Semantic Web Standards

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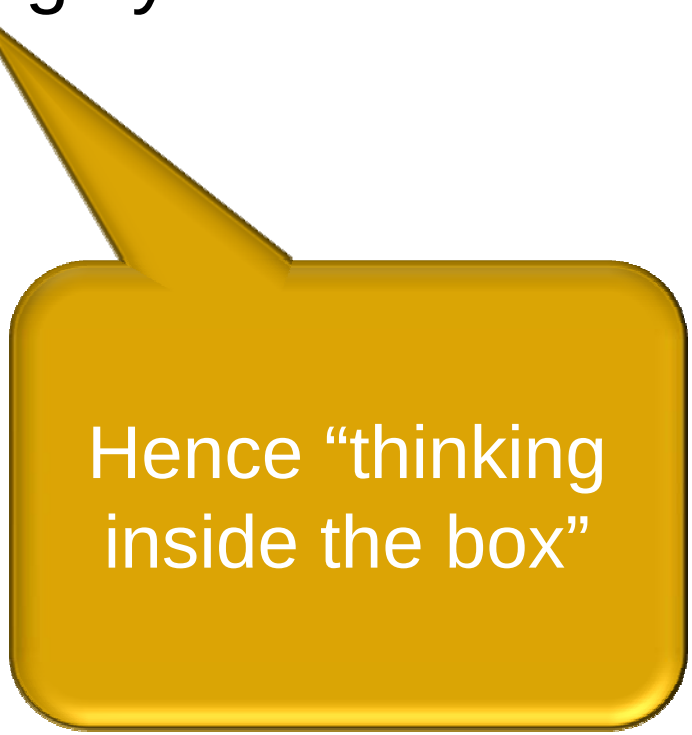
Semantic Web Standards

- Thinking Inside the Box! Optimizing Web Services Performance Today (2008)

Purpose

- Improve web services performance using existing systems/tools



Why Web Services

- Take web applications to the next level
  - Application can publish its function to world
  - Solve interoperability problems

The Box

1. Request construction
2. SOAP message construction
3. Transmission
4. Server Listening
5. SOAP message deconstruction
6. Request Processing

Timing Process

Client Language verses Return Type

Response Times (ms) using an IIS Server

Client Lang. / Return Data Type	Java	C#	PHP
Scalar	98	94	101
1D array	265	150	293
2D array	565	325	643

Response Times (ms) using a Sun Server

Client Lang. / Return Data Type	Java	C#	PHP
Scalar	7	2	15
1D array	168	63	205
2D array	466	253	554

Client Language verses Message Size

Client Lang. / #contacts	Java	C#	PHP
1	15	16	15
10	16	16	16
100	16	16	16
1000	16	16	24

Response Times (ms) using a **Sun Server** and returning 1D arrays of 15-byte elements

Response Times (ms) using a **IIS Server** and returning 1D arrays of 15-byte elements

Client Lang. / #contacts	Java	C#	PHP
1	94	94	96
10	94	94	96
100	94	109	96
1000	109	141	104

Data Type verses Message Size

Response Times (ms) using a **Java Client**

# contacts \ Array type	2D array	1D array
1	16	16
10	16	62
100	16	531
1000	47	3140

Response Times (ms) using a **C# Client**

# contacts \ Array type	2D array	1D array
1	16	16
10	16	31
100	16	250
1000	31	1859

Response Times (ms) using a **PHP Client**

# contacts \ Array type	2D array	1D array
1	7	7
10	16	156
100	18	1562
1000	36	15,624

Server Specifics verses Data Type

Response Times (ms) as a function of server application and machine type

Server Config. / Data type	Sun high	Sun low	IIS high	IIS low
Scalar	7	9	98	292
1D array	186	190	265	468
2D array	466	516	565	751

Conclusion

- Large data structures are more efficient
- SUN Application Server more efficient
- A more powerful server is better
- PHP least efficient

Discussion

- Are any of these conclusions surprising?
- Will the results of these tests make semantic web more attractive?