



IBM ITSO Poughkeepsie - the zSeries Redbooks people

WebSphere software

Session Tracking Connection Pooling

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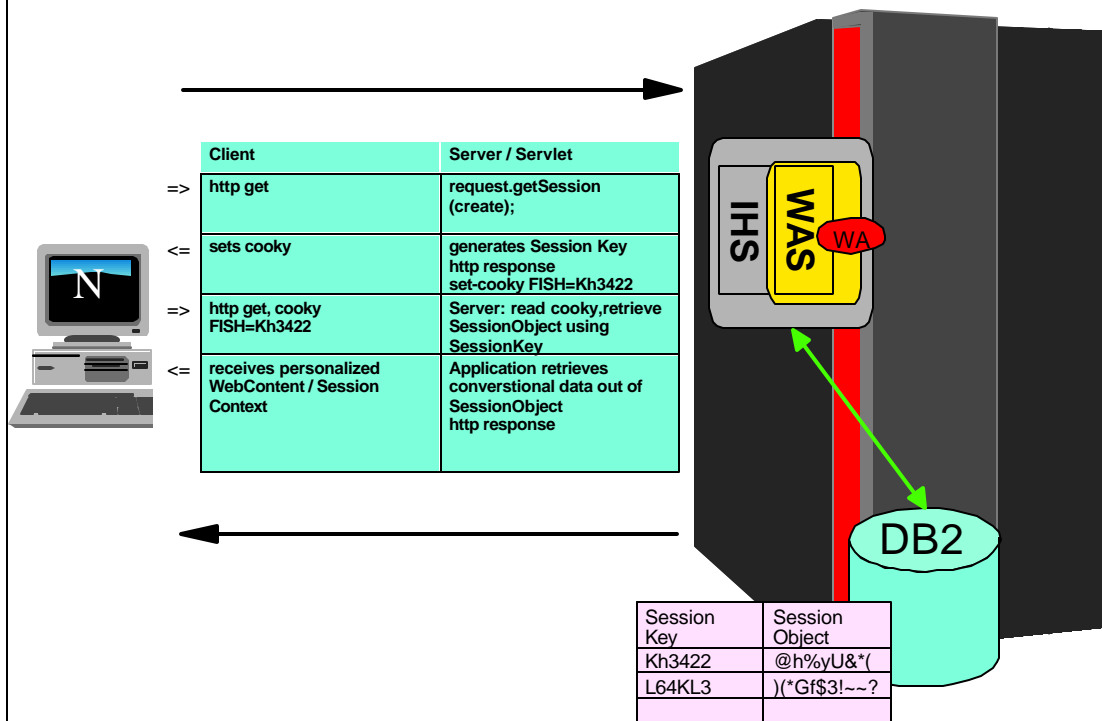
HTTP Session Tracking

- used to maintain a 'session' state in a stateless connection (http)
- cookie holds a session key
- session key will be store together with an session object at the server
- Session is managed with cooky or an modified (rewritten) URL
- session has to be externalized
 - ▶ when running in scalable mode
 - ▶ when Network Dispatching is used
- Externalized Session Tracking uses DB2 connections and should be pooled
- There are more performant scalability options than externalization



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HTTP Session Tracking (externalized)



Behind the scenes

SELECT * FROM WEBSRV.FISHPOOLTABLE WITH UR;

ID	PROPID	APPNAME
9EUXlnUKMMiZJxSNLlGlbUeI	sessiontest.counter	
9EUXlnUKMMiZJxSNLlGlbUeI	9EUXlnUKMMiZJxSNLlGlbUeI	ITSOsomp
9y1s0nUKMMUZIODTLlGlbU1b	sessiontest.counter	
9y1s0nUKMMUZIODTLlGlbU1b	9y1s0nUKMMUZIODTLlGlbU1b	ITSOsomp

The server wtsc59oe:9876&app=0 wishes to set a cookie that will be sent only back to itself. The name and value of the cookie are: FishCake=9y1s0nUKMMUZIODTLlGlbU1b. Do you wish to allow the cookie to be set?

OK Cancel

SessionKey

9yZflnUKMMGebNjXLlGlbPQi

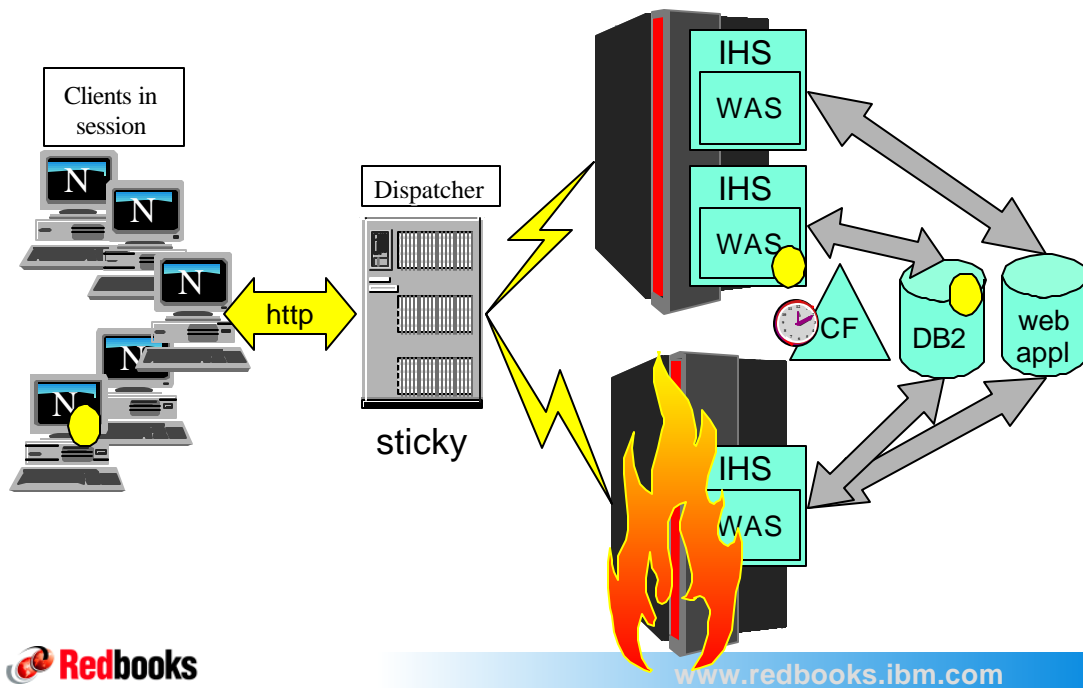
SMALL

DO..EE.. / / . % / > A. n > E A A A E. S pu 7 ag. . . n. . I / % I A I E. . / / . % / > A. + I A A E f D n. . m \ > . . . I o. . .

DO..EE.. / / . % / > A. n > E A A A E. S pu 7 ag. . . n. . I / % I A I E. . / / . % / > A. + I A A E f D n. . m \ > . . . I o. . .

serialized session object

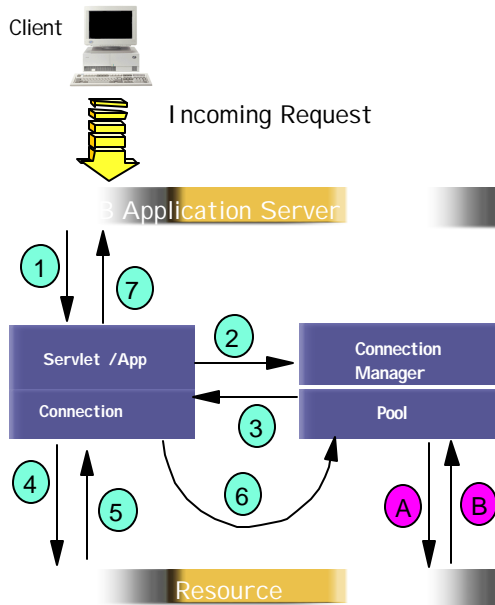
WebSphere & http sessions



WebSphere connection pooling

- WebSphere Funktion for Was 3.02 and WAS 3.5
- Minimizes the overhead of JDBC initiation and termination to DB2
- Will be implemented in JDBC Type 2 Driver Version 2
- Should be used by applications for performance reasons

Connection Pooling in WAS



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WebSphere software

Activation & Test of Session Tracking and Connection Pooling

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Create table for session objects

```
//HOLGER JOB ,
//JOB LIB DD DISP=SHR,DSN=DSN610.SDSNLOAD
//CREAL EXEC PGM=IKJEFT01
//SYS PRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*,DCB=BLKSIZE=133
//SYSUDUMP DD SYSOUT=*
//SYSTSIN DD *
  DSN SYSTEM(DBS3)
  RUN PROGRAM(DSNTIAD) PLAN(DSNTIA61) -
    LIBRARY('DB2V61S3.RUNLIB.LOAD')
  END
//SYSIN DD *

CREATE TABLESPACE TRACKING IN DSN8D61A;
COMMIT;
CREATE TABLE WEBSRV.FISHPOOLTABLE (
  ID VARCHAR(24) NOT NULL,
  PROPID VARCHAR(24) NOT NULL,
  APPNAME VARCHAR(32),
  LISTENERCNT SMALLINT,
  EXPIRES TIMESTAMP,
  LASTACCESS TIMESTAMP,
  CREATIONTIME TIMESTAMP,
  MAXINACTIVETIME INTEGER,
  USERNAME VARCHAR(256),
  SMALL VARCHAR(3595) FOR BIT DATA,
  MEDIUM LONG VARCHAR FOR BIT DATA
) IN DSN8D61A.TRACKING;

GRANT ALL ON TABLE WEBSRV.FISHPOOLTABLE TO PUBLIC;
COMMIT;
```



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define to was.conf

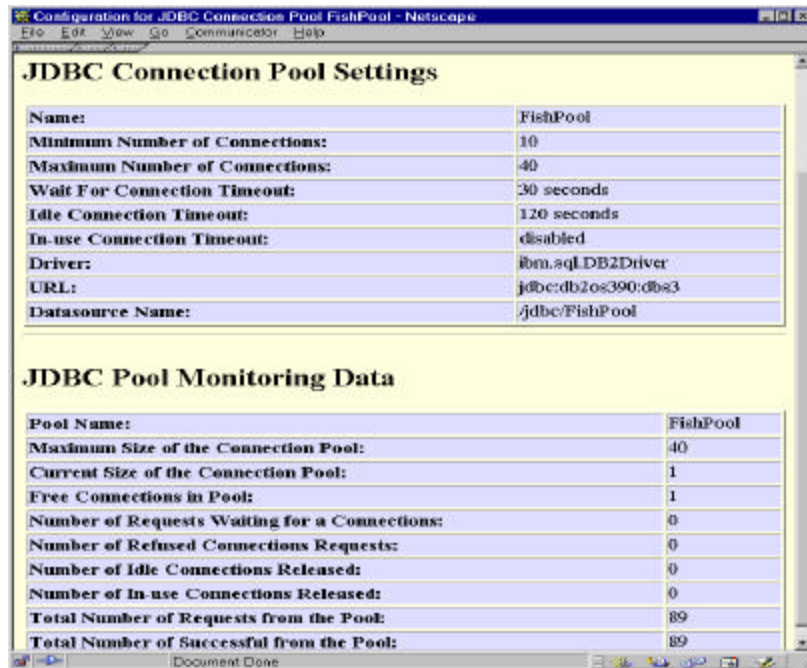
```
session.enable=true
session.urlrewriting.enable=false
session.cookies.enable=true
session.protocolswitchrewriting.enable=false
session.cookie.name=FishSessionCooky
session.cookie.comment="Wandas Session Support"
session.cookie.maxage=-1
session.cookie.path=/
session.cookie.secure=false
session.cookie.domain=
session.invalidationtime=180000
session.tableoverflowenable=true
session.tablesize=1000
  session.dbenable=true
  session.dbjdbcpoolname=FishPool
  session.dbtablename=FishPoolTable
jdbcconnpool.FishPool.minconnections=10
jdbcconnpool.FishPool.maxconnections=40
jdbcconnpool.FishPool.inuseconnectiontimeoutmilliseconds=-1
jdbcconnpool.FishPool.jdbcdriver=ibm.sql.DB2Driver
jdbcconnpool.FishPool.databaseurl=jdbc:db2os390:dbs3
jdbcconnpool.FishPool.waitforconnectiontimeoutmilliseconds=30000
jdbcconnpool.FishPool.idleconnectiontimeoutmilliseconds=120000
jdbcconnpool.FishPool.inuseconnectiontimeoutmilliseconds=120000
jdbcconnpool.FishPool.datasourcename=/jdbc/FishPool
```



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Are you JDBC pools active ?

<http://myhost/ConfigViewer/showCfg?cmd=jdbcPool&jpool=FishPool>



The screenshot shows a web browser window titled "Configuration for JDBC Connection Pool FishPool - Netscape". The page displays two tables: "JDBC Connection Pool Settings" and "JDBC Pool Monitoring Data".

JDBC Connection Pool Settings	
Name:	FishPool
Minimum Number of Connections:	10
Maximum Number of Connections:	40
Wait For Connection Timeout:	30 seconds
Idle Connection Timeout:	120 seconds
In-use Connection Timeout:	disabled
Driver:	ibm.sqlDB2Driver
URL:	jdbc:db2os390:db3
Datasource Name:	/jdbc/FishPool

JDBC Pool Monitoring Data	
Pool Name:	FishPool
Maximum Size of the Connection Pool:	40
Current Size of the Connection Pool:	1
Free Connections in Pool:	1
Number of Requests Waiting for a Connections:	0
Number of Refused Connections Requests:	0
Number of Idle Connections Released:	0
Number of In-use Connections Released:	0
Total Number of Requests from the Pool:	89
Total Number of Successful from the Pool:	89



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HTTP Session Sample Servlet

```
// SessionSample.java

import java.io.*;
import java.util.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class SessionSample extends HttpServlet
{
    public void doGet (HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        // Step 1: Get the Session object

        boolean create = true;

        HttpSession session = request.getSession(create);

        // Step 2: Get the session data value

        Integer ival = (Integer) session.getValue ("sessiontest.counter");
        if (ival == null) ival = new Integer (1);
        else ival = new Integer (ival.intValue () + 1);
        session.putValue ("sessiontest.counter", ival);

        // Step 3: Output the page
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html>");
        out.println("<head><title>Session Tracking Test</title></head>");
        out.println("<body>");
        out.println("<h1>Session Tracking Test</h1>");
        out.println("You have hit this page " + ival + " times" + "<br>");
        out.println("Your " + request.getHeader("Cookie"));
        out.println("</body></html>");
    }
}
```



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Verifying WAS session tracking

