dcml Data Center Markup Language

Setting the Standard for Utility Computing

Welcome and Introductions

Marc Andreessen, Chairman, Opsware Inc.

October 14, 2003

TCP/IP

- Before TCP/IP…
- Tower of Babel
  - IBM SNA, DEC DECnet, Microsoft NetBEUI, Novell IPX, Mac Appletalk, Lotus Notes, …
  - No universal language

- **TCP/IP came along and boom, Internet**
- Common language unleashed latent power
- Now everything speaks TCP/IP

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HTML

- Before HTML…
- Tower of Babel
  - Gopher, FTP, Adobe Postscript, Microsoft Word, Apple Hypercard, Lexis/Nexis, Dialog, Quark, …
  - No universal language

- **HTML came along and boom, Web**
- Common language unleashed latent power
- Now everything speaks HTML

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Fast forward to today

- 8 years into 25-year shift to web architecture
- 700M Internet users; 1B PC's sold in 8 years

- **Explosion of technology and complexity in the datacenter**
  - Servers: 5M shipped this year; up 10x in 8 years
  - Web applications everywhere
  - New technologies: Linux, Intel, Java, BEA, …
  - An enormous amount & diversity of *stuff*

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The new Tower of Babel

- **The new Tower of Babel is the datacenter**
  - Thousands of components
  - Jumble of technologies
  - Constant change
  - Very expensive
  - Hard to secure
  - Virtually impossible to make reliable

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DCML

- **Data Center Markup Language**
- DCML does for the datacenter…
  - What TCP/IP did for networking
  - What HTML did for content
- Universal language for the datacenter

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What DCML is

- **XML-based language**
  - Describes datacenters and their component parts
- **Open**; anyone can adopt it
- **Answers three big datacenter questions**:
  - How do you know what you have
  - How do those things know about each other
  - How do you change it or rebuild it
- **Common language** for all elements of a modern datacenter

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DCML makes things easy

- Examples:
  - Security patches
  - Scaling
  - Creating new systems quickly
  - Rolling out a new monitoring system
  - Pushing code across lots of servers
  - Recovery from mistakes and bugs
  - Disaster recovery

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DCML unleashes potential

- **Servers** easy to provision, secure, scale
- **Applications** easy to roll out, change, recover
- **Datacenters** easy to run, consolidate, move, and recover
- **Web technology** easy to field
  – However you want, whenever you want

- **Latent potential is there**
- **DCML unleashes it**

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DCML turbocharges industry trends

- **DCML enables Linux and Intel-based servers**
- **DCML enables utility computing**
- **DCML enables "best of breed"**
  - TCP/IP made networking lock-in impossible
  - HTML made content lock-in impossible
  - DCML makes datacenter lock-in impossible
- **DCML doesn't require massive investment**
  - Existing hardware, software, datacenters
  - From lots of different vendors
  - From "toe in the water" to "total immersion"

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What you'll see coming out

- **DCML specification**
  - Already in development; complete early 2004
- **DCML open source reference implementation**
- **DCML open source reference descriptions** of common datacenter components
  - Server hardware, OS's, app servers, …
- **Support of DCML in commercial products** from DCML partners throughout 2004
  - E.g. DCML-compliant Opsware in early 2004
- **25 companies here today; more will join**

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Where are the other players?

- **Big companies adopt standards late**
- IBM
  - "Everything from IBM" vs "best of breed"
  - We believe they'll adopt in response to customer demand – like they did with TCP/IP & HTML
- HP
  - Already getting DCML via Opsware & BEA
- Microsoft
  - Focused on SDM – Windows-only
  - We believe they'll adopt to bridge to the rest of the world – like they did with TCP/IP & HTML

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The thing about standards

- **What's Not**
  - X.500
  - X.400
  - COTS
  - OSI
  - CMIP
  - DCE
  - CORBA
  - OpenDOC
  - OSF Unix
  - Telescript
  - ASN.1

- **What's Hot**
  - TCP/IP
  - HTML
  - HTTP
  - LDAP
  - SMTP
  - IMAP
  - SSL
  - SNMP
  - NNTP
  - SQL
  - XML

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How successful standards happen

"We reject kings, presidents and voting. We believe in rough consensus and running code."

– Dave Clark, IETF

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Welcome and Introductions

Jeff Heller, President & COO, EDS

October 14, 2003

Partnerships the Produce Results

- DCML initiative based on partnerships
  - Concept authored by EDS and Opsware
  - Specification evolving through the collection of leading utility computing vendors

- Open industry effort
  - Initiative focused on evolving the DCML specification
  - Organization formed by industry leaders
  - Open membership and participation
  - Royalty-free intellectual property rights for members
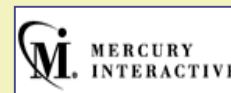
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Innovating Solutions

- Assembled group committed to innovation
- Take past experiences and knowledge… combine with new points of view
- Time to innovate this solution is now
- Clients already demanding returns on the utility promise
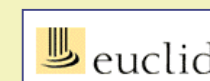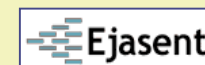
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DCML Organization Members

Governing Members

Founding Members

General Members

Larry Shoup
Chief Technologist

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Vivek Ranadive
Chairman & CEO

Oren Ariel
Chief Technology Officer

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Agenda

- 9:30 a.m. – 10:15 a.m. – Welcome and Introductions

- 10:15 a.m. – 10:45 a.m. – Evolution to the Real-Time Infrastructure
  - Donna Scott, Gartner Inc.

- 10:45 a.m. – 11:05 a.m. – Customer Drivers for DCML
  - Jeff Kelly, Executive Vice President, EDS Infrastructure Services
  - Larry Lozon, Global Offering Executive, EDS Hosting Services

- 11:05 a.m. – 11:15 a.m. – Break

- 11:15 a.m. – 11:45 a.m. – DCML Technical Overview
  - Tim Howes, CTO, Opsware Inc.
  - Darrel Thomas, Chief Technologist, Web & Application Hosting, EDS

- 11:45 a.m. – 12:30 p.m. – Partner Panel
  - Moderator: Donna Scott, Gartner Inc.
  - Governing Members and Founding Members executives

- 12:30 p.m. – 3:00 p.m. – Lunch / Media room

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