



NetApp™

NetApp: Rješenja za baze podataka, virtualizaciju i integraciju s aplikacijama

HrOUG 2009

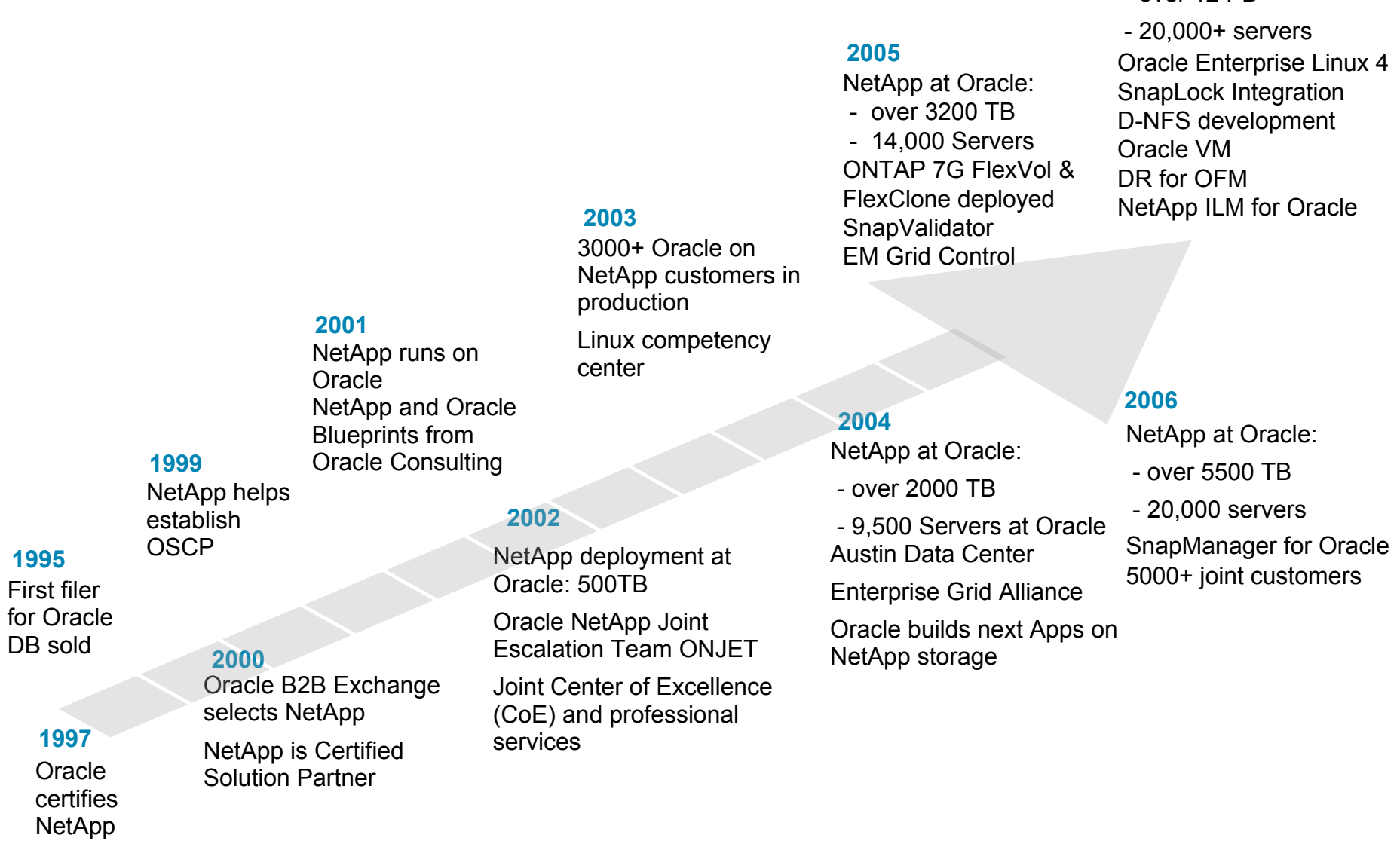
Damir Hrastović
BCC services

Go further, faster™





Partnerstvo NetAppa i Oracla





NetApp™

NetApp u svijetu i koda nas

Energy



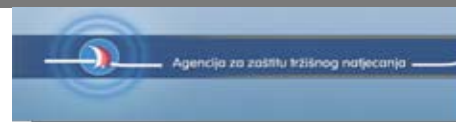
Financial



Tech



Government



Healthcare



Manufacturing



Media/Internet



Telco



Neki od zanimljivih brojeva



1600 nezavisnih baza
500 mission critical za Oracle klijente
20 000 Linux bladeova
10 000 TB prostora



80 000 TB prostora
Strateško partnerstvo



6 000 TB prostora
200 000 Exchange accounta



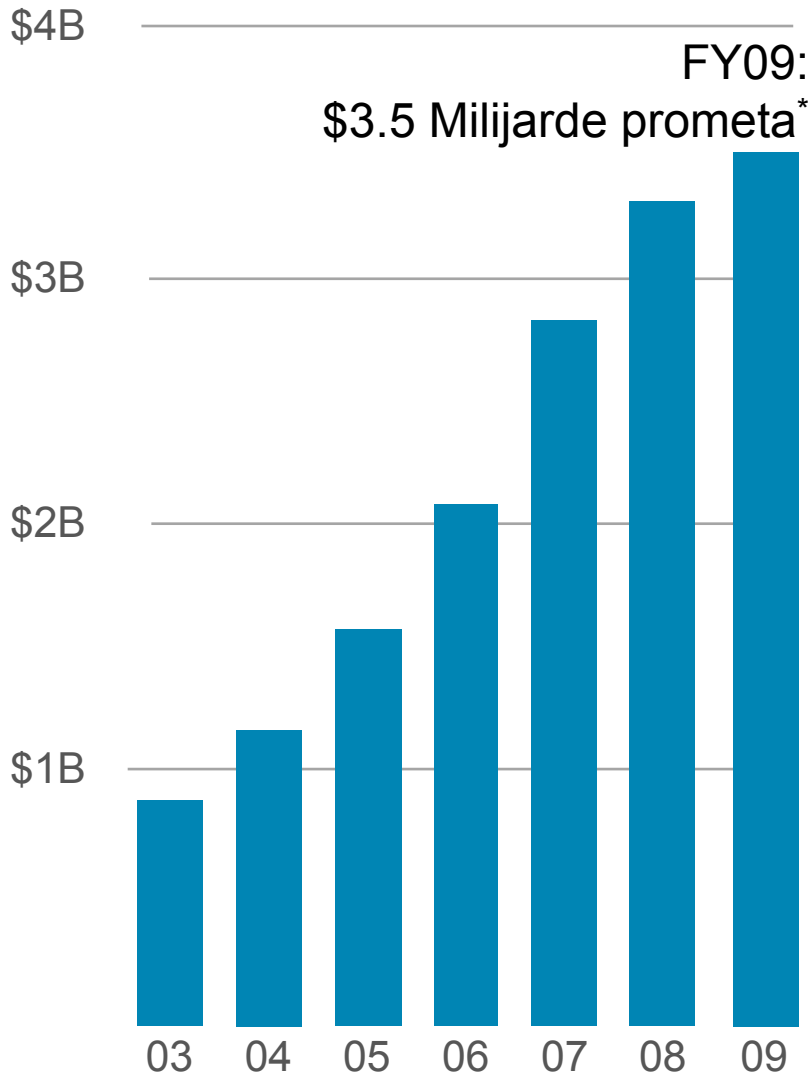
kompletan razvoj po cijelom svijetu



Gmail accounti



NetApp kao globalna kompanija

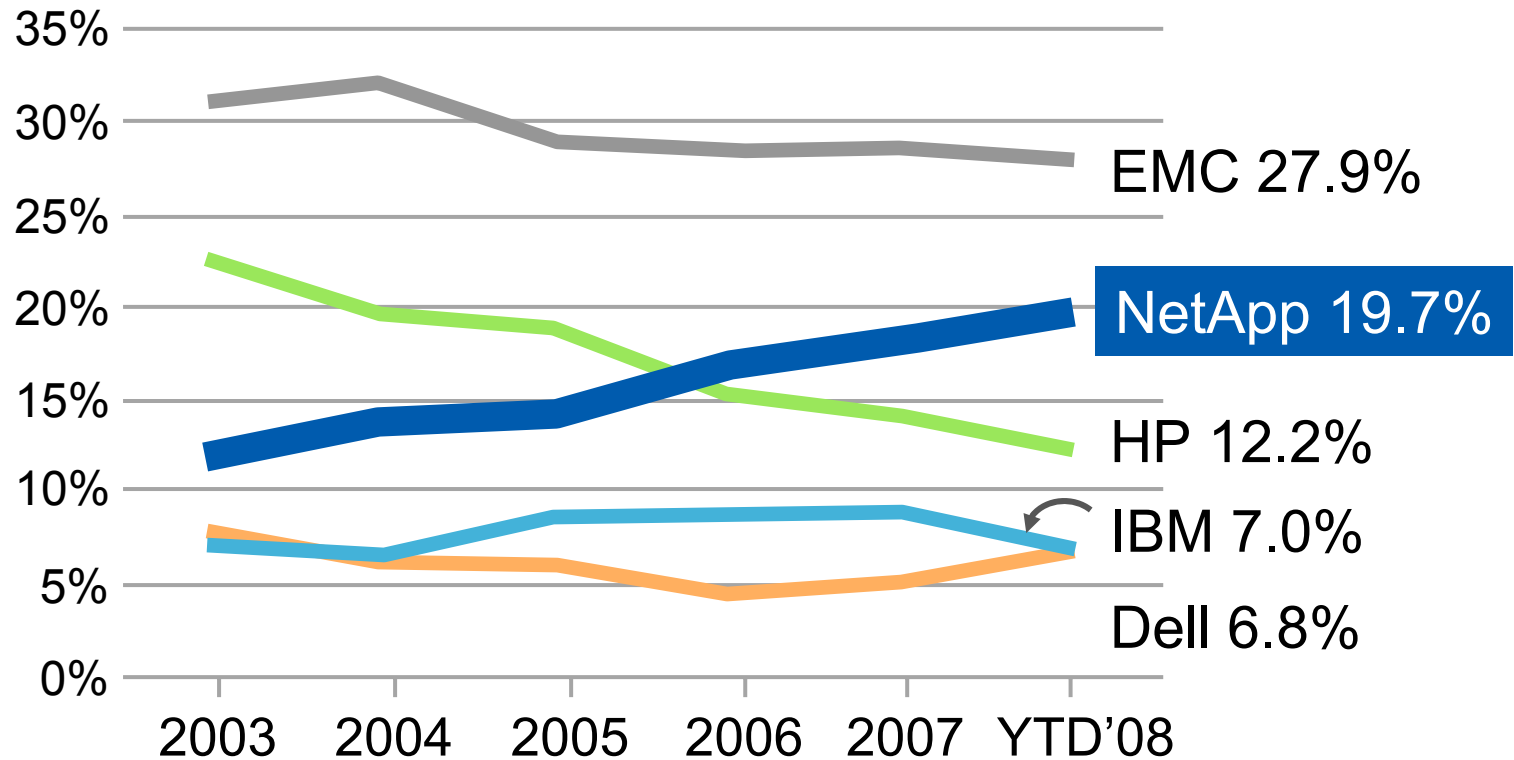


- Širok raspon proizvoda
- Profesionalni servisi
- Podrška po cijelom svijetu
- Partnerstvo s vodećima
- 135+ ureda po svijetu
- ~8000 zaposlenika
- Fortune 1000, S&P 500, NASDAQ 100

* Non-GAAP Revenue

Udio na tržištu po instaliranom kapacitetu

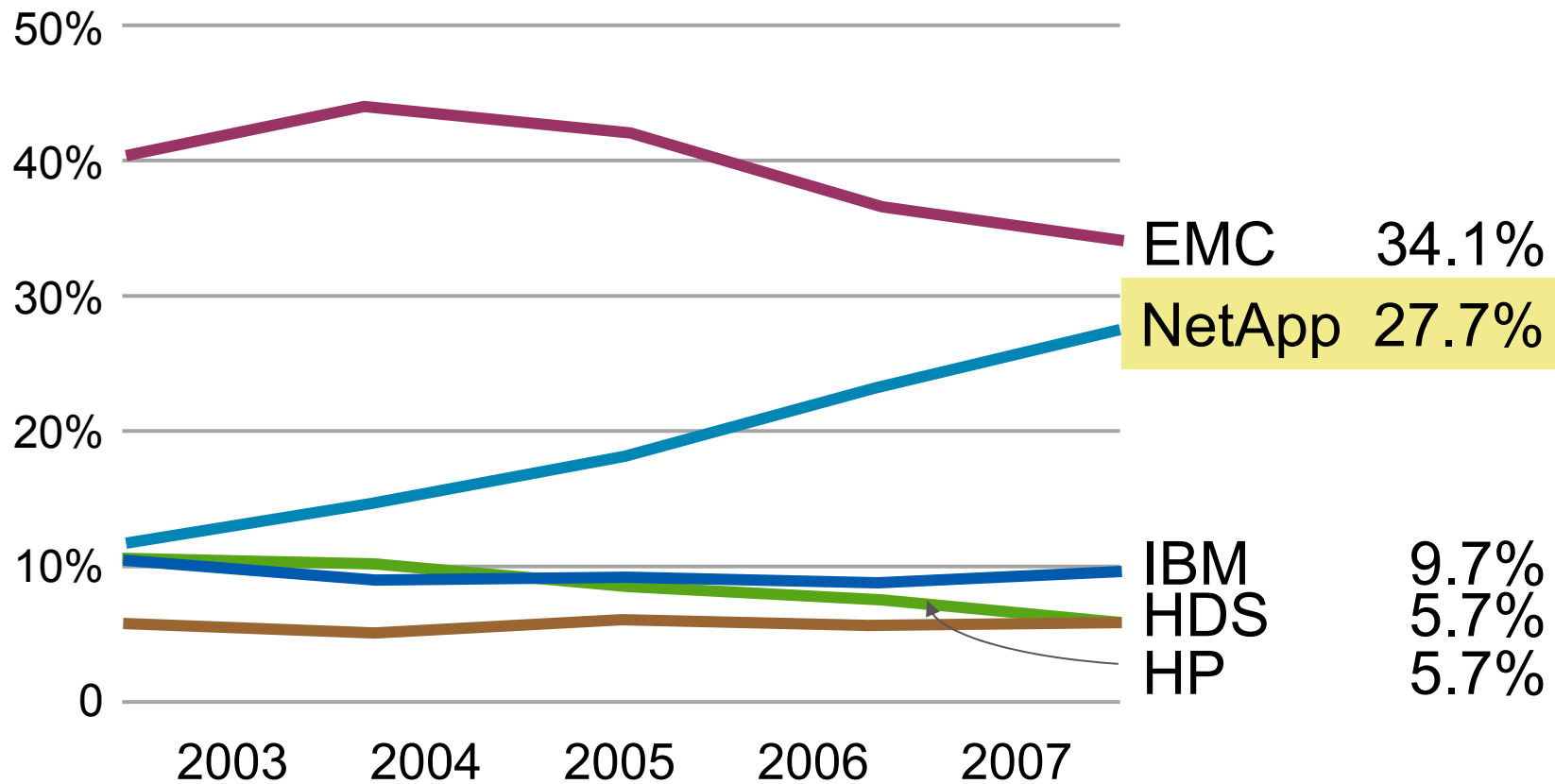
Preko 2000 TB se proizvede svaki dan



Combined NFS, CIFS, FC SAN and iSCSI SAN markets

Source: IDC, June 2008

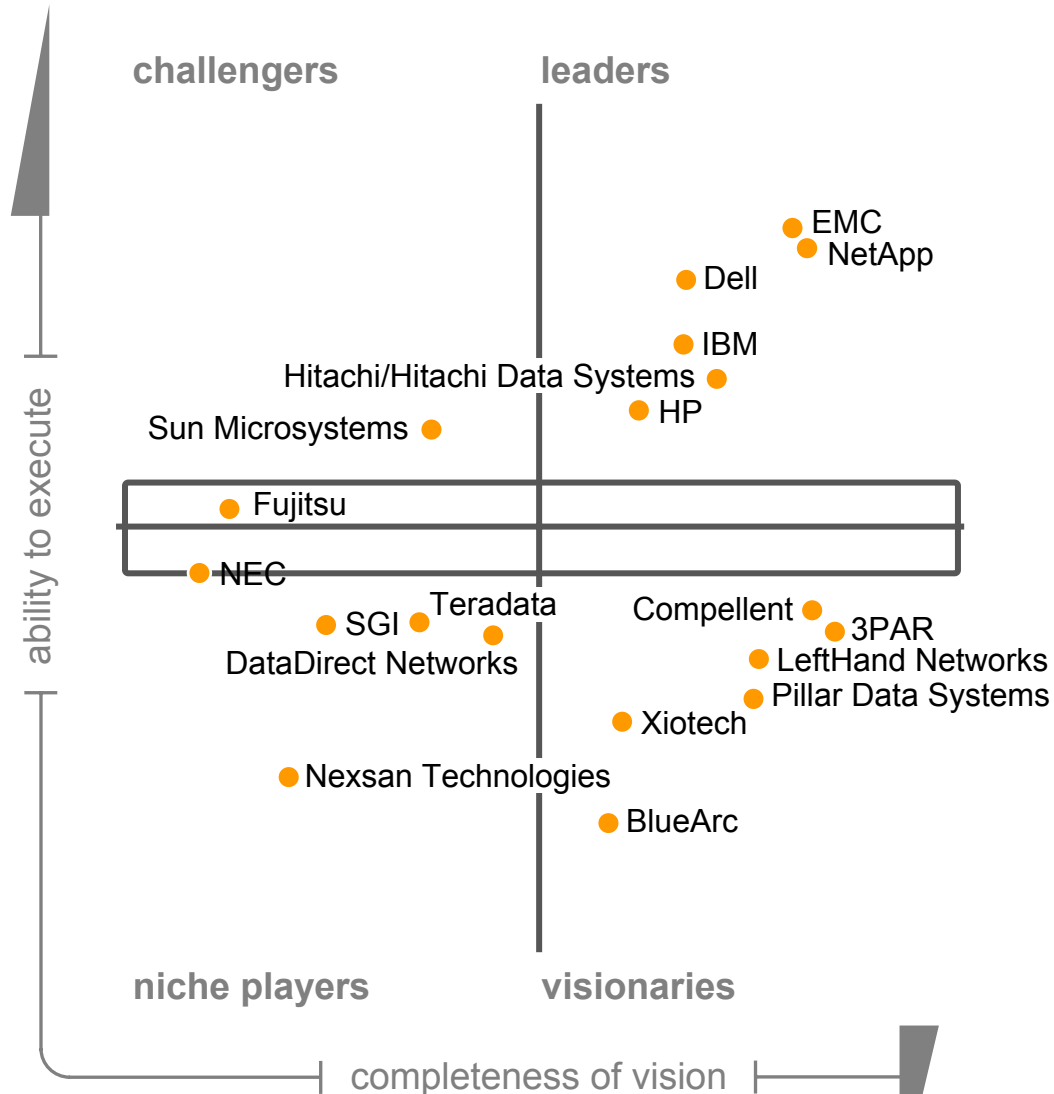
Udio na tržištu – software za replikaciju



Source: IDC Quarterly Storage Software Tracker, Q4 '07

Gartnerov magični kvadrant

Diskovna polja srednjeg kapaciteta



Source: Gartner, Inc. Nov 2008
Stanley Zaffos, Roger W. Cox,
Pushan Rinnen

Magic Quadrant for Midrange Enterprise Disk Arrays

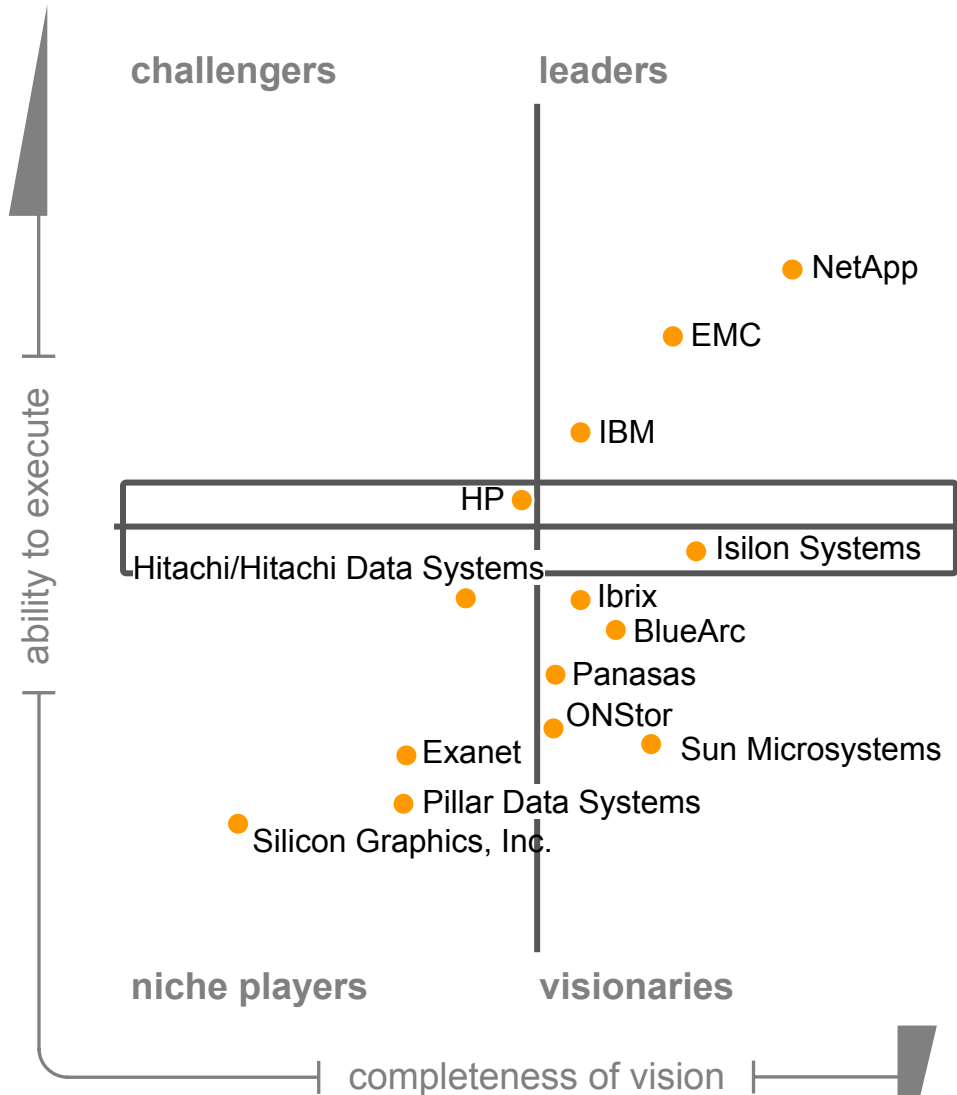
This Magic Quadrant was published as part of a larger research note and should be evaluated in the context of the entire report. The report is available upon request from NetApp.

The Magic Quadrant is copyrighted Nov 12, 2008 by Gartner, Inc. and is reused with permission. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

As of October 2008



Gartnerov magični kvadrant Srednja i High-End NAS rješenja



Source: Gartner, Inc. Feb 2009
Pushan Rinnen, Robert E. Passmore,
Roger W. Cox

Magic Quadrant for Midrange and High-End NAS Solutions

This Magic Quadrant was published as part of a larger research note and should be evaluated in the context of the entire report. The report is available upon request from NetApp.

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As of February 2009



NetApp™

Na prvom ili drugom mjestu

Tehnološka tržišta

- NAS
- iSCSI
- Replikacijski software

Vertikalna tržišta

- Federalne institucije SADa
- Industrija nafte i plina
- Video animacija i post-produkcija
- Razvoj softwera/viskokosofisticirane proizvodnje

Regionalna tržišta(FAS)

- Njemačka
- SAD
- Velika Britanija
- Nizozemska
- Australija
- Indija

Poslodavac i zaposlenici

FORTUNE
100 BEST
COMPANIES
TO WORK FOR
2008
2007
2006
2005
2004
2003

6 godina zaredom među najpoželjnijim poslodavcima





NetApp-ovi proizvodi



Pregled rješenja

Pristup

- Unificirana arhitektura
- Partnerstvo sa proizvođačima softwarea

Rješenja

- Data ONTAP
- FAS serija
- V serija
- VTL
- SNAP manageri

Osnova za fleksibilnost



Unificirana arhitektura

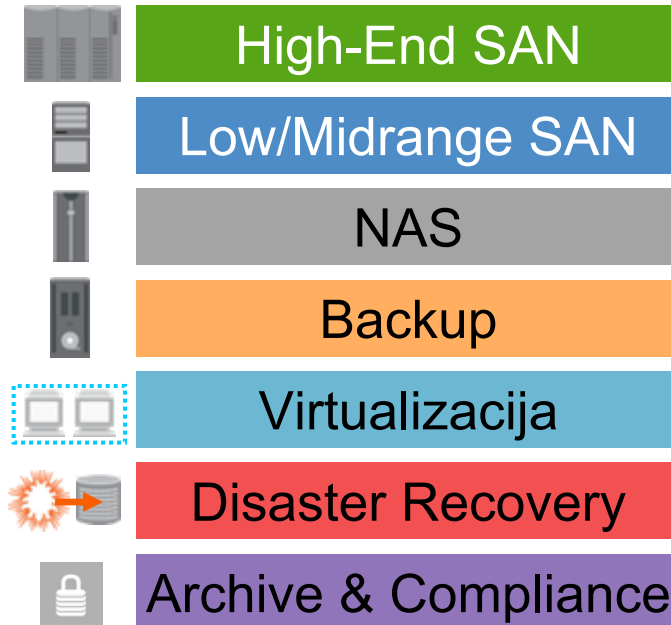
- Najšira unificirana platforma
- High-performance SAN i NAS
- Jedna, skalabilna arhitektura
- Podrška integraciji s ostalim proizvođačima

Sada možete

- Izabrati optimalnu pohranu podataka za svoje aplikacije
- Osigurati budućnost svojoj okolini

Prednosti unificiranog rješenja

Klasičan pristup



Različiti hardware
Različiti software
Različiti ljudi
Različiti procesi

NetApp®

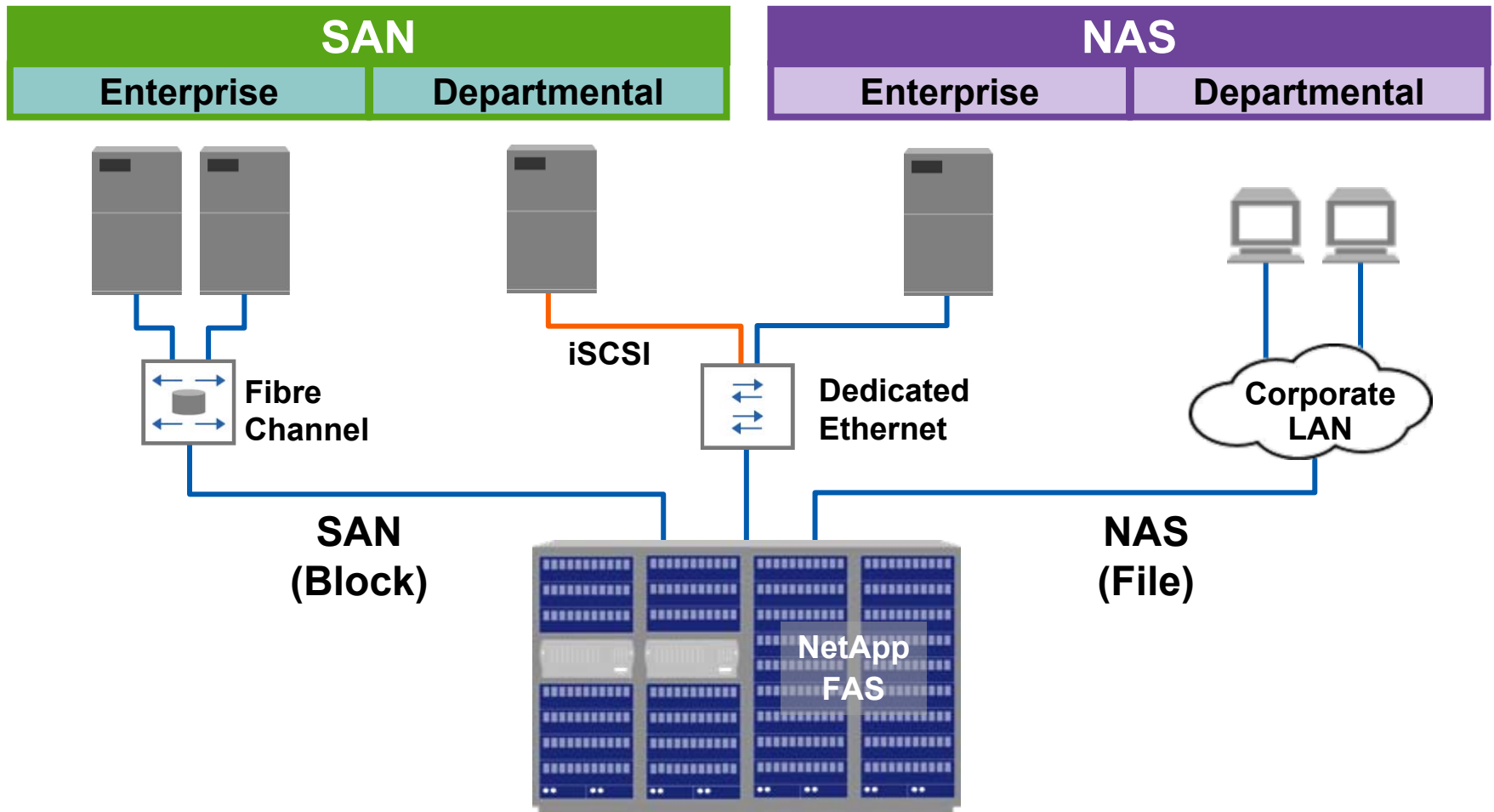


FAS serija
Data ONTAP®

Fleksibilnost
Efikasnost
Agilnost
Vrijednost

Isti hardware
Isti software
Isti ljudi
Isti procesi

All-in-one: IPSAN/FCSAN/NAS



Partnerstvo za uspjeh

Baze podataka & Poslovne aplikacije



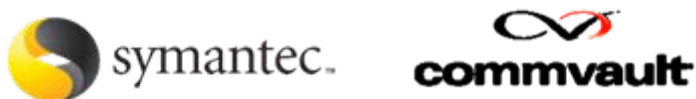
Poruke & Kolaboracija



Konsolidacija & Virtualizacija



Disk-to-Disk Backup



- Duboka integracija za maksimiziranje rezultata
- Praksa i metodologije za vrhunske performanse
- Dizajn i implementacijski servisi za što brže pokretanje sustava
- Zajednička podrška za brzo rješavanje problema

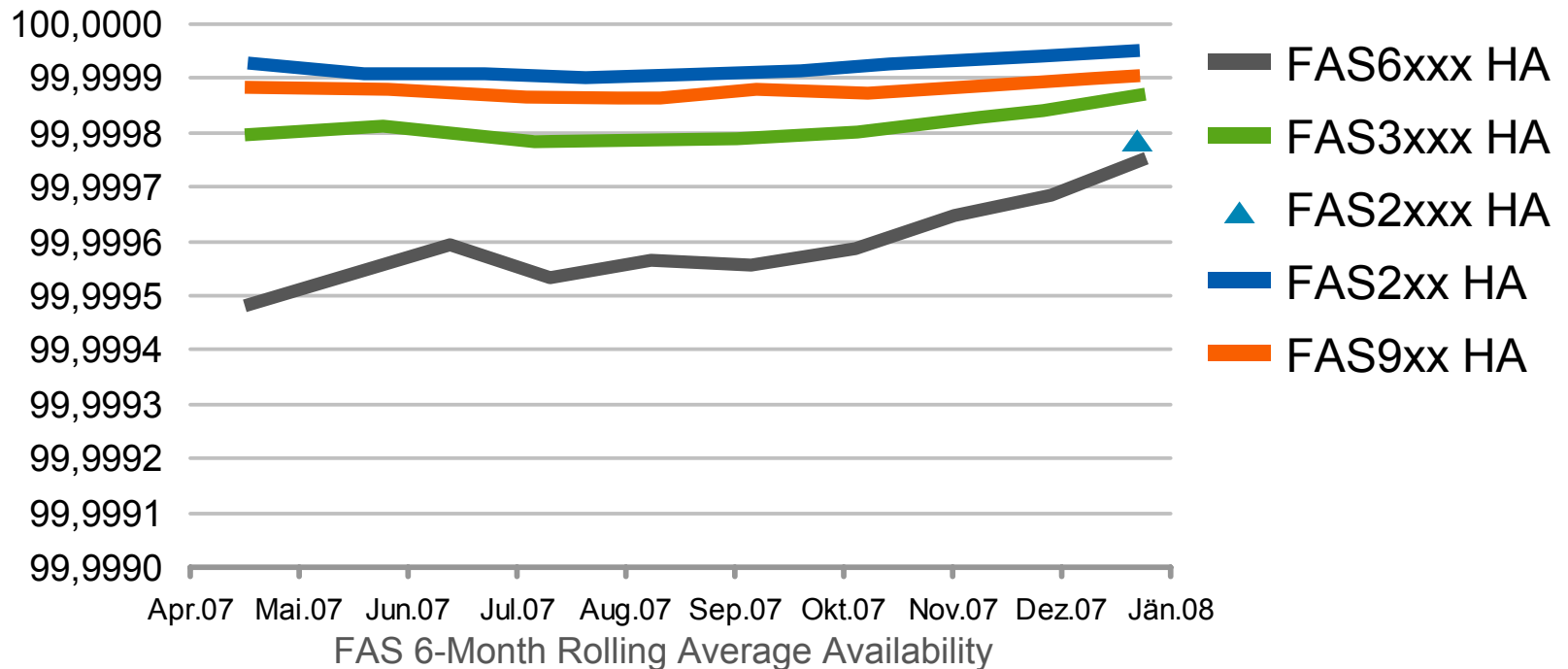
Dostupnost bez kompromisa

Prelaze 99,9999%

- “Autosupport” podaci sa 15,000+ korisničkih sustava
- IDC odobreno

Six 9s

Five 9s



IDC White Paper: FAS Storage Systems: Laying the Foundation for Application Availability



Tehnologije



Pregled tehnologija

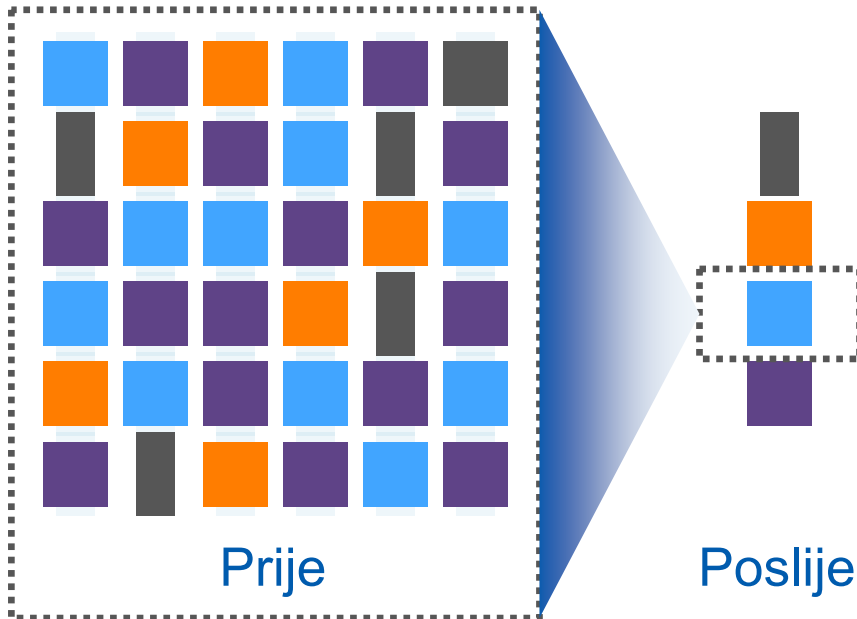
Tehnologije za optimizaciju storagea

- Deduplikacija
- FlexClone
- Thin provisioning / FlexVol

Tehnologije za brzi backup i recovery

- Snapshot tehnologija
- NearStore VTL
- SnapVault
- Snap Manager Suite

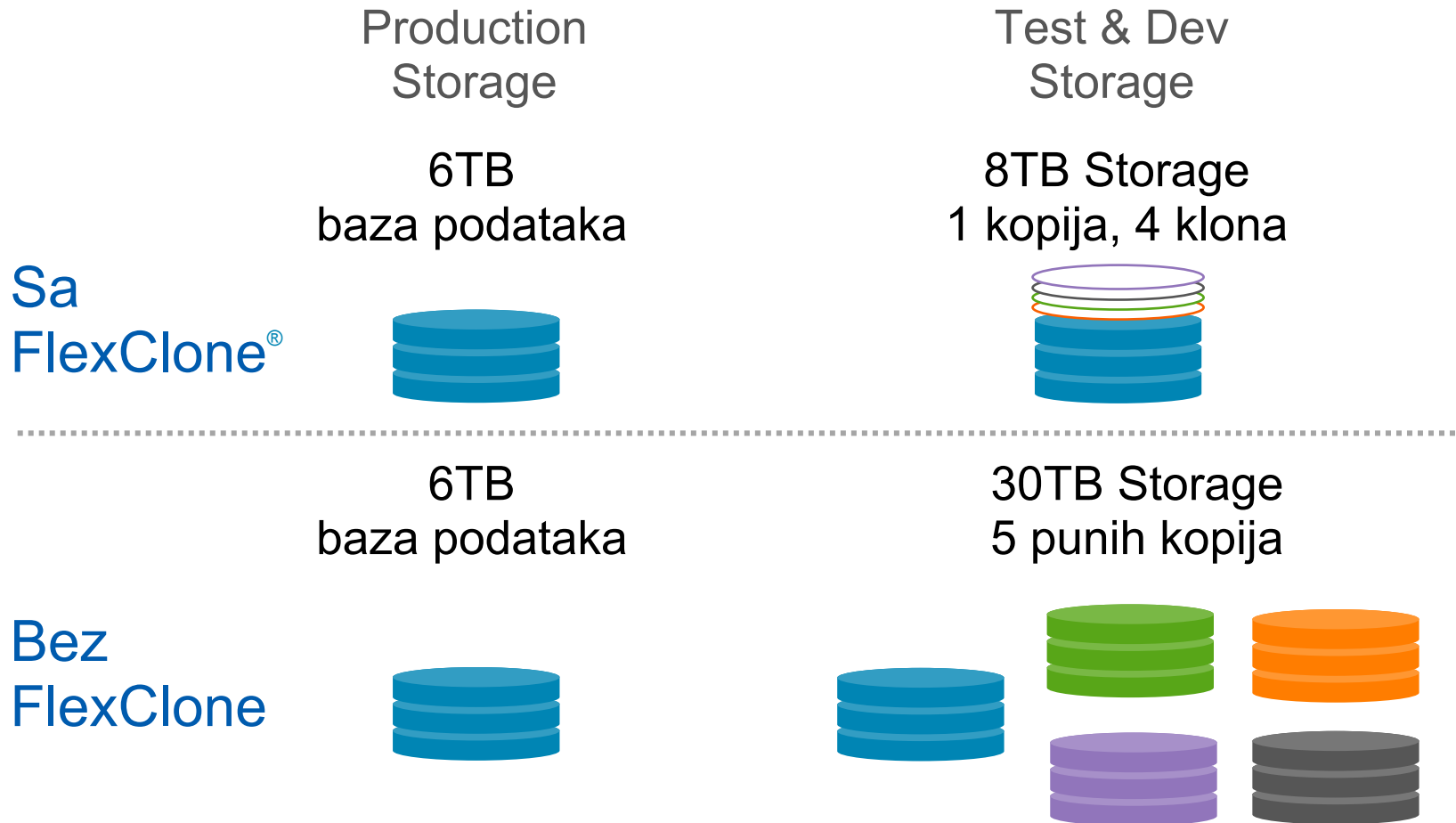
Deduplikacija



Deduplikacija

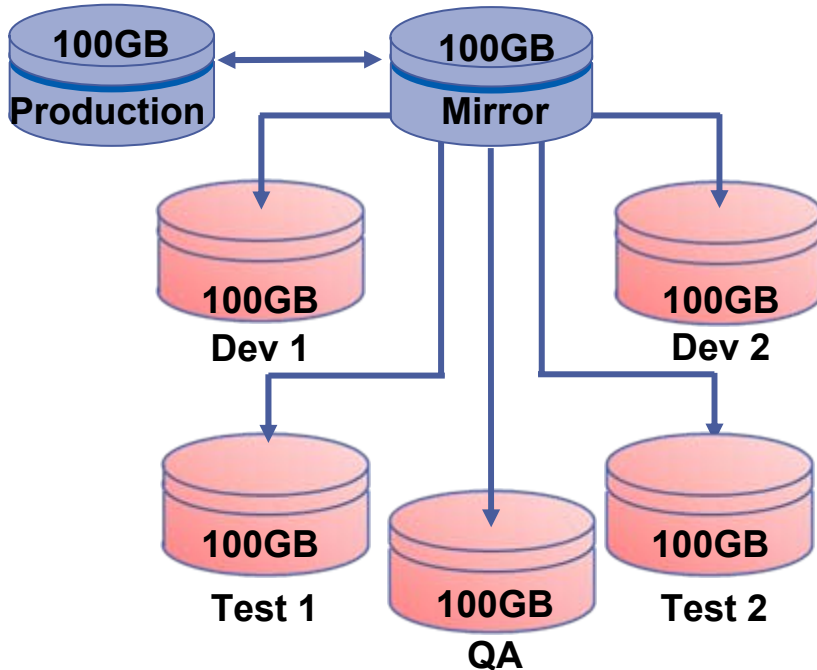
- 20:1 smanjenje na sekundarnoj pohrani
- 30-50% smanjenja na primarnoj pohrani
- Funkcija, ne platforma

Kloniranje: Zero-Space virtualne kopije



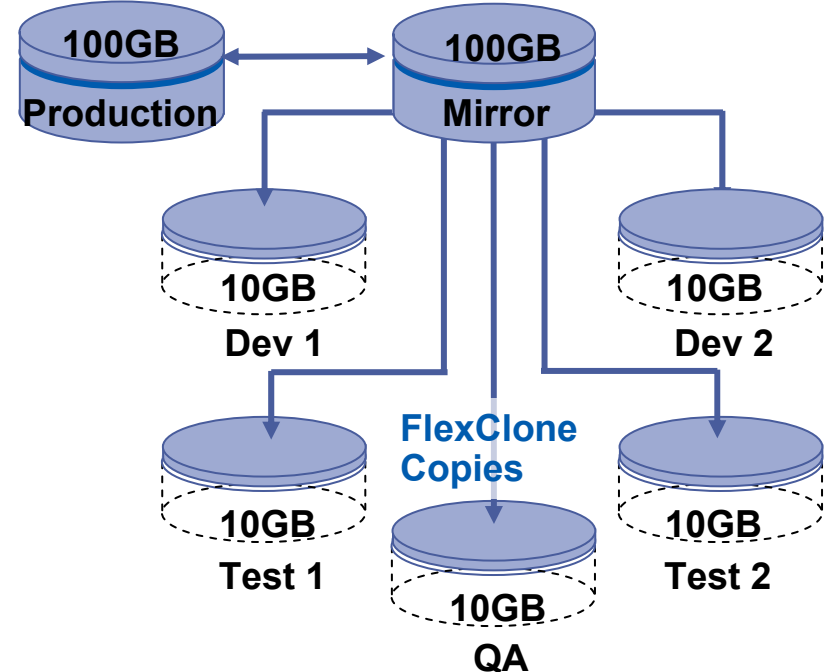
Ghost baze za razvoj i testiranje

Tradicionalno



500GB za kopije, dugotrajan proces kloniranja

NetAppovo rješenje



50GB za kopije, trenutano kopiranje

“We can replicate the production environment in minutes, put it where the application test and development groups can test it, and then get rid of that copy and recreate it within seconds. That process used to take days.”



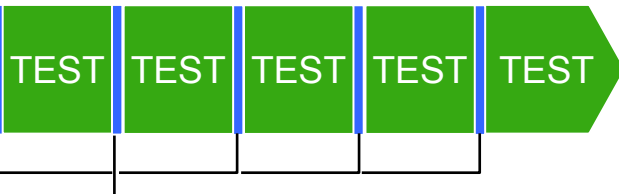
Ubrzan razvoj i testiranje

Vrijeme

Stari način



The New Way



FlexClone® kopije

Brzina

- Kopije baza u minutama

Kvaliteta

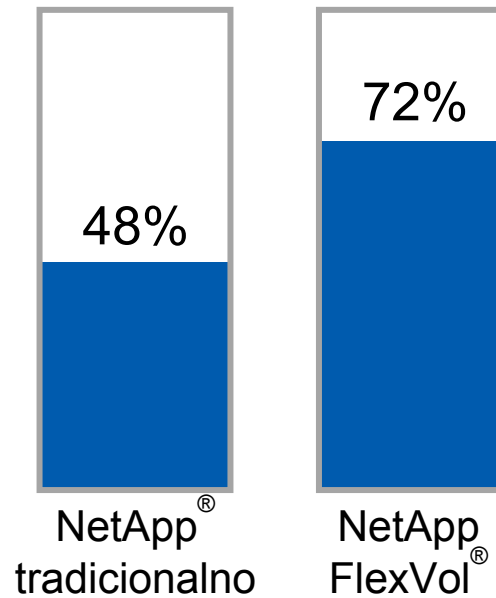
- Više kopija za više ljudi
- Više vremena za testiranje

“With FlexClone we’ve reduced our cloning time from a week to less than four hours. . .we’ve adopted a parallel development approach with multiple activities all taking place at the same time. . .”



Povećana iskoristivost s FlexVol-om

Oracle Corp. Iskorištenost storagea

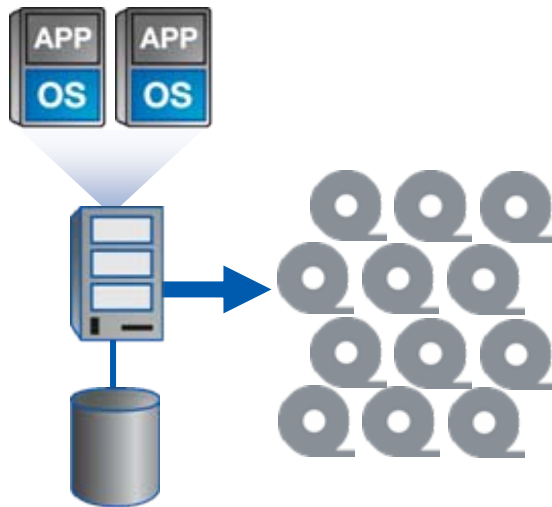


Source: SPC-1 benchmarks January 29, 2008; Oracle Corporation.

Trenutni, prostorno efikasni backup

Problemi

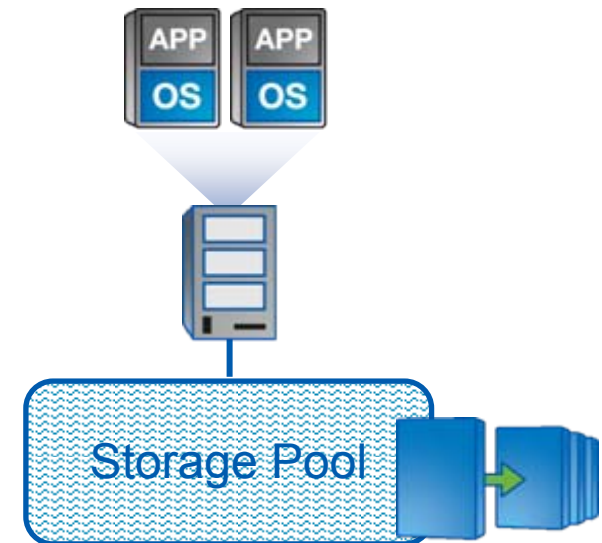
- Traka je spora
- Backup dugo traje
- Recovery je spor
- Recovery points su ograničene



Tradicionalni backup nije praktičan

NetApp Snapshot™ rješenje

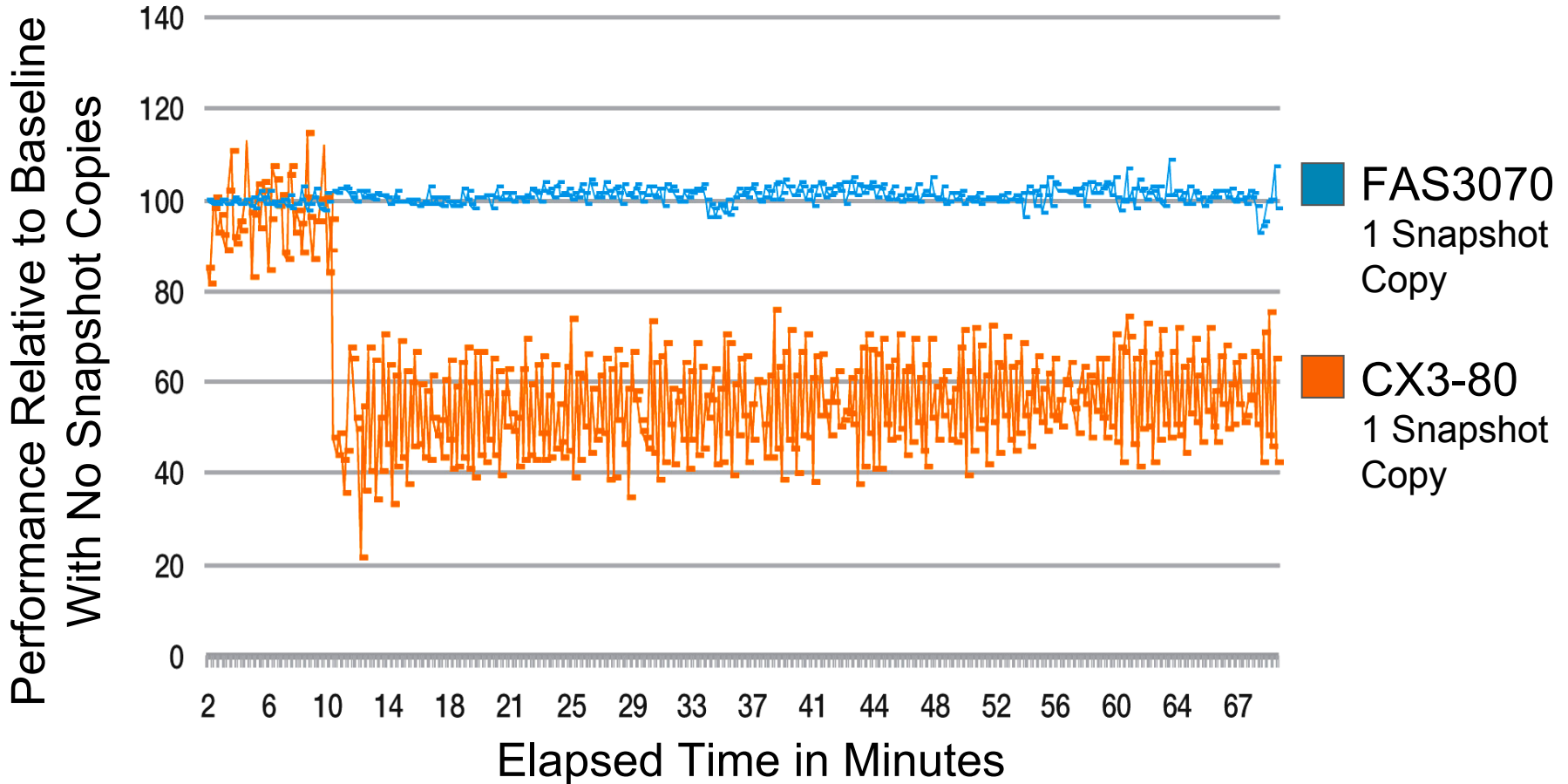
- Backups ugrađen u uređaj
- Trenutni backup i recovery
- Nema dodatno izgubljenog prostora
- Česti



Brz, jednostavan i pristupačan

Performanse Snapshota

Snapshot™ pri kreiranju jednog snapshota



Source: VeriTest: NetApp FAS3070 and EMC CLARiiON CX3-80
Comparison of Performance and Usability, Nov 2006

NetApp Backup i Recovery rješenja

Rješenja

Ubrzanje
pohrane



NearStore® VTL

Zaštita udaljenih
lokacija



SnapVault®

Automatizirana
rješenja



SnapManager® Suite

- Brži, pouzdaniji recovery s pouzdanijih backupa
 - Do 8TB/hr VTL performansi
- Deseci udaljenih lokacija mogu biti zaštićeni u minutama
 - 88% brži recovery & eliminiranje traka s udaljenih lokacija
- Zaštita lokacija bez potrebe za administratorom
 - Upravljanje je centralizirano

Smanjenje okvira za backupiranje



96 sati na 15-31 minute



Agilent Technologies



16 sati na 10-15 minute

Infosys[®]



12 sati na 10 minute

ARUP



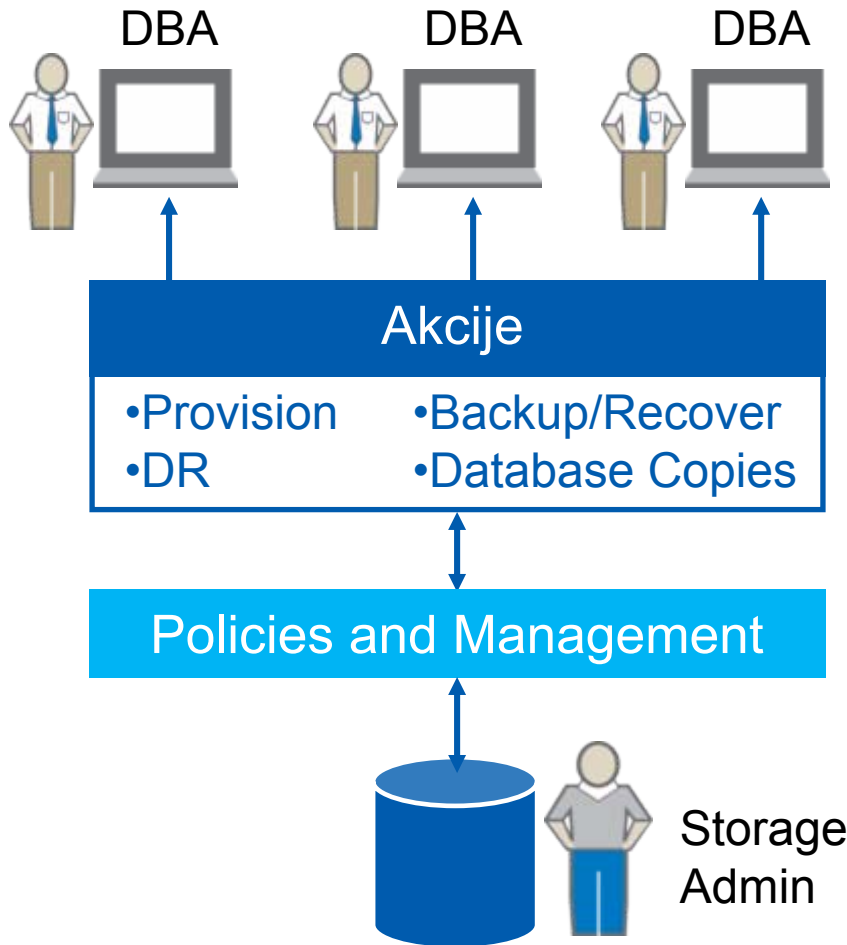
36 sati na 20 minute

ASU[®]
ARIZONA STATE
UNIVERSITY



8-10 sati na gotovo 0

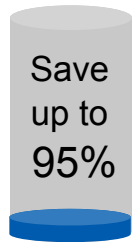
SnapManager: Alati za DBAove



- GUI za upravljanje
- Kloniranje u minutama
- Backup i restore u sekundama
- Integriranje s vodećim bazama
 - Oracle®, SQL Server®

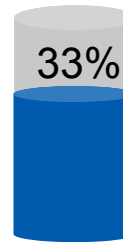
“We use SnapManager® to quickly restore lost or corrupted data. . . With daily tape backups, our recovery point was an average of 12 hours. Now it’s minutes, or even seconds.”

Smanjenje troškova ITa



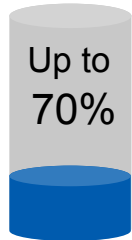
Deduplication

Saves up to 95% for full backups;
25% to 55% for most data sets.



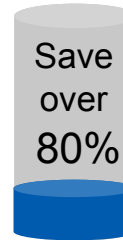
Thin Provisioning (FlexVol®)

20% to 33% typical savings.



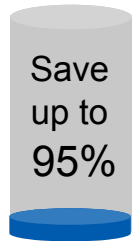
Double Parity RAID (RAID-DP™)

Saves up to 70% versus
mirrored data or RAID 10.



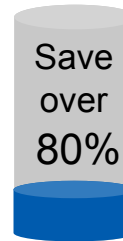
Snapshot™ Copies

NetApp Snapshots do not
require “copy” space, serve
local backup purposes,
delivers savings of up to 80%.



Thin Replication

Disk-to-disk data protection®
saves up to 95%.



Writable Snapshot (FlexClone®) Copies

Savings equal size of the
original data set minus blocks
subsequently changed in clone.



NetApp i Oracle

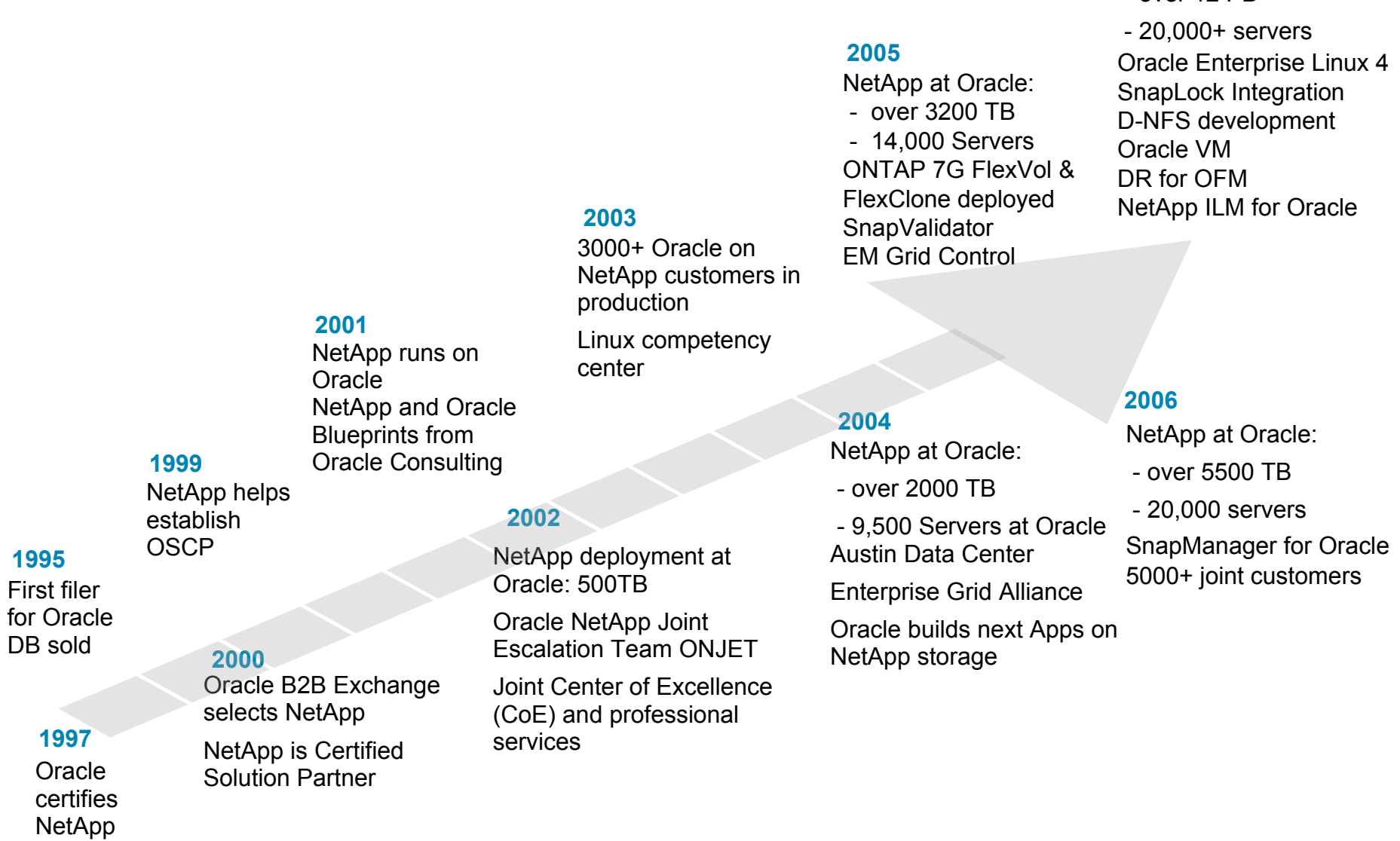


14 godina inovacija
fokusiranih na smanjenje
troškova infrastrukture i
povećanje produktivnosti
ITa

ORACLE®



Partnerstvo NetAppa i Oracla



NetApp u Oraclu

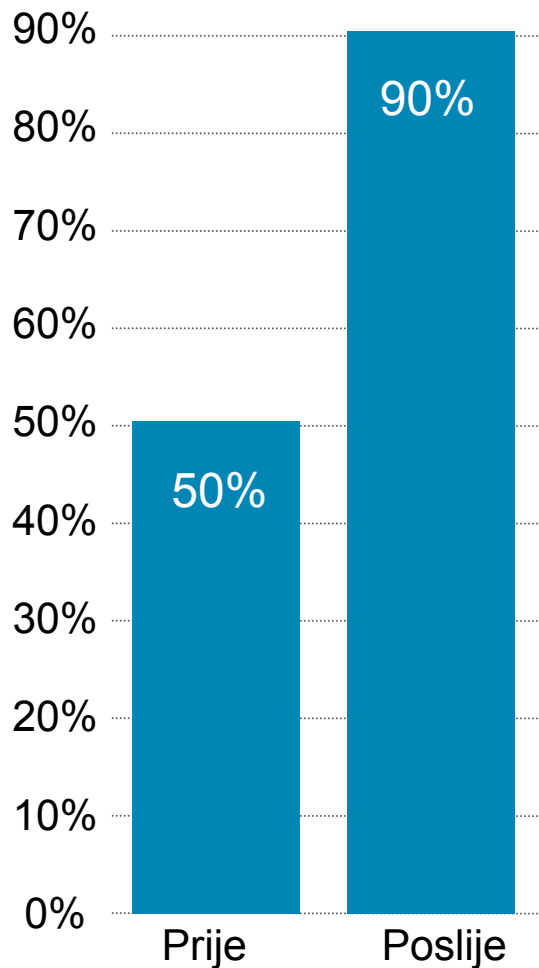


- 12 000 TB produkcijskog storagea instaliranog globalno
 - Smanjenje troškova upravljanja za 50%
 - Iskorištenost 90%
- Oracle Austin Data Center je najveća instalacija NetAppa
 - Grid arhitektura sa 20,000+ servera
 - Preko 500 mission-critical aplikacija za klijente
 - Primarni data centar za 70,000+ Oracle zaposlenika



Oracle na NetAppu

Iskorištenost
storage resursa



- Danas: iskorištenost 90%
- Po svim poslovnim granama:
 - Globalni IT
 - Oracle on Demand
 - Oracle University
 - Razvoj

Najbolji storage za virtualizaciju

Solution Highlights

Efikasnost



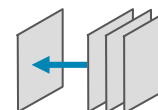
Deduplikacija
Thin provisioning

Fleksibilnost



SnapManager®
za Virtual Infrastructure

Trenutačni backup/
restore



Snapshot™
SnapRestore®

- Smanjuje upotrebu prostora za 50% ili više
 - Eliminira redundantne VM podatke deduplikacijom i povećava isoristivost storagea thin provisioningom
- Backup i restore virtualnih mašina u sekundama
 - Backup rješenje implementirano direktno u storage
- Trenutačna dodjela prostora virtualnim mašinama
 - Administrator sve radi iz svoje konzole za upravljanje virtualnom infrastrukturom



Rješenja za virtualnu infrastrukturu

50% do 90%
manje prostora

38% manji
TCO

Ubrzana
dodjela prostora
za 40%

- Dodjela prostora jednako brza kao kreiranje novih virtualnih mašina
- Trenutni backup virtualnih mašina
- Optimizacija deduplikacijom i thin provisioningom
- Uštede od 50% na snazi, hlađenju i prostoru

Virtualizacija i NetApp - pogodak

Virtualizacija

- Poboljšava:
 - Cjena
 - Upravljivost
 - Odziv sustava
 - iskoristivost
-

- Izazovi:
 - Backup
 - Disaster recovery
 - Oživljavanje kopija
-

NetApp®

- Ubrzava deployment
 - 90% manje prostora
 - Upravljivost
-

- Rješava probleme:
 - Backup
 - Disaster recovery
 - Oživljavanje kopija
-



Reference



NetApp™

BCC
services

Ministarstvo pravosuđa
suradnjom do uspjeha



HRT



Grad Varaždin



Virtualizacija na British Telecomu



BT is one of the world's leading providers of communications solutions and services operating in 170 countries.

Povećana efikasnost:

- 3103 fizička servera smanjena na 134
- Iskoristivost storagea sa 25% na 70%
- Energetske uštede od 2MW (\$2.25M po godini)
- Ušteda na prostoru za 660 rackova
- Mrežne uštede: 8500 portova
- ROI u 8 mjeseci

Increased capabilities:

- Dodavanje servera sa 6 tjedana na 1 dan
- Backup sa 96 sati na 31 minutu
- Implementiran “kapacitet po potrebi” sustav



Siemens

SIEMENS

Siemens is a Global 100 major manufacturing company with over 400,000 employees worldwide and revenues of over €72.4B

- 6.5+PB
- Širok raspon aplikacija
 - Oracle Apps, SAP, File Services,
 - 200,000 Exchange accounts
 - Napredni R&D

- Miješani protokoli

Dobici:

- Smanjeni operativni troškovi
- Povećana produktivnost ljudi
- Brži odziv
- Veća fleksibilnost i skalabilnost



NetApp u NetApp

Goals:

Avoid \$5M data center expansion, increase storage utilization, lower TCO and improve reliability

- 60% povećanje iskoristivosti storage prostora
- Smanjen broj storage sustava sa 50 na 10
- Izbrisano >27.28TB dupliciranih podataka
- 80% smanjenje potrošnje energije
- Storage smanjen sa 25 na 6 rackova



Thank You!