



# Oracle Enterprise Linux

- **Sergej Rožman**, univ.dipl.inž.; Abakus plus d.o.o.
- Zadnja verzija z morebitnimi spremembami je dosegljiva na strani:  
<http://www.abakus.si/>





# Linux



ANDROID



slamd64

ubuntu



debian



fedora





# Oracle Enterprise Linux

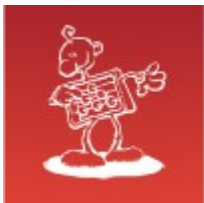
**Sergej Rožman, univ.dipl.inž.**

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Mestna občina Ljubljana





# Abakus plus d.o.o.

ORACLE® Gold Partner

## Zgodovina

- od 1992, ~20 zaposlenih

## Lastne aplikacije:

- posebne (letalski prometni sistem, distribucija časopisov)
- **ARBITER – orodje za spremljanje revizijskih sledi**

## Storitve:

- DBA, vzdrževanje operacijskih sistemov, programiranje (MediaWiki, Oracle)
- omrežja (omr. storitve, VPN, QoS, varnost)
- odportokodne rešitve, nadzorni sistemi (nagios, OCS, wiki)

## Strojna oprema:

- strežniki, SAN diskovni sistemi

## Okolje:

- od 1995 GNU/linux **(15-let izkušenj !)**
- prenos Oracle na GNU/linux: RDBMS 7.1.5 in forms 3.0 **(pred Oraclom !)**
- **20 let izkušenj s sistemi za visoko razpoložljivost !**



Mestna občina Ljubljana





Zakaj mi uporabljamo linux že od 1995

Linux je zanesljiv, varen in vsestransko uporaben

Primer dveh naših strežnikov (dne 15. 9. 2010)

# uptime

09:07:23 up **1505 days**, 13:35

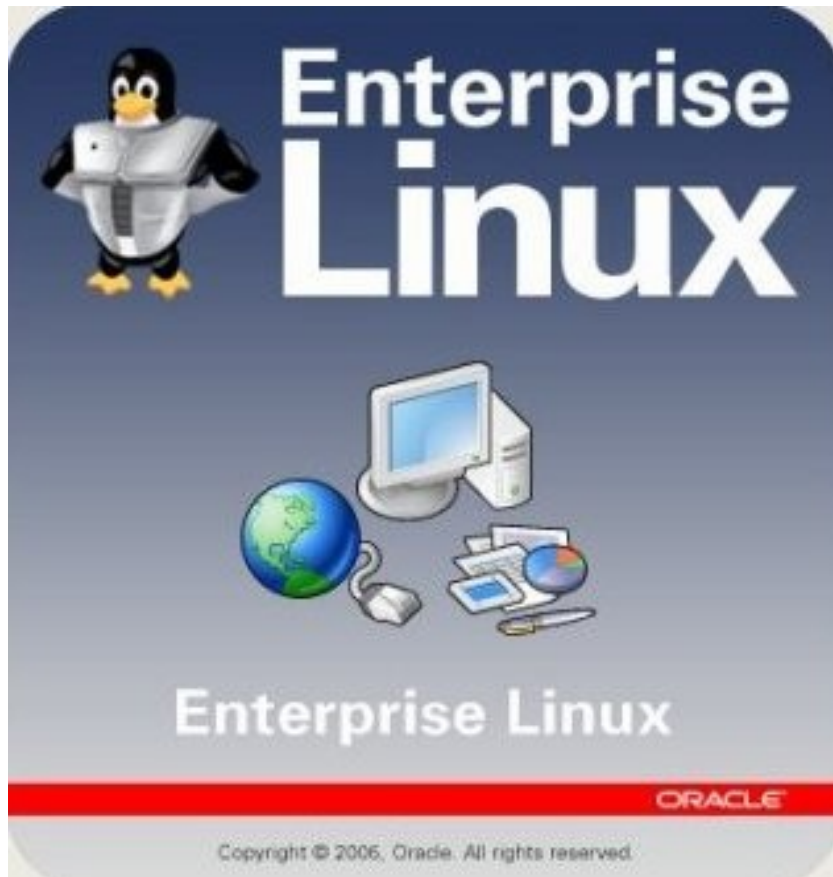
# uptime

09:08:25 up **1590 days**, 12:35





# Oracle ali RedHat



•  
•



Red Hat Enterprise Linux 5





# Oracle ali RedHat

Oracle enterprise linux se hkrati predstavlja kot  
**Oracle** in kot **RedHat**

```
# ls /etc/*-release
```

```
/etc/enterprise-release /etc/redhat-release
```

```
# cat /etc/enterprise-release
```

```
Enterprise Linux Enterprise Linux Server release 5.4 (Carthage)
```

```
# cat /etc/redhat-release
```

```
Red Hat Enterprise Linux Server release 5.4 (Tikanga)
```



# Oracle in linux

## Mejniki odnosa Oracla do linuxa:

- popolno ignoriranje in zanikanje
- začetna medla podpora linuxu na splošno
- podpora izključno komercialnim linuxom
- osvojitvev linuxa kot primarne platforme
- prisvajanje linuxa (in še marsičesa)







# Prisvajanje linuxa in druge OK

MySQL  
ORACLE





# Prisvajanje linuxa in druge OK



ORACLE®



**Abakus**

As na disku.



# Prisvajanje linuxa in druge OK



ORACLE®



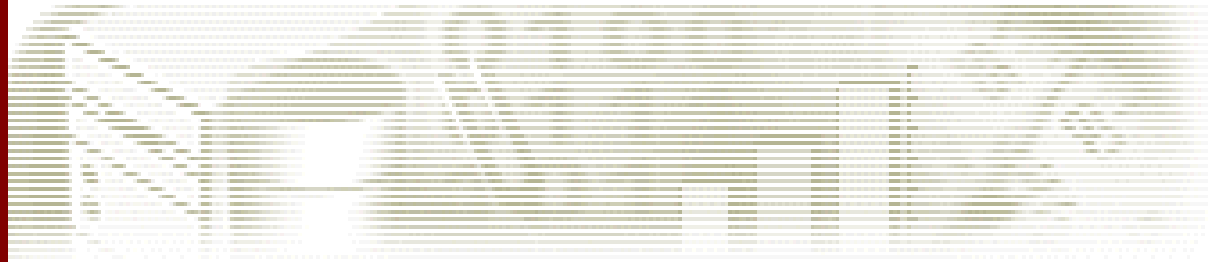
*Abakus*

As na disku.



# Prisvajanje linuxa in druge OK

Oracle HTTP Server

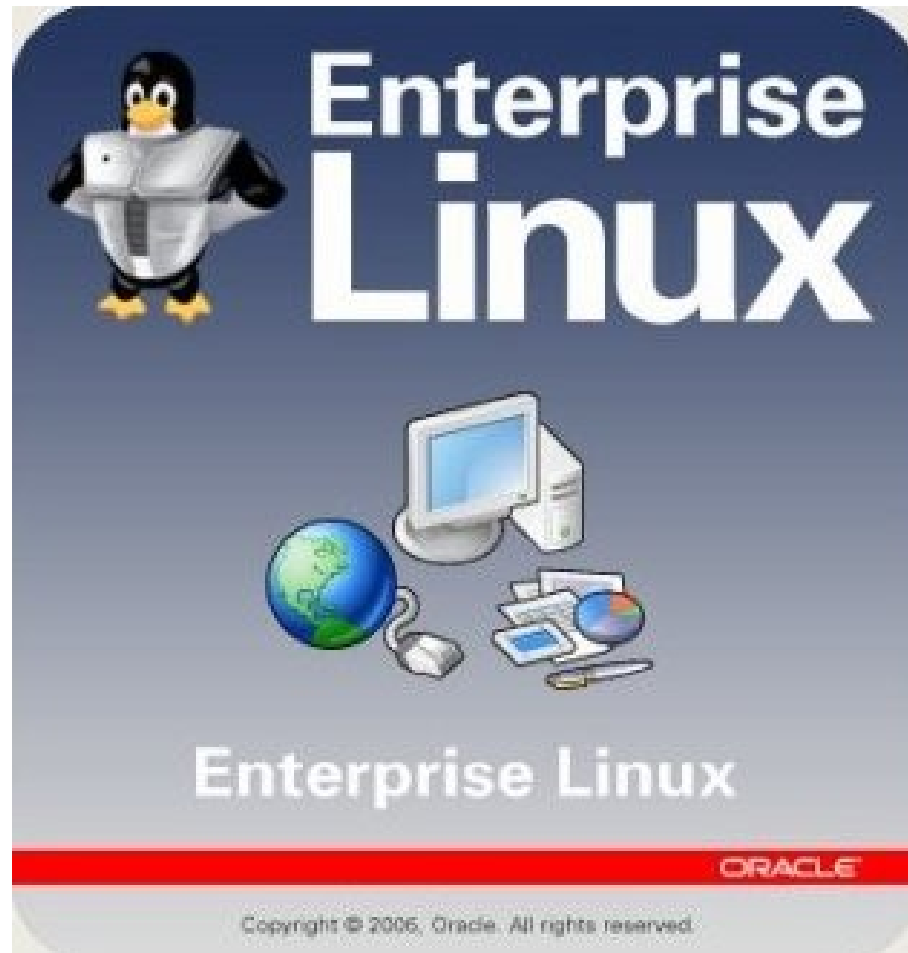


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# Prisvajanje linuxa in druge OK



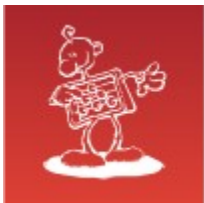


# Oracle Linux

## OS-Registered Software

<a href="#">Previous 10</a> 281-290 of 1020 <a href="#">Next 10</a>			
Product	Vendor	Location	Installation Time
<a href="#">gnome-volume-manager 2.15.0-5.el5</a>	Oracle USA	N/A	25-Aug-2010 14:06:03
<a href="#">gnupg 1.4.5-14</a>	Oracle USA	N/A	25-Aug-2010 13:51:27
<a href="#">gnutls 1.4.1-3.el5_3.5</a>	Oracle USA	N/A	25-Aug-2010 13:46:15
<a href="#">gnutls-devel 1.4.1-3.el5_3.5</a>	Oracle USA	N/A	25-Aug-2010 13:48:52
<a href="#">gok 1.2.0-2.el5</a>	Oracle USA	N/A	25-Aug-2010 14:05:40
<a href="#">gphoto2 2.2.0-3.el5</a>	Oracle USA	N/A	25-Aug-2010 13:51:26
<a href="#">gpm 1.20.1-74.1.0.1</a>	Oracle USA	N/A	25-Aug-2010 13:47:36
<a href="#">gpm-devel 1.20.1-74.1.0.1</a>	Oracle USA	N/A	25-Aug-2010 13:49:19
<a href="#">grep 2.5.1-55.el5</a>	Oracle USA	N/A	25-Aug-2010 13:46:16
<a href="#">groff 1.18.1.1-11.1</a>	Oracle USA	N/A	25-Aug-2010 13:47:44

Related Link [Search OS-Registered Software Installed on Hosts](#)



# Bojazen







# Prva žrtev?

ORACLE®



opensolaris™





# Kaj je Oracle Enterprise Linux?

» Oracle Enterprise Linux is an enterprise-class Linux distribution supported by Oracle.

According to the project's web site, „Oracle starts with Red Hat Linux, removes Red Hat trademarks, and then adds Linux bug fixes.“

Oracle Enterprise Linux is, and intends to remain, fully compatible with Red Hat Enterprise Linux. «

vir: <http://distrowatch.com/>





# Podprte platforme

## Platforme:

- x86 32 bit
- x86 64 bit
- ia64 (Intel itanium)



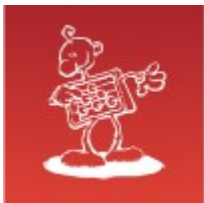


# Zakaj

## Zakaj bi uporabili Oracle Enterprise Linux

- zaradi uporabe drugih Oracle produktov
- nižja cena vzdrževanja
- dodatne funkcionalnosti





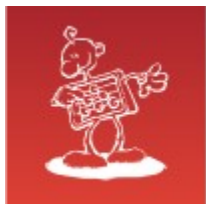
Cena

*Oracle Enterprise Linux*

je

**BREZPLAČEN !**





# »Licenciranje«

	<b>nakup</b>	<b>naročnina</b>	<b>osnovno vzdrževanje</b>	<b>napredno vzdrževanje</b>
<b>OEL</b> (do dva procesorja)	<b>0</b>	<b>84</b>	<b>356</b>	<b>994</b>
<b>OEL</b> (neomejeno)	<b>0</b>	<b>84</b>	<b>853</b>	<b>1.631</b>
<b>RHEL</b> (do dva procesorja)	<b>?</b>	<b>279</b>	<b>639</b>	<b>1.039</b>
<b>RHEL</b> (neomejeno)	<b>?</b>	<b>/</b>	<b>1.199</b>	<b>1.999</b>



# Vzdrževanje

- dostop do izboljšav, popravkov in varnostnih opozoril
- 24x7 dostop do Oracle Unbreakable Linux Network
- 24x7 dostop do portala My Oracle Support
- spletna prijava napak in težav
- pravica uporabe Oracle Management Pack
- pravica uporabe Oracle Clusterware
- prenos novih popravkov na obstoječe okolje



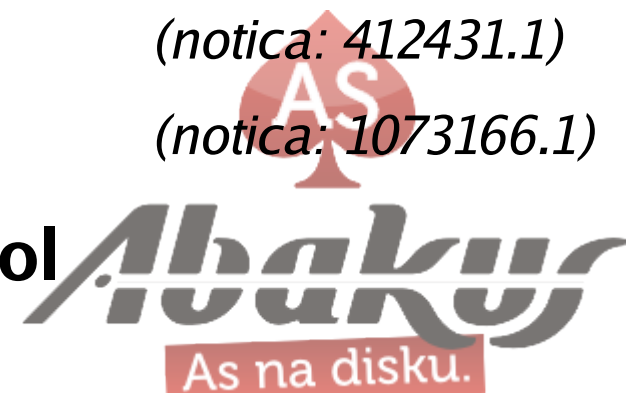




# Oracle Management Pack for Linux

## Zahteve

- 3 – 8 GB RAM
- >50 GB diskovnega prostora
- java – obvezno verzija 1.6–18 *(notica: 1063587.1)*
- Oracle Weblogic – obvezno verzija 10.3.2 *(notica: 1063762.1)*
  - + popravek WDJ7 *(notica: 1072763.1)*
- Oracle Clusterware (opciono)
- Oracle zbirka (EE – partitioning option) *(notica: 412431.1)*
  - + dva popravka 9002336 in 9067282. *(notica: 1073166.1)*
- Oracle Enterprise Manager Grid Control
- YAST





# Oracle Management Pack for Linux

ORACLE Enterprise Manager  
Grid Control 11g

Home

Targets

Deployments

Alerts

Compliance

Jobs

Reports

My Oracle Support

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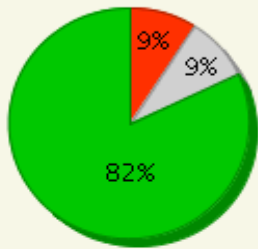
Page Refreshed 07-Sep-2010 09:00:56 CEST

View All Targets

## Overview

Total Monitored Targets **14**

### All Targets Status



### All Targets Alerts

Critical ✖ 3  
 Warning ⚠ 2  
 Errors ✖ 1

### All Targets Policy Violations

Critical ✖ 23  
 Warning ⚠ 7  
 Informational i 1

### All Targets Jobs

Problem Executions (last 7 days) ✔ 0  
 Action Required Executions (last 7 days) ✔ 0  
 Suspended Executions (last 7 days) ✔ 0

## Target Search

Search All

### Security Policy Violations

Critical ✖ 23  
 Warning ⚠ 7  
 Informational i 1  
 New in Last 24 Hours 0

### Recommended Security Patches

Security Recommendations **None**

## Deployments Summary

View Database Installations

Database Installations <span style="color: gray;">▲</span>	Targets	Installations	Patches Applied
Oracle Database 11g 11.2.0.1.0	1	1	Yes

## Resource Center

[Enterprise Manager Support Workbench](#)  
[Enterprise Manager Command Line Interface](#)  
[Enterprise Manager Release Notes](#)

[Oracle Technology Network](#)

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# Oracle Management Pack for Linux

ORACLE Enterprise Manager  
Grid Control 11g

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Host: **test6.abakus.si**

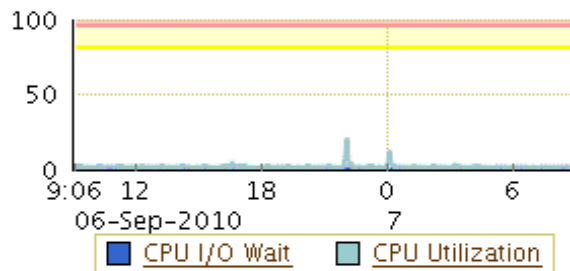
Latest Data Collected From Target **07-Sep-2010 08:56:12 CEST**

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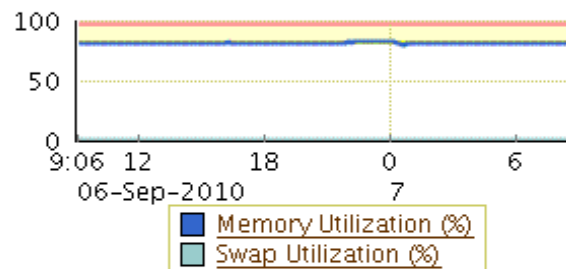
View **Performance Summary**

View Data **Last 24 hours**

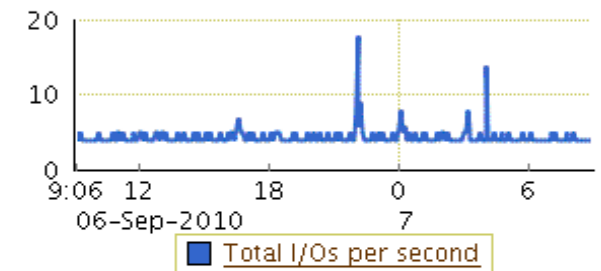
## CPU Utilization



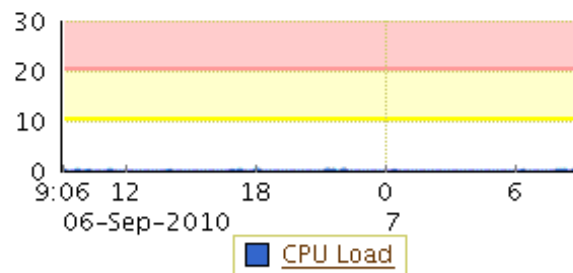
## Memory Utilization



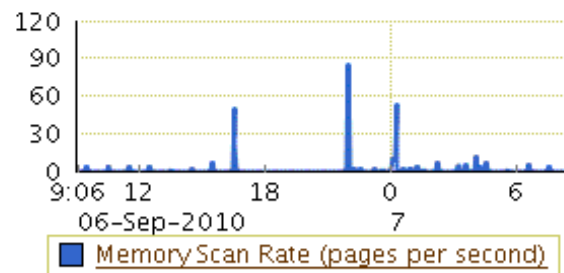
## Disk I/O Utilization



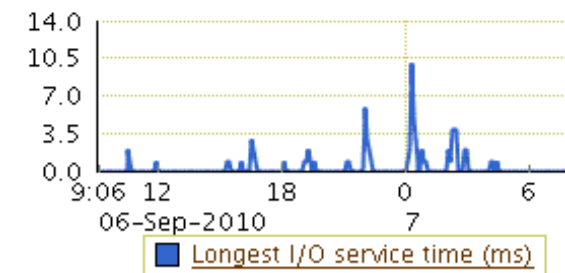
## CPU Load



## Memory Page Scan Rate



## Longest Service Time (ms)



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# Oracle Clusterware

Še en sistem strežniških gruč?

- Linux-HA (Pacemaker)
- Red Hat Cluster Suite
- Oracle Clusterware





# Datoteční systém – ACFS

Še en gručni datoteční systém?

- OCFS – Oracle Cluster File System
- GFS – RedHat Global File System
- ACFS – Oracle Automatic Storage Management Cluster File System



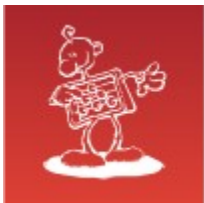


# Datotečni sistem - ACFS

## Značilnosti

- dinamična RAID funkcionalnost (Oracle ASM)
- dinamično spreminjanje velikosti datotečnega sistema
- gručne slike datotečnih sistemov (snapshot)
- celotno ali delno replikacijo preko mreže
- šifriranje

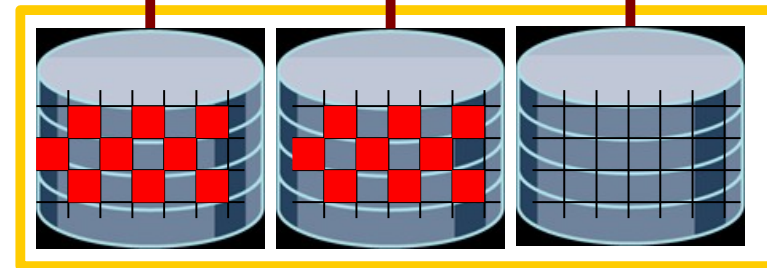




# Oracle Automatic Storage Management

Kaj je Oracle ASM:

Nadomestek za diskovno RAID polje.



Lastnosti:

- podpora gručam
- enakomerno razprši podatke med disk
- zrcaljenje  
(external = brez, normal = 2x, high = 3x)
- upravljanje z diskovnim prostorom med delovanjem
- prilagodljivost (nima zahtev po številu in velikosti diskov)



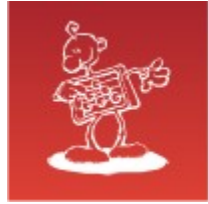




# Pomanjkljivosti in težave OEL

- staro jedro in knjižnice z obilico vprašljivih popravkov in dodelav (backport patch)
- nekatere standardne opcije niso podprte (reiserfs)
- ni novitet (ext4 ima delno podporo – ob inštalaciji ga ni mogoče izbrati)





# Težave – primer

strežnik dual opteron 2431 (2400 MHz, 6 jedrniki)

- Slackware linux 13.1 – jedro 2.6.33.4

```
# lokalni test skozi pipo
```

```
dd if=/dev/zero bs=8192 count=1000000 | dd of=/dev/null bs=8192  
8192000000 bytes (8.2 GB) copied, 8.7778 s, 933 MB/s
```

```
# remote mrežni test (10 GbE)
```

```
rsh san10g dd if=/dev/zero bs=8192 count=1000000 | dd of=/dev/null bs=8192  
8192000000 bytes (8.2 GB) copied, 11.6867 s, 701 MB/s
```

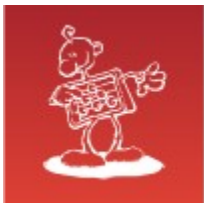
- Oracle Enterprise Linux 5.4 – jedro 2.6.18-194.el5

```
# lokalni test skozi pipo
```

```
dd if=/dev/zero bs=8192 count=1000000 | dd of=/dev/null bs=8192  
8192000000 bytes (8.2 GB) copied, 27.7413 seconds, 295 MB/s
```

```
# remote mrežni test (10 GbE)
```

```
rsh san10g dd if=/dev/zero bs=8192 count=1000000 | dd of=/dev/null bs=8192  
8192000000 bytes (8.2 GB) copied, 54.7717 s, 150 MB/s
```

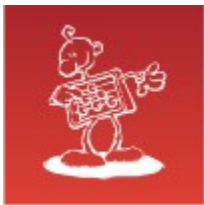


# Za konec

Rabite poceni strežniški »enterprise«  
linux z vrhunsko podporo?

Mi vam to lahko ponudimo.





# Oracle Enterprise Linux

## Vprašanja

**Sergej Rožman**

ABAKUS plus d.o.o.

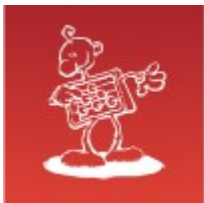
Ljubljanska c. 24a

Kranj

e-pošta: [sergej.rozman@abakus.si](mailto:sergej.rozman@abakus.si)

tel. št.: 04 287 11 14





# Konec

