
A Method for Measuring the User-Perceived Performance of Web Service

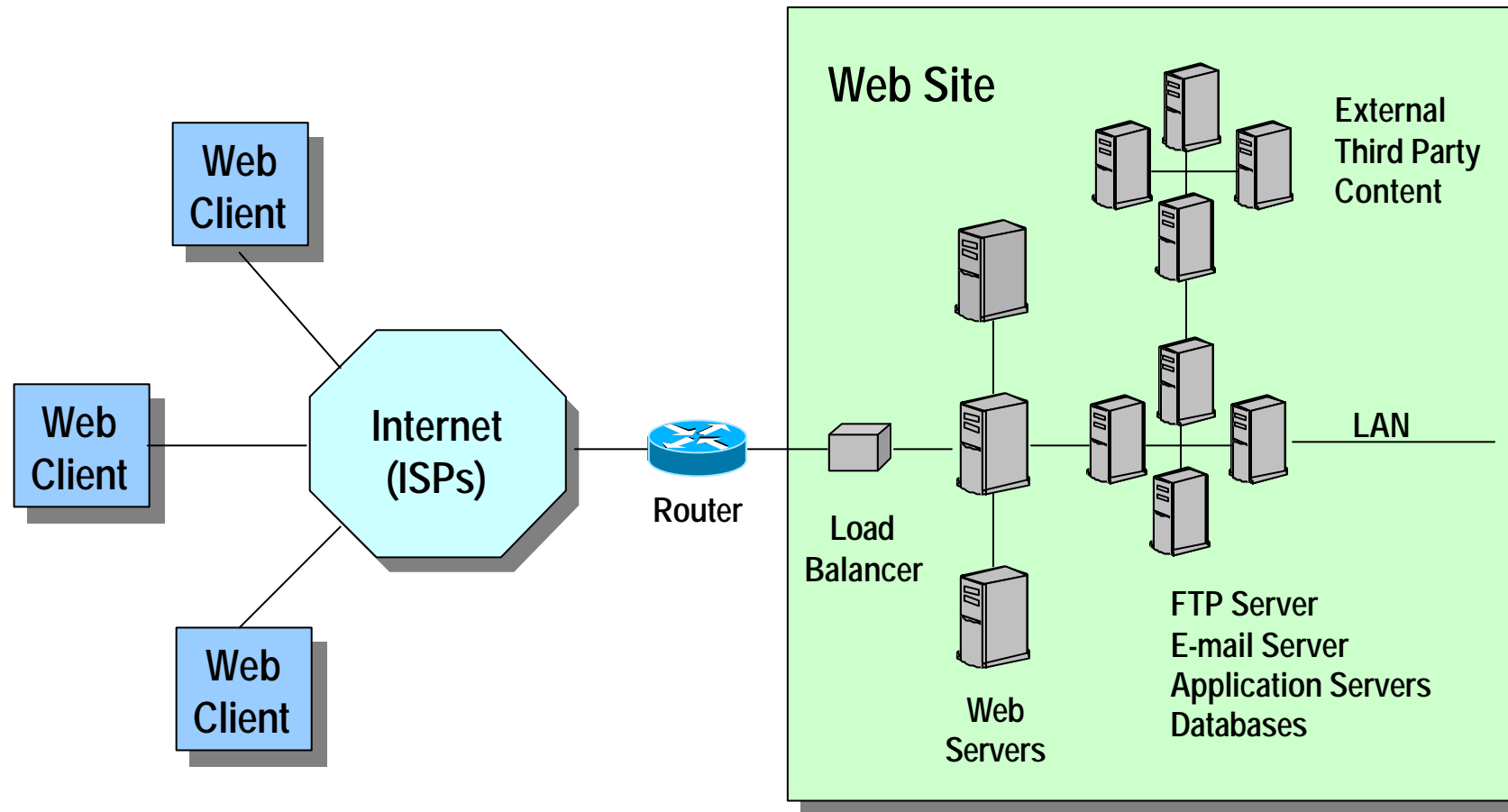
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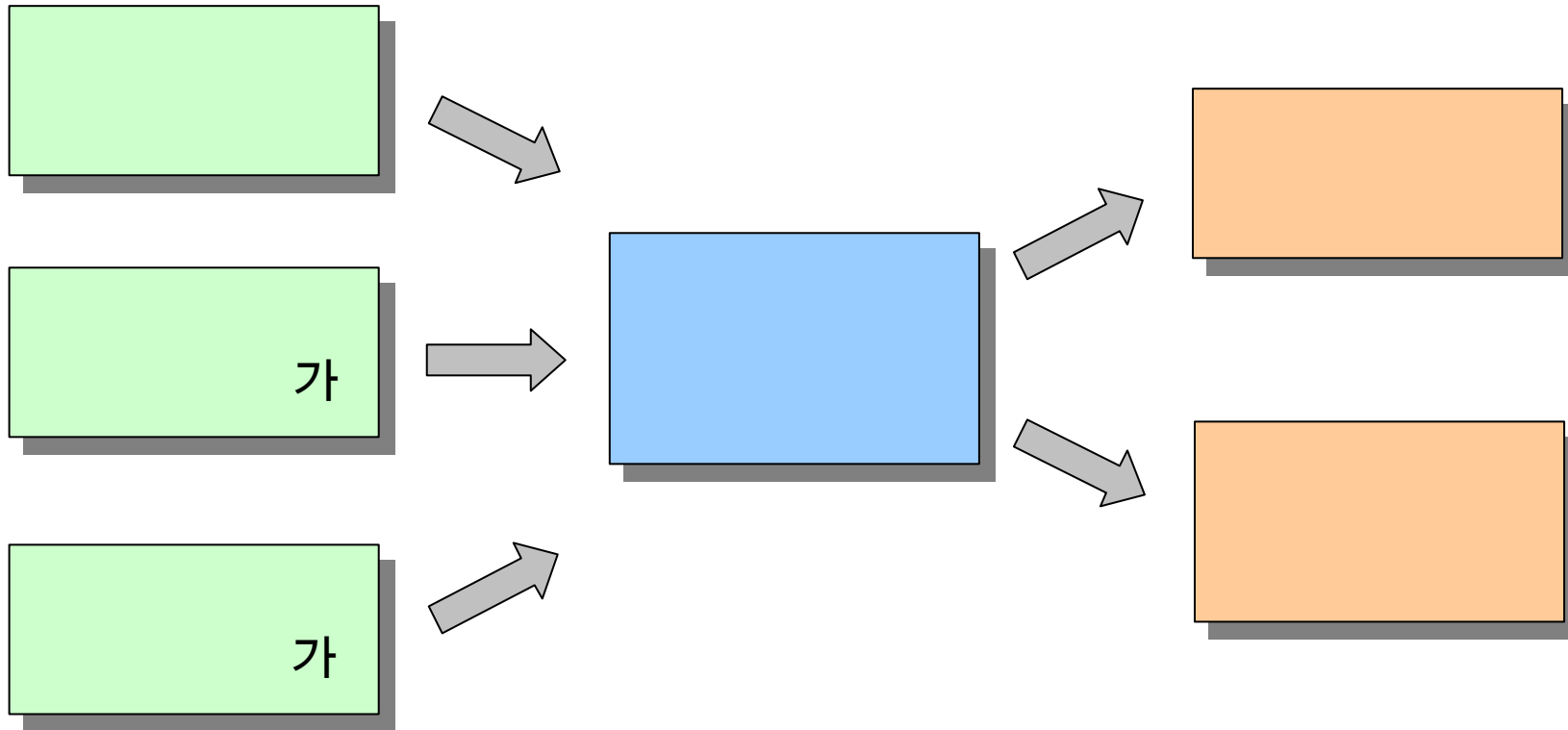
mine@postech.ac.kr



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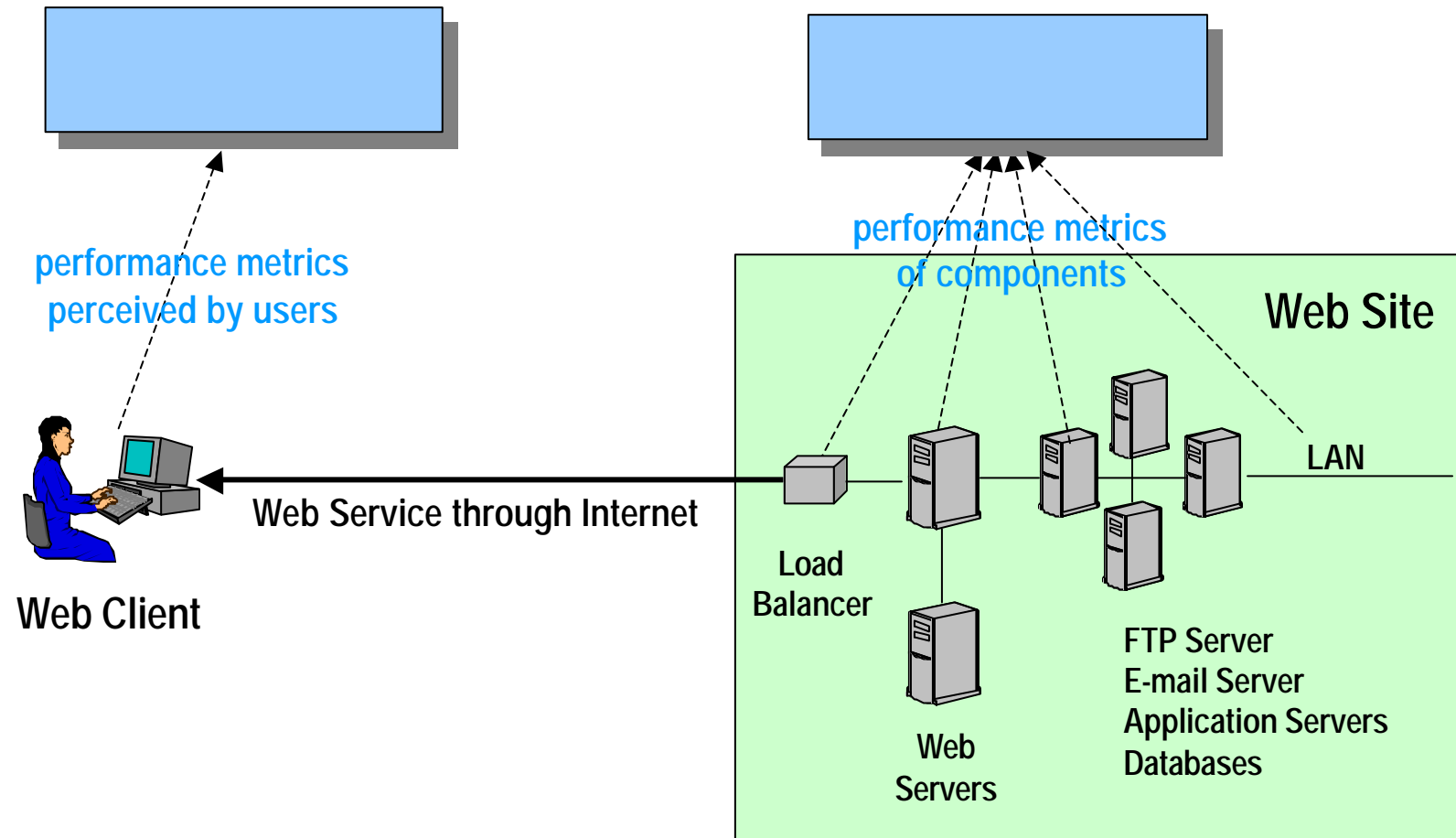






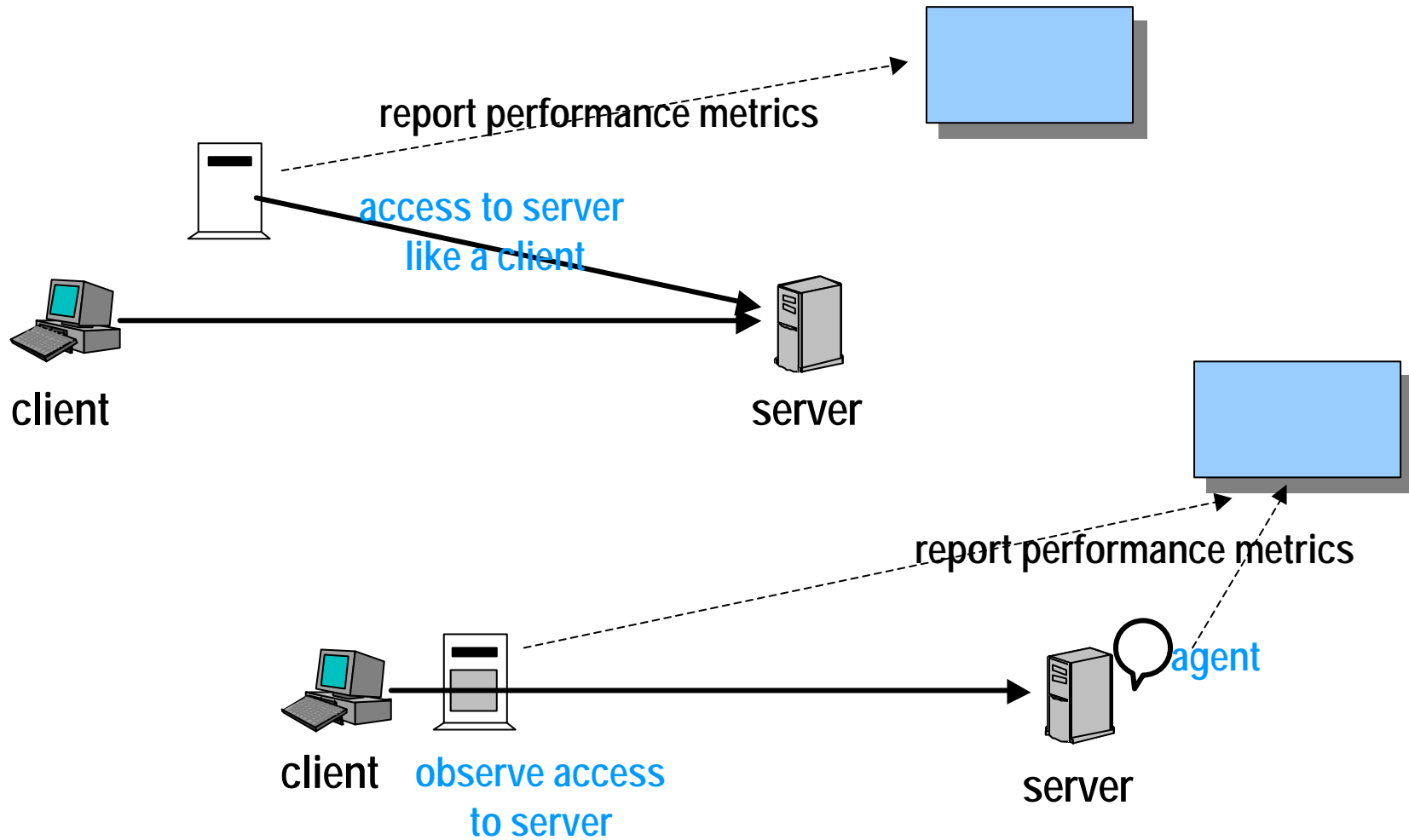
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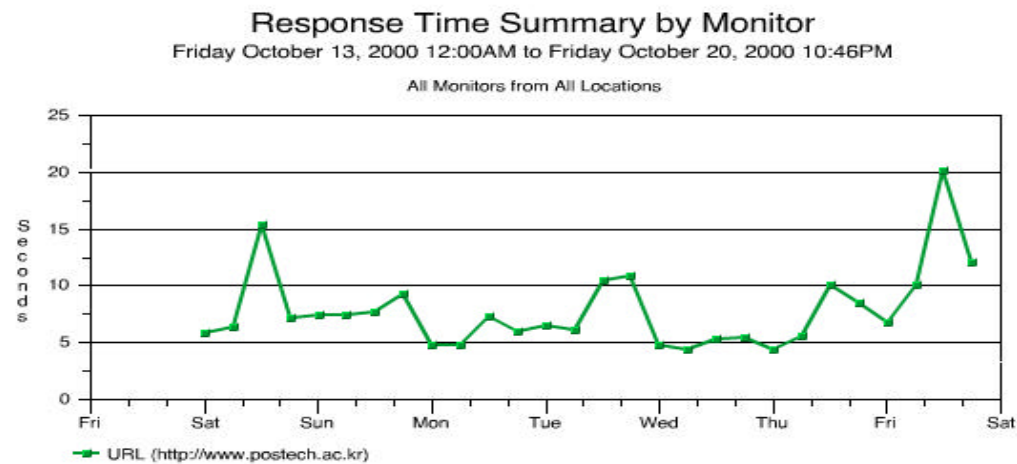
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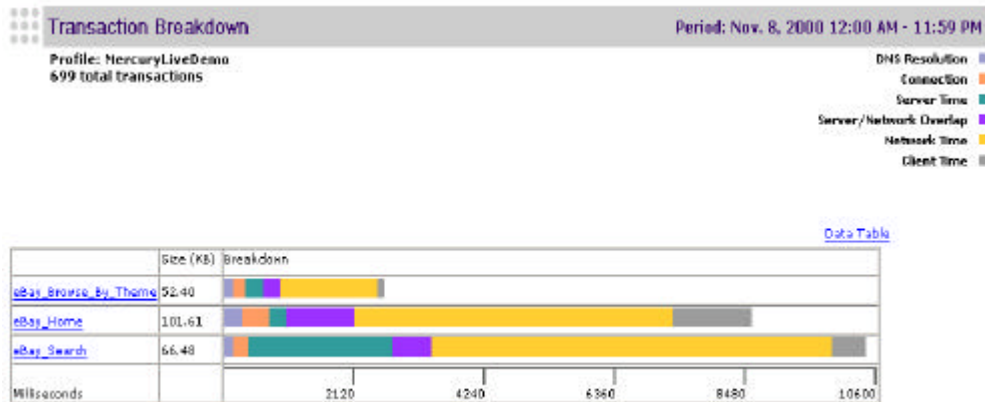
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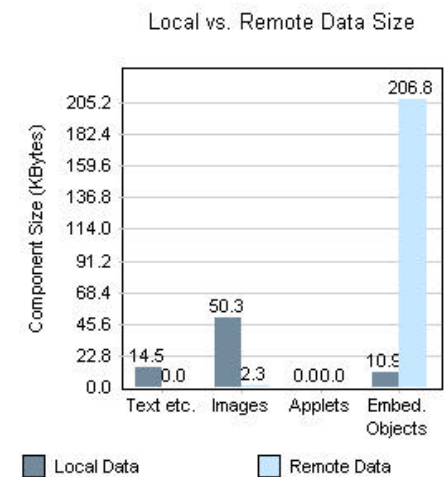
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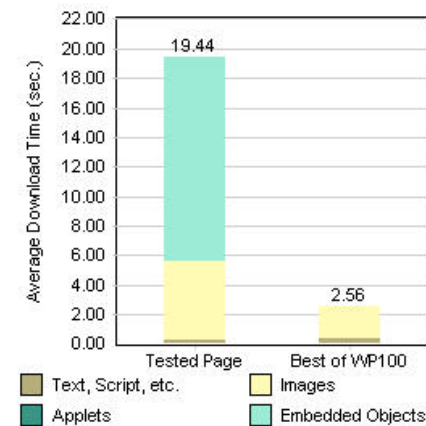
a) Remote Monitor of Holistix



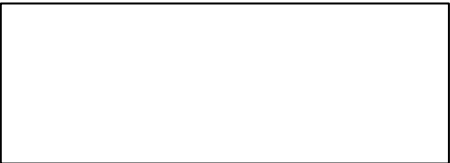
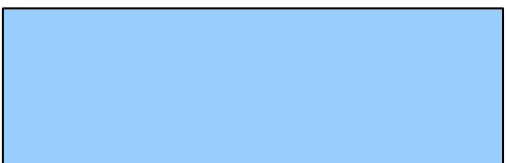
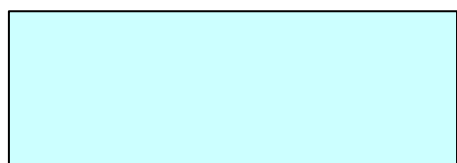
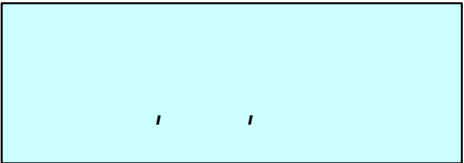
b) ActiveWatch of Mercury Interactive



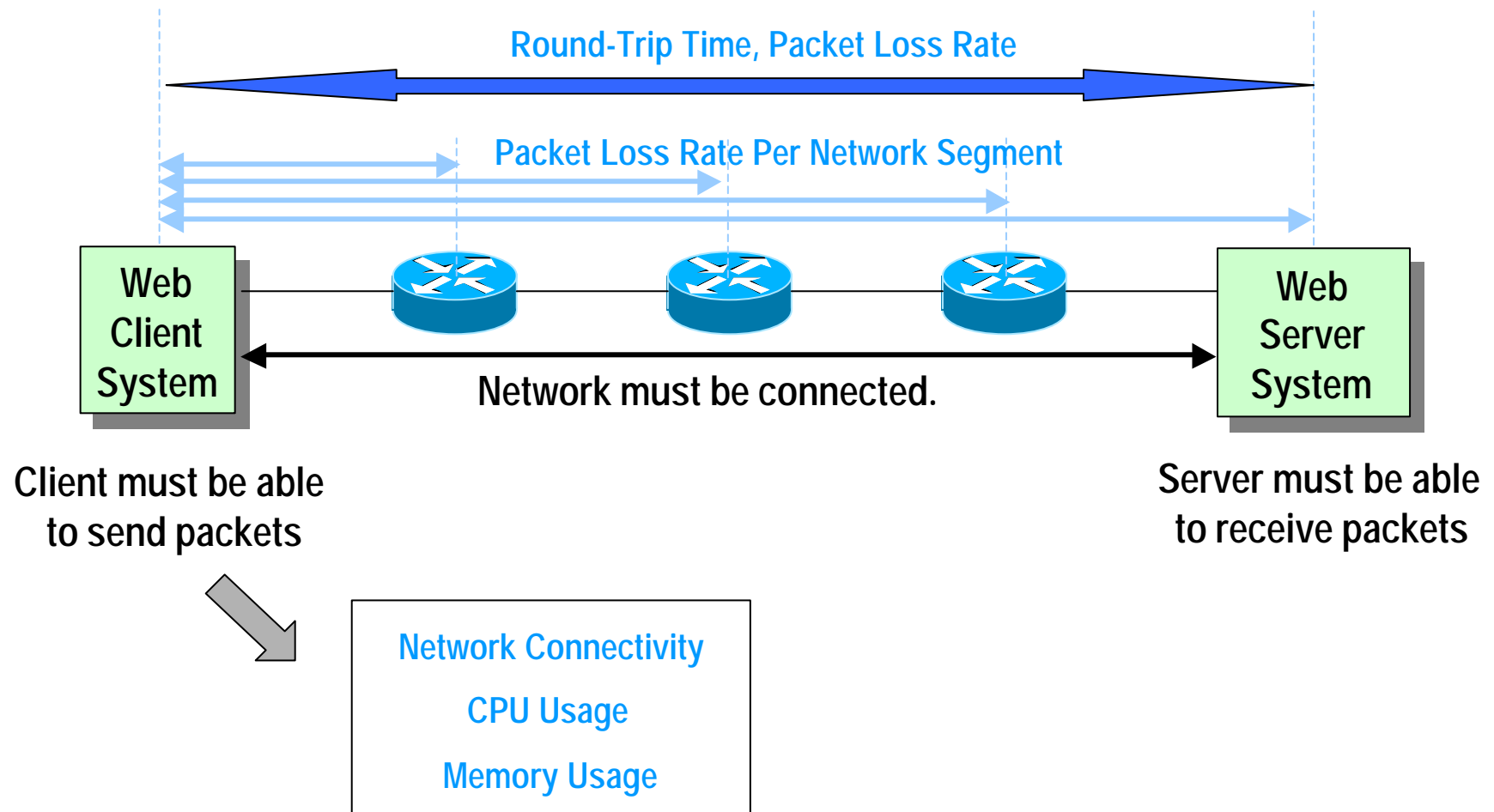
Component Load-time Breakdown



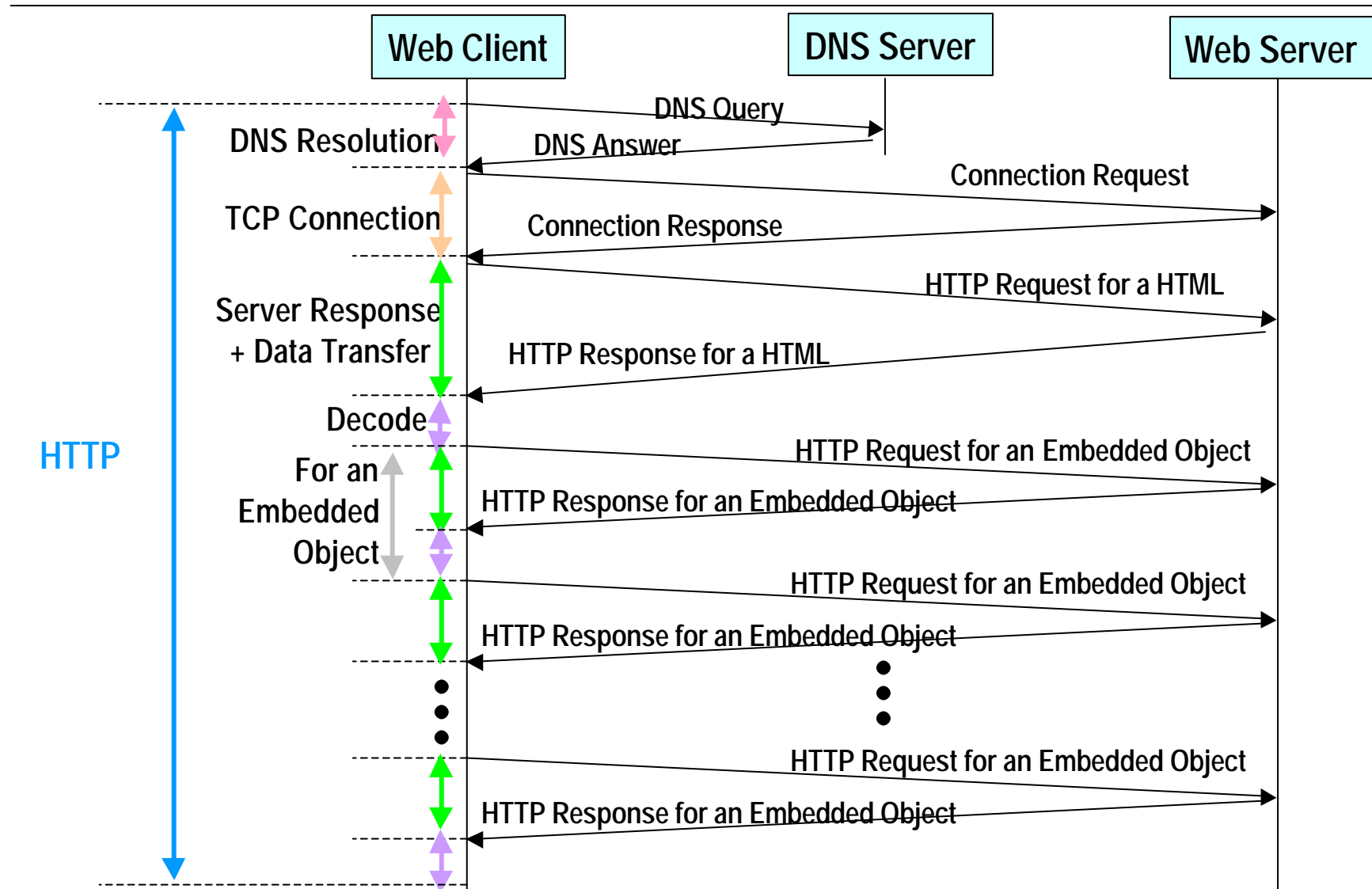
c) SecretShopper of WebPartner

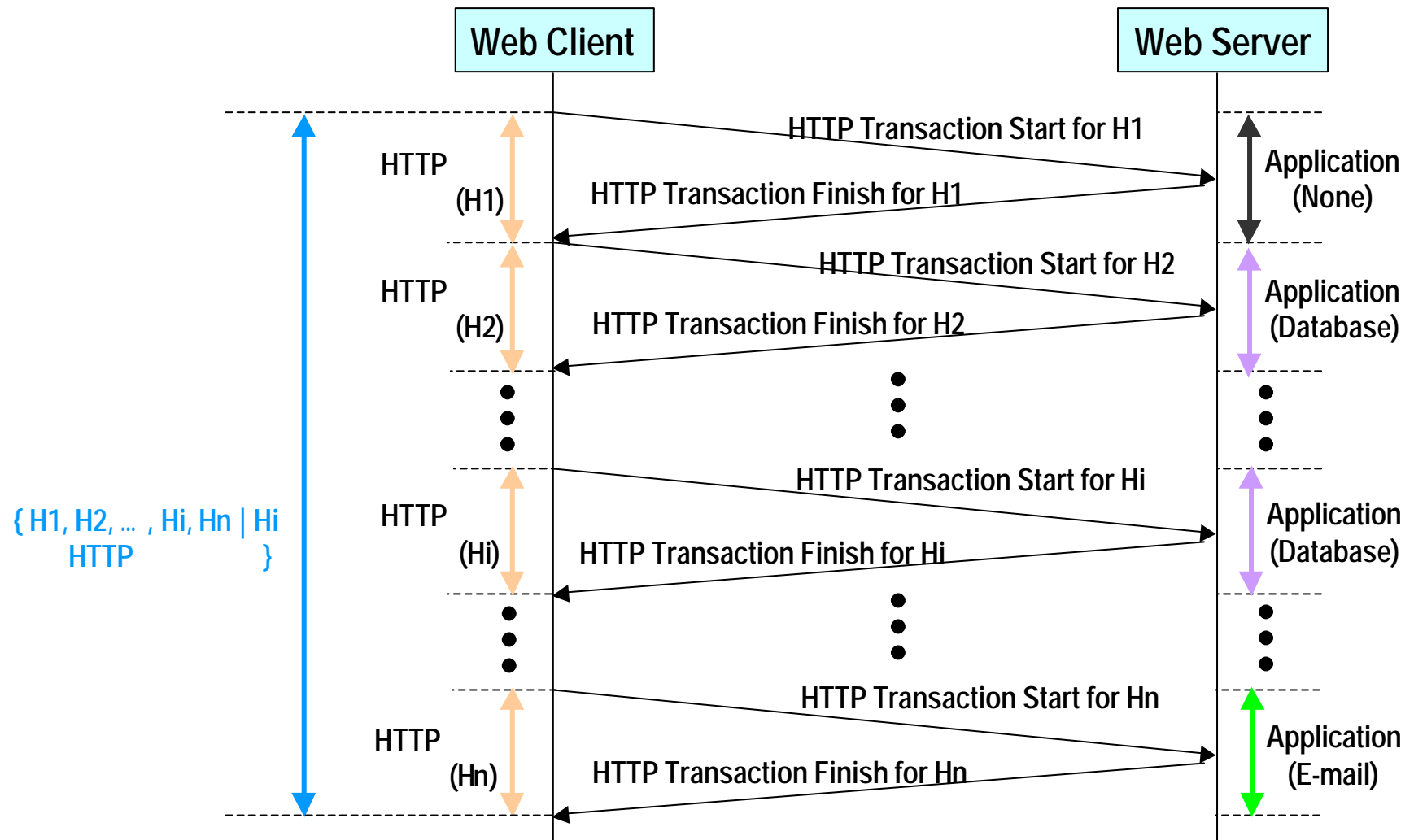


End-To-End



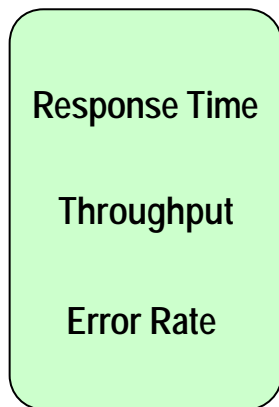
HTTP



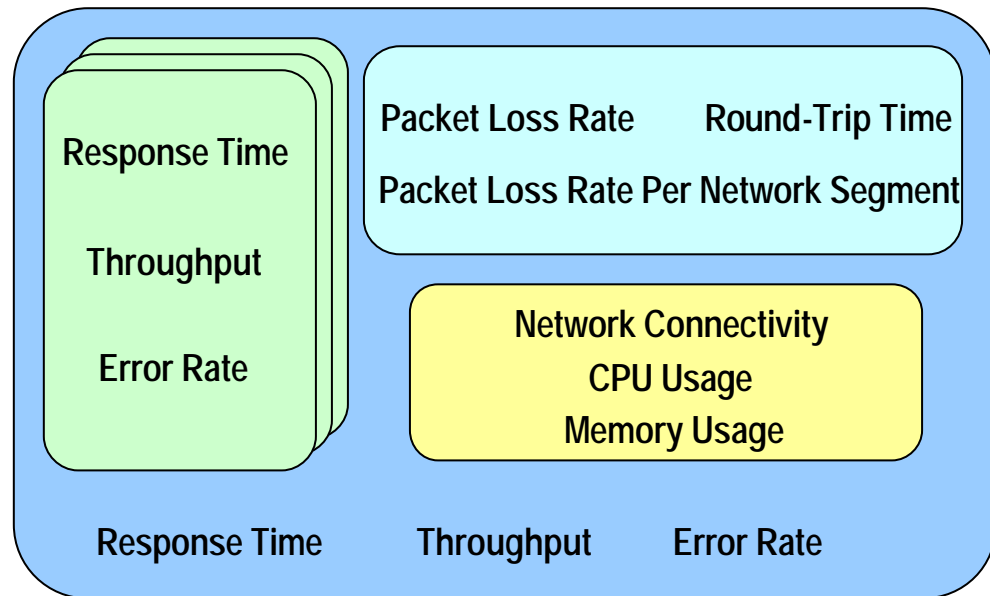
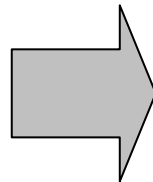




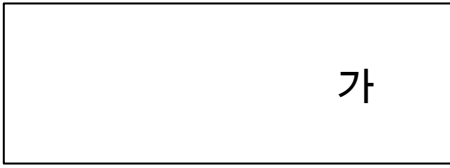
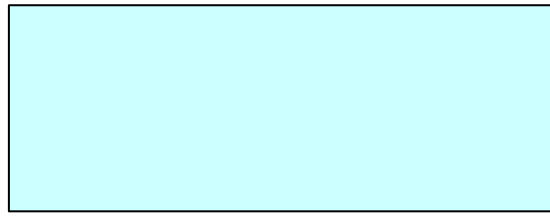
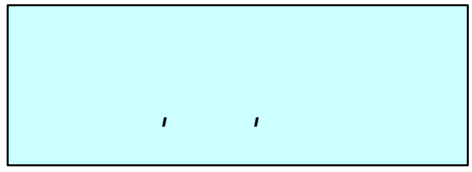
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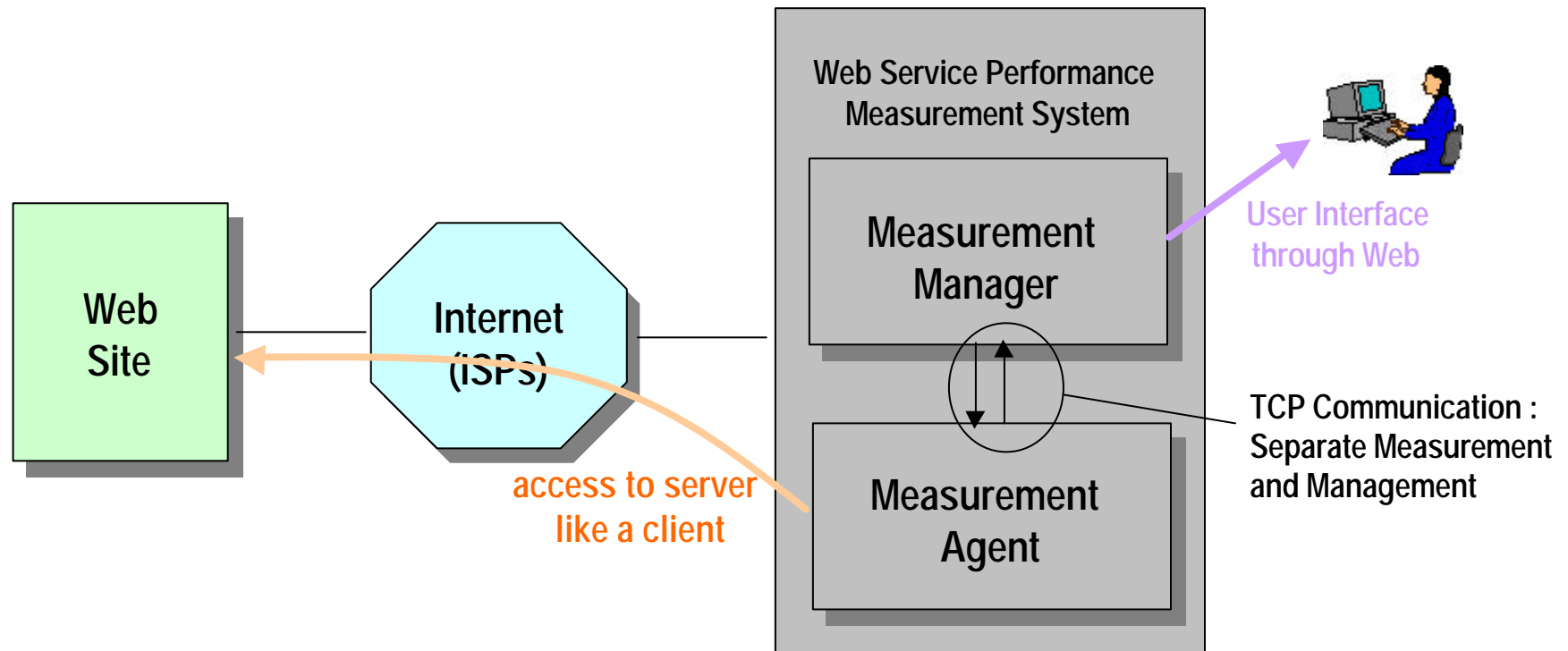


a)



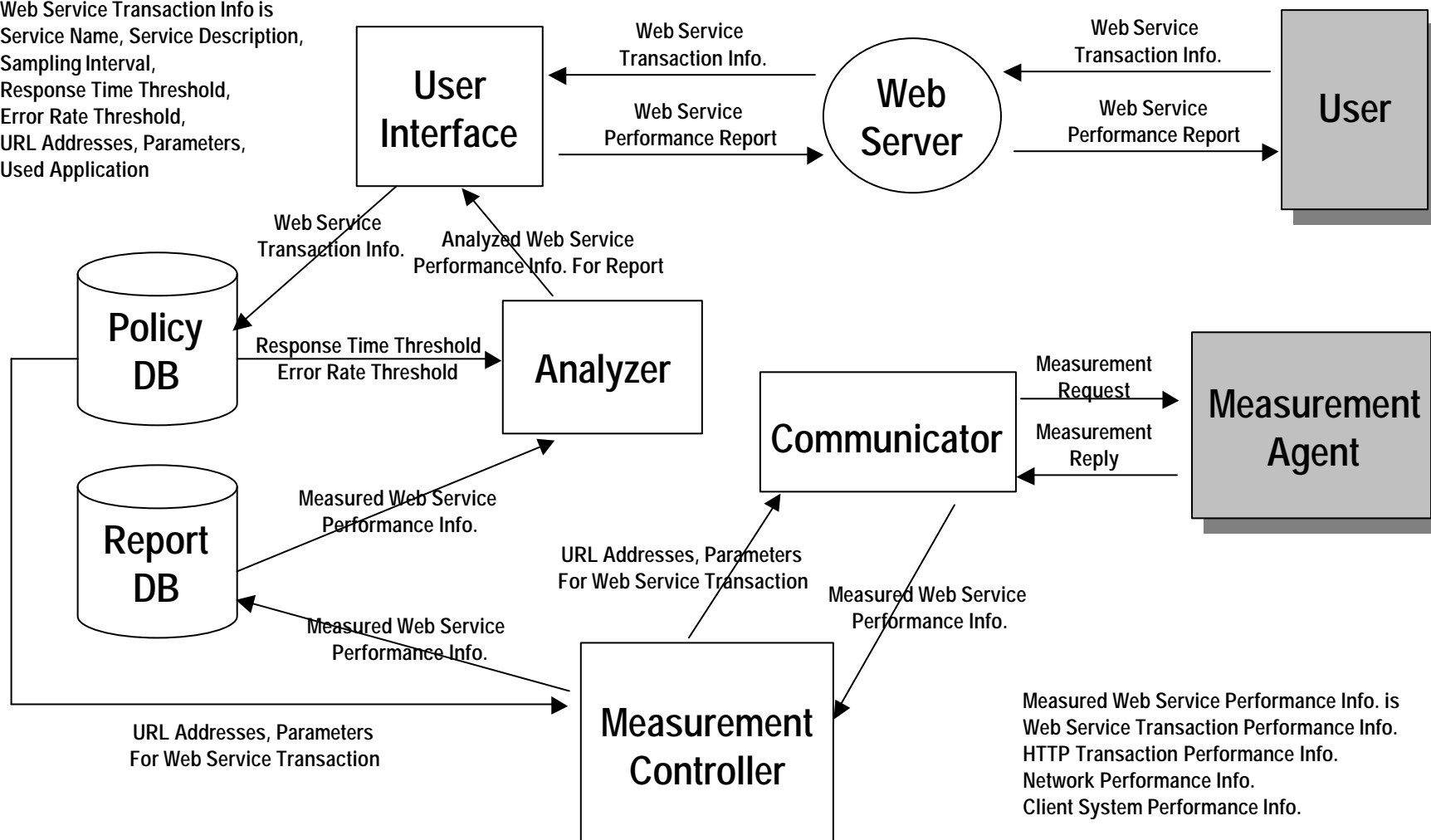
b)

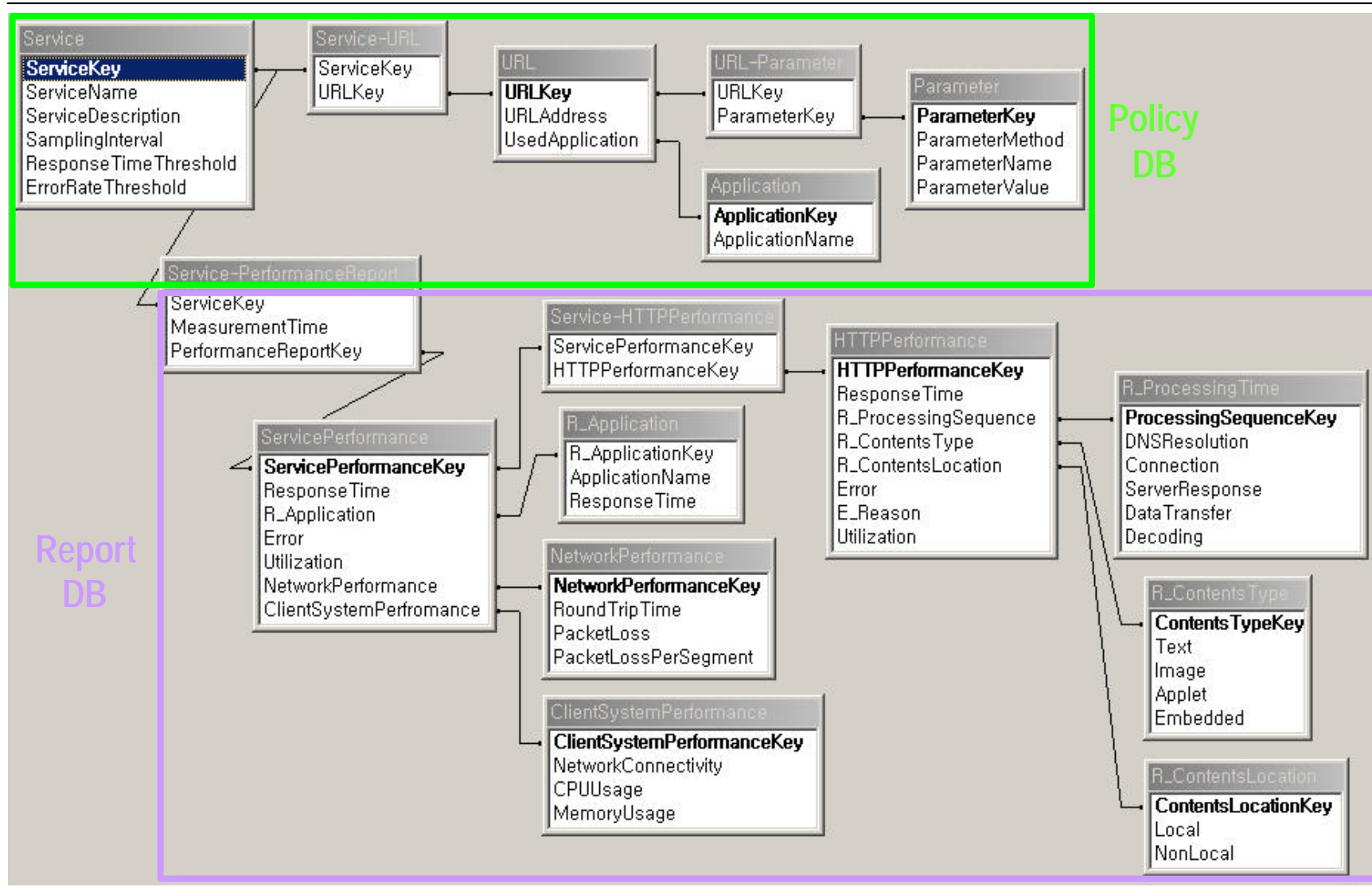




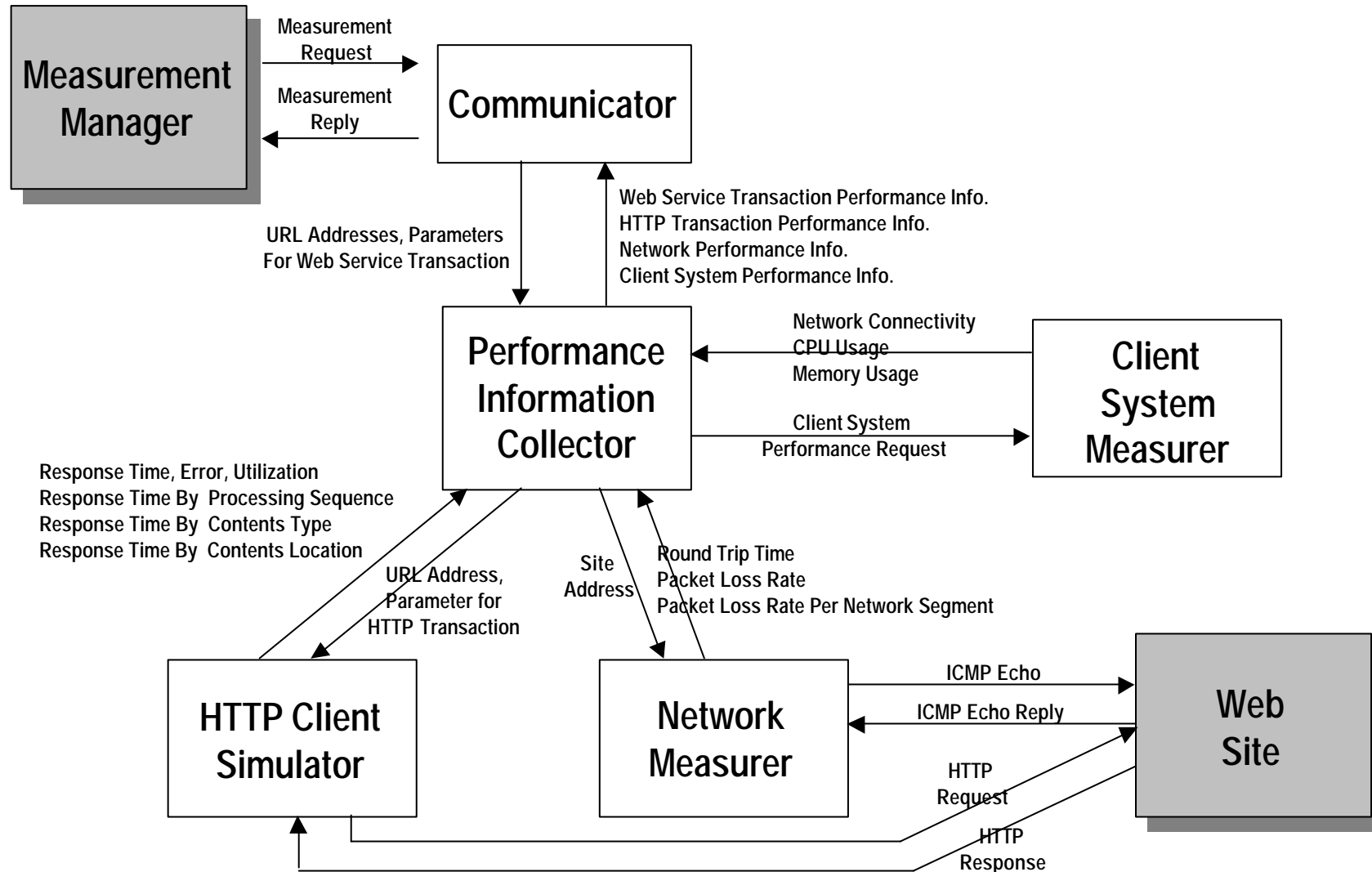
Measurement Manager

Web Service Transaction Info is
Service Name, Service Description,
Sampling Interval,
Response Time Threshold,
Error Rate Threshold,
URL Addresses, Parameters,
Used Application

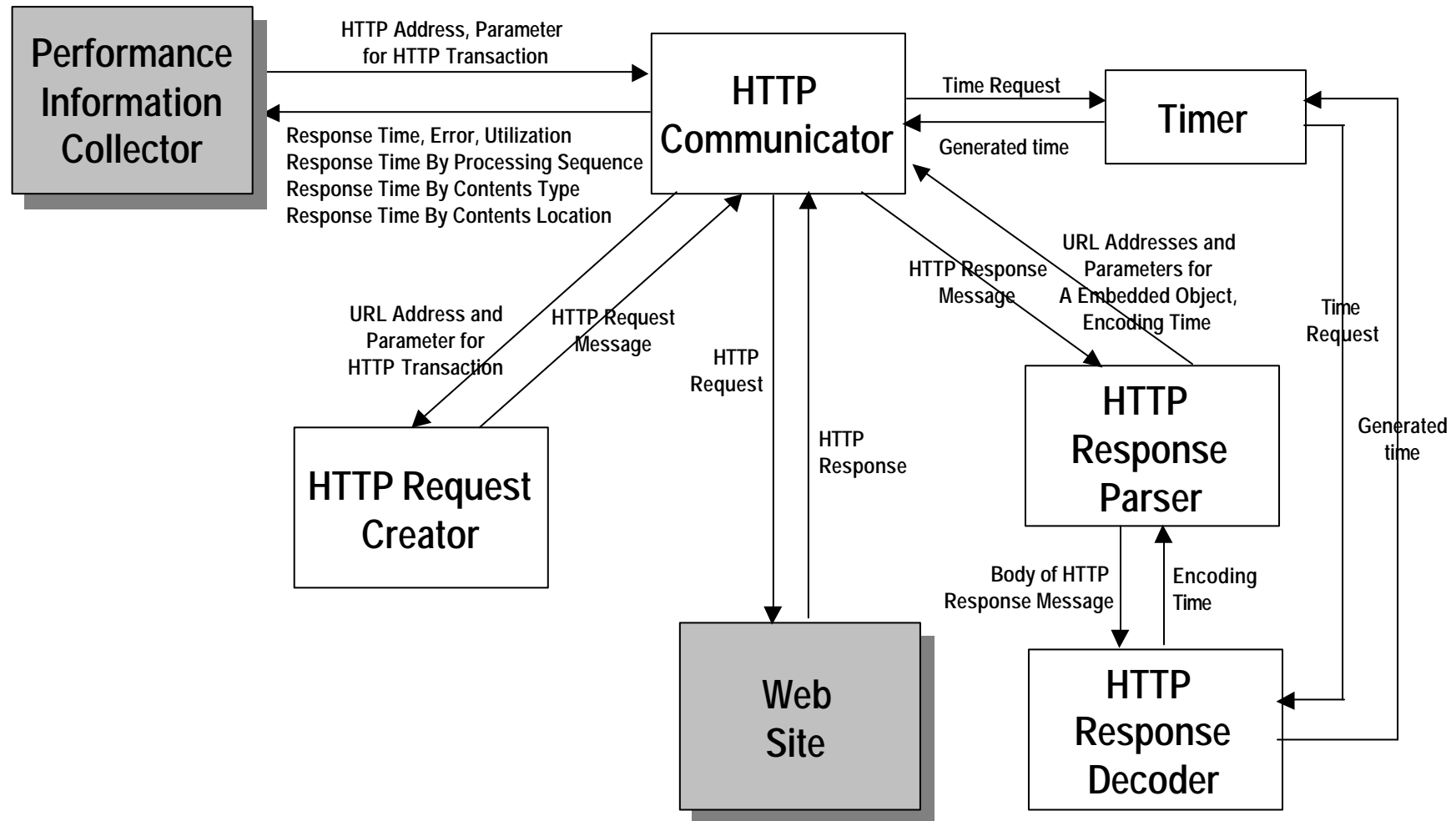




Measurement Agent



HTTP Client Simulator



General Information

Service Name:

Service Description:

Sampling Interval: min

Response Time Threshold: sec

Error Rate Threshold: %

URL Composition

No.	URL Address	Util
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>

a) The Registration Form for Web Service Transaction

Select one application used for a url.

Registered Applications :

or

New Application :

c) The Input Form for Application

General Information

URL Address:

Used Application:

Parameter Composition

No.	Method	Name	Value
1	<input type="text" value="None"/>	<input type="text"/>	<input type="text"/>
2	<input type="text" value="None"/>	<input type="text"/>	<input type="text"/>
3	<input type="text" value="None"/>	<input type="text"/>	<input type="text"/>
4	<input type="text" value="None"/>	<input type="text"/>	<input type="text"/>
5	<input type="text" value="None"/>	<input type="text"/>	<input type="text"/>

b) The Registration Form for HTTP Transaction

Web Service Transaction Report

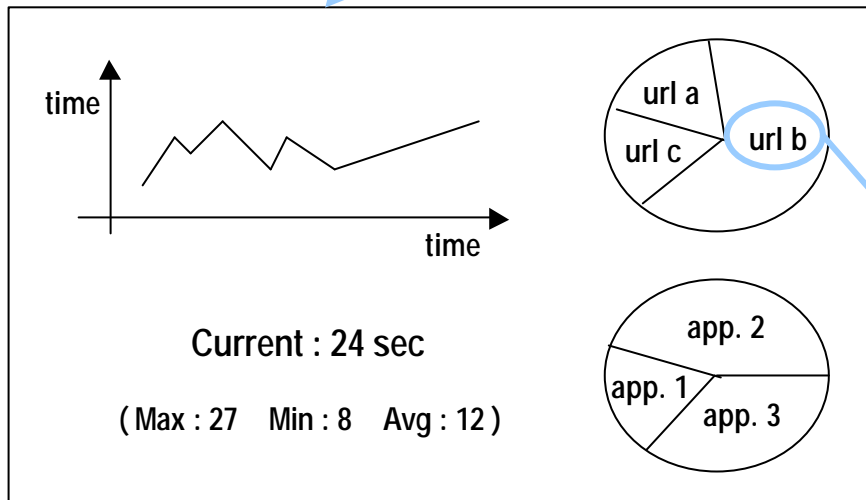
Service Name	Status	Response Time	Error Rate	Utilization
Membership	bad	24 > 17 sec	8 %	1000 byte/sec

a) Overall Web Service Performance

Round-Trip Time : 325 msec
 Packet Loss Rate: 30 %
 Packet Loss Rate Per Network Segment :

	r1	r2	r3	r4	r5	r6	r7	r8
%	0	0	0	0	0	32	28	30

d) Network Performance



b) Web Service Transaction Performance

Network Connectivity : Good
 CPU : 40% Memory : 80%

e) Client System Performance

Response Time : 16 sec

D	C	S	DT	DD
text	image	applet	embedded	
local	non-local			

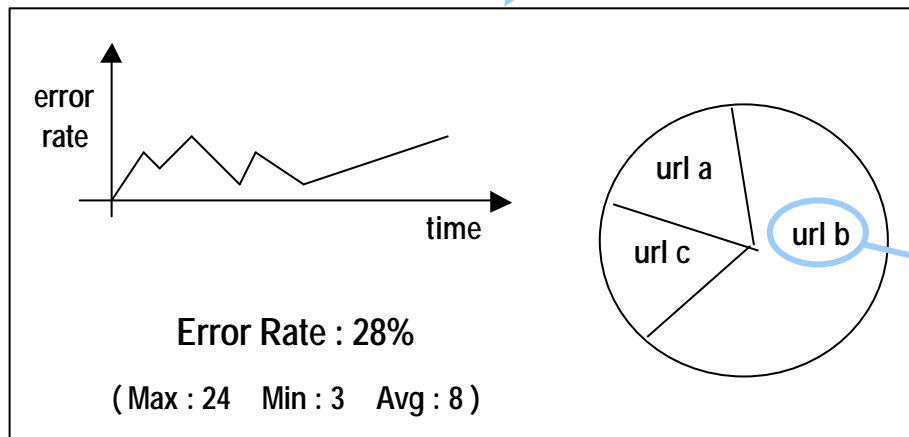
c) HTTP Transaction Performance

D : DNS resolution
 C : TCP connection
 S : Server response
 DT : Data transfer
 DD : Data Decode

Web Service Transaction Report

Service Name	Status	Response Time	Error Rate	Utilization
Membership	bad	10 sec	28 > 10%	1000 byte/sec

a) Overall Web Service Performance



b) Web Service Transaction Performance

Round-Trip Time : 35 msec

Packet Loss Rate : 0 %

Packet Loss Rate Per Network Segment :

	r1	r2	r3	r4	r5	r6	r7	r8
%	0	0	0	0	0	0	0	0

d) Network Performance

Network Connectivity : Good

CPU : 40% Memory : 80%

e) Client System Performance

Used application : Database

D	C	S	DT	DD
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c) HTTP Transaction Performance

D : DNS resolution error, C : TCP connection error,
S : Server response error,
DT : Data transfer error, DD : Data Decode error

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