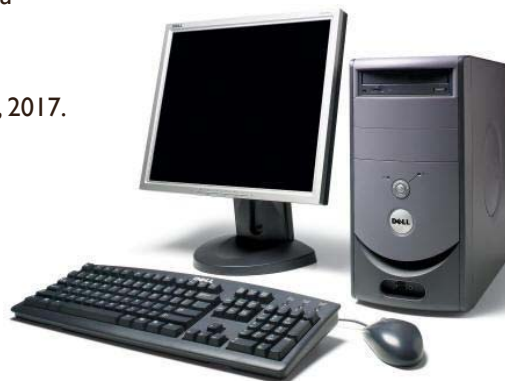


CAD u građevinarstvu

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Predavanja za predmet
CAD u građevinarstvu

Politehnički fakultet
Univerziteta u Zenici, 2017.



CAD u oblaku

- Cloud computing
- Mobilne CAD aplikacije



Cloud computing

- Znaete li šta je "Cloud Computing"?
- Koristite li već CC?
- U kolikoj mjeri koristite CC?
- "Računarstvo u oblaku"
- Korištenje mreže Internet servera (umjesto lokalnog PC ili lokalnog servera) za pohranjivanje i obradu podataka.



Cloud computing

- Podaci i aplikacije nisu centralizovani na jednom serveru, nego su distribuirani na više redundantnih servera, čija fizička lokacija nije više bitna.
- Farme servera



Cloud computing

- *Mainframe* računar pruža usluge većem broju korisnika istovremeno.
- *Client-server* tehnologija razdvaja uloge klijenta i servera u mreži
- *Grid computing* koristi umrežene servere za paralelnu obradu složenih zadataka
- *Peer-to-peer* je distribuirana arhitektura bez potrebe za centralnim upravljanjem
- *Cloud computing* obuhvata sve navedeno

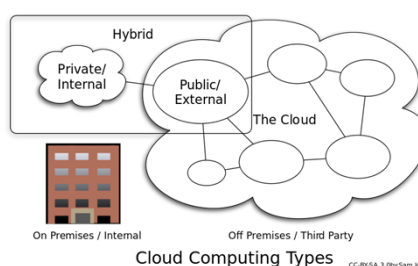
Modeli cloud computing servisa

- *Infrastructure as a service (IaaS)*: Korisnik ima pristup resursima za pokretanje sistemskog ili aplikativnog softvera kao virtualne mašine, bez punog pristupa infrastrukturi oblaka.
- *Platform as a service (PaaS)*: Korisnik može razvijati i pokretati vlastite aplikacije.
- *Software as a service (SaaS)*: Korištenje gotovih aplikacija i usluga.



Modeli cloud computing razvoja

- *Private cloud* (potpuno u posjedu)
- *Public cloud* (javno dostupan)
- *Hybrid cloud* (kombinacija *public/private*)
- Ostali modeli: *Community cloud* (više povezanih privatnih), *Distributed cloud* (npr. SETI@Home, peer-to-peer), *Intercloud*, *Multicloud*

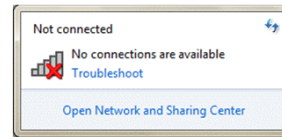


Prednosti

- Efikasnije upravljanje troškovima (CAPEX vs. OPEX)
- Skoro neograničen kapacitet
- Lakši i automatski *backup & restore*
- Univerzalna dostupnost (gdje ima interneta, imate pristup podacima)
- Automatski prelaz na nove verzije
- Lakša integracija softvera (izbor samo najprikladnijih servisa i aplikacija)



Nedostaci

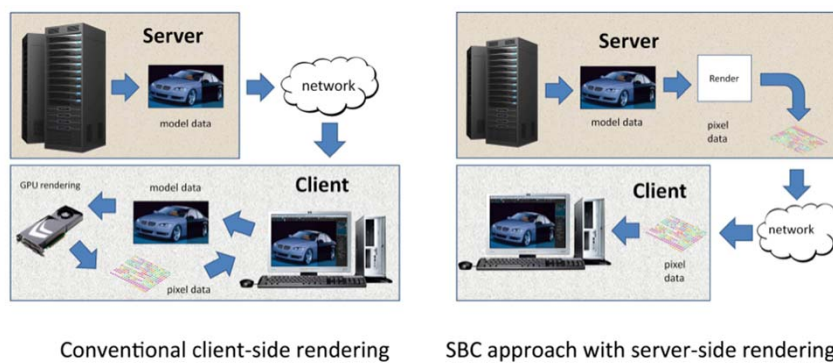


- Osjetljivost na tehničke probleme (najčešće vezane za povezivost)
- Sigurnost podataka:
C.I.A. (*Confidentiality, Integrity, Availability*)
povjerljivost, integritet, dostupnost
- Osjetljivost na hakerske napade



CAD u oblaku

- Sve prednosti/nedostaci važe i za CAD
- Potreban je veliki *bandwidth*: slika rezolucije 1280x1024 na 30 Hz zahtijeva *bandwidth* od oko 1.2 GB/s bez kompresije.

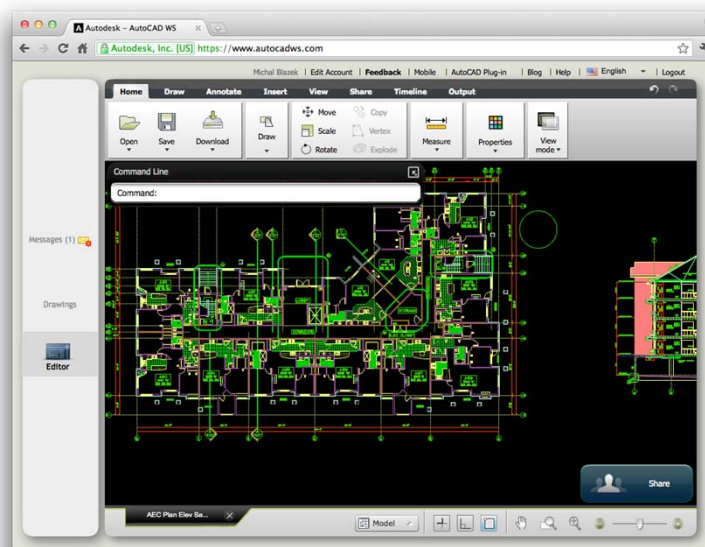


CAD u oblaku

- 2010: najava prvih cloud CAD aplikacija: *SolidWorks V6*, *Autodesk Project Butterfly*.
- Prva komercijalna aplikacija bio je *AutoCAD WS*, zasnovan na tehnologiji koju je razvila kompanija *PlanPlatform* (Autodesk je preuzeo 2009).
- Mogao je otvarati DWG datoteke, ali ima znatno umanjenu funkcionalnost u odnosu na desktop AutoCAD.

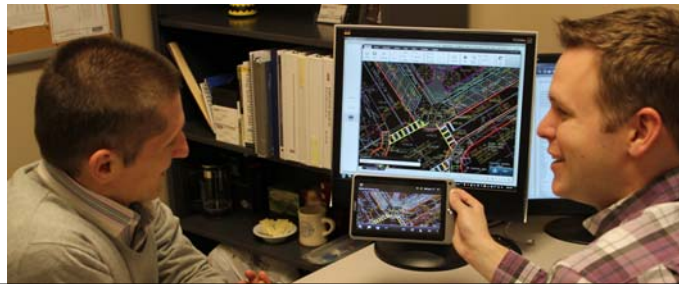


AutoCAD WS



AutoCAD 360

- Nakon prve verzije AutoCAD WS za iOS i Android, od njega nastaje AutoCAD 360
- <https://www.autocad360.com/>
- Besplatna *cloud* aplikacija za koju je potreban samo *browser*.

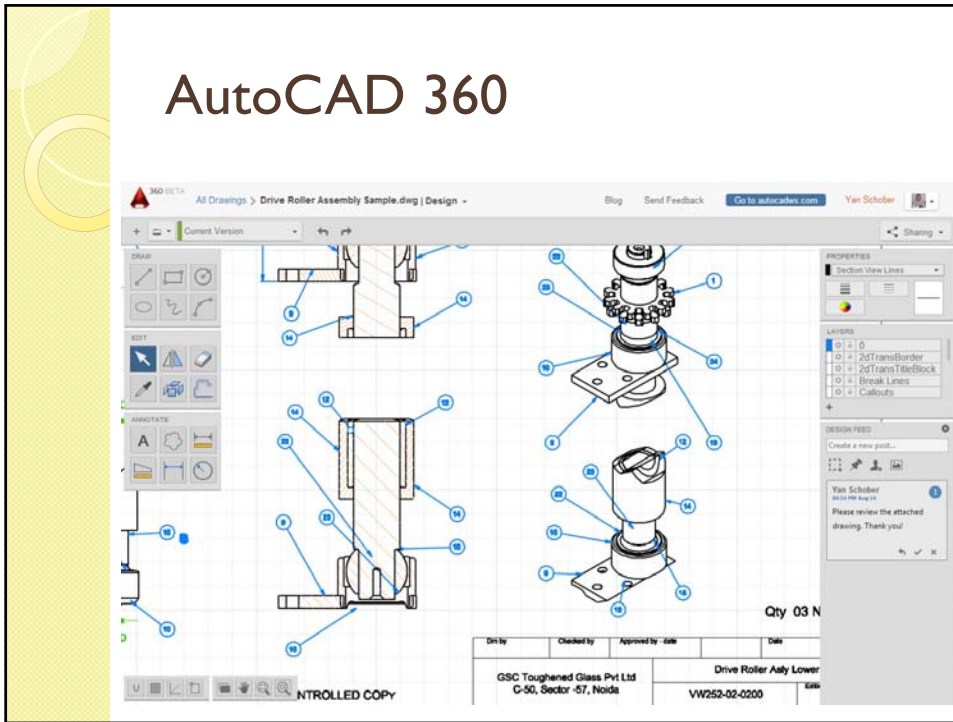


AutoCAD 360

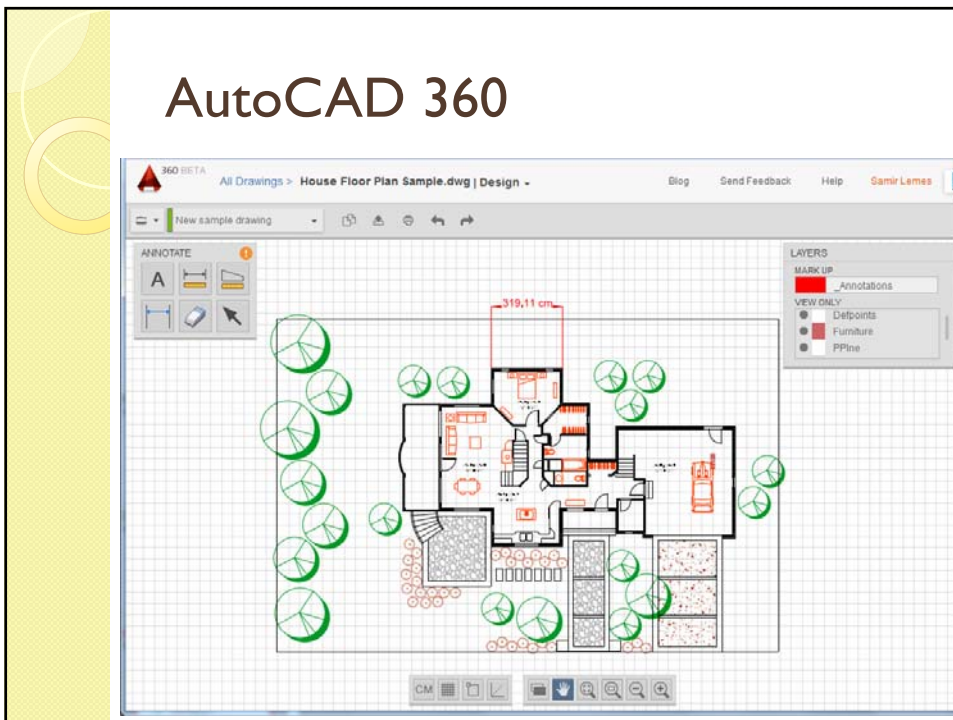
- Pored besplatne, postoji i komercijalna (Pro) verzija, sa većim mogućnostima.

Free	Pro	FEATURE	FREE	PRO
View drawings Open and view drawing files	PRO Create new drawings Create original drawings from scratch	Price	Free	\$4.99 per month / \$49.99 per year
Basic drawing tools Draw simple lines, rectangles, and circles	PRO Advanced drawing tools Expand your drawing capabilities with arcs, arrays, and more	Storage	5GB	25GB
Secure file access and storage Save drawings with AutoCAD 360 or use a 3rd party provider	PRO Increased file size support and storage Size isn't an issue—work on and store larger files easily	Maximum supported file size	10MB	30MB
Markup tools Easily redline, comment, and add photos	PRO Object library Don't start from scratch—add commonly used objects from our library	Third party storage connectivity	View	View & Edit
Basic layer management Turn existing layers on and off	PRO Advanced layer management Create new and edit existing layers	Open, share and manage drawings	✓	✓
Basic editing tools Make simple edits like move, scale, rotate, mirror, copy	PRO Advanced editing tools Expand the tools for faster editing capabilities	Zoom, markup & photo tools	✓	✓
		Basic drawing & editing tools	✓	✓
		Basic unit & measuring tools	✓	✓
		Basic layer management	✓	✓
		GPS tools	✓	✓
		Printing & stylus support	✓	✓
		Create drawings	✓	✓
		Advanced drawing & editing tools	✓	✓
		Advanced unit & measuring tools	✓	✓
		Advanced layer management	✓	✓
		Object (block) library support	✓	✓
		Object properties	✓	✓
		Priority support	✓	✓

AutoCAD 360

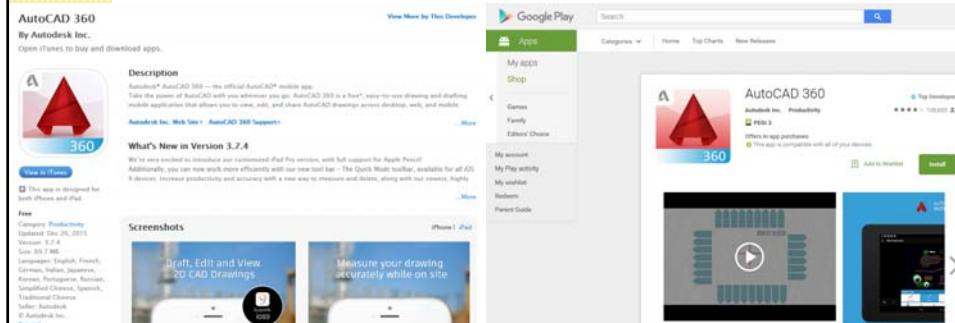


AutoCAD 360



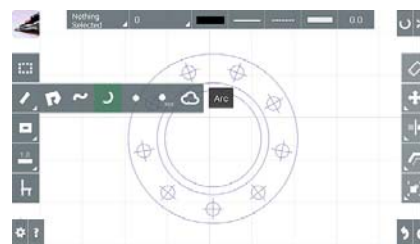
Mobilne CAD aplikacije

- Za razliku od desktop verzije AutoCAD 360, koja ne zahtijeva nikakvu aplikaciju osim browsera, postoji i mobilna aplikacija za iOS ili Android operative sisteme.



Mobilne CAD aplikacije

- CadTouch
- eDrawings Viewer



Report Card

	User Interface	Features	Sharing/ Collaboration Options	Ease of Use	Grade
Autodesk AutoCAD 360 v2.2 (Android)	4	4	4	3.5	A
Bentley Systems Navigator Mobile v4.00.01 (iOS)	4	4	2	3	A-
CadFaster Collaborate v2.0.3 (iOS)*	3	2	3	3	B
cadTouch v5.0.0 (Android)	4	4	2	3	A-
IMSI/Design TurboViewer v1.5.0 (Android)*	2	3	1	3	B-
Dassault Systemes SolidWorks eDrawings Viewer v2.0.1 (Android)	3	3	4	3	A-
ZWSOFT ZWCAD Touch v1.3.0 (Android)	3	3	2	3	B

*The developers reports that new versions of these applications will be available soon. See individual reviews for more information.