

# ORACLE FORMS APLIKACIJE NA MOBILNIM UREĐAJIMA

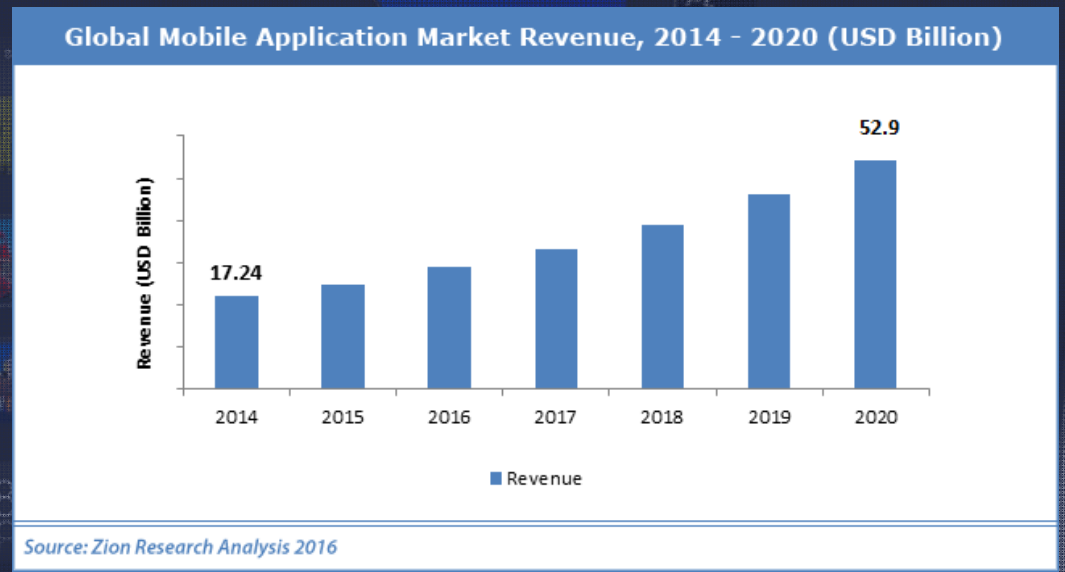


DUBRAVKO MILJKOVIĆ  
HRVATSKA ELEKTROPRIVREDA  
ZAGREB





# POTREBA ZA MOBILNIM APLIKACIJAMA





# LAPTOP

Praktički redovito Windows OS



Ponešto macOS





# WINDOWS RT TABLET (OBSOLETNO)



- Nedostaci:

- nije moguće instalirati aplikacije kao na klasičnim Windows-ima
- za aplikacije korisnici ovise o Windows Apps Microsoft Store



# WINDOWS 10 TABLET

Podržava uobičajen način instaliranja programa





# ANDROID TABLET

Instaliranja programa preko Google Play Store-a i odvojeno putem dobavljenih APK-ova





# iOS TABLET (iPAD)

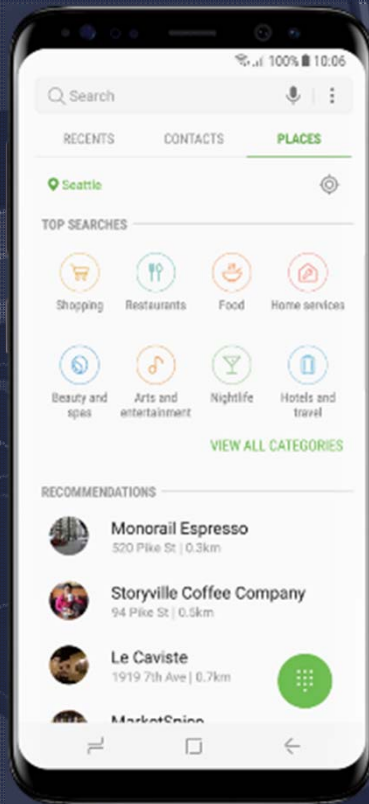
Instaliranje programa putem iTunes-a  
Specifičan odnos visine i širine ekrana (4:3)





# SMARTPHONE

Android



iPhone





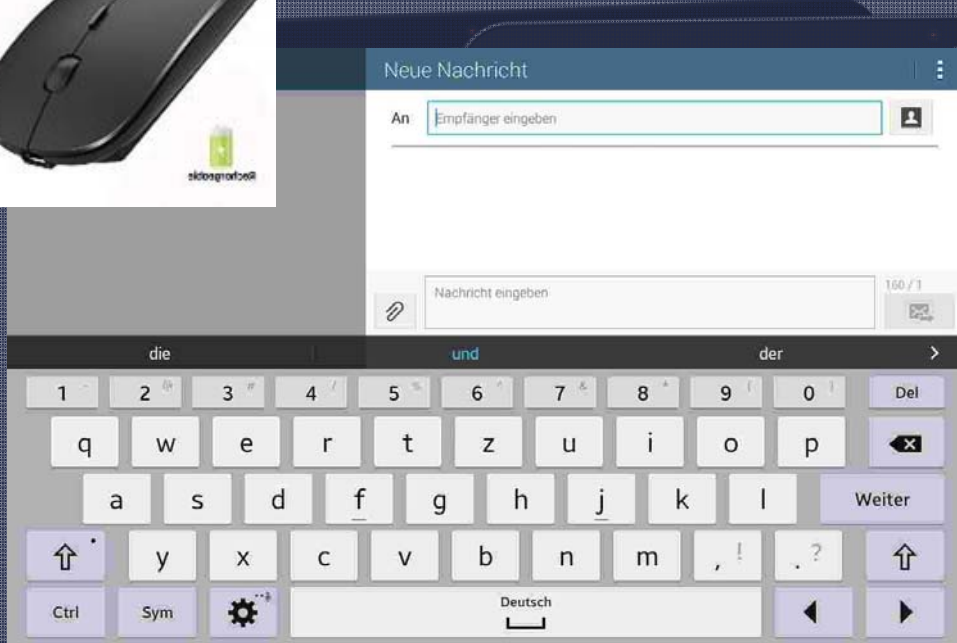
# MOBILNI IZAZOVI

- Nema miša
- Nema funkcijskih tipki
- Teže je tipkati
- Mali ekran
- Teško precizno koristiti touchscreen na malim elementima
- Spora mreža – mogući prekidi
- Sigurnost



# BLUETOOTH TIPKOVNICA I MIŠ

Cijeli ekran ostaje na raspolaganju za mobilnu aplikaciju



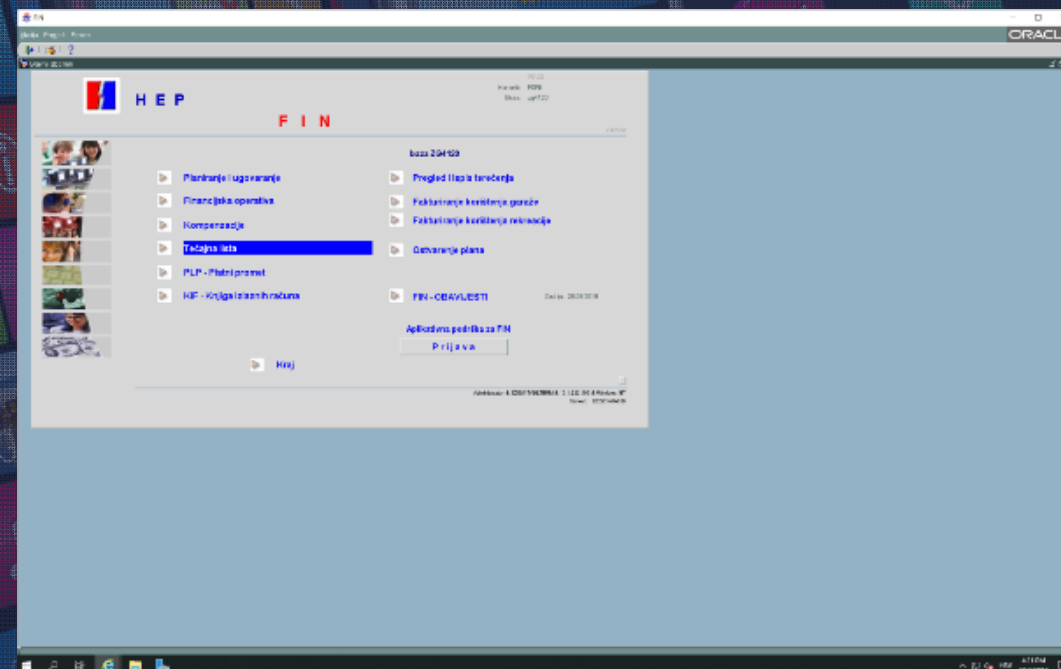


# ORACLE MOBILNA RJEŠENJA

- Oracle ADF
- Oracle Mobile Application Framework
- Oracle APEX
- Oracle Visual Developer



# TERMINAL SERVER



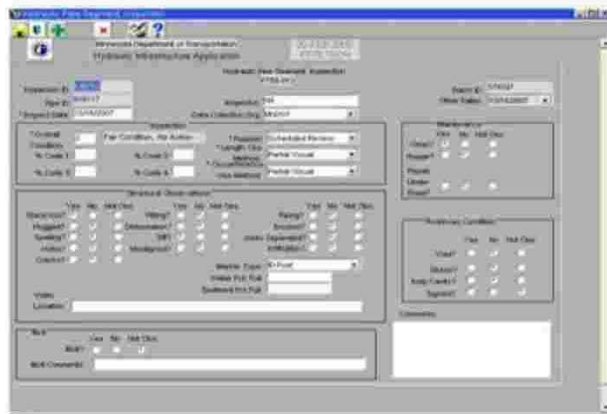
Uporabom npr. Microsoft Remote Desktop-a



# TERMINAL SERVER

## What Mobile Challenge ?

“We can run our system using Remote Desktop...”



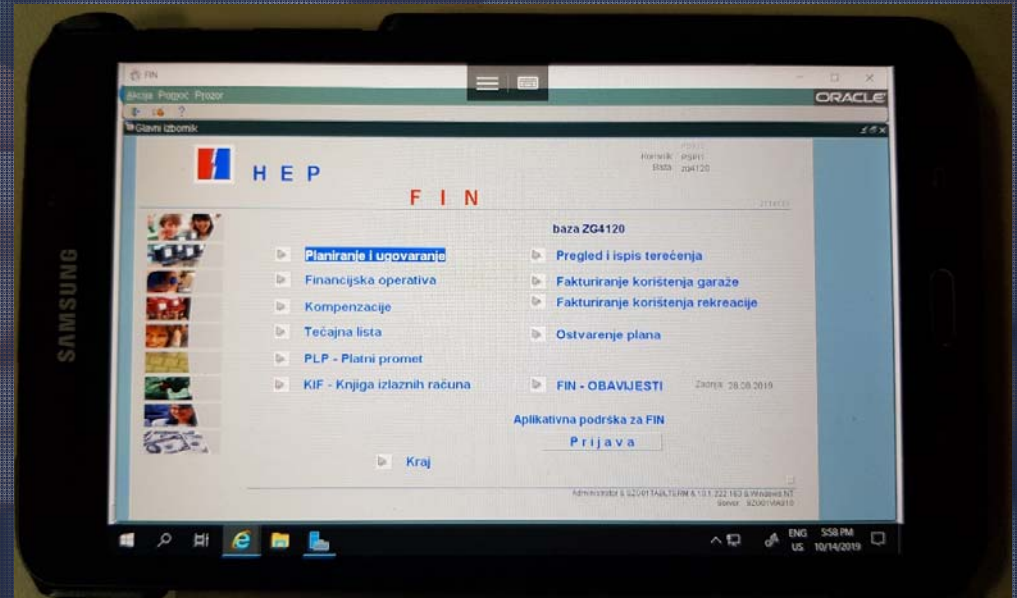
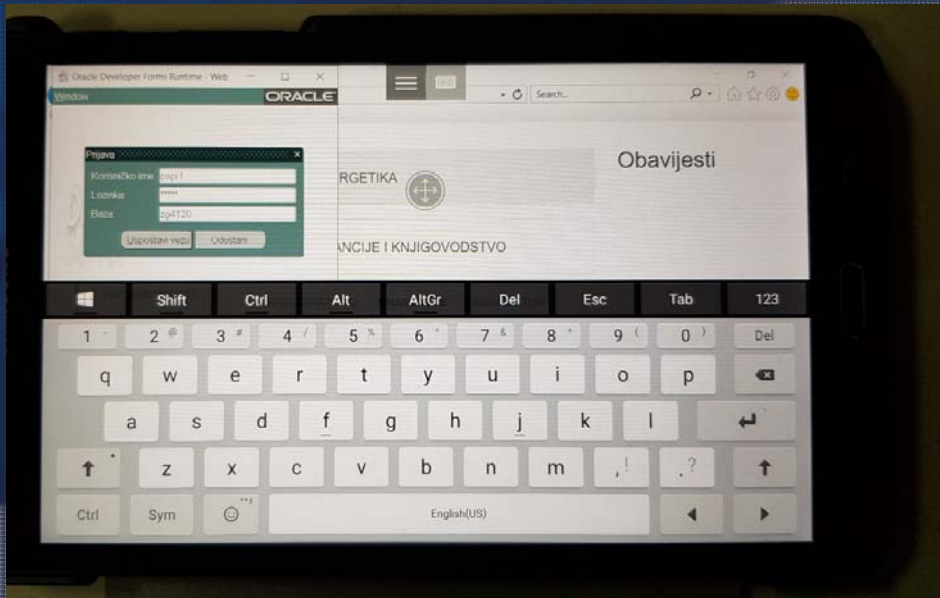
AURAPLAYER  
ADVANCED PLAYER EDITION

ODTUG

Za tablete s retina rezolucijama koristiti retina aware RDC

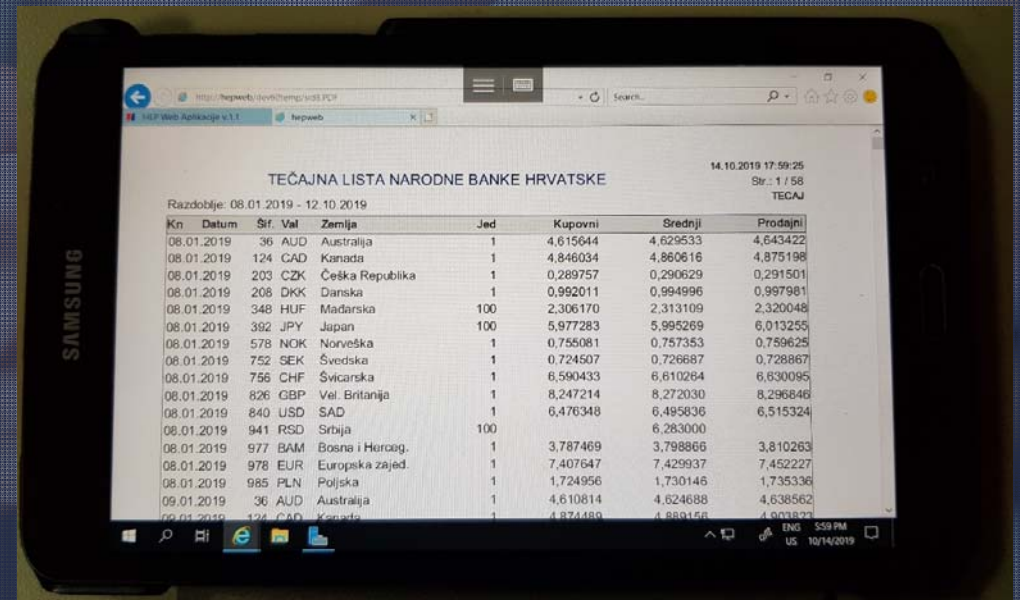
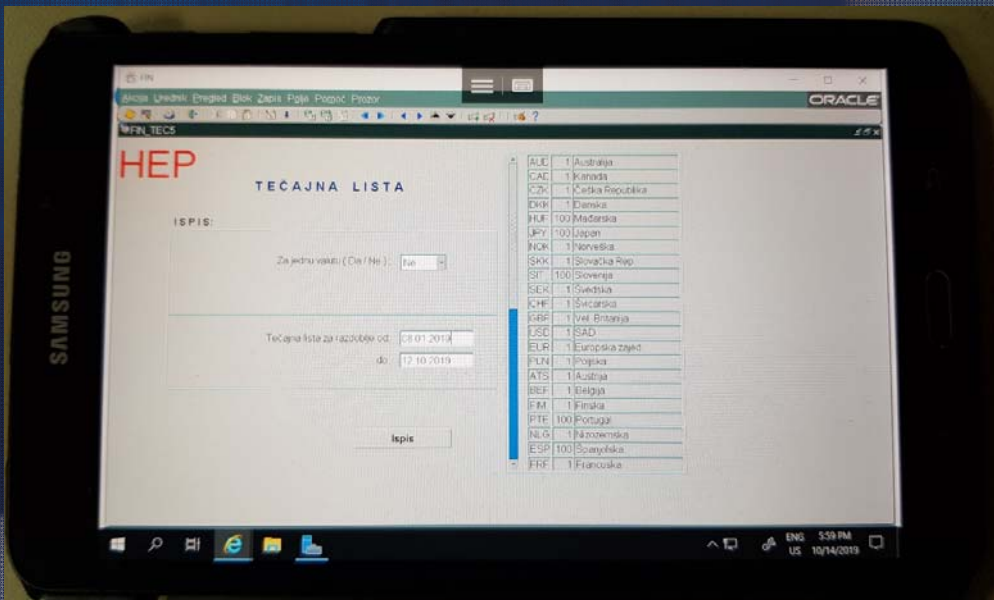


# TERMINAL SERVER





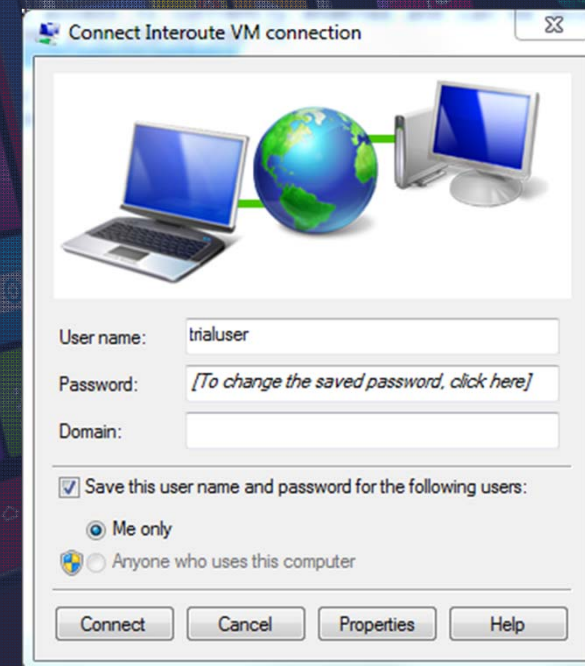
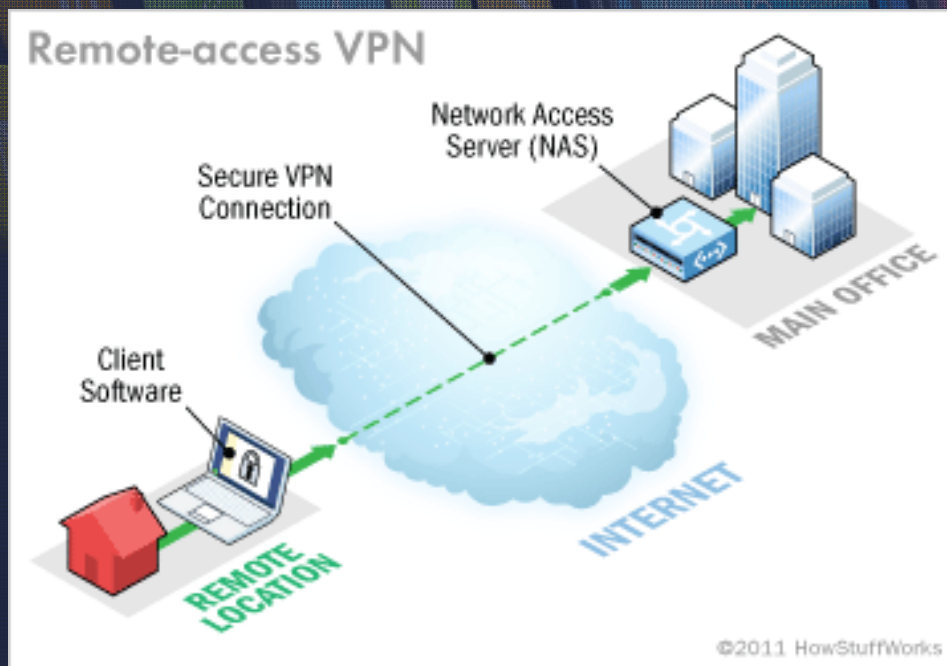
# TERMINAL SERVER





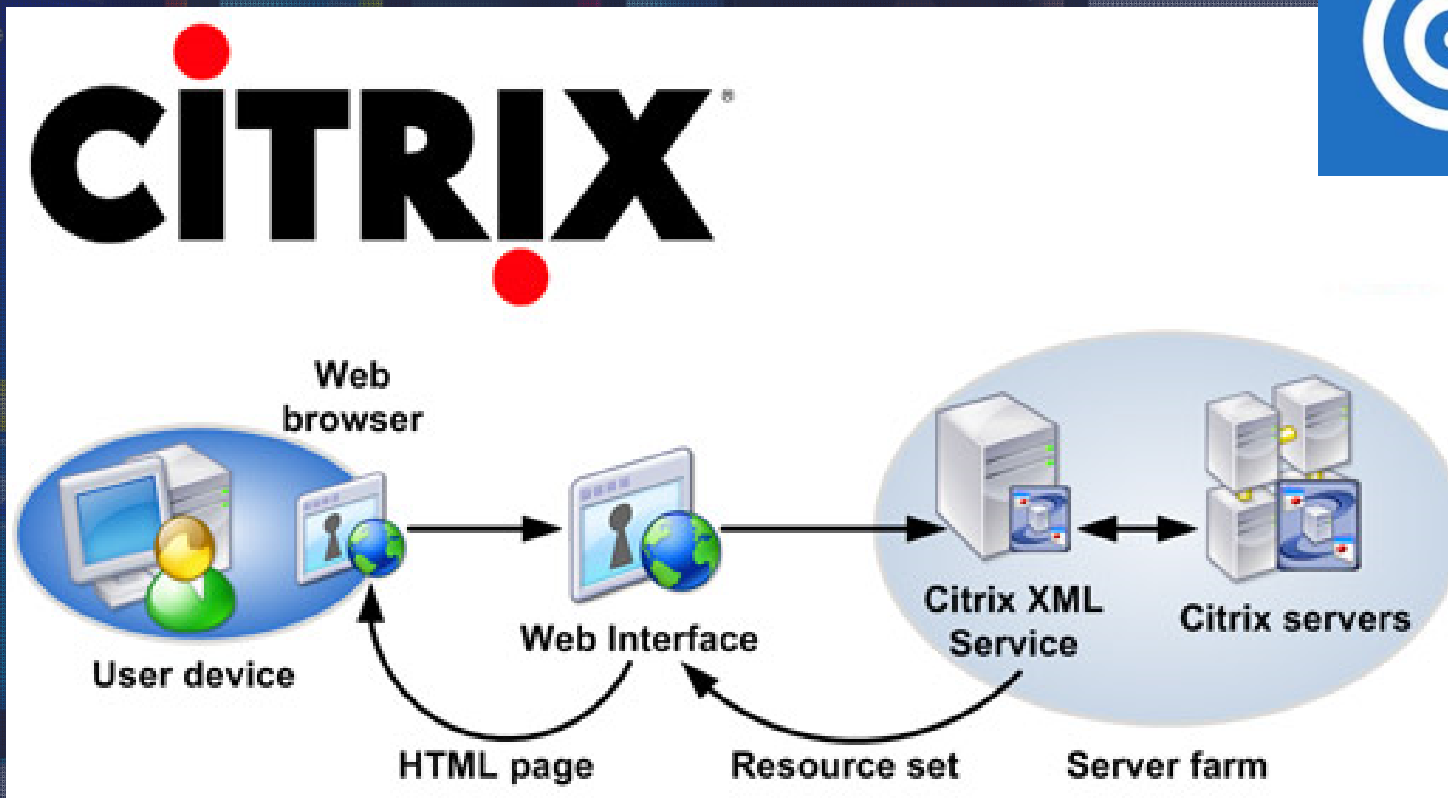
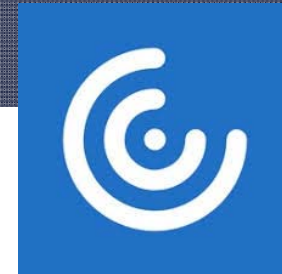
# VPN KONEKCIJA

Zasebna aplikacija nije nužna, jer se VPN može konfigurirati i unutar samog Androida, iOS-a i Windows-a



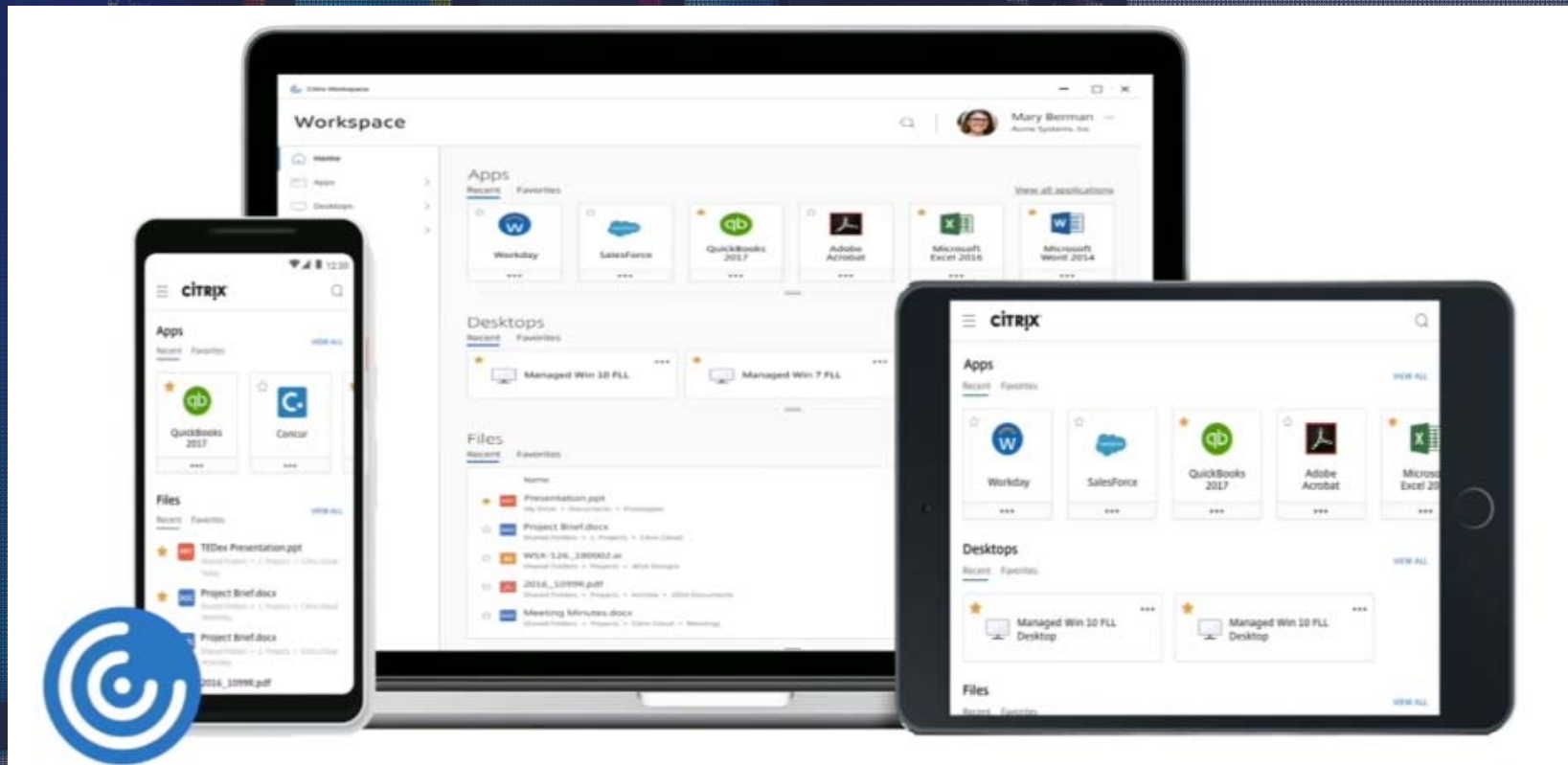


# CITRIX



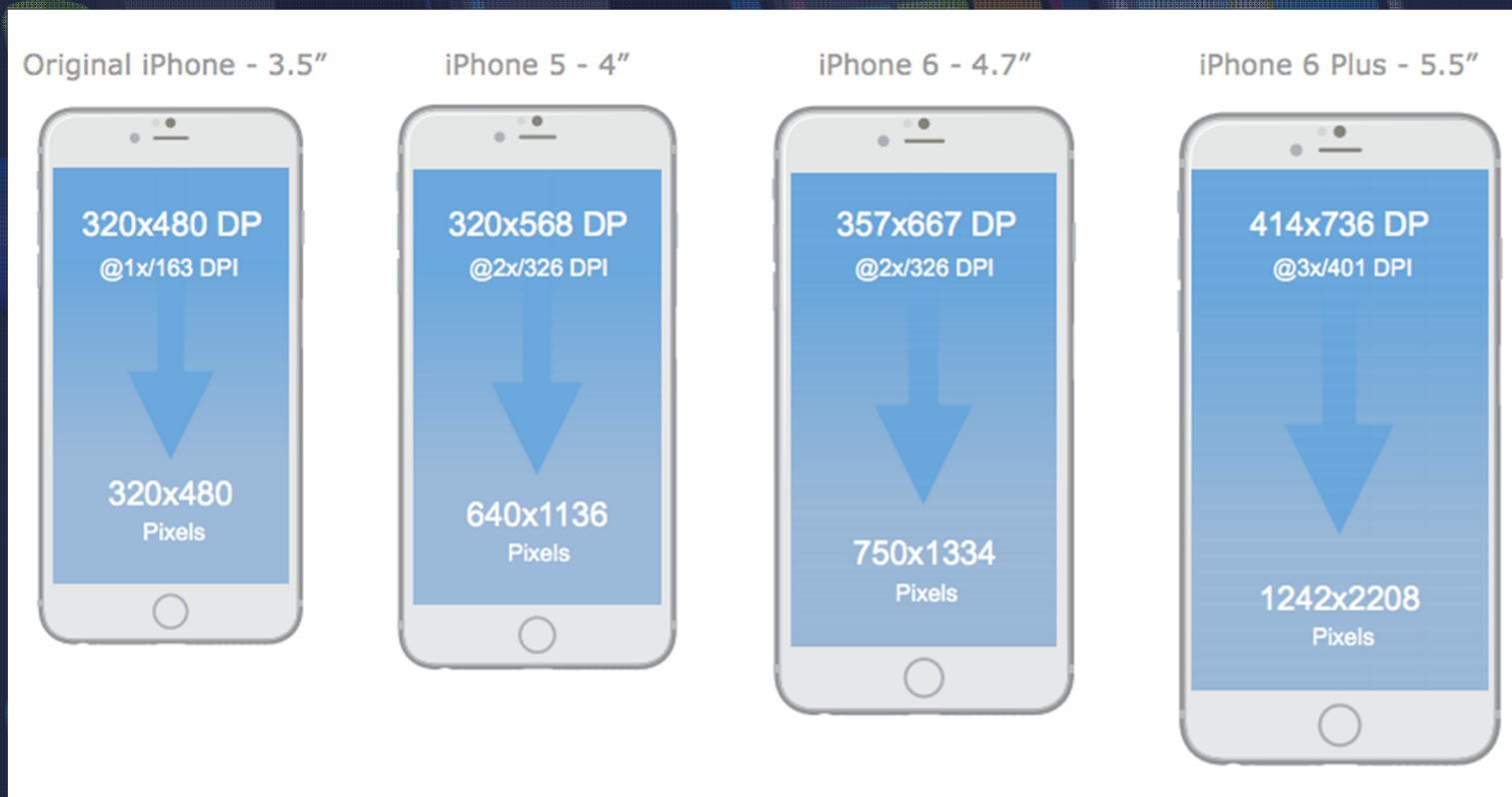


# CITRIX WORKSPACE





# iPHONE – VELIČINE I REZOLUCIJE EKRANA



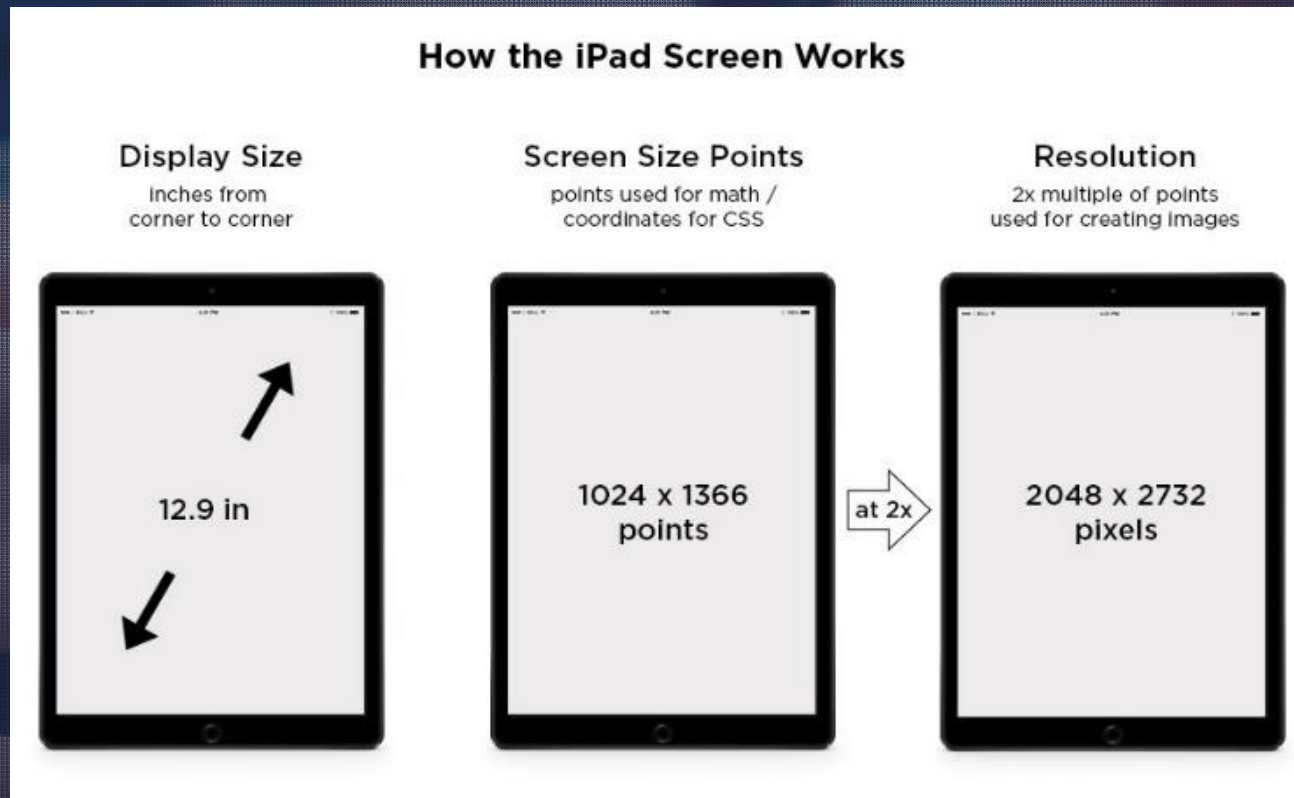


# iPAD – VELIČINE I REZOLUCIJE EKRANA

<b>iPad Mini</b>		
Display Size	7.9in	browser window 1024 x 703px
Resolution	2048 x 1536px	1024 x 671px with tabs
Screen Size	1024 x 768px	
Pixels/Inch	326ppi	
<b>iPad Air &amp; Pro</b>		
Display Size	9.7in	browser window 1024 x 703px
Resolution	2048 x 1536px	1024 x 671px with tabs
Screen Size	1024 x 768px	
Pixels/Inch	264ppi	
Top	20px	
Browser	45px	
Tabs	55px	
<b>Large iPad Pro</b>		browser window 1366 x 959px
Display Size	12.9in	1366 x 927px with tabs
Resolution	2732 x 2048px	
Screen Size	1366 x 1024px	
Pixels/Inch	264ppi	



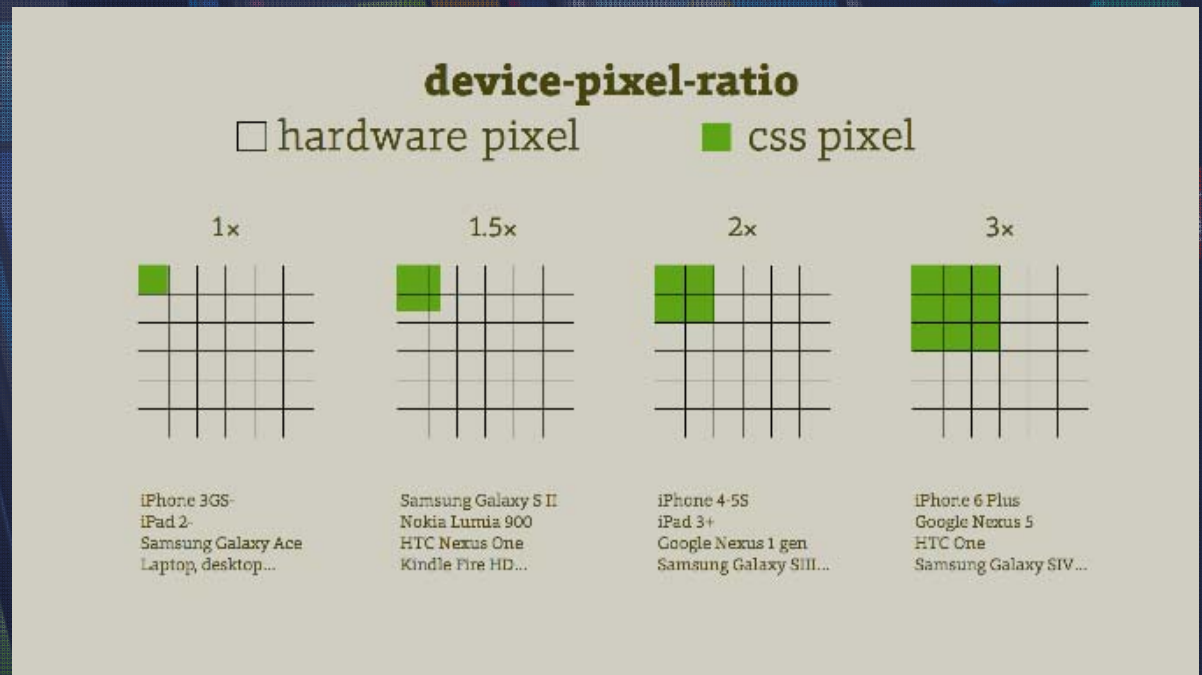
# SKALIRANJE (SCALING)





# DEVICE PIXEL | CSS PIXEL

- Device pixel
- Hardware pixel
- CSS pixel
- Software pixel
- Device pixel ratio





# SAMSUNG TABLETI – VELIČINE EKRANA

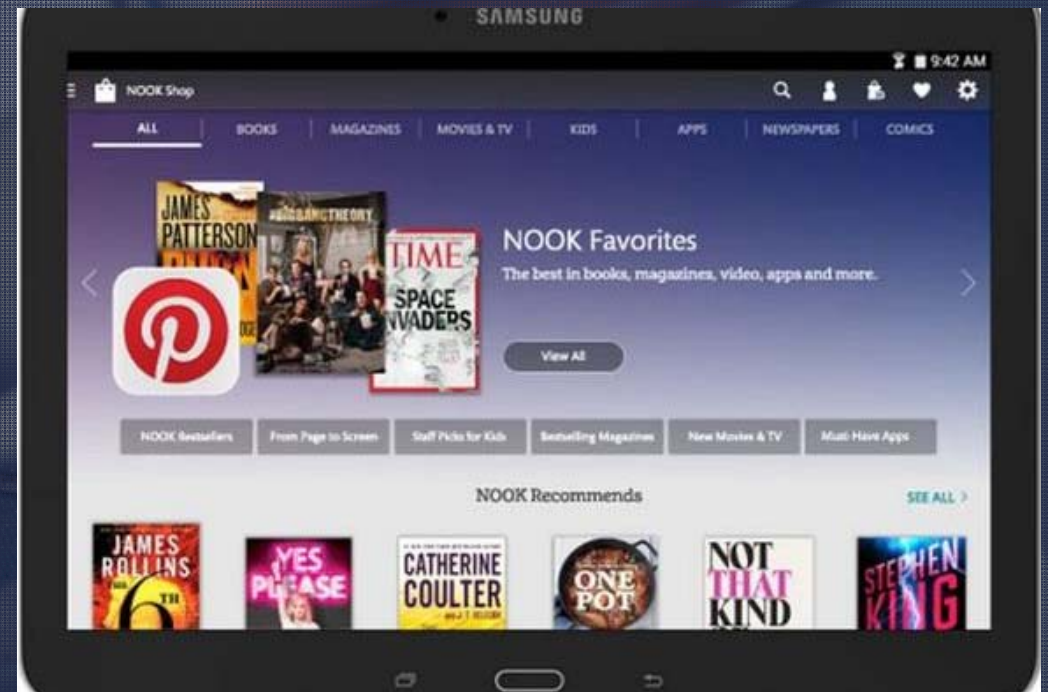
7"



8"



10"





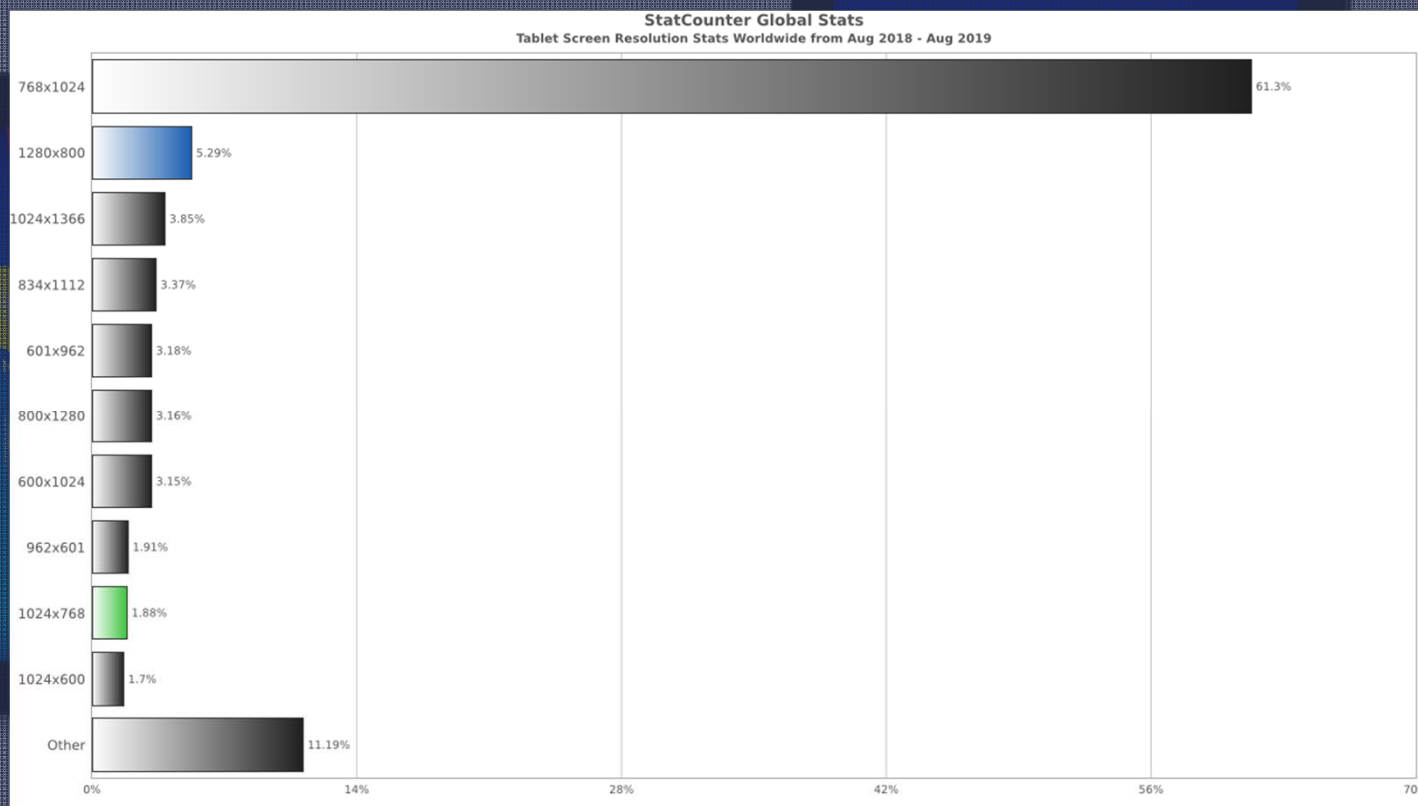
# SAMSUNG TABLETI – REZOLUCIJE EKRANA

- 1200 x 800
- 1920 x 1080
- 1920 x 1200
- 2048 x 1536
- 2560 x 1600



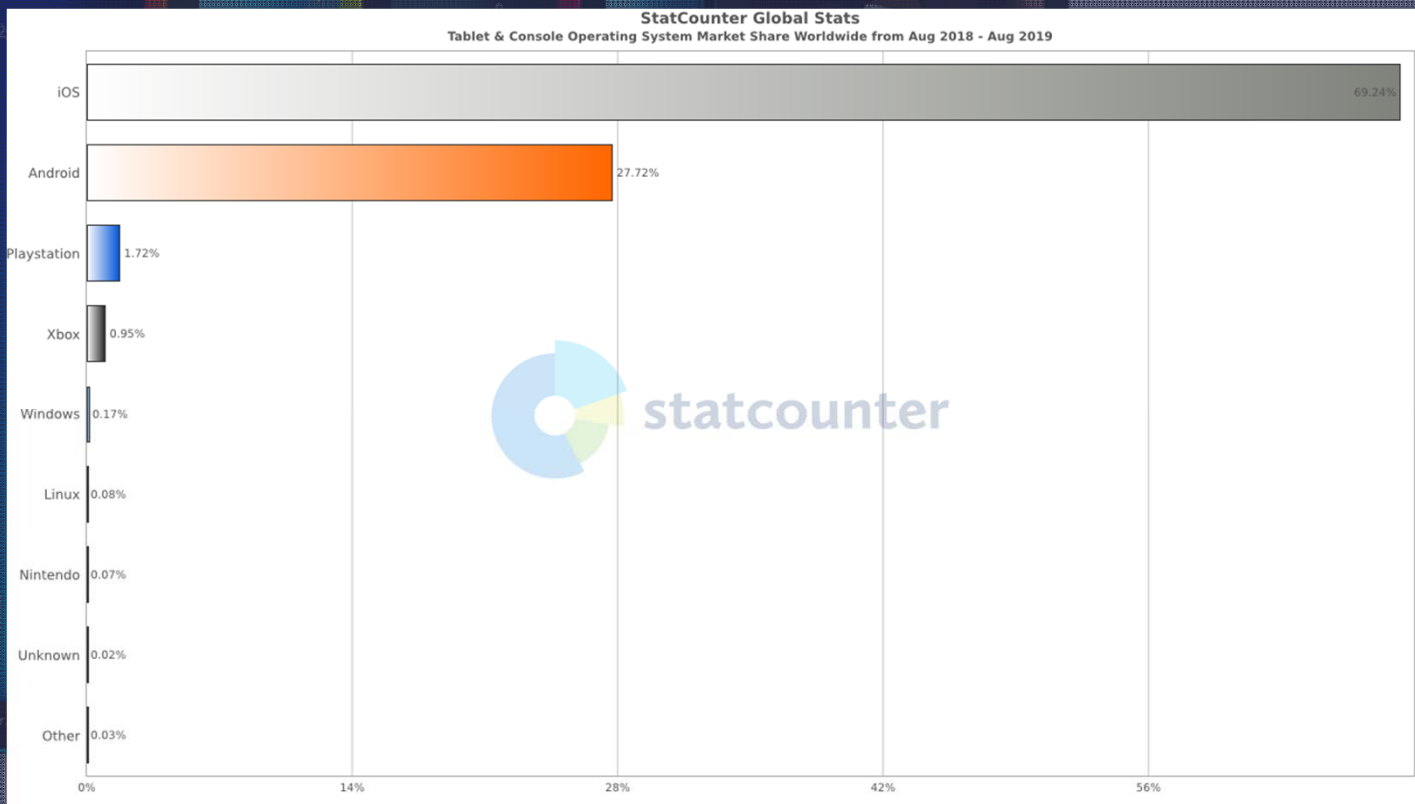


# TABLETI – REZOLUCIJE EKRANA



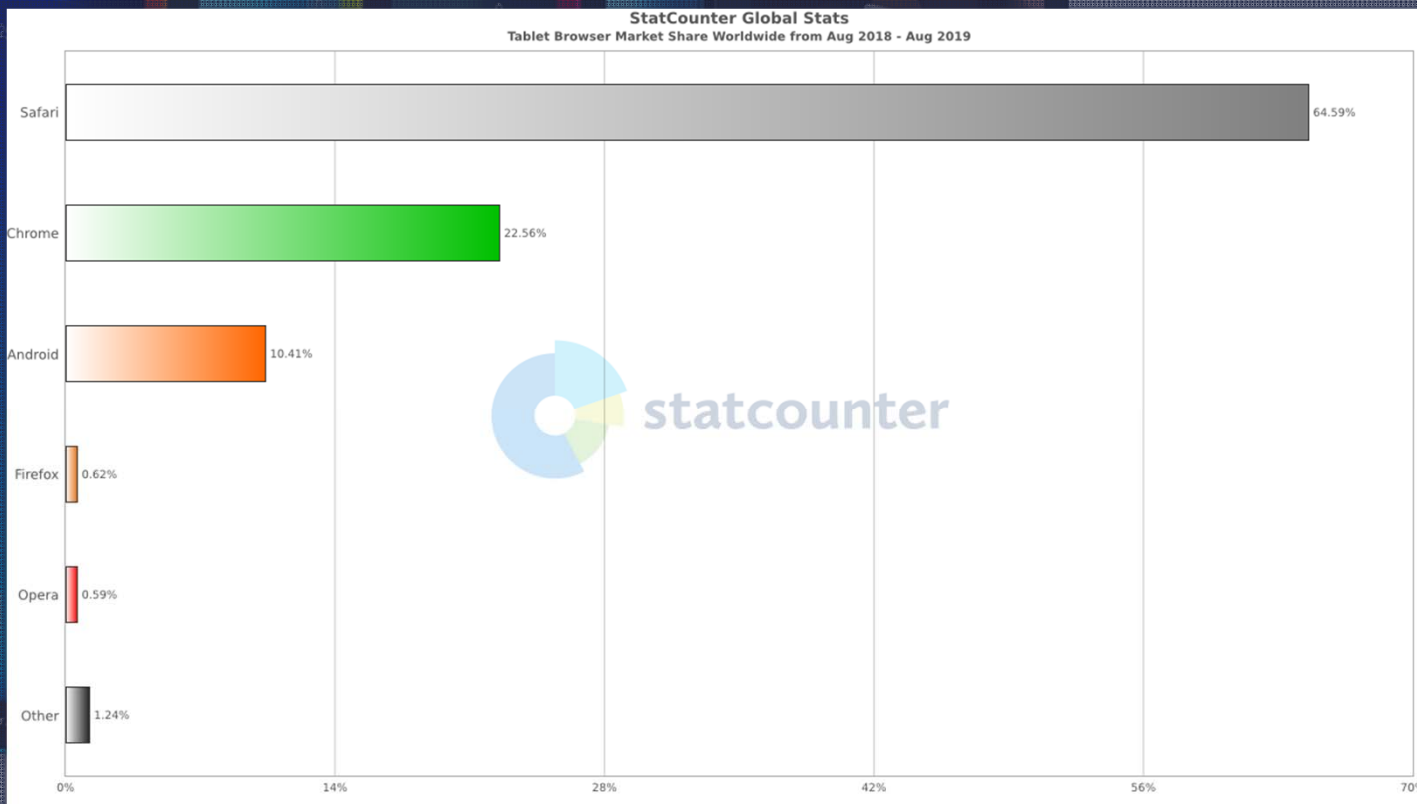


# TABLETI – OPERACIJSKI SUSTAVI



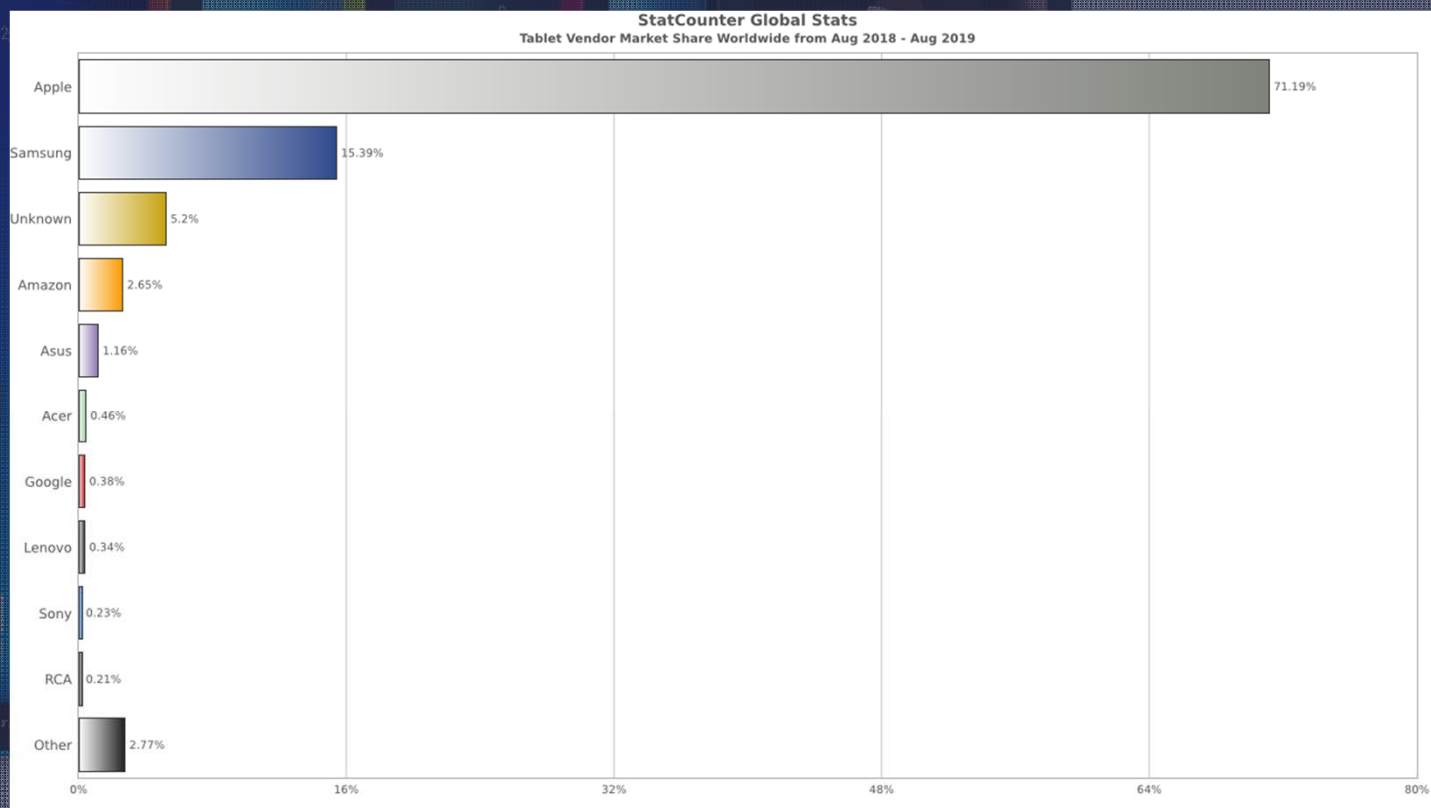


# TABLETI – INTERNET PREGLEDNICI





# TABLETI - PROIZVOĐAČI





# iOS I ANDROID SIMULATOR/EMULATOR



- Može se koristiti za testiranje osnovnog ponašanja aplikacije na brojnim uređajima i Android API razinama bez potrebe za svakim fizičkim uređajem
- Za testiranje ponašanja u stvarnom svijetu potrebno je koristiti stvarne mobilne uređaje



# AURAPLAYER

- Premošćuje jaz između Oracle poslovnih desktop aplikacija i mobilnih platformi
- Koristi poslovnu logiku ugrađenu u postojeće desktop aplikacije

**MOBILIZE instead!** **DOAG**

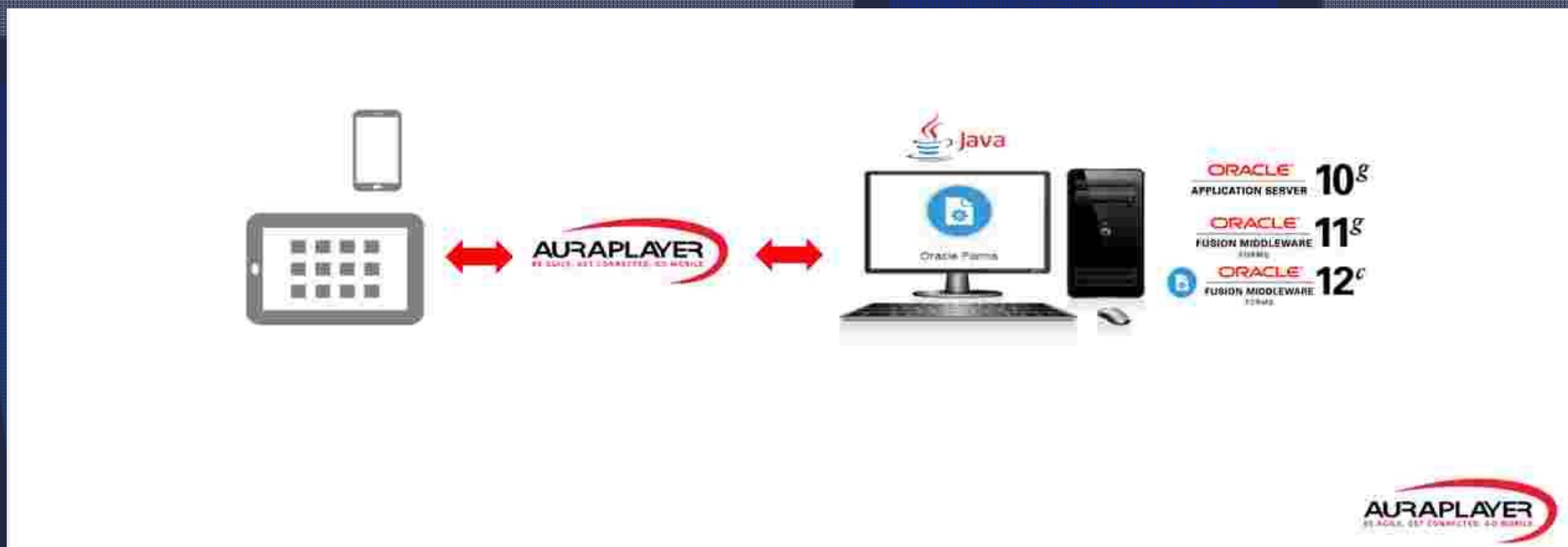


**AURAPLAYER**



# AURAPLAYER

Koristi poslovnu logiku zarobljenu u Oracle Forms / Oracle E-Business Suite sustavima bez ponovnog razvoja, troškova i rizika

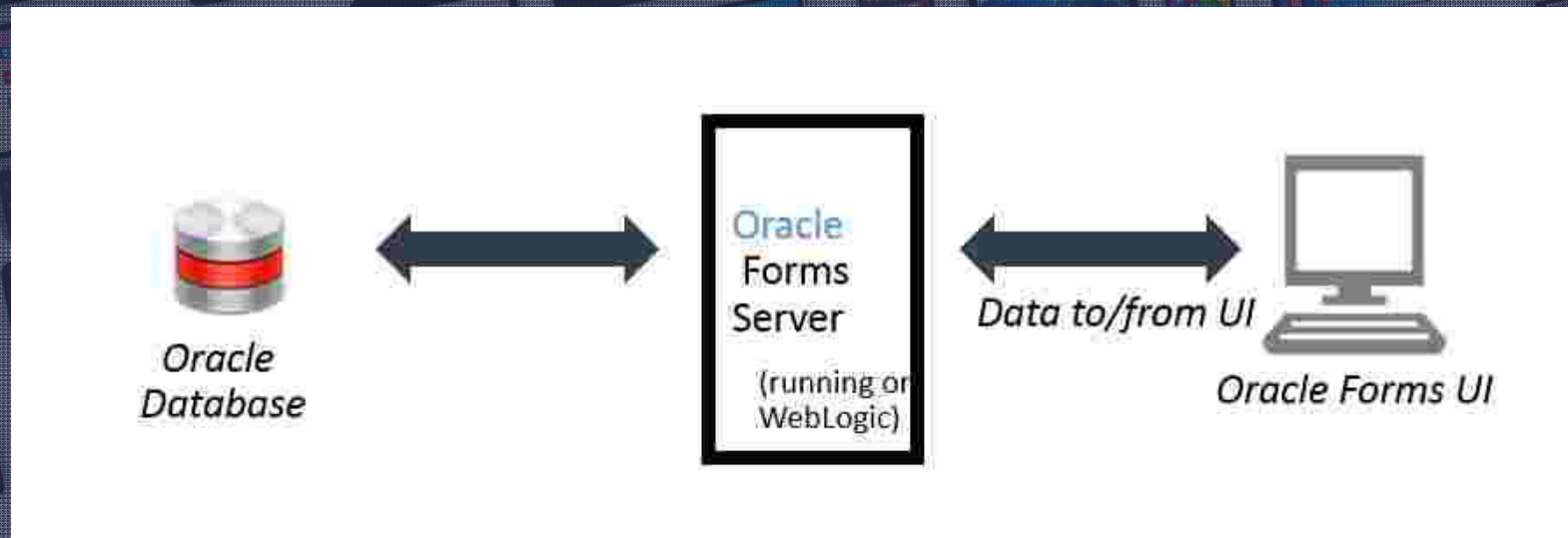


Isti sustav – mnogo korisničkih sučelja i uređaja



# TROSLOJNA ARHITEKTURA WEB APLIKACIJE

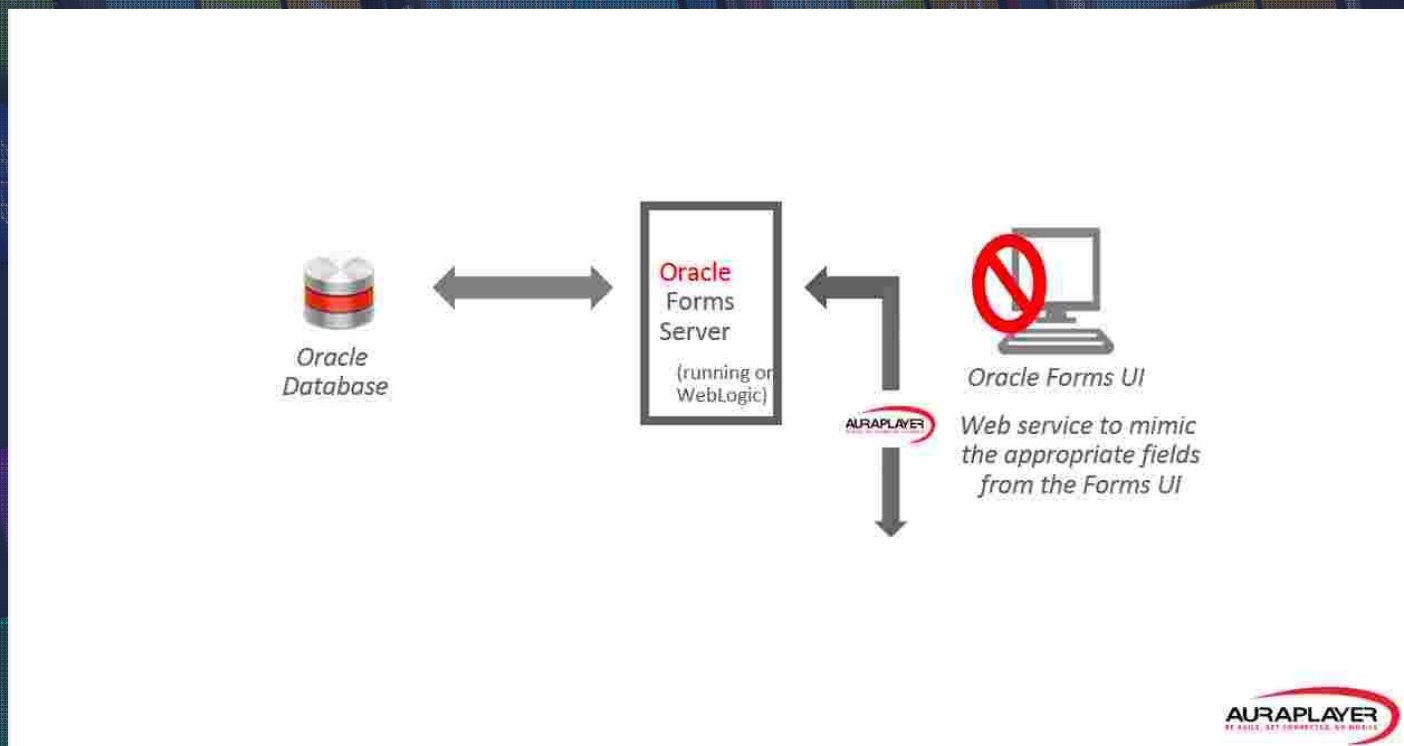
klijent – aplikacijski server – baza podataka





# TROSLOJNA ARHITEKTURA WEB APLIKACIJE

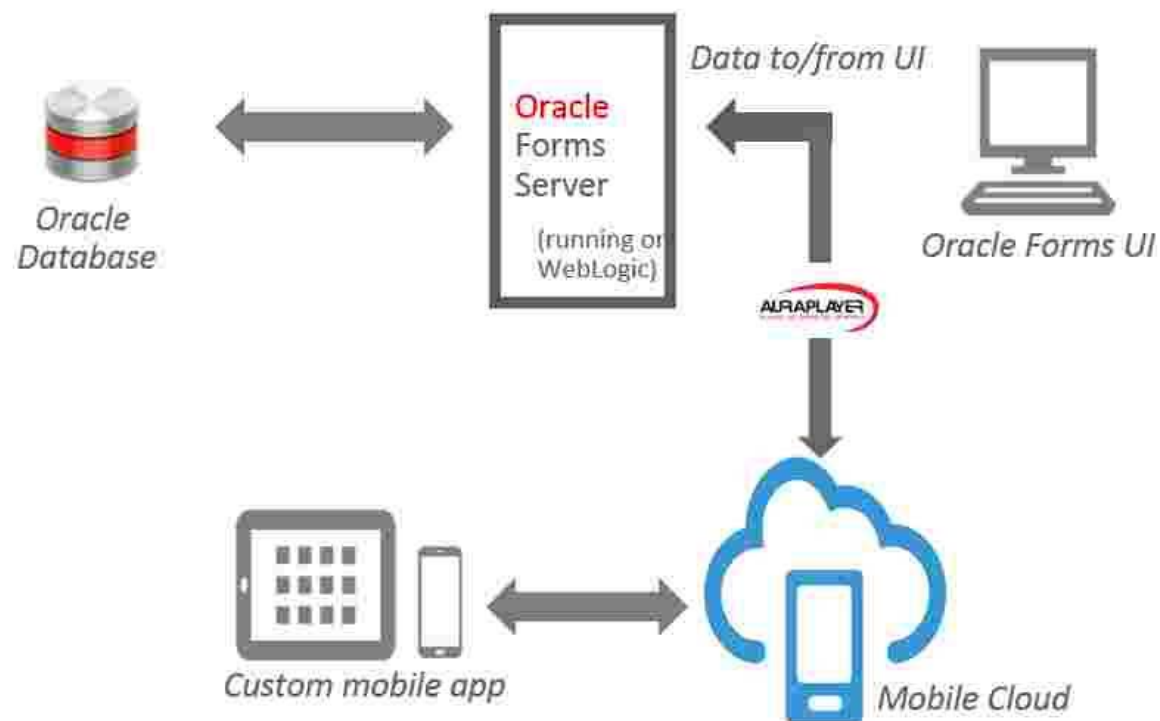
Kako mobilizirati Oracle Forms





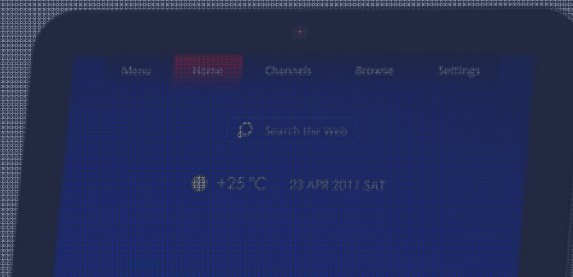
# POJEDNOSTAVLJENA ARHITEKTURA AURAPLAYER RJEŠENJA

Kako mobilizirati Oracle Forms

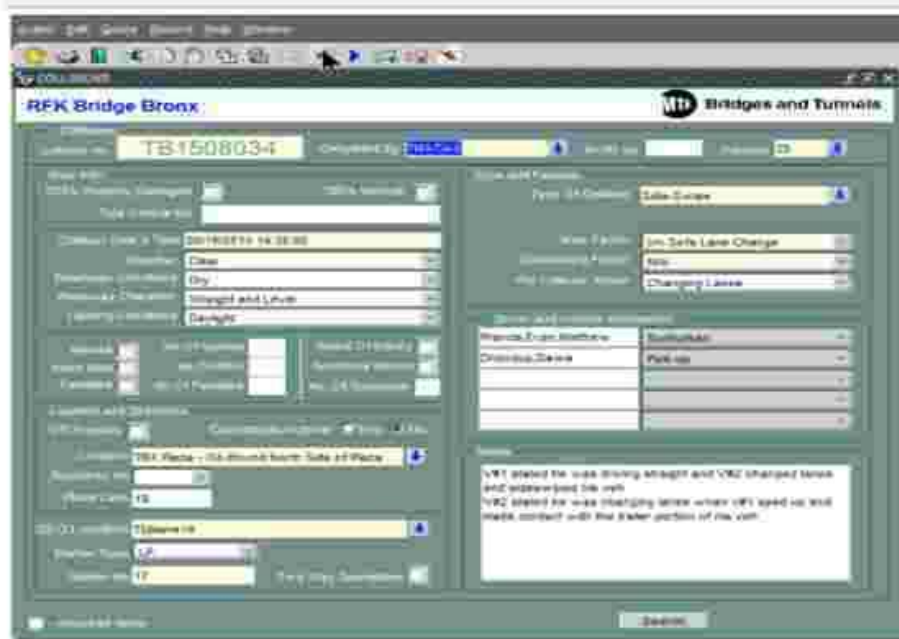




# AURAPLAYER



## Prije:



## Poslije:





# AURAPLAYER

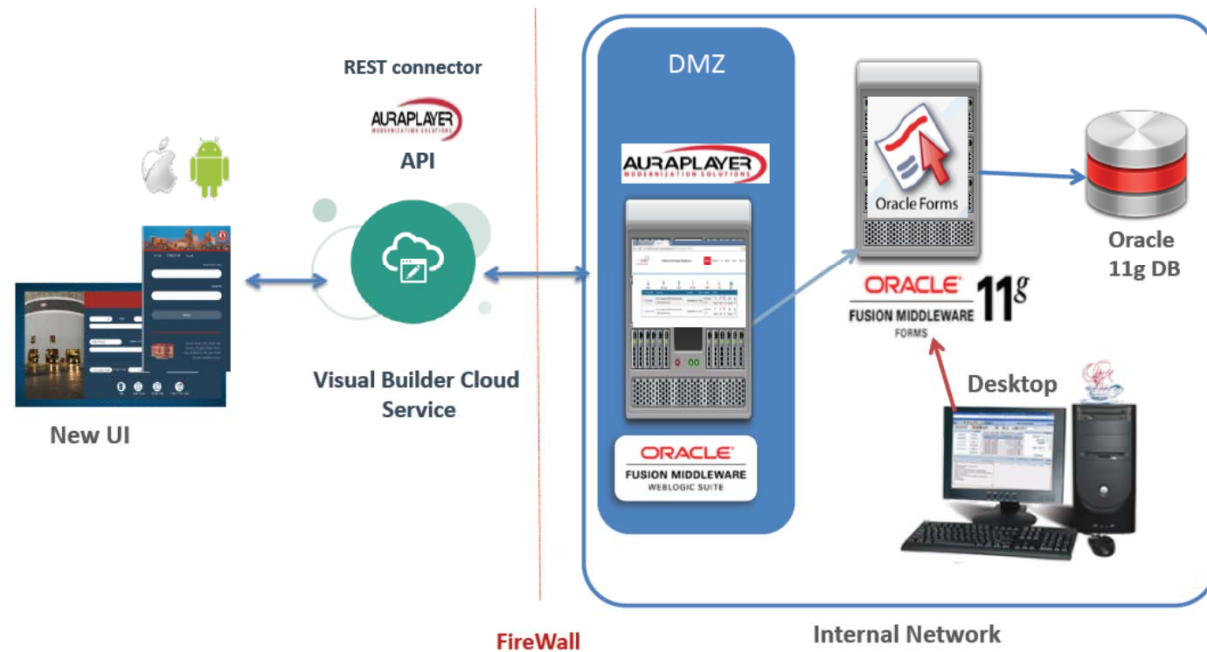




# AURAPLAYER ON PREMISE

## Backend Architecture

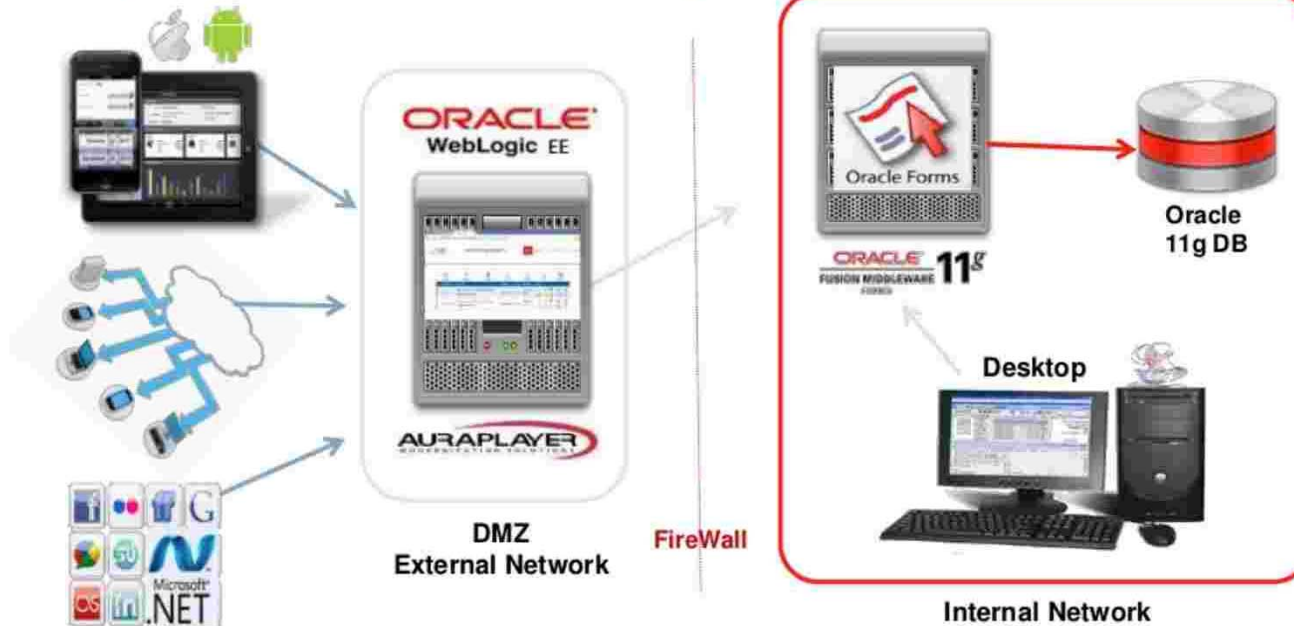
VBCS Cloud / AuraPlayer on premise architecture





# AURAPLAYER ON PREMISE

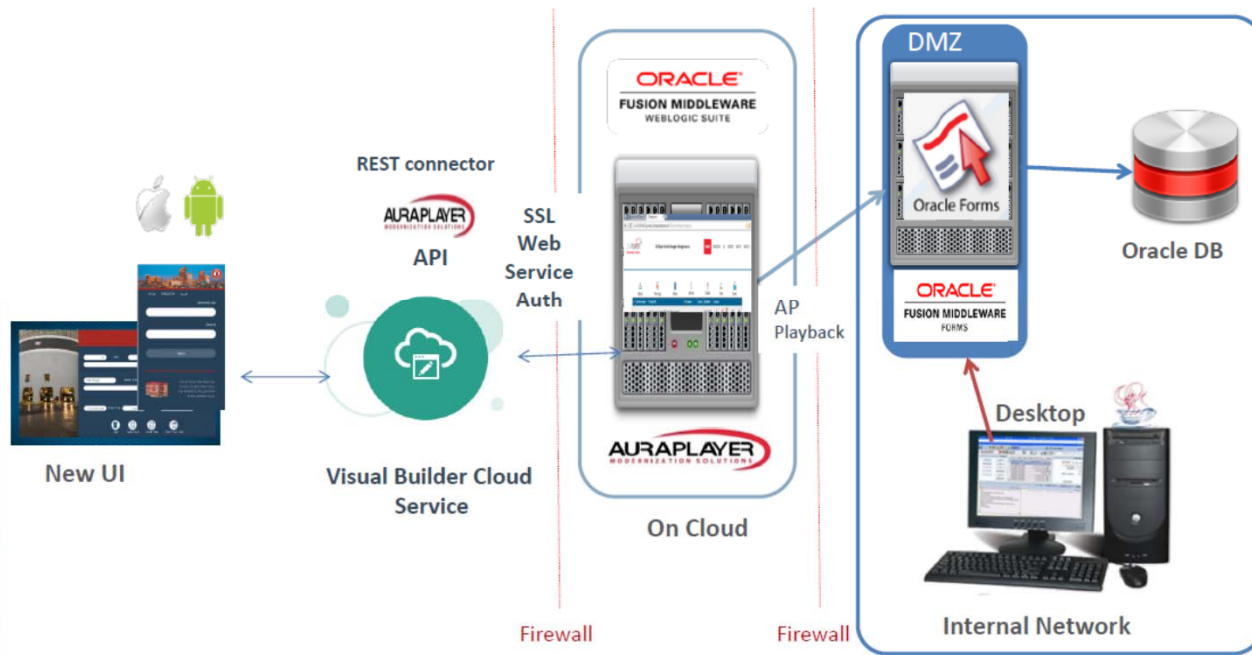
## Solution Architecture One System – For both Desktop and Any UI





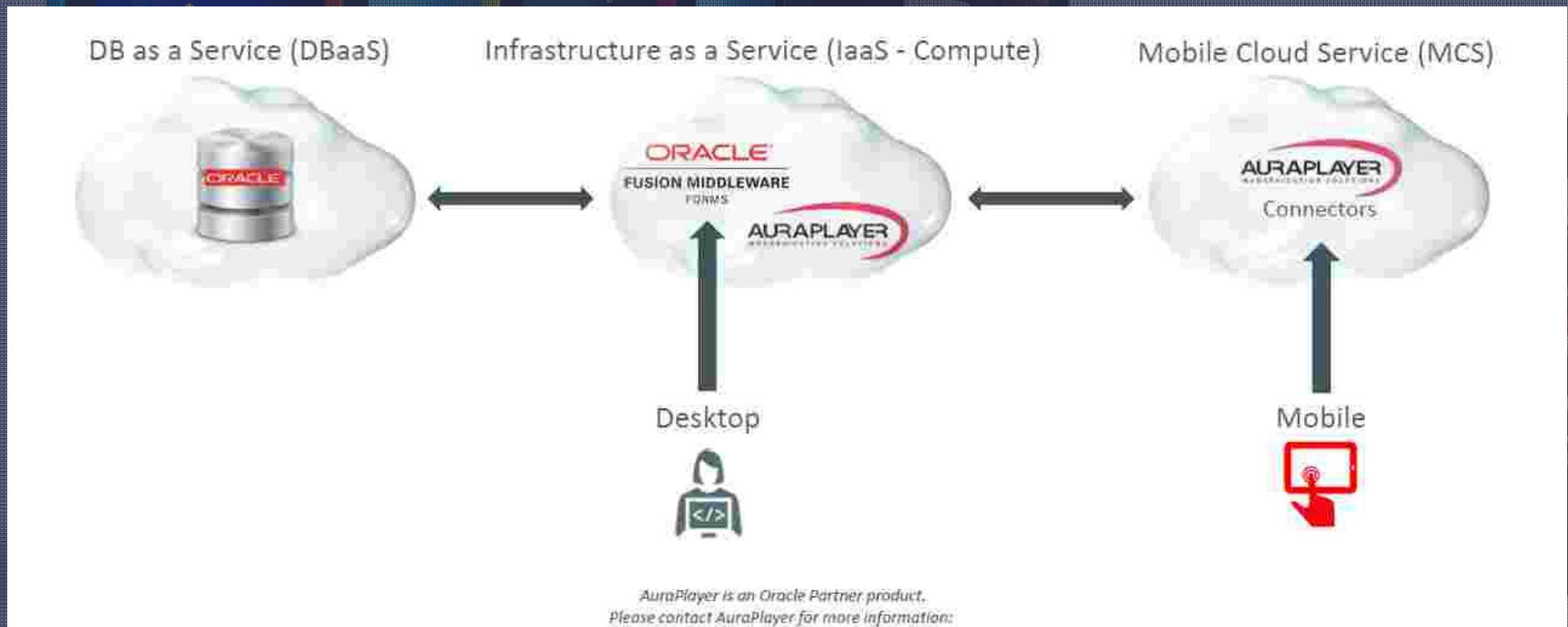
# AURAPLAYER – INSTALACIJA U OBLAKU

## Full Cloud Infrastructure



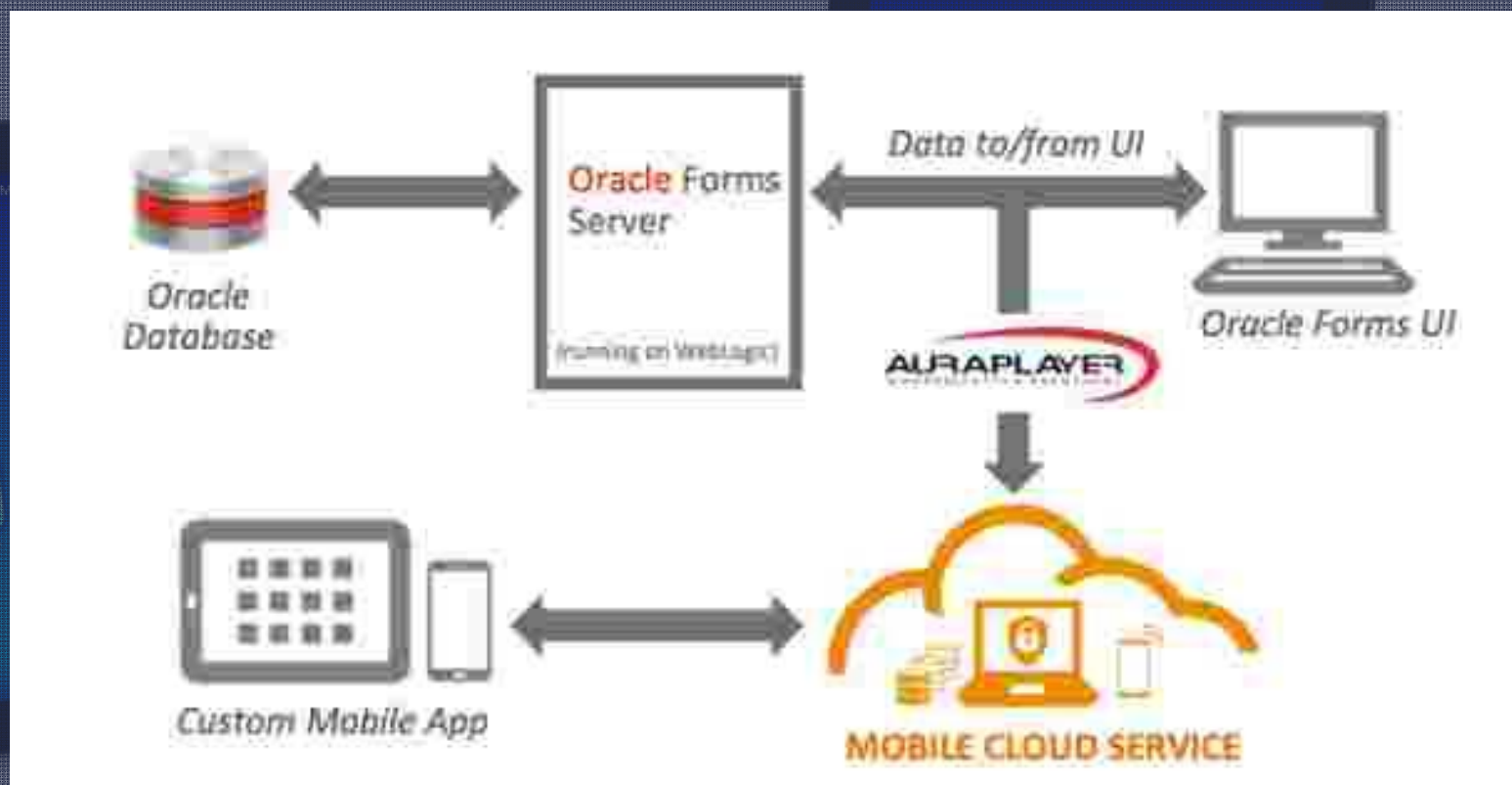


# AURAPLAYER – INSTALACIJA U OBLAKU





# AURAPLAYER – INSTALACIJA U OBLAKU





# IZRADA MOBILNE APLIKACIJE KROZ TRI KORAKA

- Business process and User eXperience
- Mobile APIs & Services
- Create Mobile App - VBCS

## How We Do It



### Step 1 – Define Process & Enable

#### AuraPlayer Toolbar

- Record Forms business process
- Gather input / output parameters



### Step 2 – Automatically Generate Webservice

#### AuraPlayer ServiceManager

- Manage and Edit Webservices
- Deploy scenarios



### Step 3 – Develop UI and Consume Services

#### AuraPlayer Visualizer

- Create default HTML pages using AuraPlayer wizard
- Or Develop UI in ANY Technology on ANY platform



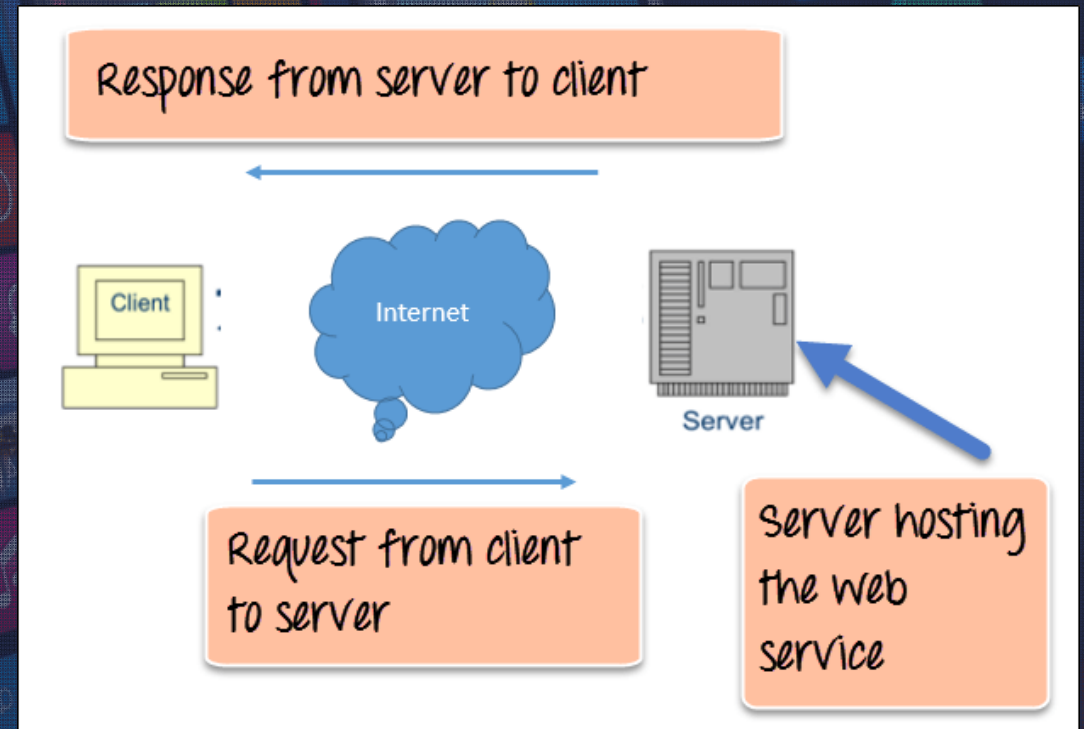
# AURAPLAYER WEB SERVISI

- Auraplayer posjeduje HTML generator za jednostavna sučelja
- Korisnici zahtijevaju suvremeno sučelje mobilne aplikacije
- Oracle Visual Builder omogućava izradu takvog sučelja
- Backend aplikacija je izložena kao REST web servis
  - Oracle Integration Cloud
  - AuraPlayer – rješenje za izradu REST web servisa od Oracle Forms aplikacije



# ŠTO JE WEB SERVIS?

- Programski modul dizajniran za obavljanje određene skupine zadataka
- Web servisi su skup API funkcija nezavisnih od platforme koji su izloženi da bi se mogli koristiti od udaljenih servera putem interneta





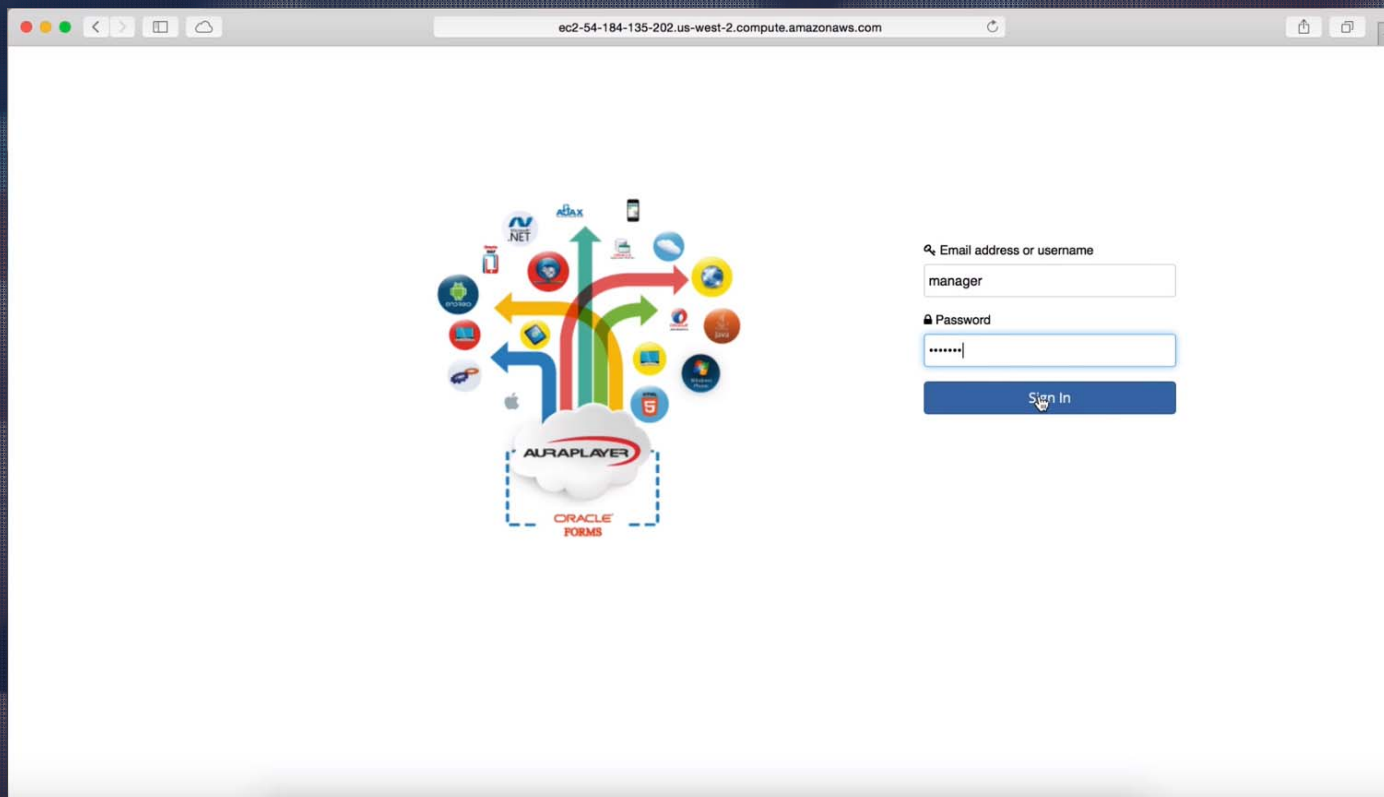
# SNIMANJE APLIKACIJE S AURAPLAYER-OM

- Pokrenuti AuraPlayer recording tool
- Pokrenuti u njemu Forms app
- Snimiti scenarij
- Definirati ulazna i izlazna polja
- Generirati web servis



# SNIMANJE APLIKACIJE S AURAPLAYER-OM

AuraPlayer recording tool





# SNIMANJE APLIKACIJE S AURAPLAYER-OM

## Definiranje imena web servisa

The screenshot displays the AURAPLAYER Service Manager interface. A modal dialog titled "Create a New Service" is open, allowing for the configuration of a new service. The dialog contains two input fields: "Service Name" and "Form URL".

The "Service Name" field contains the text: `getDetailsofCustomer1`

The "Form URL" field contains the text: `compute.amazonaws.com:9001/forms/frmservlet?config=ComplexScenarij`

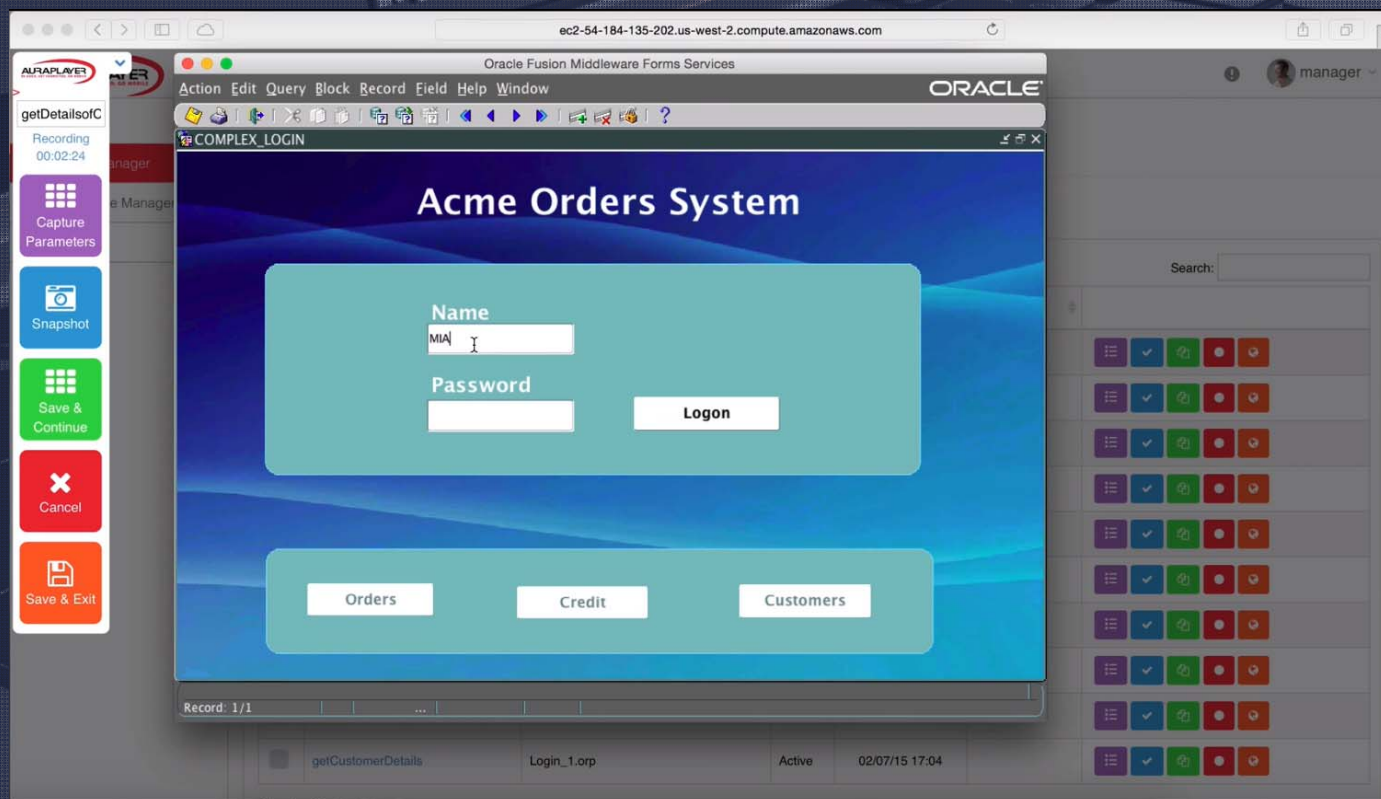
At the bottom of the dialog, there are "Close" and "Begin" buttons. The background interface shows a table of existing services with columns for Service Name, Service Workflow, Status, Modified, and Modified By.

Service Name	Service Workflow	Status	Modified	Modified By
getDetailsofCustomer1				
getDetailsofCustomer2				
getDetailsofCustomer3				
AA_...				
A_...				
A_getDetails	A_Logon_1.orp	Active	08/07/15 07:53	
A_Logon	A_Logon.orp	Active	08/07/15 07:52	
LoginCopyTryService	Login_2.orp	Active	05/07/15 13:33	
getCustomerDetails2	Login_1.orp	Active	05/07/15 10:33	
getCustomerDetails	Login_1.orp	Active	02/07/15 17:04	



# SNIMANJE ORACLE FORMS APLIKACIJE S AURAPLAYER-OM

Definiranje ulaznih i izlaznih polja





# SNIMANJE ORACLE FORMS APLIKACIJE S AURAPLAYER-OM

Prikaz definiranih ulaznih i izlaznih polja

The screenshot shows the Auraplayer web interface. The browser address bar indicates the URL: `ec2-54-184-135-202.us-west-2.compute.amazonaws.com`. The user is logged in as 'manager'. The interface displays the configuration for a customer form, showing input fields for Name, State, Phone, Address, City, Country, Zip, Rating, and Comments. The 'Output Parameters' table is expanded, showing the following data:

	Visible	Name	Label	MultiRecord
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_PHONE_0	Phone	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_ADDRESS_0	Address	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_CITY_0	City	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_COUNTRY_0	Country	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_ZIP_CODE_0	Zip	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_CREDIT_RATING_0	Rating	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	S_CUSTOMER_COMMENTS_0	Comments	<input type="checkbox"/>

At the bottom right of the interface, there are buttons for 'Save Changes' and 'Back'.



# SNIMANJE ORACLE FORMS APLIKACIJE S AURAPLAYER-OM

Detalji kreiranog web servisa

The screenshot displays the AURAPLAYER Service Manager web interface. The browser address bar shows the URL `ec2-54-184-135-202.us-west-2.compute.amazonaws.com`. The user is logged in as 'manager'. The interface includes a navigation menu on the left with options: Service Manager, HTML Page Manager, Admin, and Support. The main content area shows the details for a service named 'getDetailsofCustomer1'. The details are as follows:

Details	
<b>Service Name</b>	getDetailsofCustomer1
<b>Description</b>	
<b>Service URL</b>	<code>http://ec2-54-184-135-202.us-west-2.compute.amazonaws.com:8080/ServiceManager/Macro/ExecMacro/getDetailsofCustomer1</code>
<b>WSDL URL</b>	<code>http://ec2-54-184-135-202.us-west-2.compute.amazonaws.com:8080/ServiceManager/Macro/ExecMacro/getDetailsofCustomer1?wsdl</code>
<b>Form URL</b>	<code>http://ec2-54-184-135-202.us-west-2.compute.amazonaws.com:9001/forms/frmservlet?config=ComplexScenario</code>
<b>Status</b>	Active

Below the details table, there are three expandable sections: Advanced Parameters, Input Parameters, and Output Parameters. At the bottom of the interface, there are buttons for 'Edit Service', 'Test Service', 'Create HTML page', and 'Back'.



# GENERIRANJE JEDNOSTAVNE HTML STRANICE

Kreiranje jednostavne HTML stranice

ec2-54-184-135-202.us-west-2.compute.amazonaws.com

AURAPLAYER

Generate HTML page Visualize your page

1 General Step 1 description

2 Request Form Step 2 description

3 Response Form Step 3 description

4 Design Step 4 description

5 Confirm Step 5 description

General

Form URL

HTML Name

Application Title

Optimized destination

- Desktop
- Mobile - iOS Theme
- Mobile - Android Theme
- Single

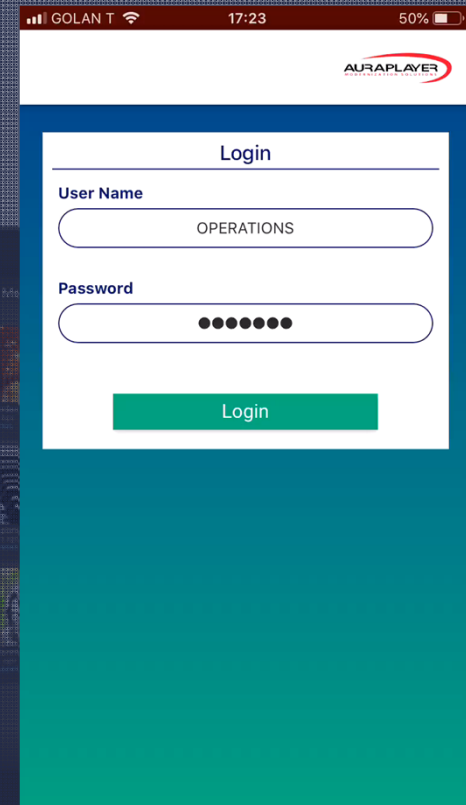
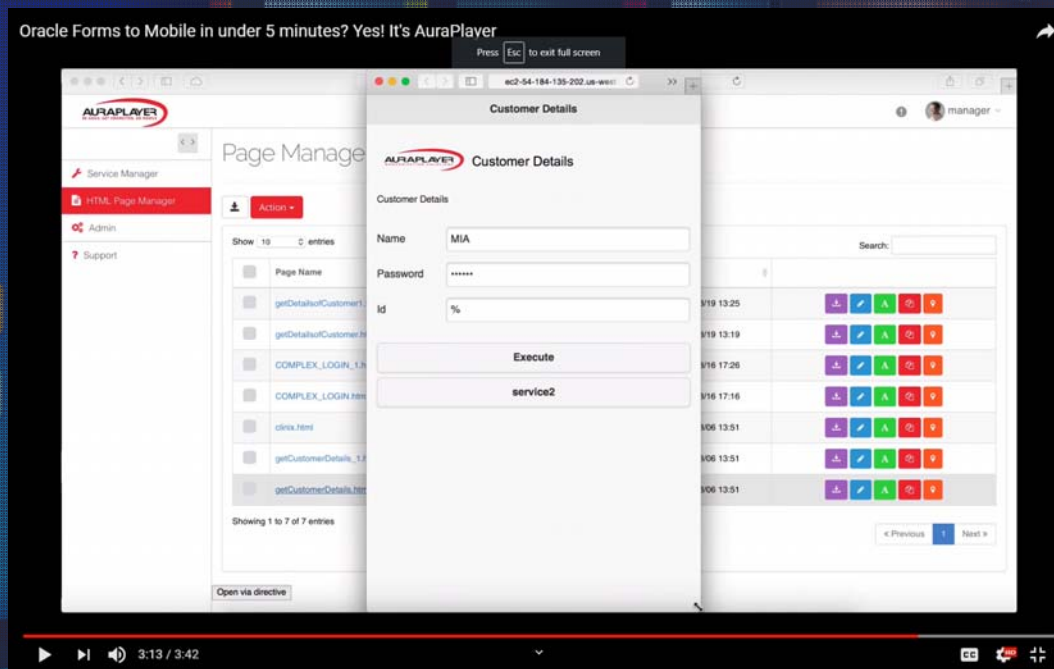
Request format

Next



# AURAPLAYER HTML APLIKACIJA

Vrlo jednostavna mobilna aplikacija  
(generirana jednostavna HTML stranica)





# AURAPLAYER HTML APLIKACIJA

Izvešće na jednostavnoj mobilnoj aplikaciji

Phone	Address	City	Date Shipped	Name Required	Zip Code	State	Date Ordered	Id	Credit Rating	Total	Filled	Comments	Sales Rep Id	Pay Type
123462226101	12 lumbada st.	Sao Paulo	12-aug-2002	Unisports	223344		10-aug-2002	4959	EXCELLENT	88888		Customer usually orders large amounts and has a high order total. This is okay as long as the credit rating remains excellent.	10	CASH
			22-aug-2001				21-aug-2001	4956		2222	true		10	CASH
			21-aug-2013				21-aug-2013	4948		99999	true		11	CREDIT
							27-jan-2014	4920		12000			10	CREDIT
							24-jan-2014	4912					10	

**Alert Messages from Forms**  
Status bar messages Enter a query; press Ctrl+F11 to execute, F4 to cancel.;  
Popup messages

Back

Open via directive



# ORACLE VISUAL BUILDER

- HTML stranica omogućava izradu vrlo jednostavnih mobilnih aplikacija
  - oskudan grafički dizajn
  - jednostavne funkcije
- Za naprednija sučelja mobilnih aplikacija potrebno je koristiti druge alate, kao npr. Oracle ADF, Oracle Mobile Framework i Oracle Visual Builder



# TIPOVI WEB SERVISA

- SOAP
- XML-RPC
- REST
  
- AURAPLAYER koristi REST

API - Application Programming Interface





# AURAPLAYER PRIMJERI

**BEFORE**

Timekeeper Entry

ABYERS Carolina Construction/RGI Weekly Approver Comments  
09/05/2016 - 09/11/2016

Message	Type	Status	Person Name	Payroll Elements	Project No.	Task No.	Mon 05-09	Tue 06-09	Wed 07-09	Thu 08-09	Fri 09-09	Sat 10-09	Sun 11-09	
✓	W	Er	Bates, Brandon D	P Holiday Pay	048045	604900	8							8
✓	W	Er	Bates, Brandon D	P Regular Hours	011692	4013600		11	10.5	10.5				32
✓	W	Er	Bates, Brandon D	P Overtime	011692	4013600					9	10		19
✓	W	Er	Bates, Toney D	P Holiday Pay	048045	604900	8							8
✓	W	Er	Bates, Toney D	P Regular Hours	011692	4013600		8	8	8	8			32
✓	W	Er	Bowen, Charles G	P Holiday Pay	048045	604900	8							8
✓	W	Er	Bowen, Charles G	P Regular Hours	0480638	600225		14	15					29
✓	W	Er	Bowen, Charles G	P Overtime	0480145	600225D				9				9
✓	W	Er	Bowen, Charles G	P Overtime	0480145	600110D				1				1
✓	W	Er	Bowen, Charles G	P Regular Hours	0480145	600110D					3			3
✓	W	Er	Bowen, Charles G	P Overtime	0105023	1525E.1					15.5	12		27.5
✓	W	Er	Burris, Carol A	P Holiday Pay	048045	604900	8							8
✓	W	Er	Burris, Carol A	P Regular Hours	048003	604900		9	8	5.5	7.75			30.25
✓	W	Er	Camarena Nuno, A	P Holiday Pay	048045	604900	8							8

0 0 0 0 0 0 0

Select / Deselect All Comment

Details Messages Mass Edit Day Totals Submit Selected Lines

SAMSUNG

Data Entry - Ricky Lawson

September 20 today

	015003 I40 / Hwy365 303107 Aggregate B	015003 I40 / Hwy365 405422.1 ACHM Base	015007 CNP27B/1-75 71701.3 MOB-SURF-P	015007 CNP27B/1-75 71201 TRAFFIC DONT	015003 I40 / Hwy365 4110323 ACS MIX	012122B ANDERSON CO 30CR CMXK CIRCLE RD	Total
Benton, Marty Q 44454	2			1	3	3	9
Bryant, Jimmy R 43263	2		2	1		3	8
Callaway, Will B 45990	2		2	2	2	2	10
Cunningham, Randall B 45990	2		2	2	2	2	11
Davis, Derek C 43910	2		2	2	2	2	0
Noble, Lamy S 45624	2						
Potter, Drew A	2						

**AFTER**





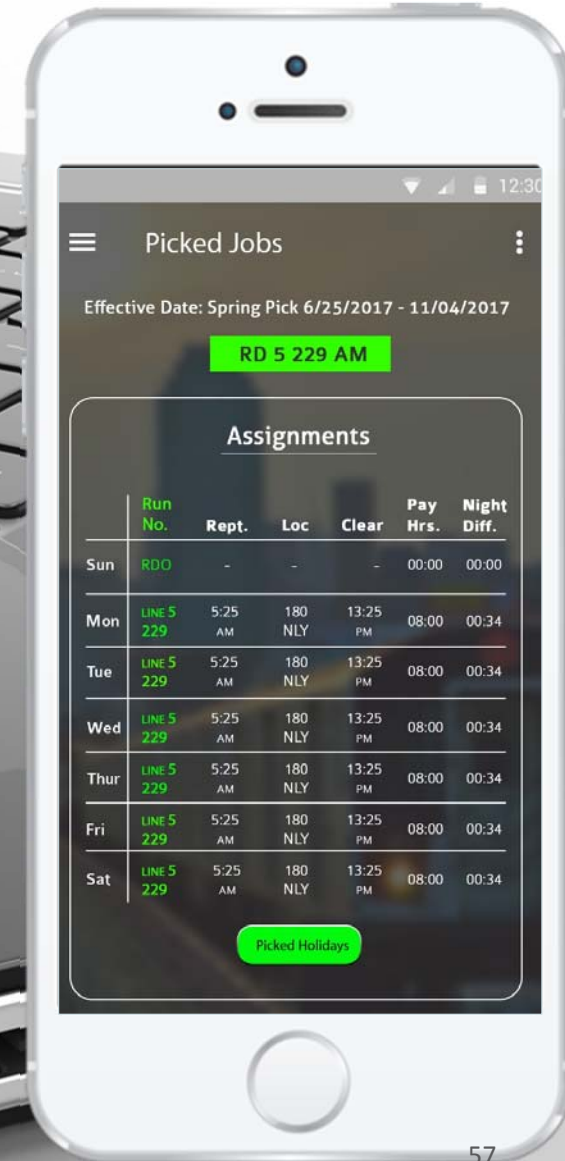
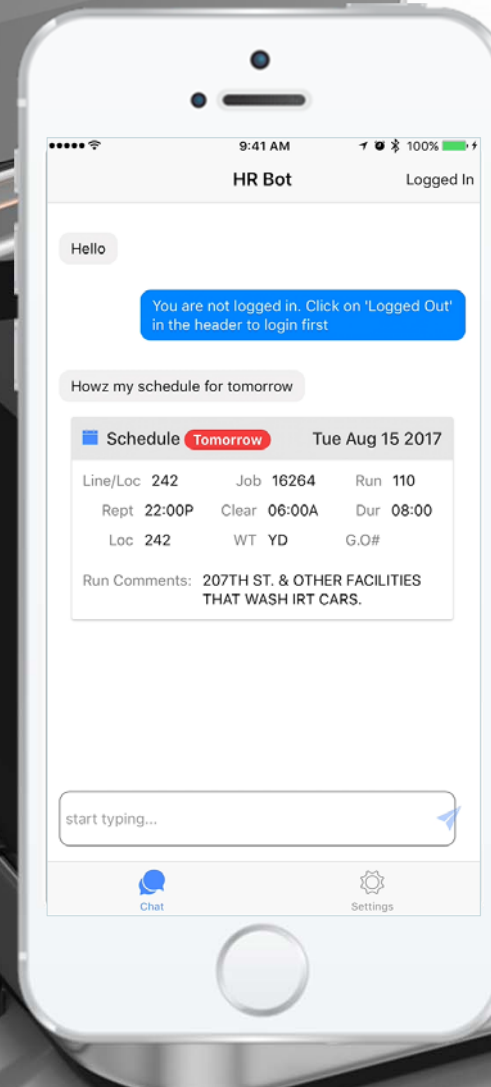
# AURAPLAYER PRIMJERI

Digital Assistant

Mobile App

**Picked Information**

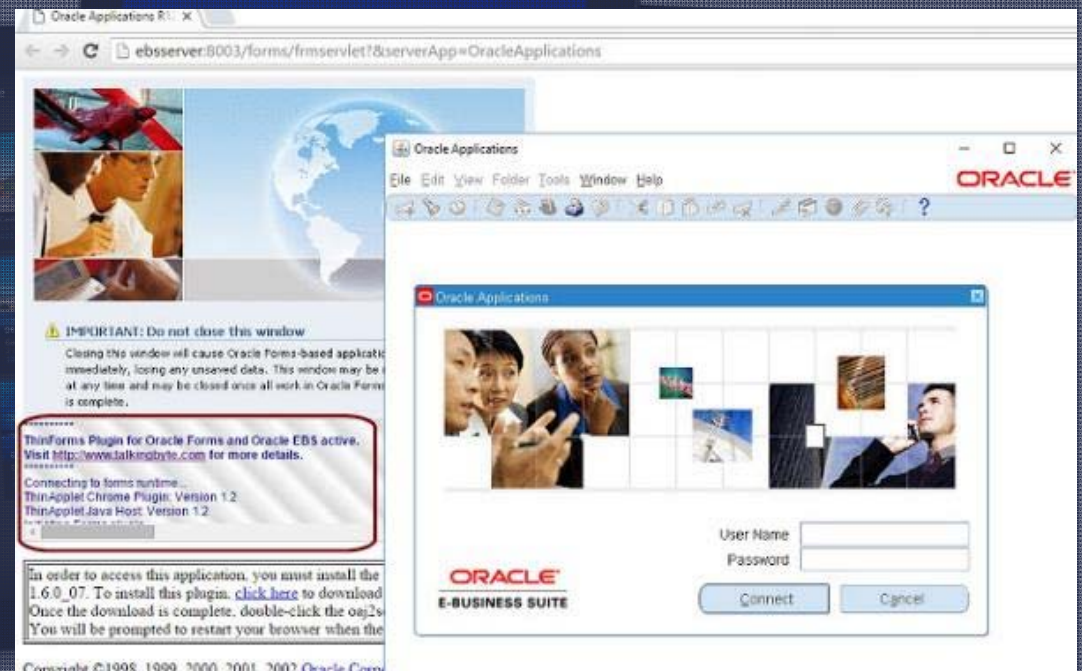
Employee/Pick Information												
Pass	Name	Title	R.C.	Union	Sen #	Status	As Of Date					
		TO	2338		00872	ACT	06/25/2017					
Pay Loc: 23047												
Pick Description				Holiday Pick								
Subdivision 'A'		Effective	Expires	Effective	Expires							
		2017	11/04/2017	06/25/2017	11/04/2017							
Packages												
Package Identifier	Package Description	Type	RDO	Tour	Work	Effective	Expires					
RD 5 229 AM	RD 5 229 AM	Norm	SS	AM	RD R	06/25/2017	11/04/2017					
Employee Vac Weeks				Assignments								
Wk#	Use	Days	Start Date	Day	Run Number	Tour Rept	Loc	Clear	Loc	Pay Hrs	Night Diff	Ok
				Sunday	RDO					00:00	00:00	
				Monday	LINE 5/229	AM 05:25A	180	13:25P	NLY	08:00	00:34	
				Tuesday	LINE 5/229	AM 05:25A	180	13:25P	NLY	08:00	00:34	
				Wednesday	LINE 5/229	AM 05:25A	180	13:25P	NLY	08:00	00:34	





# THINFORMS CHROME EXTENSION (OBSOLETNO)

- Omogućuje pokretanje Oracle Forms na iPad, Android and PCs bez thick client Java Runtime Environment download-a
- Pokrenite Forms and EBS Applications direktno iz Chrome – nije potreban NPAPI
- Obsoletno, ali na mreži još uvijek se može na nekim site-ovima naći za download (Windows, OSX, Linux) na Chrome Web Store





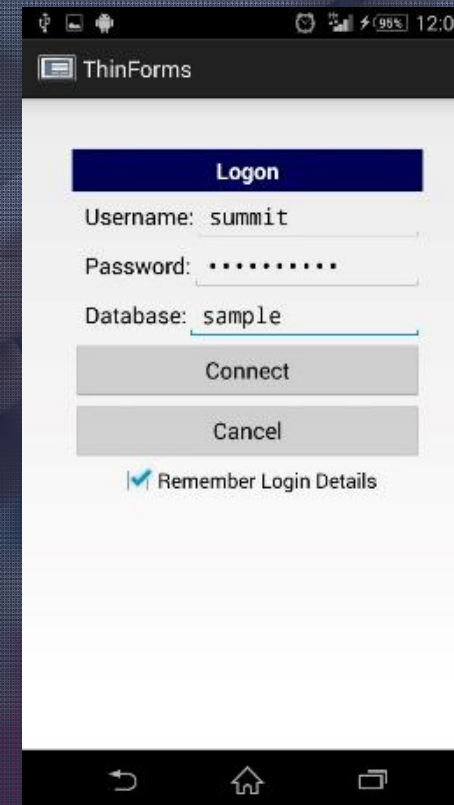
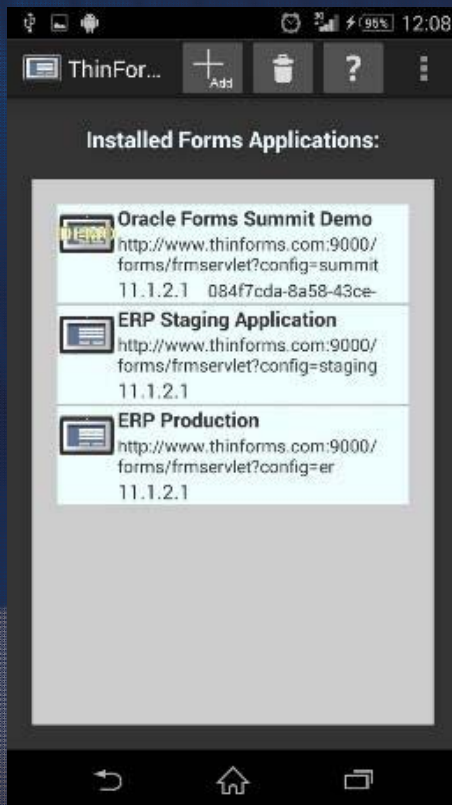
# THINFORMS APP (OBSOLETNO, ALI DOBAVLJIVO)

- Omogućuje da se sa mobilnog uređaja spojite direktno na Oracle Forms Application Server (iAS)
- Pokreće Forms aplikaciju na Android uređaju (Android 4.0 API 14 i više)
- Podržane Oracle Forms verzije:
  - 9.0.4
  - 10.1.2
  - 11.1.1
  - 11.2.1





# THINFORMS APP (OBSOLETNO, ALI DOBAVLJIVO)



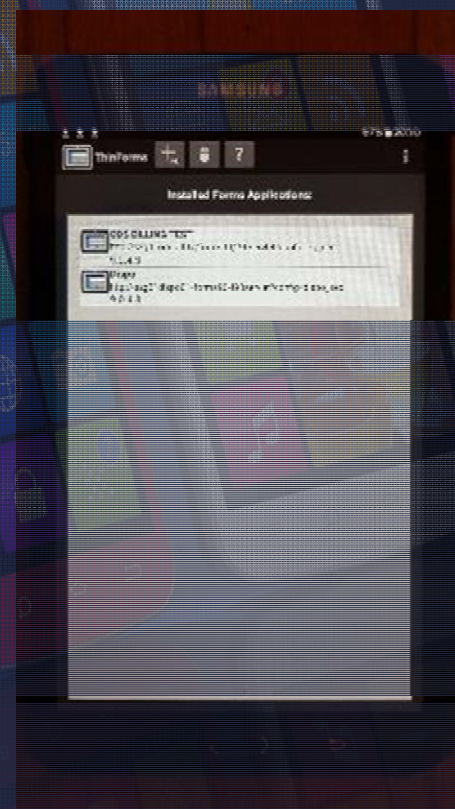
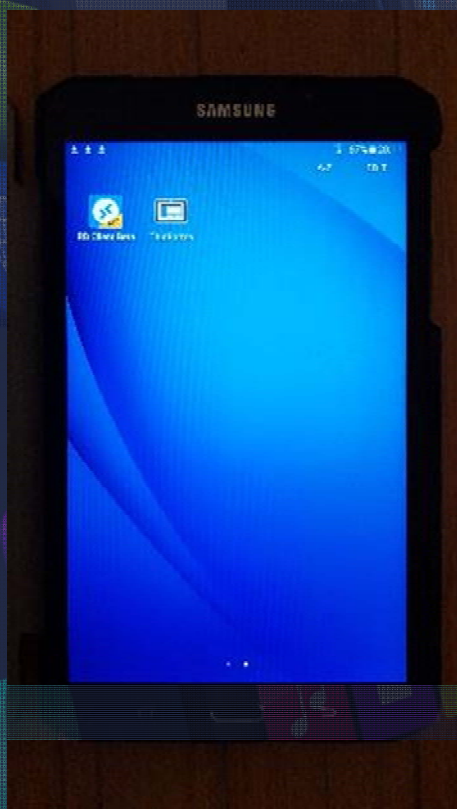


# THINFORMS APP – JOŠ UVIJEK DOBAVLJIVO ZA ANDROID KAO APK

- **APK = ANDROID APPLICATION PACKAGE**
  - Format zapakirane datoteke koji se koristi za distribuciju i instalaciju aplikacija na Google's Android operacijski sustav i neke druge sustave (npr. Blackberry)
  - Ukratko: instalacija Android aplikacije
- Raspoloživo na web adresi:  
<https://apkpure.com/thinforms/com.talkingbyte.thinforms>

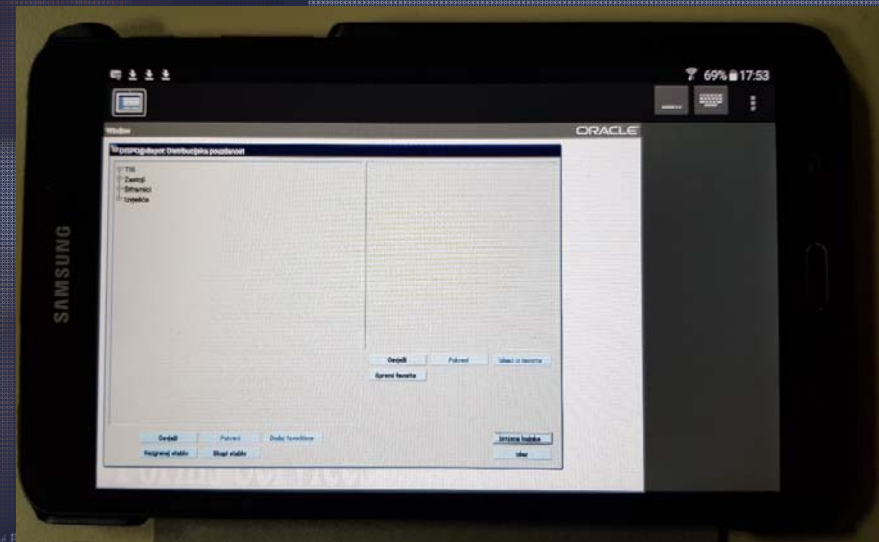
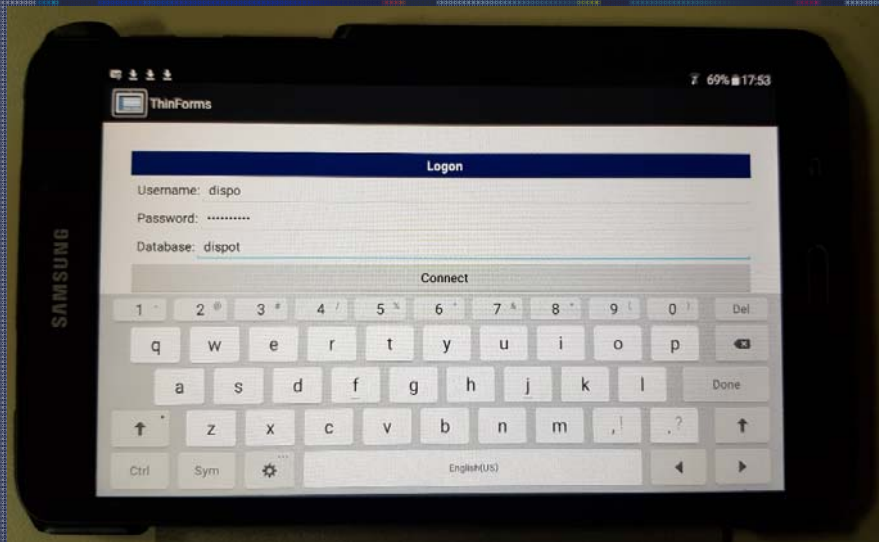


# THINFORMS APP NA ANDROIDU





# THINFORMS APP NA ANDROIDU



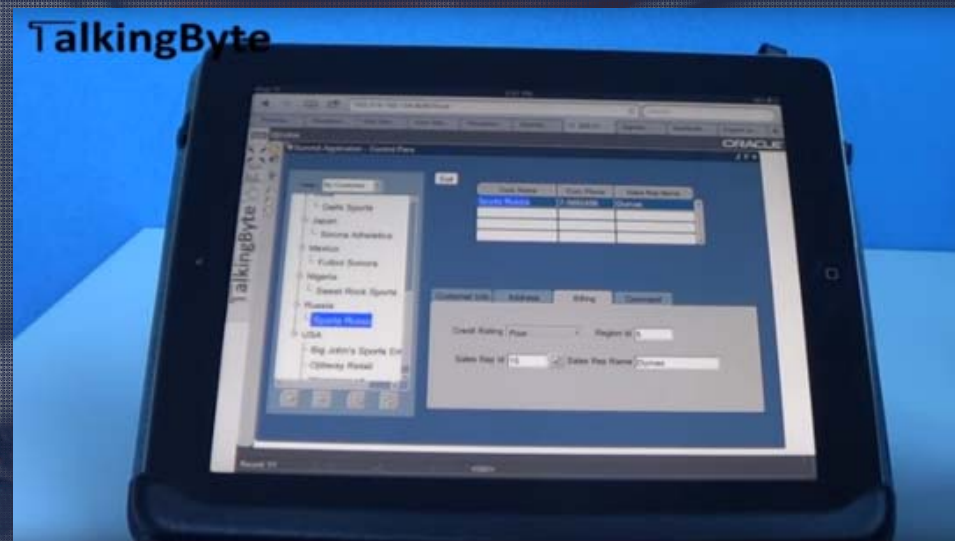
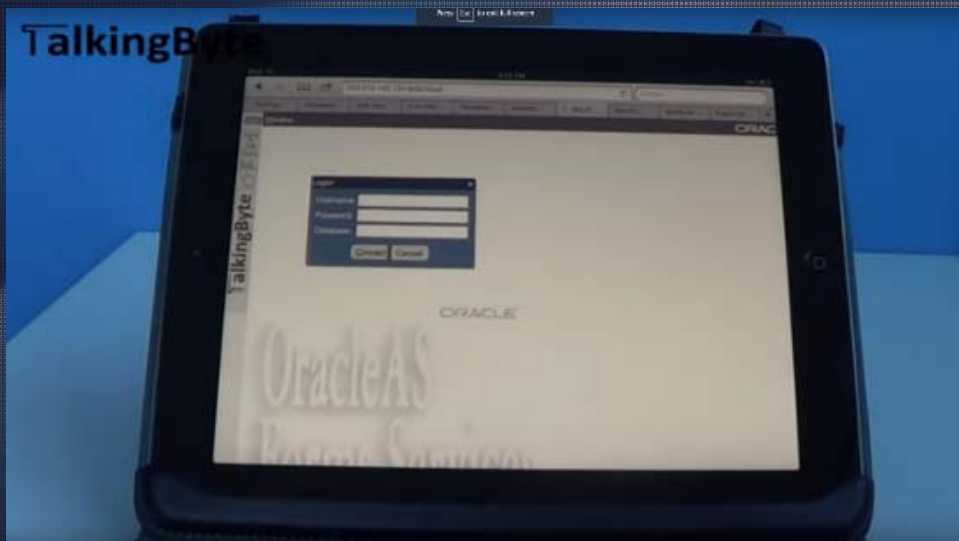


# THINFORMS APP NA ANDROIDU





# THINFORMS NA iPad-U (OBSOLETNO)





# ZAKLJUČAK

- Oracle Forms aplikacija redovito nisu inicijalno dizajnirane za uporabu na mobilnim uređajima
- Mobilni uređaji razlikuju se po OS-u, veličini i rezoluciji ekrana
- Oracle Forms aplikacija može se koristiti na mobilnim uređajima na slijedeće načine:
  - uporaba Windows mobilnih uređaja (Windows 7, 8, 10, ali ne i RT) omogućuje uobičajenu uporabu
  - uporaba Terminal Servera ili Citrix okoline
  - izrada pojednostavljene Oracle Forms aplikacije (mobilizacija) uz pomoć AuraPlayer-a
  - uporaba ThinForms aplikacije na Android uređajima (obsoletno, ali dobavljivo)



# LITERATURA

- ❑ Screen sizes, <http://screensiz.es/tablet>
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- ❑ Terminal Servers vs. Citrix (Application Hosting), <https://www.youtube.com/watch?v=ObDMVI55Fro>
- ❑ Oracle Forms to Mobile in under 5 minutes? Yes! It's AuraPlayer, <https://www.youtube.com/watch?v=cmEsdutzxKKM>
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- ❑ G. Ronald, MCS: 85. The Architecture for Mobilizing Oracle Forms, [https://www.youtube.com/watch?v=HtE\\_DQTCNHU](https://www.youtube.com/watch?v=HtE_DQTCNHU)
- ❑ G. Ronald, MCS: 86. Recording Web Services for Mobilizing Oracle Forms [https://www.youtube.com/watch?v=mWLCc6\\_o6WQ](https://www.youtube.com/watch?v=mWLCc6_o6WQ)
- ❑ G. Ronald, MCS: 01. Introducing Oracle Mobile Cloud Service, <https://www.youtube.com/watch?v=6pCIHx9OKqs>
- ❑ Create Application with AuraPlayer's Visualizer, <https://www.youtube.com/watch?v=fxH-NugXvRk>
- ❑ Oracle Visual Builder, <https://docs.oracle.com/en/cloud/paas/app-builder-cloud/index.html>



# LITERATURA

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- ❑ S. Shmeltzer and Mia Urman, Modernizing User Experience for Oracle E-Business Suite – Customer Stories, Oracle OpenWorld 2019, San Francisco
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- ❑ Guide, REST Web Services Connector (April 01, 2019), Aura Porta,
- ❑ Oracle Data Sheet, Oracle Visual Builder Cloud Service, 2017
- ❑ TalkingByte, ThinForms Demo (Talkingbyte) - Running Oracle Forms Applications on iPad, from <https://www.youtube.com/watch?v=nLzXjUO4IFc>
- ❑ ThinForms APK Download, <https://apkpure.com/thinforms/com.talkingbyte.thinforms>



# HVALA NA PAŽNJI!



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