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IBM Middleware on IBM System z

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		z/VM
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Agenda

- Distributions
- IBM WebSphere Family
- Connectors
- IBM Databases
- IBM Domino Server
- IBM Communication Server
- IBM Tivoli System Management

Distributions

- Distributors provide 31 bit as well as 64 bit distributions
 - 2.4 kernel based distributions
 - SUSE Linux Enterprise Server 8 (SLES 8 – United Linux 1.0)
 - Latest level: SLES 8 SP 4
 - Red Hat Enterprise Linux Advanced Server 3 (RHEL AS 3)
 - Latest level: RHEL AS 3 Update 8
 - 2.6 kernel based distribution
 - SUSE Linux Enterprise Server 9 (SLES 9)
 - Latest level: SLES 9 SP 3
 - SUSE Linux Enterprise Server 10 (SLES 10)
 - Red Hat Enterprise Linux Advanced Server 4 (RHEL AS 4)
 - Latest Level: RHEL AS 4 Update 4

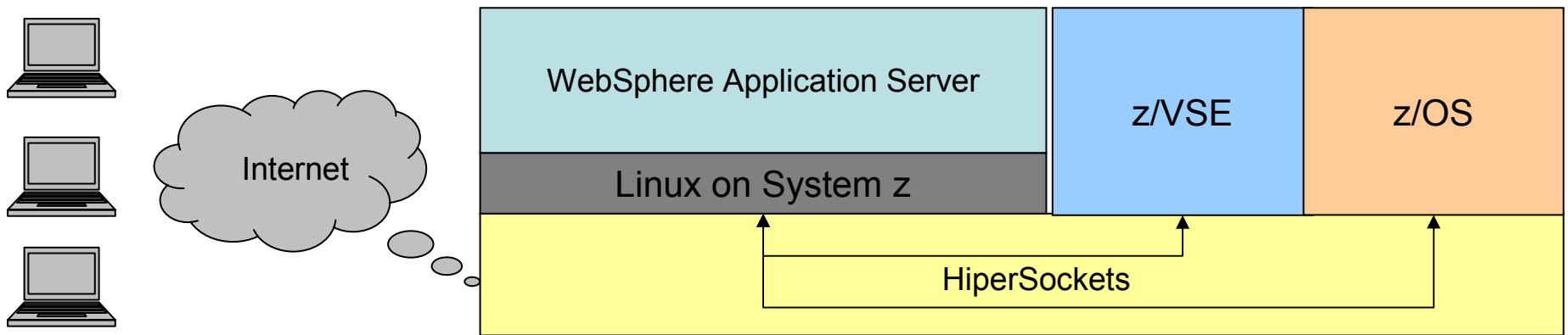
IBM WebSphere Family

- IBM WebSphere Application Server
- IBM WebSphere Commerce Suite
- IBM WebSphere Portal for Multiplatforms
- IBM WebSphere Host on Demand
- IBM WebSphere MQ

IBM Developer Kit for Linux (Java 2 Technology Edition)

- Provides Java development and runtime environment, including the Just-In-Time (JIT) compiler
- Most current levels (for 31 and 64 bit)
 - J2SE 1.3.1
 - J2SE 1.4.2
 - J2SE 5.0
- <http://www-128.ibm.com/developerworks/java/jdk/linux/tested.html>

IBM WebSphere Application Server



Web
Browsers /
Clients

- Web application servers
 - Manage applications at the 2nd tier of a 3-tier model
 - Based on web standards
 - Provide infrastructure services (security, scalability, ...)
 - Allow tight enterprise integration and cooperation
 - interacts with web browsers
 - use data from back-end systems (databases, transaction systems)

IBM WebSphere Application Server V6.1

- Multiple configurations (Network Deployment, ...)
- Offers a J2EE platform for e-business applications
- Supports the J2EE connector architecture to integrate back end servers
- Connection manager to manage connectors
- Support for Java Server Pages (JSP), servlets, XML server tools for dynamic e-business applications, web services
- Enterprise Java Bean (EJB) based connectivity
- Support of new web (service) standards
- www.ibm.com/software/webservers/appserv/was

IBM WebSphere Business Integration Server Foundation V5.1 for multiplatforms

- Builds on WebSphere Application Server (WAS) to provide J2EE and web services technology based platform for deploying web services solutions (within a service oriented architecture)
- Provides J2EE programming model extensions
- Provides common event infrastructure for exchange of network, system, business events
- Includes WAS Network Deployment and its functions such as
 - Enhanced workload and performance management
 - Provides load balancing and cluster capabilities across multiple servers
 - Reports and analyzes problems
 - Tight integration with IBM Tivoli Access Manager (centralized security)
- Includes IBM Directory Server, IBM WebSphere MQ, ...
- www.ibm.com/software/integration/wbisf/

IBM WebSphere Commerce Business Edition 5.6

- Provides services to deploy commerce applications and helps to build, maintain and manage stores to sell goods and services on the web
- WebSphere Application Server based (supports J2EE standards)
- Consists of commerce server, WAS, DB2 UDB, payment server, ...
- WebSphere Commerce provides
 - Guided selling (interactive product catalog)
 - Catalog management tooling
 - Order, payment management
 - Integration (e.g. via connectors)
 - Customer help / care
 - Analytics and business intelligence (data mining models)
 - Reporting (on sales, traffic)
 - System management (administrations, monitoring)
 - Web services for external systems
 - Business to business functionality
 - Business to business store model
 - Additional payment types
 - Advanced user management and access control
- www.ibm.com/software/webservers/commerce

IBM WebSphere Portal V6.0

- Provides single point of interaction with dynamic information, applications, processes and people for e-business environments
- Enables you to implement scalable portals that simplify and speed a user's access to personalized information and applications
- WebSphere Application Server based
- Portal Enable
 - Base offering with personalization, content publishing, document management, portal framework
- Portal Extend
 - Adds extended search and web analysis features
- www.ibm.com/software/genservers/portal/server/

IBM WebSphere Host on Demand V9

- Available as the IBM Host Access Client Package for Multiplatform
- Secure access to host applications and data from Java enabled web browsers
 - Secure access across the internet (SSL based)
- Access to zSeries applications and other platforms
- Centralized deployment and administration
- Allows access to multiple hosts concurrently
- Installs on Linux server simplifying, distribution and upgrades
- Requires no middle-tier servers, gives improved scalability
- www.ibm.com/software/webservers/hostondemand
- See also IBM WebSphere Host Access Transformation Services 6.0
 - 3270 and 5250 applications as HTML to web browsers
 - www.ibm.com/software/webservers/hats

IBM WebSphere MQ and related products

- IBM WebSphere MQ 6.0
 - Exchange information across different platforms
 - Supports most major platforms
 - For synchronous and asynchronous communication
 - Integrate existing business applications
 - Provides security options
 - Assures reliable delivery of messages
 - www.ibm.com/software/integration/wmq
- IBM WebSphere Business Integration Event Broker for Multiplatforms V5
 - Allows for the handling of high message volumes and large number of endpoints
 - Enables and controls the distribution of messages based on message topic or content
 - Separation of message routing logic from applications
 - www.ibm.com/software/integration/wbieventbroker/v5/multiplatforms.html
- IBM WebSphere MQ Everyplace 2.0
 - Provides messaging infrastructure to connect e-business applications with small / mobile devices
 - www.ibm.com/software/integration/wmqe

Connectors

- DB2 Connect
 - www.ibm.com/software/data/db2/db2connect
- CICS Transaction Gateway V6.0
 - www.ibm.com/software/http/cics/connectors
- IMS Connector for Java 2.1
 - www.ibm.com/software/data/db2imstools/imsjavcon.html
- Informix Connect
 - <http://www-306.ibm.com/software/data/informix/tools/connect/>

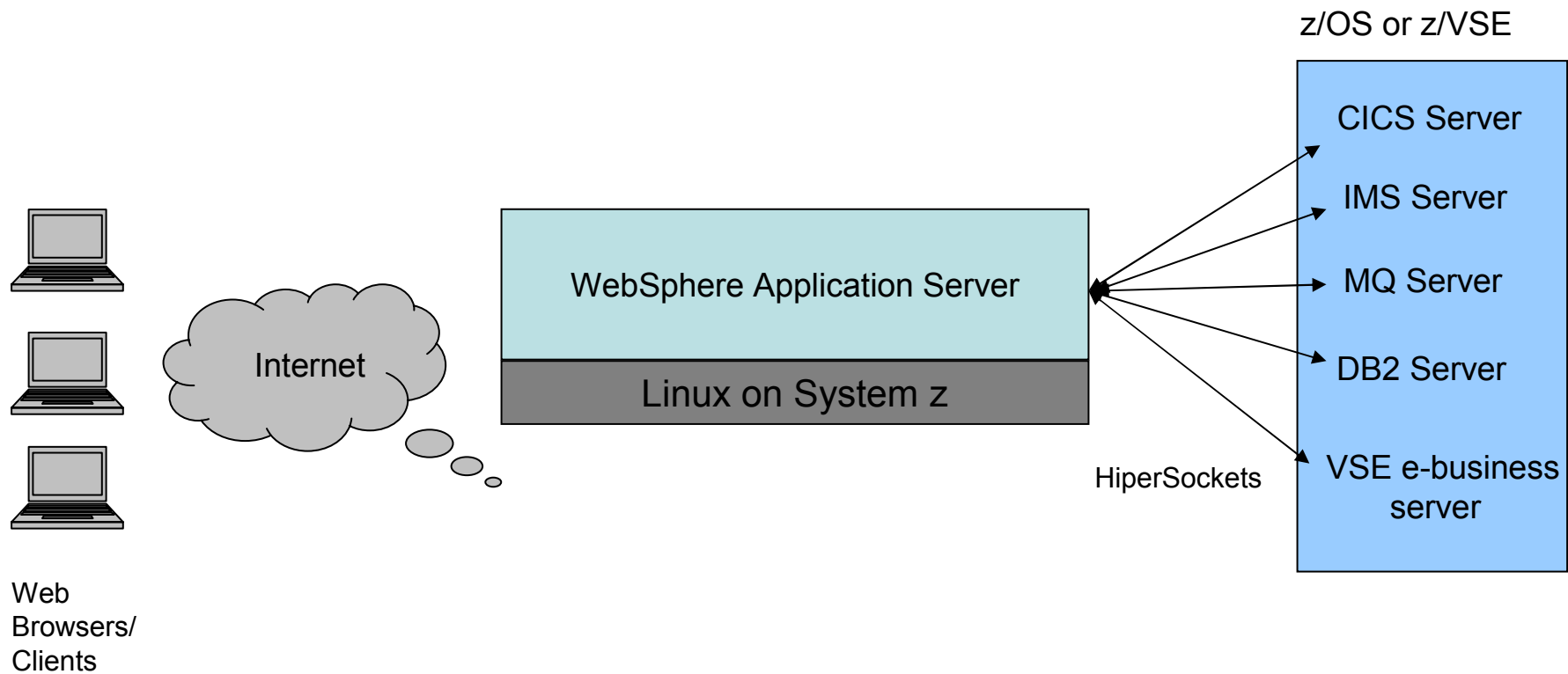
Connectors ...

- WebSphere MQ
 - www.ibm.com/software/integration/wmq
- WebSphere MQ Client for VSE
- WebSphere Service Bus V6.0.1
 - enables development of SOA
 - Connectivity infrastructure for integration of applications and services
- z/VSE e-business Connectors
 - www.ibm.com/vse/support/vseconn

z/VSE e-business Connectors

- Provide easy access to z/VSE resources from other systems
- z/VSE e-business connectors include
 - Server code running on z/VSE
 - Java beans, servlets and samples on Java capable clients
 - Access to VSAM, DL/I, POWER, ICCF, Librarian, VSE console
- TCP/IP based communication
- Advantages
 - Exploitation of non-VSE e-business infrastructure
 - Always newest e-business components
 - z/VSE resources can be easily integrated into new e-business applications
- www.ibm.com/vse/support/vseconn

Connectors ...



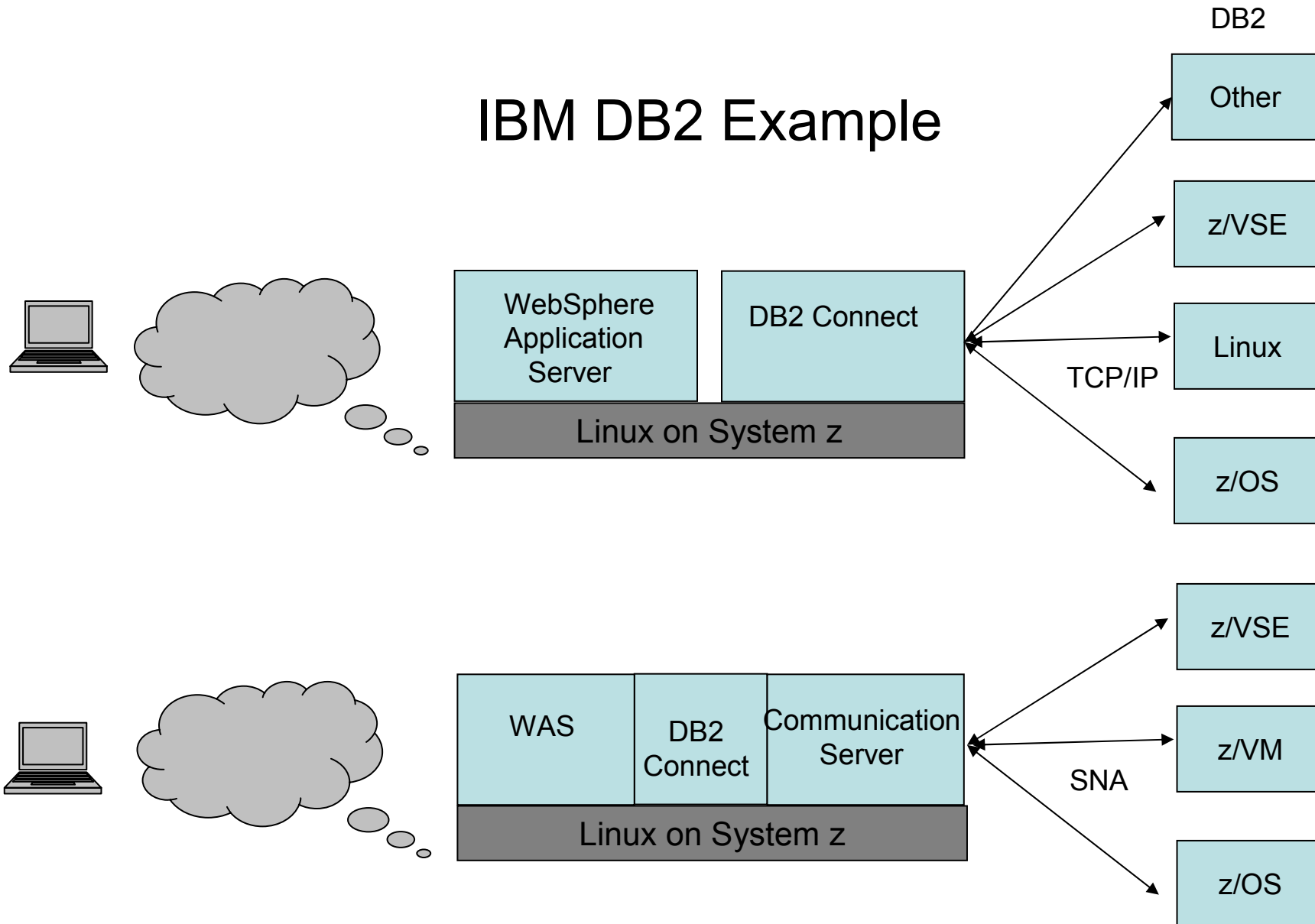
IBM Databases, Extenders and Tools

- IBM DB2 Universal Database (DB2 UDB) 8.2
 - 31 bit and 64 bit database
 - DB2 Connect 8.2
 - DB2 Intelligent Miner Modeling / Scoring
 - DB2 Net Search Extender
 - DB2 Spatial Extender
 - To store, manage and analyze spatial data
 - DB2 Net.data
 - Scripting language
 - DB2 Data Archive Expert for Multiplatform 2.1
 - DB2 Performance Expert for Multiplatforms 2.2
- IBM Informix Dynamic Server V10.0
 - 64 bit database
- IBM Cloudscape V10
 - Small database, can be imbedded into Java programs
 - www.ibm.com/software/data/cloudscape

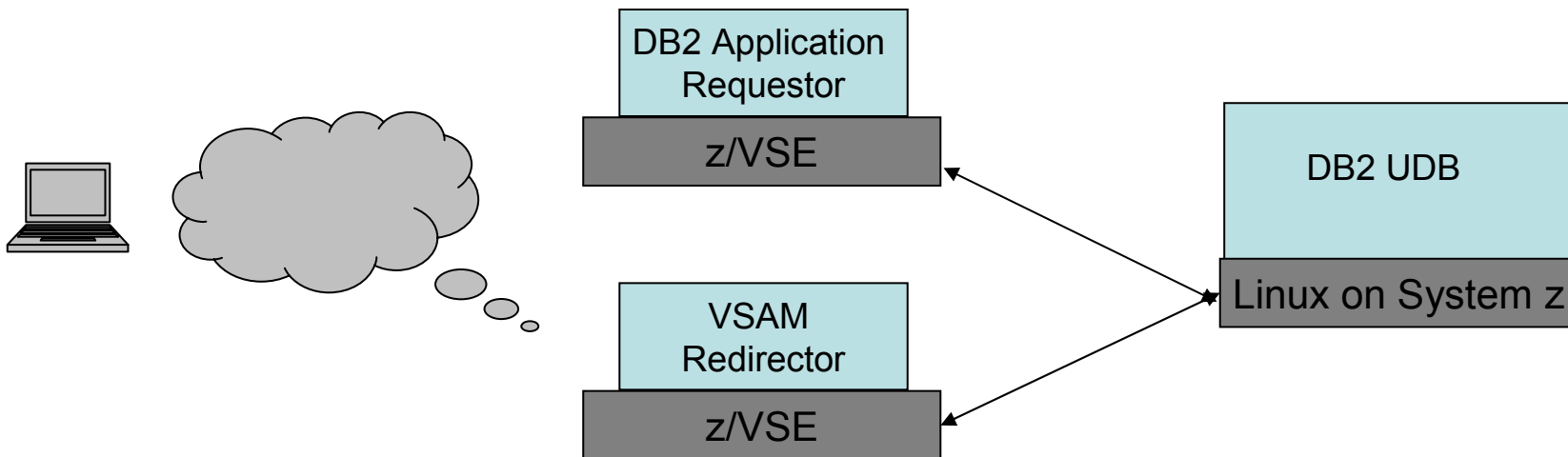
DB2 Universal Database 8.2

- 31 bit and 64 bit database, 2.4 and 2.6 kernel support
- Supports open standards like SQL, Java, ODBC, ...
- Supports C, C++ programming languages for stored procedures, local and client/server applications
- Policy based administration and maintenance (backup)
- Backup command to backup disk
- DB2 Connect provides connectivity to non-local DB2 servers
 - Allows integration of backend data
- www.ibm.com/software/data/db2/linux

IBM DB2 Example



IBM DB2 Example



DB2 Intelligent Miner

- DB2 Intelligent Miner Scoring
 - Enables users to deploy data mining analytics in real time
 - Key functions:
 - Easy-to-use data mining tool
 - Provides infrastructure necessary to deploy data mining analytics in enterprise applications
 - Manages the promotion of data mining models
 - Provides XML based language for modeling
 - SQL used as programming interface
- DB2 Intelligent Miner Modeling
 - Discover hidden relationship between data without export to other platform
 - SQL extension to DB2 database
 - Enables modeling function for inclusion into applications
 - Supports development of data mining models
- DB2 Intelligent Miner Visualization
 - Java based results browser
 - To view and evaluate the results of the data mining modeling process
- www.ibm.com/software/data/iminer

DB2 Net Search Extender

- Fast full text retrieval to Java and DB2 command line or control center interface
- Key benefits:
 - Fast indexing of very large data volumes in DB2 or Informix IDS databases
 - Searching high speed with large number of concurrent users
 - Storing presorted table columns in main memory at indexing time to avoid expensive database access and paging at search time
- www.ibm.com/software/db2/extenders/netsearch

IBM DB2 Content Manager on Demand for Multiplatforms V8.3

- Solution for enterprise report management (ERM)
- Enables high volume capture of computer output and archiving of scanned documents
- Automatic distribution of selected reports and documents to authorized users
- Supports electronic bill and payment solutions
- <http://www-306.ibm.com/software/data/ondemand/mp/>

IBM Informix Dynamic Server V10.0

- 64 bit database
- Provides enhancements in
 - Availability and reliability enhancements
 - Query optimization, performance
 - Column level encryption
 - Administrative enhancements
 - Improved programmer productivity
 - Exploitation of Linux 2.6 kernel features
- Informix Connect for client applications to access Informix servers
- Available tools
 - Informix Server Administrator (ISA) 1.6
 - Browser based administration, HTML output
 - Monitors multiple servers from one web site
 - Informix Client Software Development Kit (CSDK) 2.9
 - Provides APIs for Informix applications
 - Supported language: Java, C, C++, ...
 - Informix 4GL
 - 4GL development tool, compiler, interactive debugger
 - Informix Java Database Connectivity (JDBC) V3.0
- www.ibm.com/software/data/informix/linux4zs

IBM Lotus Domino 7.0.1

- Provides messaging and collaboration services
- Web access or access from Notes client to server platform
- Policy based administration
- Security features included
- Failover and load balancing
- Logging, statistics, diagnostics, ...
- Anti-spam features
- IBM Lotus Domino Web Access: web client
- www.lotus.com/products/product4.nsf/wdocs/dominohomepage

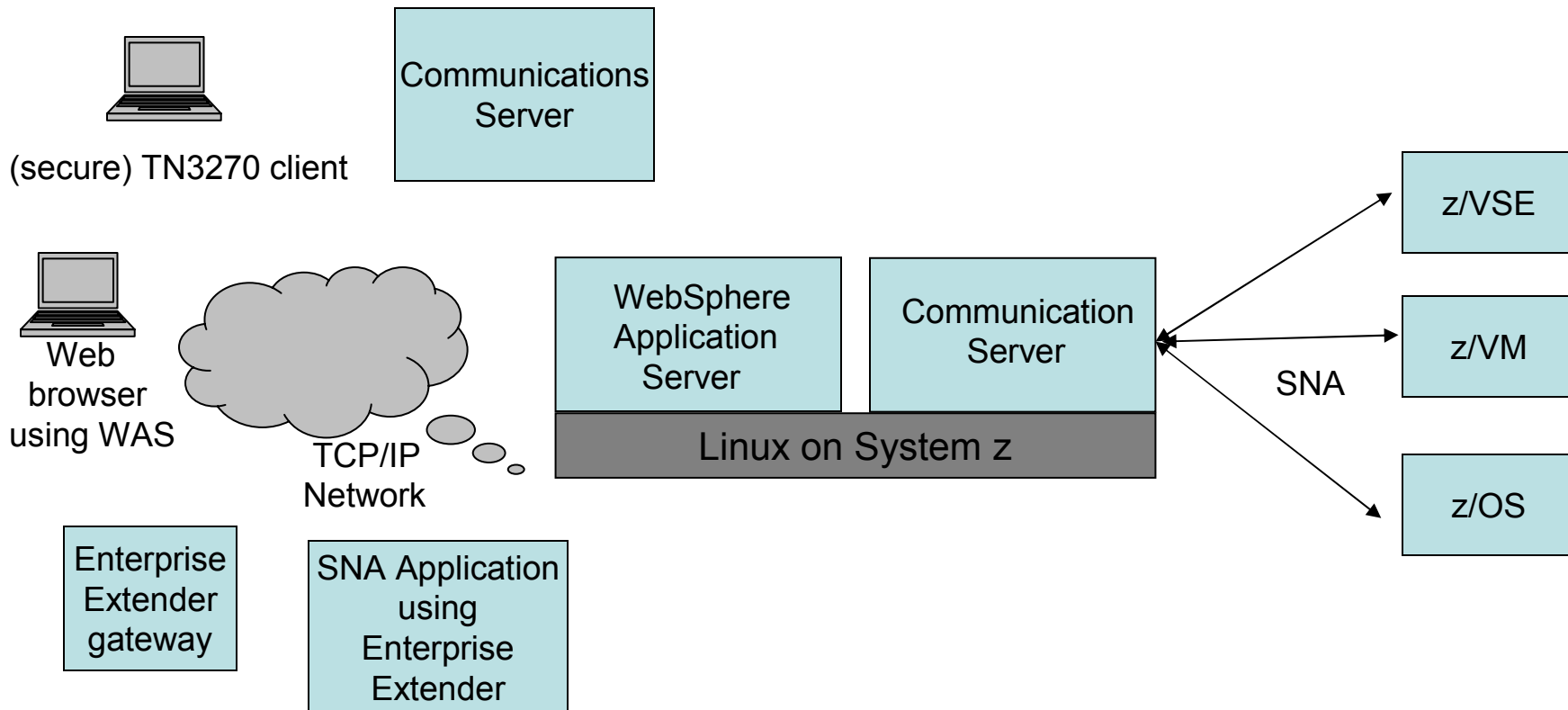
Rational

- Rational ClearCase V6.0
 - Provides life cycle management and control of software development assets
 - Version control
 - Parallel development support
 - Build and release management
 - Local, remote, web interfaces
 - <http://www.ibm.com/software/awdtools/clearcase/index.html>
- VisualAge Generator EGL Plug-in for VSE
 - Plugin to generate programs using the Enterprise Generation Language (EGL) component of Rational Application Developer
 - To develop and generate COBOL applications for z/VSE
 - <http://www.ibm.com/software/awdtools/visgen/vse/index.html>

IBM Communication Server for Linux on System z V6.2.2

- Connects across diverse networks
- Supports multiple protocols (APPN, Enterprise Extender, HiperSockets)
- Secure access to SNA applications through TCP/IP clients
 - Supports SSL authentication and encryption
 - Secure TN3270 server
- Application programming support
- Common programming interface for communications
- Configuration, administration, installation options
- Problem determination system management
- www.ibm.com/software/network/commserver/z_lin

IBM Communication Server for Linux on System z V6.2.2



IBM Communication Controller for Linux on System z

- Consolidates function from 37xx communication controller (emulates 3745 comm. Controllers)
- Provides ease of migration of stable NCP software (NCP runs on top of that emulation)
- Supports consolidation of infrastructure to an IP-based on demand environment (allows to use SNA – but communicate via TCP/IP to the internet)

IBM Tivoli System Management

- Security management
 - www.ibm.com/software/tivoli/solutions/security
- Storage management
 - www.ibm.com/software/tivoli/solutions/storage
- Performance management
 - www.ibm.com/software/tivoli/solutions/pa
- Configuration and operation
 - www.ibm.com/software/tivoli/solutions/co

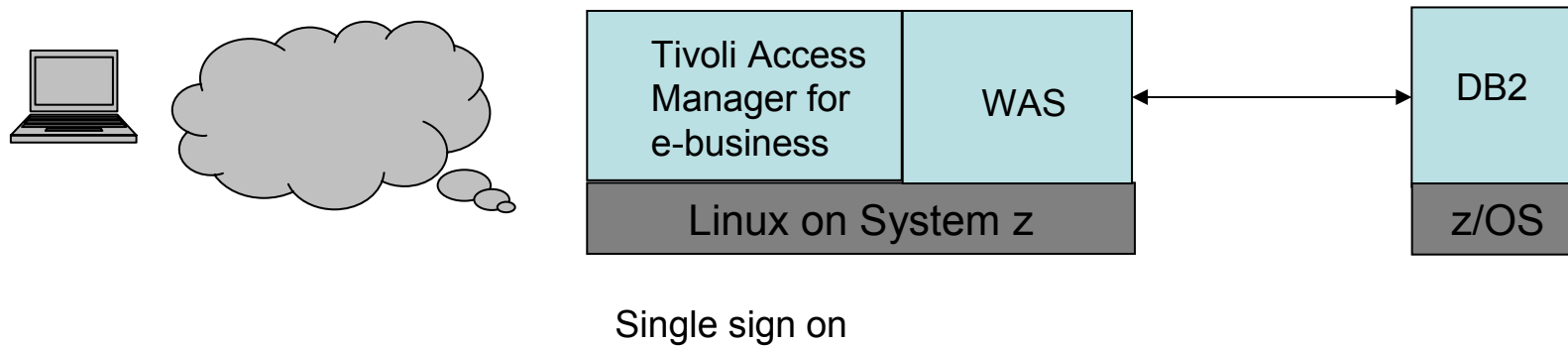
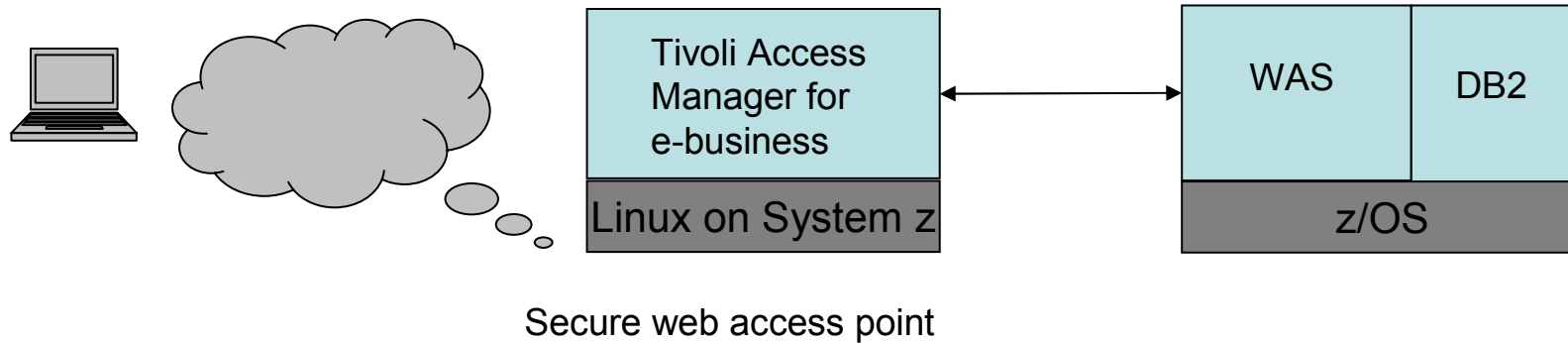
Security Management

- IBM Tivoli Directory Integrator 6.0
 - Synchronizes identity data between applications and directory sources
 - Manages data across repositories providing a directory infrastructure
 - Provides event handler, parser, connectors for protocols and access
 - New: usability enhancements, PKI security support, scalability / reliability enhancements
 - www.ibm.com/software/tivoli/products/directory-integrator
- IBM Tivoli Directory Server 6.0
 - Provides Lightweight Directory Access Protocol (LDAP) identity infrastructure for identity management applications and web services
 - Supports LDAP V3
 - Based on DB2 UDB
 - Web administration GUI
 - www.ibm.com/software/tivoli/products/directory-server

Security Management ...

- IBM Tivoli Access Manager for e-business 6.0
 - Policy based access control solution for e-business/enterprise applications and data
 - Single sign-on for authorized users
 - Provides security enhancements for J2EE conforming applications (e.g. running on WebSphere Applications Server)
 - Supports IBM Tivoli Directory Server
 - www.ibm.com/software/tivoli/products/access-mgr-e-bus
- IBM Tivoli Access Manager for operating systems 6.0
 - Security locks down business-critical applications, files and operating platforms to help prevent unauthorized access
 - Blocks insiders and outsiders
 - Provides security and auditing
 - Audit events can be analyzed by the IBM Tivoli Risk Manager
 - www.ibm.com/software/tivoli/products/access-mgr-operating-sys

IBM Tivoli Access Manager Example



Security Management ...

- IBM Tivoli Identity Manager 2.1
 - Provides policy based identity for e-business/legacy environments
 - Web interface
 - Centralized user management
 - Supports internal audits
 - Interacts with users, identity sources and access control mechanisms
 - Simplified administration
 - www.ibm.com/software/tivoli/products/identity-mgr
- New: IBM Tivoli Federated Identity Manager 6.1
- IBM Tivoli Privacy Manager for e-business 1.2
 - Definition of new digital privacy policy, or converting an existing written policy to digital form
 - Deployment of the privacy policy to specific applications and IT systems
 - Monitor and enforce access according to the policy
 - Generates detailed audit logs
 - Generates reports automatically
 - Works with IBM Tivoli Access Manager for e-business
 - www.ibm.com/software/tivoli/products/privacy-mgr-e-bus

Security Management ...

- IBM Tivoli Risk Manager 4.2
 - Security event management product:
 - Web based application
 - Real-time Web browser-based event console, based on IBM Tivoli Enterprise Console (TEC) V3.9
 - Automated recommendations - ability to tie-in organizational security policies to specific security events
 - Enhancements to help improve performance and installation
 - Integration with IBM Tivoli Configuration Manager – ability to extract hardware and software information from the Tivoli Inventory database
 - www.ibm.com/software/tivoli/products/risk-mgr

Security Management ...

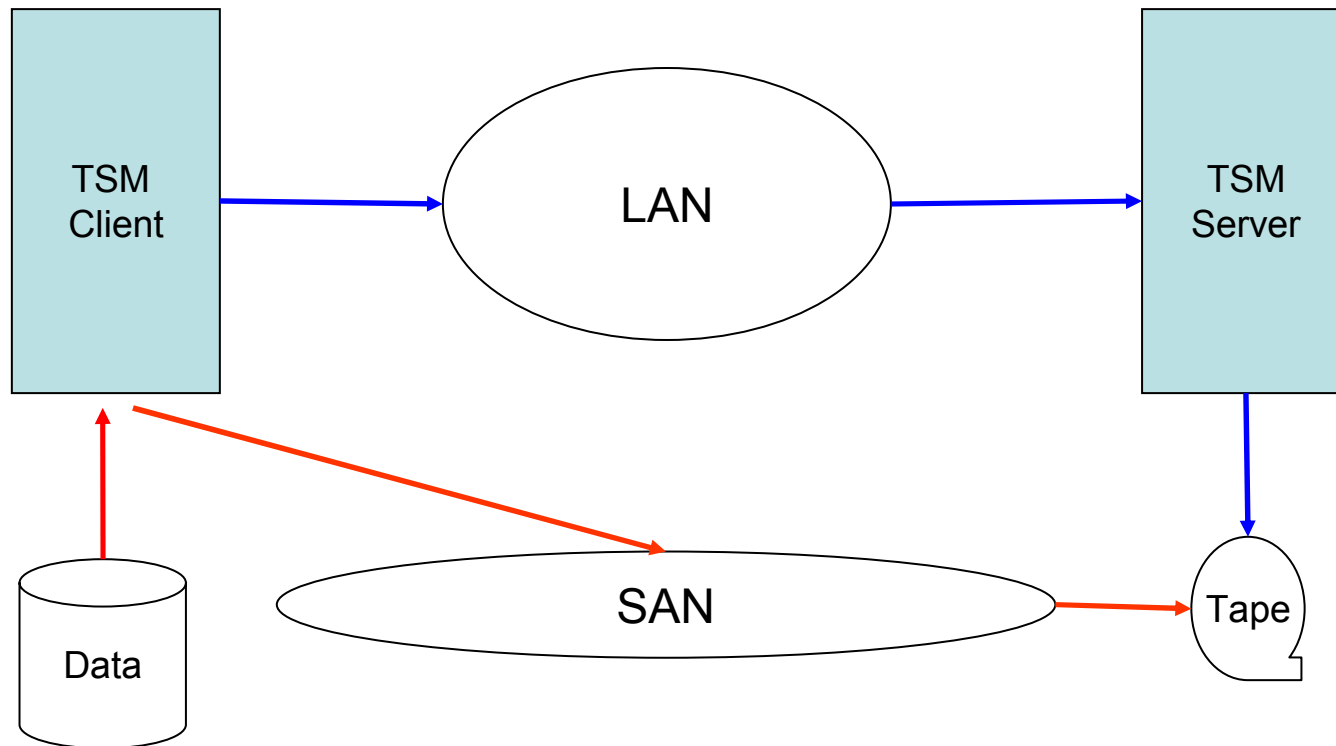
- IBM Tivoli Security Compliance Manager 5.1
 - Identifies security vulnerabilities and security policy violations
 - Helps to define consistent security policies and monitor compliance of these defined security policies
 - Centralized administration (of policy definitions)
 - Automation of security scans
 - Security vulnerability scans
 - Auditing and reporting mechanisms
 - www.ibm.com/software/tivoli/products/security-compliance-mgr

Storage Management

- IBM Tivoli Storage Manager 5.3
 - Provides services to backup / restore, archive / retrieve file servers
 - Client comes with command line and web interface
 - Provides API to access the server
 - Supports EXT2, EXT3, ReiserFS backup client (including ACLs)
 - LAN free backup
- IBM Tivoli Storage Manager for databases (e.g. DB2 UDB, Oracle)
- IBM Tivoli Storage Manager for applications
- IBM Tivoli Storage Manager for data retention
- IBM Tivoli Storage Manager for mail
- IBM Tivoli Storage Manager for Storage Area Networks
- www.ibm.com/software/tivoli/products/storage-mgr

TSM – LAN-free Backup

—→ Control flow
—→ Data flow



Performance and Availability Management

- IBM Tivoli Enterprise Console (TEC) 3.9
 - Automated problem diagnosis and resolution to improve system performance and reduce support cost
 - Event filtering, correlation and analysis
 - Event consolidation and display
 - www.ibm.com/software/tivoli/products/enterprise-console
- IBM Tivoli Netview 7.1.4
 - Discovers TCP/IP networks, displays network topologies, correlates and manages events and SNMP traps, monitors network health, and gathers performance data
 - Provides capabilities to manage mission-critical environments
 - Quickly identifies root cause of network failures
 - Reports on network trends and analysis
 - www.ibm.com/software/tivoli/products/monitor
- IBM Tivoli OMEGAMON XE for Linux on zSeries 1.2.0
- IBM Tivoli Switch Analyzer 1.3
 - For network management
 - Provides (layer 2) switching root cause management

Performance and Availability Management

- IBM Tivoli Monitoring 6.1
 - Provides monitoring for essential system resources
 - Detects bottlenecks and potential problems
 - Automatically recover from critical situations
 - www.ibm.com/software/tivoli/products/monitor

 - IBM Tivoli Monitoring for databases
 - IBM Tivoli Monitoring for applications
 - IBM Tivoli Monitoring for web infrastructure
 - IBM Tivoli Monitoring for transaction performance
 - IBM Tivoli Monitoring for business integration
 - IBM Tivoli Monitoring for Messaging and Collaboration: Domino
 - IBM Tivoli Monitoring for Messaging and Collaboration: Exchange

Performance and Availability Management

- IBM Tivoli System Automation for Multiplatforms 2.1
 - Manages availability of business applications by
 - Fast detection of outage through monitoring
 - Sophisticated knowledge about application components and their relationships
 - Quick and consistent recovery of failed resources and whole applications either in place or on another system in a Linux cluster
 - www.ibm.com/software/tivoli/products/sys-auto-linux

Configuration and Operation

- IBM Tivoli Configuration Manager 4.2.3
 - Provides software distribution
 - Provides hardware and software inventory capabilities in a multiplatform environment
 - Analyzes enterprise inventory
 - Automates and schedules software distribution and inventory operations
 - Monitors system and configuration changes
 - www.ibm.com/software/tivoli/products/config-mgr
- IBM Tivoli License Manager 2.1
 - Helps to achieve a total software asset management solution
 - Enables planning, management, optimization of enterprise wide software assets
 - Provides software inventory, usage monitoring, contract and reporting capabilities
 - helps organizations to efficiently manage the contractual and financial details of software contracts and agreements.
 - www.ibm.com/software/tivoli/products/license-mgr

Configuration and Operation ...

- IBM Tivoli Provisioning Manager 2.1
 - Provides provisioning and configuration support
 - Supports the cloning of manually installed Linux system images into automatically provisioned virtual machines under z/VM
 - Provides pre-build workflows for control and configuration
 - www.ibm.com/software/tivoli/products/prov-mgr
- IBM Tivoli Intelligent Orchestrator 2.1
 - Monitors applications under its control
 - Can sense degrading performance and determine why actions need to be taken
 - Can determine where a resource is needed and instruct the IBM Tivoli Provisioning Manager
 - To deploy a server, install the necessary software, ...
 - Can predict when resources will become available or needed
 - www.ibm.com/software/tivoli/products/intell-orch

Configuration and Operation ...

- IBM Tivoli Remote Control 3.8.1
 - Control (active state):
 - take control of the remote machine
 - execute commands and applications
 - Monitor (monitor state):
 - View the display of the remote workstation
 - monitor activities
 - www.ibm.com/software/tivoli/products/remote-control
- IBM Tivoli Workload Scheduler 8.2
 - Monitors and controls the flow of work
 - Remote and local

 - IBM Tivoli Workload Scheduler for applications
 - IBM Tivoli Workload Scheduler for On Demand
 - IBM Workload Scheduler for virtualized data centers
 - www.ibm.com/software/tivoli/products/scheduler

Configuration and Operation ...

- IBM Tivoli Service Level Advisor 2.1
 - Helps to create an end-to-end view of service levels
 - Automated evaluation of SLAs
 - Trend analysis
 - Alerts for SLA violations
- <http://www-306.ibm.com/software/tivoli/products/service-level-advisor/>

IBM Tivoli - Summary

- Availability
 - Ensure health and efficient functioning of IT environments
 - IBM Tivoli Monitoring
- Business service management
 - Align IT resources with critical business priorities
 - IBM Tivoli Enterprise Console, IBM Tivoli Netview, Tivoli Service Level Advisor
- Orchestration
 - Sense, trigger and respond to significant IT issues according to business goals
 - IBM Tivoli Intelligent Orchestrator
- Provisioning
 - Align the right processes with the right resources for the right people at the right time
 - IBM Tivoli Configuration Manager, IBM Tivoli License Manager, IBM Tivoli Provisioning Manager, IBM Tivoli System Automation for Multiplatforms

IBM Tivoli – Summary ...

- Security
 - Ensure confidentiality and data integrity
 - IBM Tivoli Access Manager, IBM Tivoli Directory, IBM Tivoli Directory Integrator, IBM Tivoli Identity Manager, IBM Tivoli Privacy Manager, IBM Tivoli Risk Manager, IBM Tivoli Security Compliance Manager
- Storage and optimization
 - Protect and maximize the utility and availability of data
 - IBM Tivoli Storage Manager, IBM Tivoli Workload Scheduler

More Information

- IBM software for Linux (link to IBM Linux software product matrix):
 - www.ibm.com/linux/software
- Linux at IBM: www.ibm.com/linux
- System z: www.ibm.com/zseries
- Linux on System z: www.ibm.com/zseries/linux
- z/VM: www.ibm.com/vm
- z/VSE: www.ibm.com/vse