

CONTINUOUS INTEGRATION ORACLE PL/SQL-A I ORACLE FORMS



INTESA SANPAOLO
CARD

SADRŽAJ



Intesa Sanpaolo Card

- Tko smo mi
- Naši klijenti
- Naše usluge



Oracle release automation – smart continuous delivery

- Razvoj aplikacije, sustava – integracije – više developerskih teamova
- Enterprise sustav – zahtjevi, novi kanali
- Pametan i kontroliran razvoj oracle source codea (ALM)
- Integration – build management
- Source code management (SCM)
- Ticket management – tracking - promjena source code-a
- Baza znanja – smart processing of data - linkovi
- Continuous integration – continuous testing
- Jenkins CI - Biti agiln

TKO SMO MI

Intesa Sanpaolo Card is a provider of payment solutions, dedicated to developing and managing payment business on the international level. Company was founded in 2009 and is a member of Intesa Sanpaolo Group.

Our foundation is based on complementary strengths of the two strongest cards businesses within the Intesa Sanpaolo Group, **Banka Koper** and **Privredna banka Zagreb**, and their transition from local companies into a fully international organization.



NAŠI KLIJENTI


PRIVREDNA BANKA ZAGREB


VÚB BANKA


BANKA KOPER


CIB BANK


BANCA INTESA


ALEXBANK | بنك الإسكندرية





INTESA SANPAOLO BANKA
 Bosna i Hercegovina


BANCA INTESA
 Beograd


INTESA SANPAOLO BANK
 Romania


INTESA SANPAOLO BANK
 Albania

The Group's member banks currently manage:

-  75 thousand POS terminals
-  2,6 thousand ATM devices
-  over 6,7 million cards

Figures as of 31st March 2015

NAŠE USLUGE

ISSUING SOLUTIONS

- Cardholder and Card Management
 - ▶ Cardholder Contact Solutions
 - ▶ Card Personalization and Distribution
 - ▶ Cardholder Billing and Statement Generation
 - ▶ Secure Data Printing
- Issuer Authorization Service
- Transaction Processing
- Proximity Payments

ACQUIRING SOLUTIONS

- ATM Solutions
 - ▶ Authorization and Transaction Processing and Routing
 - ▶ ATM Terminal Management
- POS Solutions
 - ▶ Authorization and Transaction Processing and Routing
 - ▶ POS Terminal Management
 - ▶ Merchant Management
- E-Commerce

VALUE ADDED SERVICES

- Reporting
 - ▶ Mandatory Reporting
 - ▶ Customized Reporting
- Call Center
- Dispute and Chargeback Management
- Strong Authentication
- Risk Management
 - ▶ Fraud Detection
 - ▶ Advanced Risk Modelling
- Statistical Modelling
- Loyalty Programs

All services and solutions are tailored to meet regional, local market or individual partner requirements.

RAZVOJ APLIKACIJE, SUSTAVA - INTEGRACIJE

Ideja - Developer – Rješenje

- Mali tim razvojnih inženjera
- Fleksibilnost, povezanost
- Lako održavanje
- Orijentiranost tržištu

Rast potražnje funkcionalnosti

- Rast broja inženjera na aplikaciji
- Uvođenje sustava za praćenje rada
- Analitičari, projekt menadžeri
- Povećavanje kompleksnosti

Enterprise rješenja

- Change Request procedure
- Optimiranje resursa
- Razni alati za povećavanje efikasnosti upravljanja
- 24/7 dostupnost, SLA, reputacija



ENTERPRISE SUSTAV – ZAHTJEVI, NOVI KANALI

Core sustav:

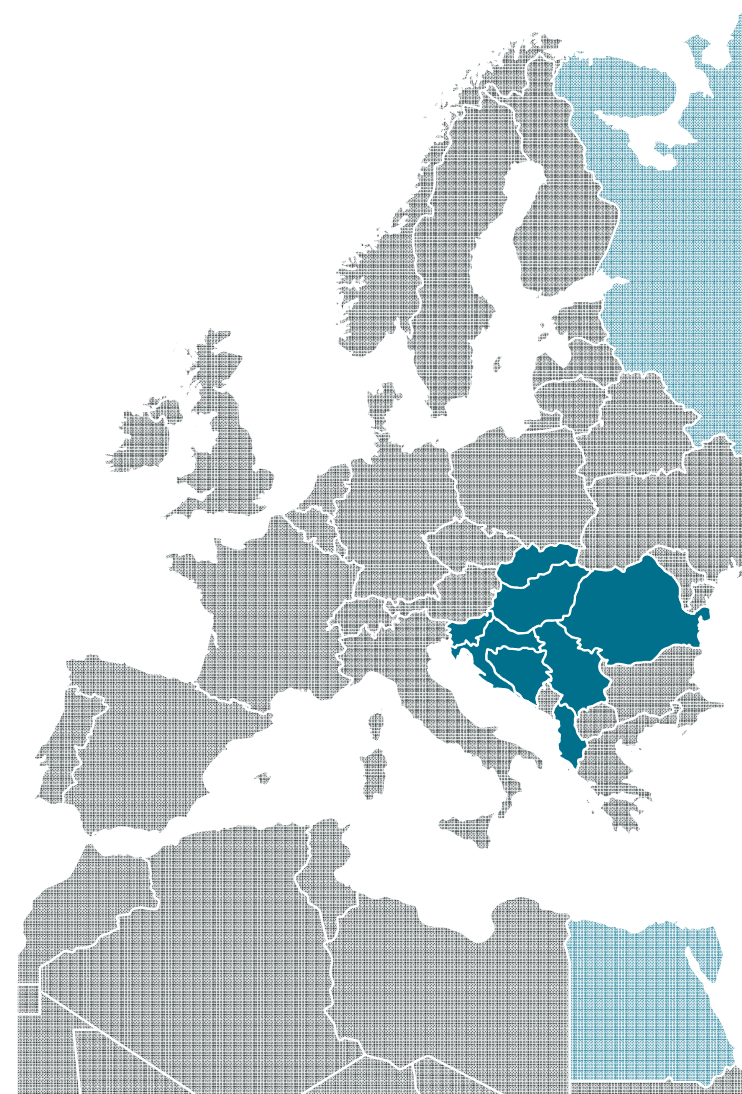
- Više partnera, razne regulative, prilagodbe
- Standardizacija sustava
- Širenje razvojnih teamova

Razni kanali izmjene podataka:

- File transfer
- Web servisi
- Razni API

Pristup sustavima:

- Internet: web, mobile
- Vremenske zone
- Maintenance window - 24/7 sustav?



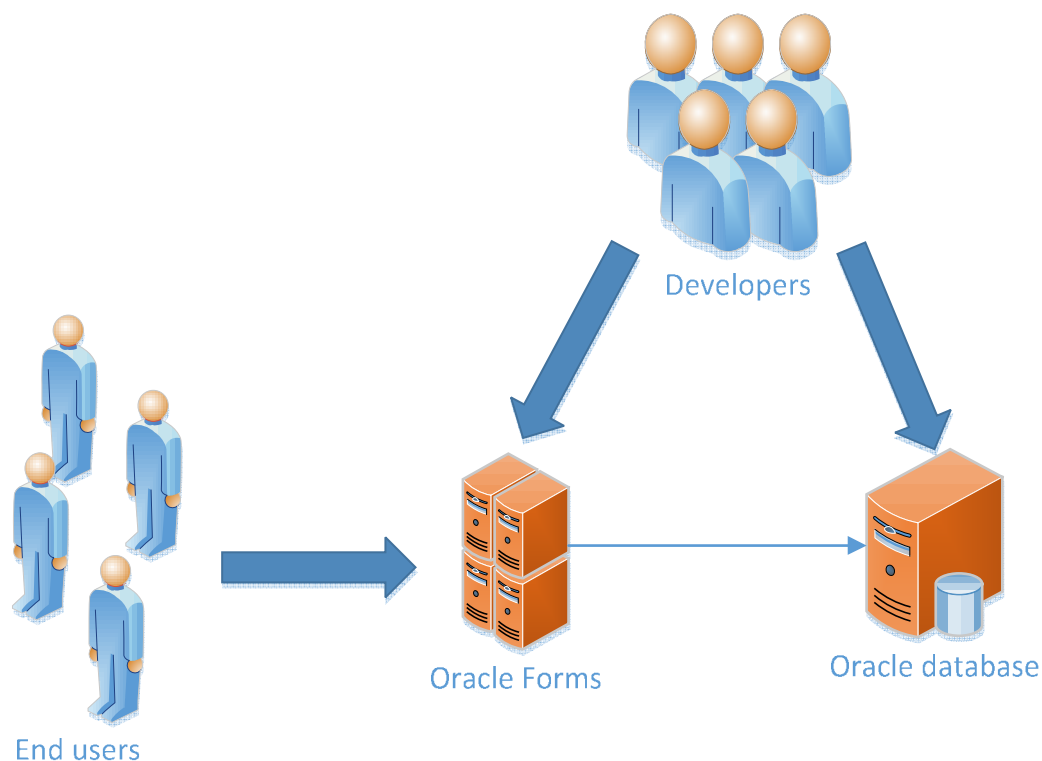
RAZVOJ – TEST – PRODUKCIJA (ALM)

Posao developera:

- Spajanje na baze
- Ažuriranje podataka
- Promjena PL-a
- Kreiranje Forms objekata
- Isporučivanje na application servere

Korisnici:

- Spajanje na aplikaciju
- Dohvat i manipulacija podataka preko Forms objekata



DINAMIKA RADA - IZAZOV

Developeri:

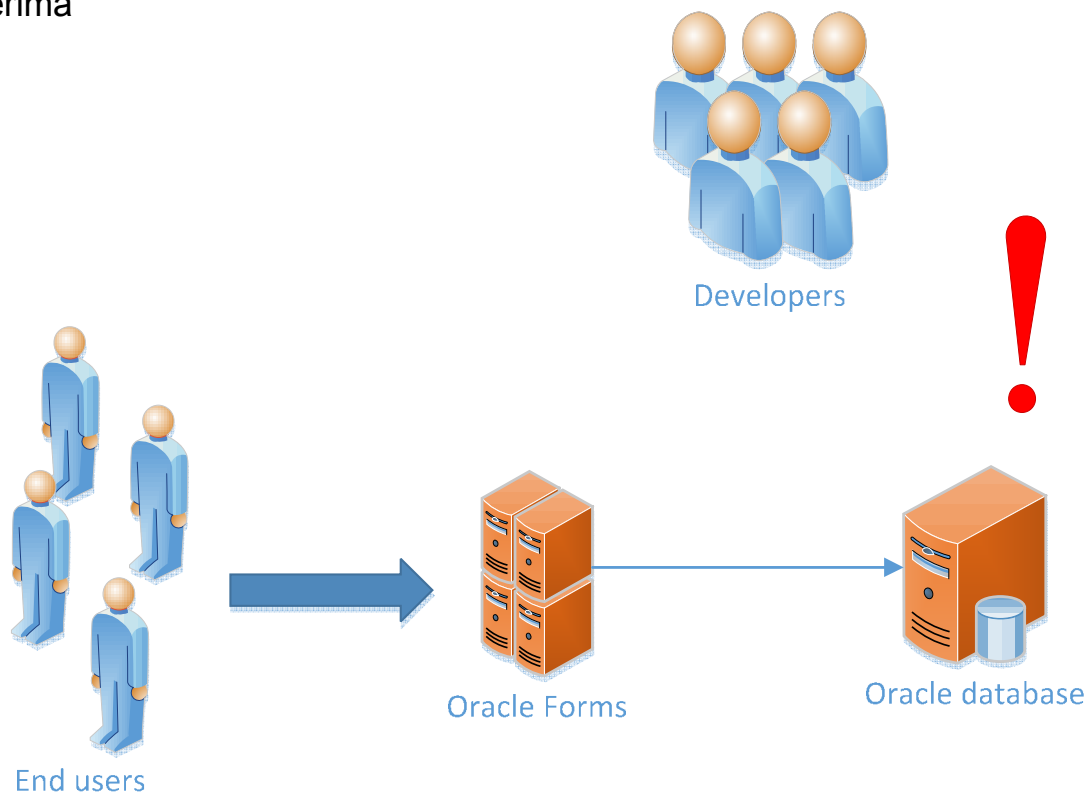
- Nemaju pristup aplikacijskim serverima
- Ne smiju mijenjati PL na bazama

Korisnici:

- Dalje moraju nesmetano koristiti funkcionalnu aplikaciju

Problem:

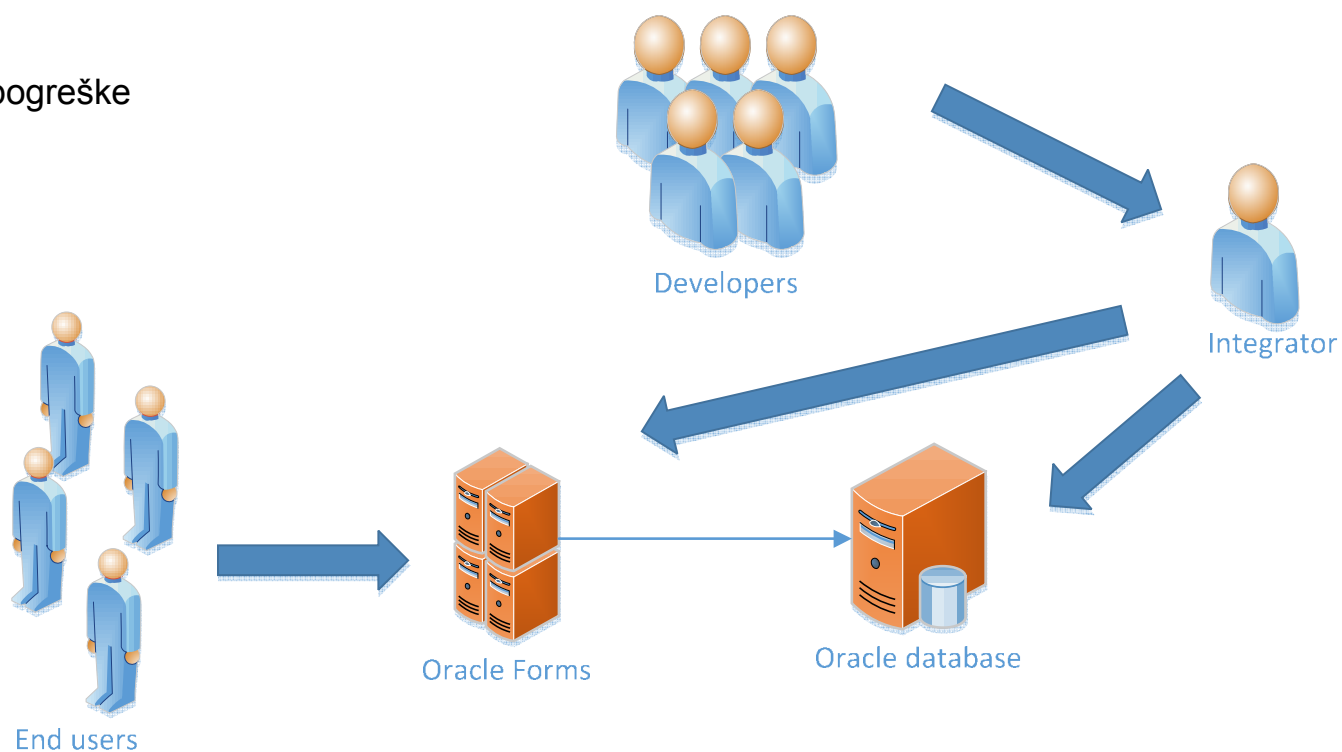
- Vezanih ruku održavati programski kod i forme
- Aktivna podrška korisnicima



INTEGRATION – BUILD MANAGEMENT

Podrška – zadovoljavanje standarda:

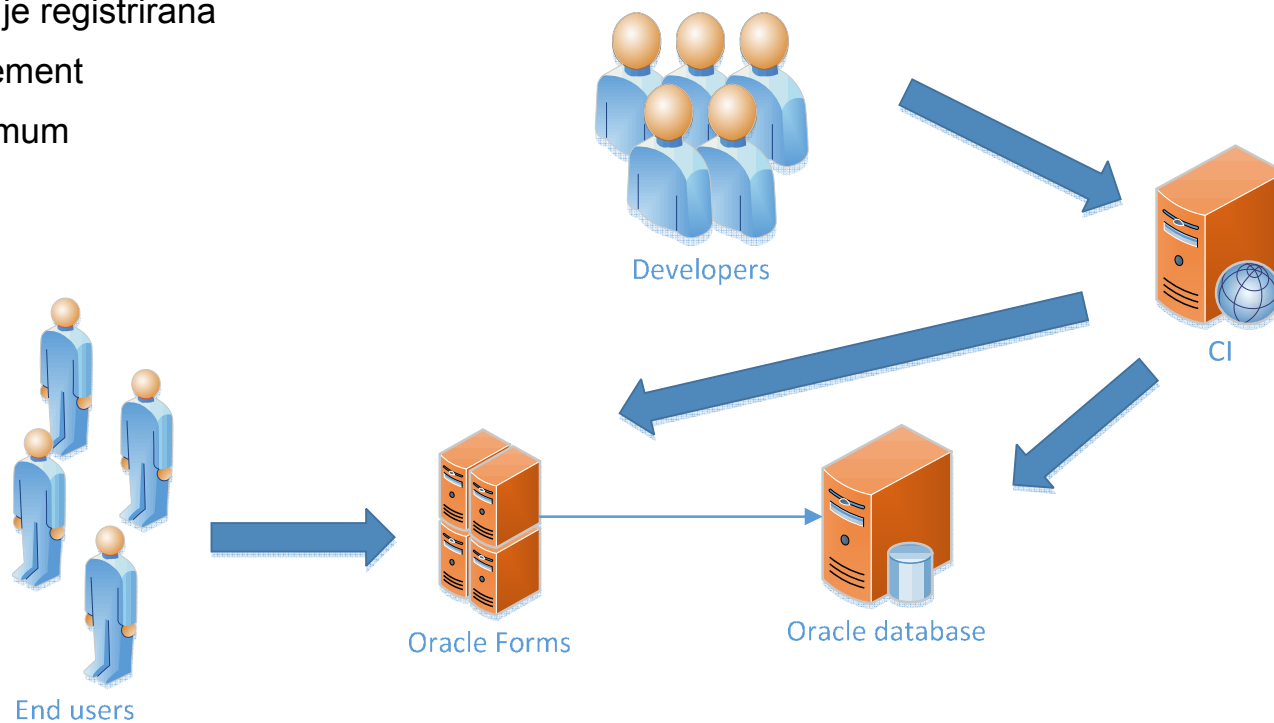
- Veza developer – oracle database – oracle forms
- Manualni rad
- Velika mogućnost pogreške
- Rad iteracijama



CONTINUOUS INTEGRATION

Application Life Cycle:

- Optimirana veza developer – oracle sustav
- Svaka promjena je registrirana
- Release management
- Downtime - minimum



SOURCE CODE MANAGEMENT (SCM)

Source control sustav:

- Temelj praćenja razvoja
- Uvid u prošlost – starije verzije
- Backup source code-a
- Dostupno cijelom razvojnom timu

IDE alati:

- Konektori za komunikaciju
- Mogućnost paralelnog rada

Tipovi source control sustava:

- Centralizirani (client – server)
- Distribuirani

Podjela:

- Open source
- Proprietary

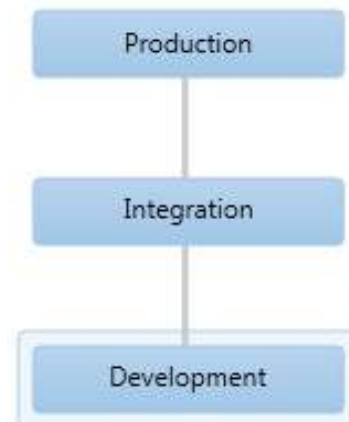
SOURCE CODE MANAGEMENT (SCM) - 2

Branching:

- Omogućuje paralelizam razvoja
- Vrlo korisno ako održavate različite verzije
- Izolacija – staging – testing

Osnovna podjela:

- razvoj
- test
- produkcija



TICKET MANAGEMENT - TRACKING

Ticket management:

- First line support
- Second line support
- Bug tracking


Agile:

- Feature
- User Story
- Issue
- Bug
- Task

Tracking systems:

- Serena Business Manager
- MS VS TFS
- Atlassian Jira

 **SERENA** BUSINESS MANAGER

 Visual Studio Team Foundation Server

 **JIRA**

PROMJENA SOURCE CODE-a – ZAŠTO

Zadovoljstvo klijenta:

- Bug – fix request
- Enhancement – change request
- Projekti



LINKOVI – ZAHTJEV - CHANGESSET

History promjena:

- Tko i kada mijenja
- Nalog
- Description (detalji)

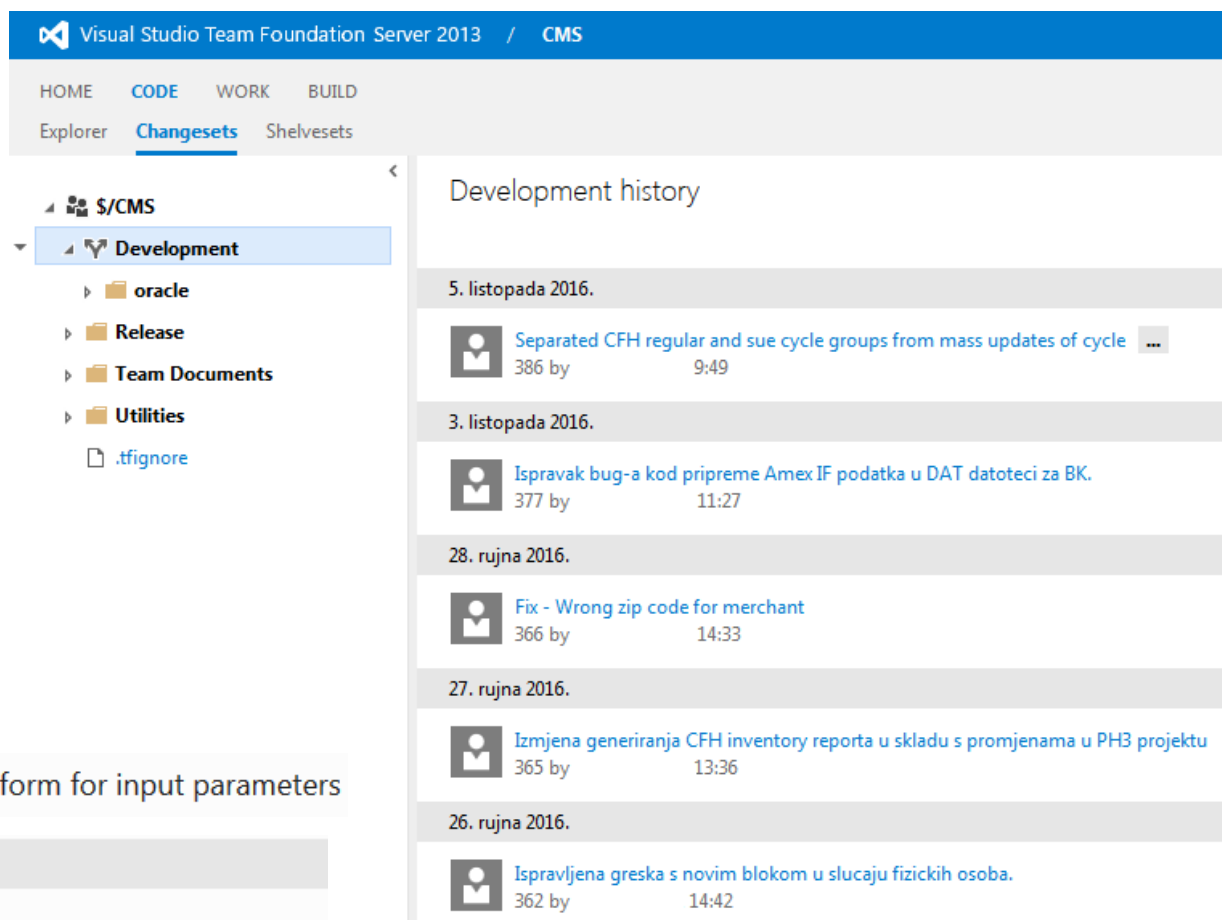
HISTORY			ALL LINKS (2)	ATTACHMENTS
ID	Work Item...	Title		
<ul style="list-style-type: none"> Changeset (2) 				
		Changeset 386		
		Changeset 387		

Bug 146: INTERNAL - improvement of form for input parameters

REPRO STEPS SYSTEM INFO TEST CASES

B / **I** / **U**       

klikne se generate virtual card i kreira se plastika umjesto struje




Visual Studio Team Foundation Server 2013 / CMS

HOME CODE WORK BUILD


Explorer **Changesets** Shelvesets

Development history


5. listopada 2016.

 Separated CFH regular and sue cycle groups from mass updates of cycle ...
386 by 9:49


3. listopada 2016.

 Ispravak bug-a kod pripreme Amex IF podatka u DAT datoteci za BK.
377 by 11:27


28. rujna 2016.

 Fix - Wrong zip code for merchant
366 by 14:33

27. rujna 2016.

 Izmjena generiranja CFH inventory reporta u skladu s promjenama u PHB projektu
365 by 13:36

26. rujna 2016.

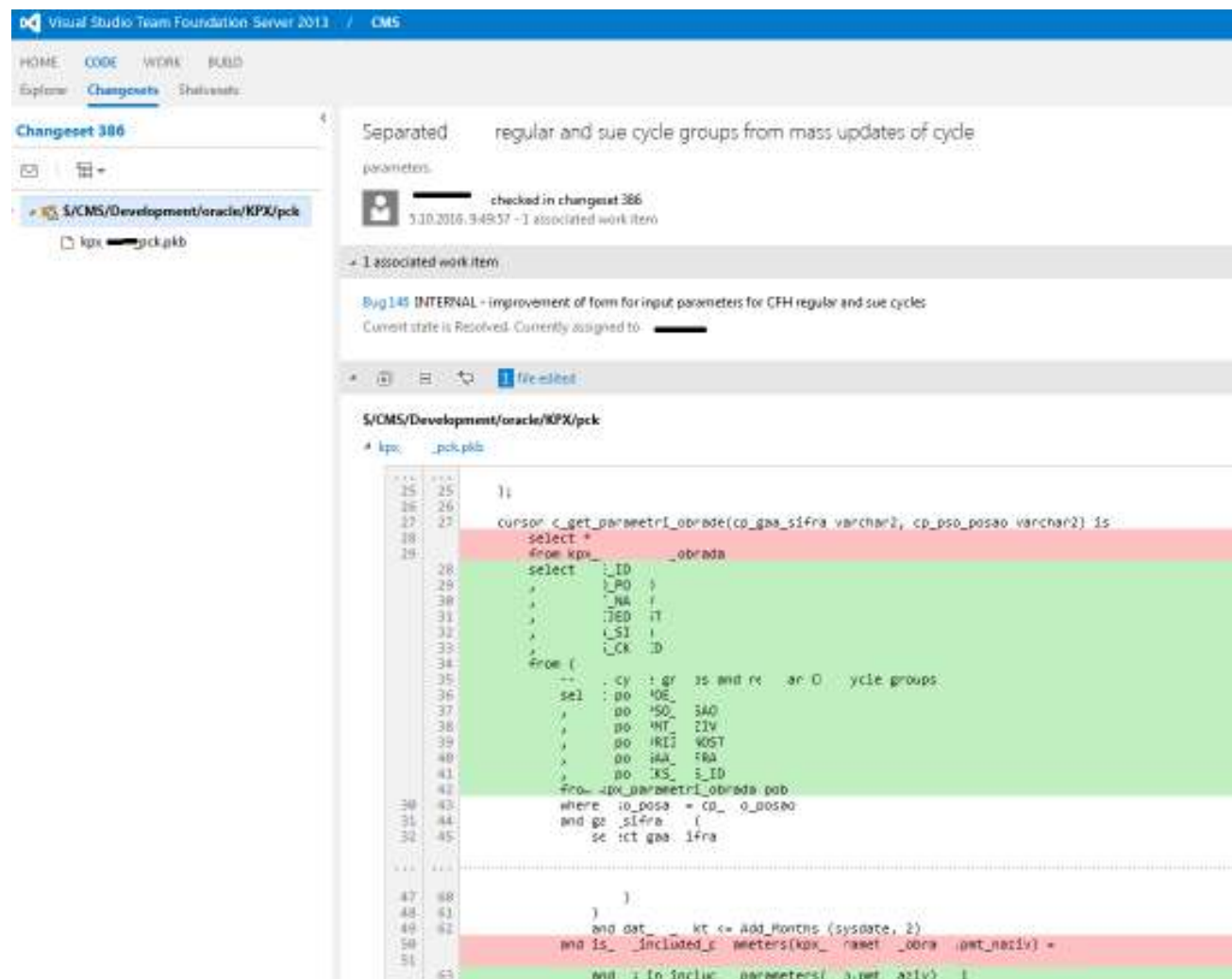
 Ispravljena greska s novim blokom u slucaju fizickih osoba.
362 by 14:42

BAZA ZNANJA – SMART PROCESSING OF DATA

Baza znanja:

- Usporedba
- Vizualna provjera
- Praćenje

- Online pristup
- Fleksibilnost



Visual Studio Team Foundation Server 2013 / CMS

HOME CODE WORK BUILD

Explore **Changesets** Shelvesets

Changeset 386

Parameters

Separated regular and sue cycle groups from mass updates of cycle

checked in changeset 386
3.10.2016. 9:49:57 - 1 associated work item

1 associated work item

Bug 145 INTERNAL - improvement of form for input parameters for CFH regular and sue cycles
Current state is Resolved. Currently assigned to [User]

```

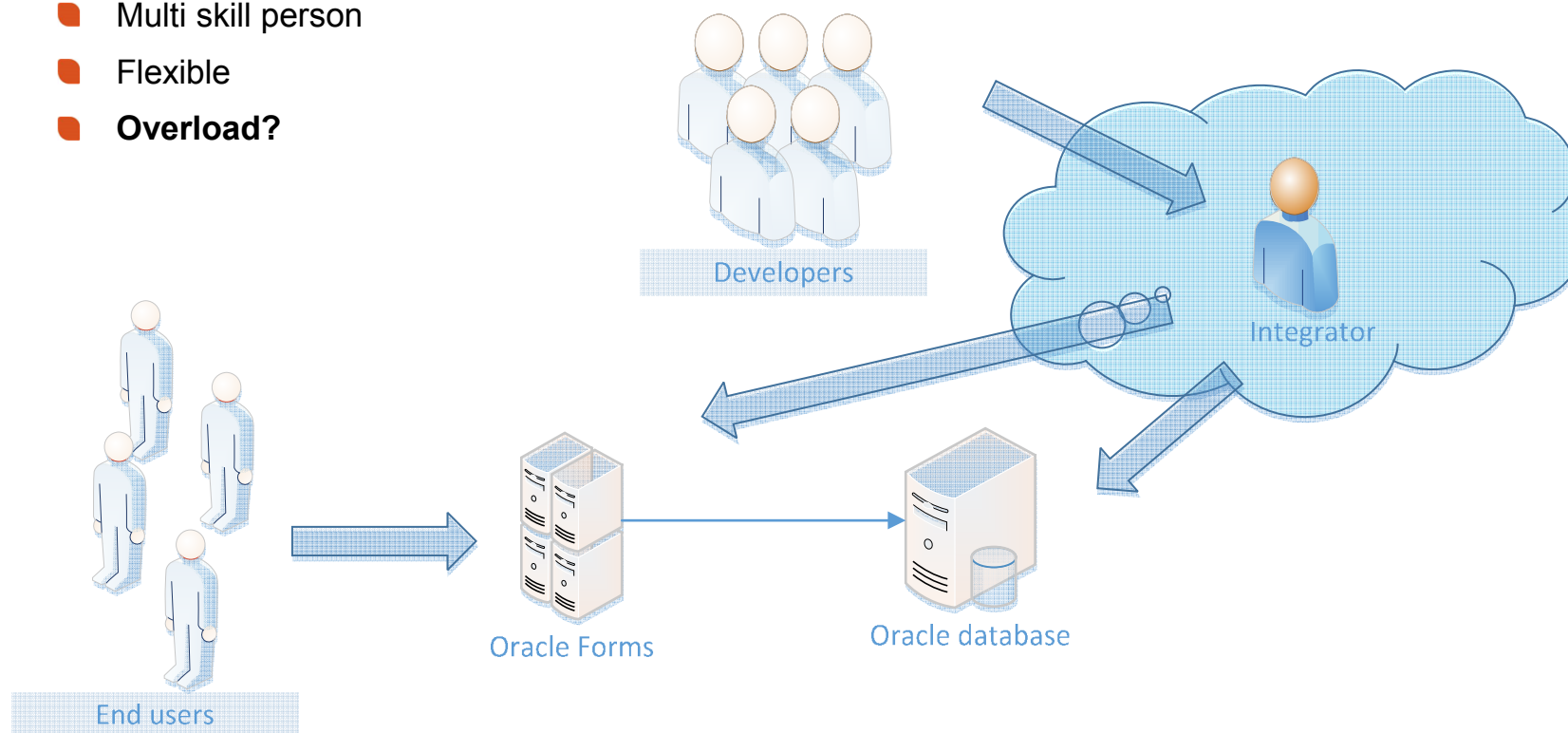
1 25 25 1;
2 26 26
3 27 27 cursor c_get_parametri_obraade(co_gaa_sifra varchar2, co_poso_posao varchar2) is
4 28 28 select *
5 29 29 from kpx_obraada
6 30 30 select
7 31 31     .ID
8 32 32     .LPO
9 33 33     .NA
10 34 34     .JED IT
11 35 35     .LSI
12 36 36     .CK ID
13 37 37     from (
14 38 38         -- cy : gr is and re ar D cycle groups
15 39 39         sel : co :OE
16 40 40         ,   : co :SO :SAD
17 41 41         ,   : co :NT :ZIV
18 42 42         ,   : co :RII :KOST
19 43 43         ,   : co :AA :FRA
20 44 44         ,   : co :KS :E_ID
21 45 45         from :px_parametri_obraada pob
22 46 46         where co_poso = co_o_posao
23 47 47         and co_sifra =
24 48 48         se :ct gaa :ifra
25 49 49
26 50 50     )
27 51 51     and dat_akt <= Add_Months (sysdate, 2)
28 52 52     and is_included_parameters(kpx_nameet_obra (pwt_nameiv) =
29 53 53     and is_included_parameters(pwt_nameiv) = 1
30 54 54
31 55 55

```

INTEGRATOR

System integrator:

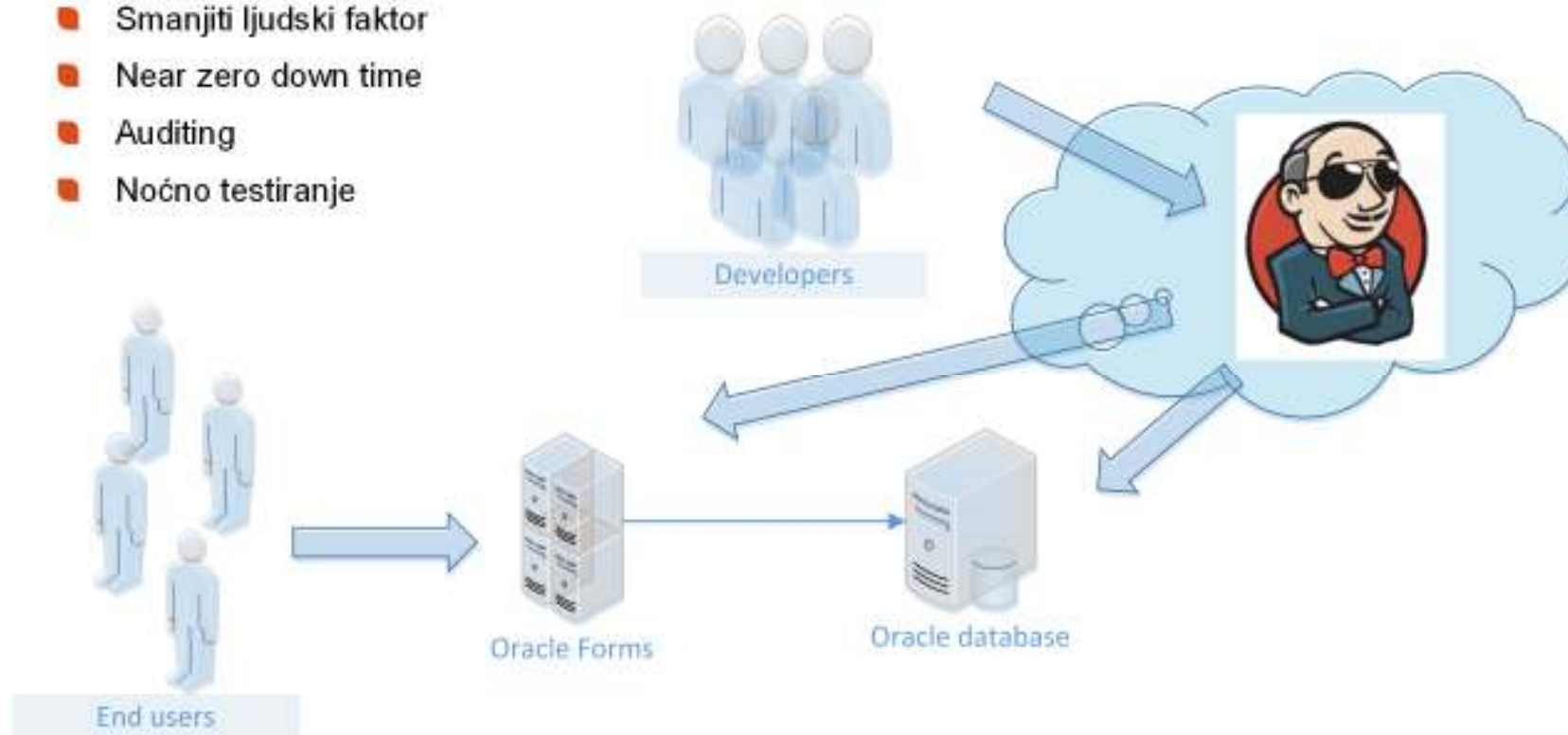
- Release Manager
- Multi skill person
- Flexible
- **Overload?**



CONTINUOUS INTEGRATION – CONTINUOUS TESTING

Release process optimization:

- Rasteretiti Integratora
- Smanjiti ljudski faktor
- Near zero down time
- Auditing
- Noćno testiranje



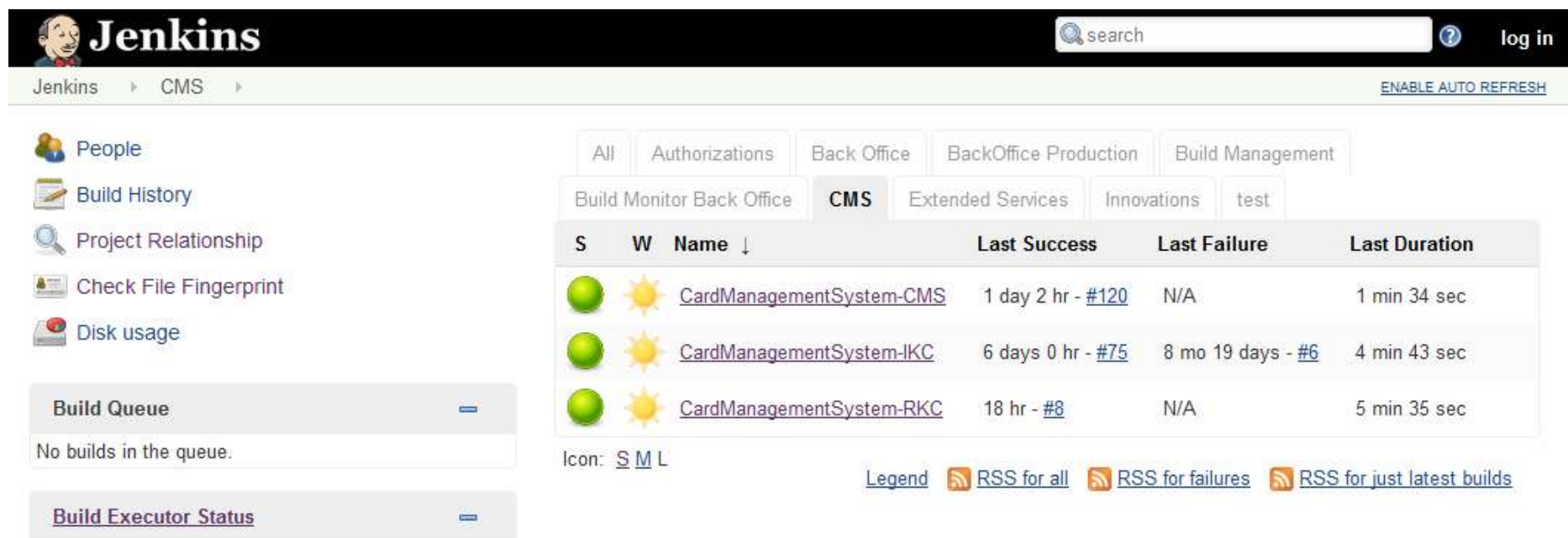
JENKINS CI

Continous integration:

- Open source
- Flexible
- Auditing

Automatizacija:

- Pristup source kontroli
- Release automation
- Monitoring



The screenshot shows the Jenkins web interface. At the top, there's a search bar and a 'log in' link. Below the navigation bar, there are tabs for 'All', 'Authorizations', 'Back Office', 'BackOffice Production', and 'Build Management'. The 'CMS' tab is selected, showing a table of build history. The table has columns for 'S' (Success), 'W' (Warning), 'Name', 'Last Success', 'Last Failure', and 'Last Duration'. Three builds are listed, all with a success status (green circle) and a warning status (yellow sun).

S	W	Name ↓	Last Success	Last Failure	Last Duration
●	☀	CardManagementSystem-CMS	1 day 2 hr - #120	N/A	1 min 34 sec
●	☀	CardManagementSystem-IKC	6 days 0 hr - #75	8 mo 19 days - #6	4 min 43 sec
●	☀	CardManagementSystem-RKC	18 hr - #8	N/A	5 min 35 sec

Below the table, there are links for 'Icon: S M L', 'Legend', 'RSS for all', 'RSS for failures', and 'RSS for just latest builds'. On the left side of the interface, there are navigation links for 'People', 'Build History', 'Project Relationship', 'Check File Fingerprint', and 'Disk usage'. At the bottom left, there are sections for 'Build Queue' (showing 'No builds in the queue.') and 'Build Executor Status'.

JENKINS CI - DASHBOARD

Vizualni prikaz:

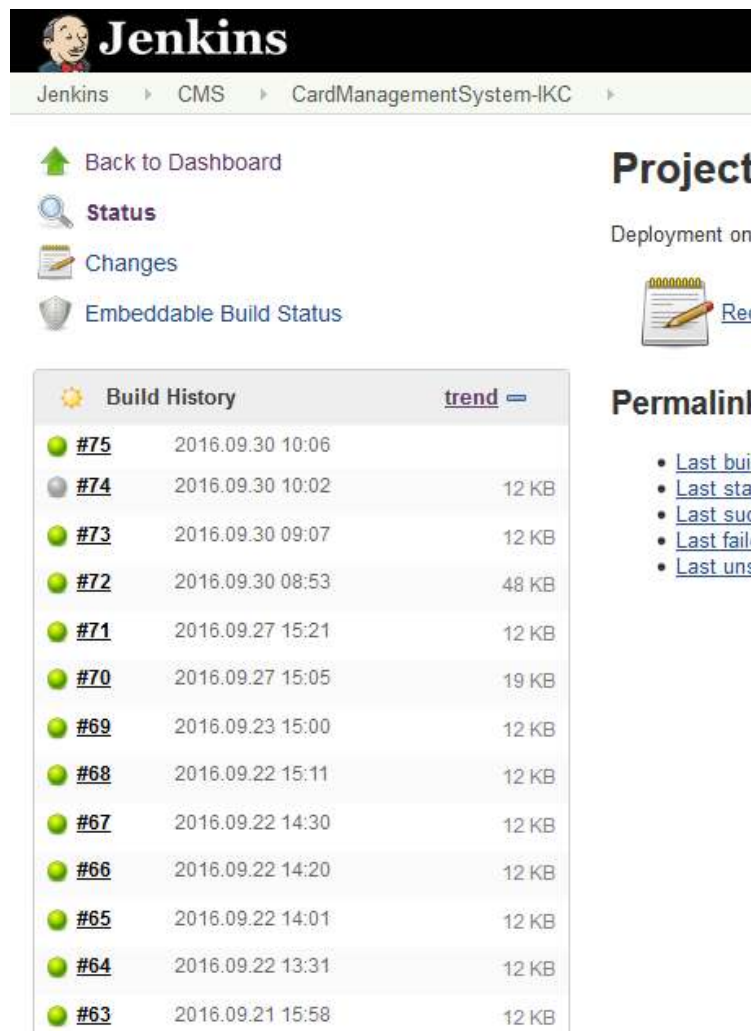
- Konfigurabilan
- Prikaz trenutnog statusa

Boje:

- Zeleno
- Žuto
- Crveno




BUILD HISTORY



Jenkins
Jenkins > CMS > CardManagementSystem-IKC

[Back to Dashboard](#)
[Status](#)
[Changes](#)
[Embeddable Build Status](#)

Project
Deployment on

 Rec

Permalink

- [Last build](#)
- [Last status](#)
- [Last success](#)
- [Last failure](#)
- [Last un](#)

Build History	trend
#75 2016.09.30 10:06	
#74 2016.09.30 10:02 12 KB	
#73 2016.09.30 09:07 12 KB	
#72 2016.09.30 08:53 48 KB	
#71 2016.09.27 15:21 12 KB	
#70 2016.09.27 15:05 19 KB	
#69 2016.09.23 15:00 12 KB	
#68 2016.09.22 15:11 12 KB	
#67 2016.09.22 14:30 12 KB	
#66 2016.09.22 14:20 12 KB	
#65 2016.09.22 14:01 12 KB	
#64 2016.09.22 13:31 12 KB	
#63 2016.09.21 15:58 12 KB	

Uvid u povijest izvršavanja:

- Retention policy
- Status
- Event startanja joba



Build #75 (2016.09.30 10:06:20)

 No changes.

 Started by remote host 10.203.21.113 with note: bhocursca

BUILD CONSOLE OUTPUT

Svaki izvršeni job:

- Log
- Status
- Analiza

Console Output

```

Started by remote host                               with note: bhocursca
[EnvInject] - Loading node environment variables.
Building on master in workspace D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-IKC
[CardManagementSystem-IKC] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd workspaces -format:brief -server
Collection: http           :fs/           system/
Workspace
-----
Hudson-CardManagementSystem-CMS-MASTER  BMSservice  BOBLDZG
Hudson-CardManagementSystem-IKC-MASTER  BMSservice  BOBLDZG
Hudson-CardManagementSystem-RKC-MASTER  BMSservice  BOBLDZG
[CardManagementSystem-IKC] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd get . -recursive -version:D2016-
All files up to date.
[CardManagementSystem-IKC] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd history $/CMS/Release/Integratio
-version:D2016-09-30T08:06:21Z -format:brief ***** -server:http:// ment:
Changeset User           Date           Comment
-----
367                28.09.2016.  14:37:12  Fixed wrong zip code for merchant
[CardManagementSystem-IKC] $ cmd /c call D:\CIJenkins\apache-tomcat-8.0.22\temp\hudson1785493059

D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-IKC>cd /d D:\CIJenkins\CardManagement

D:\CIJenkins\CardManagementSystem>d:\CIJenkins\CardManagementSystem\CCdeployer\Deployer.exe D:\C
Forms objects deployed. Waiting for reports ...
Waiting cms ...
Waiting cms_en ...
Waiting cms ...
Waiting cms_en ...
Work cms ended.

Work cms_en ended.
    
```


SOURCE CODE TO DATABASE - COMPILE

PL SQL compile:

- PL SQL objekti u VCS
- Jasno vidljivo koji sql eventualno nije dobro izvršen
- Multi user login (pck, fnc, sql)
- Housekeeping

```

CardManagementSystem-IKC > #72
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Prod
With the Partitioning option
connecting to      IKC
Connected.
[ ]
Compiling D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-IKC\oracle\  \pck\
Package body created.

[ ]
Compiling D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-IKC\oracle\  \pck\
Trigger created.

[ ]
Compiling D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-IKC\oracle\  \pck\
View created.

disconnecting from      IKC ...
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Prod
With the Partitioning option
connecting to      IKC
Connected.
-----

RETRIEVING INVALID OBJECT LIST - END CHECKPOINT ...
-----
CREATE TABLE POM_INTEGRATOR_2 ...

Table created.
-----

LIST OF INVALIDATED OBJECTS:
-----
'ALTER'||DECODE(OBJECT_TYPE,'PACKAGEBODY','PACKAGE',OBJECT_TYPE)||'||OWNER||'.
-----
ALTER FUNCTION BIB.BIB_ATM_SORT COMPILE ;
ALTER FUNCTION BIB.BIB_EMB_SORT COMPILE ;
ALTER FUNCTION CLM.CLM_CARD_WAS_AUTO_ISSUED COMPILE ;
    
```


RAZLIČITI OPERACIJSKI SUSTAVI

ORACLE FORMS:

- Razvoj - windows
- Runtime - linux

Parsiranje output logova:

- Error
- Warning
- Info

Parsed Console Output

 [Error \(0\)](#)

 [Warning \(12\)](#)

```
-ssh -l -pw ***** dev
/usr/script/ sudo Clm pll
(1 Warning in this section)
• 1 + exit 200
```

```
-ssh -l -pw ***** dev
sudo -u iaschk /usr/ dev
/provjeri_file Clm pll
(1 Warning in this section)
• 2 + exit 0
```

```
-ssh -l -pw ***** dev
/usr/script/ sudo Clm pll
(1 Warning in this section)
• 3 + exit 200
```






```
-ssh -l -pw ***** dev
sudo -u iaschk /usr/ dev
/provjeri_file Clm pll
(1 Warning in this section)
```

```
Started by remote host with note: bhocursca
[EnvInject] - Loading node environment variables.
Building on master in workspace D:\CIJenkins\jenkins_system\workspace\CardManagem
[CardManagementSystem-CMS] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd workspaces -form
Collection: system/
Workspace Owner Computer Comment
-----
Hudson-CardManagementSystem-CMS-MASTER BMservice BOBLDZG
Hudson-CardManagementSystem-IKC-MASTER BMservice BOBLDZG
Hudson-CardManagementSystem-RKC-MASTER BMservice BOBLDZG
[CardManagementSystem-CMS] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd get . -recursive -v
All files up to date.
[CardManagementSystem-CMS] $ E:\CIJenkins\TEE-CLC-12.0.2\tf.cmd history $/CMS/Rc
-version:D2016-10-05T06:13:34Z -format:brief ***** -server:
Changeset User Date Comment
-----
385 04.10.2016. 10:17:03 Nastavak integracije 05.10.20
[CardManagementSystem-CMS] $ cmd /c call D:\CIJenkins\apache-tomcat-8.0.22\temp\h
D:\CIJenkins\jenkins_system\workspace\CardManagementSystem-CMS>cd /d D:\CIJenki
D:\CIJenkins\CardManagementSystem>d:\CIJenkins\CardManagementSystem\CCdeploye
-ssh -l -pw ***** dev /usr/script/ sudo Clm pll
+ FILE=CIm_1640
+ EXT=pll
+ SRCDIR=/usr/oracle/ fileovi
+ SRCDIRLNK=/usr/oracle/i fileovi/linkovi
+ EXEDIR=/usr/oracle/ /exe
+ EXEDIRLNK=/usr/oracle/ exe/linkovi
+ BACKSRCDIR=/usr/oracle/ backup/source
```

ANALITIKA

Centralizirana analitika:

- Kompletno na jednom mjestu
- Drill down

Version 337 by FR097285 - Merge to Integration			
	\$/CMS/Release/Integration/oracle	fmb/Kpx_	.fmb
	\$/CMS/Release/Integration/oracle	pck/kpx_	_pck.pkb
	\$/CMS/Release/Integration/oracle	pck/kpx_	_pck.pks
	\$/CMS/Release/Integration/oracle	sql/grant_execute_	_pck.sql
Version 335 by Dodana dva nova			
	\$/CMS/Release/Integration/oracle/l	/pck/mcp_	ablice.prc

Changes

#72 (2016.09.30 08:53:14)

1. Fixed wrong zip code for merchant — [/ detail](#)

#70 (2016.09.27 15:05:23)

1. Ispravak. — [/ detail](#)

#69 (2016.09.23 15:00:02)

1. BK MIF++ support for reports — [/ detail](#)

#62 (2016.09.21 15:45:28)

1. Merge FR096039 into Integration — [/ detail](#)

#58 (2016.09.16 09:31:45)

1. Merge to Integration — [/ detail](#)

#54 (2016.09.15 10:55:38)

1. popravak — [/ detail](#)
2. popravak — [/ detail](#)
3. CR089426 - Merge to Integration — [/ detail](#)
4. CR089426 - Merge to Integration — [/ detail](#)
5. DVO+5 — [/ detail](#)
6. dorada na tipu — [/ detail](#)
7. FR097791 - Merge to Integration — [/ detail](#)
8. CC je bil bolji — [/ detail](#)
9. FR097285 - Merge to Integration — [/ detail](#)
10. Dodana dva nova BIN-a kao — [/ detail](#)
11. Ispravna verzija je spuštena na produkciju 02.09.2016. — [/ detail](#)
12. Dodana banka BNP PARIBAS i dorada da se moze trziste. — [/ detail](#)
13. Merge FR097041 to integration — [/ detail](#)
14. Dodana podrška za tipove terminala — [/ detail](#)
15. PIN delay 0 -> 1. — [/ detail](#)
16. Merge FR097033 to integration — [/ detail](#)
17. Merge FR097057 to integration — [/ detail](#)
18. functionality. — [/ detail](#)
19. functionality. — [/ detail](#)
20. functionality. — [/ detail](#)
21. functionality. — [/ detail](#)
22. number(8, 2) -> number(15, 2) — [/ detail](#)

ZAKLJUČAK

Enterprise sustavi:

- Zahtijevaju kontinuirano praćenje svih promjena
- Praćenje i prikupljanje audit podataka

Ručni poslovi:

- Izbaciti ljudski faktor greške
- Automatizirati sve ručne poslove
- Svesti na kontroliranje i monitoriranje

CI – Continuous Integration sustav:

- Pruža fleksibilnost pri automatizaciji
- Smanjuje Time To Market povećavanjem efikasnosti razvoja
- Transparentnost prema reviziji i poslovnim procesima
- Omogućuje pametno korištenje prikupljenih podataka

PITANJA?



THANK YOU FOR YOUR ATTENTION!

FOLLOW US:

