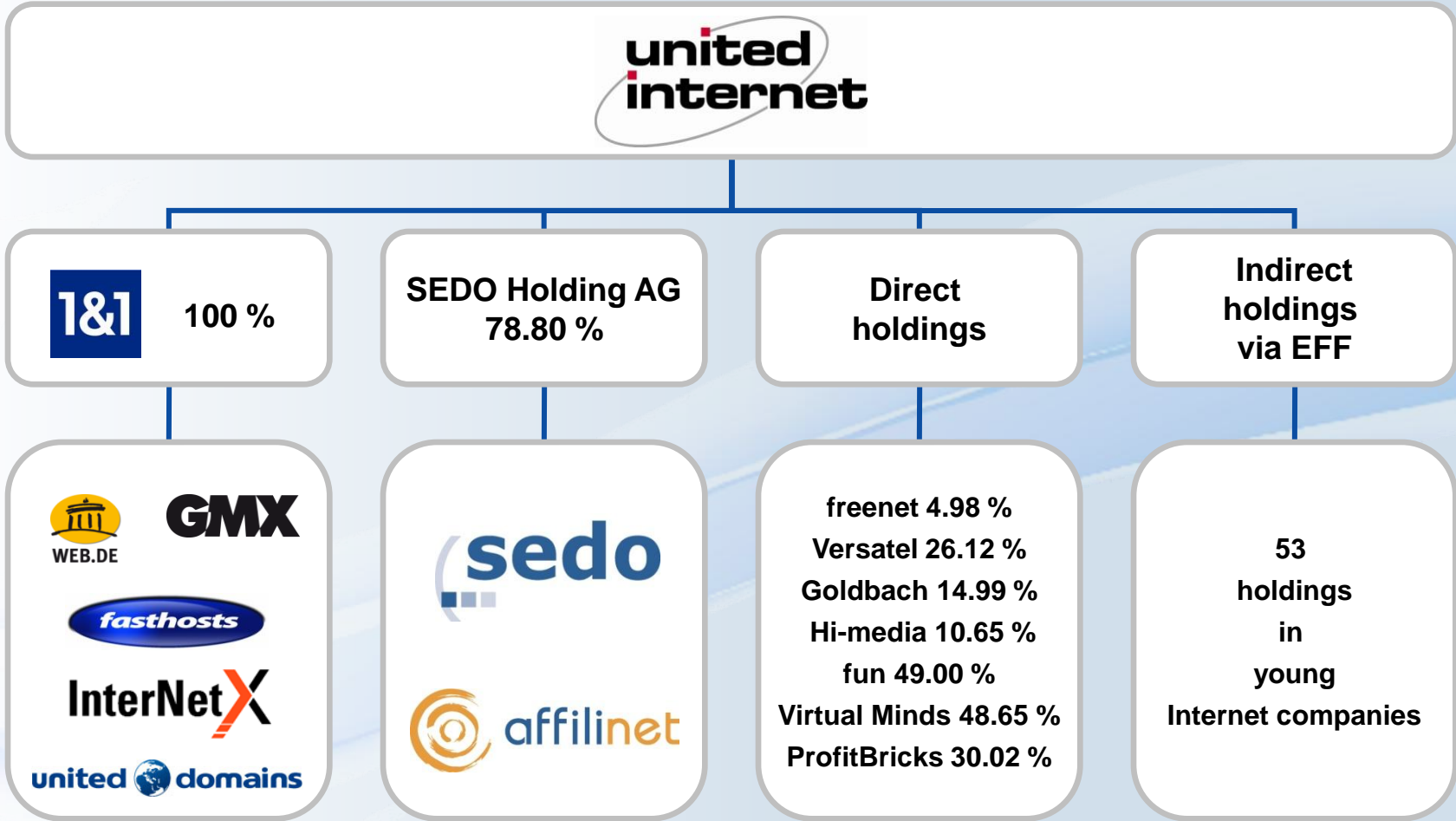


# Linux at 1&1



**Linux Tag Berlin 11.05.2011**  
**Verena Amann, Henning Westerholt**

- **1&1 – Member of United Internet**
- Locations and Infrastructure
- Linux at 1&1
- Working at 1&1



## Access

## Applications

**Networks**

### Motivated Team

- more than 4,500 employees, of which 1,100 in product management, development and data centres

### Sales Strength

- 2 million new contracts p.a.
- 40,000 registrations for free services every day

### Operational Excellence

- 37 million accounts in 9 countries
- 5 data centres
- 70,000 servers in Europe and USA

**Content**

**User  
Equipment**

**Standard  
Software**

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# 1&1 Locations



# 5 high-performance data centers on 2 continents

## ■ Statistics

- 70,000 server
- 9.76 million customer contracts
- 28 million free accounts
- Hosting of 11 million domains
- more than 5 billion E-Mail/month
- 9,000 terabyte/month data transfer

## ■ Almost 100% reliability for data centers

- Redundant infrastructure on several levels
- Maintained 24/7 from experienced specialists
- Own metro-networks on our locations
- More than 200Gbit/s global external bandwidth
- Peering with largest Internet-exchanges

## ■ Operated with green energy

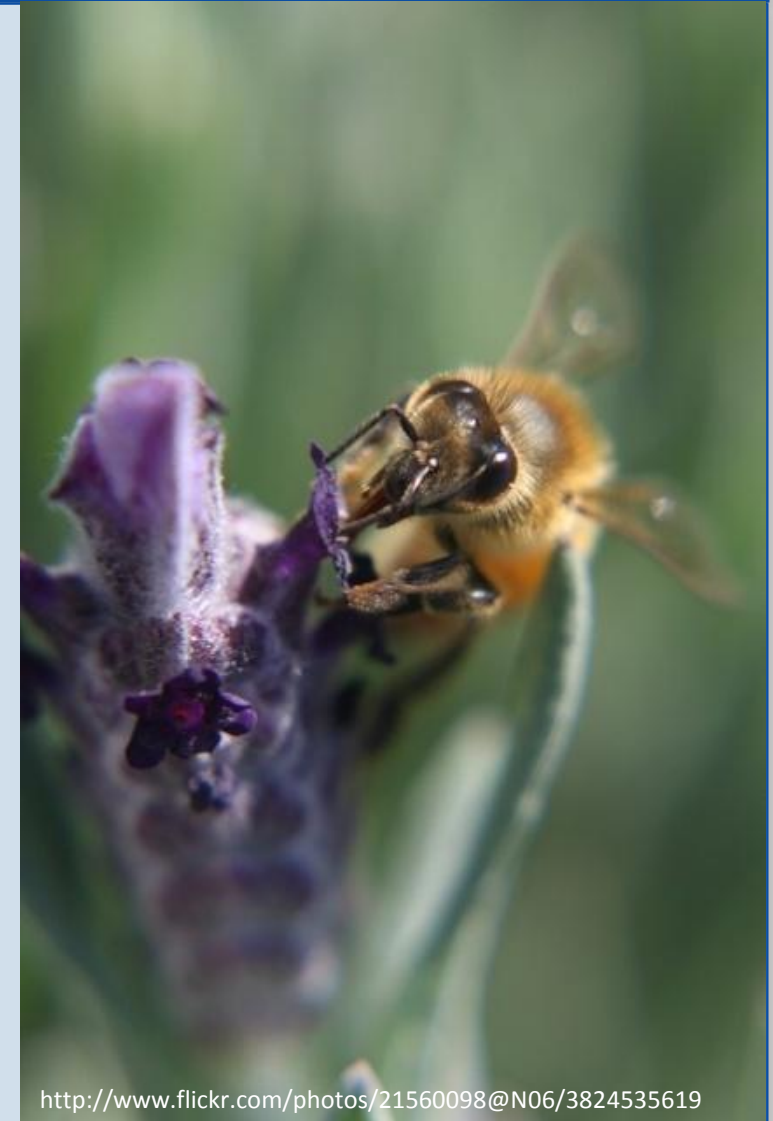


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- 1&1 Internet AG
  - Since 2006/2007 with software development
  - Now with IT Operation
  - Located in Karlsruhe, Germany
- Kamailio Open Source project
  - Core Developer
  - Member of management board
- Part of the much bigger group that design, build and also operate the services I'll present in this talk
- Interested in Open Source and Open Systems

- Linux enables us to provide exciting, reliable and also cost efficient products
- Its high flexibility allows us to customize existing components all over the stack(s)
  - Portal
  - Web hosting
  - Access products
  - Application servers
  - Storage and databases
- Active support of Open Source projects
  - Founding
  - Upstream participation
  - Contribution of code, quality assurance..
- Development and operation Knowledge
  - Dedicated kernel developers and experts
  - Core developers for important components



<http://www.flickr.com/photos/21560098@N06/3824535619>

- pronounced ['kuksdu:]
- Comprehensive and innovative framework for creating desktop-style web applications (e.g. rich internet applications)
- Object orientated Java Script, no HTML, CSS or DOM knowledge needed
- Used in important products
  - GMX free web mail service with more than 13 million members
  - Web.de SmartDrive GUI
  - customer shop system for hosting
- Founded from 1&1 in 2005
  - 9 core developers employed in Karlsruhe and Bucharest
  - Important participations also from other companies, more than 70 developers
- Dual license LPGL/ EPL
- Hosted on sourceforge.net
- More information: <http://qooxdoo.org/>

# Showcase: qooxdoo

1&1

The screenshot shows the GMX webmail interface. The browser address bar displays the URL: `http://service.gmx.net/de/cgi/g.fcgi/application/navigator?CUSTOM`. The page title is "GMX - E-Mail, FreeMail, Themen- & Sh...". The left sidebar contains a menu with categories like "PRODUKTE" and "MEIN GMX", listing various services such as "E-Mail", "E-Mail schreiben", "Posteingang", "Virenschutz", "SMS-Alarm", "Filterregeln", "Optionen", "Mail Info Service", "GMX Mobile", "Instant Messaging", "SMS und MMS", "Fax und Voice", "Adressbuch", "Organizer", "MediaCenter", "Mein Account", "Sonstige Optionen", "FreePhone", "Internet-Zugang", "Sicherheitspaket", "BrandsToGo", "MailDomain", "GMX Premium", and "GMX Tools". The main content area is titled "E-MAIL SCHREIBEN" and includes fields for "Von:", "An:", "Betreff:", and "Priorität: normal". There are also buttons for "aus Adressbuch", "CC / BCC", "Text-Editor", and "senden". A rich text editor toolbar is visible above the main text area. At the bottom, there is a section for "Dateianhänge zur E-Mail" with a "Datei:" field and buttons for "Durchsuchen..." and "Datei hinzufügen".

The screenshot shows the 1&1 Dynamic Cloud Server configuration page. The browser address bar displays the URL: `http://www.1und1.info/km/order/CloudDynamicServer.jsessionid=377CD053B4F8D69E0A0CAA7CF018C`. The page title is "1&1 Dynamic Cloud Server". The navigation menu includes "Virtual Server", "Dynamic Cloud Server", and "Dedicated Server". The main heading is "1&1 DYNAMIC CLOUD SERVER" with the subtext "Heute 10 und morgen 1.000 Kunden?". The section "DIE INDIVIDUELLE SERVER-LÖSUNG!" features a "Server-Konfiguration nach Bedarf ändern! Jederzeit, während der gesamten Vertragslaufzeit!" and a list of benefits: "Eigene dedizierte Serverumgebung mit vollem Root-Zugriff", "CPU-Anzahl, Festplattenspeicher und Arbeitsspeicher jederzeit flexibel nach Bedarf einstellbar", "Linux- oder Windows-Betriebssystem, Paralleles Plesk Panel 10 vorinstalliert", and "24/7 Hotline und Support". A "NEU:" banner highlights "Jederzeit die Verfügbarkeit Ihres Servers im Blick - jederzeit Ihren Server mobil managen" and "Mobile Server Apps". The configuration section "Konfigurieren Sie Ihren 1&1 Dynamic Cloud Server" includes sliders for "Betriebssystem" (Linux checked, Windows unchecked), "CPU-Anzahl" (set to 2), "Festplattenspeicher (GB)" (set to 300), "Arbeitsspeicher (GB)" (set to 4), and "Traffic (GB)" (set to unlimited). A "KONFIGURATIONSEMPFEHLUNG" section shows "Aktion: UNLIMITED". A price display shows "69,99 €/Mon." for 3 months, with a "30,- €/Mon." discount, and "danach 69,99 €/Mon.". A blue "auswählen" button is present. The footer includes "Fertig".

# Showcase: Kamailio

- VoIP backend at 1&1 operated mainly with Open Source components
- One of the biggest deployments of its kind, started in 2005
- Data
  - Over three million customers on the platform
  - Interconnections to Telefonica, Vodafone and QSC
  - More than 1 billion minutes per Month to the PSTN
- Geographical redundant backend in a load-sharing setup
- Focus towards small businesses and home users
- Current interesting topics are IPv6 and LTE



- High-performance and flexible SIP server for the development of medium to large voice over IP infrastructures
- Usable as routing engine and application server
- Main building block for our VoIP backend
- Project founded in 2001
  - 4 core developers employed in Karlsruhe and Bucharest
  - Development in a team with many other companies, more than 25 developers
- Contribution on many levels
  - Several modules and core parts
  - Upstream migration of most of our internal patch set
  - Participation at community events, also here at LinuxTag
- GPL license (some parts also BSD)
- Operate its own development infrastructure at [sip-router.org](http://sip-router.org)
- More information: <http://kamailio.org>

# Showcase: core system and infrastructure



- Provide a stable and high-performance core system for our products
- Own customized Linux distribution based on Debian
- Standard components, like
  - Linux kernel (obviously)
  - Java application server (Jboss)
  - Relational database engine (MySQL)
- Customized components where its necessary
  - Development of a dedicated file system event monitor
  - Apache modules for our hosting infrastructures
- Standard build infrastructure mini-buildd
  - Easy-to-setup Debian auto builder and repository
  - For add-ons to existing distributions with extensive package checking
- Founded and maintained from 1&1
- <http://packages.debian.org/squeeze/mini-buildd-bld>

- Linux enables us to provide exciting, reliable and cost efficient products
- Its high flexibility allows us to customize existing components
- Contributing back to the community in many cases
- Detailed technical expertise and knowledge
- Several successful company supported projects
  - Qooxdoo
  - Kmailio
  - Mini-buildd
- They are of course more, not covered in the talk, like
  - Stubbles PHP framework (<http://stubbles.net/>)
  - XP Web framework (<http://xp-framework.net/>)
  - DRBD Feature sponsoring (long range replication support in 8.3.10)
- Linux and Open Source contributed a lot to our success



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At 1&1 you can find a large number of fields of activities, such as

- Webhosting
- Internet Access, Mobile
- Portals, Information Management
- Online Media Marketing

In these fields we offer a wide selection of job profiles, for example in the technical or creative environment

- Software development and system administration
- (Technical) product management and project management
- Media sales
- Design and production
- Website management
- Finance / Accounting and Human Resources

## Our offer

- Competitive and performance-related compensation
- Extensive additional benefit package
- A strong, successful and excellent team

## The working environment

- Owner-managed company
- Flat hierarchies, fast decision-making processes
- Start-up culture combined with the security of an established, international 1&1
- Dynamic, performance-oriented colleagues

## Products and technology

- Innovative products, work time-to-market
- Exciting challenges in the company and internal development
- High standards for solid, innovative and scalable technologies

**Thanks for your attention!**



**Questions?**

- Qooxdoo user and developer list
  - <http://qooxdoo.org/>
- Kamailio users and developers list
  - <http://www.kamailio.org/>
  - <http://www.sip-router.org/>
  - Booth 112 in hall 7.2b
- Henning Westerholt
  - [henning.westerholt@1und1.de](mailto:henning.westerholt@1und1.de)
- Jobs:
  - <http://www.united-internet.de/Jobs>
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