

Bill-It-Easy



TECHNICAL INTEGRATION

How Bill-It-Easy Works. – Overview.

Klaus Thurnhofer, Manager Technical Development
June 2002

Key Facts

- The End User ...
 - ... has everything necessary already available on the PC (no software installation required).
- The Content Provider ...
 - ... has everything necessary in place (no software installation required).
- The Service Provider ...
 - ... is operating the payment system on behalf of the end user and the content provider.

What Is The Control Point?

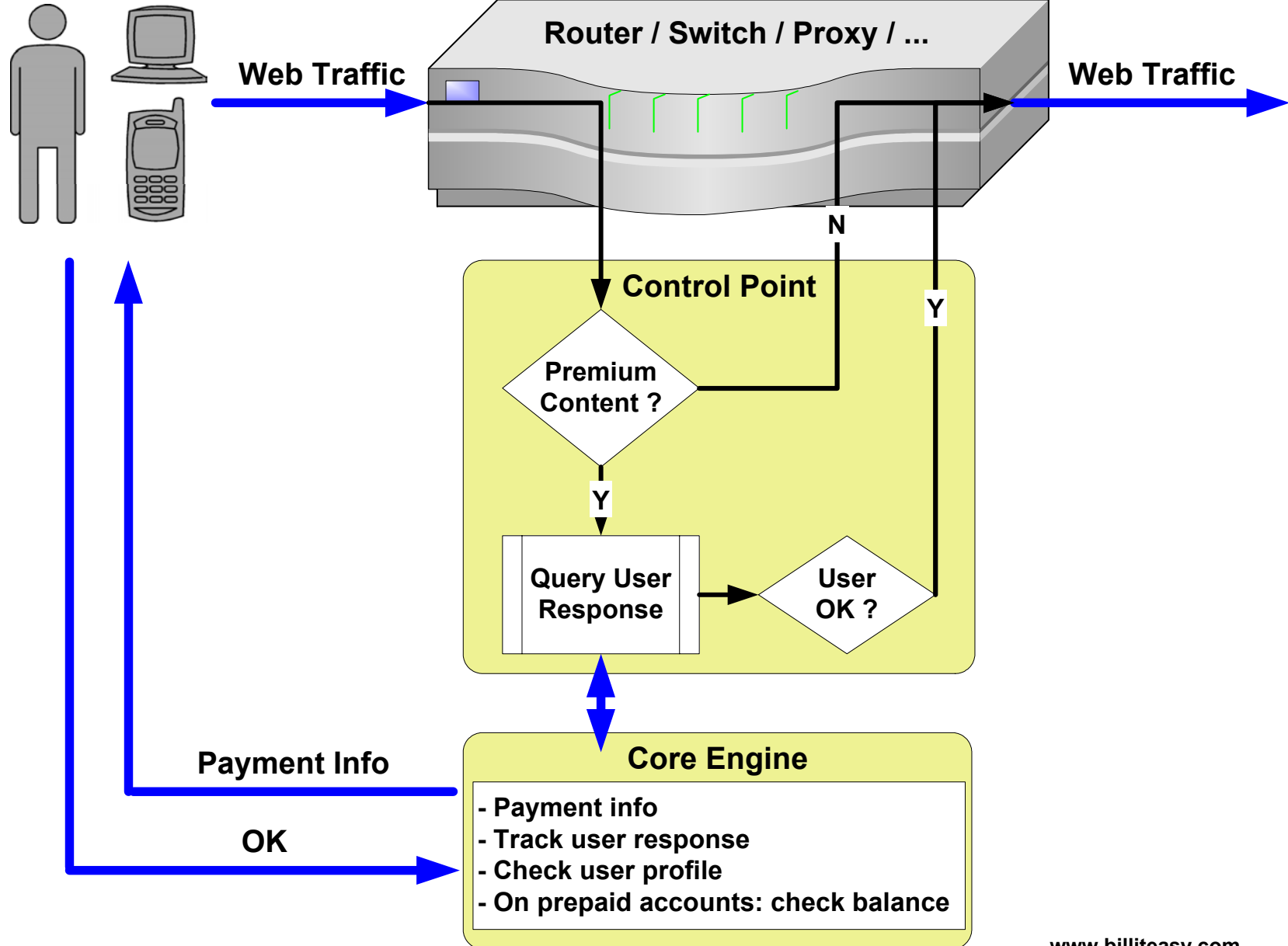
- It monitors Internet traffic
- It intercepts traffic when premium content access is detected
- It interacts with the Core Engine to trace transactions
- It grants / denies access to premium content

What Is The Core Engine?

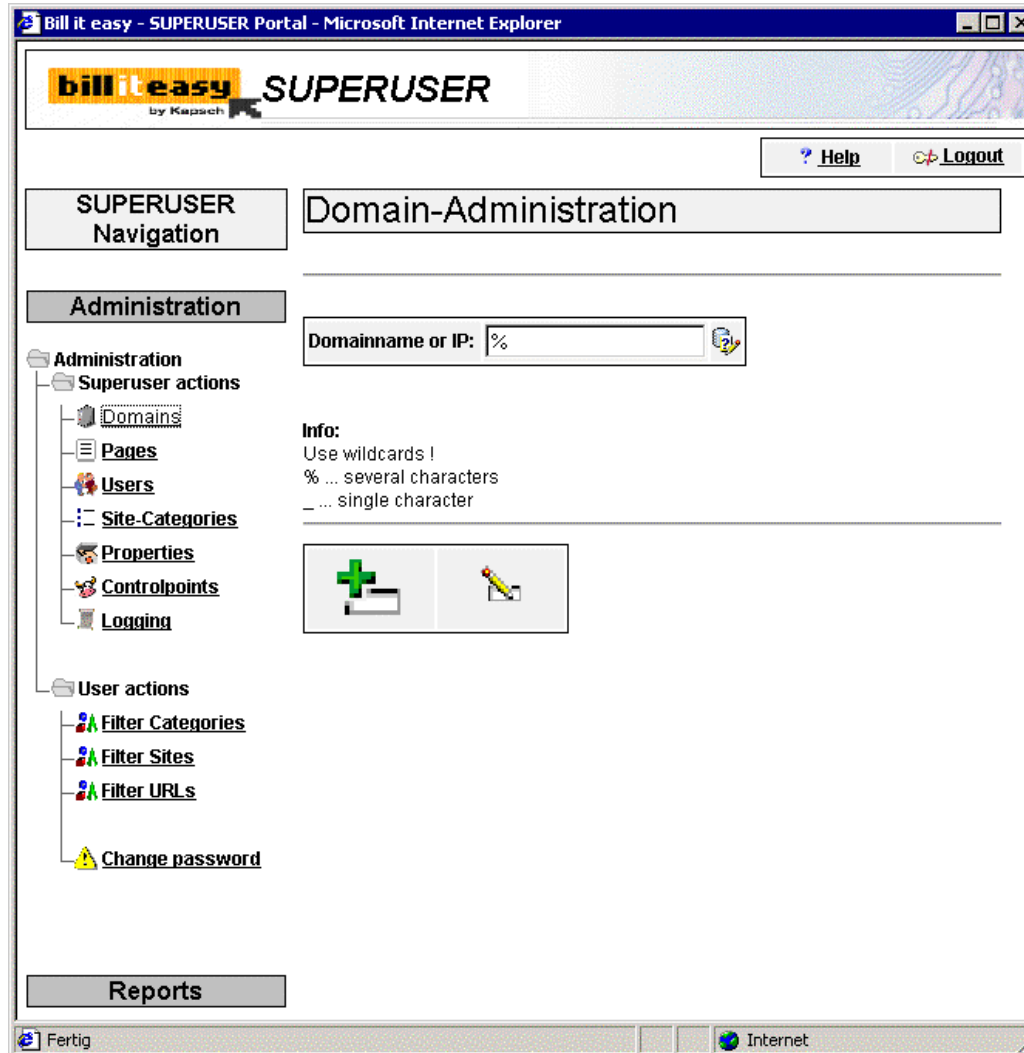
- It monitors and tracks payment actions
- It identifies the user
- It supplies payment information to the user
- It acquires user response („ok“ or „cancel“)
- It notifies the Control Point about a transaction to grant / deny access for a particular user
- It contains the content specific price list
- It holds the user's profile
- It produces billing records

How Bill-It-Easy Operates

- See flow chart on next page ...



Sample User Interface For Service Providers



Tasks Of The Service Provider

- Add a user for the content provider
- Assign an initial password

User-Administration

Insert

Username:	<input type="text" value="democp"/>
Realname:	<input type="text" value="Demo Content Provider"/>
Mail:	<input type="text" value="admin@democontent.com"/>
Hotline:	<input type="text" value="+43-1-2345"/>
Location:	<input type="text" value="Vienna"/>
Link to Licenseagreement:	<input type="text" value="http://www.democontent.com/license.html"/>
Role:	<input type="text" value="Provider"/>
Password:	<input type="password" value="* * * * *"/>
Verify password:	<input type="password" value="* * * * *"/>



Sample User Interface For Content Providers

Bill it easy - CONTENTPROVIDER Portal - Microsoft Internet Explorer

billiteasy CONTENTPROVIDER
by Kapsch

[? Help](#) [Logout](#)

CONTENTPROVIDER Navigation Domain-Administration

Administration

Records 1 - 1 of 1

	Domainname	IP	Port	Owner
<input type="radio"/>	www.democontent.com	1.2.3.4		kth

Administration

- CP actions
 - Domains
 - Pages
- User actions
 - Preferences

Navigation: << >>

Toolbar:

Reports

Fertig Internet




Setting Up The Price List

Protocol:	<input type="text" value="http"/>
Domainname:	<input type="text" value="www.democontent.com"/>
Path:	<input type="text" value="/premium/*.htm"/>
Price:	<input type="text" value="110"/> + <input type="text" value="20"/> % VAT Cent
Protection Time Kind:	<input type="text" value="Delta"/>
Protection Time Delta:	<input type="text" value="10080"/> minutes
Protection Time Fix:	<input type="text"/> MM:DD:HH:MM 99 = wildcard 24 hour format
Author:	<input type="text"/>
Category:	<input type="text" value="Computer / Internet"/>
RTSP Features:	TeaserTime: <input type="text"/>
	BillingIndicator: <input type="text" value="per minute"/>
Keywords: max. 60 characters	<input type="text" value="60"/>
Description: max. 1000 characters	<input type="text" value="1000"/>



Sample User Interface For End Users

**USER**

[? Help](#) [Logout](#)

USER Navigation

Filter Category - Administration

Administration

Records 1 - 1 of 1

Categoryname
<input type="radio"/> Erotic

« »

- Administration
 - User actions
 - [Filter Categories](#)
 - [Filter Sites](#)
 - [Filter URLs](#)
 - [Preferences](#)

Reports

Categoryname
Business / Economy
Business / Economy
Computer / Internet
Education / Career
Entertainment / Humor
Erotic
Games
General
News and Media
Pictures
Real estate
Science



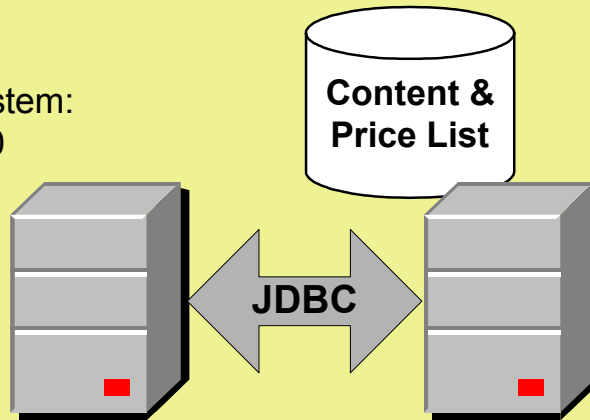
Hardware Components

Core Engine

Hardware & Operating System:

- Intel & Windows NT/2000
- Sun Sparc & Sun Solaris

Software Platform:
- Oracle Application Server (8i or 9i)



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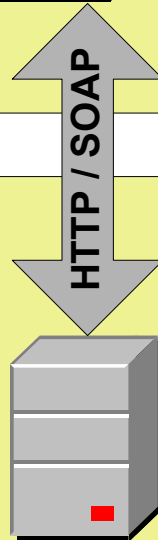
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Control Point

Hardware & Operating System:

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- Intel & Windows NT/2000
- Intel & Linux



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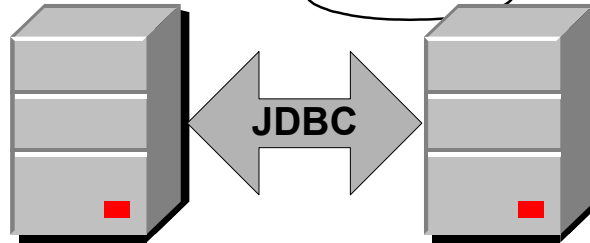
JDBC

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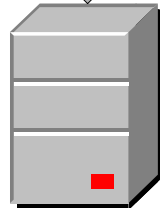


HTTP / SOAP

Control Point

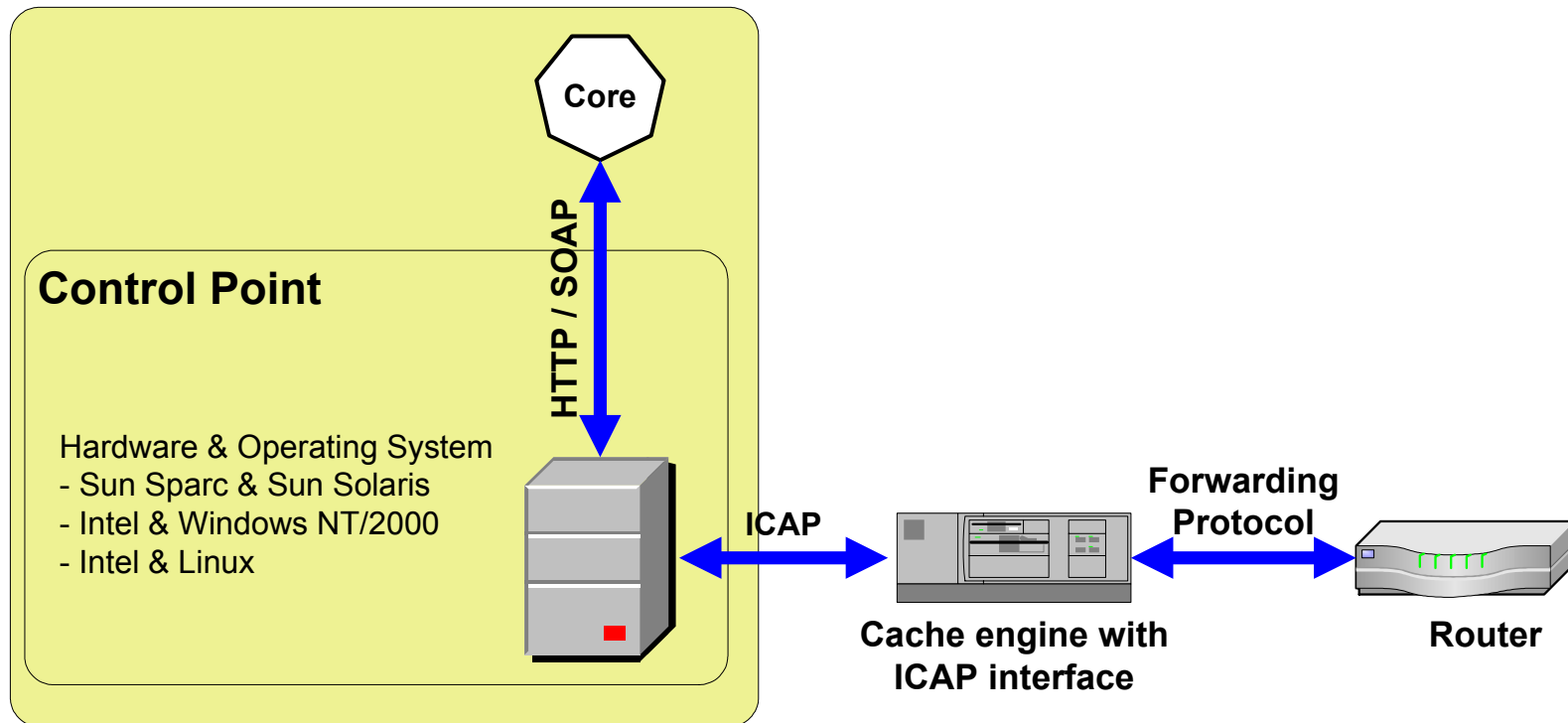
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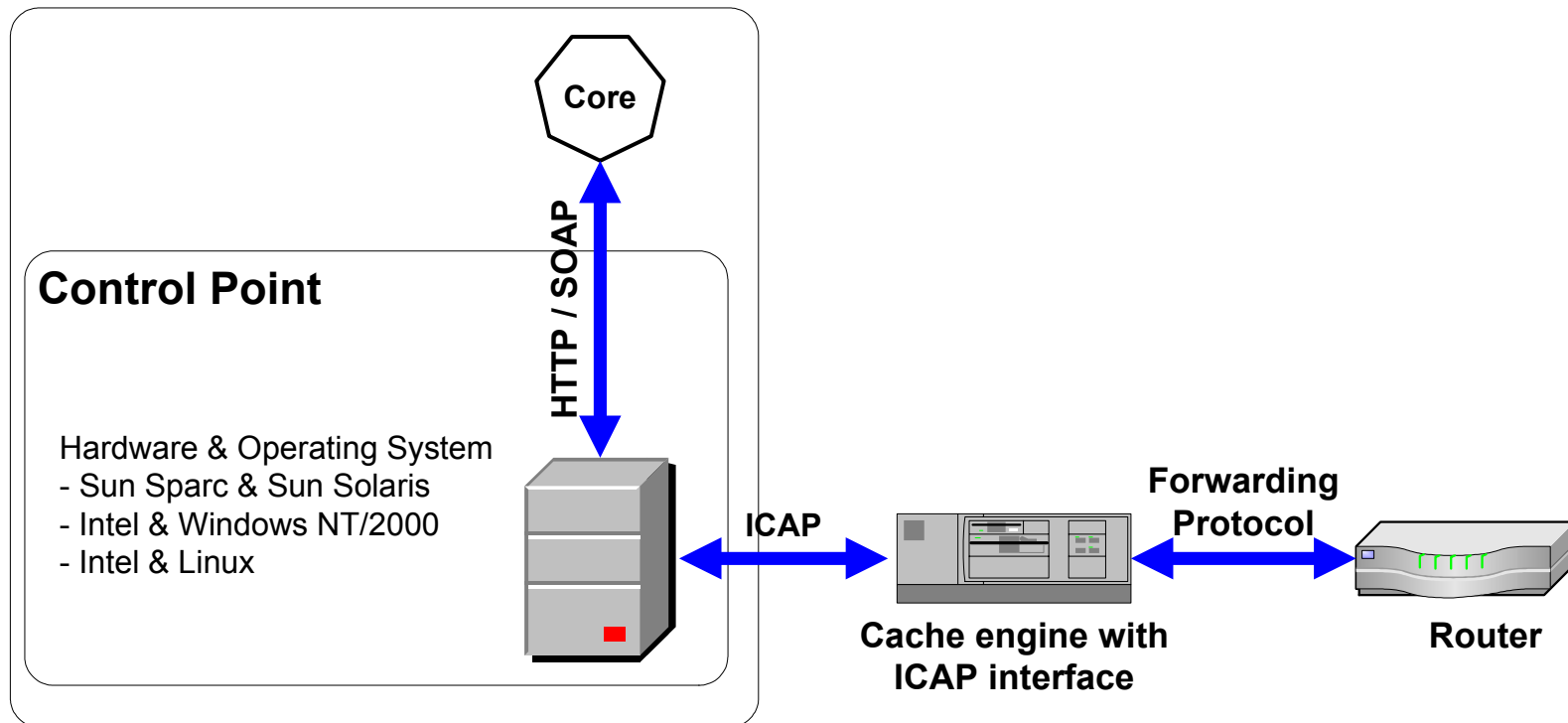
Connect Control Point via ICAP

- ICAP = Internet Content Adaption Protocol



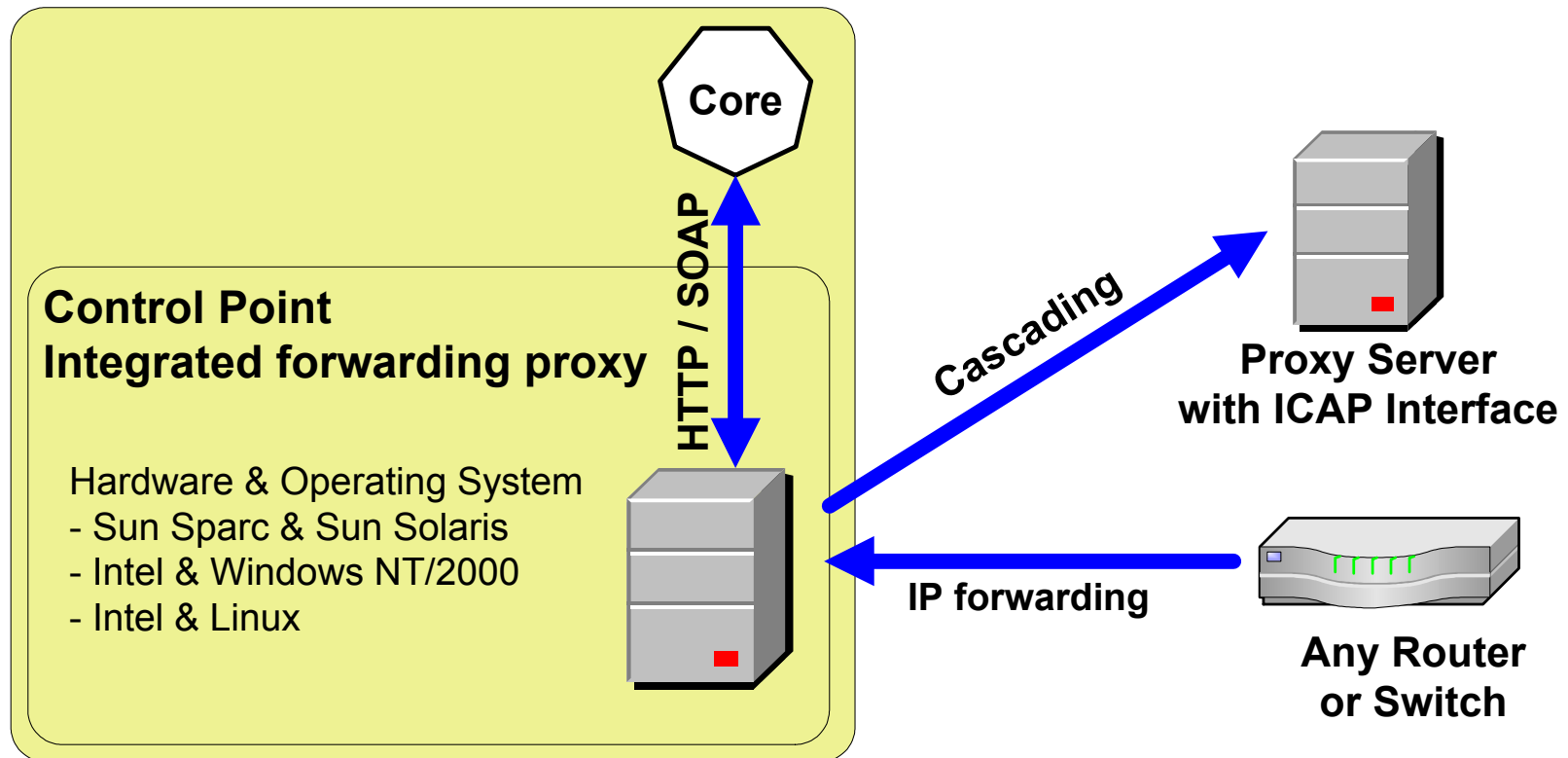
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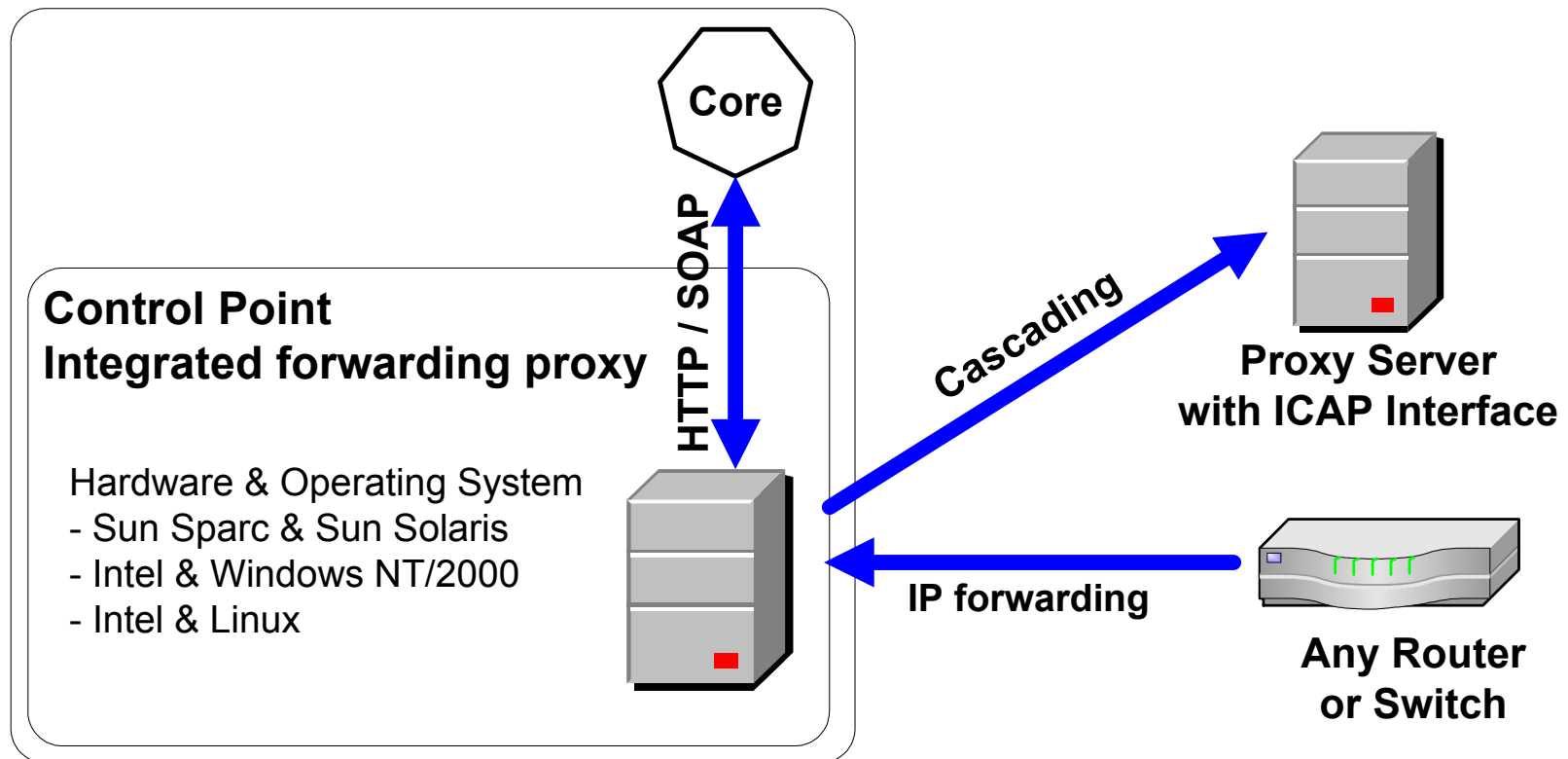
Generic Interface With IP Forwarding

- Applicable with all routers and switches



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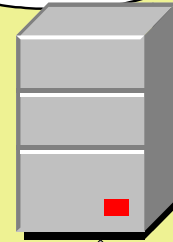
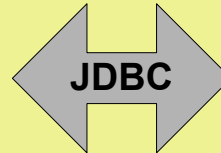
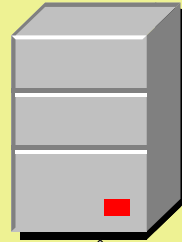
Connect Core Engine

Core Engine

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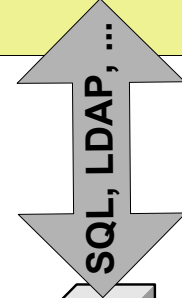
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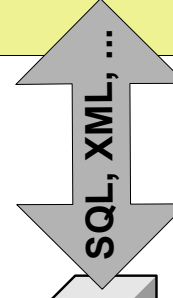
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Radius Server



Billing System



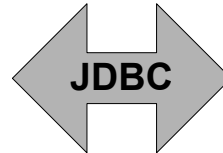
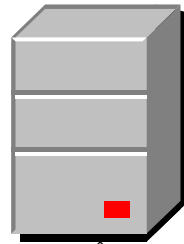
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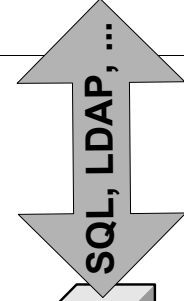
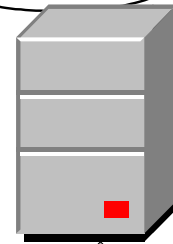


Content & Price List

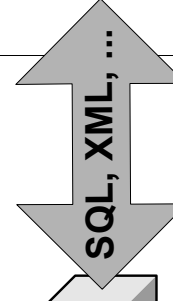
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Radius Server

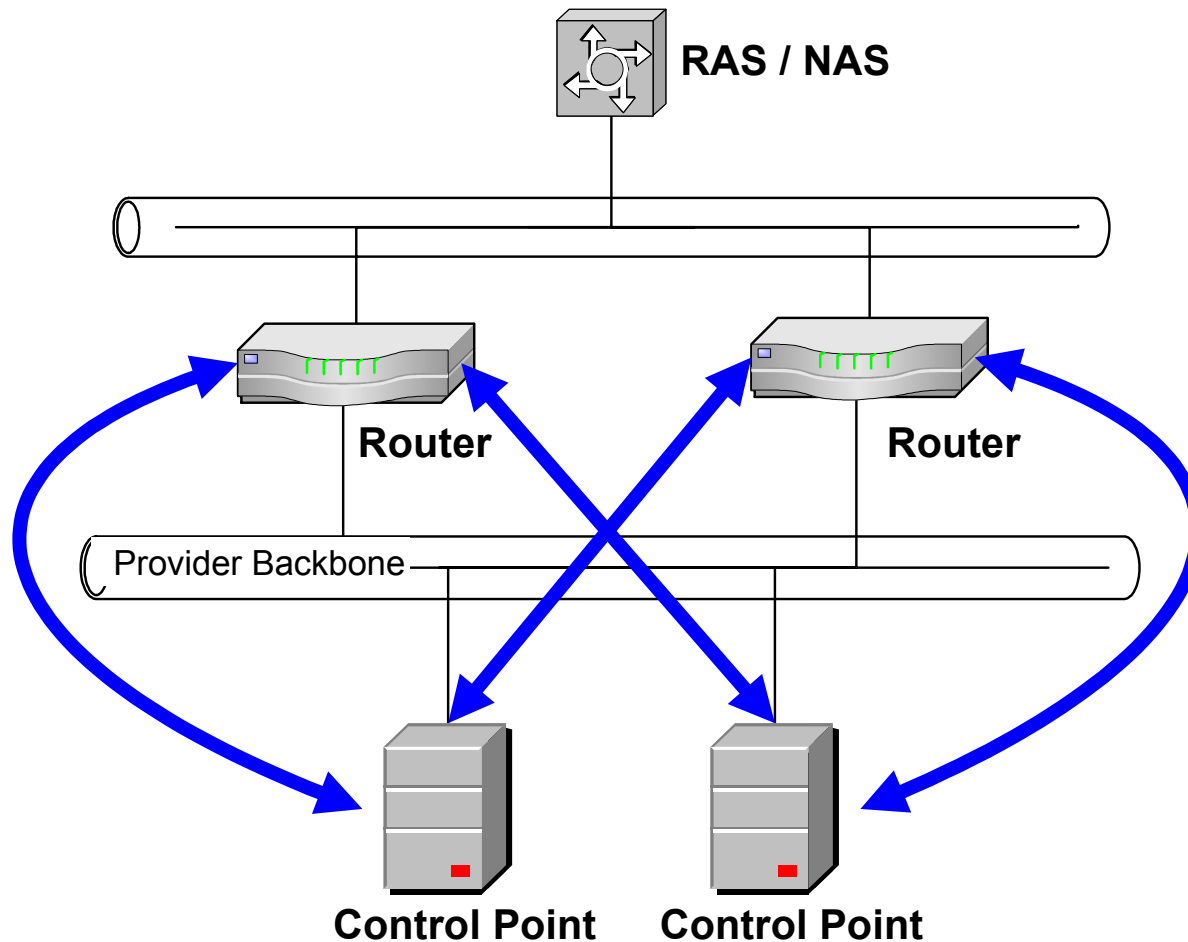


Billing System



Hardware Layout

- Fault tolerant system through redundant hardware



Hardware Metrics For The Control Point

- HTTP connections have a short life time.
- On a 100Mbit LAN approx. 1.500 HTTP connections per second can occur.
- A Sun machine with 7 NICs can handle approx. 10.500 HTTP connections per second.
- The number of actual concurrent HTTP connections is about 10% of the number of concurrent online users.
- Accordingly this Sun machine can handle approx. 100.000 concurrent users.

Hardware Metrics For The Core Engine

- The Core Engine handles genuine E-Business transactions only.
- At peak time only 1% of the HTTP traffic relates to e-Business.
- Out of 500.000 concurrent Internet users 150.000 (30%) are online shoppers.
- 150.000 concurrent online shoppers produce approx. 150 payment requests per second.
- A Sun machine with Oracle 9i can handle at least 200 payment requests per second.

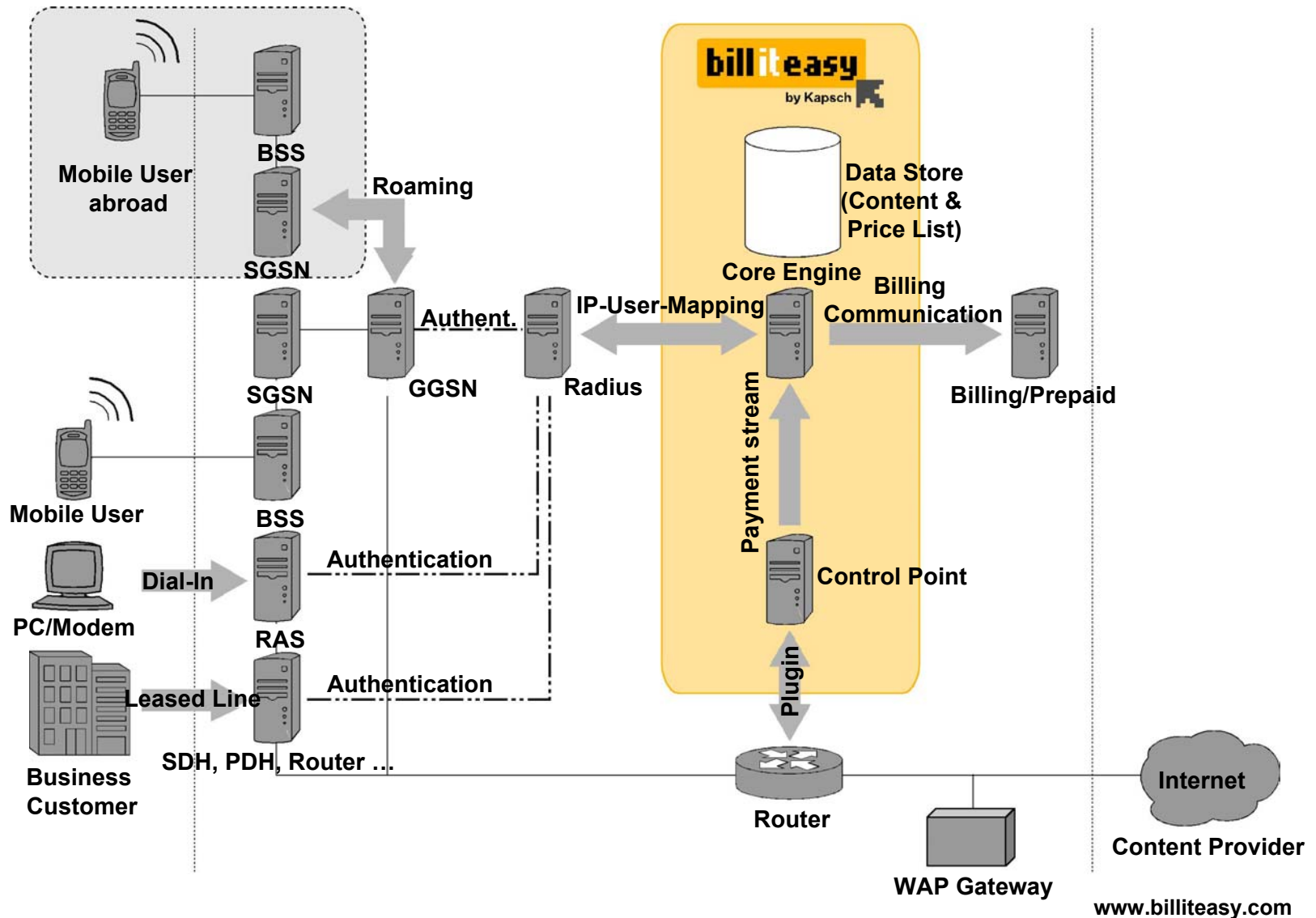
Integration Tasks

- Connect the Control Points to network elements.
- Connect the Core Engine to authentication elements.
 - Radius server, etc.
- Connect the Core Engine to billing system.

Operation Of The Bill-It-Easy System

- Maintenance of price lists and profiles.
- Maintenance of Interfaces (to network elements, authentication and billing system).
- Monitoring of Control Point and Core Engine activity and availability.
- Clearing of user and content provider payments.
- Monitoring of user behaviour.
- User support via call center.
- Software updates and system rollout.

Integration Overview



Bill-It-Easy



BILL-IT-EASY

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