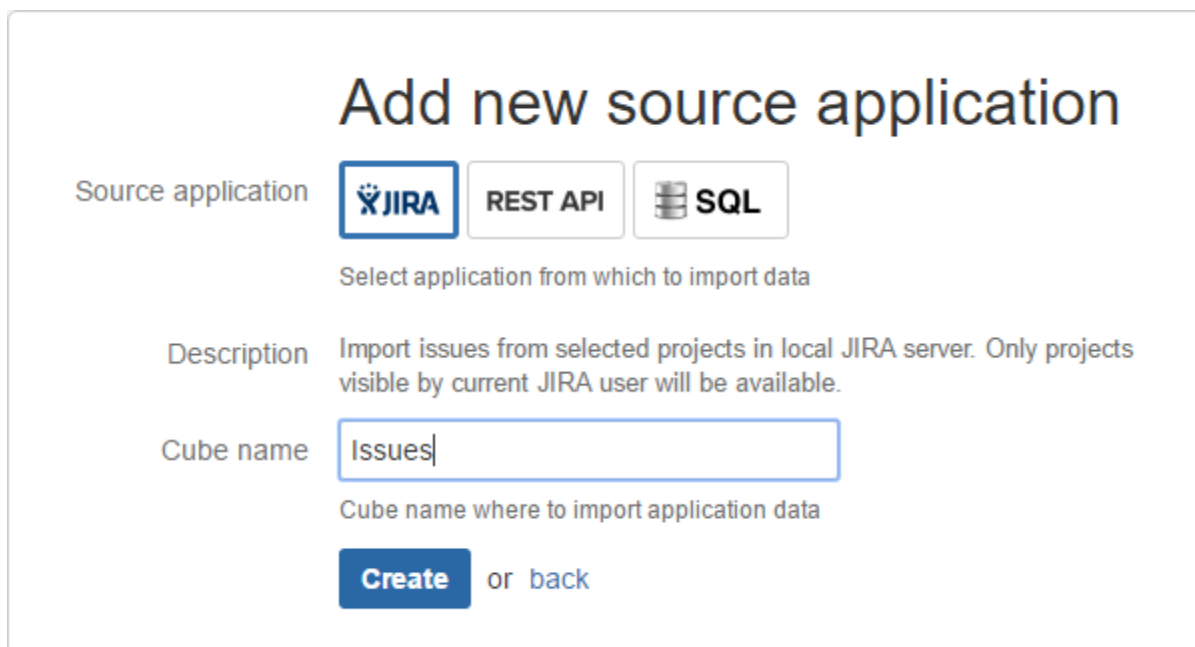


Figure 52. Import source data from JIRA system to eazyBI Report

Select application import options

Select JIRA projects BCSE-2016 (BCSE2016)
 BCSS Reforms (BR)
 BCSS-Career Progression (BCSSCP)
 Information Correction (IC)
 MISD (MISD)
[Select all](#) [Clear selection](#)

Select JIRA projects which you would like to import into easyBI.

Import sample reports 3 sample reports
If selected then all sample reports will be added after import.

Regular import frequency

Select how frequently automatic data import from data source should be performed.

Additional filter

JQL query

Optional additional JQL query to limit which issues from selected projects to import.
By default all issues from selected projects will be imported.

[Add custom JavaScript code](#)

Figure 53. Import JIRA Projects to easyBI Report

User groups

Import dimensions Reporter Group Assignee Group Logged by Group Transition Author Group

Import user groups

Select which user groups to import for selected user group dimensions. If no selection is made then all groups will be imported. Reporter Group import might be slow if there are many different reporters.

Zephyr

Import Zephyr Import Zephyr test cycles and execution results. Additional **Test Cycle**, **Test Executed by** and **Test Status** dimensions as well as **Tests scheduled**, **Tests executed** and **Tests defect count** measures will be imported.

Custom fields

After projects selection you can select available custom fields which you would like to import.
Read more about custom fields import in [JIRA custom fields documentation](#).

Select custom fields [Show available custom fields](#)

or [back](#)

Click **Import** to start the import right now. Click **Save** to change the options for the next regular import.

Figure 54. Import Test issue in Zephyr Test management tools in JIRA

eazyBI settings

Database connection and license
Advanced settings

Database connection parameters

eazyBI will store its data in a separate database. [Read more about specifying database connection parameters](#) in the help page.

Database type* ▼
Microsoft SQL Server

Host* 10.10.0.156
By default will connect to localhost

Port 1433
Do not specify if the default port is used

Instance TEST
Do not specify if the default instance is used

Database* JIRA_EAZYBI
Please use a dedicated database for eazyBI. It should be owned by the following username.

Username* sa
At first create this user in the database server with permission to create the specified database

Password

Figure 55. eazyBI Database Configuration

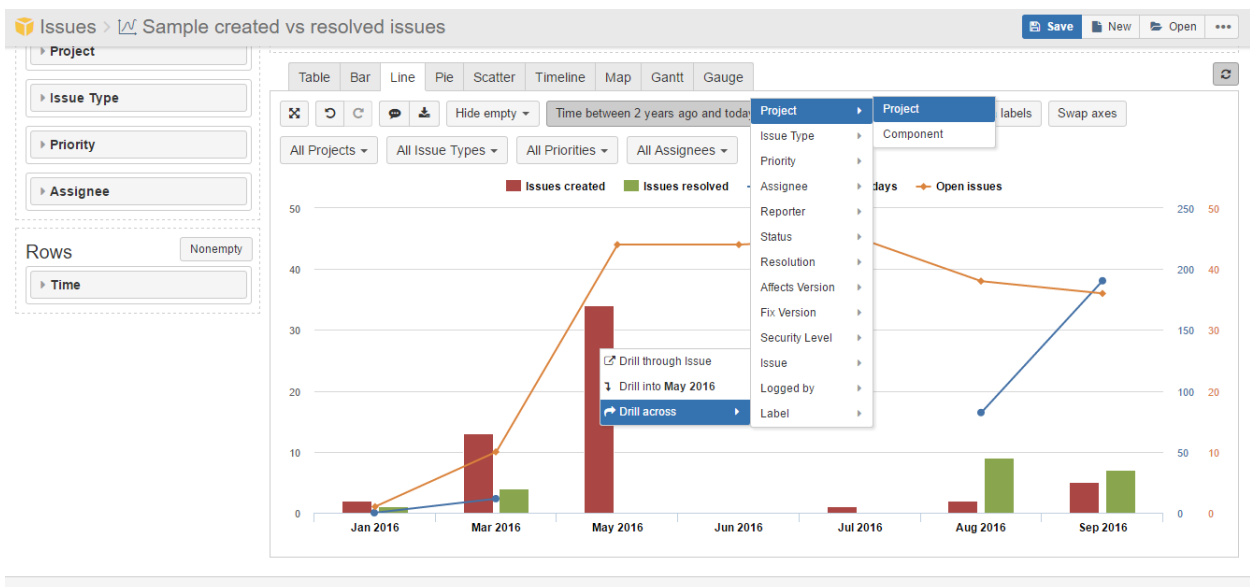


Figure 56. eazyBI Report Sample

Developer

Development Rule in MISD

▶ Development

- Tools : Use AnkhSvn plugin for visual studio
- Define proper Class, Function, Variable Name
- Comment in the function/scope

▶ Database

- Name Procedure / function prefixed ex. sp_X, fn_xx, rptXXX
- Table : Define PK, FK

▶ Source Control in Commit process

The developer will commit the code using AnkhSvn plugin for visual studio or directly commit the file by TortoiseSVN client but you have to add comment with 'JIRA Ticket ID'.

*In case you can not commit, you can check if the source has update by other developer. First you have to **update** the project to get the latest source otherwise the file will be **conflicted**.

- Code (with JIRA ticket ID **** IMPORTANT**)
- Script (create folder and file in VS otherwise it won't be show in VS ex.BCSE in CSCE_SQL folder)

▶ Release management

- Check Instance!! Ex.Test/Production
- Backup and Deploy application
- Execute Script

Source control : Visual studio Plugin for Developer

AnkhSVN is a Subversion Source Control Provider for Microsoft Visual Studio 2005-2013 and 2015. The tutorial for plugin as following step:

1. Install plugin “AnkhSvn” in share file directory [\\svr-5\MISD SHARE FILE\DEV\AnkhSvn-2.6.12735.msi](#) or latest version on website
2. Check out the source code in visual studio, Go to View > Repository Explorer

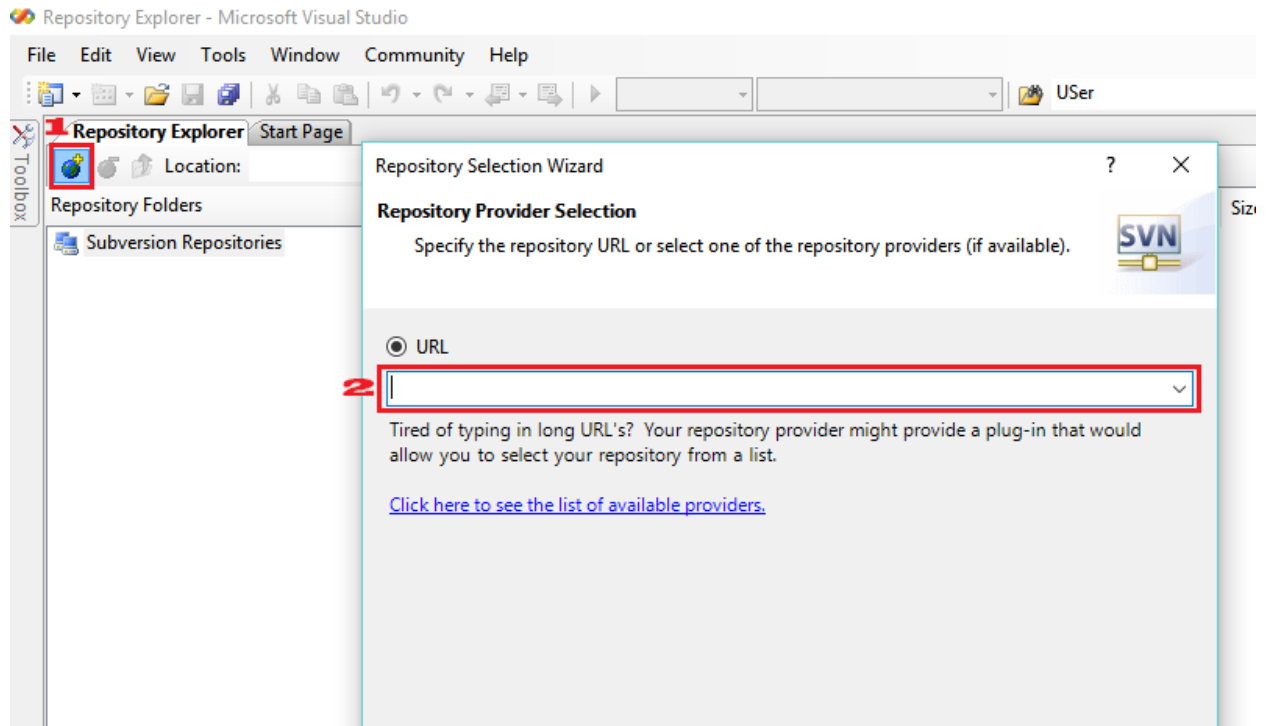


Figure 57. Add Repositor

- 2.1 Add the new URL to Repository Explorer
- 2.2 Enter URL then click finish.

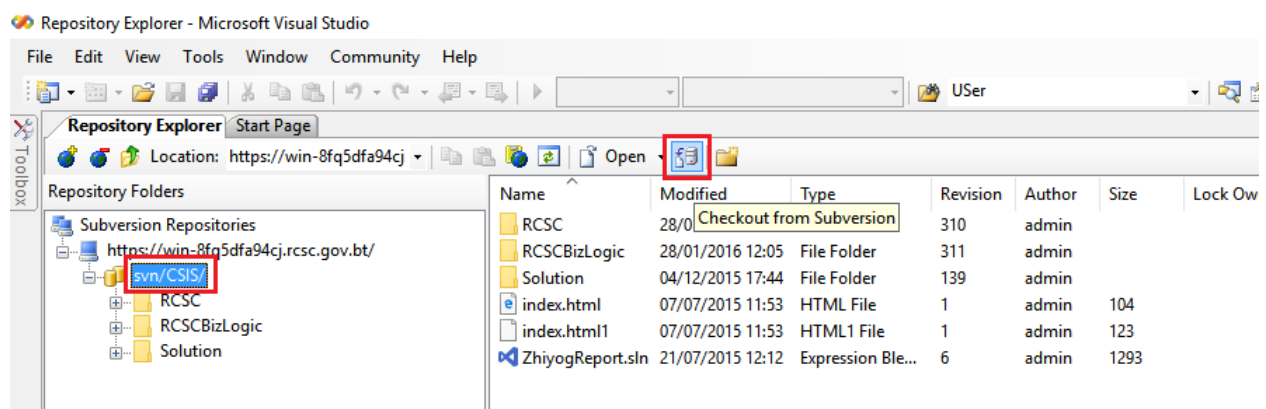


Figure 58. Checkout from Subversion

2.3 Click project and then click again on “Checkout from subversion”

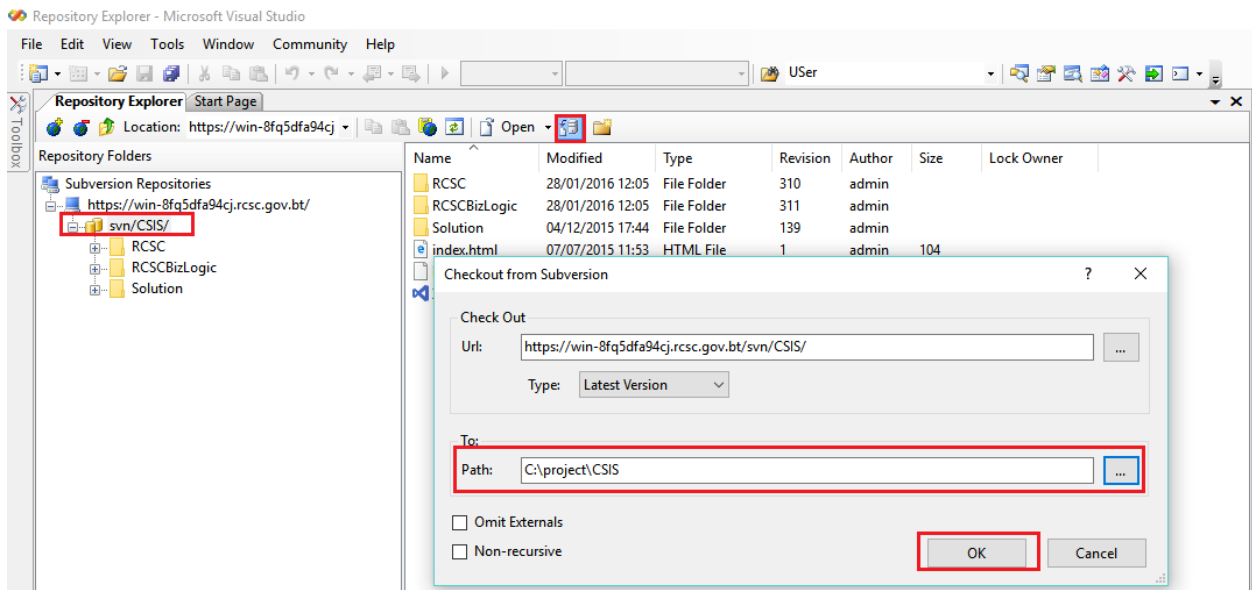


Figure 59. Checkout from Subversion

2.4 Selected the path to save the project then click OK.

Note : You can check out the project from server or you can open existing project/solution in your local.

3. To commit the code in Visual Studio, you have to add the project to subversion.

3.1 Right click the solution > Add Solution to Subversion...

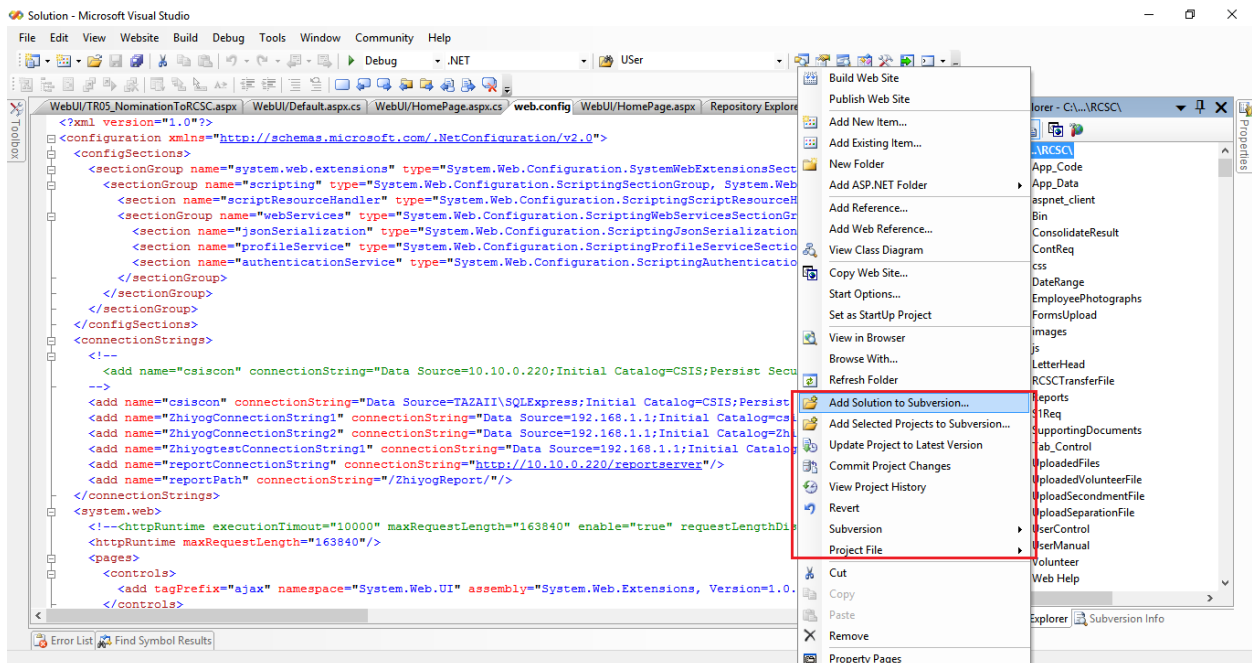


Figure 60. Subversion Menu in Visual Studio

3.2 You can update project in visual studio on Menu: Update project to Latest Version

3.3 'Add new Item' will have "+" symbol in front of the item.

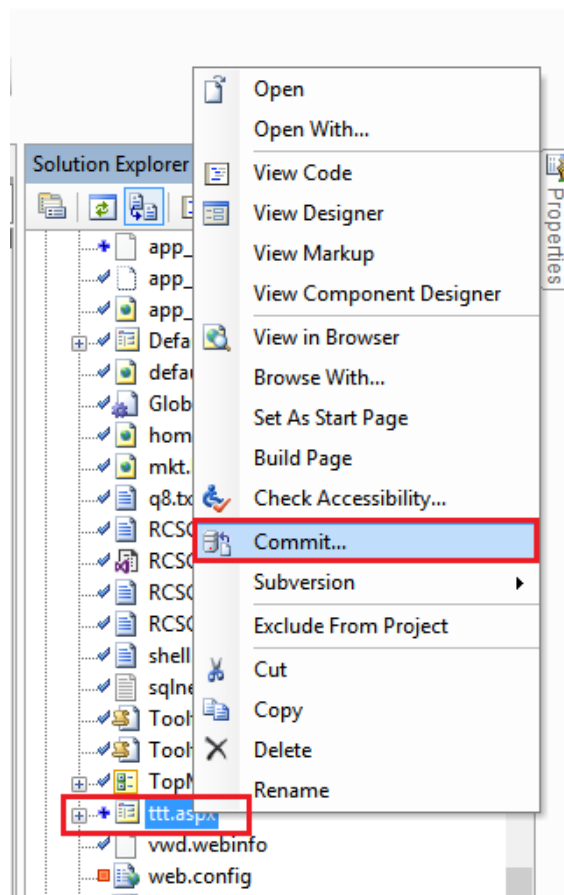


Figure 61. On the menu Commit in Visual Studio

3.4 Right click the file and then commit the code. * You have to add Message with "Ticket ID" of JIRA issue then in JIRA system can check the SVN information in "Subversion" tab.

Note : In JIRA you have to create ticket first, then you will get the ticket ID.

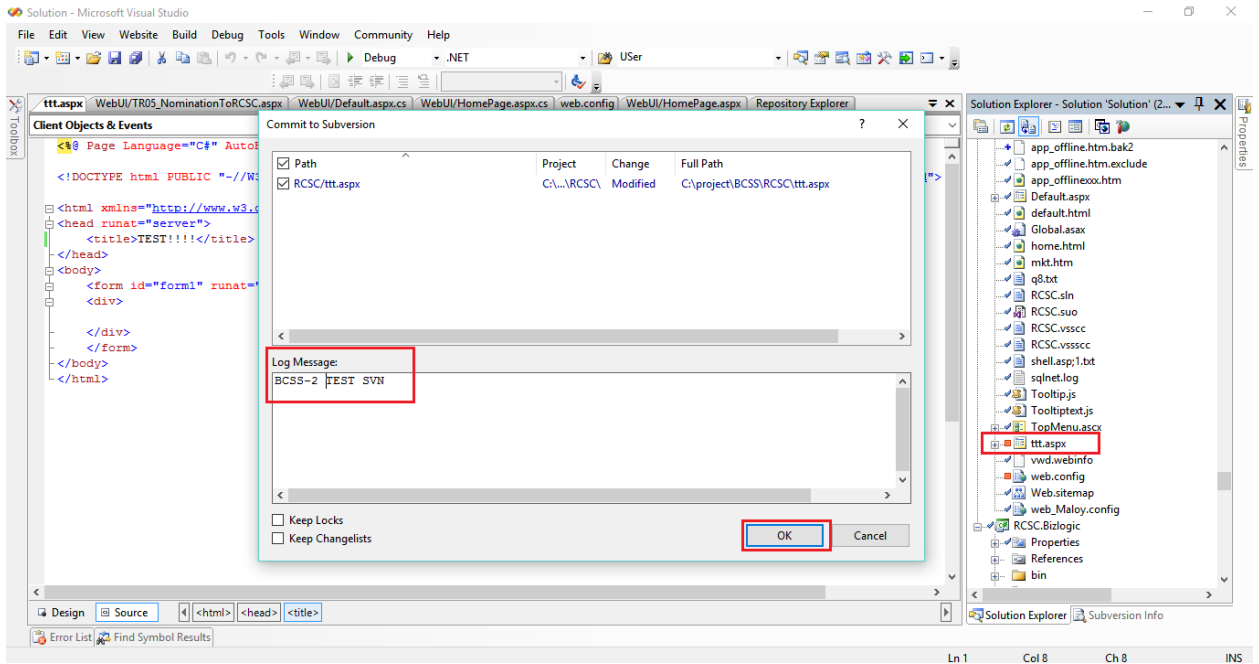


Figure 62. Commit with the comment (Mandatory)

Then in Jira ticket you can track the source change and the ticket.

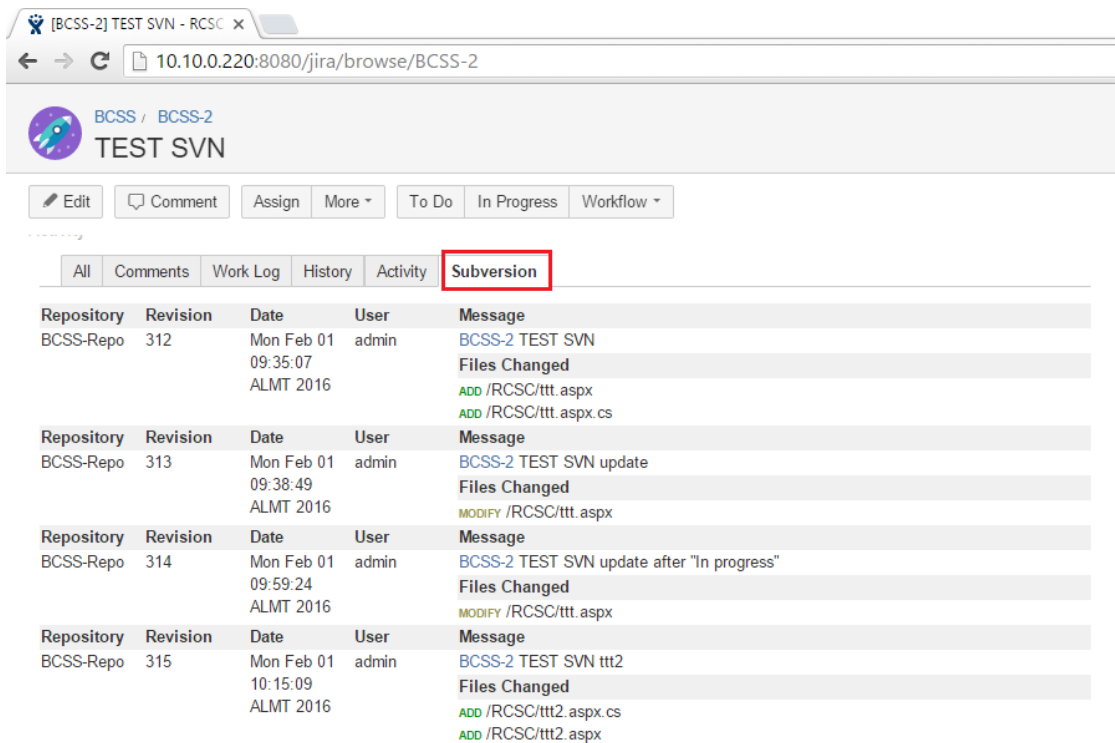


Figure 63. Subversion info

How to change your SVN account in your local!

The reason for Synchronize with JIRA and SVN when developer will commit the code then it will show in subversion in JIRA ticket who developed this issue.

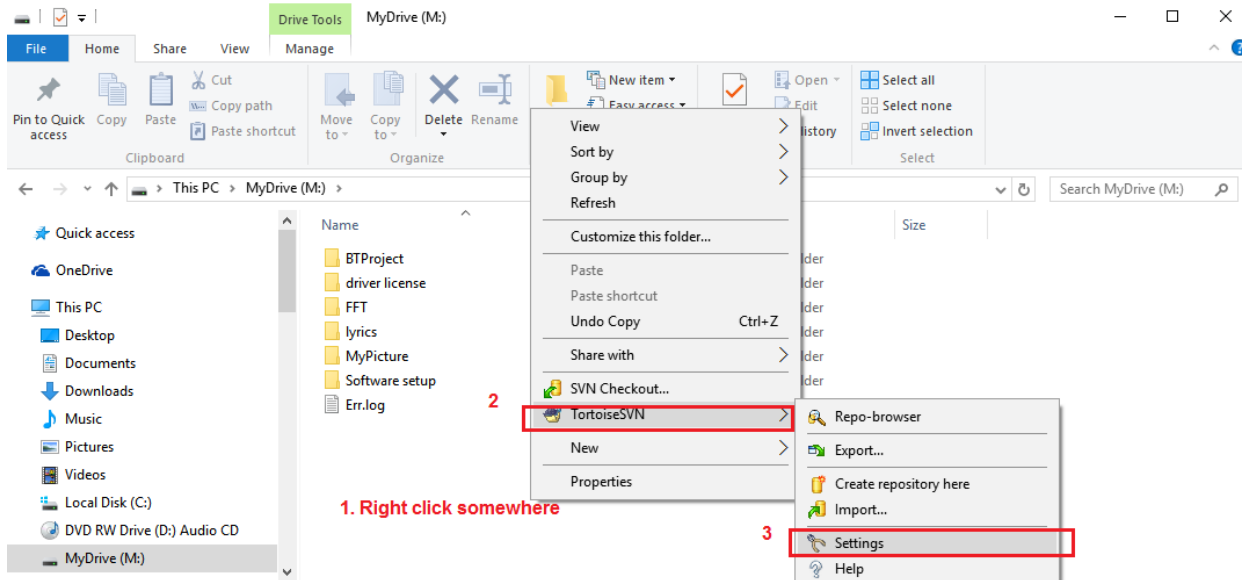


Figure 64. Configuration for SVN Account

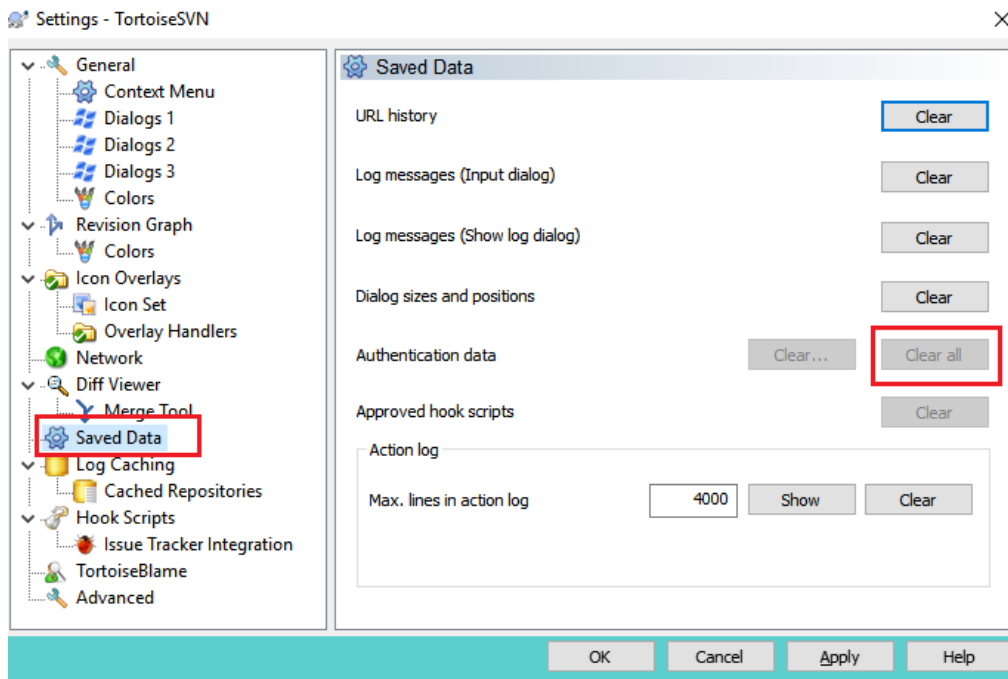


Figure 65. Configuration for SVN Account

After that, when you commit the code, the system will ask the username and password again.

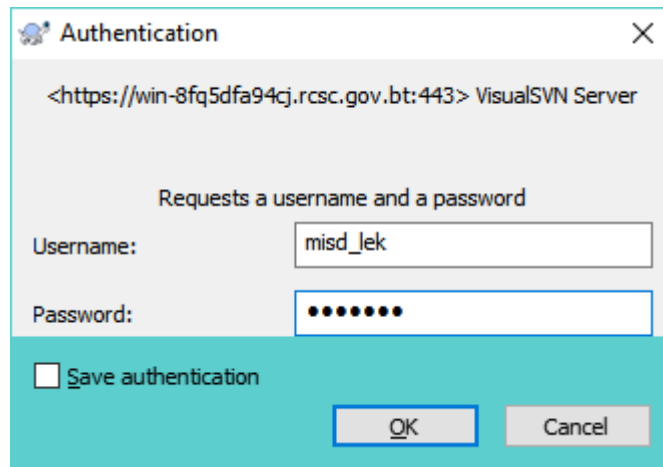


Figure 66. Configuration for your SVN Account

Please use your SVN account instead of admin!

Source Control : SQL

After you generate the script that needed in the project then you have to create SQL file in Visual studio as well in directory 'Script' for history and it will use source control for that.

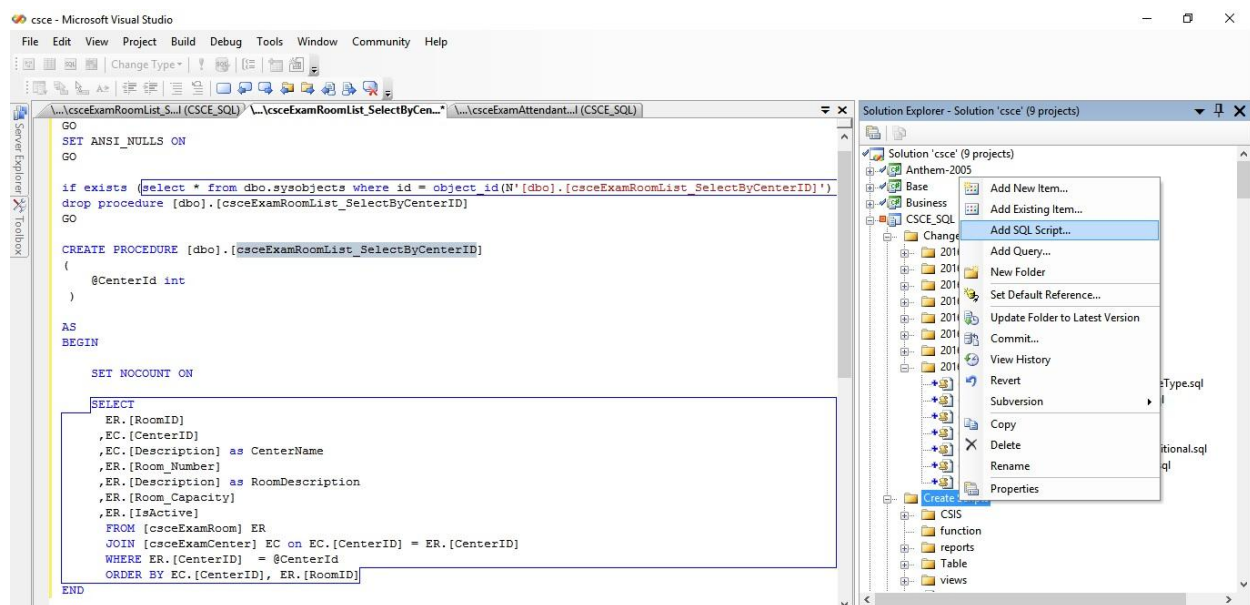


Figure 67. Create new SQL file in Visual studio

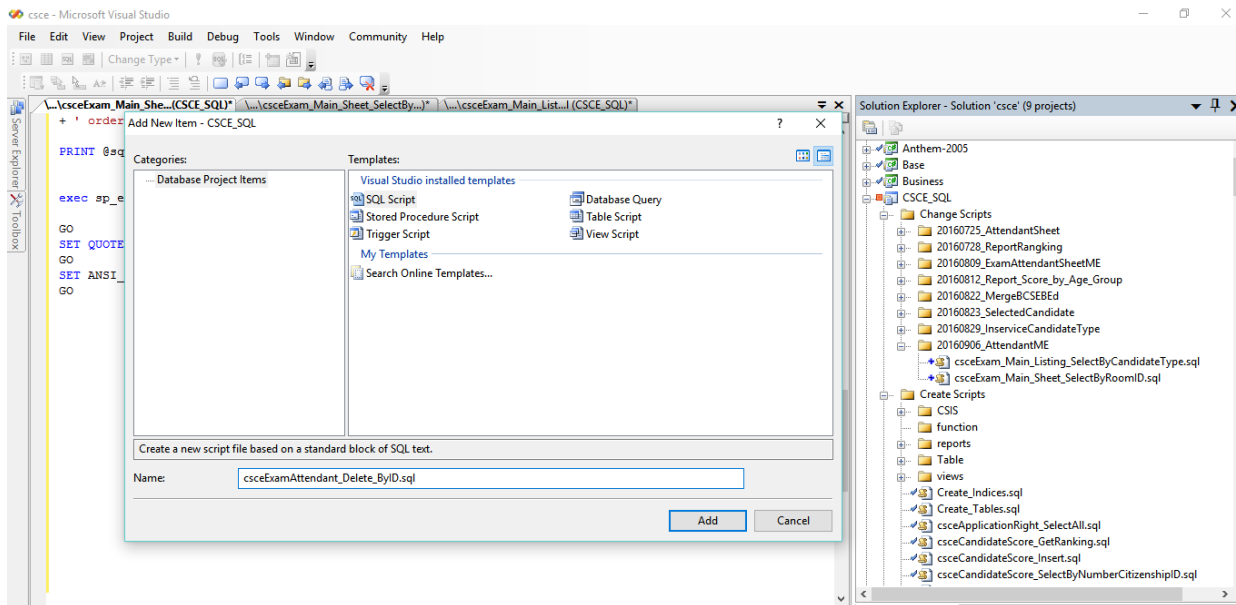


Figure 68. Create new SQL file in Visual studio

Source Control : New file

The additional when you created new file, the subversion might not know the new file and it won't show in list of commit file so you have to add it manual on 'right click' the new file on the menu "Subversion > Add" then it can control by subversion.

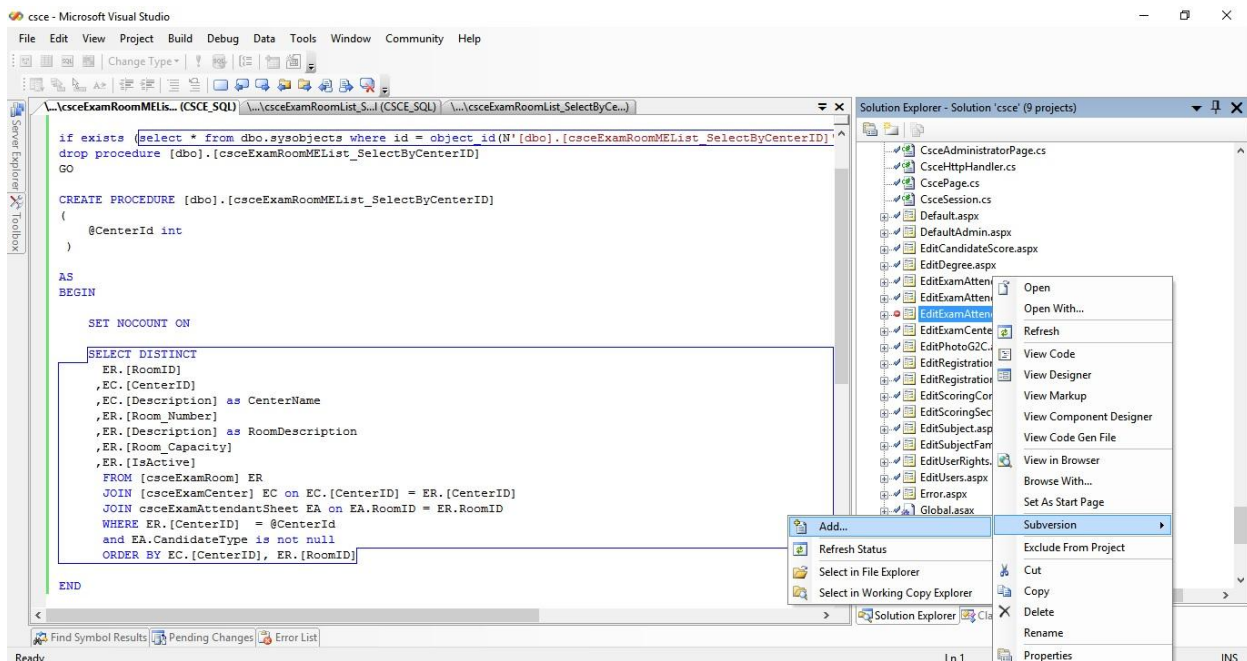


Figure 69. Create new SQL file in Visual studio

Administrator

Deployment process (Publish Website)

In main server is not allow to edit the code directly, the changes should be done on Client side for subversion control. But in the process for publish can be done for both side. First you have to check update project and then in Visual Studio on the menu Build > Publish Web that you will get the deployment file in the path which you configured. Please see the status of deployment and it should be success otherwise the deployment file is not complete.

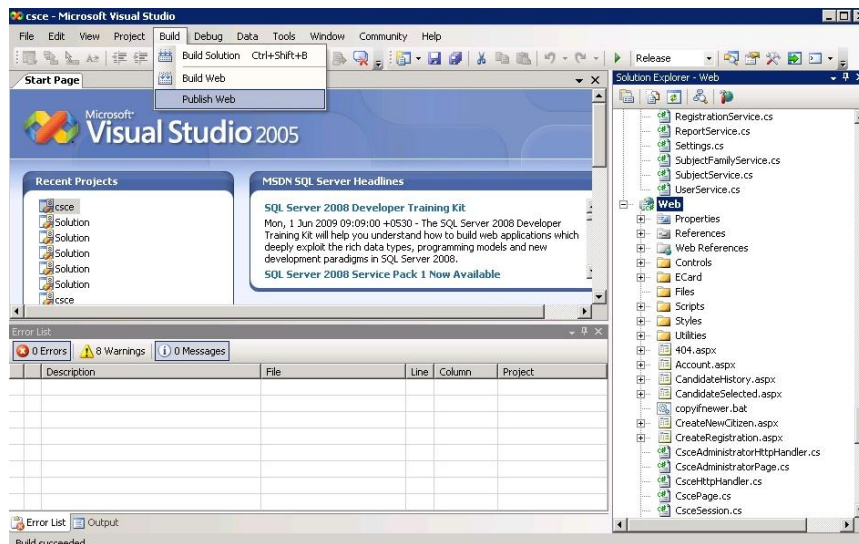


Figure 70. Deployment process in Visual studio

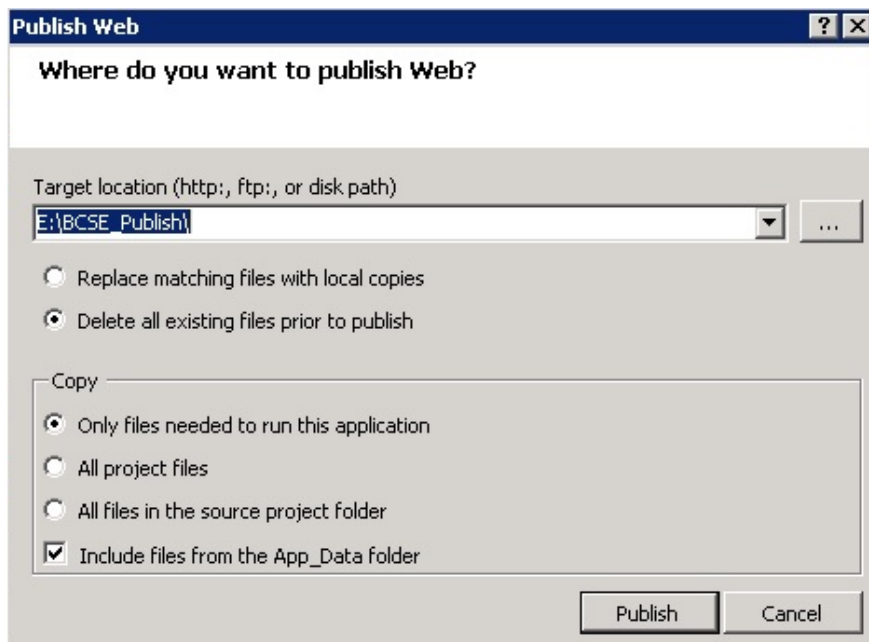


Figure 71. Deployment Configuration in Visual studio

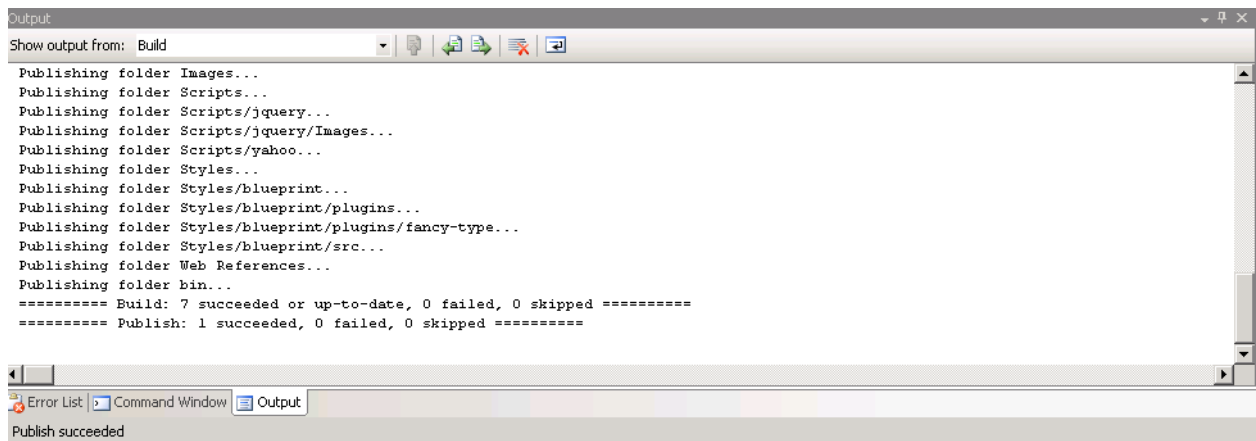


Figure 72. Deployment Successful

After deployment success , copy the file into main server and check with web.config file as well with the right information of main server(Production) instead of test server.

JIRA Installation

How to move JIRA to new Server? Check more information on website :

<https://confluence.atlassian.com/adminjiraserver071/migrating-jira-applications-to-another-server-802592269.html>

Database Configuration check more information on website :

<https://confluence.atlassian.com/jira/setting-up-a-sql-server-2005-database-for-jira-171967016.html>

Install - JIRA Software 7.0.5

Configure TCP Ports
Configure which ports JIRA Software will use.

JIRA requires two TCP ports that are not being used by any other applications on this machine. The HTTP port is where you will access JIRA through your browser. The Control port is used to startup and shutdown JIRA.

Use default ports (HTTP: 8080, Control: 8005) - Recommended

Set custom value for HTTP and Control ports

HTTP Port Number

Control Port Number

< Back Next > Cancel

Figure 73. JIRA Configuration Port : 8100

Confluence Installation

Confluence installation requires the configuration of database refer to Confluent Database Figure 74. (See more detail on website <https://confluence.atlassian.com/jira/connecting-jira-to-sql-server-2008-200709386.html>)

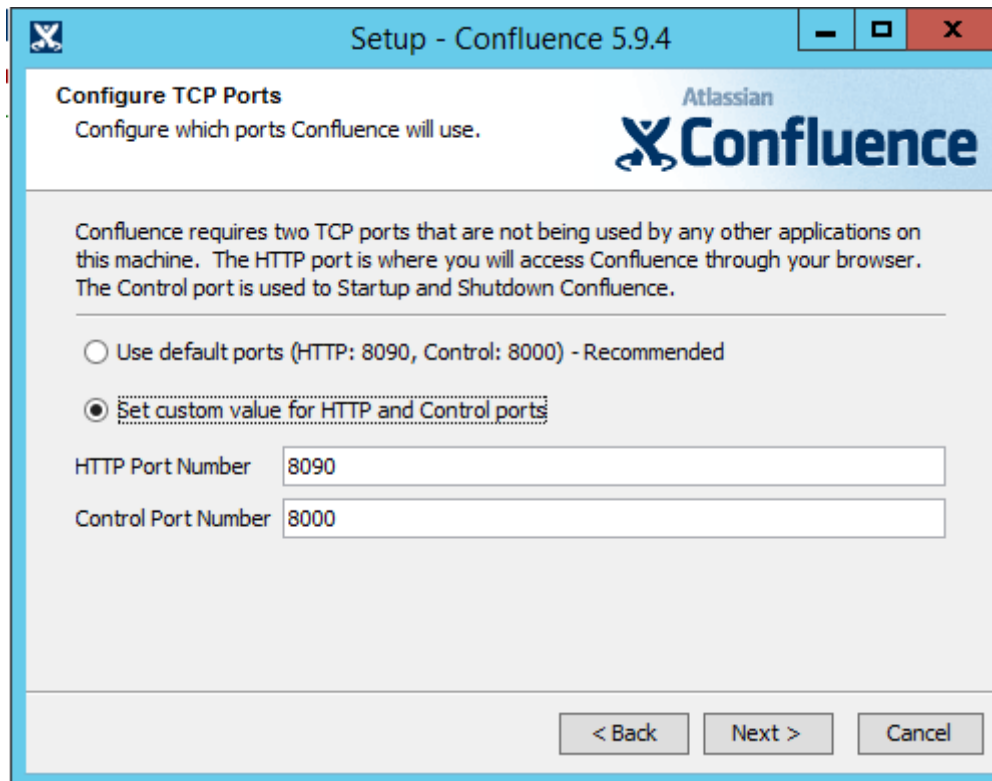


Figure74. Confluence Configuration Port : 8090

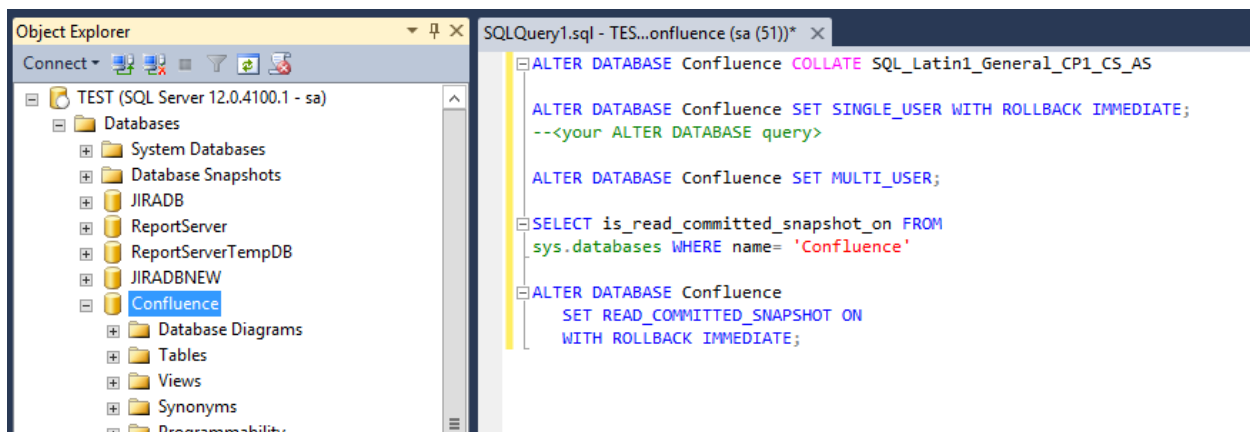


Figure 75. Confluence configured for MSSQL

Configure Database

Enter the settings for connecting to the database that Confluence will use to store data. You may need to consult your database documentation for the correct settings. Make sure that the JDBC drivers for your database are in the application server's classpath.



There are known issues with running Confluence and MS SQL using the standard Microsoft drivers. We strongly recommend using the JTDS drivers instead which can be downloaded from [here](#).



Our online documentation for installing JTDS drivers can be found [here](#).

Setup Database

Driver Class Name *	<input type="text" value="net.sourceforge.jtds.jdbc.Driver"/>
Database URL *	<input type="text" value="jdbc:jtds:sqlserver://localhost:1433/Confluence"/>
User Name *	<input type="text" value="sa"/>
Password	<input type="password" value="••••••••"/>

Figure 76. Confluence configured for MSSQL

Confluence System has to configure to link with JIRA System as refer to Figure 77-78.

Connect to JIRA

Fill in the details of the JIRA server you wish to retrieve user and group information from. You will need a valid administrator account on that JIRA server. [Learn more about configuring JIRA integration.](#)

JIRA Server Location

JIRA Base URL*

For example: <http://jira.mycompany.com> or <http://mycompany.com/jira>

JIRA Administrator Login

Confluence will need to log in to JIRA with administrative privileges to retrieve user information.

Username*

This username must have system administrator rights on your JIRA server.

Password*

Advanced Options

Confluence Base URL*

JIRA will use this URL to access your Confluence server. If Confluence is behind a proxy, you may need to change the URL given here.

User Groups*

[jira-software-users](#)

Users in these groups will have access to Confluence. Comma-separated.

Admin Groups*

Users in these groups will have administrator access to Confluence. Comma-separated.

Figure 77. Confluence Configuration sync with JIRA system

Email Notification Configuration

In JIRA Notification Setting have to set up email information and fill the fields with the Gmail SMTP server settings, which are:

- Gmail SMTP server name: smtp.gmail.com
- Gmail SMTP username: Jira.rcsc@gmail.com
- Gmail SMTP password: your password
- Gmail SMTP port: 465

For more detail see <http://www.serversmtp.com/en/smtp-gmail-configuration>.

Software Updating

Regarding JIRA and Confluence is commercial version which volunteer created Mini Project for organization that agreement support and maintain for 3 Year.

The screenshot shows the JIRA Administration interface. The main heading is "Administration" with a search bar for "Search JIRA admin". Below this are navigation tabs: "Applications", "Projects", "Issues", "Add-ons", "User management", and "System". The left sidebar contains a menu with "Versions & licenses" selected, and other options like "Application access", "JIRA SOFTWARE", "JIRA Software labs", "INTEGRATIONS", "Application links", "DVCS accounts", "HipChat", "Bamboo configuration", "FishEye", "Perforce", and "Application Navigator". The main content area is titled "Versions & licenses" and includes an "Upload an application" link. It shows "JIRA Software 7.0.5" with a progress bar for "Installing JIRA Software update...". There are two warning boxes: one indicating that JIRA Software must be updated to version 7.0.10 for compatibility, and another indicating that the user is 1 away from the maximum allowed by the license. Below these are license details: "Maintenance expires" (14/Feb/17), "Support entitlement number (SEN)" (SEN-6689533), "License type" (Commercial), "Organisation name" (RCSC), and "License key" (AAABJg0ODAOpeNp9k...). There are also "Update" and "Upgrade" buttons.

Figure 78. Updating Software

JIRA Subversion Plugin

The system installed JIRA Subversion plugin for JIRA and every new project have to configure for repository detail.

The screenshot shows the JIRA Marketplace page for the "JIRA Subversion plugin". The page is divided into two main sections. The top section is for the "JIRA Subversion plugin" by Atlassian, which is marked as "Unsupported". It has a 4-star rating (104 reviews), 6,306 installations, and is free. The description states it is a plugin to integrate JIRA with Subversion. Below this is a "Rate and review" section with a 5-star rating and a "Leave Review" button. The bottom section is for the "Subversion ALM" plugin by Kinto Soft, also marked as "Unsupported". It has a 4-star rating (22 reviews), 1,580 installations, and is free. The description states it is an extremely powerful one-click full integration of JIRA with Subversion. The page also includes a sidebar with navigation links like "PDF Views", "PDF Templates", "Getting Started", "TABLE GRID EDITOR", "Data Sources Admin", "Driving Table Admin", and "Synchronizer".

Figure 79. JIRA Subversion plugin

SVN config for JIRA system

Part 1: Repository configuration

SVN configuration for administrator need parameter to configuration so that system can connect with JIRA and source control. Administrators will add parameter to configuration for JIRA for more detail in <http://stackoverflow.com/questions/8641950/integration-of-jira-with-tortoisesvn>.

Go to repository properties and add parameter as Figure 80.

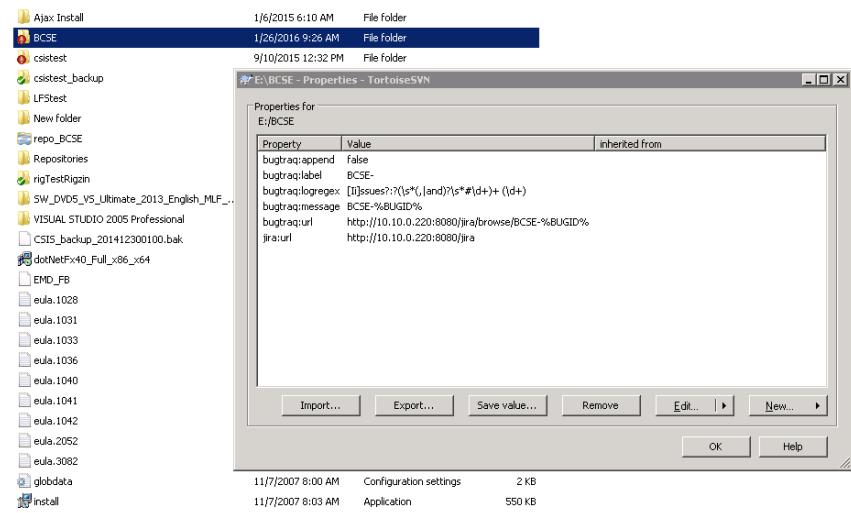


Figure 80. Subversion contiguration in TortoiseSVN : BCSE Project

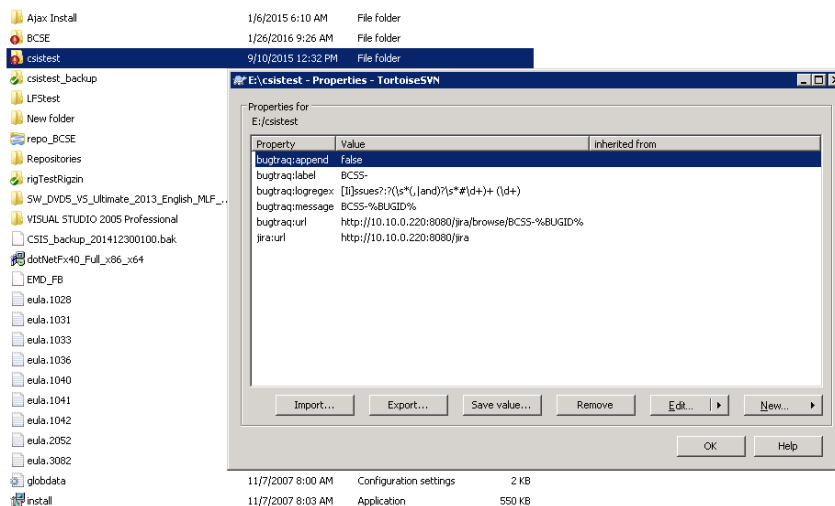


Figure 81. Subversion contiguration in TortoiseSVN : CSIS Project

Part 2 : JIRA ADMIN Configuration in “JIRA Subversion plugin”

Login JIRA with Administrator right

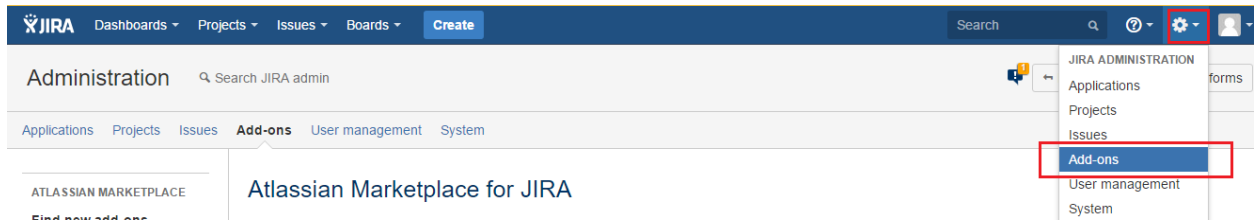


Figure 82. JIRA Configuration

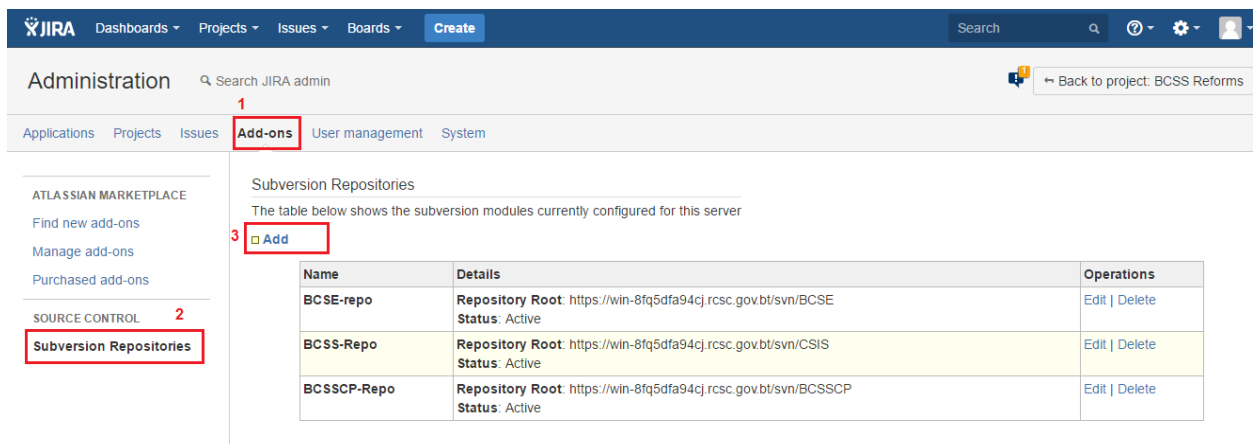


Figure 83. JIRA Configuration for new Project

Add Repository

Use this page to add a new Subversion repository.

* Display Name:

Subversion Repository Details

* Repository Root: **Repository URL**
Full path to the Subversion root - at the moment svn://, http://, https:// and file:// are supported. Note: when using file: protocol, there must be 3 slashes: "file:///path/to/local/repo".

* Revision Indexing: Index and link to any mentioned issue keys in the revision history Do not index and link to the revision history

* Revision Cache Size:

The number of revisions to keep cached in memory for quick retrieval. Note: this number does not affect the speed with which revisions are looked up. This affects the speed at which the full content of those revisions are retrieved from SVN.

Username:

SVN Account Admin

Password:

Private key file:

Please note: The passphrase for the private key file is the password above.

Web Linking

Figure 84. Add repository detail

Enjoy system 😊

References

Atlassian (2016) JIRA Software - Issue & Project Tracking for Software Teams [Online], Available: <https://www.atlassian.com/software/jira> [Access 21 December 2015]

Atlassian (2016) Confluence Team and Collaborator software [Online], Available: <https://www.atlassian.com/software/confluence> [Access 21 December 2015]

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eazyBI (No date) eazyBI: The Easiest Business Intelligence Tool on the Web [Online], Available: <https://eazybi.com> [Access 14 December 2015]

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**Business/Software Requirements
Specification:
BCSE 2016 Enhancement**

Version: 0.1 Draft

Release Date: XXX XX, 2016

Change History

Version	Date	Author	Remarks
0.1 Draft	2016.05.09	Kuenga Zam	Draft

Core Team Review

Division	Reviewer	Date	Sign-Off
CSED	Phuntsho Tashi (Head, CSED)		
CSED	Jigme Norbu (HR Officer)		

IT Team Review

Reviewer	Date	Sign-Off
Kuenga Zam Sr.ICT Officer		
Ganga Ram Ghimiray Sr.ICT Officer		
Thassaneeya Sodasoi TICA Volunteer		

1. Acronym

Acronym	Description
RCSC	Royal Civil Service Commission
CSED	Civil Services Examination Division
BCSE	Bhutan Civil Service Examination
BR	Before Registration
BPE	Before PE
APE	After PE
BME	Before ME

2. Overview

2.1 Objective

This is an enhancement on the Online registration system for Bhutan Civil Service Examination, conducted by the RCSC.

3. Users and Access Matrix

3.1 Users

There will be the following user categories:

- **Candidate**
 - These are candidate who are interested in sitting for BCSE
 - These candidates will register using their CID and Date of Birth.
- **Exam Support**
 - These are users identified by CSED, who are assigned the task of verifying the marks and entering into the system.
- **BCSE Admin**
 - These are administrators from CSED division
- **Super Admin (Admin WU)**
 - These are super admin from MISD who manage the technical part of the system (Creating users and Masters).

4. Change Request

Sl.No	Theme	Description	Priority	When	Remarks
1	Candidate Registration	Link candidate details to G2C Citizen data (Photo, Date of Birth, Permanent Address)	High	BR	Resolved
2		Nationality to be hidden from registration page all default (Bhutanese)	High	BR	Resolved
3		Need a system to stop those candidates who have exhausted their BCSE quota from registering with message system to the candidate at login page. (If Main Exam 2 times, PE 3 times)	High	BR	Resolved
4		New Field (Name and Contact in case of Emergency)	High	BR	Resolved
5		Contact number only allow Bhutan number (Starting and Length)	Medium	BR	Resolved
6		Under Qualification establish link between Country and Institute	Medium	BR	Resolved
7		Under Qualification Reduce funding to (Private, Scholarship-RGOB and Schlorship-Others)	Medium	BR	Resolved
8		Employment History: Link to CSIS on entry of employeeid display the details	Medium	BR	Resolved
9		Employment History: Link Employment History and Declaration regarding employment	Medium	BR	Resolved
10		Pop up Feature confirming registration and registration number on submit of registration by candidate.	High	BR	Resolved
11		Provision to Print e-Admit card on submission of registration as well as e-admint cared to be emailed to candidate auto on submission of registration	High	BR	Resolved

12		An e-admint card printing provision in candidate page	High	BR	Resolved
13		Note under candidate contact details: "All important message will be send to this contact number please ensure you put the correct number"	Low	BR	Resolved
14		For in-services candidate check if there bachelor degree has been updated in CSIS. If not don't allow registration and notify them to update in CSIS through HRDD	Medium	BR	Resolved
15		If declaration Teacher Candidate is true ensure that the candidate type is selected as PGDE (pop-up message)	Medium	BR	Resolved
16		Provision to see results in the registration page			Resolved
17	Candidate Score	VIVA VOCE - Auto remove highest and lowest score from calculation of viva voce marks	High	BME	Resolved
18		New Role- Create role who will be the only one who will be allowed to edit 9the scores	High	BME	Resolved
19		All Scores once entered and saved it should not be editable (expect for the score manager)	High	BME	Resolved
20		Every time a candidate type is changed auto clear all marks	High	APE	Resolved
21		Have Different score entry page	Medium	APE	Resolved
22		Two logic for candidate score calculation (ranking) <ul style="list-style-type: none"> a) General (PGDPA,PGDFM,PGDE) sum of paper/300 * 70% b) Technical (including dzongkhag) - individual paper * % and sum at the end 	High	BME	Resolved

23		In the ranking report if there is a tie in the ranking skip ranking by 1 (example two 4th rank the next rank will be 6th)	High	BME	Resolved
24		NEW: Provision to upload PE results mass	Medium	BPE	Resolved
25	Reports	System generated attendance sheet (Registration listing changed to PE attendance). Provision to enter Centre	High	BPE	Resolved
26		NEW: Report for candidates whose marks has not been entered	High	APE	Resolved
27		NEW: Report by age by Category	Medium	BME	Resolved
28		All report to align with the 'status' of the candidate. Currently, reports especially the count of candidates is different with each report. Reports under Academic Achievement, Written Examination, Viva Voce and the final results are not synced or connected	High	BME	Clarify
29		Under the monitoring list, need reports according to declarations: a) Declared as In-Services; b) Declared as Teacher Candidates;	Medium	BPE	Resolved
30		Report on those who have scored: a) 50% and above b) Below 50%	Medium	BPE	Resolved
31		Administration	A candidate search facility to check candidate's personal and scores detail of past two years	Medium	BPE
32	Provision to send out bulk email or SMS		Medium	BPE	Open
33	Provision to enter Selected candidates		Medium		Resolved

34	System Admin	Declaration to be stored at the database level not at the code level	Medium		Open
35		CSIS Masters Integration	High		Resolved
36		User Manager improved	Low		Resolved

