After The First Five Years

Central Linux Support At DESY

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Brief History

- Summer 1996: Hermes brings first Linux PCs to Computer Center
- Summer 1997: Hermes and Zeus farms, Hasylab and Theory WGS clusters
- Fall 1998: Official IT support for Desktops and WGS Autoinstallation, DESY Linux 1 (based on SuSE 5.2)
- Fall 1999: Revised Support policy, less restrictive
- January 2000: DESY Linux 2 (SuSE 6.1)
- March 2000: DESY Linux 3 (SuSE 6.3)
- Summer 2000: ‘Low TCO Linux’ CRB Project
- End 2001: DELFI Architecture
- Summer 2001: DESY Linux 4 (SuSE 7.2)
PCs Registered for DESY Linux

PCs Registered For DESY Linux (Hamburg Only)
'Low TCO Linux’ Project

• Main goal is to keep the overall effort low:
  – … define hardware standards
  – … provide common tasks centrally
  – … delegate specific tasks to group administrators
  – … use automation where possible
  – … use existing services where possible
  – … ease migration and minimize user training needs
  – … outsource tasks which require expertise that you do not have, want, or need
Total Cost Of Ownership

[Grabbed from http://www.operatingsystems.net/holistic/cost/cost.htm, quoted from Kingsley Martin: Total Asset Administration, 1998]
Integration With DESY IT Services

AFS  YP  Mail

Registry  Printing

Spectrum  OSM  ADSM
## Hardware Products - Current Standards

<table>
<thead>
<tr>
<th>Feature</th>
<th>Desktop</th>
<th>Farmnode</th>
<th>WGS</th>
<th>DELFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motherboard</td>
<td>ASUS CUB-X</td>
<td>SM 370DLE</td>
<td>INTEL L440GXG</td>
<td>INTEL L440GXG</td>
</tr>
<tr>
<td>CPU</td>
<td>1 INTEL PIII</td>
<td>2 INTEL PIII</td>
<td>2 INTEL PIII</td>
<td>2 INTEL PIII</td>
</tr>
<tr>
<td>Memory</td>
<td>Brand SDRAM</td>
<td>ECC SDRAM</td>
<td>ECC SDRAM</td>
<td>ECC SDRAM</td>
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<tr>
<td>Controller</td>
<td>IDE</td>
<td>IDE</td>
<td>SCSI</td>
<td>3Ware RAID</td>
</tr>
<tr>
<td>Disks</td>
<td>any IDE</td>
<td>any IDE</td>
<td>Seagate pref. Tower</td>
<td>IBM DTLa</td>
</tr>
<tr>
<td>Case</td>
<td>Desk/Minitower</td>
<td>Minitower</td>
<td>Tower</td>
<td>Jumbo/Rackmount</td>
</tr>
<tr>
<td>NIC</td>
<td>100 MBit</td>
<td>100 MBit</td>
<td>100 Mbit/ GBit</td>
<td>GBit (100 MBit)</td>
</tr>
<tr>
<td>Features</td>
<td>Cheap</td>
<td>Cheap</td>
<td>High CPU</td>
<td>Fileserver</td>
</tr>
<tr>
<td>(May vary,</td>
<td>single task</td>
<td>high CPU</td>
<td>high I/O</td>
<td>RAID or JBOD</td>
</tr>
<tr>
<td>don’t take</td>
<td>single user</td>
<td>high I/O</td>
<td>scalable disk</td>
<td>up to 1.5 TB</td>
</tr>
<tr>
<td>these too</td>
<td>monitor</td>
<td>low I/O</td>
<td>serial console</td>
<td>hot swap disk</td>
</tr>
<tr>
<td>literally)</td>
<td>keyboard</td>
<td>single disk</td>
<td>IT monitoring</td>
<td>redund. power</td>
</tr>
<tr>
<td></td>
<td>opt. sound</td>
<td></td>
<td></td>
<td>solid hardware</td>
</tr>
<tr>
<td></td>
<td>opt. peripherals</td>
<td></td>
<td></td>
<td>serial console</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IT monitoring</td>
</tr>
</tbody>
</table>
DELFIE IDE Fileserver
Toolbox

- DESY 'equipment database', to be migrated to an asset management system → Poster by Andreas Gellrich
- Homemade boot floppies supporting every hardware class at DESY
- Unattended base installation using SuSE’s YaST
- AFS client and Kernel RPMs installed with YaST
- DESY unix environment with mail, printing, registry, ..., installed with SALAD (Hamburg) or SUE/cfengine (Zeuthen)
- Package maintenance with rpmudate:
  - Mirror updates from SuSE’s FTP server
  - Replay these into our install server structure
  - Distribute or notify according to host or cluster based polices
Networked Autoinstall with YaST 2
Coexistence

- About 10% of DESY Linux users also want to run Windows NT
- We recommend VMware for that purpose because
  - it avoids multi-boot configurations
  - it makes sure that host OS is always online (and maintainable)
  - it allows to run bos OSes simultaneously
- Office suite for Unix is StarOffice (Linux and Solaris)
- We are investigating a Windows terminal server solution

Platform and application coexistence as well as document exchange are a major challenge for the next future. Open standards are extremely helpful. Our view emphasizes service, not platform.
Conclusions ...