

5.4 Sending Compressed Web Pages

Gzip is a text compression scheme that can dramatically reduce the size of HTML (or plain text) pages. Most recent browsers know how to handle gzipped content, so the server can compress the document and send the smaller document over the network, after which the browser will automatically reverse the compression (no user action required) and treat the result in the normal manner. Sending such compressed content can be a real time saver since the time required to compress the document on the server and then uncompress it on the client is typically dwarfed by the time saved in download time, especially when dialup connections are used.

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However, although most recent browsers support this capability, not all do. If you send gzipped content to browsers that don't support this capability, the browsers will not be able to display the page at all. Fortunately, browsers that support this feature indicate that they do so by setting the `Accept-Encoding` request header. Browsers that support content encoding include most versions of Netscape for Unix, most versions of Internet Explorer for Windows, and Netscape 4.7 and later for Windows. Earlier Netscape versions on Windows and Internet Explorer on non-Windows platforms generally do not support content encoding.

[Listing 5.2](#) shows a servlet that checks the `Accept-Encoding` header, sending a compressed Web page to clients that support gzip encoding (as determined by the `isGzipSupported` method of [Listing 5.3](#)) and sending a regular Web page to those that don't. The result (see [Figure 5-3](#)) yielded a compression of over 300-fold and a speedup of more than a factor of 10 when a dialup connection was used. In repeated tests with Netscape and Internet Explorer on a 28.8K modem connection, the compressed page averaged less than 5 seconds to completely download, whereas the uncompressed page consistently took more than 50 seconds. Results were less dramatic with faster connections, but the improvement was still significant. Gzip compression is such a useful technique that we later present a filter that lets you apply gzip compression to designated servlets or JSP pages without changing the actual code of the individual resources. For details, see the chapter on servlet and JSP filters in Volume 2 of this book.

Figure 5-3. Since the Windows version of Internet Explorer 6 supports gzip, this page was sent gzipped over the network and automatically reconstituted by the browser, resulting in a large saving in download time.

Listing 5.2 LongServlet.java

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```

    } else {
        out = response.getWriter();
    }

    // Once "out" has been assigned appropriately, the
    // rest of the page has no dependencies on the type
    // of writer being used.
    String docType =
        "<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 " +
        "Transitional//EN">\n";
    String title = "Long Page";
    out.println
        (docType +
         "<HTML>\n" +
         "<HEAD><TITLE>" + title + "</TITLE></HEAD>\n" +
         "<BODY BGCOLOR=\"#FDF5E6\">\n" +
         "<H1 ALIGN=\"CENTER\">" + title + "</H1>\n");
    String line = "Blah, blah, blah, blah, blah. " +
        "Yadda, yadda, yadda, yadda.";
    for(int i=0; i<10000; i++) {
        out.println(line);
    }
    out.println("</BODY></HTML>");
    out.close(); // Needed for gzip; optional otherwise.
}
}

```

Listing 5.3 GzipUtilities.java

```

package coreservlets;

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

/** Three small static utilities to assist with gzip encoding.
 * <UL>
 * <LI>isGzipSupported: does the browser support gzip?
 * <LI>isGzipDisabled: has the user passed in a flag
 *     saying that gzip encoding should be disabled for
 *     this request? (Useful so that you can measure
 *     results with and without gzip on the same browser).
 * <LI>getGzipWriter: return a gzipping PrintWriter.
 * </UL>
 */

public class GzipUtilities {

    /** Does the client support gzip? */
    public static boolean isGzipSupported
        (HttpServletRequest request) {
        String encodings = request.getHeader("Accept-Encoding");
        return((encodings != null) &&
            (encodings.indexOf("gzip") != -1));
    }

    /** Has user disabled gzip (e.g., for benchmarking)? */

    public static boolean isGzipDisabled
        (HttpServletRequest request) {
        String flag = request.getParameter("disableGzip");
        return((flag != null) && (!flag.equalsIgnoreCase("false")));
    }
}

```

```
/** Return gzipping PrintWriter for response. */  
  
public static PrintWriter getGzipWriter  
    (HttpServletResponse response) throws IOException {  
    return(new PrintWriter  
        (new GZIPOutputStream  
            (response.getOutputStream())));  
    }  
}
```

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