
Z39.50 : THE BASICS

Fay Turner

National Library of Canada

fay.turner@nlc-bnc.ca

1997 IFLA Conference

Session - Z39.50: Information Retrieval in an
Open Networked Environment

Z39.50

INFORMATION RETRIEVAL STANDARD

- λ NUMBER OF AN AMERICAN COMMUNICATION STANDARD (NISO)

- λ DEVELOPED TO OVERCOME PROBLEMS OF MULTIPLE DATABASE SEARCHING
 - » DIFFERENT SCREENS, COMMAND LANGUAGES, SEARCH PROCEDURES

Z39.50

- λ Z39.50 SIMPLIFIES SEARCHING
- λ ONLY NEED TO KNOW COMMANDS OF LOCAL SYSTEM
- λ PERMITS COMMUNICATION BETWEEN SYSTEMS USING DIFFERENT HARDWARE AND LIBRARY SOFTWARE

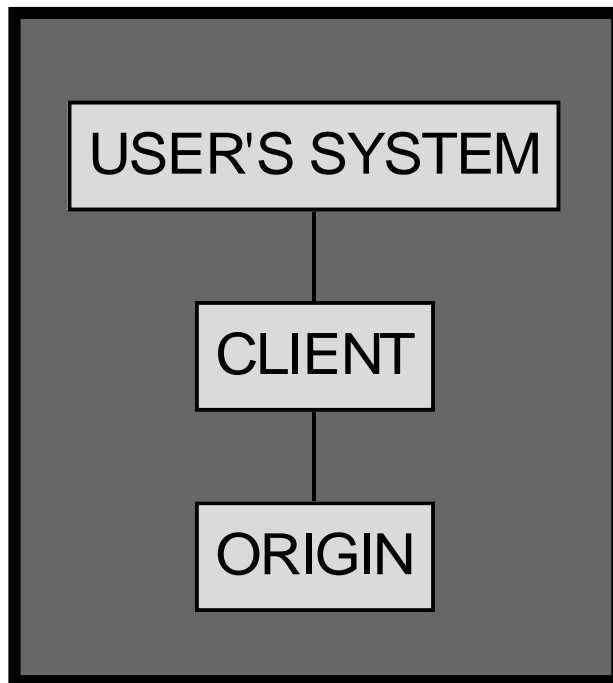
SEARCH AND RETRIEVE (SR) PROTOCOL STANDARD

- λ INTERNATIONAL INFORMATION RETRIEVAL STANDARD (ISO)
- λ COMPATIBLE SUBSET OF Z39.50
- λ REPLACED BY LATEST EDITION OF Z39.50 (1995): ISO 23950

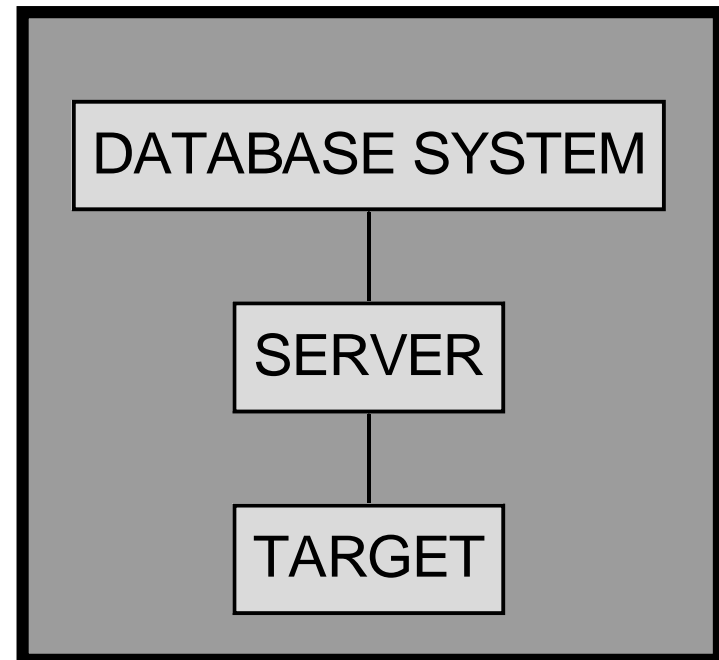
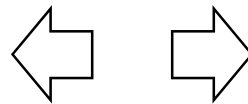
Z39.50 CLIENT and SERVER

- λ BASED ON CLIENT / SERVER MODEL
- λ TWO COMPUTERS IN A PEER-TO-PEER RELATIONSHIP
- λ EACH COMPUTER HAS SPECIFIC TASKS FOR THE FUNCTION BEING PERFORMED
- λ 2 PARTS TO Z39.50: ORIGIN/TARGET

Z39.50 MODEL



DRA, NOTIS, VTLS



GEAC, OCLC, LC

ORIGIN SYSTEM (CLIENT)

- λ SOFTWARE ON LOCAL SYSTEM
TRANSLATES SEARCH QUERY INTO
FORMAT OF Z39.50 STANDARD
- λ CONNECTS TO AND SENDS QUERY TO
SYSTEM HOUSING THE DATABASE
- λ PRESENTS RECORDS/RESULTS OF
QUERY TO SEARCHER

**SEARCHER OF ORIGIN SYSTEM NEVER
INTERACTS DIRECTLY WITH TARGET SYSTEM**

TARGET SYSTEM (SERVER)

- λ COMPUTER HOUSING THE DATABASE(S)
- λ TRANSLATES THE Z39.50 QUERY TO SEARCH LOGIC OF DATABASE SYSTEM
- λ OBTAINS INFO FROM DATABASE, RETURNS IT TO ORIGIN SYSTEM
- λ RETURNS RECORDS OR REPORTS A RESULT SET

**CLIENT AND TARGET ROLES CAN BE
CONTAINED IN SAME SYSTEM**

Z39.50 FEATURES -1992 (vers.2)

- λ SUPPORTS BASIC BIBLIOGRAPHIC SEARCHING
- λ STANDARDIZES THE QUERY FORMAT TO BUILD SIMPLE OR COMPLEX SEARCHES
- λ ATTRIBUTES: USE, RELATION, POSITION IN FIELD, STRUCTURE, TRUNCATION, COMPLETENESS
 - » BOOLEAN, PROXIMITY

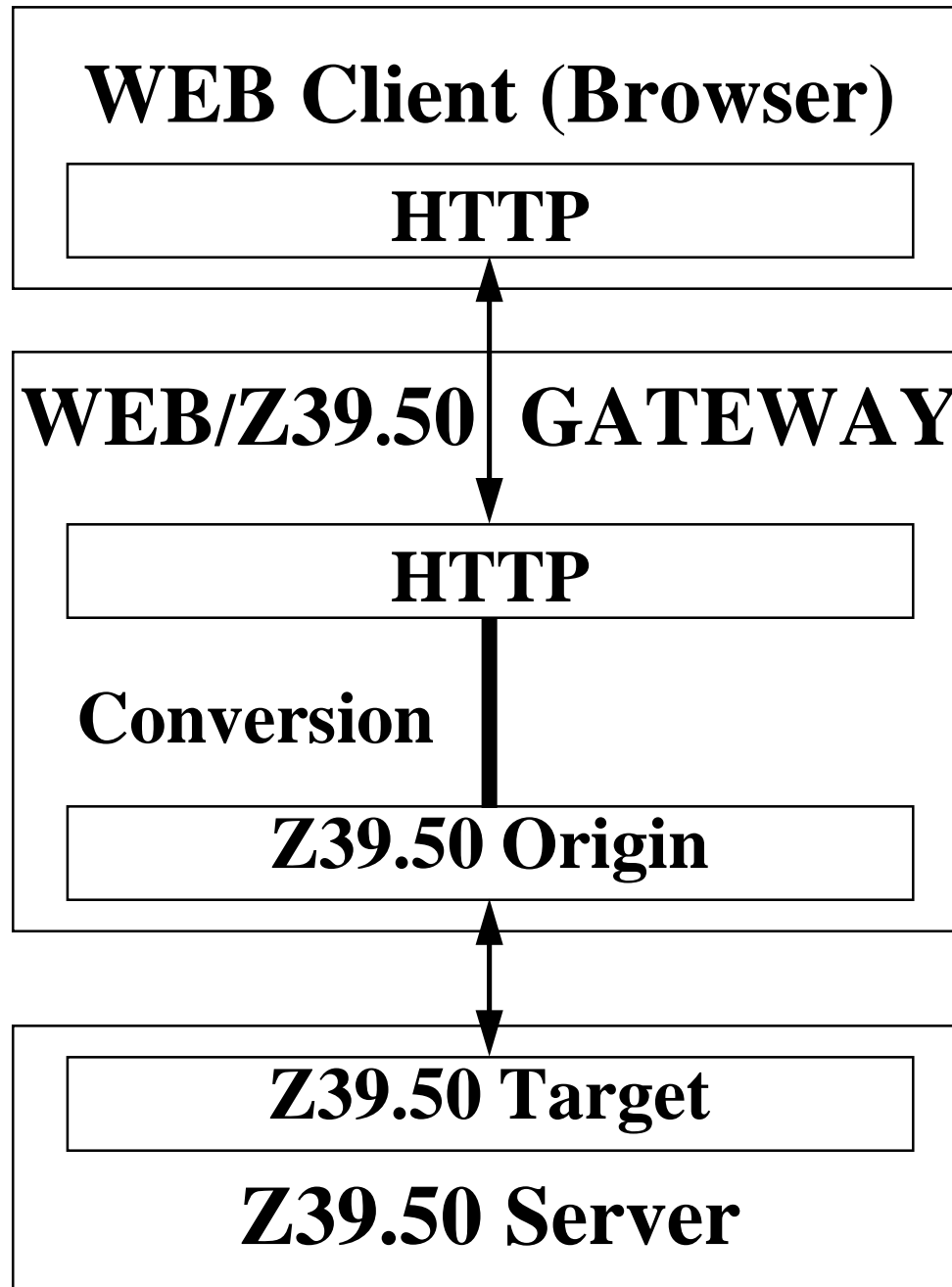
Z39.50 MESSAGES - 1992

1. INIT (INITIALIZATION)
2. SEARCH
3. PRESENT
4. DELETE-RESULT-SET
5. ACCESS CONTROL
6. RESOURCE CONTROL

Z39.50 FEATURES - 1995 (v. 2&3)

- λ SEARCHING OF BIBLIOGRAPHIC AND NON-BIBLIOGRAPHIC FORMATS, E.G. FULL TEXT, VIDEO
- λ SORT, SCAN, SEGMENTATION, ITEM ORDER, UPDATE, ETC.
- λ EXPLAIN SERVICE

Z39.50 STILL EVOLVING!!



WHAT Z39.50 IS NOT

- λ NOT A COMMON COMMAND LANGUAGE
- λ NOT A USER INTERFACE
- λ NOT A SPECIFICATION FOR BUILDING THE DATABASE
- λ NOT A SPECIFICATION FOR THE TELECOMMUNICATIONS NETWORK

BENEFITS

1. PERMITS INTERSYSTEM
SEARCHING AND RECORD
TRANSFER REGARDLESS OF
SYSTEM SOFTWARE OR
HARDWARE
2. PROVIDES SIMPLER ACCESS TO
REMOTE DATABASES THROUGH
SINGLE INTERFACE

BENEFITS

3. REDUCES TRAINING TIME, NEED FOR SYSTEM SPECIFIC TERMINALS OR COMPUTERS

4. CAN BE USED TO RETRIEVE BIBLIOGRAPHIC AND NON-BIBLIOGRAPHIC INFORMATION

IMPLEMENTATION ACTIVITIES

UNITED STATES

- λ Z39.50 IMPLEMENTORS GROUP (ZIG)
- λ APPROX. 80 IMPLEMENTATIONS
 - » AMERITECH, DRA, VTLS, GAYLORD, GEAC, ENDEAVOR, SIRSI, OVID, INNOV. INTERFACES
 - » OCLC, RLG
 - » COLUMBIA, DARTMOUTH, UNIV. OF CAL., U. OF FLORIDA, LIBRARY OF CONGRESS
 - » CHEMICAL ABSTRACTS, LEXIS/NEXIS

IMPLEMENTATION ACTIVITIES

EUROPE

- λ NETHERLANDS, U.K., GERMANY, ITALY
 - » EUROPEAN COMMISSION SPONSORED PROJECTS (DALI, SOCKER, ONE, ARCA, etc.)

CANADA

- λ NATIONAL LIBRARY OF CANADA TOOLKIT SOFTWARE
- λ UNIVERSITY LIBRARIES

CONCLUSION

- λ Z39.50 REVOLUTIONIZING DATABASE SEARCHING
- λ INVALUABLE TOOL FOR LIBRARIES AND OTHER INFORMATION SECTORS
- λ ISSUES TO BE RESOLVED:
 - » PRECISION, MARC FORMAT EXCHG,
 - » HOLDINGS, EXPLAIN, ETC.

Z39.50 RESOURCE PAGES ON THE WEB

λ **Z39.50 Maintenance Agency**

URL: <http://lcweb.loc.gov/z3950/agency/>

- » official Z39.50 documents, register of implementors, profiles, interpretations, articles, etc.

λ **Internet Searching With Z39.50**

URL: <http://www.markkelly.com/z3950/>

- » general info, links to software, int'l activity, related standards, implementations, etc.

λ **Z39.50 Resources - a Pointer Page**

URL: <http://ds.internic.net/z3950/z3950.html>

- » pointer page to numerous Z39.50 resources and information

Z39.50 RESOURCE PAGES ON THE WEB

λ **Z39.50 Client and Web Gateway Reviews**

URL: <http://www.dstc.edu.au/RDU/reports/zreviews/>

» reviews 12 Z39.50 clients, 5 Web/Z39.50 gateways

λ **Catalogs with Web Interfaces: Z39.50 gateways**

URL: <http://www.lib.ncsu.edu/staff/morgan/alcuin/wwwed-catalogs-Z39.50.html>

» annotated list of Webbed sites, software and services

λ **Z39.50 Library Sites**

URL: <http://www.bookwhere.com/hosts.htm>