

Vaja 1

Postavitev in nastavitve strežnika in osebnega računalnika

A. Strežnik

1. Sestavljanje strežnika
2. Vgradnja strežnika v strežniško omaro
3. Povezava vgrajenega strežnika s perifernimi napravami
4. **Nastavitve strežnika**
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 - b. ILO
 - c. RAID
5. **Upravljanje strežnika na daljavo s pomočjo ILO**
6. Odklop in razstavljanje strežnika

B. Osebni računalnik

1. Sestavljanje osebnega računalnika
2. Povezava osebnega računalnika s perifernimi napravami
3. Nastavitve BIOS
4. Nameščanje operacijskega sistema
5. Odklop in razstavljanje osebnega računalnika

A. Strežnik

Ob vklopu se najprej preverijo glavne vgrajene komponente strežnika in prikažejo morebitne napake.

```
3072 MB Detected

ProLiant System BIOS - P29 (09/15/2004)
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

Processor 1 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)
Processor 2 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)

Advanced Memory Protection Mode: Advanced ECC Support
Redundant ROM Detected - This system contains a valid backup system ROM.
1615-Power Supply Failure, Power Supply Unplugged, or
    Power Supply Fan Failure in Bay 1
```

Ko je preverjanja konec, strežnik poskuša najti zagonsko particijo....

```
Attempting Boot From CD-ROM
Attempting Boot From Floppy Drive (A:)
Attempting Boot From Hard Drive (C:)
Attempting Boot From NIC

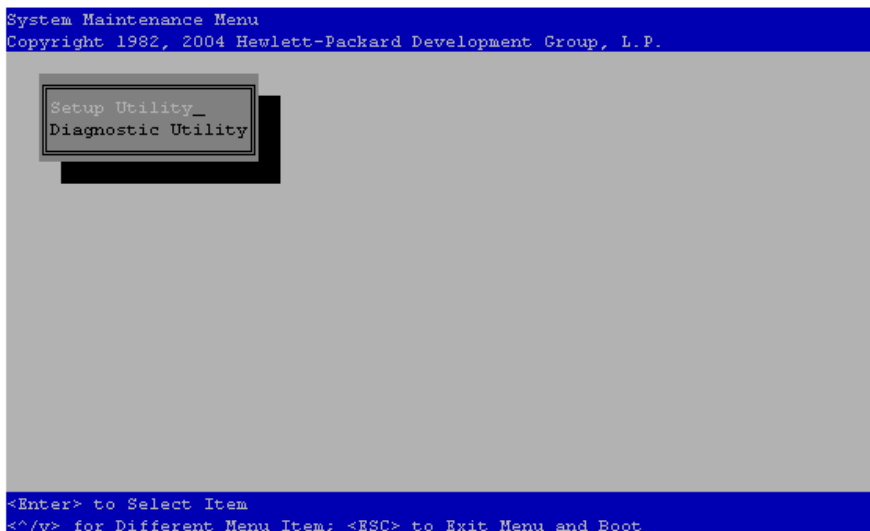
HP UNDI PXE-2.1 (build 082) v6.2.11
Copyright (C) 2000,2003 Hewlett-Packard Development Company, L.P.
Copyright (C) 1997-2000 Intel Corporation
All rights reserved.

CLIENT MAC ADDR: 00 0B CD DC 3C 66  GUID: 38304E4C 4C44 4E36 3148 202020202020
DHCP../
```

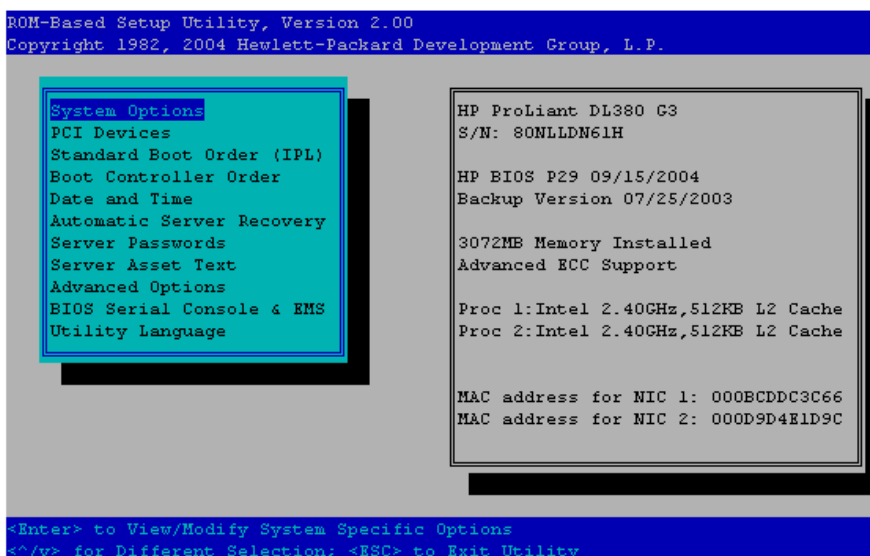
4.a. Nastavljanje BIOS - ob koncu preverjanja komponent pritisnemo F9 ali F10

```
System currently configured for Microsoft Windows 2000/Windows Server 2003.  
Press "F9" key for ROM-Based Setup Utility  
Press "F10" key for System Maintenance Menu  
Press "F12" key for PXE boot
```

Ob pritisku na F10 lahko izbiramo med nastavitvami sistema in orodjem za diagnostiko sistema (odkrivanje napak strojne opreme) – **DIAGNOSTIKE ZAENKRAT NE BOMO UPORABILI.**



Ob pritisku na F9 ali izbiri »Setuo Utiklity« na zgornji sliki, pridemo neposredno v BIOS



V BIOS-u za vajo zamenjamo vrstni red zagonskih naprav (Boot Controller order)

- Zamenjamo vrstni red disketne enote in CD-ROMa.

```
ROM-Based Setup Utility, Version 2.00
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

IPL:1  CD-ROM
IPL:2  Floppy Drive (A:)
IPL:3  Hard Drive C: (See Boot Controller Order)
IPL:4  PCI Embedded HP NC7781 Gigabit Server Adapter Port 1

<Enter> to Select IPL Device; <F1> for More Help
<^/v> for Different IPL Device; <ESC> to Close Menu
```

Ponastavimo še sistemski datum in uro.

```
ROM-Based Setup Utility, Version 2.00
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

System Options
PCI Devices
Standard Boot Order
Boot Controller Order
Date and Time
Automatic Server Reboot
Server Passwords
Server Asset Text
Advanced Options
BIOS Serial Console & EMS
Utility Language

HP ProLiant DL380 G3
N: 80NLLDN61H
BIOS P29 09/15/2004
Backup Version 07/25/2003
72MB Memory Installed
Advanced ECC Support
Proc 1: Intel 2.40GHz, 512KB L2 Cache
Proc 2: Intel 2.40GHz, 512KB L2 Cache
MAC address for NIC 1: 000BCDDC3C66
MAC address for NIC 2: 000D9D4E1D9C

Modify Date and Time
<ENTER> to Save Changes, <ESC> to Main Menu
```

Izstopimo is BIOS-a z ESC in potrdimo z F10.

```
ROM-Based Setup Utility, Version 2.00
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

System Options
PCI Devices
Standard Boot Order (IPL)
Boot Controller Order
Date and Time
Automatic Server Reboot
Server Passwords
Server Asset Text
Advanced Options
BIOS Serial Console & EMS
Utility Language

HP ProLiant DL380 G3
S/N: 80NLLDN61H
BIOS P29 09/15/2004
Backup Version 07/25/2003
3072MB Memory Installed
Advanced ECC Support
Proc 1: Intel 2.40GHz, 512KB L2 Cache
Proc 2: Intel 2.40GHz, 512KB L2 Cache
MAC address for NIC 1: 000BCDDC3C66
MAC address for NIC 2: 000D9D4E1D9C

Current Boot Controller:
PCI Embedded HP Smart Array 5i Controller

<F10> to Exit Utility
Any Other Key to Return to Main Menu
```

4.b. Nastavljanje ILO

```
3072 MB Detected

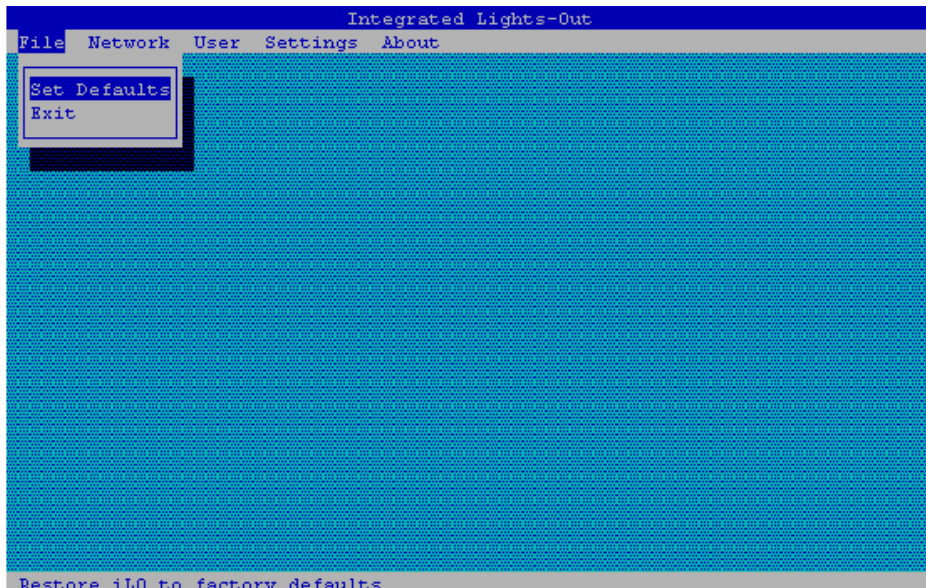
ProLiant System BIOS - P29 (09/15/2004)
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

Processor 1 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)
Processor 2 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)

Advanced Memory Protection Mode: Advanced ECC Support
Redundant ROM Detected - This system contains a valid backup system ROM.
1615-Power Supply Failure, Power Supply Unplugged, or
Power Supply Fan Failure in Bay 1

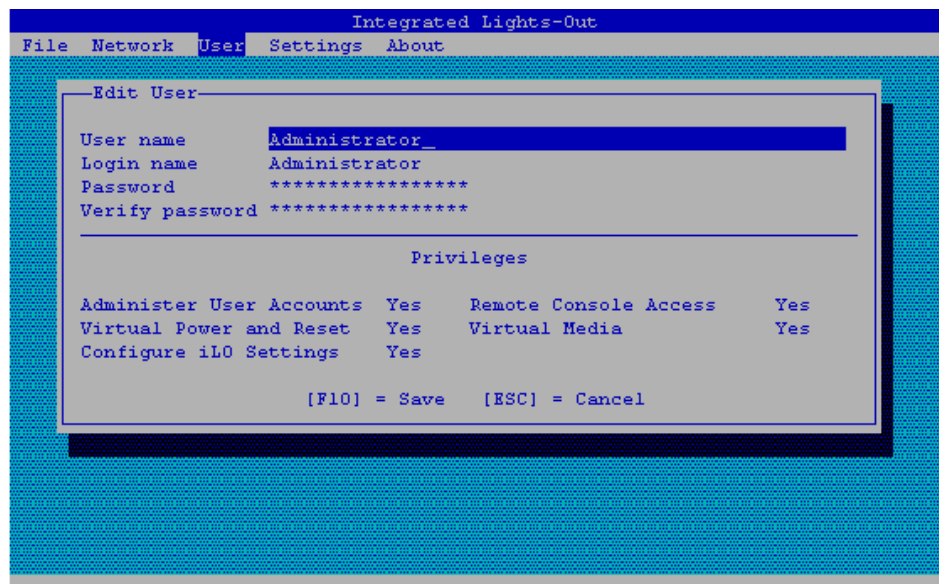
Integrated Lights-Out Standard press [F8] to configure
```

ob zagonu računalnika, po preverjanju RAM, procesorjev in napajanja, pritisnemo F8...



Ponastavimo geslo za uporabnika »Administrator«.

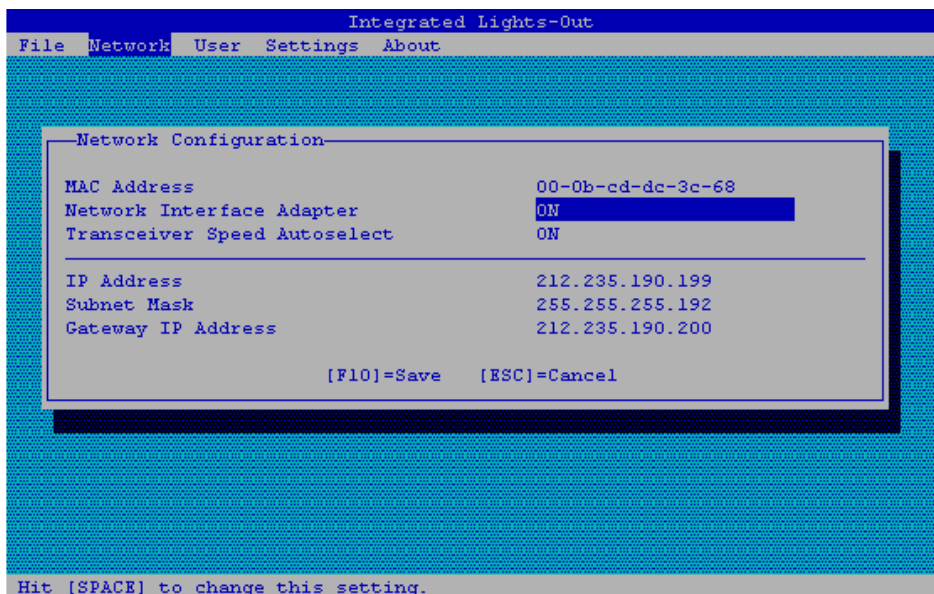
Izberemo Ukaz: User|Edit, izberemo uporabnika »Administrator« in pritisnemo Enter



V polji »Password« in »Verify Password« vpišemo geslo: 12345678.
S pritiskom na F10 shranimo spremembe.

Nastavimo podatke omrežja

Izberemo ukaz Network|NIC and TCP/IP



Nastavimo:

IP Address: 192.168.0.222

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.1

Shranimo nastavitve z F10.

Izstopimo iz aplikacije z ukazom File|Exit in dvakrat potrdimo izhod z Enter

Strežnik nadaljuje z zagonom.

4.c. Konfiguracija krmilnika RAID

Po inicializaciji krmilnika RAID HP Smart Array 5i+ pritisnemo F8

```
Copyright 1982, 2004 Hewlett-Packard Development Group, L.P.

Processor 1 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)
Processor 2 initialized at 2.40 GHz/400 MHz(512 Kbyte L2)

Advanced Memory Protection Mode: Advanced ECC Support
Redundant ROM Detected - This system contains a valid backup system ROM.
1615-Power Supply Failure, Power Supply Unplugged, or
Power Supply Fan Failure in Bay 1

Integrated Lights-Out Standard 1.94 Mar 19 2009 212.235.190.199

Slot 0 HP Smart Array 5i+ Controller (64MB, v2.62) 4 Logical Drives
1787-Slot 0 Drive Array Operating in Interim Recovery Mode
The following SCSI drive(s) should be replaced:
SCSI Port 2: SCSI ID 1

Press <F8> to run the Option ROM Configuration for Arrays Utility
Press <ESC> to skip configuration and continue
```

Pridemo v aplikacijo za nastavljanje lastnosti diskovnega polja in določanje logičnih diskov.

Z *View Logical Drive* preverimo, če ima diskovno polje že določene logične diske. V primeru, da obstajajo, jih zberemo z *Delete Logical Drive*.

Ko je diskovno polje prazno (nima določenih logičnih diskov), z ukazom *reate Logical Drive* nastavimo logične diske po dogovoru.

Primer:

Naredimo dva logična diska:

1. dva fizična diska v RAID 1 postavitvi

```
Option Rom Configuration for Arrays, version 2.58
Copyright 2003 Hewlett-Packard Development Company, L.P.

Controller: HP Smart Array 5i, slot 0
Direct-Attached Storage

Available Physical Drives
[X] SCSI Port 2, ID 0, COMPAQ 36.4 GB
[X] SCSI Port 2, ID 1, COMPAQ 36.4 GB
[ ] SCSI Port 2, ID 2, COMPAQ 72.8 GB
[ ] SCSI Port 2, ID 3, COMPAQ 72.8 GB
[ ] SCSI Port 2, ID 4, COMPAQ 72.8 GB
[ ] SCSI Port 2, ID 5, COMPAQ 72.8 GB

Raid Configurations
[ ] RAID 5
[X] RAID 1+0
[ ] RAID 0

Spare
[ ] Use one drive as spare

Maximum Boot partition
[X] Disable (4GB maximum)
[ ] Enable (8GB maximum)

<Enter> to create a logical drive; <Tab> to navigate
<UP/DOWN ARROW> to scroll; <ESC> to return
Note: For more configuration options use the HP Array Configuration Utility
```

2. trije fizični diski v RAID 5 postavitvi z enim rezervnim diskom (spare)

```
Option Rom Configuration for Arrays, version 2.58
Copyright 2003 Hewlett-Packard Development Company, L.P.

Controller: HP Smart Array 5i, slot 0
Direct-Attached Storage

-----Available Physical Drives-----
[X] SCSI Port 2, ID 2, COMPAQ 72.8 GB
[X] SCSI Port 2, ID 3, COMPAQ 72.8 GB
[X] SCSI Port 2, ID 4, COMPAQ 72.8 GB
[S] SCSI Port 2, ID 5, COMPAQ 72.8 GB

-----Raid Configurations-----
[X] RAID 5
[ ] RAID 1+0
[ ] RAID 0

-----Spare-----
[S] Use one drive as spare

-----Maximum Boot partition-----
[X] Disable (4GB maximum)
[ ] Enable (8GB maximum)

<Enter> to create a logical drive; <Tab> to navigate
<ESC> to return; <Space Bar> to select
Note: For more configuration options use the HP Array Configuration Utility
```

Na koncu konfiguracija izgleda takole

```
Option Rom Configuration for Arrays, version 2.58
Copyright 2003 Hewlett-Packard Development Company, L.P.

Controller: HP Smart Array 5i, slot 0
Direct-Attached Storage

-----Available Logical Drives-----
Logical Drive # 1, RAID 1+0, 33.9 GB, OK
Logical Drive # 2, RAID 5, 135.7 GB, with online spare OK

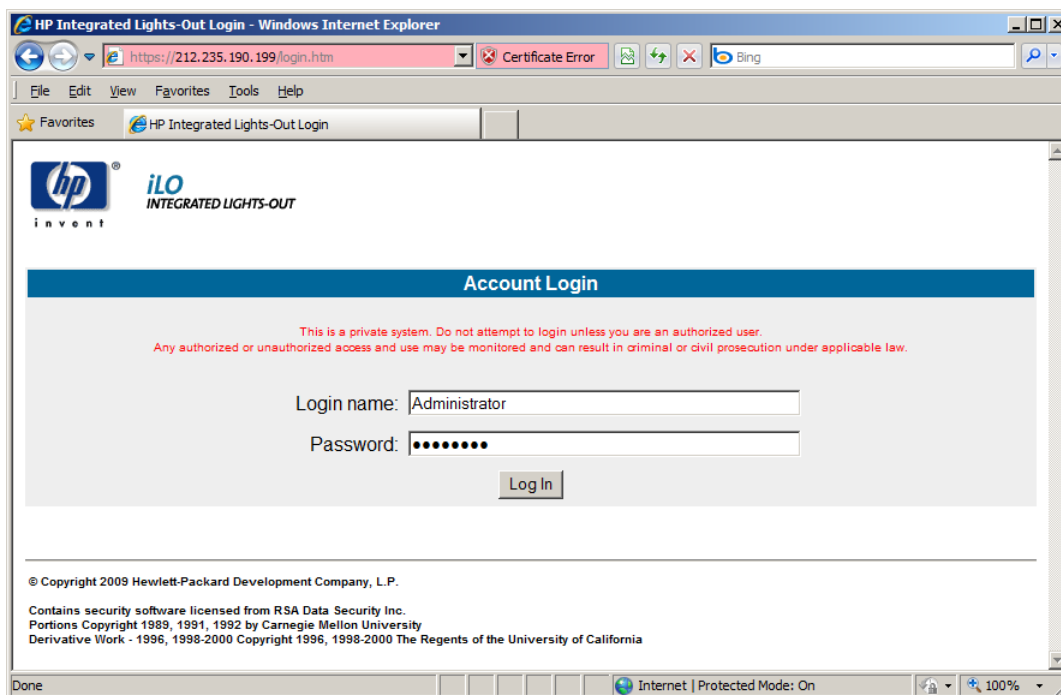
<Enter> to view logical drive details
<UP/DOWN ARROW> to select logical drive; <ESC> to return
Note: For more configuration options use the HP Array Configuration Utility _
```

Ko končamo z nastavitvami, zapustimo aplikacijo z ESC.

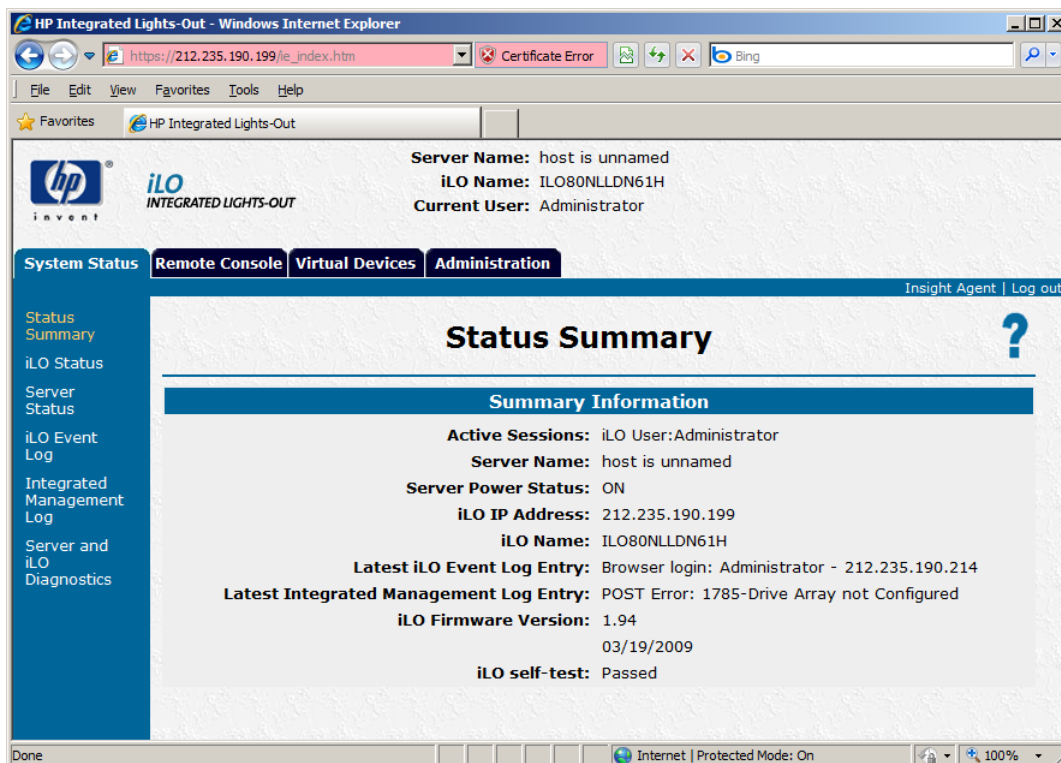
5. Upravljanje strežnika na daljavo s pomočjo ILO

Če smo ILO pravilno nastavili in povezali v omrežje, lahko do nje dostopamo z oddaljenih lokacij (remote) s pomočjo spletnega brskalnika. ILO vsebuje spletni vmesnik, za dostop do svojih funkcij in nastavitvev.

Prijavimo se z uporabniškim imenom in geslom, ki smo ga določili v točki 4.b.



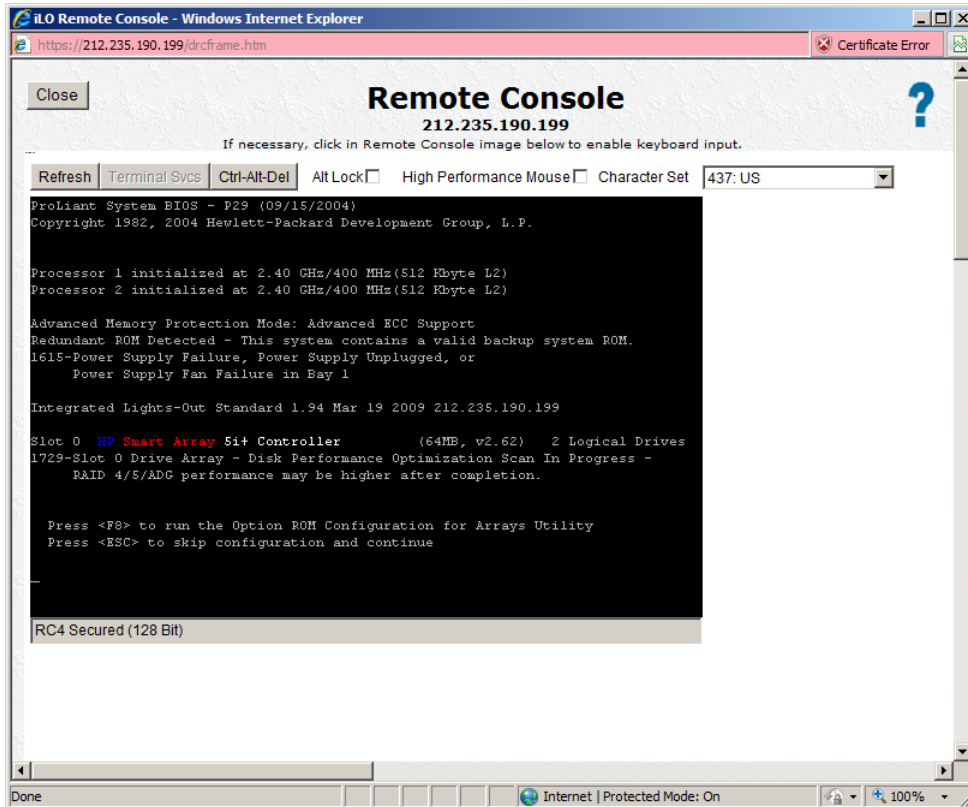
Odpre se nam statusno okno z najpomembnejšimi podatki ILO.



Poleg nastavitvev, ki so bile na voljo ob zagonu strežnika in pritisku na F8, in so dosegljive na zavihku »Administration«, ima spletni vmesnik tudi dodatne funkcije za nadzor in upravljanje strežnika.

Nekatere najpomembnejše in najbolj uporabne funkcije vmesnika so:

Remote Console – Terminalski dostop do strežnika – s katero lahko na daljavo upravljamo strežnik.



Zelom uporabne su funkcije navideznih naprav.

Na primer funkcija navidezne moči (Virtual Power), s katero na daljavo fizično ugašamo/prižigamo strežnik.

