



Image Credits to: <http://www.flickr.com/photos/stabilo-boss/93136022/in/set-72057594060779001/>

pixelpark[®] Berlin

Web 2.0 ready with OpenSolaris

1st of March 2007

Agenda

1	Intro
2	Web applications
3	Scale it
4	Old problems and new solutions
5	This is the end

Intro

About me

- Web Architect and Technical Consultant
- Working with Unix since 1993, started with IRIX and HP-UX
- First projekt on Solaris in 1996
- In most projects, I'm responsible for the whole system architecture

Intro

Where I work:

Pixelpark offers full service to customers

Analysis and Consulting market analysis, strategy deployment, marketing concepts, customer relationship management			
Conception <ul style="list-style-type: none">■ Marketing concepts■ Front- /Backend- concepts (Internet, Intranet and Extranet)■ Information architecture	Design <ul style="list-style-type: none">■ Interface design■ Design style guides■ Corporate design development■ Flash development	Compilation <ul style="list-style-type: none">■ Investigation■ Picture compilation■ Content creation■ Site Maintenance/Content Management Systems	Online Marketing <ul style="list-style-type: none">■ Search Engine Optimization■ Partnering■ E-Mailing■ Online Advertising■ Multi-channel Marketing
Software Development <ul style="list-style-type: none">■ Web applications/web portals■ Mobile and iTV applications■ Implementation of Content Management Systems	System Installation <ul style="list-style-type: none">■ Testing and creation of user guides■ Education and coaching■ Maintenance and service	Hosting/IT-Services <ul style="list-style-type: none">■ Server and storage solutions■ 24x7 Operations■ Managed Hosting■ Security solutions	and <ul style="list-style-type: none">■ Request admission■ Interface between customer, team and sub service provider■ Quality Management

Intro

Pixelpark designs multimedia projects for all industries
...a lot of them with Solaris

Media + communication



ZDF DW-WORLD.DE
DEUTSCHE WELLE

EBU-UER WDR O2

hr RTL

T-Online

Public buildings + organisations



Bundesministerium für Bildung und Forschung Institut der deutschen Wirtschaft Köln

Bundesministerium für Wirtschaft und Arbeit CMA Bestes vom Bauern.

bfai Bundesagentur für Außenwirtschaft VRR

Banks + insurances



NRW.BANK Wir fördern Ideen

WestLB

MONEY MAXX clever vorsorgen

WGZ BANK Die Initiativbank

Goldman Sachs

UBS

DWS INVESTMENTS Deutsche Bank Gruppe

Chemical + pharmaceutical



Bayer MaterialScience

BASF The Chemical Company

SCHERING making medicine work

MADAUS

SCHWARZ PHARMA

Kneipp

Industry + consumer goods



Deutsche Post World Net MAIL EXPRESS LOGISTICS FINANCE

EnBW

PUMA

ESCADA

HUGO BOSS Tehibo

BLAUPUNKT SONY

Lufthansa DHL

Automotive



Mercedes-Benz

OPEL

BOSCH

Busch-Jaeger Elektro GmbH

DAIMLERCHRYSLER

Agenda

1	Intro
2	Web applications
3	Scale it
4	Old problems and new solutions
5	Company profile

HTML is not enough

- Portals today do not only offers “HTML” Frontends nor have simple CMS Backends
 - SOA or WOA Architectures
 - Internal SOAP and REST Web Services
 - Public Web Services for MASHUPs
 - Hybrid Front End Layer
 - XHTML, CSS
 - JS, AJAX
 - RIAs, Flash, XUL,
 - Accessibility
 - Mobile Access
 - IP-TV
 - RSS, ATOM
 - Podcasts
- new Front End Layer Technologies e.g. Second Life Client

More and more technologies for the Business Logic Layer

- Programming Languages
 - JAVA
 - PHP
 - .NET
 - Rails
 - ...

- and
 - Application Server and Wb Server modules
 - Databases (Oracle DB, mysql, Sybase ASE, postgresSQL ...)

- and many many more

Agenda

1	Intro
2	Web applications
3	Scale it
4	Old problems and new solutions
5	This is the end

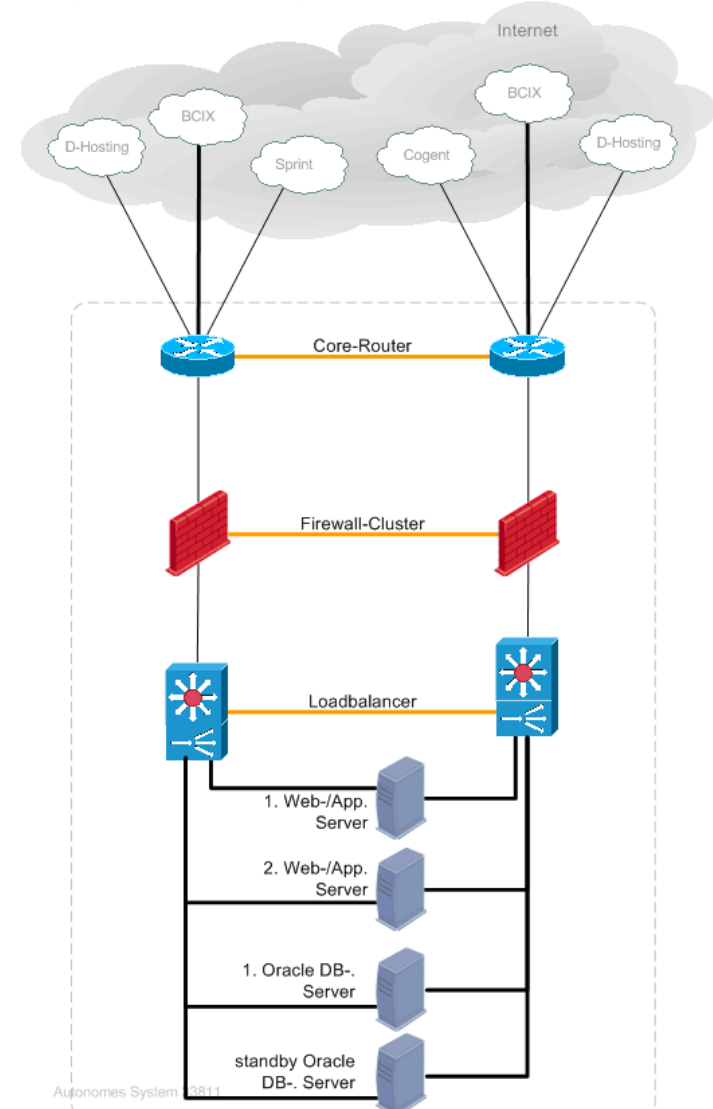
Infrastructure

Hardware, Network and Connectivity View

- Network Access
- Security Layer
- Loadbalancing Layer
- Server Layer
 - Apache web server
 - Tomcat app server
 - Oracle db server

- Clean and working example on the right
- Question: But where is the test environment?

Pixelpark Dedicated Hosting Area



Infrastructure

How many servers?



Infrastructure

How many servers?

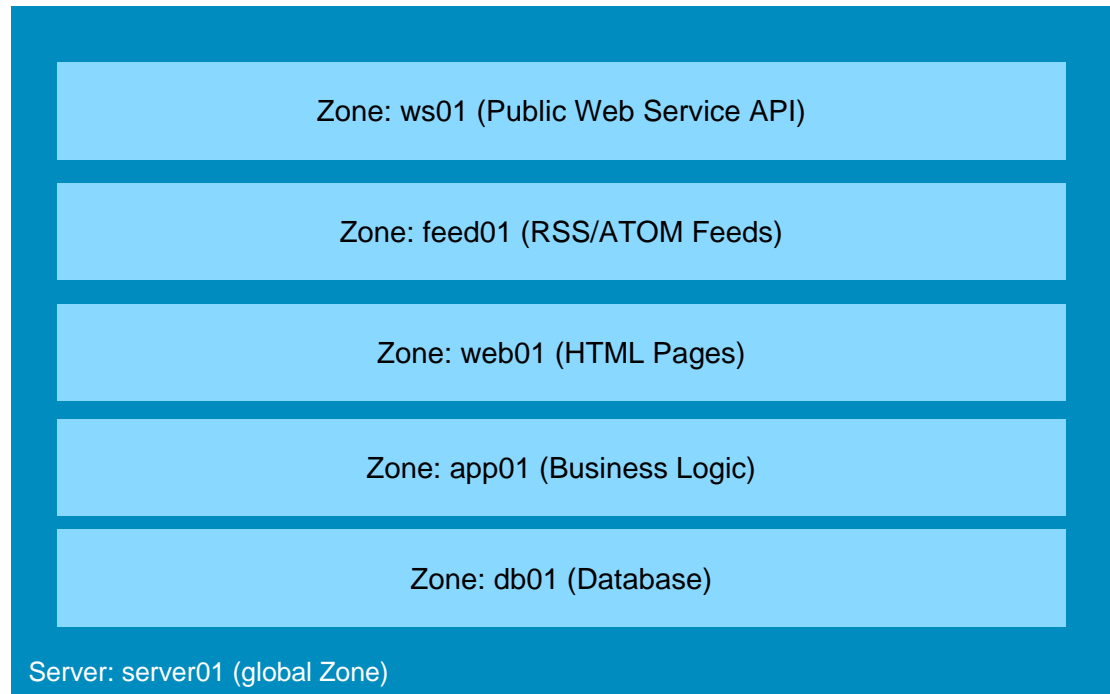


Agenda

1	Intro
2	Web applications
3	Scale it
4	Old Problems and new Solutions
5	This is the end

Software View

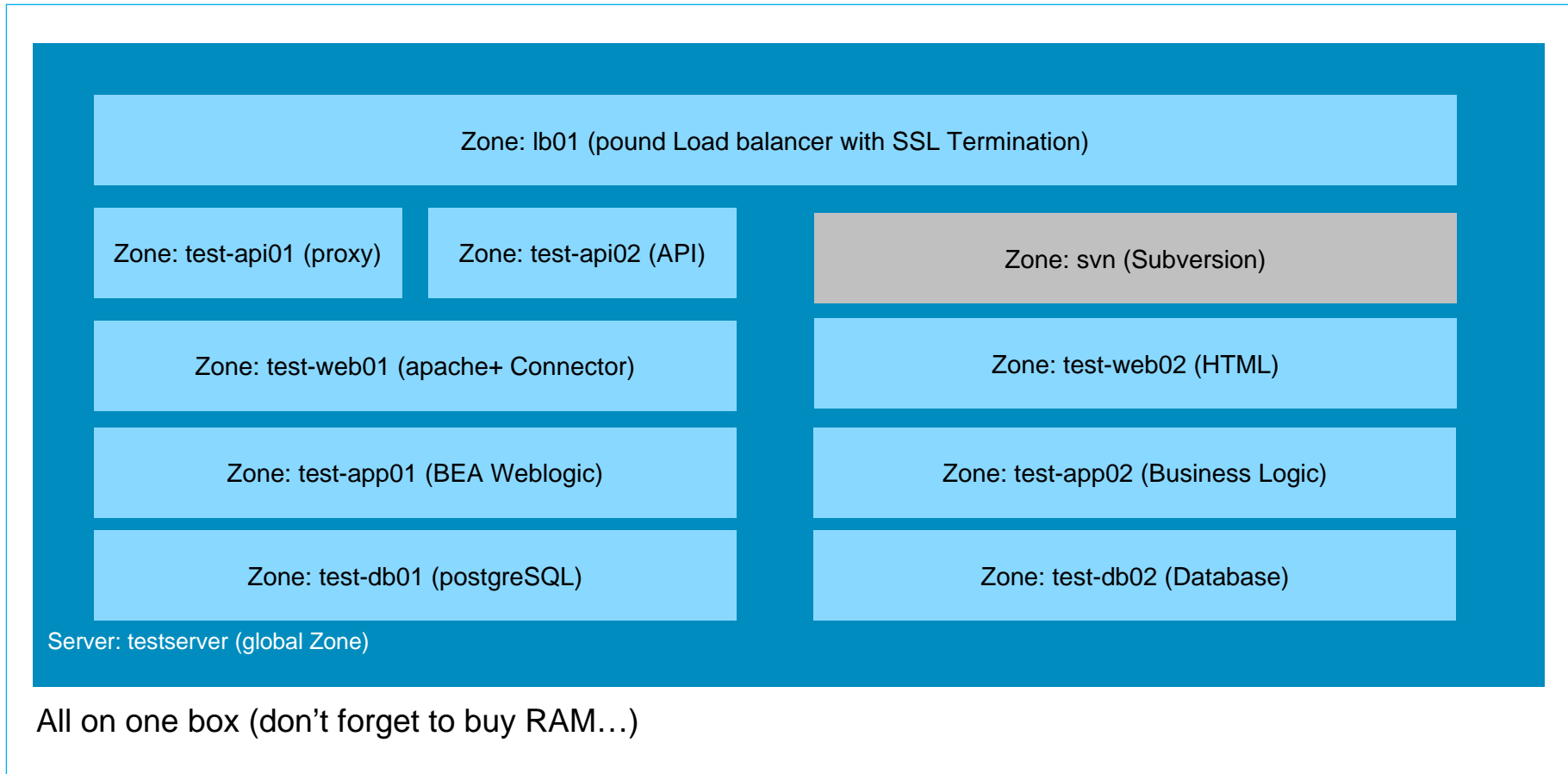
Software Architectures have a couple of layers



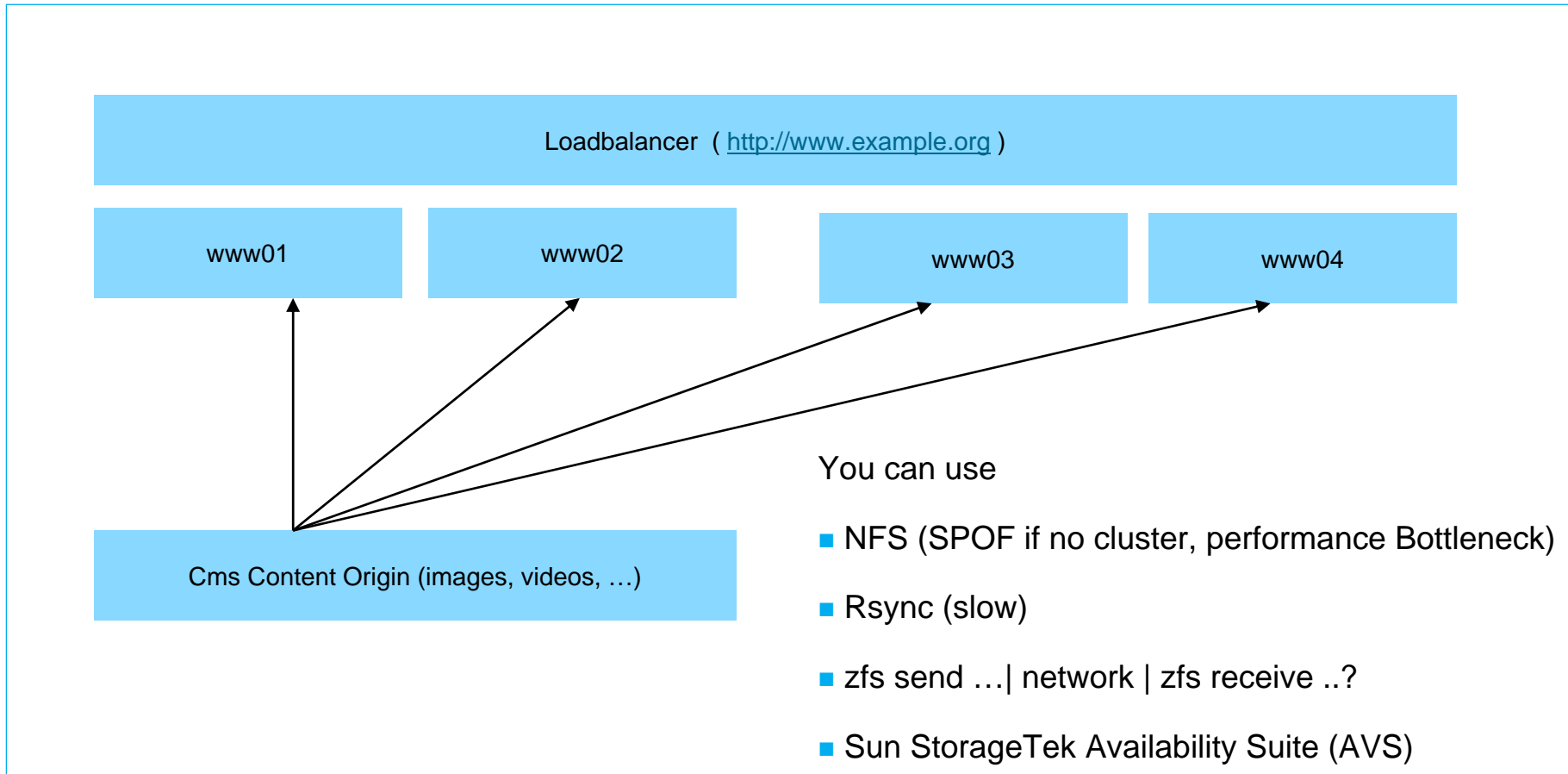
This is only a simple one ;-)

Old problems and new solutions

Test environment, simulation of your production environment with one Server



Old problems and new solutions
Replicate your content,
now with AVS



File Systems Tunings

- Tune UFS and ZFS
- For your FS mountpoint with public images, css etc. use “noatime” Flag in vfstab
 - UFS, speed improvement
 - Also in ZFS
- Databases
 - UFS “forcedirectio” in vfstab
 - Match the ZFS recordsize to the Oracle db_block_size.
- NFS with ZFS
 - Best performance with “set zfs:zil_disable=1” in /etc/system, makes operations async
 - More: http://blogs.sun.com/erickustarz/entry/zil_disable

Old problems and new solutions

More open source..

- Many open source software packages are bundled with Solaris
 - But if you need
 - PHP
 - Ruby on Rails
 - and more
 - Decide to
 - Compile it on your own (best with free Sun Studio 11)
 - Use packages for Niagara Cool Stack from <http://cooltools.sunsource.net/coolstack/>
 - www.blastwave.org
 - www.openpkg.org
 - www.sunfreeware.com
- It would be great to have more up to date open source packages like php and rails already included in Solaris /usr/sfw/

Security and Patch Management

- New “Secure by Default” Profile disables services like telnet
 - Do more hardening (uninstall packages)
 - Run Audits (BART)
 - Patch your Solaris Installation on a regular basis (in.telnetd Worm out now)
 - Solaris patches
 - Patch the additional open source and commercial packages
 - Your own application + libs
 - Servers with non global Zones
 - Patching with Solaris Live Upgrade since Solaris Express 02/2007
 - and more
- Think about sql-injection, code execution through your web(2) application

Security and SSL

- OpenSSL within Solaris10
- Build-in support for Niagara T1 (/dev/ncp) and PCI Card SSL Accelerator Boards
- To use T1 Cryptographic Provider, Compile apache with `CFLAGS= ' -DSSL_EXPERIMENTAL -DSSL_ENGINE' ./configure -with-apxs=/usr/local/apache2/bin/apxs --enable-rule=SSL_EXPERIMENTAL -with-ssl=/usr/sfw` and configuration tasks.
- Problems with missing Cipher Suites and Browser compatibility (apache/mod_ssl)

(use in httpd.conf: `SSLCipherSuite ALL:!ADH:!EXPORT56:-AES256-SHA:-DHE-RSA-AES256-SHA:-DHE-DSS-AES256-SHA:RC4+RSA:+HIGH:+MEDIUM:+LOW:+SSLv2:+EXP:+eNULL`)

or install the additional **Solaris 10 Encryption Kit** from Sun

<https://sdlc4d.sun.com/ECom/EComActionServlet;jsessionid=4FC324A4A8AB8FD062762B53F522014A>

- KSSL is also an option to use, but not in non-global zones (LDOMS?)
 - No thread support in OpenSSL (Solaris 11/06), but already in OpenSolaris
- sendmail TLS/SSL support for /dev/ncp would be great

Old problems and new solutions

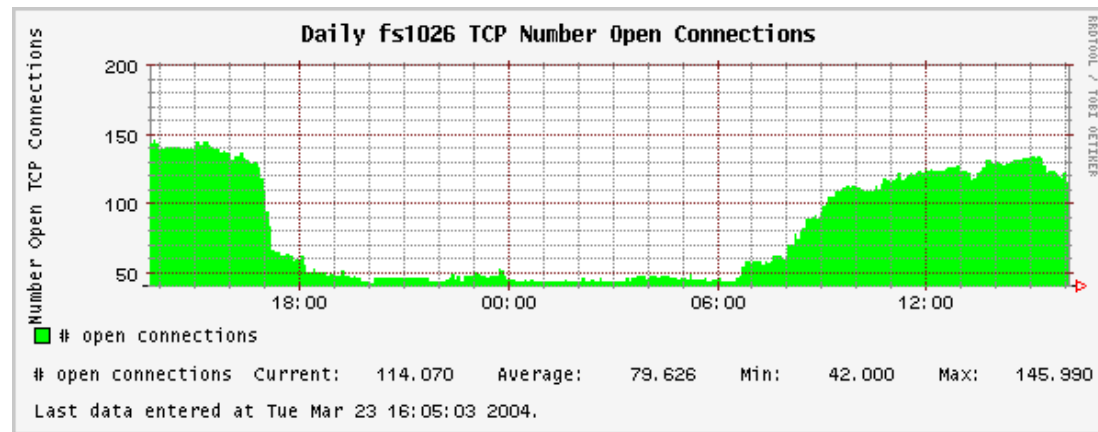
Collect you server performance statistics

- SE Toolkit and Orca
- RRD based
- Nice HTML Pages
- SE is on Sourceforge now

■ <http://sourceforge.net/projects/setoolkit/>

■ <http://www.orcaware.com/orca/>

→ Better Solaris 10 integration for RichSe would be nice



Agenda

1	Intro
2	Web applications
3	Scale it
4	Old problems and new solutions
5	This is the end

Questions

More Information and White Paper:

<http://www.pixelpark.com/Publikationen.20.0.html>

Blog:

<http://www.wiik.de>

pixel park Thorleif Wiik

Rotherstrasse 8, 10245 Berlin, Germany, Phone +49.30.5058-1648, Fax -1600

E-Mail: wiik@pixelpark.com, <http://www.pixelpark.com>