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When should I use a recordset object (ADODB.Recordset)?

26,420 requests - last updated Friday, October 5, 2001

There has been much discussion about when a person should use the various objects associated with ADO. What follows are some loose guidelines for the correct usage of these objects. This article is by no means the total picture, but rather will attempt to give the programmer the information to decide which method is 'right' for the purpose they intend to use data access.

A quick note: NEVER store a recordset in the session object. For a discussion of this see:

<http://www.microsoft.com/mind/1198/ado/ado.htm> (tip #6)

[Q176056](#)

Most data access tasks can be implemented by using the execute method of the connection object. Why would we want to do this? Well, for one, there is extra overhead in using a recordset object for UPDATE and INSERT functionality. This is because the provider has to translate your code into an equivalent T-SQL statement anyway (the database itself has no knowledge of "addNew" and similar methods). Also, there are many dangerous locks associated with recordsets... most of which are not necessary (especially when performing an INSERT or UPDATE). Your goal should be to get in, tweak your data, and get out as quickly as possible. Using direct statements is the quickest way to do this, since there is much less overhead and no locks associated with your activity.

Another benefit of using an INSERT or UPDATE statement is that it is much easier to debug. You can change `conn.execute(sql)` to `response.write(sql)` and immediately see why your statement is throwing an error. With a multi-line transaction using a recordset object, it is translated to an INSERT or UPDATE statement (inefficient!) on the DB side, so there is no straightforward way to trap errors at the code level.

To use the connection object, simply design a transact-SQL statement for the action you want to use and implement it like so:


```
<%
    sql = "INSERT INTO <table> (fields) VALUES (values)"
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    conn.execute sql, , &H00000080
    ...
%>
```

No recordset object is needed for this, because there is no need to return data (and in this case, your performance will increase if you add '&H00000080' as the third parameter - the constant for `adExecuteNoRecords`). If there were a need for returned data in the form of a recordset, we would do it like so:

```
<%
    sql = "SELECT field1, field2 FROM <table>"
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute(sql)
    ...
%>
```

The command object is also unnecessary overhead that does little, aside from bloat code, create confusion, and require constant declaration (`ADOVB.S.INC = bad`). Even for executing stored procedures, you can do it with the connection object alone:

```
<%
    sql = "EXEC SP_doSomething @param1=1, @param2='" & var & "'"
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute(sql)
    ...
%>
```

However, if you are receiving output parameters or return values, or are only returning one record from the stored procedure, performance is much better using the `ADODB.Command` object (but still no `ADODB.Recordset` object!).

Even a recordcount can be obtained without having to create an entire instance of an object (see [Article #2193](#)).

There are a few exceptions to this rule, of course. When certain ADO methods need to be used, or the cursorType needs to be changed for any other reason (e.g. for paging through a resultset), it may be necessary to use a recordset object.

What are the limitations of Access?

25,230 requests - last updated Friday, November 2, 2001

It's no secret: I hate Access. I don't think it should be used in a production environment for anything more than a personal website, and an unpopular one at that. If you're building a web site that you expect will be even remotely successful, you're only delaying the inevitable by using Access now. You will eventually be forced to upgrade to SQL Server (or something similar).

I have many reasons for this, most from first- or second-hand experience. I'm not going to get into all of those right now, because it is somewhat biased by my experience, and the type of applications I specialize in (which likely varies from the typical ASP programmer).

My primary reason, however, is that Access (and the Jet drivers) can only manage a handful of users at any given time (see [Q154869](#)). I've received plenty of criticism from people who expect there to be a hard-lined, cover-all-your-bases, magic number for this. Sorry to disappoint you, but there isn't. There are far too many variables involved, such as (in no particular order):

- ODBC driver version
- database structure
- number of tables queried
- number of queries per user
- size of tables
- number of records
- number of fields
- size of fields
- use of stored queries
- use / size of indices
- bandwidth
- processor speed
- disk subsystem
- RAM
- hard drive space
- behavior of users

Microsoft doesn't even publish hard numbers for this; they just use off-hand references such as "ten or fewer" and never define "high concurrency."

For some people, this is fine. If you have a site with a guestbook, and you get a few dozen entries a week, Access should be fine. But if you have a site like this one, with database-driven navigation, full search functionality and megs of data flowing each day, you may want to read this article in its entirety before settling for Access.

=====

From [Q222135](#)

"While Microsoft Jet is consciously (and continually) updated with many quality, functional, and performance improvements, it was not intended (or architected) for the high-stress performance required by 24x7 scenarios, ACID transactions, or unlimited users, that is, scenarios where there has to be absolute data integrity or very high concurrency."

=====

From [Q225048](#)

"...Microsoft Jet can only handle a limited number of sessions. If your application uses a large number of ADO Data controls, Jet may run out of resources."

=====

From [Q240317](#)

"Microsoft Jet has a read-cache that is updated every PageTimeout milliseconds (default is 5000ms = 5 seconds). It also has a lazy-write mechanism that operates on a separate thread to main processing and thus writes changes to disk asynchronously. These two mechanisms help boost performance, but in certain situations that require high concurrency, they may create problems."

=====

From <http://msdn.microsoft.com/library/en-us/dnmsde/html/msdeforvs.asp>

"Jet can support up to 255 concurrent users, but performance of the file-based architecture can prevent its use for many concurrent users. In general, it is best to use Jet for 10 or fewer concurrent users."

=====

From <http://msdn.microsoft.com/library/en-us/dnduwam/html/d2dbase.asp>

"Phase 2 of the Duwamish Books sample includes a Microsoft® Access .mdb database, although this technology supports fewer concurrent users than does Microsoft SQL Server."

=====

You're not going to get hard numbers from anyone else that apply specifically to your application. It is YOUR responsibility to benchmark YOUR application and make sure that Access can handle the maximum number of simultaneous users YOU expect (or hope for). Not performing this kind of test is doing a disservice to you, your employer, and your client -- and opening all up to risk of failure.

With all that aside, if you're stuck with Access, here is a list of links to KB articles revolving around specific Access error messages. This isn't a completely exhaustive list, but it should serve to be a good starting point.

80040e07 - Data type mismatch in criteria expression.

[Q136059](#), [Q175258](#), [Q184948](#), [Q208425](#), [Q210244](#), [Q246570](#)

80040e10 - Too few parameters. Expected <x>.

[Q162980](#), [Q171850](#), [Q172898](#), [Q178070](#), [Q181209](#), [Q181832](#), [Q184233](#), [Q191619](#), [Q205972](#), [Q207586](#),
[Q216425](#), [Q237994](#)

80040e14 - The Microsoft Jet Database engine cannot find the table or query 'tablename'. Make sure it exists and that its name is spelled correctly.

[Q184572](#)

80040e14 - Syntax error in FROM clause.

[Q181489](#)

80040e4d - Too many client tasks.

[Q154869](#)

80004005 - The Microsoft Jet database engine cannot open the file '(unknown)'. It is already opened exclusively by another user, or you need permission to view its data.

[Q166029](#), [Q174943](#), [Q189408](#)

80004005 - Data source name not found and no default driver specified.

Q159682, Q174655, Q184572

80004005 - Operation must use an updateable query.

Q175168

80004005 - Couldn't use '(unknown)'; file already in use.

Q174943

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Aside from the concurrent user and permissions problems, Access lacks many other qualities of a mission-critical, enterprise-level database.

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Scalability

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I don't believe it can be stressed enough that Access will simply not stand up to traffic. I realize it is tough to simulate TRUE load testing in a development environment, but if it can prevent you from launching an inadequate database, it will be worth the trouble. Mission-critical databases should laugh at traffic; database servers should buckle under bandwidth and RAM constraints before they're ever stopped by the database itself. As an added point, SQL Server has the flexibility of actually using multiple processes on an SMP machine.

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Backup

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Access doesn't have a good backup scheme; in fact, it doesn't have a backup scheme at all. Being file-based, there are two problems with attempting to back up Access: (1) if records are modified while the backup is being performed, the backup may become corrupt; and, (2) many backup programs won't even touch a file that is in use. Most capable database systems have a variety of configurable backup schemes, and SQL Server is no exception. SQL Server also has comprehensive locking facilities, making it much more difficult to corrupt a backup.

Similarly, it is near impossible to modify an Access database while it is 'live', e.g. while any user has a page

opened that is accessing any table within. You have to copy the database, make your changes, and replace the 'live' version - waiting until nobody is on your site. Not something that can be tolerated in a 24/7 environment.

=====

Replication

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A decent database system has at least one way to replicate / transfer content from one database, or one server, to another. SQL Server has multiple options for Data Transformation Services (DTS), and can have external tools "plugged in" to perform similar tasks. With versions of Access prior to 2000, it was always right-click, copy .mdb file, paste. Yuck.

=====

Security

=====

Capable database platforms have multiple levels of configurable security, down to the object level. A user can also be permitted across databases and across servers. Through the context of ASP, Access only has the ability to password protect a database on a single file basis, so you can't have custom permissions per query, table or view.

Another element of security is that even password-protected MDB files are easily compromised simply by importing them into an Access 2000 application.

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Transactions

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SQL Server is a transactional database. Aside from remote stored procedures, any set of operations within a transaction can be rolled back. With Access, you would have to either (a) use transactions from an external application, e.g. COM+ or MTS; or (b) revert to a previous copy of the database.

=====

Triggers

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In SQL Server, triggers allow you to perform operations in response to certain events without slowing down the

calling application. For example, you could have SQL Mail send you an e-mail after every five inserts to the ORDERS table where the order total is greater than \$50. With Access, you would have to create a table, store a count for the number of times such an insert occurs, and code the application to send mail at insert time (which slows down the application itself). Not the prettiest solution.

=====

SQL Mail

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SQL Server supports a native mail format; as long as there is an Exchange Server within reach, you can tell the database to e-mail specific users on certain events... e.g. within a trigger, or when certain database tasks fail. With Access, you would have to code this stuff up yourself - assuming you find some way to trap the event(s) in the first place.

=====

Jobs

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SQL Server supports jobs, allowing you to schedule database tasks and have the system execute them automatically (instead of a user having to invoke them). You can schedule jobs to be performed when the CPU is idle, or at certain times during the day. We use this for number-crunching at the end of each day, and for archiving stats throughout the day to keep our 'active' tables as small as possible.

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Stored Procedures

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Yes, Access supports stored queries. But IMHO, these are nowhere near as powerful as stored procedures. For one, it is difficult to have stored queries access data from different databases. With stored procedures, this is trivial at worst. SQL Server stored procedures support cursors and temporary tables, both of which are very powerful tools in sorting data and performing operations/calculations/logic.

Additionally, SQL Server comes with several system and extended stored procedures, which you can plug into your existing logic to do all sorts of things (such as retrieve a directory file listing (**exec xp_cmdshell 'dir c:\'**), list all of the users currently accessing your database (**exec sp_who**), or iterate through all DSNs on the server (**exec xp_enumdsn**). Try and do those things from Access!

=====

Again, if you want to use Access for your personal photos page or your CD collection, and you're not going to publish it for the world to see, then Access is more than capable. I strongly recommend not using Access in any application for which a 3rd party is relying on you, especially an e-commerce or other 24/7 operation.

And I'm not saying you have to use Microsoft's [SQL Server](#), or even the latest version (I like 2000, but 7.0 is more or less equally beneficial). While it is the database that is the natural 'next step' - and many upsizing tools and tutorials are available (see [Article #2182](#)). There are several other database packages you can look at, each with their own strengths and weaknesses. These include [Sybase](#), [DB2](#), [Oracle](#), [Informix](#)... my preference, as you might guess, is SQL Server... but I do have some level of faith in all of these products.

How do I store GIF and JPEG images inside a database?

21,733 requests - last updated Friday, June 1, 2001

While I *strongly* recommend storing the file in the filesystem and its LOCATION in the database, there are several components out there that make this really easy. My preference is ASPUpload from Persits software (www.aspupload.com).

I have not investigated the capabilities of other components (except to see that Software Artisans' version had a terrible setup routine when I tried it), nor have I deemed it worthwhile to try and implement this capability without a component. :-)

Where can I get basic info about using stored procedures?

21,633 requests - last updated Wednesday, January 23, 2002

In this article, I will step through some INSERT, UPDATE and DELETE stored procedures, from the ground up. We will explore a few speed bumps that I have experienced, and which you will most likely experience also.

This article assumes you're familiar with SQL Server and ASP, and have dbo-level privileges in Enterprise Manager. Please be sure you have the latest version of Microsoft Data Access Components (MDAC) installed. If you're running NT 4.0 or Windows 9x, you can download new versions at <http://www.microsoft.com/data/>. See [Article #2057](#) to determine which version you're currently running.

These samples were tested using the version of MDAC that ships with Windows 2000 (MDAC 2.5), as well as the version that is installed by SQL Server 2000 (2.6 RTM).

Why use stored procedures?

1. Performance - stored procedures are pre-compiled by SQL Server, so performance is fast. The increase in speed is similar to the benefits of porting lengthy blocks of resource-intensive ASP code into a COM/COM+ DLL (without the overhead implications).
2. Isolation of Logic - stored procedures allow you to separate your data tier logic from presentation code. This way, your ASP experts don't have to be SQL experts - and vice-versa. The SQL gurus can often change the way a stored procedure works with data, without even having to touch the ASP gurus' code. Granted, there are some times when this can add complexity to a project; for those situations, I recommend using communication and SourceSafe, and remember #1.

When should I use stored procedures?

Our company policy is to encapsulate ALL data logic into stored procedures, and eliminate all direct SQL calls (whether from ISAPI, COM, ASP, Servlets, or Java). For quick and dirty tests, you don't need to be 100% formal about this. But for anything in production -- if you care about performance -- you should be using stored procedures as much as possible.

How do I write stored procedures?

Stored procedures are created within SQL Server's Enterprise Manager GUI. You can create them from Query Analyzer, or even from ASP code. Personally, I prefer the GUI for its "Check Syntax" button, but many people think this is gratuitous and also find the space in the procedure GUI limiting. In any case, before we get into the process, let's show a simple example of a stored procedure.

Note that your instinct may be to name a stored procedure with the `sp_` prefix. Please do not do this, as this prefix is reserved for system stored procedures. In addition to making your procedures confusing and possibly opening the doors for pre-empting critical procedures used elsewhere in your code; even if you choose a unique name, this causes a performance hit as the engine checks for that procedure name in the Master database first. Accordingly, the procedures demonstrated in this article will be given the prefix `FAQ_`.

```
CREATE PROCEDURE dbo.FAQ_GetAuthors AS
BEGIN
    SELECT lastname,firstname
        FROM authors
        ORDER BY lastname
END
```

This simply does a `SELECT` statement, returning authors' last and first names, ordered alphabetically by last name. Notice the only syntactical difference between a typical `SELECT` statement and an equivalent stored procedure is the `CREATE PROCEDURE` wrapper (and the `BEGIN/END` statements, which aren't altogether necessary).

You can call this from ASP as follows:


```
<%
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute("EXEC dbo.FAQ_GetAuthors")
    do while not rs.eof
        lastname = rs(0)
        firstname = rs(1)
        response.write lastname & ", " & firstname & "<br>"
        rs.movenext
    loop
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>
```

This was a fairly trivial example; I'd like to go much deeper than this today. But first, let's examine some questions you probably have about the above code.

- What should my connection string look like?

To force TCP/IP over named pipes, and to avoid superfluous layers, here is a fictitious example of the kind of connection string I always use:

```
<%
    cs = "provider=SQLOLEDB; network=DBMSSOCN;
    server=1.1.1.1;"
    ' if you use a port other than 1433, use
    server=1.1.1.1,1500;
    ' (where 1500 is the port number SQL Server is listening
    on)
    cs = cs & "database=pubs; uid=myUsername;
    pwd=myPassword;"
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open cs
    ' ...
%>
```

- Why didn't I use a command object?

The command object brings overhead that is rarely necessary when executing any stored procedure. This object has very stringent guidelines as far as creating parameters (including strictly matching any and all data types being passed), and almost always forces you to include ADOVBS.inc for constants (which is inefficient - see [Article #2112](#)). Some texts will claim "it's faster, and simpler to use." While the former might be true in the case of a single output parameter and no records, I've seen no proof of it otherwise... and I outright disagree with the latter. Command object code is monstrous and very error-prone.

- Why didn't I use a recordset object?

I avoid ADODB.Recordset for pretty much for the same reasons as avoiding ADODB.Command. It has all kinds of overhead I very rarely require, and uses more complex code to accomplish the same results. For more information, see [Article #2191](#) (and recall that, in earlier versions of MDAC, an RS.Open call would tend to crash if it was an empty resultset).

- Why did I use rs(0) instead of rs("lastname")?

While retrieving recordset elements by name is more intuitive, it is actually much less efficient than retrieving them by index number. Also, this almost forces you to assign them to local variables, which aids in reuse and in retrieving text/memo fields. This, however, is one of the few scenarios where you have to be in tune with the stored procedure developers... if they change the SELECT field order, they have to tell you. When you work alone, this danger isn't as great... but it might be one of those preference issues where readability outweighs performance.

Let's move on to a more concrete example. We'll start with a fairly simple table. I created a table in pubs called **BOOKS**. The fields are shown in the following table:

Field Name	Data Type / Length	Field Name	Data Type / Length
id	INT (Identity)	synopsis	VARCHAR (4000)
title	VARCHAR (255)	inprint	BIT (DEFAULT=1)
pubdate	DATETIME	salesCount	INT

I used one column to represent each datatype (and/or property) that I will be covering in this article. DATETIME and VARCHAR(>255), in particular, seem to cause many problems for ASP developers. Here is the script used to create the table from Query Analyzer, so you don't have to muck with the GUI:

```
CREATE TABLE BOOKS
(
    id INT IDENTITY,
    title VARCHAR(255) NOT NULL DEFAULT '',
    pubdate DATETIME NOT NULL DEFAULT '1/1/1900',
    synopsis VARCHAR(4000) NOT NULL DEFAULT '',
    inprint BIT NOT NULL DEFAULT 1,
    salesCount INT NOT NULL DEFAULT 0
)
GO

GRANT ALL ON BOOKS TO myUsername
GO
```

We make the id field an identity, so that it can be a unique, auto-incrementing value. Replace "myUsername" with the true username you'll be using to connect with - the last line applies appropriate permissions (it should have INSERT, SELECT, UPDATE and DELETE). Depending on the version of SQL Server you're using, you may have to hit F5 before you see the new table in the Tables list.

INSERT

Now that we have a table created, we can start writing stored procedures around it. The first one we'll need, of course, is an INSERT statement. After all, we need to get data in there somehow! A typical INSERT statement for this table might be as follows:

```
INSERT INTO BOOKS
(
    title,
    pubdate,
    synopsis,
    salesCount
)
VALUES
(
    'Seven Minute Stored Procedures',
    '01/01/2000',
    'This book helps you trim the fat, and feel good about coding
again!',
    0
)
```

One of the problems with running an INSERT statement directly is that you need to find some other means of retrieving the IDENTITY value of the record you inserted. This is one of the most common questions asked in Microsoft's public newsgroups, and it seems to cause people a lot of trouble (both in initially doing it, and - in concurrent user scenarios - making sure that they are getting the proper IDENTITY value back, not someone else's). A stored procedure makes this much more reliable, though admittedly not perfect. @@IDENTITY is a *global* variable SQL Server uses to keep track of the IDENTITY value last inserted. While I have never personally experienced a mistaken identity, I'm not going to go out on a limb and say it will never happen.

[Note: if you are running SQL Server 2000, replace all further instances of @@IDENTITY with **SCOPE_IDENTITY()**. This is a new method which makes sure you only get the IDENTITY value that *your* connection generated.]

Changing this statement to a stored procedure will be pretty simple. Open Query Analyzer, copy the following code, and hit F5:

```
CREATE PROCEDURE dbo.FAQ_InsertBook
    @title VARCHAR(255),
    @pubdate CHAR(10),
    @synopsis VARCHAR(4000),
    @salesCount INT
AS
BEGIN
    SET NOCOUNT ON
    DECLARE @newBookID INT
    INSERT BOOKS
    (
        title,
        pubdate,
        synopsis,
        salesCount
    )
    VALUES
    (
        @title,
        @pubdate,
        @synopsis,
        @salesCount
    )
    SELECT @newBookID = @@IDENTITY
    SELECT newBookID = @newBookID
END
GO

GRANT EXEC ON dbo.FAQ_InsertBook to myUsername
GO
```

Again, replace "myUsername" with the name of the account that will be accessing this application.

Let's review our code before we do anything with it. Always prefix stored procedures with dbo. This will prevent permissions issues later on, and will prevent the awkward situation where two people, connected as two different users, create stored procedures with the same name (yes, this is possible). We take in four parameters: @title, @pubdate, @synopsis, and @salesCount. You'll notice I changed the datatype of @pubDate; this is because we're only interested in the CHAR(10) equivalent of the date (10 characters, e.g. "01/01/2000"). I've found that I run across far fewer problems when I avoid

passing explicit datetime values directly to stored procedures.[\[Footnote 1\]](#)

After the BEGIN command, we SET NOCOUNT ON -- this prevents interim statements from being returned as recordsets.

I strongly recommend you always use SET NOCOUNT ON at the beginning of your stored procedures. This is because, as you might learn soon enough, statements that return RowsAffected results (or any message, for that matter) in Query Analyzer can also be interpreted as recordsets in client code -- which means the recordset you think you're on isn't necessarily the right one. One example that dogged me for a few hours went as follows:

```
INSERT ...  
DELETE ...  
SELECT ...
```

When I would call this stored procedure from an ActiveX DLL, I would try and obtain some fields from the recordset... only to receive the "ordinal name not found" error. It took me a while to realize that using NextRecordset() would eventually get me to the results I was after, but I didn't like this at all (the code was inefficient, because it was returning much more data than it needed to be). Once I changed it to the following, everything was fine:

```
SET NOCOUNT ON  
INSERT ...  
DELETE ...  
SELECT ...
```

I have quickly become accustomed to wrapping non-result-returning code inside of SET NOCOUNT ON... to avoid being bitten by this in the future. So, if you decide not to use the NOCOUNT options, at least (having read this) you'll know what to look for if you experience similar problems.

Next we use the DECLARE command to create a temporary INT value called @newBookID. (While we could do this without a temporary variable, this is a good habit to have - you will eventually be dealing with multiple IDENTITY values in one stored procedure.) This value will store the IDENTITY number for the record inserted by the stored procedure. The next 14 lines make up the INSERT statement, utilizing the four parameters passed to the query - but otherwise looking like most INSERT statements you've seen before. Note that we don't have to pass a value for the inprint column, since it has a default value

of 1 - and we are assuming that all books are, in fact, in print (we'll deal with overriding this value shortly).

The first SELECT statement in this query applies the global @@IDENTITY value (the latest insert) to the local variable @newBookID. We then SET NOCOUNT OFF, so that our SELECT statement - which actually returns the new IDENTITY value to the calling script - is not ignored. (After END, a GO command is automatically added for you in SQL Server 2000.)

All right, let's test this stored procedure before we move to ASP. In Query Analyzer, copy the following query:

```
EXEC dbo.FAQ_InsertBook
    @title='Seven Minute Stored Procedures',
    @pubdate='01/01/2000',
    @synopsis='This book helps you trim the fat, and feel good about
coding again!',
    @salesCount=0
```

When you execute the query, you should see the number 1 under the newBookID column in the results pane. Next you'll see how we return this value, within a recordset, to our ASP page.[\[Footnote 2\]](#)

First, to be sure the record was inserted properly, change your query to the following:

```
SELECT * FROM BOOKS
```

After executing this query, you should see the new record intact, with all of the values you inserted. Now that we know our stored procedure is running correctly, let's move to the fun part. The goal here, of course, is to have ASP scripts running these things -- not to be fiddling with Query Analyzer and Enterprise Manager all day long.

We'll start script similar to the ASP code above. I will populate local variables with values, but you can assume that these values come from anywhere (e.g. the Form or QueryString collection). I have also included my "FixDate" and "FixString" functions, which clean up dates and escape apostrophes, respectively.

```

<%
FUNCTION FixDate(str)
    datestr = cdate(str)
    mStr = month(datestr): dStr = day(datestr): yStr = year(datestr)
    if (CInt(mStr)<10 and len(mStr)=1) then mStr = "0" & mStr
    if (CInt(dStr)<10 and len(dStr)=1) then dStr = "0" & dStr
    FixDate = mStr & "/" & dStr & "/" & yStr
END FUNCTION
FUNCTION FixString(str)
    FixString = replace(str,"","'")
END FUNCTION

    title = "Six Minute Stored Procedures"
    pubdate = "1/1/00"
    synopsis = "This one is better than the last one."
    salesCount = 0

    title = FixString(title)
    pubdate = FixDate(pubdate)
    synopsis = FixString(synopsis)
    salesCount = CInt(salesCount)

    sql = "EXEC dbo.FAQ_InsertBook" & _
        " @title='" & title & "'," & _
        " @pubdate='" & pubdate & "'," & _
        " @synopsis='" & synopsis & "'," & _
        " @salesCount=" & salesCount
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute sql
    Response.write("Record inserted. ID number was <b>" & rs(0) &
"</b>.")
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>

```

If you've gotten this far and are getting errors from the SQL Server driver, a good idea to try and debug is to `Response.Write` the `sql` variable, so you can review on-screen EXACTLY what you're passing to the database engine. It is often easier to spot a missing single quote or comma in a resulting string than in concatenated code like the above sample. See [Article #2145](#) for more info.

UPDATE

Okay, so now we have data in there, what if we want to update it? Let's say the book 'Seven Minute Stored Procedures' (ID = 1) reached a sales count of 4,023 units, and was shortly thereafter discontinued. We would start with the same principle -- a basic UPDATE statement in T-SQL might look as follows:

```
UPDATE BOOKS SET
    title = 'Seven Minute Stored Procedures',
    pubdate = '01/01/2000',
    synopsis = 'This book helps you trim the fat, and feel good about
coding again!',
    salesCount = 4023,
    inprint = 0
WHERE
    id = 1
```

A stored procedure that does this kind of update is extremely similar to the one we wrote earlier for inserting a book. Here is the code:

```
CREATE PROCEDURE dbo.FAQ_UpdateBook
    @id INT,
    @title VARCHAR(255),
    @pubdate CHAR(10),
    @synopsis VARCHAR(4000),
    @salesCount INT,
    @inprint BIT = 1
AS
BEGIN
    UPDATE BOOKS SET
        title = @title,
        pubdate = @pubdate,
        synopsis = @synopsis,
        salesCount = @salesCount,
        inprint = @inprint
```

```
        WHERE
            id = @id
    END
GO

GRANT EXEC ON dbo.FAQ_UpdateBook to myUsername
GO
```

The biggest difference here is that we have to pass the ID number as a parameter, so that SQL knows which record we want to apply that change to (without a WHERE clause, it would update every record in the table). Also note that if you DON'T pass a new inprint value, it will not change. The input param @inprint has a default value of 1, so the value in the table will only change if you override it (which we will do in a moment).

You can test this new stored procedure by issuing the following command to Query Analyzer:

```
EXEC dbo.FAQ_UpdateBook
    @id=1,
    @title='Seven Minute Stored Procedures',
    @pubdate='01/01/2000',
    @synopsis='This book helps you trim the fat, and feel good about
coding again!',
    @salesCount=4023,
    @inprint=0
```

And from ASP, the code for this new stored procedure would be almost identical to the previous example. Let's assume, from now on, that you have placed the FixDate() and FixString() functions into an #INCLUDE file called sqlFunctions.asp. The following file will update the synopsis of the book to reflect the fact that it is no longer in print:

```

<!--#INCLUDE FILE='sqlFunctions.asp'-->
<%
    id = 1
    title = "Seven Minute Stored Procedures"
    pubdate = "1/1/00"
    synopsis = "This book was removed from circulation effective
6/1/2000."
    salesCount = 4023
    inprint = 0

    id = cLng(id)
    title = FixString(title)
    pubdate = FixDate(pubdate)
    synopsis = FixString(synopsis)
    salesCount = formatnumber(cLng(salesCount),0,-1,-1,0)
    inprint = cLng(inprint)

    sql = "EXEC dbo.FAQ_UpdateBook" &_
        " @id=" & id & "," &_
        " @title='" & title & "'," &_
        " @pubdate='" & pubdate & "'," &_
        " @synopsis='" & synopsis & "'," &_
        " @salesCount=" & salesCount & "," &_
        " @inprint=" & inprint
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    conn.execute sql,,&H000000080
    Response.write("Record updated.")
    conn.close: set conn = nothing
%>

```

You're probably asking "what's that &H000000080 for?" This is the constant for `adExecuteNoRecords`. It tells the SQL engine that you won't be returning or processing any rows, and executes the query more efficiently - providing a bit more performance boost to your application. My testing yielded gains better than 20% simply by adding this constant to my execute calls in ASP and VB. Since this stored procedure didn't return any data, we didn't need to create a recordset object at all; we simply passed the SQL statement directly to the execute method of the connection object. One issue you'll want to watch for is passing larger integer values to SQL statements. Because a large portion of T-SQL syntax

relies on commas, you have to be careful not to pass numbers formatted with comma separators (which is why the above salesCount assignment has the additional formatnumber command - in case you're passing to it a value with comma separators).

DELETE

Now we'll get into a slightly more complex example. Let's say we want to delete all records where the word "seven" appears in the title (hey, I didn't say these examples had to be logical!). The typical DELETE statement would look like this:

```
DELETE FROM BOOKS
WHERE
    title LIKE '%seven%'
```

A common requirement for this kind of query is that it alerts the user how many records were actually deleted. When using a normal DELETE statement, you would have to do a differential between SELECT COUNT(id) before and after the DELETE query is run. This makes for messy and inefficient code, and is not entirely intuitive either. Luckily, SQL Server has another global variable which, like @@IDENTITY, is used to keep track of specific values. This variable, called @@ROWCOUNT, reflects the number of rows affected by a query.

And this brings us to one of the challenges with using @@ROWCOUNT. Any value returned to it is automatically set to 0 when SET NOCOUNT ON is used in conjunction with statements that don't return any rows (such as IF or DELETE statements). Ultimately, this means we're going to have to examine returning multiple recordsets from a stored procedure. Don't get me wrong, it is not a bad thing to learn. But it is one of the reasons this example is slightly more complex than the previous examples.

Before we get too far, let's see what the stored procedure looks like. It is actually quite similar to the previous stored procedures, with far fewer parameters being passed:

```
CREATE PROCEDURE dbo.FAQ_DeleteBook
    @criteria VARCHAR(255)
AS
BEGIN
    DELETE FROM BOOKS
        WHERE
            SUBSTRING(LOWER(@criteria), LOWER(title))>0
    SELECT @@ROWCOUNT
END
GO

GRANT EXEC ON dbo.FAQ_DeleteBook to myUsername
GO
```

Executing this query from Query Analyzer would look like this:

```
EXEC dbo.FAQ_DeleteBook @title='seven'
```

You can use FAQ_InsertBook in the Query Analyzer to populate the BOOKS table with a bunch of identical records, then run FAQ_DeleteBook to make sure the proper number of rows are being returned. When you are sure the stored procedure is working as advertised, we can move to ASP. The biggest difference in the following code, compared to the resultset example from the INSERT stored procedure, is that we call the NextRecordSet() method of the rs object (see the **bold** section below).

```
<!--#INCLUDE FILE='sqlFunctions.asp'-->
<%
    title = "seven"

    sql = "EXEC dbo.FAQ_DeleteBook @title='" & FixString(title) & "'"
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute(sql)
    set rs = rs.NextRecordSet()
    Response.write(rs(0) & " rows deleted.")
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>
```

The first "recordset" doesn't return any data (but is defined as a recordset by the provider), so we don't need to care about any results. In fact, trying to access any element in the first recordset will result in an ADO error. Once you move to the second recordset, you can safely retrieve the number of records that the query deleted (and this is why, in this case, we don't use the `adExecuteNoRecords` constant).

Note that most DELETE queries would delete by ID number or some other unique identifier; all it takes is someone passing a criteria value of 'a' to delete just about every book in your database. These are just simple examples that try to cover all the little issues that invariably come up when using stored procedures.

Conclusion

As you can see, there are many pros and cons to using stored procedures. The main advantage are performance, additional functionality and encapsulation of code; while a significant disadvantage is that there are a few more considerations to make when writing code. Overall, it is the author's opinion that stored procedures are worth the trouble - several times over. You owe it to yourself to try them out, and see for yourself how much they can improve your database's performance, as well as your development schedule.

Footnotes

[1] One thing you'll want to make sure of is that your ASP pages are actually creating dates in MM/DD/YYYY format. Server setup registers MM/DD/YY as the default system locale (as ridiculous as this is after that whole Y2K thing); so, even if you have changed the format to MM/DD/YYYY for a specific user, if nobody is logged in to the box, it reverts to the default. I have yet to find a reliable way, short of reinstalling from scratch, of reversing that setting (and I have argued with my fair share of WPP "tech support" people about it). To be sure my ASP scripts are always using proper CHAR(10) date format no matter who is logged in, I wrote the following VBScript function - which I place in all of my top-level includes (I've also included a simple test to verify that it works):

```
FUNCTION FixDate(str)
    datestr = cdate(str)
    mStr = month(datestr): dStr = day(datestr): yStr =
year(datestr)
    if (CInt(mStr)<10 and len(mStr)=1) then mStr = "0" & mStr
    if (CInt(dStr)<10 and len(dStr)=1) then dStr = "0" & dStr
    FixDate = mStr & "/" & dStr & "/" & yStr
END FUNCTION
```

' As a test:

```
SQL = "EXEC dbo.myProc @dateVal='" & fixDate("2/1/74") & "'"
Response.Write(SQL)
```

[2] Yes, using an output parameter can be slightly more efficient than returning a recordset. However, this is one of those cases where ease of use often outweighs performance concerns, IMHO (output parameters, like ADODB.Command, can be a pain to use). And further to that, I find it more often than not the case that I'm returning multiple recordsets from a stored procedure (as opposed to the rare case of only one value being returned), whereby you lose any performance advantage of the parameter anyway.

Why am I having problems with MEMO, TEXT, HYPERLINK, CURRENCY fields?

19,850 requests - last updated Saturday, October 27, 2001

MEMO / TEXT / VARCHAR(>255)

Depending on the version of your MDAC driver, and the database you are connecting to, these fields can either (a) not show up at all, (b) only show up the first time they're called, or (c) cause 'Unspecified Error', 'Exception Occured' or 'Errors Occurred' runtime errors, if the following recommendations are not observed:

- Avoid SELECT * notation; NAME your fields in a list, and name the offending field name(s) LAST.
- Assign the value of the field to a variable IMMEDIATELY, and only use this variable from that point on.
- Make sure your MDAC drivers are most current (<http://www.microsoft.com/data/>).
- See [Q200124](#) and [Q175239](#)

Another problem people have is retaining line breaks from a textarea, once the value is returned to the screen. Access and SQL Server DO store this information, it's just not in a format that a browser's HTML engine understands. You need to replace line feeds and carriage returns with HTML tags.

Here is some example syntax:

```
<%  
    set conn = server.createobject("adodb.connection")  
    conn.open <connection string>  
    sql = "SELECT idfield,intfield,memofield FROM table"  
    set rs = conn.execute(sql)  
    do while not rs.eof  
        memofield = rs("memofield")  
        response.write(replace(memofield, CHR(10), CHR(10) & "&nbsp;<br>"))  
        rs.movenext  
    loop  
%>
```

Hyperlink, Currency

Many people assume that, because Access can understand that a hyperlink field should be underlined and

clickable and that a currency field starts with a dollar sign and is followed by two decimal places, the browser should be able to as well. So they write syntax like this:

```
<%  
    response.write(rs("hyperlink_Field_Name"))  
    response.write(rs("currency_Field_Name"))  
%>
```

And expect the browser to automatically wrap the hyperlink in an anchor tag, and format the currency field appropriately. Unfortunately, this isn't how it works.

For one thing, DO NOT use the hyperlink datatype in Access. This is designed to allow users to click on links in the GUI. It is NOT meant for presentation-layer formatting (e.g. HTML). Use a TEXT field for hyperlinks. I would also recommend using a numeric data type with two decimal places. Storing dollar signs and #link# values in the table aren't going to help you in HTML, and only add unnecessary storage size to your tables.

Based on that, to format these values in your HTML, you need to do something like this:

```
<%  
    hl = rs("hyperlink_Field_Name")  
    response.write "<a href='" & hl & "'>" & hl & "</a>"  
    curr = rs("currency_Field_Name")  
    response.write formatcurrency(curr,2)  
%>
```

To get a hyperlink formatted properly right out of SQL Server, you can use:

```
SELECT '<a href='+fieldname+'>'+fieldname+'</a>'  
      AS fieldname  
FROM table
```

To get a currency value formatted properly right out of SQL Server, you can use:

```
SELECT '$'+CAST(CONVERT(VARCHAR(20), CAST(fieldname as MONEY), 1) as  
VARCHAR(20))  
      AS fieldname  
FROM table
```

How can I solve 80004005 errors?

19,458 requests - last updated Tuesday, November 13, 2001

The 80004005 error message can be summarized as "I couldn't get at your data for some reason."

[Here is one article](#) with a whole bunch of links.

The following article contains a listing of the various 80004005 error messages, the most frequent causes of the error messages, and troubleshooting steps to resolve them. While this article assumes you are using ActiveX Data Objects (ADO) within an ASP page, the causes and many of the troubleshooting steps are applicable to any environment where ODBC is used for data access.

Q306518

Common errors:

ACCESS

The Microsoft Jet database engine cannot open the file '(unknown)'. It is already opened exclusively by another user, or you need permission to view its data.

Cannot open database '(unknown)'. It may not be a database that your application recognizes, or the file may be corrupt.

Couldn't use '(unknown)'; file already in use.

'(unknown)' isn't a valid path. Make sure that the path name is spelled correctly and that you are connected to the server on which the file resides.

Couldn't lock file.

General error Unable to open registry key 'DriverId'.

SQL SERVER

[DBNMPNTW] ConnectionOpen (CreateFile()).

[DBNMPNTW] ConnectionWrite (GetOverLappedResult()).

[DBMSSOCN] General network error. Check your network documentation.

Logon Failed()

Login failed- User: Reason: Not defined as a valid user of a trusted SQL Server connection.

The query and the views in it exceed the limit of 16 tables.

BOTH

Data source name not found and no default driver specified.

Syntax error in INSERT INTO statement.

Too few parameters. Expected 1.

Errors occurred.

How do I make DSNs without calling my ISP?

18,972 requests - last updated Tuesday, April 24, 2001

Unless you can log into the ISP's machine with remote software (which is typically only allowed when you're leasing an entire box), you can't.

However you can use the following workaround, which actually removes one layer standing between you and your database - making data access faster.

For SQL Server:

```
<%  
    cst = "Provider=SQLOLEDB;Server=<ip address>;database=<dbname>;"  
    cst = cst & "network=DBMSSOCN;uid=<uid>;pwd=<pwd>"  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
    ' // Use of Network=DBMSSOCN is to avoid Named Pipes errors  
%>
```

For Oracle:

```
<%  
    cst = "Provider=OraOLEDB.Oracle;Server=<ip address>;Data "  
    cst = cst & "Source=<dbname>;User ID=<uid>;Password=<pwd>"  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
%>
```

For Access:

```
<%  
    cst = "Driver={Microsoft Access Driver (*.mdb)};DBQ="  
    cst = cst & server.mappath("/<pathtofile.mdb>")  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
%>
```

(If you know you have Jet 4.0 installed, you can use the following slightly more efficient method.)

```
<%  
    cst = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source="  
    cst = cst & server.mappath("/<pathtofile.mdb>")  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
%>
```

In each case, of course, filling in the <variables> with the proper values.

Now you may be calling your ISP soon enough if they haven't been keeping up-to-date with MDAC updates. But at least you won't have to ask them to make a DSN every time you turn around. :-)

Why does RecordCount return as -1?

17,834 requests - last updated Wednesday, January 30, 2002

Recordcount is not supported with the default forward-only cursor. If you open a recordset in the following manner, you will have access to recordcount:

```
<%  
    numrecords = 0  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = Server.CreateObject("ADODB.Recordset")  
    sql = "SELECT whatever FROM table WHERE [...]"  
    rs.open sql,conn,1,1  
    if not rs.eof then numrecords = rs.recordcount  
    response.write("There were " & numrecords & " matches.")  
    ...
```

However I think this is more efficient (even though it looks like more code):

```
<%  
    numrecords = 0  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    sql = "SELECT COUNT(field) FROM table WHERE [...]"  
    set rs = conn.execute(sql)  
    if not rs.eof then numrecords = rs(0)  
    sql = "SELECT whatever FROM table WHERE [...]"  
    set rs = conn.execute(sql)  
    response.write("There were " & numrecords & " matches.")  
    ...
```

And in SQL Server, this would be a more direct approach:

```
<%  
    numrecords = 0  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    sql = "SELECT whatever FROM table WHERE [...]" & vbCrLf  
    sql = sql & "SELECT @@ROWCOUNT"  
    set rs = conn.execute(sql)  
    set rs2 = rs.nextrecordset()  
    if not rs.eof then numrecords = rs2(0)  
    response.write("There were " & numrecords & " matches.")  
    ...
```

Keep in mind that the condition in both queries [...] should be identical!

How do I connect to an Access database / text file on another web server?

15,193 requests - last updated Thursday, December 13, 2001

If the file is outside your LAN

Access isn't really designed for this type of application ([more info](#)), and if you need your database server to reside on a separate machine from your web server, it might be time to look for a more scalable database (e.g. SQL Server or Oracle). However, there is a way to connect to an Access database over the web, assuming you know the absolute file structure of the remote server (and know this won't change). Keep in mind that Access is not the most prudent performer on one machine, and is likely to be more problematic over the web (which has many more variables). Here is a sample connection string:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "Provider=MS Remote;" &  
        "Remote Server=http://<ip address or server name>;" &  
        "Remote Provider=Microsoft.Jet.OLEDB.4.0;" &  
        "Data Source=c:\inetpub\wwwroot\file1.mdb;"  
%>
```

I have received feedback that this "doesn't work" -- while I have no idea what "doesn't work" means, I can say that along with the performance issues of using this kind of solution, there is also a painful configuration process that must be followed. NTFS permissions, firewalls, existence of MSADC, and several other issues might prevent this from working. The most common error I have seen is:

```
Error Type:  
Microsoft ADO/RDS (0x800A20FF)  
Internet Server Error.
```

If you are getting this error, please refer to the following KB articles: **Troubleshooting Common Problems with Remote Data Services** ([Q251122](#)) and **HOWTO: Use RDS From an IIS 4.0 Virtual Server** ([Q184606](#)).

Other permissions problems might be solved by referring to [Q253580](#)...

For text files, you can read the contents of remote text files by using XML or one of the many ASP components designed for performing an HTTP "tear" - see [Article @2173](#) for more info and a detailed example.

If the file is within your LAN

You can do this by syncing anonymous user accounts on the two machines.

Let's say you have MachineA and MachineB. MachineB has a text file or Access database, in a share, that you want to have control over from your ASP application on MachineA. With a stock server setup, you should get one of many 80004005 errors with Microsoft Access, most commonly:

```
Microsoft OLE DB Provider for ODBC Drivers error '80004005'  
[Microsoft][ODBC Microsoft Access 97 Driver]  
The Microsoft Jet database engine cannot open the file '(unknown)'. It is  
already opened exclusively by another user, or you need permission to view its  
data.
```

Or one of the following errors with FileSystemObject:

```
Microsoft VBScript runtime (0x800A0046)  
Permission denied
```

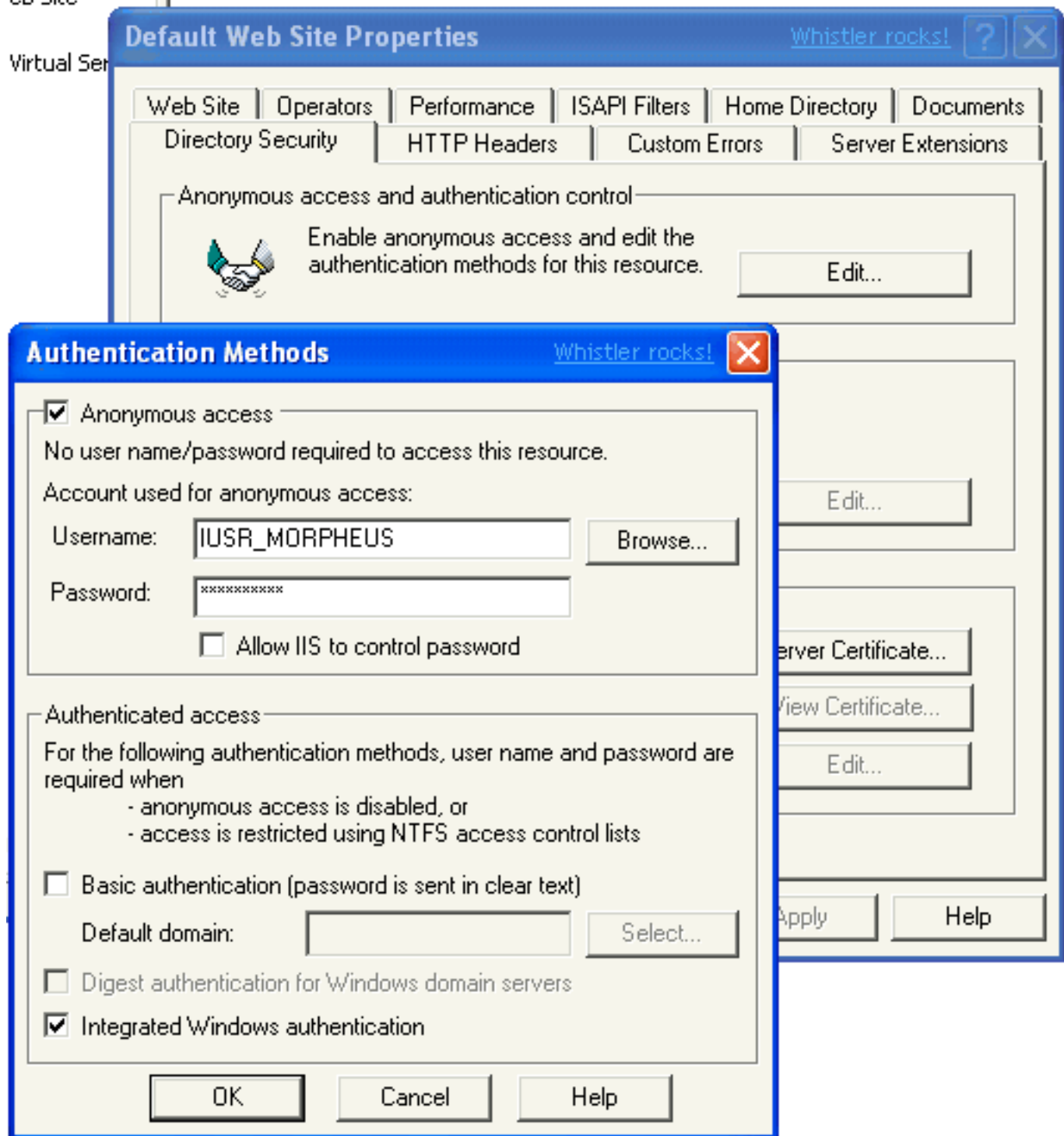
```
Microsoft VBScript runtime (0x800A004C)  
Path not found
```

To give MachineA access to MachineB's shares, you need to fuss with the Anonymous User employed by IIS (IUSR_MachineA, in this case).

First, on MachineA, you need to go to Internet Services Manager, right-click Default Web Site (or the application in question).

Under the Directory Security tab, click 'Edit...' under 'Anonymous Access and Authentication Control.'

Computer /	MORPHEUS (local computer)	Yes	IIS V5.1
Web Site	HESTIA	No	IIS V5.0



On Windows 2000, you will have to click 'Edit...' again under the Anonymous Access checkbox.

Uncheck "Allow IIS to control password" and enter a new password. When you click OK, you will be asked to confirm.

Click OK, Apply, OK, and close out of ISM. If prompted to save console settings, say Yes / OK.

On MachineB, go into Local Users and Groups -- under Computer Management, add a user named IUSR_MachineA with the same password as above.

In Windows Explorer on MachineB, right-click the share in question, hit Properties, and on the SECURITY tab Add... the new local user, and give appropriate permissions. Hit Apply, Apply, OK.

Now run your ASP file from the original server and all should be fine!

See [Q207671](#) and [Q189408](#) for more info.

How do I page through a recordset?

14,937 requests - last updated Monday, November 19, 2001

This article demonstrates how to page through a recordset WITHOUT using an explicit ADODB.Recordset object. We have updated this sample to use a stored procedure in addition to straight ASP. There are two benefits to the stored procedure version. One is that it is compiled after first execution, so much of the code only goes through overhead once. More importantly, the stored procedure does its subset calculation within the database, so the entire recordset is not sent over the wire. (We will be experimenting with getRows() soon.)

Let's assume we have the following table in SQL Server 2000 (don't worry, the non-stored procedure version will work on a similarly structured table in Access):

```
CREATE TABLE [dbo].[CDs] (  
    [artist] [varchar] (255) NOT NULL DEFAULT '',  
    [title] [varchar] (255) NOT NULL DEFAULT '',  
    [cdn] [bit] NOT NULL DEFAULT 0  
) ON [PRIMARY]  
GO  
  
ALTER TABLE [dbo].[CDs] WITH NOCHECK ADD  
    CONSTRAINT [PK_CDs] PRIMARY KEY CLUSTERED  
    (  
        [artist],  
        [title]  
    ) ON [PRIMARY]  
GO
```

Let's also assume that someone went through the painstaking task of documenting their entire CD collection (which I did, since I was sick of receiving duplicates as gifts <G>). So imagine around 1000 INSERT statements populating the table above. If I were to publish this CD collection on the Internet (which I did, to accompany my Christmas wish list <G>), I clearly wouldn't want people to have to go through all the CDs in one page. Perhaps they're only interested in the U2 album missing from my U2 set. So, let's write some code to break this up at 50 CDs per page.

Plain ASP

This version uses ASP code to grab all the records, and only display the subset currently requested. It's a little

messy, but I hope the inline comments help to explain it...

```
<%
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection_string>"

    ' tell me how many records you want per page
    perPage = 50

    ' set up a query to get the count, and another to get the data
    countSQL = "SELECT count(artist) FROM CDs"
    dataSQL = "SELECT artist,title,cdn FROM CDs"

    ' start getting the data, first we need to know the count
    ' this will tell us how many pages there will be
    set rs = conn.execute(countSQL)
    counter = clng(rs(0))
    rs.close: set rs = nothing

    ' determine if anything is returned. If there are records,
    ' figure out the pagecount and the total number of records.
    if counter < 1 then
        Response.Write "No records found."
        Response.End
    else

        if counter = 1 then perpage = 1
        totalRecords = counter
        pageCount = clng(counter/perpage)
        if counter/perPage > pageCount then
            pageCount = pageCount + 1
        end if

        ' what page are we on?
        currentpage = clng(request.form("currentpage"))
        if currentpage <= 1 then
            currentpage = 1
        elseif currentpage > pageCount then
            currentpage = pageCount
        end if
        cp = currentPage
```

```

response.Write "<form method=post action=rsPage.asp "
response.Write "name=spform><b>Aaron's CDs</b> ... "
response.Write "count = " & counter & "</b> ... Jump to"
response.Write " page #<select name=currentpage "
response.Write "onchange='document.spform.submit();'>"
for i = 1 to pageCount
    thisOpt = "<option value='" & i & "'>" & i
    ' highlight the current page!
    response.Write replace(thisOpt," value='" & cp & _
        "'", " value='" & cp & "' SELECTED")
next
Response.Write "</select></form><p>"
Response.Write "<p><table border=0 cellpadding=4 "
Response.Write "cellspacing=0 style='border:1px solid #999999'>"
end if

' set up the first record to move to, if applicable
if pageCount > 1 then
    startrecord = (clng(currentpage-1) * perpage) + 1
end if

' let's get the data, move to the first record if necessary
' loop through, returning records until we meet perpage or EOF

set rs = conn.execute(dataSQL)
'if counter > perpage and startrecord > 1 then
rs.move(startrecord-1)
for x = 1 to perpage
    if rs.eof then exit for
    response.write "<tr valign=middle><td>"
    artist = rs(0)
    if artist <> prevArtist then
        prevArtist = artist
        if rs(2) then
            artist = "<img src=leaf.gif><b>" & artist & "</b>"
        else
            artist = "<b>" & artist & "</b>"
        end if
    else
        artist = " <span style='color:#999999'>" & artist & "</span>"
    end if
end if

```

```

        end if
        response.write "<nobr>" & artist & "</nobr></td><td>"
        response.write "<nobr>" & rs(1) & "</nobr></td></tr>"
        rs.movenext
    next
    response.write "</table>"

    ' clean up
    rs.close: set rs = nothing
    conn.close: set conn = nothing

%>

```

There is some extraneous formatting in there that you'll probably do differently, and there is some data missing (e.g. style sheet parameters). Essentially, the above should work for any generic query. Obviously, if your SQL statement will vary based on a search or other criteria, you will want to pass the countSQL and dataSQL statements in a session variable instead of hard-coding them into the top of the page.

Stored Procedure

All right, so now you've seen the kids' example, let's move on to a bigger boy. Again, hopefully the inline comments explain what is going on.

```

CREATE PROCEDURE dbo.usp_listCDs
    @pagenumber INT = 1,
        -- current page number; default is 1
    @perpage INT = 50
        -- let's have configurable page size
AS
BEGIN
    SET NOCOUNT ON
    DECLARE @pageNumbers INT
        -- total number of pages

    CREATE TABLE #TEMP
    (
        ID INT IDENTITY(1,1),
        artist VARCHAR(255),
        title VARCHAR(255),
        cdn BIT
    )

```



```

)
    -- temp table to store subset of data

INSERT INTO #temp(artist,title,cdn)
    SELECT artist,title,cdn FROM CDs ORDER BY artist,title
    -- let's jam all the records into #temp

SELECT @pageNumbers = 1+((COUNT(id)-1)/@perpage) FROM #temp
    -- weird formula to account for page 1
    -- and those on the cusp (e.g. 50 records)

SELECT pageNumbers = @pageNumbers, count(id) FROM #temp
    -- return number of pages, total count
    -- to ASP page as first recordset

IF @pagenumber <= @pagenumbers
BEGIN
    -- not the last page
    SELECT artist,title,cdn
        FROM #temp
        WHERE id > (@perpage*(@pagenumber-1))
            AND id <= (@perpage*@pagenumber)
            ORDER BY artist,title
END
IF @pagenumber = @pagenumbers AND @pagenumber = 1
BEGIN
    -- there's only one page
    SELECT artist,title,cdn
        FROM #temp
        ORDER BY artist,title
END
IF @pagenumber = @pagenumbers AND @pagenumber > 1
BEGIN
    -- last page
    SELECT artist,title,cdn
        FROM #temp
        WHERE id > (@perpage*(@pagenumber-1))
            ORDER BY artist,title
END
DROP TABLE #temp
END

```

So now, the ASP code to retrieve this information is similar to the previous example, only a wee bit shorter:

```
<%
set conn = Server.CreateObject("ADODB.Connection")
conn.open "<connection_string>"

prevArtist = ""

' what page are we on?
currentPage = cLng(request.Form("currentpage"))
if currentPage = 0 then currentPage = 1
cp = currentPage

set rs = conn.execute("EXEC usp_listCDs " & currentPage)
numPages = rs(0)
numDiscs = rs(1)
Response.Write "<form method=post action=spPage.asp name=spform><b>"
Response.Write "Aaron's CDs</b> ... count = " & numDiscs & "</b> ..."
Response.Write " Jump to page #<select name=currentpage onchange='"
Response.Write "document.spform.submit();'>"
for i = 1 to numPages
    thisOpt = "<option value='" & i & "'>" & i
    ' highlight the current page!
    response.Write replace(thisOpt," value='" & cp & "'", " value='" &
        cp & "' SELECTED")
next
response.write "</select></form><p>"
response.write "<p><table border=0 cellpadding=4 cellspacing=0"
Response.Write " style='border:1px solid #999999'>"

set rs = rs.nextrecordset()

do while not rs.eof
    response.write "<tr valign=middle><td>"
    artist = rs(0)
    if artist <> prevArtist then
        prevArtist = artist
        if rs(2) then
            artist = "<img src=leaf.gif><b>" & artist & "</b>"
```

```

        else
            artist = "<b>" & artist & "</b>"
        end if
    else
        artist = " <span style='color:#999999'>" & artist & "</span>"
    end if
    response.write "<nobr>" & artist & "</nobr></td><td>"
    response.write "<nobr>" & rs(1) & "</nobr></td></tr>"
    rs.movenext
loop
response.write "</table>"

' clean up
rs.close: set rs = nothing
conn.close: set conn = nothing

%>

```

Comparing Methods

Sometimes it takes a lot to convince people that a stored procedure is faster than ASP recordset processing, and often it takes even more to show that using a temporary table can sometimes be worth the trouble. Finally, it is impossible to convince people that there are too many variables to say that one method will ALWAYS be faster than another. To show these facts, I have posted these examples online, with timer() code, so you can compare for yourself. Run each page, apples to apples, and scroll down to compare execution times. You will find, like I did, that while the stored procedure method often outran the ASP code, the reverse was occasionally true as well. This could be due to various things, including network traffic (at both server and client ends), other database activity, etc.

[Recordset paging](#)

[Stored procedure paging](#)

External Information

Here are two articles at 15seconds.com that describe paging:

<http://www.15seconds.com/Issue/010308.htm>

<http://www.15seconds.com/issue/010607.htm>

How do I deal with an apostrophe (') in a SQL statement?

14,470 requests - last updated Sunday, August 13, 2000

This has got to be the most-often asked question in all three of these groups. The apostrophe is an illegal character in SQL because it is interpreted as a string delimiter. To allow a ' mark to be inserted into a database, simply double-up all occurrences of the ' mark:

```
<%  
    criteria = replace(criteria,"'","''")  
%>
```

Inside the parentheses, for clarity, that's criteria, comma, quote, apostrophe, quote, comma, quote, apostrophe, apostrophe, quote (without the spaces).

So, for the following...

```
<%  
    mycrit = replace(mycrit,"'","''")  
%>
```

...you may have statements like these:

```
<%  
    sql = "INSERT INTO table(field) VALUES('" & mycrit & "')"  
%>
```

...OR...

```
<%  
    sql = "SELECT field FROM table WHERE field LIKE '%" & mycrit & "%'"  
%>
```

How do I get the ID number of a just-inserted record?

12,895 requests - last updated Thursday, August 16, 2001

SQL Server

With SQL Server 2000, there are a couple of new functions that are better than @@IDENTITY. Both of these functions are not global to the connection, which is an important weak point of @@IDENTITY. After doing an insert, you can call:

```
PRINT IDENT_CURRENT('table')
```

This will give the most recent IDENTITY value for 'table' - regardless of whether you created it or not (this overrides the connection limitation of @@IDENTITY -- which can be useful).

Another thing you can do is:

```
PRINT SCOPE_IDENTITY()
```

This will give the IDENTITY value last created within the current stored procedure, trigger, etc. One of the problems with the global nature of @@IDENTITY is that if you do an INSERT, and that table has a TRIGGER ON INSERT which then, in turn, inserts into another table with an IDENTITY field, @@IDENTITY is populated with the second table's value.

If you are not using SQL Server 2000, the best way with SQL Server is to use a single stored procedure that handles both the INSERT and the IDENTITY retrieval using @@IDENTITY. Here is sample code for the stored procedure:

```
CREATE PROCEDURE myProc
    @param1 INT
AS
BEGIN
    SET NOCOUNT ON
    INSERT INTO someTable
    (
        intField
    )
    VALUES
    (
        @param1
    )
    SET NOCOUNT OFF
    SELECT NEWID = @@IDENTITY
END
```

And you would call this from ASP as follows:

```
<%
    fakeValue = 5
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<conn string>"
    set rs = conn.execute("EXEC myProc @param1=" & fakeValue)
    response.write "New ID was " & rs(0)
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>
```

If you are using SQL Server 2000, simply change the line in the stored procedure from ...

```
SELECT NEWID = @@IDENTITY
```

... to ...

```
SELECT NEWID = SCOPE_IDENTITY()
```

Access

Jet/OLEDB provider now supports @@IDENTITY! See [Q232144](#) for more info.

With Access, you should be able to get away with something like this:

```

<%
    fakeValue = 5
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<conn string>"
    conn.execute "Insert into someTable(intField) values(" & fakeValue &
    ")"
    set rs = conn.execute("select MAX(ID) from someTable")
    response.write "New ID was " & rs(0)
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>

```

Now I say "should" because it is (though very obscurely) possible for two people to "cross" inserts, and receive the wrong autonumber value back. To be frank, if there is a possibility of two or more people simultaneously adding records, you should already be considering SQL Server (see [Article #2182](#)). However, if you're stuck with Access and need more security that this won't happen, you can use a Recordset object with an adOpenKeyset cursor (this is one of those rare scenarios where a Recordset object actually makes more sense than a direct T-SQL statement):

```

<%
    fakeValue = 5
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<conn string>"
    set rs = Server.CreateObject("ADODB.Recordset")
    rs.open "select [intField] from someTable where 1=0", conn, 1, 3
    rs.AddNew
    rs("intField") = fakeValue
    rs.update
    response.write "New ID was " & rs("id")
    rs.close: set rs = nothing

```



```
conn.close: set conn = nothing  
%>
```

You can also look at Manohar's excellent articles at Active Server Corner:

http://www.kamath.com/tutorials/tut004_autonum.asp

http://www.kamath.com/tutorials/tut007_identity.asp

And check out MS' KB article:

<http://support.microsoft.com/?id=kb;;Q221931>

What is wrong with 'SELECT *'?

12,565 requests - last updated Tuesday, January 23, 2001

SELECT * is inefficient, particularly when you are only using a few of the fields in the table. This is because it actually makes TWO queries to the database: before it runs your query, it has to query the system tables to determine the name and datatypes of the fields. It is much more efficient to NAME your fields in the SQL query, and this will also help in having your field names right there... so you don't have to keep flipping back and forth between ASP page and database.

Here's another reason to avoid SELECT * : Memo/Text fields, as well as fields containing BLOB data. Microsoft recommends to put BLOB/text fields at the end of the SELECT statement, in order of appearance in the table. This is also applicable to VARCHAR fields in SQL Server with a length greater than 255 characters. For more information:

[Article #2188](#)

[Q175239](#)

What are reserved Access, ODBC and T-SQL keywords?

11,819 requests - last updated Sunday, October 28, 2001

The following three tables document reserved words that should not be used as names for columns, tables, aliases, or other user-defined objects. If you are getting syntax errors of any kind, these are often due to using one of these reserved words.

Access | [ODBC](#) | [Transact-SQL](#)

ADD	ALL	ALPHANUMERIC	ALTER	AND
ANY	APPLICATION	AS	ASC	ASSISTANT
AUTOINCREMENT	AVG	BETWEEN	BINARY	BIT
BOOLEAN	BY	BYTE	CHAR	CHARACTER
COLUMN	COMPACTDATABASE	CONSTRAINT	CONTAINER	COUNT
COUNTER	CREATE	CREATEDATABASE	CREATEFIELD	CREATEGROUP
CREATEINDEX	CREATEOBJECT	CREATEPROPERTY	CREATERELATION	CREATETABLEDEF
CREATEUSER	CREATEWORKSPACE	CURRENCY	CURRENTUSER	DATABASE
DATE	DATETIME	DELETE	DESC	DESCRIPTION
DISALLOW	DISTINCT	DISTINCTROW	DOCUMENT	DOUBLE
DROP	ECHO	ELSE	END	EQV
ERROR	EXISTS	EXIT	FALSE	FIELD
FIELDS	FILLCACHE	FLOAT	FLOAT4	FLOAT8
FOREIGN	FORM	FORMS	FROM	FULL
FUNCTION	GENERAL	GETOBJECT	GETOPTION	GOTOPAGE
GROUP	GROUP BY	GUID	HAVING	IDLE

IEEEDOUBLE	IEEESINGLE	IF	IGNORE	IMP
IN	INDEX	INDEXES	INNER	INSERT
INSERTTEXT	INT	INTEGER	INTEGER1	INTEGER2
INTEGER4	INTO	IS	JOIN	KEY
LEFT	LEVEL	LIKE	LOGICAL	LOGICAL1
LONG	LONGBINARY	LONGTEXT	MATCH	MAX
MIN	MOD	MEMO	MONEY	MOVE
NAME	NEWPASSWORD	NO	NOT	NULL
NUMBER	NUMERIC	OBJECT	OLEOBJECT	OFF
ON	OPENRECORDSET	OPTION	OR	ORDER
OUTER	OWNERACCESS	PARAMETER	PARAMETERS	PARTIAL
PERCENT	PIVOT	PRIMARY	PROCEDURE	PROPERTY
QUIT	REAL	RECALC	RECORDSET	REFERENCES
REFRESH	REFRESHLINK	REGISTERDATABASE	RELATION	REPAINT
REPAIRDATABASE	REPORTS	REQUERY	RIGHT	SCREEN
SECTION	SELECT	SET	SETFOCUS	SETOPTION
SHORT	SINGLE	SMALLINT	SOME	SQL
STDEV	STDEVP	STRING	SUM	TABLE
TABLEDEF	TABLEDEFS	TABLEID	TEXT	TIME
TIMESTAMP	TOP	TRANSFORM	TRUE	UNION
UNIQUE	UPDATE	VALUE	VALUES	VAR
VARP	VARBINARY	VARCHAR	WHERE	WITH
WORKSPACE	XOR	YES	YESNO	

[Access](#) | [ODBC](#) | [Transact-SQL](#)

ABSOLUTE	ACTION	ADA	ADD	ADD
ALL	ALLOCATE	ALTER	AND	ANY
ARE	AS	ASC	ASSERTION	AT
AUTHORIZATION	AVG	BEGIN	BETWEEN	BIT
BIT_LENGTH	BOTH	BY	CASCADE	CASCADEED
CASE	CAST	CATALOG	CHAR	CHAR_LENGTH
CHARACTER	CHARACTER_LENGTH	CHECK	CLOSE	COALESCE
COLLATE	COLLATION	COLUMN	COMMIT	CONNECT
CONNECTION	CONSTRAINT	CONSTRAINTS	CONTINUE	CONVERT
CORRESPONDING	COUNT	CREATE	CROSS	CURRENT
CURRENT_DATE	CURRENT_TIME	CURRENT_TIMESTAMP	CURRENT_USER	CURSOR
DATE	DAY	DEALLOCATE	DEC	DECIMAL
DECLARE	DEFAULT	DEFERRABLE	DEFERRED	DELETE
DESC	DESCRIBE	DESCRIPTOR	DIAGNOSTICS	DISCONNECT
DISTINCT	DOMAIN	DOUBLE	DROP	ELSE
END	END-EXEC	ESCAPE	EXCEPT	EXCEPTION
EXEC	EXECUTE	EXISTS	EXIT	EXTERNAL
EXTRACT	FALSE	FETCH	FIRST	FLOAT
FOR	FOREIGN	FORTRAN	FOUND	FROM
FULL	GET	GLOBAL	GO	GOTO
GRANT	GROUP	HAVING	HOURL	IDENTITY

IMMEDIATE	IN	INCLUDE	INDEX	INDICATOR
INITIALLY	INNER	INPUT	INSENSITIVE	INSERT
INT	INTEGER	INTERSECT	INTERVAL	INTO
IS	ISOLATION	JOIN	KEY	LANGUAGE
LAST	LEADING	LEFT	LEVEL	LIKE
LOCAL	LOWER	MATCH	MAX	MIN
MINUTE	MODULE	MONTH	NAMES	NATIONAL
NATURAL	NCHAR	NEXT	NO	NONE
NOT	NULL	NULLIF	NUMERIC	OCTET_LENGTH
OF	ON	ONLY	OPEN	OPTION
OR	ORDER	OUTER	OUTPUT	OVERLAPS
PAD	PARTIAL	PASCAL	POSITION	PRECISION
PREPARE	PRESERVE	PRIMARY	PRIMARY	PRIOR
PRIVILEGES	PROCEDURE	PUBLIC	READ	REAL
REFERENCES	RELATIVE	RESTRICT	REVOKE	RIGHT
ROLLBACK	ROWS	SCHEMA	SCROLL	SECOND
SECTION	SELECT	SESSION	SESSION_USER	SET
SIZE	SMALLINT	SOME	SPACE	SQL
SQLCA	SQLCODE	SQLERROR	SQLSTATE	SQLWARNING
SUBSTRING	SUM	SYSTEM_USER	TABLE	TEMPORARY
THEN	TIME	TIMESTAMP	TIMEZONE_HOUR	TIMEZONE_MINUTE
TO	TRAILING	TRANSACTION	TRANSLATE	TRANSLATION
TRIM	TRUE	UNION	UNIQUE	UNKNOWN

UPDATE	UPPER	USAGE	USER	USING
VALUE	VALUES	VARCHAR	VARYING	VIEW
WHEN	WHENEVER	WHERE	WITH	WORK
WRITE	YEAR	ZONE		

[Access](#) | [ODBC](#) | [Transact-SQL](#)

ADD	ALL	ALTER	AND	ANY
AS	ASC	AUTHORIZATION	AVG	BACKUP
BEGIN	BETWEEN	BREAK	BROWSE	BULK
BY	CASCADE	CASE	CHECK	CHECKPOINT
CLOSE	CLUSTERED	COALESCE	COLUMN	COMMIT
COMMITTED	COMPUTE	CONFIRM	CONSTRAINT	CONTAINS
CONTAINSTABLE	CONTINUE	CONTROLROW	CONVERT	COUNT
CREATE	CROSS	CURRENT	CURRENT_DATE	CURRENT_TIME
CURRENT_TIMESTAMP	CURRENT_USER	CURSOR	DATABASE	DBCC
DEALLOCATE	DECLARE	DEFAULT	DELETE	DENY
DESC	DISK	DISTINCT	DISTRIBUTED	DOUBLE
DROP	DUMMY	DUMP	ELSE	END
ERRLVL	ERROREXIT	ESCAPE	EXCEPT	EXEC
EXECUTE	EXISTS	EXIT	FETCH	FILE
FILLFACTOR	FLOPPY	FOR	FOREIGN	FREETEXT
FREETEXTTABLE	FROM	FULL	GOTO	GRANT

GROUP	HAVING	HOLDLOCK	IDENTITY	IDENTITY_INSERT
IDENTITYCOL	IF	IN	INDEX	INNER
INSERT	INTERSECT	INTO	IS	ISOLATION
JOIN	KEY	KILL	LEFT	LEVEL
LIKE	LINENO	LOAD	MAX	MIN
MIRROREXIT	NATIONAL	NOCHECK	NONCLUSTERED	NOT
NULL	NULLIF	OF	OFF	OFFSETS
ON	ONCE	ONLY	OPEN	OPENDATASOURCE
OPENQUERY	OPENROWSET	OPTION	OR	ORDER
OUTER	OVER	PERCENT	PERM	PERMANENT
PIPE	PLAN	PRECISION	PREPARE	PRIMARY
PRINT	PRIVILEGES	PROC	PROCEDURE	PROCESSEXIT
PUBLIC	RAISERROR	READ	READTEXT	RECONFIGURE
REFERENCES	REPEATABLE	REPLICATION	RESTORE	RESTRICT
RETURN	REVOKE	RIGHT	ROLLBACK	ROWCOUNT
ROWGUIDCOL	RULE	SAVE	SCHEMA	SELECT
SERIALIZABLE	SESSION_USER	SET	SETUSER	SHUTDOWN
SOME	STATISTICS	SUM	SYSTEM_USER	TABLE
TAPE	TEMP	TEMPORARY	TEXTSIZE	THEN
TO	TOP	TRAN	TRANSACTION	TRIGGER
TRUNCATE	TSEQUAL	UNCOMMITTED	UNION	UNIQUE
UPDATE	UPDATETEXT	USE	USER	VALUES
VARYING	VIEW	WAITFOR	WHEN	WHERE

#2080 : What are reserved Access, ODBC and T-SQL keywords?

WHILE	WITH	WORK	WRITETEXT	
-------	------	------	-----------	--

Which is better, rs(0) or rs("fieldname")?8,922 requests - last updated Monday, August 14, 2000

It has been proven time and time again that accessing recordset elements by index number is several times faster than by name. A string lookup is much more expensive, resource-wide, than an integer lookup (this is true in virtually all computer-based applications). Now, it might be difficult to keep track of name->ordinal pairs when dealing with larger resultsets. There is definitely a trade-off for maintainability... but as long as you control the order of the elements (by avoiding SELECT *, which you shouldn't be using anyway), you should be able to stay on top of it. To make the transition easier, you should insert a little key for yourself when generating a resultset, such as the following:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("EXEC sp_getRecords")  
    if not rs.eof then  
        do while not rs.eof  
  
            id = rs(0) ' SELECT ID,  
            fname = rs(1) ' fname,  
            lname = rs(2) ' lname FROM table  
  
            ' ... process results using local vars  
  
            rs.movenext  
        loop  
    end if  
    ' ... clean up etc.  
%>
```

The only danger here is when somebody changes the order of fields in the SELECT list for the SQL statement or stored procedure.

What is wrong with 'LIKE *'?

7,089 requests - last updated Tuesday, January 23, 2001

ADO uses % for wildcard translation, not *. Therefore, if you use * as a wildcard, the query will actually be searching for records that have a literal * in the field data. Also, you should use _ instead of ?. Access natively supports % and _ (in addition to * and ?), so I recommend using those everywhere instead of being forced to worry about statement conversion when web-ifying anything.

How do I solve 'Operation must use an updateable query' with Access?

6,838 requests - last updated Saturday, November 4, 2000

This answer is the same for the 'Database or object is read only' error.

This is almost always a permissions issue. Be sure that the MDB file is in a folder where IUSR has read/write access (because IUSR_<machine_name> needs to create an .LDB file when modifying the database). Also be sure that the MDB file itself isn't marked as read-only, and that you don't have the MDB file open (particularly in exclusive mode) while trying to reach the DB from ASP.

Another possible reason is that the field actually can't be updated, for example because of a constraint relationship with another table.

Of course this error could also happen if you're storing your Access database on a floppy disk that has write protection enabled (or that is full). Please don't do this; using Access is inefficient enough. You don't want to add floppy seek time to your performance issues.

How do I retrieve a random record?

6,519 requests - last updated Sunday, November 4, 2001

Assuming there is a unique identifier for each row, and that there is at least one record in the table, retrieving a random record can be quite easy. This method will work in SQL Server 7.0 and above (running on Windows 2000), but this could be a performance problem on larger tables / resultsets:

```
<%  
    SELECT TOP 1 someColumn  
    FROM someTable  
    ORDER BY NEWID()  
%>
```

If you are not running on Windows 2000, then the following code will work if your table has a unique identifier (e.g. IDENTITY) column:

```
<%  
    SELECT TOP 1 someColumn  
    FROM someTable  
    ORDER BY RAND((1000*IDColumn)*DATEPART(millisecond, GETDATE()))  
%>
```

Note that both of these methods also allow you to select 10 or 50 or 5000 random records, simply by altering the TOP parameter.

SQL Server has [a few other tricks](#) up its sleeve as well...

Now, if you're stuck using Access or SQL Server 6.5, you may have to use some logic on the application end to deal with this. Here are the ordered steps your code must take:

1. retrieve a recordcount, so you know how many records you need to "randomize"
2. place the ID numbers in an array, one for each "hit" in your recordcount
3. run the recordcount through a randomizer, and figure out which ID you're going to pick
4. create a select statement matching the random number to its ID in the array

Here is some code that will do this:

```

<%
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<conn string>"

    ' ***** (step 1) *****

    set rs = conn.execute("SELECT COUNT(IDColumn) FROM someTable")
    rCount = rs(0)

    ' ***** (step 2) *****

    set rs = conn.execute("SELECT IDColumn FROM someTable")
    cnt = 1
    dim RRs
    redim RRs(rCount)
    do while not rs.eof
        RRs(cnt) = rs(0)
        cnt = cnt + 1
        rs.movenext
    loop

    ' ***** (step 3) *****

    randomize
    currentRR = cLng(rnd*rCount+0.5)
    ID = RRs(currentRR)

    ' ***** (step 4) *****

    sql = "SELECT someColumn FROM someTable WHERE id=" & ID
    set rs = conn.execute(sql)
    response.write "ID # " & ID & " = " & rs(0)
    ' ...
    rs.close: set rs = nothing
    conn.close: set conn = nothing
%>

```

With SQL Server, this would be much faster with a stored procedure... I just wanted to provide syntax here that demonstrates the concept, and will work on either Access or SQL Server.

#2132 : How do I retrieve a random record?

Why should I avoid NULLs in my database?

6,501 requests - last updated Saturday, January 6, 2001

Joe Celko said it best: "NULLs confuse people..." (SQL For Smarties, ISBN 1558605762). McGoveran and Date add: "NULLs...are far more trouble than they are worth and should be avoided; they display very strange and inconsistent behavior and can be a rich source of error and confusion." (Guide to Sybase and SQL Server, ISBN 020155710X).

My sentiments exactly. Of course, I don't expect to convince you by flashing a few quotes from very reputable authors in front of you. Let's talk for a minute about what exactly NULLs do that cause this type of reaction. The first problem is that the definition of NULL is "unknown." So, one problem is determining whether one value is (not) equal to another value, when one or both values are NULL. This trickles down to many problems for a database engine and any associated applications. The following list details some of those problems:

- they are interpreted differently depending on compatibility level and ANSI settings;

For example, let's consider two values, x and y, that are both NULL. Since the definition of NULL is unknown, then you can't say $x = y$. However, with the ANSI setting ANSI_NULLs, this can be different. When this setting is FALSE, $x = y$... however, when TRUE, $x <> y$. Confusing, no?

- the storage engine has to do extra processing for each row to determine if the NULLable column is in fact NULL -- this extra bit field affects storage and indexing, and obviously has performance implications for general queries;
- they produce weird results when using calculations, comparisons, sorting and grouping;
- they create problems with aggregates and joins, such as different answers for COUNT(*) vs. COUNT(fieldname);
- they produce unpredictable results in statistics computations, particularly WITH ROLLUP and WITH CUBE;
- applications must add extra logic to handle inserting and retrieving results, which may or may not include NULL values;
- they cause unpredictable results with NOT EXISTS and NOT IN subqueries (working backwards, SQL determines that NULL columns belong or do not belong to the result set, usually for the wrong reasons);
- no language that supports embedded SQL has native support for NULL SQL values.

Here are some more specific examples:


```
USE PUBS
SELECT COUNT(state) FROM publishers
SELECT COUNT(pub_name) FROM publishers
```

Why the difference in count results? You would **think** that the count would give a rowcount regardless of the contents of the column. It is often recommended that "*" be avoided because it is inefficient (causing an extra call to the syscolumns table) -- however in this case, if you allow NULL values in your fields, you run the risk of basing your count on a field which contains NULLs... leading to an inaccurate count. So, because of your design, you're almost forced to use an inefficient method to obtain count (whereas, if you didn't allow NULLs, a default value -- that could still act as a flag -- WOULD get counted).

Here is another more involved example. Let's say you're running a stats program, and someone has to enter things manually. What if they don't know the adid and/or siteid when they enter the data, and you're doing rollups against it? If you haven't used it before, WITH ROLLUP groups by your GROUP BY fields, then adds summary rows. It adds flags to each column when you're at a summary row, so that you can identify WHICH summary row it is. Guess what the flag is? NULL. So, try out this code:

```
USE pubs
CREATE TABLE fakeStats
(
    id INT IDENTITY NOT NULL,
    adid INT,
    siteid INT,
    hitcount INT
)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(1,1,40)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(1,1,20)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(1,2,30)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(1,3,40)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(2,1,40)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(2,2,60)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(2,2,20)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(2,2,30)
INSERT INTO fakeStats(adid,siteid,hitcount) VALUES(2,3,10)

SELECT adid,siteid,sum(hitcount) FROM fakeStats
      GROUP BY adid,siteid WITH ROLLUP
```

You'll see that the results clearly identify the summary rows with NULL flags. Unfortunately, if you have NULLs *in the data*, this becomes very difficult to process automatically. For example, run this now:

```
UPDATE fakeStats SET adid=NULL where id=4
UPDATE fakeStats SET siteid=NULL where id=6

SELECT adid,siteid,sum(hitcount) FROM fakeStats
GROUP BY adid,siteid WITH ROLLUP
```

See the difference? Which rows are the summary rows now? Easy enough to figure out, if you have a small result set and time to straighten out the mess. However, if you've got a system that automatically (or on-demand) creates reports against a data warehouse, I think you can see how NULL values will put up some roadblocks.

The only datatype where NULLs are unavoidable in certain scenarios are DATETIME columns -- some dates are clearly unknown. But for all the reasons cited above, my opinion is that a flag, non-sensical date is better. In either case, you have to use logic to omit flagged records from result sets, but you can avoid all the other problems associated with NULLs.

So, my suggestion is to always use a DEFAULT value, and declare all columns explicitly as NOT NULL. The default in DDL for column creation, at least in SQL Server, is NULL. One thing you should keep in mind is that, whether you decide to use NULL or NOT NULL, is that this can change per SQL Server (and can even change between DDL executions). So, you should always explicitly define NULL or NOT NULL for every column in your CREATE TABLE statements, to avoid confusion and unpredictable results.

Should I use ADOVBS.inc for declaring constants?

6,394 requests - last updated Friday, December 14, 2001

Sadly, VBScript does not understand ADO constants, such as AdLockReadOnly, the way VB does. Luckily (or unluckily) for the developer, the immense number of constants for use with ADO is compiled in a file called ADOVBS.inc. When starting out with database development, everyone is told to use the constant names (as opposed to their integer counterparts), and to include ADOVBS.inc. This recommendation is given by many people, even if you are only using 2 or 3 of the 393 constants that are listed in ADOVBS.inc.

These 393 constants result in an overall raw read size of 14,639 bytes. Never mind the amount of memory allocated to holding all of those variables, most of which you have no intention of using. On a small, single-user app, you won't see a difference. However, when you have 300 people on your site at once, every single user has to load that 15kb file, and every user has 393 extra page-level variables in memory... this can really add up.

This is why my suggestion will always be to either:

1. Write your own adovbs.inc file, with only the handful of constants you need;
2. Only define constants as you need them;
3. Place the relevant constant/value pairs in a comment, and use the integer equivalent in the actual code; or
4. Use <!--METADATA...--> references in global.asa:

```
<!--METADATA
TYPE="TypeLib"
NAME="Microsoft ActiveX Data Objects 2.7 Library"
UUID="{EF53050B-882E-4776-B643-EDA472E8E3F2}"
VERSION="2.7"-->
```

Here is the code for version 2.6:

```
<!--METADATA
TYPE="TypeLib"
NAME="Microsoft ActiveX Data Objects 2.6 Library"
UUID="{00000206-0000-0010-8000-00AA006D2EA4}"
VERSION="2.6"-->
```

And if you're stuck with version 2.5, use the following:

```
<!--METADATA
TYPE="TypeLib"
NAME="Microsoft ActiveX Data Objects 2.5 Library"
UUID="{00000205-0000-0010-8000-00AA006D2EA4}"
VERSION="2.5"-->
```

If you're using a version of MDAC prior to 2.5, it's [time to upgrade](#) to the most recent version.

Note that this same argument holds true if you are using JScript and its equivalent include file, ADOJAVAS.INC.

Why do I get 'Name redefined' errors with ADOVBS.INC?

4,383 requests - last updated Tuesday, January 23, 2001

This usually indicates that you have used ADOVBS.inc in two different #INCLUDE directives (possibly nested within other includes). Another possible cause is that you have defined an identical constant in a page that also #INCLUDEs ADOVBS.inc. You can demonstrate this with the following example:

```
<%  
    const adOpenForwardOnly = 0  
%>  
<!--#INCLUDE file='ADOVBS.inc'-->
```

My suggestion for avoiding this, is not using ADOVBS.inc at all... it incurs a lot of overhead for a few constants. Find out which constants you "need", copy them into your script (or your own reduced-size include), and leave ADOVBS.inc alone. (See [Article #2112](#) for more info.)

How do I upsize from Access to SQL Server?

4,337 requests - last updated Wednesday, January 9, 2002

Access is not truly meant for concurrent use. Microsoft made it easy to use Access over the web so that small companies who couldn't afford (or were intimidated by) SQL Server would have some database platform to use for their LANs (great way to sell more copies of the higher-end Office package, as well). Unfortunately for Internet developers, Access does not handle more than a handful of simultaneous users very well at all. So if you've got a family site that only your friends and such are looking at, Access is probably fine. For anything more than that, you'll probably want to use SQL Server.

Here is a KB article, two tools and a white paper that will help you upsize your Access 97 or 2000 database to SQL Server (6.5 or greater):

[Q237980](#) How to Convert an Access Database to SQL Server

For Access 97:

<http://office.microsoft.com/downloads/9798/aut97.aspx>

For Access 2000 / XP:

<http://office.microsoft.com/downloads/2000/Accsql.aspx>

(white paper available from [Q294407](#))

If you know you are converting from Access 2000 to SQL Server 2000, you may want to pick up the [SQL Server 2000 Resource Kit](#). It has an updated version of the upsizing wizard that fixes some problems, and makes Access 2000 projects (.adp) much more fluent in the changes to SQL Server 2000.

There are also some 3rd party products out there that help the migration. One is [SSW Upsizing Pro](#) and another is [DataConvert](#).

Finally, here are some Knowledge Base articles you may want to glance over before proceeding:

[Q288300](#) "Microsoft Access Can't Find the Wizard..." Error [...]

[Q282380](#) Bad File Name or Number [...]

[Q285829](#) How to Use DTS [...]

[Q281950](#) Database Unexpectedly Upsized [...]

[Q272384](#) "Overflow" Error Message When You Try [...]

[Q269824](#) Incompatibility Issues Between Access 2000 Projects [...]

[Q165827](#) "Overflow" or "Division by Zero" Error Upsizing Table

[Q153034](#) Table Is Not Exported Using the Upsizing Tools

Now that you see how much work is involved, and that there are plenty of potential issues, wouldn't it make sense to just prototype your application using SQL Server in the first place?

Schema: How do I get the tables out of a database?4,288 requests - last updated Wednesday, September 19, 2001

Here are two ways to retrieve table names from a database. The first uses ADOX, and the second uses a system stored procedure called sp_tables (which is therefore SQL Server only). In addition, check out sp_MSForEachTable ... this is an **undocumented** system procedure which does an enumeration of all tables in a database.

Here is the code that uses ADOX. This was tested with MDAC 2.5, and will work with either MS Access or SQL Server.

```
<%
    dbname = "databasename"

    ' Use this string if using Access:
    ' ConnStr = "Provider=Microsoft.Jet.OLEDB.4.0;data source="
    ' ConnStr = ConnStr & "<path>\\" & dbname & ".mdb"

    ' Use this string if using SQL Server:
    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    set adoxConn = Server.CreateObject("ADOX.Catalog")
    set adodbConn = Server.CreateObject("ADODB.Connection")
    adodbConn.open ConnStr
    adoxConn.activeConnection = adodbConn
    for each table in adoxConn.tables
        if table.type="TABLE" then
            response.write table.name & "<br>"
        end if
    next
    adodbConn.close: set adodbConn = nothing
    set adoxConn = nothing
%>
```

And here is the code that uses a stored procedure (note that <uid> needs to have at least 'datareader' access to <dbname>).


```

<%
    dbname = "databasename"

    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    set adodbConn = Server.CreateObject("ADODB.Connection")
    adodbConn.Open ConnStr

    set rs = adodbConn.execute("EXEC sp_tables")
    do while not rs.eof
        if rs("table_type") = "TABLE" then
            Response.Write rs("table_name") & "<br>"
        end if
        rs.movenext
    loop

    rs.close: set rs = nothing
    adodbConn.Close: set adodbConn = nothing
%>

```

Finally, for SQL Server, if you have access to Query Analyzer (and just want a table list, not necessarily for code), you can simply type the following and hit F5:

```

EXEC sp_tables

-- or

SELECT name FROM sysobjects WHERE xtype='U' ORDER BY name

```

Schema: How do I get the field names (and their datatype) out of a table?4,169 requests - last updated Friday, January 11, 2002

Here are three ways to retrieve column names from a table. The first uses ADOX, the second uses simple properties, the third uses a system stored procedure called sp_help, and the fourth uses a system stored procedure called sp_columns. The last two are therefore SQL Server only, and should not be relied upon in production code... future changes in the product might break your code.

Here is the code for retrieving field names using ADOX, which will work with both MS Access and SQL Server:

```
<%  
    dbname = "databasename"  
    tablename = "tablename"  
  
    ' Use this string if using Access:  
    ' ConnStr = "Provider=Microsoft.Jet.OLEDB.4.0;data source="  
    ' ConnStr = ConnStr & "<path>\\" & dbname & ".mdb"  
  
    ' Use this string is using SQL Server:  
    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"  
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="  
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname  
  
    dim columnTypes(203)  
    columnTypes(2) = "SmallInt"  
    columnTypes(3) = "Integer"  
    columnTypes(6) = "Currency"  
    columnTypes(11) = "Boolean"  
    columnTypes(14) = "Decimal"  
    columnTypes(16) = "TinyInt"  
    columnTypes(129) = "Char"  
    columnTypes(131) = "Numeric"  
    columnTypes(135) = "DateTime"  
    columnTypes(200) = "VarChar"  
    columnTypes(203) = "Text"  
  
    set adoxConn = Server.CreateObject("ADOX.Catalog")  
    set adodbConn = Server.CreateObject("ADODB.Connection")
```

```

adodbConn.open ConnStr
adoxConn.activeConnection = adodbConn
set table = adoxConn.Tables(tablename)
for each col in table.columns
    response.write col.name & " [" & columnTypes(col.type)
    if col.type = 129 or col.type=200 then
        ' definedSize only works in SQL Server
        Response.write " (" & col.definedSize & ")"
    end if
    Response.Write "]<br>"
next
set table = nothing
adodbConn.close: set adodbConn = nothing
set adoxConn = nothing

%>

```

Here is the code for using simple recordset properties:

```

<%
    dbname = "databasename"
    tablename = "tablename"

    ' Use this string if using Access:
    ' ConnStr = "Provider=Microsoft.Jet.OLEDB.4.0;data source="
    ' ConnStr = ConnStr & "<path>\\" & dbname & ".mdb"

    ' Use this string if using SQL Server:
    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    dim columnTypes(203)
    columnTypes(2) = "SmallInt"
    columnTypes(3) = "Integer"
    columnTypes(6) = "Currency"
    columnTypes(11) = "Boolean"
    columnTypes(14) = "Decimal"
    columnTypes(16) = "TinyInt"
    columnTypes(129) = "Char"

```

```

columnTypes(131) = "Numeric"
columnTypes(135) = "DateTime"
columnTypes(200) = "VarChar"
columnTypes(203) = "Text"

set adodbConn = Server.CreateObject("ADODB.Connection")
adodbConn.open ConnStr
set rs = adodbConn.Execute("select * from " & tablename)
for each field in rs.fields
    Response.Write field.name & " [" & columnTypes(field.type)
    if field.type = 129 or field.type=200 then
        ' definedSize only works in SQL Server
        Response.write " (" & field.definedSize & ")"
    end if
    Response.Write "<br>"
next
rs.close: set rs = nothing
adodbConn.close: set adodbConn = nothing
%>

```

If you are using SQL Server, you can use `sp_help`, which returns 6 recordsets when there are no constraints, and 7 recordsets when there are constraints. You might have a query like this:

```

<%
    dbname = "databasename"
    tablename = "tablename"

    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    set adodbConn = Server.CreateObject("ADODB.Connection")
    adodbConn.Open ConnStr
    set rs = conn.execute("EXEC sp_help '" & tablename & "'")
    ' ...
%>

```

And this would return the following columns, in successive recordsets:

Name, Owner, Type, Created_Datetime

Column_name, Type, Computed, Length, Prec, Scale, Nullable,
TrimTrailingBlanks, FixedLenNullInSource

Identity, Seed, Increment, Not For Replication

RowGuidCol

Data_located_on_filegroup

Index_name, Index_description, Index_keys

Constraint_type, Constraint_name, Status_enabled, Status_for_replication,
Constraint_keys

Finally, here is the code for using sp_columns. Note that <uid> needs to have at least 'datareader' access to <dbname>.

```
<%  
    dbname = "databasename"  
    tablename = "tablename"  
  
    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"  
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server=" &  
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname  
  
    set adodbConn = Server.CreateObject("ADODB.Connection")  
    adodbConn.Open ConnStr  
    sql = "EXEC sp_columns @table_name='" & tablename & "'" &  
    set rs = adodbConn.execute(sql)  
    do while not rs.eof  
        response.write rs("column_name") & " [" & rs("type_name") &  
        if rs("type_name")="varchar" or rs("type_name")="char" then  
            response.write " (" & rs("length") & ")" &  
        end if  
        response.write "<br>"
```

```
rs.movenext  
loop  
rs.close: set rs = nothing  
adodbConn.Close: set adodbConn = nothing  
%>
```

How do I hide system tables in SQL's Enterprise Manager?

4,055 requests - last updated Monday, July 10, 2000

Many people don't like the clutter provided so graciously by the existence of all the system tables, objects and stored procedures in SQL Server's user interface. To get rid of the system objects, just right-click the server in question (in MMC), choose "Edit SQL Server Registration properties...", and uncheck "Show system databases and system objects" ... hit OK and that clutter should disappear, making direct manipulation of your data much easier. This will work in both SQL Server 7.0 and SQL Server 2000.

Why do I get 'Too few parameters. Expected 1.' errors?

3,802 requests - last updated Saturday, April 28, 2001

This error is due to one of the following things:

1. A field name was spelled incorrectly.
2. One or more of the values was blank.
3. You tried to insert the wrong datatype (e.g. surrounded a numeric value with quotes).

To troubleshoot this, response.write your SQL statement... make sure there is data for all params you are passing, and compare field names directly with those in the table.

How do I know which version of MDAC I'm running?

3,713 requests - last updated Saturday, October 14, 2000

The simplest way is to use the **version** property of the ADODB.Connection object, such as:

```
<%  
    set conn = server.createobject("ADODB.Connection")  
    response.write conn.version  
    set conn = nothing  
%>
```

Another way is to go to **Start, Run...** and type `regedit`, then look at the following key:

```
HKEY_LOCAL_MACHINE  
    \Software  
        \Microsoft  
            \DataAccess  
                \Version
```

You can also use the component checker, available halfway down [this page](#), although it seems this tool hasn't been updated for MDAC 2.6 yet.

Yet another way is to find **msado15.dll** (in `%SYSTEM32%\DLLCache\`), right-click it and hit properties, and look on the version tab. This should produce the exact same result as the registry scan above.

Why do I get General error Unable to open registry key 'DriverId'?

3,638 requests - last updated Sunday, June 10, 2001

This error can happen when the Internet Guest Account (IUSR_<machine>) does not have sufficient privileges on the MDB file (or the folder it resides in). If applying proper permissions doesn't solve the problem, then you may want to apply the [most recent MDAC](#).

How do I connect to SQL Server on a port other than 1433?

3,509 requests - last updated Thursday, October 4, 2001

Sometimes an added measure of security can be achieved by using ports other than the defaults for server software. SQL Server allows you to specify which port you want it to run on; the default is 1433. Provided you can access your SQL Server through TCP/IP, the following connection string should help you connect to a different port (this example uses port 1510 on the local machine):

```
<%  
    cst = "provider=SQLOLEDB;network=DBMSSOCN;uid=<uid>";  
    cst = cst & "pwd=<pwd>;server=127.0.0.1,1510;database=pubs"  
    set conn = Server.CreateObject("Adodb.Connection")  
    conn.open cst  
    ...
```

Notice that the IP address and port number are separated by a comma, and that TCP/IP is 'forced' by adding network=DBMSSOCN.

Why does ASP give me ActiveX errors when connecting to a database?

3,501 requests - last updated Thursday, April 5, 2001

You may see the 800A01AD error (ActiveX component can't create object) or 8002801D (Library not registered) after installing / re-installing / removing Access 97, Access 2000, Visual Studio, or certain SQL Server components. The problem is that operating systems prior to Windows 2000 had no way of preventing external applications from removing or replacing critical system DLLs, like those installed with MDAC (Microsoft Data Access Components). To fix this error, simply (re-)install the latest version of MDAC. You can find it here:

[MDAC Downloads](#)

How do I find a stored procedure containing <text>?

2,909 requests - last updated Monday, August 14, 2000

ADOX seems to have been designed just for this. :-) Here is a simple example that prints out the stored procedures in your database that contain the text 'insert into BLAH':

```
<%
    set catalog = Server.CreateObject("ADOX.Catalog")
    set conn = Server.CreateObject("ADODB.Connection")

    connstr = "driver={SQL
Server};server=<ip>;database=<db>;uid=<UID>;pwd=<PWD>"

    catalog.ActiveConnection = connstr
    conn.Open connstr

    ' String we're looking for:
    str = "insert into blah"

    ' loop through all procedures:
    For Each proc In cat.Procedures

        ' last two characters are garbage
        spname = left(proc.Name, len(proc.name)-2)

        ' use helptext to get command
        SQL = "exec sp_helptext " & spname
        set rs = conn.Execute(SQL)

        sptext = ""
        do while not rs.eof
            ' each line is a row, build proc
            sptext = sptext & rs(0) & "<br>"
            rs.movenext
        loop

        if instr(lcase(sptext), lcase(str))>0 then
            ' match!
            response.write "<hr>" & spname & "<p>" & sptext & "<hr>"
```

```
        end if
        rs.close
        set rs = Nothing
    Next
    conn.Close
    set conn = Nothing
    Set catalog = Nothing
%>
```

If you have long stored procedures like mine, you can also highlight the key words you found, as follows (this will keep the stored procedure's case intact, but only highlight instances of your string that are all lowercase, all uppercase, or exactly as you defined it):

```
<%
    if instr(lcase(sptext),lcase(str))>0 then
        sptext = replace(sptext,lcase(str),"<b>" & lcase(str) & "</b>")
        sptext = replace(sptext,ucase(str),"<b>" & ucase(str) & "</b>")
        sptext = replace(sptext,str,"<b>" & str & "</b>")
        ...
%>
```

Or, more reliably, you can convert everything into lower case:

```
<%
    if instr(lcase(sptext),lcase(str))>0 then
        sptext = replace(lcase(sptext),lcase(str),"<b>" & lcase(str) &
"</b>")
        ...
%>
```

Why do I get 'Arguments are of the wrong type' errors?

2,598 requests - last updated Monday, January 29, 2001

Typically, the following error will happen if you try and set invalid cursor or lock properties on a recordset object.

Error number: 0x800A0BB9

Arguments are of the wrong type, are out of acceptable range, or are in conflict with one another.

This is often because you used the VB "friendly" names for the values (such as adLockReadOnly), instead of the integer constants (which are the only values understood by the engine), without including ADOVBS.INC. So, a quick solution can often be to make sure you've included ADOVBS.INC.

If you're using JScript, you might get an error like 'adLockReadOnly undefined.' In this case, you should be including ADOJAVAS.INC

After that, you should investigate two things. One is whether you should even be using a recordset object; more often than not, the ADODB.Recordset object is unnecessary (see [Article #2191](#) for more info). The second is whether it makes sense to include ADOVBS.INC / ADOJAVAS.INC, or to simply define the few constants you actually plan on using (take a look at [Article #2112](#) for reasons to avoid using this massive file).

How do I prevent my ASP pages from waiting for database activity?

2,459 requests - last updated Monday, October 22, 2001

This FAQ is designed for a very specific scenario. Your ASP page should:

1. initiate a long-running command that may cause a browser to time out; and,
2. not need to show a user results from the command.

This means it should be a page which triggers an event in the database which is NOT a recordset or other results-obtaining operation, and that the user isn't expecting direct feedback of any kind to let them know that the process has finished.

```
<%  
    set conn = server.createobject("ADODB.Connection")  
    conn.open "<connection string>"  
    conn.execute "<long-running command>",, &H000000010  
    response.write "The command is still running, but I'm not waiting!"  
    ...  
>%
```

You can test this technique by creating a single-column table:

```
CREATE TABLE dt (dt DATETIME)
```

And using a command like:


```
<%  
    set conn = server.createobject("ADODB.Connection")  
    conn.open "<connection string>"  
    sql = "INSERT dt VALUES(CURRENT_TIMESTAMP) WAITFOR DELAY '00:00:05' " &  
        " INSERT dt VALUES(CURRENT_TIMESTAMP) WAITFOR DELAY '00:00:05' " &  
        " INSERT dt VALUES(CURRENT_TIMESTAMP)"  
    response.write now()  
    conn.execute sql, ,&H000000010  
    '...  
%>
```

Now wait at least 10 seconds, go into the dt table manually, and check out the differences in the dt column (and compare to the now() value that you wrote to the browser).

One word of warning: errors get swallowed up by the provider when using asynchronous methods, so you'll want to employ this method carefully.

How do I prevent NULLs in my database from mucking up my HTML?

2,283 requests - last updated Friday, June 1, 2001

Many people have come across the issue where they're using a recordset to populate a table, and someone goofed up and stored <NULL> values in the database, so it wrecks the formatting of the table.

First, you should consider not allowing NULLs into your database in the first place. See [Article #2073](#) for more info.

Now, let's say you can't get around using NULLs (due to pointy-haired boss syndrome, or whatever else)... you can do one of two things:

1. test for null values at runtime, or
2. replace null values in the query itself

I prefer (2), but I will provide examples of both.

Here is an example of using VBScript to get rid of NULL values *after* they've come out of the database, but before displaying them on the screen.

```
<%  
    ' ...  
    do while not rs.eof  
        cField = rs("fieldname_which_may_contain_nulls")  
        if len(cField)=0 then cField = "&nbsp;"  
        response.write "<td>" & cField & "</td>"  
        rs.movenext  
    loop  
    ' ...  
%>
```

Manas Tungare adds that there is an even quicker solution to this. By appending a blank string to the end of the result, you implicitly force the value to become NOT null:

```
<%  
    ' ...  
    do while not rs.eof  
        cField = rs("fieldname_which_may_contain_nulls") & ""  
        response.write "<td>" & cField & "</td>"  
        rs.movenext  
    loop  
    ' ...  
%>
```

Here is an example of using SQL (both in Access and in SQL Server) to replace these NULL values for you, taking care of the problem at the data level (because it *is* a data problem):

```
/* For Access: */  
  
SELECT IIF(ISNULL(field),' ',field) FROM Table  
  
/* For SQL Server: */  
  
SELECT ISNULL(field,' ') FROM Table  
  
    -- or, more ANSI-compliant:  
  
SELECT COALESCE(field,' ') FROM Table
```

(FWIW, I definitely like SQL Server's syntax better.)

In any case, I still strongly suggest you avoid NULLs in your database. But if you absolutely must have them, I hope that these solutions help alleviate some of the problems they cause.

How do I get rid of Named Pipes / DBNMPNTW errors?

2,040 requests - last updated Sunday, January 14, 2001

Chances are, you want to use TCP/IP, not Named Pipes. Make sure network library is configured to use TCP/IP by default. If you have SQL Server installed, you can do this through the Client Network Utility.

Named pipes can sometimes be stubborn, even after you have changed your network library. This could be because the remote serve is overriding your local settings. To alleviate this, add the following line to your existing connection string:

```
<%  
    cst = cst & "Network=DBMSSOCN;"  
%>
```

Why do I get 'Syntax Error in INSERT INTO Statement' with Access?

1,984 requests - last updated Saturday, January 20, 2001

Aside from an actual syntax error in your SQL statement, such as a misplaced quote, comma or bracket, the most common cause for this error is by using a reserved word as an alias, field name or table name. For a list of reserved words to check against your statement, see:

[Article #2080](#)

Next, check your delimiters. You might get this if you try to delimit a numeric field with an apostrophe or quote, or a date field with the wrong delimiter, or leave a string without a delimiter.

Finally, if you're still having a problem, change:

```
<%  
    conn.execute(sqlString)  
%>
```

to:

```
<%  
    response.write(sqlString)  
%>
```

That should point out the problem. If it doesn't, post your code, the resulting SQL, and your data structure to microsoft.public.inetserver.asp.db and someone will try and help you.

How do I enable connection pooling?

1,919 requests - last updated Sunday, June 10, 2001

Connection pooling is enabled by default for SQL Server and Oracle, in IIS 4.0 and above. You shouldn't need to configure anything to take advantage of connection pooling for these databases. You can check the status of your current settings by going to the "ODBC Data Sources" Control Panel applet (this is under Administrative Tools in Windows 2000 and later). There is a tab called connection pooling, which is only relevant if you are using ODBC to connect to your database(s) (yet another reason to use OLEDB and [AVOID USING A DSN](#)).

If you are using Access, and absolutely must use a DSN (e.g. pointy-haired boss syndrome), and you want to enable connection pooling: double-click on the entry for 'Microsoft Access Driver (*.mdb)' and change 'Don't pool connections to this driver' to 'Pool Connections to this driver.'

Please test the performance of your app with and without this setting. [I'd be interested in knowing](#) if this increased or decreased connection and query times for ODBC connections to Access database.

Microsoft states:

"To make the best use of connection pooling, explicitly close database connections as soon as possible. By default, a connection terminates after your script finishes execution. However, by explicitly closing a connection in your script after it is no longer needed, you reduce demand on the database server and make the connection available to other users."

How do I sort out an AND/OR query with an unknown number of parameters?

1,616 requests - last updated Sunday, April 1, 2001

Given this search page:

```
<form method=post action=find.asp>
<input type=text name=keywords>
<p>
<select name=kind>
  <option value=' AND '>All words
  <option value=' OR '>Any word(s)
</select>
<p>
<input type=submit>
</form>
```

The following ASP script will split up the search terms and do an AND or OR search appropriately:

```
<%
SQL = "SELECT field FROM table"

keywords = trim(replace(Request.Form("keywords"), "", "' '))

if len(keywords)>0 then
  sqlExtra = " WHERE "
  kind = Request.Form("kind")
  keywordArray = split(keywords)
  for i = 0 to ubound(keywordArray)
    keyword = keywordArray(i)
    ' if you want to match entire words only!
    sqlExtra = sqlExtra & " (field LIKE '% " & keyword & " %')" &
kind
    ' if you want to find each string inside of other words
    ' sqlExtra = sqlExtra & " (field LIKE '%" & keyword & "%')" &
kind
  next
end if
response.write sql & left(sqlExtra, len(sqlExtra)-len(kind))
```

%>

Note that you may want to make your search case sensitive (in SQL Server you would do this through database options, not in code). You also might want to have a list of noise words, such as 'a' and 'the' - particularly if you don't use the WHOLE WORD search. For example, a search for 't' might return your entire table! Yes, that's the user's fault, but it's still YOUR server doing all that extra work.

How do I solve 'ADO Could Not Find The Specified Provider'?

1,589 requests - last updated Monday, January 15, 2001

Chances are, you are using an out-of-date version of Microsoft's Data Access Components. Get a new version from [MDAC Downloads](#) at Microsoft's site.

See [Q191271](#) for more info.

(Reinstalling the most current MDAC components will automatically re-register the problem DLL, MSDASQL.dll.)

What do I need to know about the differences between Access and SQL Server?

1,509 requests - last updated Tuesday, December 18, 2001

This article will try to explain some of the differences between Access and SQL Server. It is not an exhaustive list, and in no means should be considered an ultimate authority. If you have anything to add or correct, please [let us know](#)...

DATA TYPES

Here is a list of data types in each environment, and how they are different. Some datatypes from SQL Server were left out (e.g. SQL_VARIANT, TABLE).

Access	SQL Server	SQL Server Definition
Yes/No	BIT	(Integer: 0 or 1)
Number (Byte)	TINYINT	(Positive Integer 0 -> 255)
Number (Integer)	SMALLINT	(Signed Integer -32,768 -> 32,767)
Number (Long Integer)	INT	(Signed Integer $-(2^{31})$ -> $(2^{31})-1$)
(no equivalent)	BIGINT	(Signed Integer $-(2^{63})$ -> $(2^{63})-1$)
Number (Single)	REAL	(Floating precision $-3.40E + 38$ -> $3.40E + 38$)
Number (Double)	FLOAT	(Floating precision $-3.40E + 38$ -> $3.40E + 38$)
Currency	MONEY	(4 decimal places, $-(2^{63})/10000$ -> $((2^{63})-1)/10000$)
Currency	SMALLMONEY	(4 decimal places, $-(2^{31})/10000$ -> $((2^{31})-1)/10000$)
Hyperlink	(no equivalent - use VARCHAR())	
Decimal	DECIMAL	(Fixed precision $-10^{38} + 1$ -> $10^{38} - 1$)
Numeric	NUMERIC	(Fixed precision $-10^{38} + 1$ -> $10^{38} - 1$)
Date/Time	DATETIME	(Date+Time 1/1/1753->12/31/9999, accuracy of 3.33 ms)

Date/Time	SMALLDATETIME	(Date+Time 1/1/1900->6/6/2079, accuracy of one minute)
Autonumber	IDENTITY	(INT with IDENTITY property)
Text(n)	CHAR(n)	(Fixed-length non-Unicode string to 8,000 characters)
Text(n)	NCHAR(n)	(Fixed-length Unicode string to 4,000 characters)
Text(n)	VARCHAR(n)	(Variable-length non-Unicode string to 8,000 characters)
Text(n)	NVARCHAR(n)	(Variable-length Unicode string to 4,000 characters)
Memo	TEXT	(Variable-length non-Unicode string to 2,147,483,647 characters)
OLE Object	BINARY	(Fixed-length binary data up to 8,000 characters)
OLE Object	VARBINARY	(Variable-length binary data up to 8,000 characters)
OLE Object	IMAGE	(Variable-length binary data up to 2,147,483,647 characters)

Some notes on usage of data types:

Switching from Yes/No to BIT

In Access, you could use integers or TRUE/FALSE keywords to determine the value of the field. In SQL Server, and especially during migration, you should use integer values only. So here are some sample queries; note that the SQL Server queries will work Access as well.

```
-- DETERMINING TRUE

-- Access:
[...] WHERE ynColumn = TRUE
[...] WHERE ynColumn = -1

-- SQL Server:
[...] WHERE ynColumn <> 0

-----
```

```
-- DETERMINING FALSE

-- Access:
[...] WHERE ynColumn = FALSE
[...] WHERE ynColumn = 0

-- SQL Server:
[...] WHERE ynColumn = 0
```

Switching from Currency to MONEY

You will no longer be able to use cute VBA functions like `FORMAT` to add dollar signs, thousand separators, and decimal places to your numbers. In fact, in Access, some of this data is actually stored along with the value. With SQL Server, this extraneous data is not stored, reducing disk space and making calculations more efficient. While you can apply this formatting in SQL Server, as explained in [Article #2188](#), it's messy -- and better handled, IMHO, by the client application. In ASP, you can use built-in functions like `FormatCurrency` to apply proper formatting to your money values.

Switching from Hyperlink to VARCHAR()

Like Currency, Access uses internal formatting to make the values stored in the application clickable. This is partly because Access is a client application, and this feature makes it easier to use. However, when you're not physically in the application, you may not want the URL to be clickable (it may just be a display value, or you may want to wrap alternate text -- or an image -- inside the `<a href>` tag). In SQL Server, use a `VARCHAR` column (likely 1024 or greater, depending on the need) and apply `<a href>` tags to it in the client application. Don't expect the database to maintain HTML for you... this only increases storage size, and hurts performance of searches against that column.

Switching from Date/Time to DATETIME

When passing dates into Access from ASP or an application, you use pound signs (`#`) for surrounding dates. SQL Server, on the other hand, uses apostrophes (`'`). So the following query conversion would be required:

```
-- Access:  
[...] WHERE dtColumn >= #11/05/2001#  
  
-- SQL Server:  
[...] WHERE dtColumn >= '11/05/2001'
```

In addition, Access allows you to store date and time alone. SQL Server does not allow this (see [Article #2206](#) for more info). To see if a date equals 11/05/2001 in SQL Server, you would have to convert the stored value (which includes time) to a 10-character date. Here is how a typical query would have to change:

```
-- Access:  
[...] WHERE dtColumn = #11/05/2001#  
  
-- SQL Server:  
[...] WHERE CONVERT(CHAR(10), dtColumn, 101) = '11/05/2001'
```

If you want to retrieve the current date and time, the syntax is slightly different:

```
-- Access:  
SELECT Date() & " " & Time()  
  
-- SQL Server:  
SELECT GETDATE()  
SELECT CURRENT_TIMESTAMP
```

To get tomorrow's date, here is how your queries would look:

```
-- Access:  
SELECT DateAdd("d",1,date())  
  
-- SQL Server:  
SELECT CONVERT(CHAR(10), DATEADD(day, 1, GETDATE()), 101)
```

To get the date and time 24 hours from now:

```
-- Access:  
SELECT cstr(DateAdd("d",1,date())) & " " & cstr(time())  
  
-- SQL Server:  
SELECT DATEADD(day, 1, GETDATE())
```

To get the first day of the current month:

```
-- Access:  
SELECT DateAdd("d",1-day(date()),date())  
  
-- SQL Server:  
SELECT CONVERT(Char(10),GETDATE()+1-DAY(GETDATE()),101)
```

To get the number of days in the current month:

```
-- Access:  
SELECT DAY(DATEADD("m", 1, 1-DAY(date()) & date())-1)  
  
-- SQL Server:  
SELECT DAY(DATEADD(MONTH, 1, 1-DAY(GETDATE()+GETDATE())-1))
```

To get the current millisecond:

```
-- Access:  
SELECT "Pick a number between 1 and 1000"  
  
-- SQL Server:  
SELECT DATEPART(millisecond, GETDATE())
```

To get the current weekday:

```
-- Access:  
SELECT weekdayname(weekday(date()))  
  
-- SQL Server:  
SELECT DATENAME(WEEKDAY, GETDATE())
```

Switching from Autonumber to IDENTITY

Not much difference here, except for how you define the column in DDL (CREATE TABLE) statements:

```
-- Access:  
CREATE TABLE tablename (id AUTOINCREMENT)  
  
-- SQL Server:  
CREATE TABLE tablename (id INT IDENTITY)
```

Handling Strings

There are many changes with string handling you will have to take into account when moving from Access to SQL Server. For one, you can no longer use double-quotes (") as string delimiters and ampersands (&) for string concatenation. So, a query to build a string would have to change as follows:

```
-- Access:  
SELECT "Foo-" & barColumn FROM TABLE  
  
-- SQL Server:  
SELECT 'Foo-' + barColumn FROM TABLE
```

(Yes, you can enable double-quote characters as string delimiters, but this requires enabling QUOTED_IDENTIFIER at each batch, which impacts many other things and is not guaranteed to be forward compatible.)

Built-in CHR() constants in Access change slightly in SQL Server. The CHR() function is now spelled slightly differently. So, to return a carriage return + linefeed pair:

```
-- Access:
SELECT CHR(13) & CHR(10)

-- SQL Server:
SELECT CHAR(13) + CHAR(10)
```

This one is confusing for many people because the CHAR keyword doubles as a function and a datatype definition.

String Functions

There are many VBA-based functions in Access which are used to manipulate strings. Some of these functions are still supported in SQL Server, and aside from quotes and concatenation, code will port without difficulty. Others will take a bit more work. Here is a table of the functions, and they will be followed by examples. Some functions are not supported on TEXT columns; these differences are described in [Article #2061](#).

Access	SQL Server	TEXT Equivalent
CINT(), CLNG()	CAST()	CAST(SUBSTRING())
INSTR()	CHARINDEX()	CHARINDEX()
ISDATE()	ISDATE()	ISDATE(SUBSTRING())
ISNULL()	ISNULL()	ISNULL()
ISNUMERIC()	ISNUMERIC()	ISNUMERIC(SUBSTRING())
LEFT()	LEFT()	SUBSTRING()
LEN()	LEN()	DATALength()
LCASE()	LOWER()	LOWER(SUBSTRING())
LTRIM()	LTRIM()	LTRIM(SUBSTRING())

REPLACE()	REPLACE()	STUFF()
RIGHT()	RIGHT()	SUBSTRING()
RTRIM()	RTRIM()	RTRIM(SUBSTRING())
CSTR()	STR()	STR(SUBSTRING())
MID()	SUBSTRING()	SUBSTRING()
UCASE()	UPPER()	UPPER(SUBSTRING())
StrConv()	n/a	n/a
TRIM()	n/a	n/a

CINT(data) -> CAST(data AS INT)

This function converts NUMERIC data that may be stored in string format to INTEGER format for comparison and computation. Remember that SQL Server is much more strongly typed than VBA in Access, so you may find yourself using CAST a lot more than you expected.

```
-- Access:
SELECT CINT(column)

-- SQL Server:
SELECT CAST(column AS INT)
```

INSTR(data, expression) -> CHARINDEX(expression, data)

This function returns an integer representing the character where the search expression is found within the data parameter. Note that the order of these parameters is reversed!

```
-- Access:
SELECT INSTR("franky goes to hollywood","goes")

-- SQL Server:
SELECT CHARINDEX('goes','franky goes to hollywood')
```

ISDATE(data)

This function returns 1 if the supplied parameter is a valid date, and 0 if it is not. Aside from delimiters, the syntax is identical.

```
-- Access:  
SELECT ISDATE(#12/01/2001#)  
  
-- SQL Server:  
SELECT ISDATE('12/01/2001')
```

ISNULL(data)

This function works a bit differently in the two products. In Access, it returns 1 if the supplied parameter is NULL, and 0 if it is not. In SQL Server, there are two parameters, and the function works more like a CASE statement. The first parameter is the data you are checking; the second is what you want returned IF the first parameter is NULL (many applications outside the database haven't been designed to deal with NULL values very gracefully). The following example will return a 1 or 0 to Access, depending on whether 'column' is NULL or not; the code in SQL Server will return the column's value if it is not NULL, and will return 1 if it is NULL. The second parameter usually matches the datatype of the column you are checking.

```
-- Access:  
SELECT ISNULL(column)  
  
-- SQL Server:  
SELECT ISNULL(column,1)
```

ISNUMERIC(data)

This function returns 1 if the supplied parameter is numeric, and 0 if it is not. The syntax is identical.

```
SELECT ISNUMERIC(column)
```

LEFT(data, n)

This function returns the leftmost n characters of data. The syntax is identical.

```
SELECT LEFT(column,5)
```

LEN(data)

This function returns the number of characters in data. The syntax is identical.

```
SELECT LEN(column)
```

LCASE(data) -> LOWER(data)

This function converts data to lower case.

```
-- Access:  
SELECT LCASE(column)  
  
-- SQL Server:  
SELECT LOWER(column)
```

LTRIM(data)

This function removes white space from the left of data. The syntax is identical.

```
SELECT LTRIM(column)
```

REPLACE(data, expression1, expression2)

This function scans through data, replacing all instances of expression1 with expression2.

```
SELECT REPLACE(column, 'bob', 'frank')
```

RIGHT(data, n)

This function returns the rightmost n characters of data. The syntax is identical.

```
SELECT RIGHT(column,8)
```

RTRIM(data)

This function removes white space from the right of data. The syntax is identical.

```
SELECT RTRIM(column)
```

CSTR(data) -> STR(data)

This function converts data to string format.

```
-- Access:  
SELECT CSTR(column)  
  
-- SQL Server:  
-- if column is NUMERIC:  
SELECT STR(column)  
-- if column is not NUMERIC:  
SELECT CAST(column AS VARCHAR(n))
```

MID(data, start, length) -> SUBSTRING(data, start, length)

This function returns 'length' characters, starting at 'start'.

```
-- Access:  
SELECT MID("franky goes to hollywood",1,6)  
  
-- SQL Server:  
SELECT SUBSTRING('franky goes to hollywood',1,6)
```

UCASE(data) -> UPPER(data)

This function converts data to upper case.

```
-- Access:  
SELECT UCASE(column)  
  
-- SQL Server:  
SELECT UPPER(column)
```

StrConv

This function converts a string into 'proper' case (but does not deal with names like O'Hallaran or vanDerNeuts). There is no direct equivalent for StrConv in SQL Server, but you can do it per word manually:

```
-- Access:
SELECT StrConv("aaron bertrand",3)

-- SQL Server:
SELECT LEFT(UPPER('aaron'),1)
+ LOWER(RIGHT('aaron',LEN('aaron')-1))
+ ' '
+ LEFT(UPPER('bertrand'),1)
+ LOWER(RIGHT('bertrand',LEN('bertrand')-1))
```

There is a thread stored at Google dealing with [proper casing an entire block of text](#); you could likely implement something like that in both Access and SQL Server.

TRIM(data)

This function combines both LTRIM() and RTRIM(); there is no equivalent in SQL Server. To mimic the functionality, you would combine the two functions:

```
-- Access:
SELECT TRIM(column)
SELECT LTRIM(RTRIM(column))

-- SQL Server:
SELECT LTRIM(RTRIM(column))
```

String Sorting

Access and SQL Server have different priorities on string sorting. These differences revolve mostly around special characters like underscores and apostrophes. These might not change the way your application works, but you should be aware of the differences. Let's take this fictional example (SQL Server):

```

CREATE TABLE names
(
    fname VARCHAR(10)
)
INSERT names VALUES('bob')
INSERT names VALUES('_bob')
INSERT names VALUES(' bob')
INSERT names VALUES('=bob')
INSERT names VALUES('andy')
INSERT names VALUES('_andy')
INSERT names VALUES(' andy')
INSERT names VALUES('=andy')
INSERT names VALUES(' 'andy')
INSERT names VALUES(' 'bob')
INSERT names VALUES(' -andy')
INSERT names VALUES(' -bob')
INSERT names VALUES('andy-bob')
INSERT names VALUES('bob-andy')

SELECT fname FROM names ORDER BY fname
DROP TABLE names

```

Now, insert identical data into a similar table in Access 2000, and compare the SELECT results:

SQL Server	Access 2K
-----	-----
andy	andy
bob	bob
'andy	_andy
'bob	_bob
-andy	=andy
-bob	=bob
=andy	andy
=bob	'andy
_andy	-andy
_bob	andy-bob
andy	bob
andy-bob	'bob
bob	-bob

bob-andy bob-andy

Notice the inconsistencies - Access (like Windows) treats underscore (_) as the highest non-alphanumeric character. Also, it ignores apostrophe (') and hyphen (-) in sorting. You can see the other slight differences in sorting this otherwise identical list. At least they agree on which names are first and last... if only all of our queries used TOP 1! Add on top of this that both database engines' concepts of sort order are sensitive to changes in the underlying operating system's regional settings. SQL Server is also variable in its server-level (and in SQL Server 2000, table- and column-level) collation options. So, depending on all of these variables, your basic queries that sort on a text/char/varchar column will potentially start working differently upon migration.

NULL Comparisons

SQL Server handles NULL values differently. Access assumes NULL = NULL, so two rows where a column is <NULL> would match a JOIN clause comparing the two. By default, SQL Server treats NULLs correctly as UNKNOWN, so that, depending on the settings within SQL Server, it cannot state that NULL = NULL. If you are trying to determine whether a field contains a NULL value, the following query change should be made:

```
-- Access:  
[...] WHERE column = NULL  
[...] WHERE column <> NULL  
  
-- SQL Server:  
[...] WHERE column IS NULL  
[...] WHERE column IS NOT NULL
```

If you set ANSI_NULLS OFF and are trying to compare two columns, they won't equate. A column that contains a NULL will equate with an expression that yields NULL, as will two expressions that yield NULL. But two columns that contain NULL will never be considered equal, regardless of ANSI_NULLS settings or the ANSI standards. As a workaround, use the following comparison to determine that two fields are equal AND both contain NULL (without the extra AND condition, these two would also evaluate as equal if they both contained an empty string):

```
[...] WHERE ISNULL(col1, '') = ISNULL(col2, '') AND col1 IS NULL
```

Yes, it's not pretty. For more information on how SQL Server handles NULLs (and why you should avoid them), see [Article #2073](#).

OTHER SYNTAX CHANGES

There are possibly dozens of other slight syntax changes that may have to be made when moving from Access to SQL Server. Here are a few of the more significant ones:

IIF(expression, resultIftrue, resultIfFalse)

IIF() is a handy inline switch comparison, which returns one result if the expression is true, and another result if the expression is false. IIF() is a VBA function, and as such, is not available in SQL Server. Thankfully, there is a more powerful function in SQL Server, called CASE. It operates much like SELECT CASE in Visual Basic. Here is an example query:

```
-- Access:
SELECT alias = IIF(Column<>0, "Yes", "No")
  FROM table

-- SQL Server:
SELECT alias = CASE WHEN Column<>0 THEN 'Yes' Else 'No' END
  FROM table
```

SQL Server's CASE also supports multiple outcomes, for example:

```
SELECT alias = CASE
  WHEN Column='a' THEN 'US'
  WHEN Column='b' THEN 'Canada'
  ELSE 'Foreign'
END
FROM table
```

DISTINCTROW

SQL Server supports DISTINCT but does not support DISTINCTROW.

OBJECTS

When creating tables and other objects, keep the following limitations in mind:

- Access uses MAKE TABLE, while both platforms support CREATE TABLE;
- Access object names are limited to 64 characters;
- SQL Server 7.0+ object names are limited to 128 characters;
- SQL Server 6.5 object names were limited to 30 characters and no spaces; and,
- Stored queries in Access become Stored Procedures in SQL Server.

STORED QUERIES

Stored queries in Access are a way to store query information so that you don't have to type out ad hoc SQL all the time (and update it throughout your interface everywhere you make a similar query). Being a non-GUI guy, the easiest way I've found to create a stored query in Access is to go to Queries, open "Create query in Design View", switch to SQL View, and type in a query, such as:

```
PARAMETERS ProductID INTEGER;
SELECT ProductName, Price
FROM Products
WHERE ProductID = [productID]
```

Be careful not to use any **reserved words**, like [name], as parameter names, or to give your parameters the SAME name as the column -- this can easily change the meaning of the query.

Once you have the same schema within SQL Server, when moving to stored procedures, the basic difference you'll need to know is syntax. The above stored query becomes:

```
CREATE PROCEDURE MyQuery
    @ProductID INT
AS
BEGIN
    SELECT ProductName, Price
    FROM Products
    WHERE ProductID = @productID
END
```

You can create this stored procedure using this code through QUery Analyzer, or you can go into the Enterprise Manager GUI, open the database, open the Stored Procedures viewpane, right-click within that pane and choose New > Stored Procedure. Paste the above code (or a query that might make a bit more sense given *your* schema), click Check Syntax, and if it all works, click Apply/OK. Don't forget to set permissions!

Now in both cases, you can call this code from ASP as follows:

```
<%
    productID = 5
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute("EXEC MyQuery " & productID)
    do while not rs.eof
        ' process recordset here
        ' ...
    %>
```

See [Article #2201](#) for a quasi-tutorial on writing stored procedures.

SECURITY

Access is limited to security in terms of username / password on the database. It also is subject to Windows security on the file itself (as well as the folder it resides in). Typically, ASP applications must allow the anonymous Internet guest account (IUSR_<machine_Name>) to have read / write permissions on file and folder. Username / password access to the database cannot be controlled with any more granularity.

SQL Server has two authentication modes, and neither are much like Access security at all. You can use Windows Authentication, which allows you direct access to domain Users and Groups from within the interface. You can also use Mixed Mode, which allows SQL Server to maintain usernames and passwords (thereby negating the need for a domain or other Windows user/group maintenance).

Once you have determined an authentication mode, users have three different levels of access into the database: login (at the server level), user (at the database level), and object permissions within each database (for tables, views, stored procedures, etc). Just to add a layer of complexity, SQL Server makes it easy to "clone" users by defining server-wide roles, and adding users to that role. This is much like a Group in a Windows domain; in SQL Server, you can use the built-in definitions (and customize them), or create your own. Alterations to a role's permissions affect all users that are members of that role.

Microsoft has a thorough [whitepaper](#) you should skim through before jumping into SQL Server. If you're going to deploy your own SQL Server box (as opposed to leasing a dedicated SQL Server, or a portion of one), by all means read the [SQL Server Security FAQ](#).

MORE INFORMATION

[Article #2182](#) has a list of tools and tutorials that will aid in the migration process. Also be sure to read Microsoft's [migration whitepaper](#) for some helpful info from the vendors themselves. Finally, if you're into books, APress has a great title called [From Access to SQL Server](#).

How do I access MIN, MAX, SUM, COUNT values from SQL statements?

1,457 requests - last updated Tuesday, June 19, 2001

Many people write a SQL statement like this:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("SELECT COUNT(field) FROM table")  
    response.write rs("field")  
%>
```

And are confused when they get this error:

```
ADODB.Recordset (0x800A0CC1)  
    Item cannot be found in the collection corresponding to the requested name  
or ordinal.
```

This is because they weren't looking for "field" from the recordset, they were looking for an expression that represents the COUNT of "field" in the table. There are three ways to obtain this value from the recordset.

The first is to simply use ordinal numbers instead of. This requires no modification to the existing SQL statement, and has the added bonus of being slightly faster (though for most users I recognize this will be negligible).

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("SELECT COUNT(field) FROM table")  
    response.write rs(0)  
%>
```

The second two solutions involving adjusting the SQL statement to use an alias for the expression:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
  
    set rs = conn.execute("SELECT fieldcount = COUNT(field) FROM table")  
    response.write rs("fieldcount")  
  
    set rs = conn.execute("SELECT COUNT(field) AS fieldcount FROM table")  
    response.write rs("fieldcount")  
%>
```

Schema: How do I get the stored procedures out of a database?

1,415 requests - last updated Sunday, April 15, 2001

The following SQL Statement will retrieve all the user-created stored procedures:

```
SELECT name FROM sysobjects
WHERE type='P' AND
ObjectProperty(ID, 'IsMSShipped')=0
```

How do I debug my SQL statements?

1,414 requests - last updated Monday, May 28, 2001

Many people who get errors in SQL statements post their ASP code and the error, and say "what's wrong with this SQL statement?" It's hard for anyone to tell when you've got a SQL statement that hasn't been built yet, for example:

```
<%  
    sql = "SELECT field FROM table WHERE ID=" & someVarname  
    set rs = conn.execute(sql)  
%>
```

To debug this properly, when you get an error, you should add the following two lines:

```
<%  
    sql = "SELECT field FROM table WHERE ID=" & someVarname  
    response.write sql  
    response.end  
    set rs = conn.execute(sql)  
%>
```

Now, you can copy the SQL statement from the browser and post it directly in Access or Query Analyzer, and see why it's not working. Sometimes it will be obvious even before that point, e.g. someVarname is empty or the wrong data type. Sometimes it will be missing (or erroneous) quotes (e.g. quotes around a numeric value, or # characters around a SQL date). Sometimes it will be a reserved word problem (e.g. you named your field DATE).

Before posting SQL errors to the newsgroups, please assemble the following information:

- DDL (in the form of CREATE TABLE statements) - this is so everyone can understand exactly what data types your table consists of, and enables them to easily re-create your table in their own environment.
- Sample data (in the form of INSERT statements) - this is so everyone can understand what data you put into your table, and can populate their local copy for testing purposes.
- The **actual** SQL statement (not the one made up with variables - if you can't get that working to begin with, that's a string concatenation and/or variable issue).

Following these steps, you are likely to solve your problem much quicker than people who post their ASP code and ask people to fix it. This will almost always result in a "we need more info" type of post.

How do I handle BIT / BOOLEAN fields in a query?

1,410 requests - last updated Tuesday, May 1, 2001

In Microsoft Access, you can say:

```
SELECT field FROM table WHERE boolField=TRUE
-- or
SELECT field FROM table WHERE boolField=FALSE
```

Unfortunately, this doesn't work in SQL Server. The following can be used in SQL Server:

```
SELECT field FROM table WHERE bitField=1
-- or
SELECT field FROM table WHERE bitField=0
```

However, this doesn't work in Access, since TRUE in Access is -1, not 1. Confused yet? :-)

For cross-platform support, use the following queries:

```
SELECT field FROM table WHERE bitField<>0
-- or
SELECT field FROM table WHERE bitField=0

-- to update (Access will convert to -1):
UPDATE table SET bitField=1
--or
UPDATE table SET bitField=0
```

Also, remember that if you're using checkboxes to update / insert / display data, you have to convert from "on" or "" to 1 or 0, and when retrieving you must change 1 or 0 (or true or false) to "checked"... for example, [page1.asp](#):

```
<form method=post action=page2.asp>
<input type=checkbox name=bool>
<input type=submit>
</form>
```

And page2.asp:

```
<%
    bitValue = 0
    bool = request.form("bool")
    if bool = "on" then bitValue=1
    sql = "UPDATE table SET bitField=" & bitValue
    ' ...
%>
```

And page3.asp:

```
<%
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set rs = conn.execute("SELECT bitField FROM table")
    ch=""
    bitValue = rs(0)
    if bitValue then ch=" CHECKED"
    ' or you could say if bitValue<>0 then ch=" CHECKED"
%>
<form method=post action=page2.asp>
<input type=checkbox name=bool <%=checked%>>
<input type=submit>
</form>
```

Hope that clears up some BIT / BOOLEAN misunderstandings.

Why does Access give me 'unspecified error' messages?

1,317 requests - last updated Wednesday, May 23, 2001

Aside from the improper use of MEMO fields (see [Article #2188](#)), this may be caused by the mode in which Access is opened. Unless otherwise specified, IIS opens Access databases with adModeUnknown... which has proven to cause random problems in certain configurations. You can overcome this by setting the mode to adModeReadWrite **before** opening the connection, such as:

```
<%  
    cst = "Driver={Microsoft Access Driver (*.mdb)};DBQ="  
    cst = cst & server.mappath("/<pathtofile.mdb>")  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.mode = 3 ' adModeReadWrite  
    conn.open cst  
%>
```

(If you know you have Jet 4.0 installed, you can use the following slightly more efficient method.)

```
<%  
    cst = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source="  
    cst = cst & server.mappath("/<pathtofile.mdb>")  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.mode = 3 ' adModeReadWrite  
    conn.open cst  
%>
```

Can I compact / repair an Access database from ASP code?

1,238 requests - last updated Wednesday, January 9, 2002

Yes, you can. Thanks to Craig Starnes for suggesting this article.

I created a simple table, with an Autonumber column and a text(50) column. I created a macro that would insert rows with random characters into the text fields. I set the repeat on the macro to 30,000 and ran it. While I was waiting for Access to struggle through the task and release my CPU so I could do other things on the box, I went and brushed my teeth. When I came back, it wasn't finished yet. So I read Tolkien's trilogy. When it finally completed the task, I observed the size of the MDB file, and it was around 1.3 MB. I then wrote a query to delete roughly half the records, interspersed (e.g. I did not delete the first or last 15,000 rows - I wanted to see what compacting would do to a more realistically adjusted Autonumber column). I closed the database, and lo and behold, the file was still 1.3 MB (even though I had just cut the actual storage size in half).

So, I decided to try out Craig's code, which came to me something like this:

```
<%  
oldDB = Server.MapPath("/accessTest.mdb")  
bakDB = Server.MapPath("/accessTestBack.mdb")  
newDB = Server.MapPath("/accessCompact.mdb")  
  
Set FSO = Server.CreateObject("Scripting.FileSystemObject")  
  
' back up database  
  
FSO.CopyFile oldDB, bakDB, true  
  
' compact database  
  
Set Engine = Server.CreateObject("JRO.JetEngine")  
prov = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=" & oldDB & ";"  
Engine.CompactDatabase prov & oldDB, prov & newDB  
set Engine = nothing  
  
' delete original database  
  
FSO.DeleteFile oldDB
```

```
' move / rename our new, improved, compacted database

FSO.MoveFile newDB, oldDB
set FSO = nothing

%>
```

Sure enough, this code reduced the size of my MDB file by more than half (!) and did it rather quickly. I'm not sure what would have happened to requests for the database that came in at exactly the same time, but if you're using Access in a production environment, this is probably not a high priority anyhow.

Note that compacting the database also performs the 'repair' operation you might otherwise perform only through Access' GUI.

For more ways to compact an Access database, see the following articles:

[Online compacting of Access databases](#) (ASPAlliance.com)

[Compact and Repair](#) (ASPerium.com)

[Compact \(compress\) mdb database](#) (pstruh.cz)

How can I make my SQL queries case sensitive?

1,208 requests - last updated Sunday, October 28, 2001

If you installed SQL Server with the default collation options, you might find that the following queries return the same results:

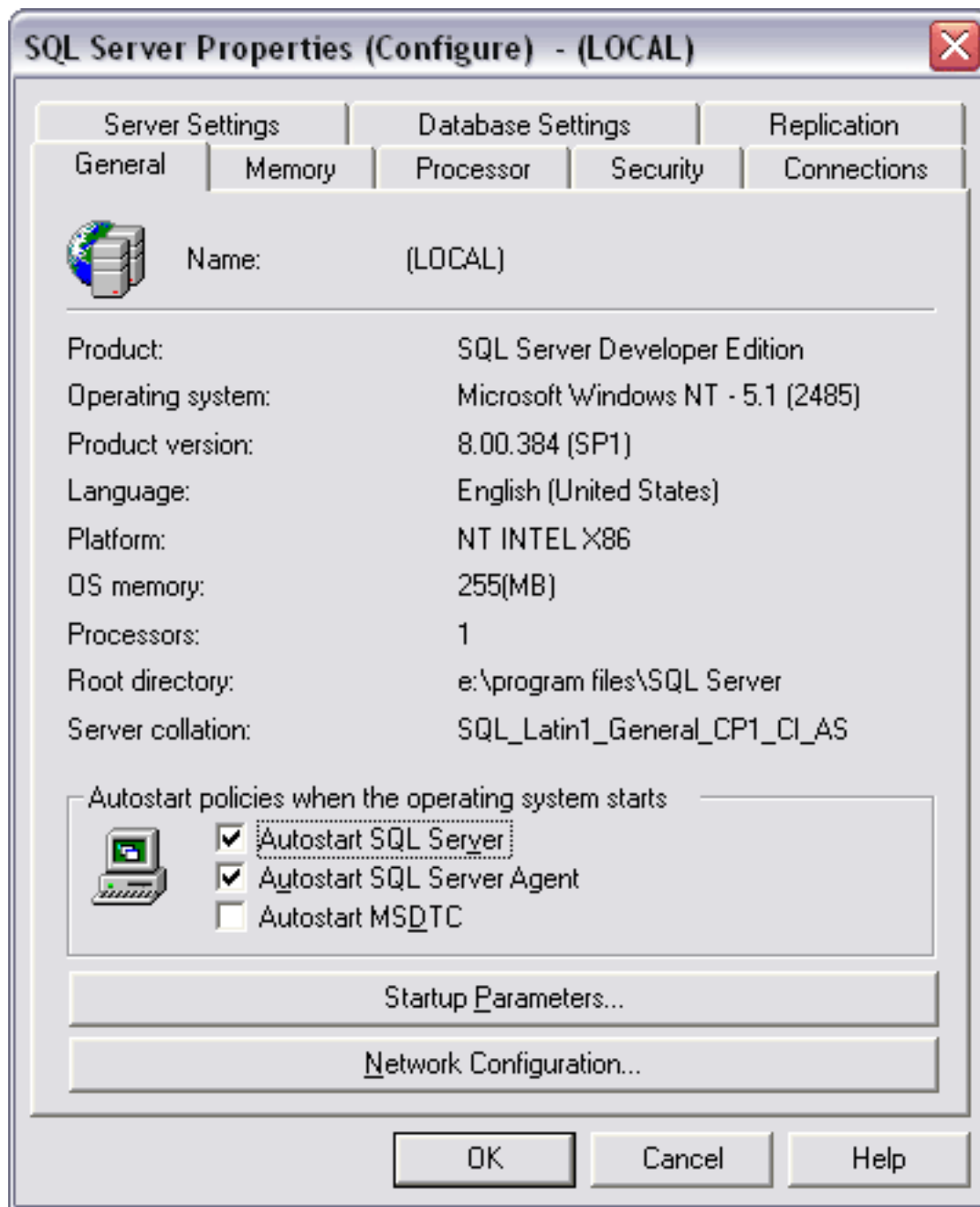
```
USE PUBS
GO

CREATE TABLE mytable
(
    field VARCHAR(10)
)

INSERT INTO mytable VALUES('Case')

SELECT field FROM mytable WHERE field='Case'
SELECT field FROM mytable WHERE field='caSE'
SELECT field FROM mytable WHERE field='case'
```

You can force the collation at the database level, or at the table level, using the ALTER DATABASE and ALTER TABLE commands, respectively. You can see the current collation level on the properties tab of the database server, through Enterprise Manager (if you're going to change this setting, MAKE NOTE OF THIS VALUE):



As changing this setting can impact applications and SQL queries, I would isolate this test first. In SQL Server 2000, you can easily run the following ALTER TABLE statement to change the sort order of a specific column, forcing it to be case sensitive:

```
ALTER TABLE mytable
  ALTER COLUMN field
  VARCHAR(10)
  COLLATE Latin1_General_CS_AS

SELECT field FROM mytable WHERE field='Case'
SELECT field FROM mytable WHERE field='caSE'
SELECT field FROM mytable WHERE field='case'
```

If this screws things up, you can change it back, simply by issuing a new ALTER TABLE statement (be sure to replace my COLLATE identifier with the one you found on your properties tab, as per the above screen shot!):

```
ALTER TABLE mytable
  ALTER COLUMN field
  VARCHAR(10)
  COLLATE SQL_Latin1_General_CP1_CI_AS
```

If you are stuck with SQL Server 7.0, you can try this workaround, which might be a little more of a performance hit (you should only get a result for the FIRST match):

```
SELECT field FROM mytable WHERE
CAST(field AS VARBINARY(10)) = CAST('Case' AS VARBINARY(10))

SELECT field FROM mytable WHERE
CAST(field AS VARBINARY(10)) = CAST('caSE' AS VARBINARY(10))

SELECT field FROM mytable WHERE
CAST(field AS VARBINARY(10)) = CAST('case' AS VARBINARY(10))
```


Schema: How do I show all the triggers in a database?1,189 requests - last updated Sunday, February 25, 2001

The following code uses a pair of nested recordsets to grab the triggers from the sysobjects table and then display them using sp_helptext (tested in SQL Server 2000):

```
<%
    dbname = "databasename"

    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    set Conn = Server.CreateObject("ADODB.Connection")
    Conn.Open ConnStr

    set rs = Conn.execute("SELECT name FROM sysobjects WHERE xtype='TR'")
    do while not rs.eof
        response.write("<hr>" & rs(0) & "<br>")
        set rs2 = Conn.execute("EXEC sp_helptext '" & rs(0) & "'")
        do while not rs2.eof
            response.write(rs2(0) & "<br>")
            rs2.movenext
        loop
        rs.movenext
    loop

    rs.close: set rs = nothing
    Conn.Close: set Conn = nothing
%>
```

Note that you must loop through the sp_helptext resultset because, as with stored procedures, each line of code in a trigger is returned as one row in the resultset.

Are there more efficient ways to do this? Yes, you could probably write a complicated stored procedure that did this in one JOIN statement, but efficiency isn't a worthwhile goal in this quick & dirty task, IMHO.

Schema: How do I show all the primary keys in a database?

1,168 requests - last updated Sunday, February 25, 2001

The following code uses a recordset to grab the primary keys using a SELF JOIN on sysobjects:

```
<%
    dbname = "databasename"

    ConnStr = "provider=SQLOLEDB;network=DBMSSOCN;"
    ConnStr = ConnStr & "uid=<uid>;pwd=<pwd>;server="
    ConnStr = ConnStr & "<x.x.x.x>;database=" & dbname

    set Conn = Server.CreateObject("ADODB.Connection")
    Conn.Open ConnStr

    sql = "SELECT so1.name AS keyName, so2.name AS tableName "
    sql = sql & "FROM sysobjects so1 INNER JOIN sysobjects so2 "
    sql = sql & "ON so2.id = so1.parent_obj WHERE (so1.xtype='PK')"
    set rs = Conn.execute(sql)
    do while not rs.eof
        response.write(rs(0) & " is PK for " & rs(1) & "<br>")
        rs.movenext
    loop
    rs.close: set rs = nothing
    Conn.Close: set Conn = nothing
%>
```

I get "Login failed for user '\.'" in SQL Server, why?

1,150 requests - last updated Friday, May 18, 2001

You have SQL Server set up to use Windows Authentication. Unless you are using Windows Authentication exclusively throughout your web site, you should have SQL Server set up to authenticate using mixed mode - this allows support for Windows Authentication AND passing credentials via clear text (e.g. a connection string from ASP). To make sure SQL Server is set up to be in mixed mode:

1. Open Enterprise Manager;
2. Expand a server group;
3. Right-click a server, and click Properties;
4. Click the Security tab;
5. Under Authentication, click SQL Server and Windows.

Now, make sure you have a valid user set up to access your tables, views and procedures.

How do I know which version of SQL Server I am running?

1,087 requests - last updated Monday, December 3, 2001

For SQL Server 7.0 and 2000, the following will extract ONLY the version information. This has not been tested with SQL Server 6.5 (sorry, can't find any of those anymore) but should continue to work for future versions of SQL 2000 (e.g. SP1, which will be out soon) at least.

```
SELECT RIGHT(LEFT(@@VERSION,37),8)
```

Or you can run this from ASP, assuming a valid and open connection to the SQL Server in an object named conn:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("SELECT RIGHT(LEFT(@@VERSION,37),8)")  
    response.write("SQL Version is: " & rs(0))  
    rs.close: set rs = nothing  
%>
```

How do I interpret these results?

This query should result in one of the following strings:

7.00.517 = SQL Server 7.0 Beta 3
7.00.583 = SQL Server 7.0 RC1
7.00.623 = SQL Server 7.0 RTM
7.00.689 = SQL Server 7.0 SP1 Beta
7.00.699 = SQL Server 7.0 SP1
7.00.842 = SQL Server 7.0 SP2
7.00.843 = SQL Server 7.0 SP2 + **Stored Procedure Patch**
7.00.961 = SQL Server 7.0 SP3

8.00.194 = SQL Server 2000 RTM
8.00.384 = SQL Server 2000 SP1

8.00.532 = SQL Server 2000 SP2 Beta

8.00.534 = SQL Server 2000 SP2

If you are wary about using the string parsing provided (either for forward- or backward-compatibility), or are worried your server might have another build of SQL Server (e.g. a beta of a service pack), you can roll your own parsing simply by working with the results of the following:

```
SELECT @@VERSION
```

These results are a little superfluous, IMHO... but may contain any extra information you need. For example, they also tell you which version of NT / Windows 2000 (including service pack level), the actual type of SQL Server installed (for example, Enterprise Edition), and whether the system is Intel or Alpha. And, if you want even more exhaustive information, you can use the following:

```
EXEC master..xp_msver
```

How do I send a MsgBox from ASP?

1,076 requests - last updated Tuesday, October 30, 2001

Come on, we've all done it. Tried to send a MsgBox from ASP. And received this lovely message:

```
Microsoft VBScript runtime (0x800A0046)
Permission denied: 'MsgBox'
/<file>.asp, line <line>
```

MsgBox is a client-side interaction element. To work in an ASP environment, someone would have to be sitting at the web server terminal day and night, clicking OK on every MsgBox that comes up. Yes, I know, that's exactly the scenario you'd like to have when debugging (and are used to with traditional client-server or stand-alone applications). However, ASP simply doesn't allow it. Here are a few code samples that show how to use a client-side alert (recommended for browser reach) or MsgBox. These bring up a couple of other answers too, such as how you can nest script tags and embed single- and double-quotes in a string. Plenty of languages for everyone!

Server-Side JavaScript -> Client-Side JS Alert

```
<script language=JavaScript runat=Server>
  var msg = "Umm, I guess, EOF?";
  Response.Write("<" + "script>alert('" + msg + "');");
  Response.Write("<" + "/script>");
</script>
```

Server-Side VBScript -> Client-Side JS Alert

```
<%
  msg = "Umm, I guess, EOF?"
  Response.Write("<" & "script>alert('" & msg & "');")
  Response.Write("<" & "/script>")
%>
```

Server-Side JavaScript -> Client-Side VBS MsgBox

```
<script language=JavaScript runat=Server>
    var msg = "Umm, I guess, EOF?";
    Response.Write("<" + "script language=VBScript>");
    Response.Write("MsgBox \"\" + msg + \"\"<" + "/script>");
</script>
```

Server-Side VBScript -> Client-Side VBS MsgBox

```
<%
    msg = "Umm, I guess, EOF?"
    Response.Write("<" & "script language=VBScript>")
    Response.Write("MsgBox \"\" & msg & \"\"<" & "/script>")
%>
```

Why does my DELETE query not work?

921 requests - last updated Tuesday, June 26, 2001

Many people assume that DELETE queries are just like SELECT queries, in that you want to retrieve or affect a certain group of columns hinging on a condition (e.g. WHERE clause). The syntax I generally see, and which causes the most problems, is as follows:

```
DELETE * FROM table WHERE [...]
```

The problem here is that the DELETE command does not take columns as a parameter; you're deleting ROWS, not COLUMNS. You can't delete just one field in records that match a given set of criteria; you delete the entire rows. So you can change it to one of the following:

```
DELETE FROM table WHERE [...]  
DELETE table WHERE [...]
```

(The latter usually scares people, but the two statements are functionally equivalent.)

How do I create a database from ASP?

779 requests - last updated Sunday, October 28, 2001

SQL Server

Assuming you have sufficient permissions to the SQL Server box, you can simply say:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string with UID and NO database>"  
    conn.execute("CREATE DATABASE dummy")  
    ' create tables, etc...  
%>
```

The owner of the database will be the user specified in UID. To change the database owner, use `sp_changedbowner`, as follows:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    conn.execute("USE dummy; EXEC sp_changedbowner 'username'")  
    ' ...  
%>
```

Now, if you have user-defined objects, put them in the model database. This is the database that is used to be a template for new databases.

Access

Here is code that will create an empty Access database from ASP:

```

<%
    newDB = "c:\inetpub\wwwroot\databases\new.mdb"
    Set cat = Server.CreateObject("ADOX.Catalog")
    cat.Create "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=" & newDB
    Set conn = Server.CreateObject("ADODB.Connection")
    conn.Open "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=" & newDB
    ' create tables, etc...
%>

```

Another way to do it (if you're creating cookie-cutter databases) is to generate a template with table structure and no data, and simply copy it:

```

<%
    targetDB = "c:\inetpub\wwwroot\databases\new.mdb"
    sourceDB = "c:\inetpub\wwwroot\databases\template.mdb"
    set fso = Server.CreateObject("Scripting.FileSystemObject")
    fso.CopyFile sourceDB, targetDB, true
    set fso = nothing
    set conn = Server.CreateObject("ADODB.Connection")
    conn.Open "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=" & targetDB
    ' ...
%>

```

(Of course, you should check that the targetDB name is not already taken, or you could wipe out someone's data.)

How do I connect to a non-default instance of SQL Server?

776 requests - last updated Monday, May 28, 2001

Here is a connection string that attaches to an instance of SQL Server that is NOT the default instance.

```
<%  
    cst = "Provider=SQLOLEDB;Server=127.0.0.1\instanceName;"  
    cst = cst & "database=pubs;network=DBMSSOCN;"  
    cst = cst & "uid=<uid>;pwd=<pwd>"  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
%>
```

You could also connect to an alternate port, if that's where your instance is running:

```
<%  
    cst = "Provider=SQLOLEDB;Server=127.0.0.1,1510\instanceName;"  
    cst = cst & "database=pubs;network=DBMSSOCN;"  
    cst = cst & "uid=<uid>;pwd=<pwd>"  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open cst  
%>
```

Why do I get weird results when using both AND and OR in a query?

733 requests - last updated Wednesday, May 30, 2001

Like grade school mathematics and the chicken and the egg, several fundamental concepts involving order of operations also apply to SQL statements. Take the following, for example:

```
SELECT fields
  FROM table
 WHERE
    a=1
  AND b=2
  OR a=2
```

I get confused reading that query, even after translating it to English:

```
GIVE ME the records
  OUT OF this table
 WHEN
    a is 1
  AND b is 2
  OR a is 2
```

So, even with that straightforward English, which of these records would meet the criteria?

id	a	b
1	1	2
2	2	2
3	2	1

Tricky, isn't it? The SQL engine, like me, has a hard time determining which clause(s) the AND applies to, and which clause(s) the OR applies to. It really depends on what you mean by AND and what you mean by OR. You can separate and group distinct clauses by using parentheses. So, as an example, if you mean:

```
GIVE ME the records
OUT OF this table
WHEN
    a is 1 *AND* b is 2,

    *OR*

    WHEN a is 2
```

Then your SQL query would be:

```
SELECT fields
FROM table
WHERE
    (a=1 AND b=2)
    OR a=2
```

And if you mean:

```
GIVE ME records
OUT OF this table
WHEN
    a is 1

    *AND*

    WHEN b is 2 *OR* a is 2
```

Then your SQL query would be:

```
SELECT fields
FROM table
WHERE
    a=1
    AND (b=2 OR a=2)
```

Why do I get 'Invalid Object Name' with SQL Server?

720 requests - last updated Tuesday, June 26, 2001

You may have found yourself in this situation before: you are connecting to a SQL Server, you know a table or procedure exists, but you keep getting this nasty error:

```
Microsoft OLE DB Provider for SQL Server (0x80040E37)  
Invalid object name '<something>'
```

There are several possible causes, ranging from the most obvious to the more cryptic:

- The object really doesn't exist -- either because you (a) spelled it wrong, (b) forgot to create it, or (c) looked in the wrong database;
- The current user has insufficient permissions to know the object exists, never mind affect its data; or,
- The tablename exists more than once in the same database with different owners (if this is the case, use database.owner.object syntax)

Why doesn't SQL Server allow me to separate DATE and TIME?

545 requests - last updated Wednesday, October 31, 2001

Admittedly, this is one of the rare features that Access boasts over SQL Server. The ANSI-92 standard states that compliant database should support the following DATE/TIME fields:

- DATE + TIME
- DATE
- TIME

Unfortunately, SQL Server only supports the first type of column, with the DATETIME (sub-millisecond accuracy) and SMALLDATETIME (minute accuracy) datatypes. If you only insert partial information (such as '10/31/2001' or '3:25 PM'), SQL Server will fill in the rest for you. Try the following script, to see what I mean:

```
SET NOCOUNT ON
CREATE TABLE #foo
(
    dt DATETIME
)
INSERT #foo VALUES('10/31/2001')
INSERT #foo VALUES('3:25 PM')
SELECT dt FROM #foo
DROP TABLE #foo
```

Here are the results:

```
dt
-----
2001-10-31 00:00:00.000
1900-01-01 15:25:00.000
```

Notice that SQL Server inserts midnight when time information is missing, and 1/1/1900 when date information is missing.

So what do you do when you're only interested in one or the other? There are several camps on this one. One is to store the date and/or time information as a CHAR or VARCHAR column. This makes comparisons and

sorting very difficult. Another camp suggests storing the extraneous information and ignoring it. Often "ignoring" means "converting", so to get just the date or time from the above table, you would do this:

```
SELECT dateonly=CONVERT(CHAR(10),dt,101) FROM #foo
SELECT timeonly=CONVERT(CHAR(8),dt,8) FROM #foo
```

Results:

```
dateonly
-----
10/31/2001
01/01/1900

timeonly
-----
00:00:00
15:25:00
```

Unfortunately, this type of conversion will not take advantage of any index on the DATETIME column. A similar approach is to store a standard value for the part you're not interested in, and handle that part of the data at the application level.

Another way to store only time, and do so efficiently, is to use an integer field. You multiply the number of hours by 100, and add the minutes. For example:

```
SET NOCOUNT ON
CREATE TABLE #foo
(
    tm SMALLINT
)
INSERT #foo VALUES
(
    -- e.g. 1527 = 3:27 PM / 15:27

    100 * DATEPART(HOUR, GETDATE())

    + DATEPART(MINUTE, GETDATE())
)
```



```
)
SELECT tm FROM #foo
DROP TABLE #foo
```

You multiply the hours by 100, then add the minutes, thus getting the time in military format. You could leave the formatting up to the application, or retrieve a nicely formatted time by running this query against #foo (I think this would be prettier in an application that's not so strongly typed):

```
SELECT
    timeonly = CAST(
        LEFT(tm, LEN(tm)-2) + ':'

        + RIGHT(tm, 2)

        AS VARCHAR(5)
    ) FROM #foo
```

Results:

```
timeonly
-----
1:17
```

Similarly, to store only date as an integer, you multiply the year by 10000, add the month (multiplied by 100), and then add the day:

```
SET NOCOUNT ON
CREATE TABLE #foo
(
    dt INT
)
INSERT #foo VALUES
(
    -- e.g. 20011031 = 2001/10/31

    DATEPART(YEAR, GETDATE()) * 10000
```

```
+ DATEPART(MONTH, GETDATE()) * 100  
  
+ DATEPART(DAY, GETDATE())  
)  
SELECT dt FROM #foo  
DROP TABLE #foo
```

Getting this one into date format is about as pretty as the previous example:

```
SELECT  
    dateonly = LEFT(dt, 4) + '/'  
  
            + LEFT(RIGHT(dt, 4), 2)  
  
            + '/' + RIGHT(dt, 2) FROM #foo
```

Results:

```
dateonly  
-----  
2001/10/31
```

These latter solutions should only be used for enhancing storage space required for presentation values. If you need to do computations and conversions on these columns, throw the last few solutions out the window.

In this age of infinite, nearly-free disk space, I think most SQL programmers would say "let the app people deal with the formatting" while, conversely, the application developers would say "the data people should give me the format I need."

How do I determine if a number is odd or even?

351 requests - last updated Sunday, October 28, 2001

Sometimes you need to know this because it's important; other times, it's simply for flipping the colors of adjacent rows in an HTML table. In any case, here are some samples of using the MODULUS operator on signed integers in T-SQL, VBScript and JScript:

Transact-SQL

This mimics retrieving a resultset from a table, along with a description of whether each id is odd or even. Note that ABS() is used so that the sign is ignored.

```
SELECT
    id,
    CASE
        WHEN ABS(id) % 2 = 1 THEN 'odd'
        ELSE 'even'
    END
FROM table
```

VBScript

This uses a hardcoded value, so you can switch it around and test it before incorporating it into more significant code.

```
<%
    id = 5
    stat = "even"
    SELECT CASE abs(id) mod 2
        CASE 1: stat = "odd"
    END SELECT
    Response.write id & " is " & stat
%>
```

JScript

This sample is just like the VBScript code above. The additional use of the Math object was required to convert the integer to positive.

```
<script language='JScript' runat=server>
    var id = 5;
    var stat = "even";
    switch(Math.abs(id) % 2)
    {
        case 1 : stat = "odd";
    }
    Response.Write(id.toString() + " is " + stat);
</script>
```

How do I enumerate through the DSNs on a machine?

340 requests - last updated Saturday, October 27, 2001

Well, there is a simply way, if SQL Server is installed on the same machine you're interested in:

```
EXEC master..xp_enumDSN
```

And then from ASP:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("EXEC master..xp_enumDSN")  
    if not rs.eof then  
        do while not rs.eof  
            response.write rs(0) & " (" & rs(1) & ")<br>"  
            rs.movenext  
        loop  
    else  
        response.write "No DSNs found."  
    end if  
    rs.close: set rs = nothing  
    conn.close: set conn = nothing  
%>
```

NOTE: You must have appropriate privileges to run extended stored procedures from the master database to pull this off.

How do I document / compare my SQL Server database(s)?

334 requests - last updated Monday, November 26, 2001

ASP developers thrown into a project involving SQL Server will undoubtedly need to get up to speed very quickly on the database schema, structure, goals, etc. Unfortunately, not every company documents and maintains their databases in a way that makes sense to newcomers.

Here is an article by Viktor Gorodnichenko:

[Compare SQL Server Databases with sp_CompareDB](#)

Aside from that, there are several third party vendors, offering products of varying complexity. You may choke at the prices of some of these products, but remember that some of these tools are Enterprise-level and offer a *LOT* more than just documentation.

[AGS SQL Scribe](#)

[BMC Web DBA Free](#)

[BMC SQL Programmer Free](#)

[BMC SQL Programmer](#)

[CAST Release Builder](#)

[Cobb Systems Data Dictionary](#)

[Embarcadero DBArtisan](#)

[Enhanced ISQL/w](#)

[Quest SQL Impact](#)

[Red-Gate SQLCompare](#) (with a companion article at [MSSqlServer.com](#))

[Total SQL Analyzer](#)

WinSQL

Yes, you could document these things yourself using SQL Scripts, Database Diagrams, and what have you. But some of these tools are downright cool, and for a few dollars, will save you from reinventing the wheel.

How do I temporarily disable a trigger?

228 requests - last updated Sunday, October 28, 2001

Some people have found a need to disable a trigger for a short period of time while they did work on the system that was not typical for their application. Rather than delete the trigger and re-create it later, here is some code that you can run in one statement (and inside a transaction, if required):

```
ALTER TABLE tablename DISABLE TRIGGER ALL
-- do work here
-- and after
ALTER TABLE tablename ENABLE TRIGGER ALL
```


Why do I get 'Argument data type text is invalid for argument [...]'

218 requests - last updated Tuesday, November 6, 2001

SQL Server TEXT columns are kind of special. Because of their size, and the fact that they're stored off-row, string manipulations must be considered wisely. Also, some of the functions that work for VARCHAR are not legal with TEXT. Here is a partial list (these samples assume a TEXT column called 'data'):

```
-- getting the number of characters
```

```
    SELECT LEN(data)
```

```
-- becomes
```

```
    SELECT DATALENGTH(data)
```

```
-- getting the first 5 characters
```

```
    SELECT LEFT(data,5)
```

```
-- becomes
```

```
    SELECT SUBSTRING(data,1,5)
```

```
-- getting the last 5 characters
```

```
    SELECT RIGHT(data,5)
```

```
-- becomes
```

```
    SELECT SUBSTRING(data,DATALENGTH(data)-4,5)
```

```
-- changing case
```

```
    SELECT LOWER(data)
```

```
    SELECT UPPER(data)
```

```
-- becomes
```

```
    SELECT LOWER(SUBSTRING(data,1,DATALENGTH(data)))
```

```
    SELECT UPPER(SUBSTRING(data,1,DATALENGTH(data)))
```

```
-- replacing part of the string
```

```
    SELECT REPLACE(data,'bob','frank')
```

```
-- becomes
```

```
    SELECT STUFF(data,CHARINDEX('bob',data),LEN('bob'),'frank')
```

Take care with the STUFF function. You should always check if the column contains the target string, otherwise your column could become <NULL>.

Should I index my database table(s), and if so, how?

200 requests - last updated Monday, January 7, 2002

An index is like a set of pointers to specific rows in a table. These pointers are ordered in terms of the column(s) defined by the index, which makes SQL's scans much more efficient - they just look up the pointers to the rows with the relevant data (based on a WHERE or other clause), and jump right to the row(s).

If you have multiple indexes on one column each, there will be n sets of pointers to the rows - each ordered by the specific column. As I will discuss later, you should choose your index(es) wisely.

If you have one index on multiple columns, it creates one huge set of pointers -- ordering the rows by each column you chose, successively.

So let's say you have a table with three integer columns (a, b and c). Let's insert some sample data, which are stored on disk in heap format [remember - tables are not guaranteed to be sorted in any way], looking like this (a normal SELECT a,b,c FROM table, given some fictitious data):

```
a b c
-----
1 2 3
2 2 2
1 2 2
3 1 2
2 1 2
```

Now, in the first example, we'll create a multi-column index on a, b and c. Now, this is how the pointers will look, ORDER BY a, b, c:

```
a b c
-----
1 2 2
1 2 3
2 1 2
2 2 2
3 1 2
```

So now, imagine running a query `SELECT a,b,c FROM table WHERE a=1`. This query will be very efficient, because the pointers have grouped these records all together.

Now, imagine running a similar query, but this time `SELECT a,b,c FROM table WHERE b=1`. This query will not be very efficient, since SQL Server's only index option is this index which does NOT consider b to be a top priority (and it just so happens that these records are NOT grouped together). It's the jumping around on the pointers that makes SQL Server work harder to get all the rows that match the WHERE clause - in some cases it may be more efficient for SQL Server to just do a table scan, rather than care about your index.

Let's create multiple indexes now, one on each column. The pointers for each, in order, will look something like this:

```
a b c
-----
1 2 2
1 2 3
2 1 2
2 2 2
3 1 2
```

```
a b c
-----
2 1 2
3 1 2
1 2 2
1 2 3
2 2 2
```

a	b	c
1	2	2
2	1	2
2	2	2
3	1	2
1	2	3

Now, running the two queries mentioned above, each will be very efficient. In the first query, SQL Server will choose the first index, and get all the rows where a is grouped together - minimizing read / scan time. In the second query, SQL Server is smart enough to ignore the first index, and use the second index instead.

I will mention that with a compound index, let's say columns a, b and c, the optimizer will use the index for a query on column a, or a and b, or a and b and c, or a and c. However, the index will not be able to optimize on queries against column b, column c, or columns b and c.

Keep in mind that while an index can speed up SELECTs, it can also can slow down INSERTs and UPDATEs. In addition, an index occupies disk space, which can be an issue not only for performance but also for backup / replication purposes. Just something you should keep in mind before adding 19,000 indexes to a database - there is definitely a happy medium between no indexes and too many.

Indexing in and of itself is a science, and is not easy to master without spending a lot of time analyzing different indexes and their impacts on performance and disk space. And I didn't even start getting into fragmentation, partitioning, clustered indexes, compound indexes...

What you use and what will work best depends on your schema, the nature of your queries, where your performance counts, the load on your system, hardware, levels of transactions, acceptable query times, type of application, etc. I strongly recommend running Index Profiler wizard, feeding it a SQL trace of the typical activity on your system. The wizard should identify which types of indexes will work best for your scenario.

What does the SQLSetConnectAttr Failed message mean?

195 requests - last updated Tuesday, November 13, 2001

In most cases, this error message is purely informational, and does not indicate that anything terrible has happened while connecting to the database. To avoid the error, you can check each error in the `conn.errors` collection -- if any number is 0, it can be ignored.

See [Q197459](#) and [Q241267](#) for more information.

Why do I get the error 'Command text was not set for the command object'?

194 requests - last updated Sunday, October 28, 2001

This error is usually caused by an empty SQL statement (and does not necessarily deal with the explicit ADODB.Command object). Here is a sample piece of code that will cause this error:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
  
    ' notice the flip flop of strSQL -> SQLstr  
  
    strSQL = "UPDATE table SET dt = CURRENT_TIMESTAMP"  
    conn.execute(SQLstr)  
  
    ' ...  
%>
```

Using Option Explicit would prevent errors like this from happening (well, actually, using Option Explicit would just cause a different error). Using quick and sensible [debugging practices](#) will help determine the cause of many SQL-related errors.

How do I present one-to-many relationships in my ASP page?

166 requests - last updated Wednesday, January 23, 2002

Often you need to show results from multiple tables in one unified interface. Let's say you have the following schema (geared to SQL Server):

```
CREATE TABLE artist
(
    [id] INT IDENTITY,
    [name] VARCHAR(32)
)

CREATE TABLE album
(
    [artist_id] INT,
    [name] VARCHAR(32)
)

INSERT INTO artist(name) VALUES('Michael Jackson')
INSERT INTO artist(name) VALUES('ABBA')
INSERT INTO artist(name) VALUES('Tragically Hip')

INSERT INTO album(artist_id,name) VALUES(1,'Bad')
INSERT INTO album(artist_id,name) VALUES(1,'Very Bad - Worst Hits')

INSERT INTO album(artist_id,name) VALUES(2,'Gold')

INSERT INTO album(artist_id,name) VALUES(3,'Self-Titled')
INSERT INTO album(artist_id,name) VALUES(3,'Up to Here')
INSERT INTO album(artist_id,name) VALUES(3,'Road Apples')
INSERT INTO album(artist_id,name) VALUES(3,'Fully Completely')
INSERT INTO album(artist_id,name) VALUES(3,'Day For Night')
INSERT INTO album(artist_id,name) VALUES(3,'Trouble at the Henhouse')
INSERT INTO album(artist_id,name) VALUES(3,'Live Between Us')
INSERT INTO album(artist_id,name) VALUES(3,'Phantom Power')
INSERT INTO album(artist_id,name) VALUES(3,'Music@Work')
```

The results you want in ASP are:

ABBA

Gold

Michael Jackson

Bad

Very Bad - Worst Hits

Tragically Hip

Self-Titled

Up to Here

Road Apples

Fully Completely

Day For Night

Trouble at the Henhouse

Live Between Us

Phantom Power

Music@Work

Now, what I see many people attempting in ASP is something like this (and I'll keep HTML simple for brevity):

```
<%  
    sql = "SELECT id,name FROM artist ORDER BY name"  
    set rs = conn.execute(sql)  
    do while not rs.eof  
        response.write rs("name") & "<p>"  
        sql2 = "SELECT name FROM album WHERE artist_id=" &  
            rs("id") & " ORDER BY name"  
  
        set rs2 = conn.execute(sql2)  
        do while not rs2.eof  
            response.write rs2("name") & "<br>"  
            rs2.movenext  
        loop  
        response.write "<br>"  
        rs.movenext  
    loop  
%>
```

There are much more efficient ways to do this than creating multiple recordsets and nesting them. This is what joins are for. Imagine the above code if you then had a table with the song titles on the album? And then another table listing the bands who have covered each song? And then a table further to that listing the albums of each of THOSE bands?

Creating nested recordsets is very inefficient. Let's look at the join solution to the above:

```
<%
    sql = "SELECT " &_
        "artistName = artist.name, " &_
        "albumName = album.name " &_
    "FROM " &_
        artist, " &_
        album " &_
    "WHERE " &_
        "artist.id = album.artist_id " &_
    "ORDER BY " &_
        "artist.name, " &_
        "album.name"

    currentArtist = ""
    set rs = conn.execute(sql)
    do while not rs.eof
        if rs("artistName") <> currentArtist then
            response.write rs("artistName") & "<p>"
            currentArtist = rs("artistName")
        end if
        response.write rs("albumName") & "<br>"
        rs.movenext
    loop
%>
```

One recordset, getting all your results, without causing extra strain on the database by executing multiple statements consecutively. One large recordset is always more efficient than multiple recordsets obtaining the same amount of data.

Now, one problem you might come across is, what if an artist has no albums, but you still want to show the artist name? Imagine adding the following artist, who couldn't possibly have any record deals in effect:

```
INSERT INTO artist(name) VALUES('Aaron Bertrand')
```

Now, the query and ASP code to still return this value is as follows (note how little it changes):

```
<%
    sql = "SELECT " &_
        "artistName = artist.name, " &_
        "albumName = ISNULL(album.name, '-') " &_
    "FROM " &_
        "artist " &_
    "LEFT JOIN " &_
        "album " &_
    "ON " &_
        "artist.id = album.artist_id " &_
    "ORDER BY " &_
        "artist.name, " &_
        "album.name"

    currentArtist = ""
    set rs = conn.execute(sql)
    do while not rs.eof
        if rs("artistName") <> currentArtist then
            response.write rs("artistName") & "<p>"
            currentArtist = rs("artistName")
        end if
        if rs("albumname") <> "-" then
            response.write rs("albumName") & "<br>"
        else
            response.write "No albums for this artist.<br>"
        end if
        rs.movenext
    loop
%>
```

We do a LEFT JOIN so that artists are included even if they have no matching records in the albums title.

Where can I get this 'Books Online' that people keep telling me about?

157 requests - last updated Monday, January 7, 2002

Books Online is fundamental documentation for SQL Server. If you are developing from a machine that does not have SQL Server installed, you can (and SHOULD) download this resource from

<http://www.microsoft.com/sql/techinfo/productdoc/2000/books.asp> ... the English version is 32MB, but trust me -- it is more than worth it.

Can I start IDENTITY values at a new seed?

137 requests - last updated Monday, January 7, 2002

This can be useful if you want to create an artificial gap between your current seed and your desired next identity value.

```
SET IDENTITY_INSERT [myTable] OFF
INSERT INTO [myTable] (id,other)
    VALUES(@NewSeed,'something')
SET IDENTITY_INSERT ON [myTable] ON
```

In this case, the id column will continue incrementing from the value of @NewSeed.

If you want to remove all entries in a table and start over at 1 (or a non-default seed), you can do one of two things:

```
DROP TABLE [myTable]
CREATE TABLE [myTable]
(
    -- Column definition
)

-- or

TRUNCATE TABLE [myTable]
```

Also, check out DBCC CHECKIDENT in Books Online.

Why does Enterprise Manager crash when I get an error in a stored procedure?

92 requests - last updated Thursday, January 10, 2002

After installing Visual Studio.NET betas, you may find that when you are writing stored procedures and you encounter an error, the EM crashes and aborts, rather than allowing you to correct the error.

There are a couple of workarounds. One is to use Query Analyzer or another tool (even ASP!) to create your stored procedures. Another is to delete the 'OANACACHE' value from the Environment Variables section of system properties.

Why do I get 'BOF or EOF' errors?

40 requests - last updated Wednesday, January 30, 2002

When doing searches or other SQL queries, you may have encountered this error:

```
ADODB.Field error '80020009'
```

```
Either BOF or EOF is True, or the current record has been deleted; the  
operation requested by the application requires a current record.
```

The most probable cause, of course, is that there is no record. For example, it would happen with the following code, if none of the records contained 'frank' in the fname column:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open <connection string>  
    set rs = conn.execute("SELECT lname FROM table WHERE fname LIKE  
'%frank%'")  
    do while not rs.eof  
        response.write rs("lname") & "<br>"  
        rs.movenext  
    loop  
>%
```

To prevent this error from "blowing up" your ASP page, you need to trap for the case where no records are there. The easiest way to do this is by adding the following lines:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open <connection string>  
    set rs = conn.execute("SELECT lname FROM table WHERE fname LIKE  
'%frank%'")  
    if not rs.eof then  
        do while not rs.eof  
            response.write rs("lname") & "<br>"  
            rs.movenext  
        loop  
    else  
        response.write "No matches."  
    end if  
%>
```


How do I time my T-SQL code?

36 requests - last updated Wednesday, January 30, 2002

This is for SQL Server specifically. With Access, you'll likely have to rely on the methods described in [Article #2092](#) ...

The first thing you can do is simply compare the difference between the timestamp BEFORE your query, and the timestamp AFTER. For example:

```
DECLARE @a DATETIME, @b DATETIME
SET @a = CURRENT_TIMESTAMP

DECLARE @i INT
SET @i = 0
WHILE @i < 10000
BEGIN
    SET @i = @i + 1
END
SET @b = CURRENT_TIMESTAMP
SELECT DATEDIFF(MS, @a, @b)
```

You can achieve similar results by running SQL Profiler, setting appropriate filters, and watching the Duration column as your query runs.

Finally, you can alter the above code slightly so that you see all of the durations on the messages tab of Query Analyzer:

```
SET STATISTICS TIME ON
-- query here
SET STATISTICS TIME OFF
```

Then if you look in Query Analyzer's Messages tab, you will see the number of milliseconds taken by each step in your query.

Obviously, this is much more useful for queries with a reasonable amount of unique queries, and doesn't do much good for code with loops. This particular STATISTICS option prints durations for every single operation

(each iteration of a loop is recorded), so there will be 10,000 messages, likely all stating 0 ms. This could really impact the time it takes to execute a query.

What you can do after this, to compare two queries (and perhaps get to the bottom of why one takes longer than the other), is to turn on Show Execution Plan (CTRL+K) and view that tab after your queries are finished. You'll be able to spot table scans and other operations with high I/O or CPU costs.

Schema: how do I retrieve the description property of a column?

27 requests - last updated Wednesday, January 30, 2002

Assuming you created a column in Access and added a description to it, use the following:

```
<%
    on error resume next
    Set c = Server.CreateObject("ADOX.Catalog")
    c.ActiveConnection = "Provider=Microsoft.Jet.OLEDB.4.0;" & _
        "Data Source=<path>\<file>.mdb"
    d =
c.Tables("<table>").Columns("<column>").Properties("Description").Value
    Response.Write "Description = " & d
    if err.number <> 0 then Response.Write "<" & err.description & ">"
    Set c = nothing
%>
```

In SQL Server, let's say you created a column like this:

```
CREATE TABLE dbo.TestTable
(
    id INT
)
```

Then you could add a description in the Enterprise Manager GUI, or you could use this code:

```
EXEC sp_addextendedproperty
    'MS_Description',
    '<Some description>',
    'user',
    dbo,
    'table',
    'T2',
    'column',
    id
```

Now, you can retrieve that value with the following code:

```
<%
    set conn = Server.CreateObject("ADODB.Connection")
    sql = "SELECT name,value FROM ::fn_listExtendedProperty" & _
        "NULL, 'user', 'dbo', 'table', 'T2', 'column', 'id'"
    set rs = conn.execute(sql)
    if not rs.eof then
        do while not rs.eof
            response.write rs(0) & " = " & rs(1)
            rs.movenext
        loop
    end if
%>
```

Note that the column name is surrounded in quotes when retrieving from the function, but not when it is passed to the stored procedure.

To get the extended properties for ALL columns in the table, just change 'id' to default or NULL (without quotes).

Why does AbsolutePosition return as -1?

22 requests - last updated Wednesday, January 30, 2002

This could be because the provider you selected doesn't support AbsolutePosition. But it is more likely that you are not opening the cursor with the correct properties. Make sure you are using a dynaset or snapshot cursor; this means that adOpenForwardOnly should be used in place of adOpenStatic, and the CursorLocation should be set to adUseClient.

How do I store objects or components in session/application variables?

17,455 requests - last updated Wednesday, September 27, 2000

Please don't.

Many people seem tempted to store objects in the session, so that they don't have to create instances on each page. This is particularly true for connection objects and recordsets.

They assume this is more efficient, but it is not. This is the absolute worst use of resources you can have (particularly with ADO objects) and will significantly reduce your application's scalability. See these articles for more details:

<http://www.microsoft.com/mind/1198/ado/ado.htm> (tip #6)

[Q176056](#) INFO: ADO/ASP Scalability FAQ

Here are some other KB articles that should help clarify the issues at hand (I hope you didn't expect this to be light reading):

[Q243544](#) INFO: Component Threading Model Summary Under Active Server Page

[Q191979](#) PRB: VB Component Not Marked Apartment Produces ASP 0115 Error

[Q243548](#) Design Guidelines for VB Components Under ASP

[Q243543](#) Single-Threaded Apartment Objects in Session or Application

Note that it is possible to safely store a recordset in the session, by first converting it to its array form using `GetRows()`.

DLL: How do I avoid 'Permission Denied' when re-compiling?

10,389 requests - last updated Sunday, October 28, 2001

Use this batch file to release IIS' lock on your DLL:

```
net stop iisadmin /y
net start w3svc
```

You may need to add start lines for other services such as smtpsvc or msftpsvc. The disclaimer of course, if you're worried about stopping your web site traffic: don't develop DLLs on production machines.

You may also find the need to use KILL.EXE, if iisadmin refuses to be shut down. KILL.EXE is found in the NT and Windows 2000 Resource Kits. As long as the .EXE is in your system's path, you can modify the above script as follows:

```
net stop iisadmin /y
kill iisadmin
net start w3svc
```

In Windows 2000, you can use a much faster process by issuing the following command (again, at a command prompt or in a batch file):

```
iisreset
```

You can also issue stop and start commands independently:

```
iisreset /stop

iisreset /start
```

If your object is hosted in MTS (or an application running in its own memory space), you should be able to just unload that application / package. Similarly, for objects hosted in COM+, shutting down the application from Component Services should unlock any holds IIS has on your DLL.

If you are developing your ASP files using Visual InterDev, then IntelliSense may be doing you a disservice. Since this feature actually hooks into your custom COM objects (once you've created them using their ProgID in a `createobject()` statement), this places a lock on the DLL similar to the one IIS places on it. So if you are editing an ASP file which calls the DLL in question, you can recompile without rebooting by simply closing the ASP file.

When does ASP release COM objects?

6,871 requests - last updated Sunday, August 13, 2000

Page-level

If you have page-level objects and are running IIS 4.0, they are not released when you issue the following command:

```
<%  
    set object = nothing  
%>
```

Page-level objects are NOT released until the page goes out of scope (and, by some reports, are not released at all if the object is not explicitly destroyed, as per above).

IIS 5.0 cleans this up quite a bit; since it releases the object THE INSTANT you set it to nothing, there is suddenly a great advantage to releasing it explicitly as early as possible.

Session-level

Session-level objects, unless you explicitly release them from the session yourself, are (allegedly) destroyed when the session ends. This depends on how the session ends, of course. See [Article #2078](#) for more information.

There are few scenarios where you should be using objects in session variables (see [Article #2053](#)). In about 99% of all cases, objects should be created and destroyed at the page level.

How do I detect browsers without components?

6,274 requests - last updated Thursday, October 4, 2001

We all know that to make a successful and attractive web site, we must strictly adhere to HTML 3.2 standards, avoiding all temptations to use any browser- or platform-specific tags and features.

Yeah, right. And 640k of RAM ought to be enough for anybody.

For the rest of us, we have to find innovative ways to present browser-specific content, yet still have it degrade gracefully for everyone else. This can be relatively straightforward for individual elements, such as ActiveX controls, cascading style sheets and even Java applets. But what if you want to present a certain paragraph only to IE4 users? or only let Netscape users see the contents of a specific <div> element? or make your body text 10pt for a Mac, and 9pt for a PC?

There is a way to do these things, without using COM objects, a database, or 200 tedious client-side document.write commands. All you need is a little familiarity with the user agent string of the browser(s) you wish to target.

Let's start with getting at that string in the first place. It is available in the server variable "http_user_agent" and can be accessed as follows (I convert this variable to lower case, in order to prevent ambiguity):

```
<%  
    myUA = Request.ServerVariables("HTTP_USER_AGENT")  
    ua = lcase(myUA)  
    Response.Write ua  
%>
```

This code will produce a string similar to one of the following:

```
mozilla/4.0 (compatible; msie 5.5; windows nt 5.0)  
mozilla/4.5 [en] (win98; i)
```

Be aware that there are literally thousands of unique user agent strings. Thankfully, the ones you will likely be most concerned with share common characteristics. Also, depending on the purpose of your discrimination, most can be grouped into similar categories.

Let's take DHTML for example. Say you want to have a headline that, when clicked on, presents an "abstract" and a link to more information (instead of linking the user right away). The code would look something like this:

```
<a href="#top" onClick="myDiv.style.display='';return false;">This is a
link</a>
<div style="display:none" id="myDiv"><br>This is an in-depth description
of the link,
as well as <a href="#top">an actual link</a>.</div>
```

In IE3 and NN3, the description and link will always be visible, and in Netscape 4 it will never be visible. In most cases the code above will generate a scripting error as well, which is not pretty. However, in IE4 or greater, the description will be hidden until the user clicks on the headline. Wouldn't it be nice if you had the ability to regulate that code, and ONLY insert the extra DHTML snippets for IE4 and IE5, preventing errors and other weird things in Netscape?

Here's what you can do, based on the code above. Since all IE4+ user agent strings (including AOL and NeoPlanet versions) are remarkably similar, you can search for "msie 4" or "msie 5" in the above strings. If this string is found, you know that your visitor is using IE4 or better, and so it is safe to include your DHTML code. For example:

```
<%
myUA = Request.ServerVariables("HTTP_USER_AGENT")
ua = lcase(myUA)
ie4 = instr(ua,"msie 4")
ie5 = instr(ua,"msie 5")
if ie4>0 or ie5>0 then
' You can include DHTML code:
%>

<a href="#" onClick="myDiv.style.display='';return false;">This is a
link</a>
<div style="display:none" id="myDiv"><br>This is an in-depth description
of the link,
as well as <a href="#top">an actual link</a>.</div>

<% else ' Don't include DHTML code: %>
```

```
<a href="#top">This is a link</a><br>This is an in-depth description of  
the link.  
  
<% end if %>
```

If you find that certain script elements you use only work on certain platforms (e.g. Win32), you can add extra search elements into your discriminatory code, searching for key elements like "x11", "mac", "win95", "win98", or "winnt" -- the possibilities for this kind of browser detection are really only limited by your imagination and creativity. I use it almost religiously when writing any ASP application... from scripting functions, to adding CSS support, to deciding whether or not to tell people they're using an outdated browser.

If manual browser detection isn't for you, I strongly recommend you take a look at CyScape's [BrowserHawk](#) before you resign yourself to using Browscap. BrowserHawk is a very powerful server-side component which makes browser detection a breeze and, unlike Browscap, maintains itself as new browser versions are released. If you are using Browscap, however, make sure you keep it up to date as new browsers are released.

How do I determine if a COM object is installed?

4,182 requests - last updated Tuesday, May 8, 2001

As long as you know the ProgID (e.g. "Scripting.FileSystemObject"), you can easily determine if a COM object is installed and available for you to use. In the following example, I am going to send an e-mail *if* ASPMail ("SMTPsvg.Mailer") is installed and registered:

```
<%  
    On error resume next  
    Set Mailer = Server.CreateObject("SMTPsvg.Mailer")  
    if err.number <> 0 then  
        Response.Write "ASPMail is not installed."  
    else  
        Mailer.RemoteHost = "<some remote SMTP host that allows relay>"  
        Mailer.FromName = "Me!"  
        Mailer.FromAddress = "me@me.com"  
        Mailer.Subject = "Test"  
        Mailer.BodyText = "Hello"  
        Mailer.Addrecipient "you@me.com", "you@me.com"  
        if not Mailer.sendMail then Response.Write mailer.response  
        set Mailer=nothing  
    end if  
>%
```

If you're not making code decisions based on the results of the check, you can just print out a result. For example I have a status ASP page I check on all servers we add to our farm, to make sure all COM objects are installed, registered, licensed where applicable, and work as coded. Here is the type of code I use:

```
<%  
    On error resume next  
    if isObject(Server.Createobject("SMTPsvg.Mailer")) then  
        response.write "ASPMail is installed."  
    else  
        response.write "ASPMail is not installed."  
    end if  
>%
```

Of course, knowing the object is there is only half the battle sometimes; CDONTS is particularly gnarly to get working properly, and FileSystemObject can be extremely permissions-sensitive.

Why does Browscap give me 'unknown' or tell me IE is Netscape?

3,882 requests - last updated Tuesday, December 11, 2001

Your Browscap.ini file is probably outdated, or you are using an obscure browser. Unfortunately, developers are pretty much left on their own these days when it comes to Browscap.ini. We have a fairly up-to-date version, including IE 6.0 and Netscape 6.2. Of course, this file is provided "as is" and comes with no support whatsoever. If you have problems with it, you can use Juan Llibre's version, which is a bit more reliable for some systems, but isn't as up-to-date. You could download both and make your own adjustments you may see fit.

CyScape makes a great browser detection component called BrowserHawk -- reducing the need for much of the manual coding to provide proper browser detection. You can read about its advantages over Browscap.ini at <http://cyscape.com/products/bhawk/bcadv.asp>.

Why do I get 'Server.CreateObject Access Error'?

2,892 requests - last updated Monday, January 22, 2001

If this is happening with your own DLL, or a third-party component, make sure IUSR_<machine_name> has access rights to the DLL. See [Q198432](#) for more info. With IIS 5.0, you might also want to make sure that the application which is using the object is set to LOW under 'Application Protection' in Internet Services Manager.

Why do I get 'Not Enough Storage Is Available to Complete This Operation'?

2,665 requests - last updated Tuesday, May 1, 2001

This error can be caused by various things. You should see the following KB articles to see if any of these situations apply to your problem:

[Q248668](#) - BUG: "Not Enough Storage Is Available to Complete This Operation" with Oracle OLE DB

[Q189782](#) - BUG: RegQueryValueEx() Fails When lpValueName Is NULL

[Q182423](#) - FIX: "Not Enough Storage is Available..." Error with ADO

[Q174776](#) - Index Server Queries Return Not Enough Storage Is Available Error

[Q254759](#) - BUG: ListAvailableServers Method of the SQLDMO.Application Object Causes Error 0x800A000E

If this is happening on a data connection page, make sure you're using the right version of MDAC components. Nick Heppleston tells us:

"Seems to have been due to the fact that i was attempting to create an ADO object using MDAC 2.6, when MDAC 2.5 was the highest installed version available on the server."

If this is your scenario, install the latest [MDAC components](#) on your server.

What does 'Invalid Class String' mean?

2,227 requests - last updated Tuesday, May 8, 2001

This error is usually associated with trying to create an instance of a COM object using a ProgID that is not actually registered on the machine. Common causes for this are:

1. forgetting to register the object using regsvr32
2. fat-fingering the ProgID (e.g. "CDNOTS.NewMial")
3. not realizing that the object is not actually installed
4. using an MSWC or IIS sample component that is not installed (see [Q249290](#) for more info)

See [Article #2135](#) for information on determining if a COM object is installed on your server.

How do I generate PDF files from ASP?

2,039 requests - last updated Thursday, November 1, 2001

There are several components out there that will help you generate PDF files dynamically - whether based on simple ASP variables, database queries or user input.

[Acrobat FDF Toolkit](#) (and a good companion article at [15 Seconds](#))

[ActivePDF](#)

[Appligent](#)

[PDFLib](#)

[RPT Software](#)

You may also want to snoop around this resource site:

<http://www.pdfzone.com/>

Where can I get a shopping cart for my web site?

736 requests - last updated Tuesday, January 22, 2002

If you want to roll your own cart, can't deploy custom COM objects on your web site, or must not support cookies / session variables, you can look at the very simplistic sample code at <http://www.aspfaq.com/cart/> to get you started ... nothing beats the education (and flexibility!) you gain from writing your own application. However if you lack the time or ability, here is a list of free and commercial components, as well as some pure ASP solutions. I have used ActiveCart and it is fairly well written; I have also heard very good things about IISCart.

[a.shopKart](#)

[A+ Store E-Commerce](#)

[A-Cart](#)

[AceFlex B2C](#)

[ActiveCart 3.0](#)

[Affilius Shopping Cart](#)

[ASP 101 Sample Code](#)

[ASPCart](#)

[ASP Shop Plus](#)

[ASP Simple Store](#)

[BridgeCart](#)

[BugMall Shopping Cart](#)

[CactuShop Shopping Cart](#)

[Cart32](#)

[CartEasy](#)

[Charon Cart 2.0.2](#)

[ClickCart!](#)

[Comersus Cart](#)

[CyberShop](#)

[CyberStrong eShop](#)

[DevInteractive's Web-Cart](#)

[Envision eStore](#)

[iHTML Merchant](#)

[IISCart](#)

[Line9 Lite](#)

[Line9 Pro](#)

[MetaCart Free](#)

[MetaCart2 \(PayPal\)](#)

[opuslabs' ShopShop.Cart](#)

[QuadComm Q-Shop](#)

[SalesCart](#)

[Sams' ASP in 24 Hours Sample Code](#)

[StoreFront 5.0](#)

[Ultra Cart II](#)

[Virtual Brochure Cupboard](#)

[VP-ASP Cart](#)

[WebStores Developer](#)

[Xtensible Shopping Bag](#)

[ZmeY Shopping Cart](#)

How do I pass server-side values to a client-side ActiveX control?

493 requests - last updated Tuesday, October 30, 2001

Many people go way overboard and try to dream up elaborate ways to have a client-side ActiveX control communicating with the server to retrieve values. As long as these values are not dependent on user activities AFTER the ActiveX control has been loaded, try something like this:

```
<%
    strValue = "some string"
    intValue = 5
    Response.Write("<OBJECT clsid=[blah blah]>")
    Response.Write("<PARAM NAME=INT VALUE=\""&intValue&"\">")
    Response.Write("<PARAM NAME=INT VALUE=\""&intValue&"\">")
    Response.Write("</OBJECT>")
%>
```

ANd now in server-side JavaScript:

```
<script language=JavaScript runat=server>

    var strValue = "some string";
    var intValue = 5;
    Response.Write("<OBJECT clsid=[blah blah]>");
    Response.Write("<PARAM NAME=INT VALUE=\"&intValue&\">");
    Response.Write("<PARAM NAME=INT VALUE=\"&intValue&\">");
    Response.Write("</OBJECT>");

</script>
```

Can I code ISAPI filters / extensions with Visual Basic?

450 requests - last updated Tuesday, November 6, 2001

Not directly, because ISAPI filters and extensions require functionality only found in C++ (or Delphi). For more information, see [Developing ISAPI Extensions and Filters](#) at MSDN Online.

However, there are some links out there that allegedly help make this possible (though the overhead of hitting the VB runtime with every request to your web server is something you definitely want to weigh in your testing). You can see some of Microsoft's benchmarks [here](#).

[VB Bridge](#)

[SpyWorks](#)

[OLEISAPI](#) (outdated)

I have not tried any of these methods, so do not vouch for their validity. Personally, I would prefer to wait for VB.NET, which is supposed to support this functionality more directly, than to use a duct tape solution. YMMV.

Where can I get an updated Browscap.ini?

440 requests - last updated Tuesday, December 11, 2001

Many people view MSWC.BrowserType as the holy grail, taking care of all of their browser detection issues. I'm not going to lie to you: Browscap.ini is a PITA. You have to update this file with umpteen new entries every time a new browser version is released.

There used to be several places where you could download a new version, which someone else updated, pretty much within days of a new User Agent hitting the logs. Microsoft denied responsibility for this file almost immediately after it was born (the version that ships with XP has User Agent strings containing "Windows 2000" and its highest Navigator version is 4.0 Beta 2!); Cyscape has not updated theirs since February of 2000; and asptracker.com seems to have been bought out by the pornlords.

Understandable. Given the explosion of browser versions, and the public availability of betas of betas of betas, it's simply too time-consuming to sit there updating a file with new versions, and making sure your new entries don't step on the feet of any already in the file.

We're not going to promise to keep this file hot and oven fresh either... it really is a pipe dream. But due to a recent barrage of posts in the newsgroups, we recently spent several hours compiling an updated version. We incorporated IE 6 on all platforms (including Windows XP and Windows ME), as well as Netscape 6.0, 6.01, 6.1 and 6.2 on Windows, *nix and Mac platforms. In addition, we added support for IE 4.5, 5.0 and 5.1 on MacPPC.

Anyway, the file is a whopping 136kb now, and you can [download it](#) from us. Feel free to modify, redistribute, and use as you wish. If you find something we missed, or think we've made a mistake in the file, please [let us know](#) and we'll address it...

If you have problems with it, you can use [Juan Llibre's version](#), which is a bit more reliable for some systems, but isn't as up-to-date. You could download both and make your own adjustments that you may see fit.

Personally, I'm at the point where I'm ready to eliminate most of the FUD in that file and make it much more compact. But then again, I believe there are [better ways](#) to handle browser detection.

How do I upload files from the client to the server?

20,091 requests - last updated Monday, January 21, 2002

For your users to upload files, you must provide them with the following interface:

```
<form method=POST action=handler.asp enctype='multipart/form-data'>
<input type=file name=filename>
<input type=submit value=' Go >> '>
</form>
```

Keep two things in mind: (1) users of IE 3.02 or lower will need a [Microsoft add-on](#) to facilitate file uploads, and (2) the enctype of the form precludes you from accessing non-file form elements directly (but most components deal with this).

Now, to handle the uploaded file(s) from ASP, you typically need a component:

[ASPUpload](#)

[ASPSmartUpload](#)

[ABCUpload](#)

[ASP Simple Upload](#)

[Infomentum ActiveFile](#)

[MiniUpload](#)

[MS Posting Acceptor](#)

[SAFileUp](#)

[Win ASP Up/Download Component](#)

There are also a few ways to upload files without traditional 3rd party components:

[ASP 101](#)

[aspfaqs.com](#)

[ASPFree](#)

[ASPZone](#)

[PureASP](#)

[StarDeveloper](#)

For exact syntax to handle the incoming file(s), please see the documentation and sample code that will be available with whatever choice you make.

How do I change the target frame or window of a response.redirect?

18,834 requests - last updated Saturday, October 27, 2001

With client-side code, such as `top.<target>.location.href= ...`

ASP is on the server and does not "see" frames.

Instead of `response.redirect`, use code like this:

```
<%  
    url = "http://wherever.com/"  
    response.write("<script>" & vbCrLf)  
    response.write("parent.frameName.location.replace('" & url & "');")  
    response.write(vbCrLf & "</script>")  
%>
```

Or this:

```
<%  
    url = "http://wherever.com/"  
    response.write("<script>" & vbCrLf)  
    response.write("parent.frameName.location.href='" & url & "';")  
    response.write(vbCrLf & "</script>")  
%>
```

I prefer the `replace()` function because it doesn't muck up the history list. I've also found that using the following syntax creates headaches on certain 3.0 browsers:

```
<%  
    url = "http://wherever.com/"  
    dest = "frameName.location.href='" & url & "'" & vbCrLf  
    response.redirect("javascript:" & dest & ";")  
%>
```

So I would avoid using that one unless you're in a controlled environment or you've tested it across your target audience.

If you want to open a new window, you can use:

```
<%  
    url = "http://wherever.com/"  
    response.write("<script>" & vbCrLf)  
    response.write("window.open('" & url & "');" & vbCrLf)  
    response.write("</script>")  
%>
```

If it is a form you're submitting to, you can use the following (either for a frame or a new window):

```
<%  
    url = "http://wherever.com/"  
    dest = "<form method=post action='" & url & "' target=frameName>"  
    ' for a new window:  
    'dest = "<form method=post action='" & url & "' target=_blank>"  
    response.redirect(dest)  
%>
```

How do I validate a credit card number in ASP?12,552 requests - last updated Thursday, July 27, 2000

While with ASP alone you can't verify that a credit card belongs to this person, that it isn't stolen, that the credit is good or that the purchase price doesn't exceed the card's limit -- you can verify that it is a possible number before bothering to waste transaction time with a true verification authority.

```
<%
function isCreditCard(cardNo)
    isCreditCard = false
    lCard=len(cardNo)
    lC=right(cardNo,1)
    cStat=0
    for i=(lCard-1) to 1 step -1
        tempChar= mid(cardNo,i,1)
        d=cint(tempChar)
        if lcard mod 2 = 1 then
            temp=d*(1+((i+1) mod 2))
        else
            temp=d*(1+(i mod 2))
        end if
        if temp < 10 then
            cStat = cStat + temp
        else
            cStat = cStat + temp - 9
        end if
    next
    cStat = (10-(cStat mod 10)) mod 10
    if cint(lC) = cStat then isCreditCard = true
end function

' ***** AS A TEST *****
'
' 4111111111111111 should pass (test number)
' 4111111111111112 should fail
'
```

```
response.write("1:" & isCreditCard("4111111111111111") & "<br>")  
response.write("2:" & isCreditCard("4111111111111112") & "<br>")
```

```
'  
' ***** TRY YOUR OWN *****  
'
```

%>

How can I mimic a client-side POST from ASP?

8,122 requests - last updated Friday, June 8, 2001

Often you need to POST information to an ASP or other script without relying on the user to click a Submit button. There are a few ways to work around this:

1. Write a component. We have one that does this (among many other things); however, it is proprietary, and as such I can't distribute source. I will tell you it is an ATL component and makes a low-level connection.
2. Use an existing HTTP component, such as [AspHTTP](#) or MSXML (described in [Article #2173](#))
3. "Fake" a POST operation with client-side script, as in the following:

```
<form
  method=post
  action='<script>'
  name='myform'>

  <input
    type=hidden
    name='myname'
    value='myvalue'>

</form>

<script>
  window.onload = document.myform.submit();
</script>
```

Note that it's fairly easy to build such a form with ASP, simply by [iterating through the incoming form elements](#)

How do I iterate through a form collection?

7,345 requests - last updated Sunday, October 28, 2001

It's kind of a pain to list all of the elements from a submitted form by referring to each one individually by name, e.g.:

```
<%
    response.write("a = " & request.form("a") & "<br>")
    response.write("b = " & request.form("b") & "<br>")
    response.write("c = " & request.form("c") & "<br>")
    .....
    response.write("n = " & request.form("n") & "<br>")
%>
```

There's an easy way to manipulate this, particularly when you're troubleshooting and just want to write out all the variables to the screen (or to a comment in the page). The following code will iterate (haphazardly, mind you) through each form element:

```
<%
    for each x in Request.Form
        Response.Write("<br>" & x & " = " & Request.Form(x))
    next
%>
```

And in JScript:

```
<%
    for(f = new Enumerator(Request.Form()); !f.atEnd(); f.moveNext())
    {
        var x = f.item();
        Response.Write("<br>" + x + " = " + Request.Form(x));
    }
%>
```

What I mean by haphazardly is that, while this is a very easy way to get all of the elements in three lines, they

will not be in the order you expect... they'll be all over the place, and I have yet to see a valid explanation of how the order is derived.

So another way to do this iteration actually preserves the order of the original form, by cycling through the form items numerically (there is a count property of the form object). Here it is in VBScript:

```
<%  
    for x = 1 to Request.Form.count()  
        Response.Write(Request.Form.key(x) & " = ")  
        Response.Write(Request.Form.item(x) & "<br>")  
    next  
%>
```

And in JScript:

```
<%  
    for (x = 1; x <= Request.Form.count(); x++)  
    {  
        Response.Write(Request.Form.key(x) + " = ");  
        Response.Write(Request.Form.item(x) + "<br>");  
    }  
%>
```

[This technique also works for the QueryString and ServerVariables collections - in the ServerVariables collection, this doesn't change anything, since they're already ordered by iteration.]

Personally, I would have chosen "name" and "value" over "key" and "item." Of course, I don't have as much influence over Microsoft as some of my co-workers seem to think. :-)

How do I validate forms using server side script?

6,622 requests - last updated Sunday, February 25, 2001

Jay McVinney wrote an article on server side form validation for Wrox's ASPToday.com site. You can find it [here](#), if you're willing to shell out \$50:

[Professional Form Validation](#)

I'm using <... value=<%=value%>>, why is it truncating at the first space?

4,109 requests - last updated Tuesday, July 11, 2000

When you insert values into textboxes dynamically, you have to remember the same rules that hold true for basic HTML. When you use a string, you must store it within quotes to prevent premature concatenation. :-)

```
<... value=<%=value%>>
```

Becomes:

```
<... value="<%=value%>">
```

One thing you want to be careful of is embedded quotes. You might try using ' or " as the delimiter, and eliminating the other for possible entry (using client-side validation of course; the value is destroyed before you'd be able to validate for it on the server side). If you have to allow both ' and ", you could consider using the rarely used "back-apostrophe" (`).

Which is faster: Request("item") or Request.Form("item")?

3,783 requests - last updated Friday, March 16, 2001

According to Microsoft, you should ALWAYS use the complete name of the collection you are retrieving items from. For more information, read the following resource in its entirety:

Request Object

A lot of people leave out the actual collection name, merely putting request("item") either out of laziness or because they're not sure which collection the value will come from. In my opinion, it is better programming practice to either (a) use one method exclusively, or (b) do the following in such cases where you can't avoid using multiple submission methods:

```
<%  
    item = Request.QueryString("item")  
    if item = "" then  
        item = Request.Form("item")  
    end if  
%>
```

(Note: this is more efficient than querying for Request.ServerVariables("REQUEST_METHOD"), since the ServerVariables collection is a significant performance hit.)

Why does my form variable become 'value, value' instead of 'value'?

3,308 requests - last updated Tuesday, July 11, 2000

This is usually a case of multiple form fields on the previous page with the same name. For example, if you have a form with the following:

```
<input type=text name=a value="whatever">
<input type=text name=a value="whatever else">
```

When you do a request("a"), it's actually going to return the following:

```
whatever, whatever else
```

If this happens, scan through your form looking for multiple instances of that input field name.

How do I retrieve the name of the form that was submitted?

3,003 requests - last updated Sunday, July 9, 2000

The name of the form is not passed with the form collection. You can do one of two things:

1. Use a hidden element in each form that will go to the same page, this way you can determine the form that was submitted. This should be sufficient, unless you don't have control over the submitting forms. If you don't, you have to explain to the people who DO have control over them, that you need some way to distinguish their requests.
2. Use `Request.ServerVariables("HTTP_REFERER")` to determine what page the request came from, which should help you determine which form it was. `HTTP_REFERER` is unreliable, so I don't recommend this one too highly.

What is the size limit of a posted FORM field?

2,109 requests - last updated Tuesday, January 9, 2001

Any request element is limited to ~102kb. If you exceed this limit, you may get 80000009 or 80004005 errors.

Microsoft has a few workarounds listed in [Q273482](#) (note the warnings regarding usage of the code).

How do I cause/prevent ENTER being used to submit a form?

1,604 requests - last updated Monday, March 26, 2001

Rather than try to reproduce it here, take a look at this great article:

<http://ppewww.ph.gla.ac.uk/%7Eflavell/www/formquestion.html>

When I'm uploading files, why can't I access the request.form collection?

1,309 requests - last updated Thursday, June 28, 2001

You will get errors from IIS in both of the following cases:

- You try to access the form collection (request.form) after calling request.binaryread, or
- You try to access the incoming binary stream after calling request.form.

The errors you receive are typically one of the following:

```
Request object error 'ASP 0206 : 80004005'  
Cannot call BinaryRead after using Request.Form collection
```

or

```
Request object error 'ASP 0206 : 80004005'  
Cannot call Request.Form collection after using BinaryRead
```

The two major commercial upload components have their own .form collection that you can call, and this is found in their documentation:

`ASPUpload`

`SA-FileUp`

Dundas.Upload, a free upload control, also has this capability:

`Dundas.Upload`

If you're using one of the other components, contact the vendor; if you have rolled your own component, well... you may be in for more of a time investment than you thought. :-)

How do I perform spell checking from a web page?

737 requests - last updated Tuesday, November 6, 2001

When a user enters data, it'd be nice if you could find possible typos in their text and offer suggestions. Here are some articles / tools that will help you do that:

[ASPFree.com](#)

[Chado SpellServer](#)

[Don's Easy Spell Checker](#)

[MSDN Library](#)

[Planet Source Code](#) (IE only)

[TCP/IQ Spell Checker](#)

[Wintertree Spelling Server](#)

[XDE's Java Spell Checker](#)

Note that some of these solutions require licenses for Microsoft Word.

What is the limit on Form / POST parameters?

696 requests - last updated Tuesday, November 13, 2001

Unlike QueryString data, POSTed form data has a very high number of allotted characters. This is because the data is transferred in the headers and not in the URL.

Note that there is no limit on the number of FORM elements you can pass via POST, but only on the aggregate size of all name/value pairs.

While GET is limited to as low as 1024 characters, POST data is limited to 2 MB on IIS 4.0, and 128 KB on IIS 5.0. Each name/value is limited to 1024 characters, as imposed by the SGML spec.

See [Q260694](#) to learn how to adjust the limits of POST data (this deals with adding/modifying MaxClientRequestBuffer in the registry).

What is the limit on QueryString / GET / URL parameters?

659 requests - last updated Tuesday, November 13, 2001

RFC 2068 states:

Servers should be cautious about depending on URI lengths above 255 bytes, because some older client or proxy implementations may not properly support these lengths.

The spec for URL length does not dictate a minimum or maximum URL length, but implementation varies by browser. On Windows: Opera supports ~4050 characters, IE 4.0+ supports exactly 2083 characters, Netscape 3 -> 4.78 support up to 8192 characters before causing errors on shut-down, and Netscape 6 supports ~2000 before causing errors on start-up.

Note that there is no limit on the number of parameters you can stuff into a URL, but only on the length it can aggregate to.

Keep in mind that the number of characters will be significantly reduced if you have special characters (e.g. spaces) that need to be URLEncoded (e.g. converted to the sequence '%20'). For every space, you reduce the size allowed in the remainder of the URL by 2 characters - and this holds true for many other special characters that you may encode before sending the URL to the client.

Keep in mind, also, that the SGML spec declares that a URL as an attribute value (e.g.) cannot be more than 1024 characters. Similarly, the GET request is stored in the server variable QUERY_STRING, which can have similar limitations in certain scenarios.

If you are hitting a limit on length, you should consider using POST instead of GET. POST does not have such low limits on the size of name/value pairs, because the data is sent in the header, not in the URL. The limit on POST size, by default, is 2 MB on IIS 4.0 and 128 KB on IIS 5.0. POST is also a little more secure than GET -- it's tougher (though not impossible) to tinker with the values of POSTed variables, than values sitting in the querystring.

See [Article #2223](#) for more information on using POST to overcome limitations on length.

How do I disable certain FORM elements?

527 requests - last updated Thursday, November 1, 2001

You can use the DISABLED attribute to turn off input for elements, for example:

```
<INPUT TYPE=TEXT NAME=foo DISABLED VALUE='bar'>
```

One side effect is that this attribute is not recognized by Netscape, so those users will still be able to edit the text. Also, FORM elements marked as "disabled" are removed from the collection, so the page you're posting to won't be able to collect the value (a messy workaround would be to also place the value in a HIDDEN element).

A workaround for all of this is to use the READONLY attribute, for example:

```
<INPUT TYPE=TEXT NAME=foo READONLY VALUE='bar'>
```

This will solve both side effects mentioned above. However, some have noted that this doesn't change the appearance of the field (it still *looks* editable). To do this also, you can add a style to the field (which, admittedly, will only work in certain browsers):

```
<INPUT TYPE=TEXT NAME=foo READONLY VALUE='bar'  
  STYLE='color:#999999;background:#DEDEDE'>
```

How do I pass x-y coordinates to ASP, after the user clicks an image?

399 requests - last updated Tuesday, October 30, 2001

Use an image input type as your submit button. With the following code:

```
<form method=post action=receiver.asp>
  <input type=image name=coords width=300 height=100>
</form>
```

The receiving page can do this:

```
<%
  Response.Write("The coordinates were: " & Request.Form("coords.x"))
  Response.Write(", " & Request.Form("coords.y") & ".")
%>
```

How do I make form fields read-only?

236 requests - last updated Monday, January 7, 2002

Here are three ways to make form fields read only:

```
<input type=text READONLY value='Do not touch'>  
  
<input type=text DISABLED value='Do not touch'>  
  
<input type=text value='Do not touch' onfocus='this.blur();'>
```

The first two require "recent" browsers (left as an exercise to the reader); the third requires a JavaScript-enabled browser.

How do I disable IE's Autocomplete feature?

230 requests - last updated Monday, January 7, 2002

While this isn't an ASP question per se, it is often requested by developers creating an ASP site. Sometimes you just don't want IE to remember previous entries in an input field. You can turn this feature off as follows:

```
<INPUT TYPE="text" AUTOCOMPLETE="off">
```

You can also turn it off at the form level, like so:

```
<FORM AUTOCOMPLETE="off">
```

How can I programmatically interfere with the INPUT TYPE=FILE element?

218 requests - last updated Monday, January 7, 2002

When uploading a file, users are constantly asking if they can programmatically populate the path in an INPUT TYPE=FILE element. The fact is, users must input this file themselves by typing it in manually or using the provided Browse... button. Otherwise, it would be fairly trivial for malicious users to steal files from users' hard drives...

When I have multiple submit buttons, how do I tell which was clicked?

140 requests - last updated Friday, January 25, 2002

You can use a hidden input type, coupled with a client-side handler that intercepts the submit.

```
<form method=post onsubmit="return false;"
      name=form1>

<input type=text name=bob>

<input type=hidden name=buttonChoice>

<input type=button value="Choice 1"
      onclick='setButton("Choice1");'
      style='cursor:pointer'>

<input type=button value="Choice 2"
      onclick='setButton("Choice2");'
      style='cursor:pointer'>

</form>

<script>
function setButton(s)
{
    document.form1.buttonChoice.value = s;
    document.form1.submit();
}
</script>

<%
    for each x in request.form
        response.write "<p>" & x & " = "
        response.write request.form(x)
    next
%>
```

How do I dynamically include files?

18,853 requests - last updated Tuesday, August 15, 2000

One of the greatest obstacles faced by ASP developers is the ability to dynamically include files. Since `#include` directives are processed BEFORE the ASP code, it is impossible to use if/else logic to include files.

Or is it?

Depending on what you are doing within your include files, and how many you are including, it IS possible to use if/then logic to make use of includes. While it is not feasible for all situations, and it is often an inefficient solution, it can occasionally be quite a handy workaround.

Let's start with two sample HTML files, 1.htm and 2.htm. For the sake of simplicity, they contain very simple code:

```
<!-- 1.HTM: -->
<font color=#ff0000>This is 1.htm</font>

<!-- 2.HTM: -->
<font color=#0000ff>This is 2.htm</font>
```

Now, let's set up some conditional includes! For this example, we'll assume you want to include the file 2.htm if your page is passed a parameter of 2, otherwise include 1.htm. Here is an example of how you could accomplish this task:

```
<%
  if request.querystring("param")="2" then
%>
    <!--#include file="2.htm"-->
<%
  else
%>
    <!--#include file="1.htm"-->
<%
  end if
%>
```

Now try accessing the page in these three ways, and experiment with the results:

`http://yourserver/file.asp?param=1`

`http://yourserver/file.asp?param=2`

`http://yourserver/file.asp`

Of course you can perform this kind of include logic based on various conditions, such as the date, the time, or the user's browser.

Please note that in the above example, BOTH include files are processed. So, the more options you have, the less efficient this kind of solution will be. When the number of possible includes start getting a bit high, you could try something like this:

```
<%  
    if request("param")="2" then  
        filespec = "2.htm"  
    else  
        filespec = "1.htm"  
    end if  
    filespec = server.mapPath(filespec)  
    scr = "scripting.FileSystemObject"  
    set fs = server.createobject(scr)  
    set f = fs.openTextFile(filespec)  
    content = f.readall  
    set f = nothing  
    set fs = nothing  
    response.write(content)  
%>
```

The FileSystemObject is useful for many things, and it fits into the dynamic include paradox quite nicely.

IIS 5.0 / ASP 3.0 supports "dynamic includes" with two new methods:

```
<%  
    server.transfer filename  
    server.execute filename  
%>
```

If you have IIS 5.0 at your disposal (IIS 5.0 and ASP 3.0 will ONLY run on Windows 2000), look these methods up in the VBScript documentation. They can be handy for a quick and dirty solution to the dynamic include problem.

Where can I find info on working with files and FileSystemObject?

14,744 requests - last updated Tuesday, August 15, 2000

Here is Microsoft's starting point for FileSystemObject:

<http://msdn.microsoft.com/library/en-us/script56/html/FSOoriFileSystemObject.asp>

There are samples for creating, copying, deleting and renaming files, as well as reading and appending the text within them.

If you are not running Windows 2000 or Windows XP, make sure you have the [latest scripting engine](#) before trying any of these samples. Several methods and properties of the FileSystemObject were not available in the original implementation.

How do I create / manipulate images from ASP?

8,184 requests - last updated Wednesday, October 31, 2001

There are a few components that allow you to do this; here are two of them:

[ShotGraph](#)

[ASPIImage](#)

The following components are specialized for creating charts from ASP:

[PopChart Image Server](#)

[Chart FX](#)

[DundasChart](#)

[IntrChart](#)

The following free component will tell you the properties of a local image file:

[ImageSize](#)

Finally, you can determine the size of an image without a component.

<http://www.learnasp.com/learn/graphicdetect.asp>

I found this script a bit buggy with JPG files produced by certain filters in Photoshop. Also, thanks to Bryan O'Malley and Thomas Honoré Nielsen, here is a correction of the ReadJpg function from the above link:


```

Function ReadJPG(file)
    Const maxJpegSearch = 2048
    Dim fso, ts, s, HW, nbytes, x, SOF
    HW = Array("", "")
    Set fso = CreateObject("Scripting.FileSystemObject")
    Set ts = fso.OpenTextFile(Server.MapPath("/") & file), 1
    s = ts.Read(maxJpegSearch)
    ts.Close
    for x = 1 to Len(s) - 1
        if Asc(Mid(s, x, 1)) = &hFF then
            if Asc(Mid(s, x + 1, 1)) >= &hC0 AND _
                Asc(Mid(s, x + 1, 1)) <= &hCF AND _
                Asc(Mid(s, x + 1, 1)) <> &hC4 then
                SOF = x
                exit for
            end if
        end if
    next
    if SOF > 0 then
        s = Mid(s, SOF + 5, 4)
        HW(0) = HexToDec(HexAt(s,3) & HexAt(s,4))
        HW(1) = HexToDec(HexAt(s,1) & HexAt(s,2))
    else
        HW(0) = -1
        HW(1) = -1
    end if
    ReadJPG = HW
End Function

```

How do I make the filename correct for the client, when using binaryWrite?

6,017 requests - last updated Saturday, April 28, 2001

If you have an ASP file that dynamically produces files in binary for download, you've probably noticed that when the client saves the file, it gets renamed to yourfile.asp instead of thefile.ext. Here's how you can avoid this... before sending the response.binarywrite command, issue this:

```
<%  
    fn = "thisfile.ext"  
    Response.AddHeader "Content-Disposition","attachment;filename=" & fn  
    ...  
    response.binarywrite(binarydata)  
%>
```

Note that some 3rd-party download managers will still override this setting, and save the file as yourfile.asp. You can try these URL re-writing utilities to overcome this problem:

[IISRewrite](#)

[URLReplacer](#)

How do I sort a file list alphabetically?

5,634 requests - last updated Sunday, July 16, 2000

One of IIS' great built-in tools is FileSystemObject. Unfortunately, there is no native way to produce a file listing in the order you specify. For example, consider the following code snippet:

```
<%  
    folder = "C:\"  
  
    set fso = server.createobject("Scripting.FileSystemObject")  
    set fold = fso.getFolder(folder)  
    for each file in fold.files  
        response.write file.name & "<br>"  
    next  
    set fold = nothing: set fso = nothing  
%>
```

This produces a list of files in seemingly random order. It is not ordered by name, file size, type, date modified, date accessed, archive, read-only, system, hidden, super hidden...

Here are three ways you can order your files alphabetically; the first uses a VBScript sort routine, the second uses a JScript sort routine, and the third uses a database.

Here is the VBScript version (thanks for the help with this, Luke Magnus):

```
<%  
    folder = "C:\"  
  
    set fso = server.createobject("Scripting.FileSystemObject")  
    set fold = fso.getFolder(folder)  
    fileCount = fold.files.count  
    dim fNames()  
    redim fNames(fileCount)  
    cFcount = 0  
    for each file in fold.files  
        cFcount = cFcount + 1  
        fNames(cFcount) = lcase(file.name)  
    next  
%>
```

```

next
for tName = 1 to fileCount
    for nName = (tName + 1) to fileCount
        if strComp(fNames(tName),fNames(nName),0)=1 then
            buffer = fNames(nName)
            fNames(nName) = fNames(tName)
            fNames(tName) = buffer
        end if
    next
next
for i = 1 to fileCount
    content = content & fNames(i) & "<br>"
next
Response.Write content
%>

```

Here is the JScript sort version:

```

<script language='jscript' runat='server'>
    // remember to double-up backslashes:
    var folder = 'C:\\';

    var fso = new ActiveXObject('Scripting.FileSystemObject');
    var fold = fso.GetFolder(folder); filesArrayString = '';
    for (files = new Enumerator(fold.files); !files.atEnd();
files.moveNext())
    {
        var thisFile = files.item();
        thisFile=thisFile.name.toLowerCase();
        filesArrayString+=thisFile+'\\';
    }
    var lenString = filesArrayString.length-1;
    filesArrayString = filesArrayString.substring(0, lenString);
    var filesArraySplit = filesArrayString.split('\\');
filesArraySplit.sort();
    Response.Write(filesArraySplit.join('<br>'));
</script>

```

And here is the database version (you'll want to create a simple table, called fileTable, with a filename column,

varchar(255)):

```
<%
    set conn = Server.CreateObject("ADODB.Connection")
    conn.open "<connection string>"
    set fso = Server.CreateObject("Scripting.FileSystemObject")
    set fold = fso.getFolder("c:\")
    for each file in fold.files
        sql = sql & "INSERT INTO fileTable(filename)"
        sql = sql & " VALUES('" & file.name & "');"
    next
    conn.execute(sql)
    sql = "SELECT filename FROM fileTable ORDER BY filename"
    set rs = conn.execute(sql)
    do while not rs.eof
        filename = rs("filename")
        if left(filename,5) = "D0101" then
            fileURL = server.urlEncode(filename)
            response.write("<a href='Documents/" & fileURL
            response.write("'>" & filename & "</a><br>")
        end if
        rs.movenext
    loop
    rs.close: set rs = nothing
    conn.execute("DELETE FROM fileTable")
    conn.close: set conn = nothing
%>
```

The bonus with the database version is that you can insert other elements (such as extension or DateLastModified), and order in different ways (file type; creation date, ascending or descending; reverse alphabetical; etc...).

How do I get the current filename?

4,439 requests - last updated Friday, December 15, 2000

This one is pretty easy, but there are two parts.

To retrieve the name of the current file, you can use any of these:

```
<%  
    Response.Write Request.ServerVariables("SCRIPT_NAME") & "<br>"  
    Response.Write Request.ServerVariables("PATH_INFO") & "<br>"  
    Response.Write Request.ServerVariables("URL") & "<br>"  
%>
```

To make that path local (for example, to use with `FileSystemObject`), just apply the `server.mappath()` method to the result.

Now. If your file is an `#INCLUDE` within another file, the above scripts will produce the name of the **CALLING** file (since the included file is first integrated into the calling script, then the ASP within it is all executed in the context of the 'parent' file). One way you can work around this is to re-populate a `current_filename` variable before loading each include file, for example:

```
<%  
    current_filename = "filetoinclude.asp"  
%>  
<!--#include file='filetoinclude.asp'-->
```

(And no, don't try passing `current_filename` as a variable to the `#INCLUDE` directive; see [Article #2042](#).)

Then, in `filetoinclude.asp`:

```
<%  
    Response.Write "Current file: " & current_filename  
%>
```

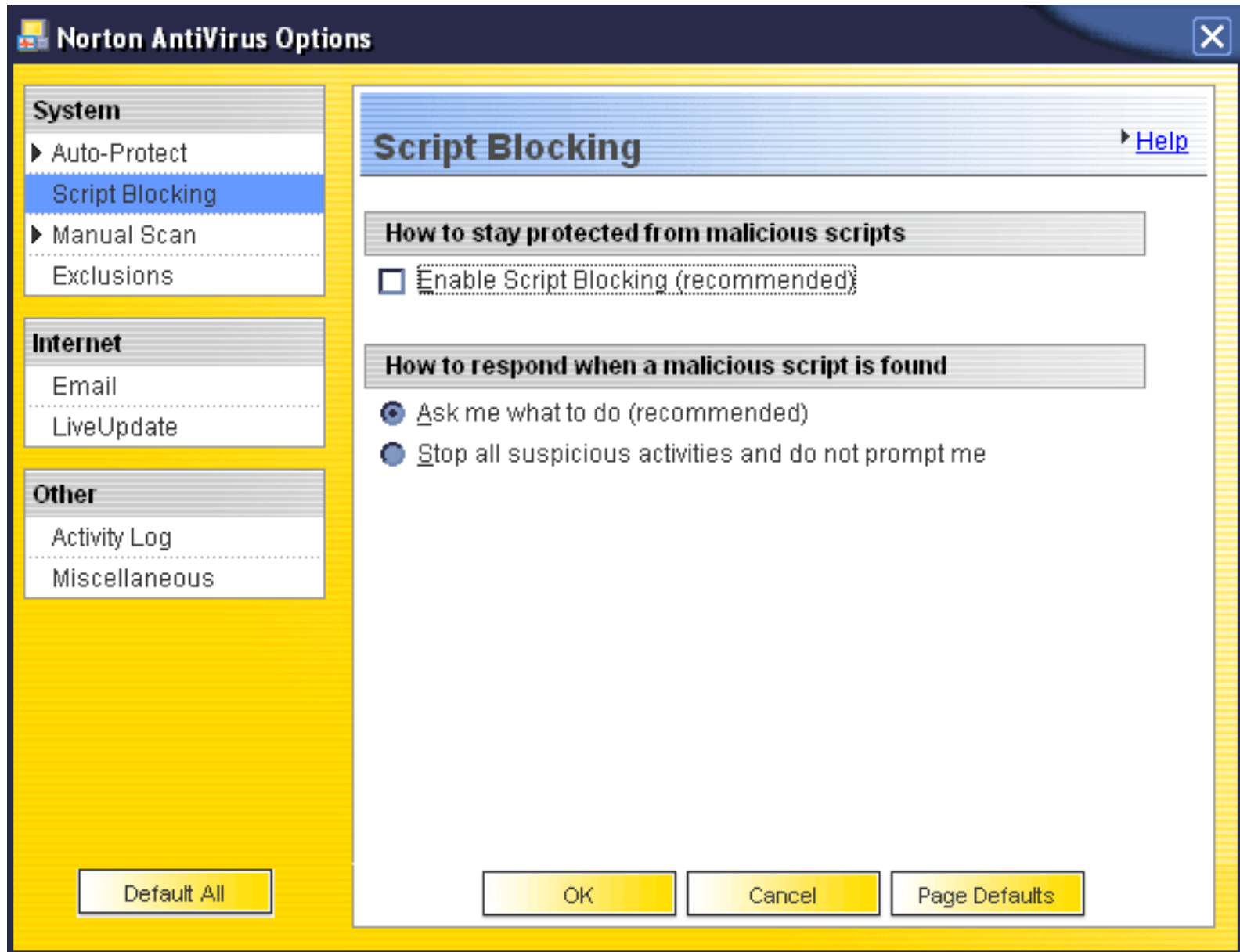
Of course, you could just as easily hard-code the filename inside of each include file. But I suppose that

solution would somewhat defeat the purpose of retrieving that information at least somewhat dynamically.

Why does FileSystemObject hang all of a sudden?

3,095 requests - last updated Friday, November 16, 2001

Likely, you (re-)installed or re-configured Norton Anti-Virus. This program has an option called 'script blocking' which, among other things, prevents FileSystemObject from working on the local file system. With the default setting, Norton raises a 'prompt'... and sits there waiting and waiting for a response from ASP (which it can obviously never get). To stop this from happening, go to Norton's Options screen, click on 'Script Blocking' and uncheck 'Enable Script Blocking'...



Keep in mind you shouldn't be running client applications like this on a commercial web server... hopefully this issue is only affecting your workstation!

There is more information available from Microsoft and Symantec on this issue:

[Microsft KB #Q295375](#)

[Symantec KB #2001031311101006](#)

Why do I get 'Permission Denied' errors with FileSystemObject?

2,704 requests - last updated Saturday, January 20, 2001

Permission Denied, when dealing with the FileSystemObject, has to do with local file and folder permissions for the anonymous user (IUSR_<machine_name>).

To open a text file forReading (1), IUSR_<machine_name> must have read access in the folder the file is located.

To open a text file forWriting (2) or forAppending (8), or to create a text file, IUSR_<machine_name> must have read and write access in the folder.

Rather than alter the permissions for IUSR_<machine_name>, giving him/her access to various parts of your machine, my recommendation is to first pursue placing any such text files within the web structure, or in any other place that IUSR_<machine_name> already has access. The more you alter file- and folder-level permissions to suit your application, the more open your system will be for attack... and the more maintenance you will have to do if your application should ever move to a new server.

Can I rename a file using FileSystemObject?

2,668 requests - last updated Saturday, January 6, 2001

Unfortunately, FSO does not have a "renameFile" method. However, you can rename a file using FSO's movefile method. Simply enter the old name and the new name as parameters, for example:

```
<%  
    Set fso = Server.CreateObject("Scripting.FileSystemObject")  
    fso.moveFile "c:\boot.ini", "c:\boot.old"  
    Set fso = Nothing  
%>
```

I strongly recommend writing a reverse script to change this file back before you reboot, or else use another filename on your machine. (Hopefully, though, your IUSR doesn't have proper permissions for the above script to work.)

Why do I get 'Path not found' errors with FileSystemObject?

1,849 requests - last updated Saturday, January 20, 2001

This error is usually pretty self-explanatory. You tried to access a file/folder that doesn't exist, or you tried to access a file that does exist but you specified the wrong folder.

Some tips on avoiding this:

1. Make use of the `folderExists` and `fileExists` properties of FSO!
2. Use `OpenTextFile` with the "create" flag to true, instead of assuming the file exists (or using convoluted logic to create `TextFile` if the file doesn't exist, and `openTextFile` if it does).
3. When folders are in the web structure, use `server.mappath("/virtual/")` to get the local location, since this can vary on different machines. This is an expensive call, so you might want to store the webroot (`server.mappath("/")`) in an application variable instead of calling the `mappath` method every time you need it.

Why do I get 'Invalid procedure call or argument'?

1,083 requests - last updated Wednesday, January 24, 2001

This often happens because you used a VBScript "friendly name" constant in place of its integer equivalent. Visual Basic understands these friendly names, such as FileSystemObject's 'forAppending' and 'forWriting' constants.

An easy solution is to add this line to any include files you use in every page (or else add it at the top of every page, if you don't have a common header in your application):

```
<%  
    Const ForReading = 1, ForWriting = 2, ForAppending = 8  
%>
```

Why do I get 'Disk not ready' errors with FileSystemObject?

1,063 requests - last updated Saturday, January 20, 2001

Usually this means you used an absolute path to a drive that either doesn't exist, or is not currently enabled. Common scenarios for this are removable media like ZIP drives or CD-Roms, network shares that are not always available, or simply fat-fingering a drive letter in your ASP code (it's okay, it happens to all of us!).

Of course, it is possible that this error will also really mean what it says: that your hard disk has a failure of some sort. If this is the case, you have more to worry about than a malfunctioning ASP page. <G>

How do I get a list of a folder's subfolders?

607 requests - last updated Thursday, November 1, 2001

Many people expect FileSystemObject to just return a list of subfolders and display them to the screen. It's almost that easy:

```
<%  
    folderspec = server.mappath("/")  
  
    Set fso = CreateObject("Scripting.FileSystemObject")  
    Set fold = fso.GetFolder(folderspec)  
    for each subfolder in fold.subFolders  
        Response.Write(subfolder.name & "<br>")  
    next  
    set fold = nothing  
    set fso = nothing  
%>
```

And here is a sample in JScript:

```
<script language=JScript runat=server>  
  
    var folderspec = Server.mapPath("/");  
  
    var fso = new ActiveXObject("Scripting.FileSystemObject");  
    var fold = fso.GetFolder(folderspec);  
    for (f = new Enumerator(fold.subFolders); !f.atEnd(); f.moveNext())  
    {  
        Response.Write(f.item() + "<br>");  
    }  
    var fold = null;  
    var fso = null;  
  
</script>
```

Note that the JScript version returns the full folder path, while the VBScript version only returns the folder name itself. You can alter the VBScript version to return the full path, by omitting the ".name" from the

Response. Write statement. You could also parse the folder name out of the string JScript returns. Or you could read the docs (the way I clearly **haven't** done), and **tell us** the proper method of returning only the subfolder name in JScript.

Can I include a file in both server-side script and client-side script?

581 requests - last updated Wednesday, January 30, 2002

Often, ASP developers want to put common functions in a place accessible to both client-side and server-side scripts. There are some challenges with this, including the fact that several server-side objects (such as Response, Request) are not available on the client, much like several client-side elements (such as document, window and msgbox) are not available on the server. But if you write a routine that's generic enough, it can make sense to have it serve both the client-side and server-side scripts - reducing maintenance in the long run.

If you're using IIS 5.0 or better, you can achieve this simply as follows. Let's say you have a .js file called 'whatever.js':

```
function returnValue() { return "value"; }
```

Now you can call this from both server-side and client-side JScript like this:

```
<script language=jscript runat=server src=whatever.js></script>

<script language=jscript runat=server>
Response.Write("Server: "+returnValue()+"<br>");
</script>

<script language=jscript src=whatever.js></script>

<script language=jscript>
document.write("Client: "+returnValue());
</script>
```

Now, for those using IIS 4.0:

I'm going to provide an example of using a VBScript routine in server-side and client-side VBScript, as well as using a JScript routine in server-side and client-side JScript. I'm not going to attempt to crosswire the languages, nor am I going to try to deal with workarounds for swapping out document / response depending on the scope.

Here is an example of using a VBScript routine in client-side and server-side script. You'll need a file called fixString.asp:

```
<%  
    function fixString(str)  
        fixString = replace(str,"Bob","the coder formerly known as Bob")  
    end function  
%>
```

And another ASP file, with this code:

```
<!--#include file='fixString.asp'-->  
<%  
    response.write fixString("Do you think that's okay with Bob?")  
    set fso = Server.CreateObject("scripting.FileSystemObject")  
    set fs = fso.OpenTextFile(server.MapPath("fixString.asp"))  
    f = fs.ReadAll()  
    fs.close: set fs = nothing: set fso = nothing  
  
    ' we just replace the server-side delimiters with client tags  
    f = replace(f,"<" & "%","<" & "script language=vbscript>")  
    f = replace(f,"%" & ">","</script>")  
    response.write(f)  
%>  
  
<script language=vbscript>  
    msgbox fixString("I don't think Bob will mind."),64,"Bob"  
</script>
```

Here is an example of using a JScript routine in client-side and server-side script. You'll need a file called fixStringJS.asp:

```
<script language=JScript runat=server>
function fixString(str)
{
    return str.replace("Bob","the coder formerly known as Bob");
}
</script>
```

And another ASP file, with this code:

```
<!--#include file='fixStringJS.asp'-->
<Script language=JScript runat=server>
    Response.Write(fixString("Do you think that's okay with Bob?"));
    var fso = new ActiveXObject("Scripting.FileSystemObject");
    var fs = fso.OpenTextFile(Server.MapPath("fixStringJS.asp"));
    var f = fs.ReadAll();
    fs.close(); var fs = null; var fso = null;

    f = f.replace(" runat=server","");
    Response.Write(f);
</script>

<script language=Jscript>
    alert(fixString("I don't think Bob will mind."));
</script>
```

Now, this fictitious example doesn't deal with a serious limitation in JScript's implementation of replace - it only replaces the *first* instance of the search string, not *all* instances (like VBScript). Not sure which language implemented it wrong; according to the ECMA docs, JScript is correct. But I prefer the behavior of VBScript. I'll leave it as an exercise to the reader to code a workaround in JScript.

Why do I get permissions errors after upgrading to Windows XP?

469 requests - last updated Monday, February 4, 2002

After switching from Win95, Win98 or WinME to Windows XP, you may find that previously functional ASP pages are now choking on code that uses FileSystemObject or MS Access (usually 'Permission Denied' or 'Operation must use an updateable query' errors). To straighten this out, you need to apply appropriate permissions for IUSR_<machine_name> on the folder(s) you need to read/write with ASP.

In Windows Explorer, right-click the folder in question, hit Properties, and select the Security tab. If the Internet Guest Account is not listed, click the Add... button and type IUSR_<machine_name> into the textbox, and click OK. Now select the Internet Guest Account, and check the permissions appropriate. For most web applications, Read and Write is sufficient. You may have to do this for individual files as well. One one of my work machines, Photoshop 6.0 saves files in a weird manner, so that IUSR cannot access them until I fix their permissions. Still investigating that one.

Now, what if you don't have a Security tab?

Open up Windows Explorer, open the Tools menu, choose Folder Options, and go to the View tab. The last item in the list is called "Use simple file sharing (recommended)" - which is actually NOT recommended if you want to get any work done. Uncheck this box, click Apply and OK, and try the above steps again.

Oh gosh, you still don't have a security tab?

It's possible this was hidden from you by a group policy (perhaps the OEM set the machine up that way, or your network admin doesn't trust you). Assuming you have appropriate permissions on the machine itself, go to Start, Run... and type in "gpedit.msc" without the quotes. This launches the Group Policy Editor. Navigate to User Config / Administrative Templates / Windows Components / Windows Explorer / Remove Security Tab. Read about this setting before just changing it, and back up your system before applying any changes (just in case).

Ummm, Houston?

If those steps don't work, I'm at a loss. I don't run XP Home, and never will, so I'm not sure how much more digging I'll be able to do on this issue.

Can I place a file on a user's hard drive without bothering them with a prompt?

339 requests - last updated Monday, January 7, 2002

NO.

How do I send e-mail from ASP?

35,763 requests - last updated Monday, January 7, 2002

There are several components that enable you to do this. You may already have one, if you have an SMTP server installed alongside IIS - it's called CDONTS. Here is the documentation and an article for CDONTS:

http://msdn.microsoft.com/library/en-us/cdo/html/_denali_newmail_object_cdonts_library_.asp

[Article #2026](#)

There are also several other components available (if I missed any, let us know)

AspMail

<http://www.serverobjects.com/products.htm#Aspmail>

MailListBot

<http://www.maillistbot.com/>

ASPEmail

<http://www.aspemail.com/>

SA-SMTPMail

<http://www.softartisans.com/softartisans/smtpmail.html>

Dundas Mailer

<http://www.dundas.com/index.asp?/products/mailer>

EasyMail

<http://www.quiksoft.com/products/>

w3 Jmail

<http://www.dimac.net/>

HTMLMailer / HTMLMailerPlus

<http://www.oopadelic.com/htmlmailer/>

<http://www.oopadelic.com/htmlmailerplus/>

DevMailer

<http://www.geocel.com/devmailer/>

VSEmail

<http://www.vsoft-tech.com.au/vsemail/readme.html>

Mabry Mail

<http://www.mabry.com/mail/index.htm>

SimpleMail

<http://simplemail.adiscon.com/en/>

AB Active X Mailer

<http://www.geocities.com/ResearchTriangle/2656/abmailer.html>

OCXMail

<http://www.flicks.com/aspmail/>

Zaks.POP3

<http://www.zaks.demon.co.uk/code/cpts/pop/index.html>

How do I send e-mail with CDONTS?

20,432 requests - last updated Wednesday, January 23, 2002

To send an e-mail with Active Server Pages requires some kind of component. There are many third party components available (see bottom of page), but one of the most readily available is the free Microsoft mail component CDONTS, which ships with the Option Pack for WinNT 4.0.

Now, once you stop trying to comprehend it's name (I know I can't), it is a simple mail program to use.

CDO works by using the SMTP service in IIS, unless Exchange is installed, then it will just use Exchange's SMTP system. Before continuing, make sure you have your SMTP service properly set up. You can check by using the Microsoft Management Consol (MMC), or you can look to see if CDONTS.DLL is in your system32 directory.

To send e-mail from ASP, all you have to do is define the object and use the ".send" function.

```
<%  
    Set MailObj = Server.CreateObject("CDONTS.NewMail")  
    MailObj.Send "from@me.com", "to@me.com", "My Subject", "My Text"  
    Set MailObj = Nothing  
%>
```

Wasn't that easy? If you need more properties, you can add them as necessary. But as it gets more complex, you might find it easier to use the format that most people use:

```
<%  
    Set MailObject = Server.CreateObject("CDONTS.NewMail")  
    MailObject.From = "from@me.com"  
    MailObject.To = "to@me.com"  
    MailObject.Subject = "Subject Text Here"  
    MailObject.Body = "Body Text Here"  
    MailObject.CC = "someoneElse@somewhere.com"  
    MailObject.Send  
    Set MailObject = Nothing  
%>
```

Sending an Attachment


```
<%  
    Set MailObject = Server.CreateObject("CDONTS.NewMail")  
    attFile = "c:\attachments\StandardPolicy.txt"  
    attName = "Policy.txt"  
    MailObject.From = "from@me.com"  
    MailObject.To = "to@me.com"  
    MailObject.Subject = "Subject Text Here"  
    MailObject.Body = "Body Text Here"  
    MailObject.AttachFile attFile, attName  
    MailObject.Send  
    Set MailObject = Nothing  
%>
```

Problems

If you are having difficulties with CDONTS, see the following reference:

http://msdn.microsoft.com/library/en-us/cdo/html/_denali_newmail_object_cdonts_library_.asp

If you get "Permission Denied" errors, see the following KB article:

[Q228465](#)

If you get "The system cannot find the path specified" errors, you may need to (re)install the SMTP service. For details, see the following KB article:

[Q235681](#)

Windows XP

If you are trying to run CDONTS.NewMail on WinXP, you might get one of the following errors:

```
ASP 0177  
Invalid class string
```

or

ActiveX component can't create object: 'CDONTS.NewMail'

This is because Microsoft changed the name and progID of the DLL used to send mail through CDO. To get around this, you can use the new code style:

```
<%  
    Set cdoConfig = Server.CreateObject("CDO.Configuration")  
    cdoConfig.Fields(0) = "2"  
    cdoConfig.Fields(1) = "mail.server"  
    cdoConfig.fields.update  
  
    Set cdoMessage = Server.CreateObject("CDO.Message")  
    Set cdoMessage.Configuration = cdoConfig  
    cdoMessage.From = "from@me.com"  
    cdoMessage.To = "to@me.com"  
    cdoMessage.Subject = "Sample CDONTS NewMail"  
    cdoMessage.TextBody = "This is a test for CDONTS message"  
    cdoMessage.Send  
    Set cdoMessage = Nothing  
    Set cdoConfig = Nothing  
%>
```

Or you can use the workaround of copying cdonts.dll from a Windows 2000 machine and regsvr32'ing it on the XP machine. I have not tested this method, so try it at your own risk. If it works, it may -- at least in the short term -- be the better solution. But you should plan to migrate your code eventually, because hosts running .NET Servers are not likely to be willing to register obsolete DLLs.

If you switch to the new code technique, the advantage is that it works on Windows 2000... so you can migrate your code gradually.

Windows 2000

If you are using Windows 2000, you should start using CDO.Message and migrating your code. There is a decent article here:

http://msdn.microsoft.com/library/en-us/cdosys/html/_cdosys_messaging.asp

Last resort...

If CDONTS continues to frustrate you, check out [Article #2119](#) for a thorough list of alternative SMTP components. Your web host almost certainly supports at least one of them. If they don't, they should.

How do I put carriage returns into an e-mail?

6,259 requests - last updated Sunday, August 13, 2000

If you are using HTML mail, you can use HTML carriage returns. For example, if the body is coming from a textarea, you'll want to use the following to put HTML carriage returns in:

```
<%  
    ' ...  
    body = request.form("textareabody")  
    body = replace(body,vbCrLf,"<br>")  
    ' ...  
%>
```

If you are using plain text, then you just need to insert the vbCrLf constant to generate carriage returns. For example:

```
<%  
    ' ...  
    body = "Hello Aaron," & vbCrLf & vbCrLf & "How are you?"  
    ' ...  
%>
```

How do I validate an e-mail address?

474 requests - last updated Tuesday, January 8, 2002

You can use ASP to validate the **format** of an e-mail address, using a function like the following:

```
<%  
function isEmail(car)  
    dim lencar  
    lencar = len(car)  
  
    isEmail = false 'assume error  
  
    if instr(car, "@") <= 1 or instr(car, ".") <= 1 or lencar < 6 then  
        exit function  
    end if  
  
    dim cs, j, k, c, c1  
    cs = 0  
  
    for j = 1 to lencar  
        c = mid(car, j, 1)  
        if c = "@" then  
            cs = cs + 1  
        end if  
    next  
  
    if cs <> 1 then  
        exit function  
    end if  
  
    dim dotArray, lenDotArray, lenDot, lenAt  
    dotArray = split(car, ".")  
  
    lenDotArray = (ubound(dotArray) - lbound(dotArray)) + 1  
    lenDot = dotArray(lenDotArray - 1)  
    lenAt = mid(car, instr(car, "@") + 1)  
  
    if len(lenDot) > len(lenAt) then  
        exit function
```

```
end if

for k = 1 to lencar
    c1 = ucase(mid(car, k, 1))

    cnd1 = c1>="A" and c1<="Z"
    cnd2 = isNumeric(c1)
    cnd3 = c1="_" or c1="-" or c1="@"
    cnd4 = c1="." or c1="~"

    if not (cnd1 or cnd2 or cnd3 or cnd4) then
        exit function
    end if
next

isEmail = true
end function

%>
```

However, it is not so simple to test whether the e-mail account is actually valid. For that, you may want to generate some random string or a key, e-mail it to the user, and have them enter it into your interface.

Could I get a little help with dates?

16,582 requests - last updated Tuesday, October 30, 2001

(1) Entering/comparing dates in a SQL Query

Make sure your date is a valid date. You can do this in VBScript using the `isDate()` function. Syntax is:

```
<%  
    if isDate(dateVar) then  
        ' do something  
    else  
        ' do something else  
    end if  
>%
```

A SQL query might look like this:

NOTE: If you are using Access, you need to surround dates with pound signs (#). With most other databases, including SQL Server 7, dates are surrounded with apostrophes (') and are treated like strings.

```
<%  
    ' *** SQL Server:  
    sql = "SELECT field FROM table WHERE datefield > '" & dateVar & "'"   
  
    ' *** for Access:  
    ' sql = "SELECT field FROM table WHERE datefield > #" & dateVar & "#"  
  
    ' *** for a stored procedure:  
    ' sql = "EXEC Proc_name @dateField='" & dateVar & "'"   
>%
```

If you only want records with datefields in the last n days, you can do something like this:

```
<%
    n = 5

    ' *** SQL Server:
    sql = "SELECT field FROM table WHERE DATEDIFF([d],GETDATE(),datefield)<" &
n
%>
```

If you want records that fall between two dates (inclusive), you can do this:

```
<%
    sql = "SELECT field FROM table WHERE datefield BETWEEN '" & dateVar1 & "'
AND '" & dateVar2 & "'"
%>
```

Another tip... don't name datetime fields with **reserved words** like DATE or TIME.

(2) Dealing with mm/dd/yyyy vs. d/m/yy vs. m/d/yy [...]

Use yyyy-mm-dd format for all dates when passing to the database. Then the database won't care which way it's set up internally, the default locale (or the current user's regional settings) on the database machine, the default locale (or current user's regional settings) of the IIS machine passing dates through ASP, and the date that the user entered manually. Here is a quick example of converting ASP's date to yyyy-mm-dd format:

```
<%
    dateVar = year(date) & "-" &_
        left("00",2-len(month(date))) & month(date) &_
        "-" & left("00",2-len(day(date))) & day(date)
%>
```

Of course, it will be up to you that dates entered by the user are in the correct format. No code can determine whether the user who typed in 2/3/01 actually meant Febraury 3rd or March 2nd - it can only determine in which format the application developer expects entries to be made.

(3) Comparing/determining dates

VBScript has many useful date functions that can help you with many issues. One problem I had on a project was running a loop from the first day of the PREVIOUS month to today. The DateAdd() function helped with this immensely.

First I moved back a month by adding -1 months to today's date:

```
<%  
    lastmonththisday = dateadd("m", -1, date())  
%>
```

Then I subtracted from that date the number of days that had passed that month (which would bring you back to the last day of the previous month), and added one:

```
<%  
    lastmonthfirstday = dateadd("d", -day(date())+1, lastmonththisday)  
%>
```

Now I put that together in a for loop that created a table, with each day from the beginning of last month to today (VBScript's for loop works with dates excellently):

```
<%  
    response.write("<table>")  
    lmfd = dateadd("d", -day(date())+1, (dateadd("m", -1, date())))  
    for i = lmfd to date()  
        response.write("<tr><td>" & formatdatetime(i, 1) & "</td></tr>")  
    next  
    response.write("</table>")  
%>
```

I then threw in some logic to color the weekends with a different color:

```
<%  
    response.write("<table>")  
    lmfd = dateadd("d",-day(date()))+1,(dateadd("m",-1,date()))  
    for i = lmfd to date()  
        bg = "#ffffff"  
        if weekday(i)=1 or weekday(i)=7 then bg = "#fffcc"  
        response.write("<tr><td bgcolor=" & bg & ">" & formatdatetime(i,1) &  
"</td></tr>")  
    next  
    response.write("</table>")  
%>
```

There is a more comprehensive date tutorial at learnASP.com:

<http://www.learnasp.com/learn/datetime.asp>

How do I delimit dates for inserting/updating a database?

7,062 requests - last updated Wednesday, July 12, 2000

With SQL Server (and most other PL/SQL-based DBs):

```
<%  
    sql = "insert into table(datefield) values('6/5/1999')"  
%>
```

With Access:

```
<%  
    sql = "insert into table(datefield) values(#6/5/1999#)"  
%>
```

Why does JavaScript's document.lastModified() not work in ASP files?

4,559 requests - last updated Sunday, October 28, 2001

ASP is compiled when the user requests the file, so browsers report the time the HTML was generated, not when the ASP file was saved. Here is some code

VBScript:

```
<%  
    thisfile = Request.ServerVariables("SCRIPT_NAME")  
    thisfile = Server.MapPath(thisfile)  
    set fso = Server.CreateObject("Scripting.FileSystemObject")  
    set fs = fso.getfile(thisfile)  
    dlm = fs.datelastmodified  
    set fs = nothing: set fso = nothing  
    Response.Write("Last modified: ")  
    Response.Write(formatdatetime(dlm,1) & " " & formatdatetime(dlm,3))  
%>
```

JScript:

```
<script language=jscript runat=server>  
    var thisfile = Request.ServerVariables("SCRIPT_NAME");  
    thisfile = Server.MapPath(thisfile);  
    var fso = new ActiveXObject("Scripting.FileSystemObject");  
    var fs = fso.GetFile(thisfile);  
    var dlm = fs.DateLastModified;  
    Response.Write("Last modified: " + dlm);  
</script>
```

Of course, when you add this script to a file and save it, the dateLastModified value will become "now()" by definition.

If you have a common include file, you could put this code in THAT file without changing the calling file. See [Article #2072](#) if you want the last modified time of the include file instead.

SQL Server: How do I select time only from a DATETIME field?

4,035 requests - last updated Sunday, September 17, 2000

You have two options that come to mind straight away.

One is to use the CONVERT function in conjunction with specific style numbers, to convert the date value into a specific type of string. I like using 114, because you can simply change the number of characters returned to increase accuracy. For example, for **HH:MM**:

```
SELECT
    CONVERT(CHAR(5), DateField, 114)
FROM
    table
[WHERE ... ]
```

Will produce the following:

```
11:45
```

For **HH:MM:SS**:

```
SELECT
    CONVERT(CHAR(8), DateField, 114)
FROM
    table
[WHERE ... ]
```

Will produce the following:

```
11:45:37
```

And for **HH:MM:SS:mmm**:

```
SELECT
    CONVERT(CHAR(12), DateField, 114)
FROM
    table
[WHERE ... ]
```

Will produce the following:

```
11:45:37:623
```

Depending on your application, you may need any of the above accuracies. Usually, though, to-the-minute is sufficient.

The other option is to use DATEPART to concatenate the time yourself. This is a bit messier, but is useful, for example, if you only want the minutes and are not concerned about the actual hour. I can't think of a practical use for this, but one must exist.

```
SELECT
    DATEPART(MINUTE, DateField)
FROM
    table
[WHERE ... ]
```

If you want to build an entire time string on your own, you could do this:

```
SELECT
    CONVERT(VARCHAR(2),DATEPART(HOUR, DateField)) + ':' +
    CONVERT(VARCHAR(2),DATEPART(MINUTE, DateField))
FROM
    table
[WHERE ... ]
```

Now, you might find that minutes less than 10 will result in weird padding; for example, if you were going to use this technique for building a time string on your own, you could end up with a result as follows:

5:3

This would be 5:03, but could obviously be misconstrued by the user. Here is how I work around this scenario:

```
SELECT
    CONVERT(VARCHAR(2), DATEPART(HOUR, DateField)) + ':' +
    CASE
        WHEN DATEPART(MINUTE, DateField) < 10 THEN
            '0'+CONVERT(VARCHAR(2),DATEPART(MINUTE, DateField))
        ELSE
            CONVERT(VARCHAR(2),DATEPART(MINUTE, DateField))
    END
FROM
    table
[WHERE ...]
```

Can I get millisecond accuracy in VBScript?

2,676 requests - last updated Tuesday, January 23, 2001

VBScript does not support such fine granularity within formatdatetime, datediff, or dateadd.

But there may still be a way to do what you want, depending on your goal.

If you want to count the number of milliseconds between two dates, there are very few scenarios where you could make this work in VBScript. Perhaps if two datetime values are stored in SQL Server, including milliseconds, and you retrieved them using a string... parsing it out and doing all the math yourself (yuck). If that were the case, you could just as easily do the DATEDIFF within SQL Server, and then you wouldn't have to do the math in VBScript. You can do this as follows:

```
SELECT numMs = CAST(DATEDIFF(MS, dt_1, dt_2) AS VARCHAR(32)) FROM <tbl>
-- or if you just want a datetime to display in ASP with milliseconds:
SELECT numMs = CAST(dt AS VARCHAR(32))
```

JScript does support a getMilliseconds() method, which does exactly what you need. So it may be possible that you can use Jscript to get millisecond accuracy. Certainly if you define two dates within a script, and you want to know how many milliseconds passed between them, you can do custom math functions which will have to vary calculations depending on how many minutes, seconds etc. have elapsed. I have yet to test whether it is possible to display the milliseconds stored in SQL Server from a JScript-based ASP page. As with VBScript, it is trivial to return the value as a string and write it out, but it *may* prove more difficult to actually use those values for anything (I just haven't tried it).

How do I display time in military format?1,845 requests - last updated Sunday, October 21, 2001

There are at least three options for this.

One is to change regional settings to display time in military format. I don't like to do this because it can break existing code, and can change depending on who is logged into the server (if anyone).

The second is to use string formatting. Here is an example:

```

<%
    ft = formatdatetime(time(),3)
    response.write "Standard time:<p>" & formatdatetime(ft,3)
    if right(ft,2)="PM" then
        t = split(ft,":")
        milhour = clng(t(0))
        if clng(left(ft,2))<12 then milhour = milhour +12
        mtime = cstr(milhour) & ":" & t(1)
        mtime = mtime & ":" & left(t(2),2)
    elseif clng(left(ft,2))=12 then ' this handles midnight only
        mtime = "00:"
        mins = datepart("n",ft)
        secs = datepart("s",ft)
        mtime = mtime & left("00",2-len(mins)) & mins
        mtime = mtime & left("00",2-len(secs)) & ":" & secs
    else
        mtime = left(ft,len(ft)-3)
    end if
    response.write "<p>Military time:<p>" & mTime
%>

```

The third is to use SQL Sevrer to convert it for you:

```
<%  
    response.write "Standard time:<p>" & time()  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    sql = "SELECT  
CONVERT(Char(8),(CONVERT(DATETIME,CURRENT_TIMESTAMP,113)),114)"  
    set rs = conn.execute(sql)  
    response.write "<p>Military time:<p>" & rs(0)  
    rs.close: set rs = nothing  
%>
```

The advantage with SQL is you could change it to CHAR(12) and get millisecond accuracy (the above scripts only get down to the second).

How do I convert local time to UTC (GMT) time?

453 requests - last updated Monday, November 12, 2001

Many people have asked how they can convert local times to UTC format.

Current Date / Time

Converting the current time is relatively simple, assuming that your server is set up correctly (proper time zone, and observes daylight savings time if appropriate). This is because the registry stores the offset between the local time zone and UTC. Here are a few examples:

VBScript - assuming IUSR has read access to registry! If this is not the case, you can use the same logic as the VBScript example further on in this article.

```
<%  
    od = now()  
    set oShell = server.createobject("WScript.Shell")  
    atb = "HKEY_LOCAL_MACHINE\System\CurrentControlSet\" &  
        "Control\TimeZoneInformation\ActiveTimeBias"  
    offsetMin = oShell.RegRead(atb)  
    nd = dateadd("n", offsetMin, od)  
    Response.Write("Current = " & od & "<br>UTC = " & nd)  
%>
```

JScript

```
<script language="JScript" runat=server>  
    var od = new Date();  
    var nd = od.toGMTString();  
    Response.Write('Current = ' + od + '<br>UTC = ' + nd);  
</script>
```

Transact-SQL

```
SELECT GETDATE() AS CurrentTime, GETUTCDATE() AS UTCTime
```

Arbitrary Date / Time

Converting an arbitrary time is a little more involved. Because the registry only stores the CURRENT bias, and doesn't keep historical record for previous dates, you may get invalid data if you are NOT in daylight savings tiem and you are converting a date that is (or vice-versa). These examples will show how to find GMT time for another date *in 2001* -- I will update this later to apply to any year. Note that for the VBScript and T-SQL solutions, you should know your regular offset (these examples assume Eastern time zone, which is 5 hours offset from UTC).

VBScript

```
<%
    ' fill in your known bias here!

    offset = 5

    ' find first Sunday in April

    for i = 1 to 7
        if weekday("4/" & i & "/2001")=1 then
            startDST = cdate("4/" & i & "/2001")
            exit for
        end if
    next

    ' find last Sunday in October

    for i = 31 to 25 step -1
        if weekday("10/" & i & "/2001")=1 then
            endDST = cdate("10/" & i & "/2001")
            exit for
        end if
    next

    ' set some arbitrary date

    od = "06/28/2001 4:35:08 AM"

    ' subtract hour from offset if within DST
```

```

    if cdate(od) >= startDST and cdate(od) < endDST then
        offset = offset - 1
    end if

    nd = dateadd("h", offset, od)

    Response.Write("Current = " & od & "<br>UTC = " & nd)
%>

```

JScript - a little smarter, JScript inherently knows when a date falls within DST, and adjusts accordingly.

```

<script language="JScript" runat=server>

    // note that months are ZERO-based
    // June 28 = 2001,5,28

    var od = new Date(2001,5,28,4,35,08);
    var nd = od.toGMTString();
    Response.Write('Current = ' + od + '<br>UTC = ' + nd);
</script>

```

Transact-SQL

```

-- fill in your known bias here!

DECLARE @offset TINYINT
SET @offset = 5

DECLARE @dt CHAR(10), @sdt CHAR(10), @edt CHAR(10)
DECLARE @i TINYINT
SET @i = 1

-- find first Sunday in April

WHILE @i < 7
BEGIN

```

```

SET @dt = '04/0'+CAST(@i AS CHAR(1))+'/2001'
IF DATEPART(weekday,@dt)=1
BEGIN
    SET @sdt = '04/0'+CAST(@i AS CHAR(1))+'/2001'
    SET @i = 7
END
SET @i = @i + 1
END

-- find last Sunday in October

SET @i = 31
WHILE @i > 24
BEGIN
    SET @dt = '10/'+CAST(@i AS CHAR(2))+'/2001'
    IF DATEPART(weekday,@dt)=1
    BEGIN
        SET @edt = '10/'+CAST(@i AS CHAR(2))+'/2001'
        SET @i = 24
    END
    SET @i = @i - 1
END

-- set some arbitrary date

DECLARE @od DATETIME
SET @od = '06/28/2001 04:35:08 AM'

-- subtract hour from offset if within DST

IF (@od>=@sdt AND @od<@edt)
    SET @offset = @offset - 1

SELECT @od AS CurrentTime, DATEADD(hour, @offset, @od) AS UTCTime

```

How do I determine the number of seconds since 1/1/1970?

376 requests - last updated Monday, November 12, 2001

This is a pretty common one, as many systems use this measure for various date calculations. Here are examples in VBScript, JScript and Transact-SQL. Note that to get the number of milliseconds since 1/1/1970, you need to multiply these results by 1000.

VBScript

```
<%  
    timeStart = "1/1/1970 12:00:00 AM"  
    Response.Write(datediff("s", timeStart, now()))  
%>
```

JScript - we need to correct for UTC, which is already accounted for.

```
<script language='jscript' runat=server>  
    var timeStart = new Date();  
    var tz = timeStart.getTimezoneOffset()*60*1000;  
    timeStart = Math.floor(((timeStart.getTime() - tz))/1000);  
    Response.Write(timeStart);  
</script>
```

Transact-SQL

```
SELECT DATEDIFF(SECOND, '1/1/1970 12:00:00 AM', GETDATE())
```

Note also that these solutions do not account for leap seconds. You can add them in manually for leap seconds that have been known to occur in the past (06/30/1997 and 12/31/1998 are two examples). You can not predict them programmatically... since leap seconds are defined by the variability of the Earth's rotation, and are declared by the International Earth Rotation Service as required. See this [Google posting](#) and this [U.S. Navy article](#) for highly detailed information about leap seconds and how they affect UTC. After reading these, you may see why your calculations don't need to be this precise -- especially since your web and/or SQL Server are probably not set to atomic clocks anyway. :-)

Given two dates, how do I determine an age?

285 requests - last updated Thursday, January 10, 2002

There are a few considerations here. Most people funnel into big mathematical equations, dividing the datediff in days by 365.333333333 and doing all kinds of logic to equate that to an age. In addition, we need to be wary of leap years and treat those cases differently. While a leap year baby's true age might technically be in the single digits, the more important piece of data (usually) is that x number of years have passed since they were born. Here is an example in VBScript:

```
<%  
    ' use DateSerial(y,m,d) to avoid locale issues  
    date1 = DateSerial(1974,2,24)  
    date2 = DateSerial(year(date), month(date), day(date))  
  
    ' make sure we have a valid date!  
    if date2 >= date1 then  
  
        ' determine if leapYearBaby  
        if month(date1) = 2 and day(date1) = 29 then  
            leapBaby = true  
        end if  
  
        ' get absolute number of years  
        ageInYears = cint(datediff("YYYY", date1, date2))  
  
        ' get date1's month and day in terms of date2's year  
        date1alt = dateadd("yyyy", ageInYears, date1)  
  
        if date1alt > date2 then  
            ' their birthday hasn't hit yet in date2's year  
            ageInYears = ageInYears - 1  
        end if  
  
        if leapBaby = true then  
            ' need to format output slightly  
            yearsPassed = ageInYears  
            ageInYears = ageInYears \ 4  
        end if  
    end if
```



```
        response.write "Age: " & ageInYears
        if leapBaby then response.write " (" & yearsPassed & " years since
birth)"
        else
            response.write "Invalid date."
        end if
    %>
```

And here is an example in T-SQL (note that this example does NOT make special considerations for leap year birthdays):

```
DECLARE @birthdate DATETIME, @bdThisYear DATETIME, @age INT

SET @birthdate = '1974-02-24'

SET @age = DATEDIFF
(
    YEAR,
    @birthdate,
    CURRENT_TIMESTAMP
)

SET @bdThisYear = DATEADD
(
    YEAR,
    @age,
    @birthdate
)

IF @bdThisYear > CURRENT_TIMESTAMP
    SET @age = @age - 1

SELECT @age
```

How do I prevent my ASP pages from caching?

24,284 requests - last updated Wednesday, July 12, 2000

At the top of the page:

```
<%  
    Response.Expires = 0  
    Response.Expiresabsolute = Now() - 1  
    Response.AddHeader "pragma","no-cache"  
    Response.AddHeader "cache-control","private"  
    Response.CacheControl = "no-cache"  
%>
```

How do I execute a DOS command / batch file / exe from ASP?

22,231 requests - last updated Wednesday, October 18, 2000

You can use ASPExec from [ServerObjects](#). Alternatively, if you have Windows Script Host installed, you can do this (sorry, I've only had the time to test .bat files):

```
<%  
    set wshell = server.createobject("wscript.shell")  
    wshell.run "c:\file.bat"  
    set wshell = nothing  
%>
```

Where c:\file.bat is something like:

```
net stop iisadmin /y  
net start w3svc
```

Where else can I learn about ASP?

18,285 requests - last updated Wednesday, December 12, 2001

If you're looking for info on ASP+, Visual Studio 7, and .NET technologies, look here:

[Where can I find out about ASP+ \(ASP Plus\), Visual Studio 7, and .NET?](#)

For "regular" ASP, there are many sites out there. This list is not exhaustive. All sites are free except for one exception:

[Action Jackson](#)

[Active Server Corner](#)

[ASP-help.com](#)

[ASP 101](#)

[ASP Free](#)

[ASP Hole](#)

[ASP Key](#)

[ASP Resource Index](#)

[ASP Today](#) (**\$\$\$ Annual Fee \$\$\$**)

[DeveloperFusion.com](#)

[Developersdex](#)

[DevGuru](#)

[4guysfromrolla](#)

[15 Seconds](#)

[IIS Answers](#)

[IIS FAQ](#)

[Infinite Monkeys](#)

[LearnASP.Com](#)

[MSDN Online](#)

[Planet Source Code](#)

[powerASP.com](#)

[Stardeveloper.com](#)

[SWYNK](#)

[T-Cubed](#)

[Ultimate ASP](#)

[VisualBasicScript.com](#)

[VisualBuilder.com](#)

[www.serverscripting.com](#)

[aspfaqs.com](#)

Microsoft has created a list of ASP Knowledge Base articles. While they didn't have enough foresight to make them LINKABLE, at least you can scan the titles with relative ease.

[INFO: ASP Knowledge Base Article Index](#)

How do I disable the back/forward buttons?

17,144 requests - last updated Tuesday, July 11, 2000

Short of disabling the entire toolbar, you can't. Even then, people can use Backspace or Alt+left. Instead of trying to disable the features of a browser, build your application so that disabling those features is not necessary. For example, if your application inserts a record into a table, and you're afraid that if the user clicks back it will insert another one, there are at least two things you can do (and likely several others): use a session variable to track the insert, or prevent duplicate values on certain fields.

Web Men Talking recently had a [decent article](#) describing the various ways to deal with this behavior.

What is this 'ASP 0115' error?

16,801 requests - last updated Wednesday, January 23, 2002

UPDATE: for quick symptom relief, simply restart IIS using the batch file referenced in [Article #2087](#)

The ASP 0115 error is IIS' way of saying "there was an error, but I don't know the cause." This is because the error came from something external to ASP (e.g. a custom COM object or an Oracle database).

Listed below are some of the common causes for ASP returning the 0115 error, followed by some recommended troubleshooting techniques:

- Permission and authentication issues with files and registry keys.

Errors may occur if the authenticated user does not have sufficient permissions on other files such as custom components, system dynamic-link libraries (DLLs), and even registry keys.

ASP scripts are typically executed in the security context of the IUSR_<machine_name> account.

If you believe you are dealing with a permissions problem in the registry, you can use Regedt32.exe to examine permissions on the various registry keys. In particular, you may want to look at ODBC, Jet, ADO, and other keys that might be relevant to the problem. If you have a machine that is working properly, try comparing key permissions between the two machines.

The first step is to determine if you really are seeing a permissions problem. A good test is to temporarily add the anonymous logon account (IUSR_<machine_name>) to the administrators group using User Manager. This gives the IUSR_<machine_name> account administrative privileges on the machine. If this causes ASP to function properly, you are almost certainly dealing with a permissions issue.

Note: When you have finished debugging, be sure to remove the IUSR_<machine_name> account from the administrators group to minimize the security risk on your server.

Refer to the following article for additional information:

[Q185874](#) How to Troubleshoot Permissions in IIS 4.0

- Incorrectly registered dlls or incompatible dll version issues.

If you are developing COM objects with Visual Basic, you might create a dependency file and compare the file versions to the files installed on your server.

Refer to the following articles:

[Q178354](#) HOWTO: Setup Wizard Dependency Files

[Q185599](#) BUG: OleAut32.dll Is Unregistered Incorrectly

[Q145676](#) Registry Overwritten with Same ProgID/Different Bitness Server

- Unhandled errors returned from components.
- Form elements are not named. Refer to the following article:

[Q173741](#) PRB: Random ASP 0115 Errors when Submitting Form

- Use of the ASP Session Object prior to version 1.24.09 of the ASP dll

Refer to the following article:

[Q177036](#) FIX: ASP 0115 Error Occur With The Session Object

- Connecting to Oracle with an old version of msorcl32.dll

Get a new version with the latest version of MDAC from <http://www.microsoft.com/data/>.
FWIW, my current machine has version # 2.573.7924.0.
If the connection alone is fine, try a firehose recordset.
Oracle through OLE-DB doesn't support some advanced rs properties.

- Use of components that are not thread-safe in a multi-threaded environment.

Refer to the following articles:

[Q191979](#) PRB: VB Component Not Marked Apartment Produces ASP 0115 Error

Q172925 INFO: Security Issues with Objects in ASP and ISAPI Extensions

Q150777 INFO: Descriptions and Workings of OLE Threading Models

- Using Microsoft Data Access Components (MDAC) 2.0 on IIS 3.0.

Refer to the following article:

Q193310 FIX: ADO 2.0 Generates Error 0115 When Used with IIS 3.0

Other potential fixes:

- ensure Stored Procedure parameters without have correct data types or lengths
- ensure Stored Procedures don't use **reserved words**
- toggling the memory space / protection of an Application
- updating to the latest version of MDAC (<http://www.microsoft.com/data/>)
- handling errors correctly inside custom VB or VC++ components

Finally, check out this KB article:

Q194190 PRB: Error "ASP 0115 a Trappable Error Has Occurred"

How do I read the contents of a remote web page?

16,073 requests - last updated Sunday, October 28, 2001

You can include static txt and HTML files from remote servers by using a component (such as [AspHTTP](#), [ASPTear](#), or VB's built in InetCtrls) to parse the remote URL's content.

You can also try this method out; it was tested with the MSXML objects which are installed with Windows 2000. For performance reasons, and just to have "the latest", you should [download the new version 4.0](#) for Windows 2000 or other operating systems. If you download the newer version, take special note of the new ProgID you should be using -- MSXML 4.0 now supports side-by-side installation, which means the ProgID below will actually use the older version.

```
<%  
    url = "http://www.espn.com/main.html"  
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")  
    xmlhttp.open "GET", url, false  
    xmlhttp.send ""  
    Response.write xmlhttp.responseText  
    set xmlhttp = nothing  
%>
```

And here it is in JavaScript:

```
<script language=javascript runat=server>  
    var url = "http://www.espn.com/main.html";  
    var xmlhttp = new ActiveXObject("MSXML2.ServerXMLHTTP");  
    xmlhttp.open("GET", url, 0);  
    xmlhttp.send("");  
    Response.Write(xmlhttp.responseText);  
    var xmlhttp = null;  
</script>
```

Don't forget that if your remote page has relative image URLs, or style sheets, or JavaScript files, or frames, or links, it won't work perfectly when ported to your server(s). To overcome this, you'll want to add a BASE HREF tag to keep all the images coming from the correct location. For example, the above code (which gets all the text from espn.com, but is formatted weird and doesn't function 100% as intended), is modified only slightly to

work correctly:

```
<%  
    url = "http://www.espn.com/main.html"  
  
    ' add a BASE HREF tag  
    Response.write "<BASE HREF='" & url & "'">  
  
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")  
    xmlhttp.open "GET", url, false  
    xmlhttp.send ""  
    Response.write xmlhttp.responseText  
    set xmlhttp = nothing  
%>
```

If you need to POST data you can so by adding a header that tells the receiver you're sending FORM data:

```
<%  
    url = "http://www.espn.com/main.html"  
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")  
    xmlhttp.open "POST", url, false  
    xmlhttp.setRequestHeader "Content-Type", "application/x-www-form-  
urlencoded"  
    xmlhttp.send "x=1&y=2"  
    Response.write xmlhttp.responseText  
    set xmlhttp = nothing  
%>
```

Another thing you may want to do, going back to the original script, is make sure the server is there! If not, you can display a message...

```

<%
    ' deliberate typo:
    url = "http://www.espn.co/main.html"
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")
    on error resume next
    xmlhttp.open "GET", url, false
    xmlhttp.send ""
    if err.number <> 0 then
        response.write "Url not found"
    else
        Response.write xmlhttp.responseText
    end if
    set xmlhttp = nothing
%>

```

You might want to parse the results, instead of sending them straight to the client:

```

<%
    url = "http://www.espn.com/main.html"
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")
    on error resume next
    xmlhttp.open "GET", url, false
    xmlhttp.send ""
    if err.number <> 0 then
        response.write "Url not found"
    else
        if instr(xmlhttp.responseText,"Stanley Cup")>0 then
            response.write "There's a story about the playoffs."
            response.write "<a href=" & url & ">Go there</a>?"
        else
            response.write "There is no story about the playoffs."
        end if
    end if
    set xmlhttp = nothing
%>

```

Finally, you may want to spoof your user agent, since the MSXML object sends something like "Mozilla/4.0 (compatible; Win32; WinHttp.WinHttpRequest.5)" -- here are two samples:

```
<%  
    url = "http://www.espn.com/main.html"  
  
    ' this sample posts as the actual browser being used:  
  
    br = request.servervariables("HTTP_USER_AGENT")  
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")  
    on error resume next  
    xmlhttp.open "GET", url, false  
    xmlhttp.setRequestHeader "User-Agent",br  
    xmlhttp.send ""  
    if err.number <> 0 then  
        response.write "Url not found"  
    else  
        response.write xmlhttp.responseText  
    end if  
    set xmlhttp = nothing  
  
    ' this sample posts as "My funky browser."  
  
    set xmlhttp = server.CreateObject("MSXML2.ServerXMLHTTP")  
    on error resume next  
    xmlhttp.open "GET", url, false  
    xmlhttp.setRequestHeader "User-Agent","My funky browser."  
    xmlhttp.send ""  
    if err.number <> 0 then  
        response.write "Url not found"  
    else  
        response.write xmlhttp.responseText  
    end if  
    set xmlhttp = nothing  
%>
```

How do I get screen resolution from ASP?

16,032 requests - last updated Thursday, August 17, 2000

Screen Resolution has always been a tough egg to fry. In most browsers, you can't get a screen resolution. But if you can, what do you plan to do with it? If I have a screen resolution of 1600x1200, it doesn't mean that my browser is that size. So if you create a table that is 1550 pixels wide, just because you've detected my resolution, if my browser is not maximized I'm going to have to scroll all over the place to see the whole page.

In IE 4 and Netscape 4, you can detect a much more meaningful variable, the width/height of the browser window. For this, you need client-side script.

IE 4+:

```
<script language="JavaScript">
var w = document.body.clientWidth;
if (w>=650)
{
    window.location.href="bigscreen.htm";
}
else
{
    window.location.href="smallscreen.htm";
}
</script>
```

NN 4:

```
<script language="JavaScript">
var w = window.innerWidth;
if (w>=650)
{
    window.location.href="bigscreen.htm";
}
else
{
    window.location.href="smallscreen.htm";
}
</script>
```

Of course this leaves out the 3.0 browsers. Here is how to handle this in IE 3.0, which provides the SCREEN size (note, not the window size).

IE 3:

```
<%
    smallurl = "smallscreen.htm"
    bigurl = "bigscreen.htm"
    a = request("http_ua_pixels")
    url = smallurl
    if instr(a,"x")>0 then
        a = split(a,"x")
        if clng(a(0)) >= 650 then
            url = bigurl
        end if
    end if
    response.redirect(url)
%>
```

And NN 3.0 has to be different... in that case, to get the screen resolution (again, not the more meaningful browser window size), you need to hook up Java.

NN 3:

```

<script language="JavaScript">
var Sizer=java.awt.Toolkit.getDefaultToolkit()
var ScrSize=Sizer.getScreenSize();
var ScrW=ScrSize.width;
if (ScrW >=650)
{
    window.location.href="bigscreen.htm";
}
else
{
    window.location.href="smallscreen.htm";
}
</script>

```

So, the ASP solution (which, admittedly, only takes into account the two major browsers; Opera and others will need special considerations):

```

<%
    bigurl = "bigscreen.htm"
    smallurl = "smallscreen.htm"
    A = LCase(Request.ServerVariables("HTTP_USER_AGENT"))
    if instr(A,"msie 5")>0 or instr(A,"msie 4")>0 then
%>

        <script language="JavaScript">
            var w = document.body.clientWidth;
            if (w>=650)
            {
                window.location.href="<%=bigurl%>";
            }
            else
            {
                window.location.href="<%=smallurl%>";
            }
        </script>

<%
    elseif instr(A,"msie 3")>0 then

```



```
smallurl = "smallscreen.htm"  
bigurl = "bigscreen.htm"  
a = request("http_ua_pixels")  
url = smallurl  
if instr(a,"x")>0 then  
    a = split(a,"x")  
    if cLng(a(0)) >= 650 then  
        url = bigurl  
    end if  
end if  
response.redirect(url)
```

```
elseif instr(A,"zilla/4")>0 Then
```

```
%>
```

```
<script language="JavaScript">  
var w = document.body.clientWidth;  
if (w>=650)  
{  
    window.location.href="<%=bigurl%>";  
}  
else  
{  
    window.location.href="<%=smallurl%>";  
}  
</script>
```

```
<%
```

```
elseif instr(A,"zilla/3")>0 then
```

```
%>
```

```
<script language="javascript">  
var Sizer=java.awt.Toolkit.getDefaultToolkit();  
var ScrSize=Sizer.getScreenSize();  
var ScrW=ScrSize.width;  
if (ScrW>=650)  
{  
    window.location.href="<%=bigurl%>";  
}  
else
```

```
        {
            window.location.href="<%=smallurl%>";
        }
    </script>

<%
    else
        response.redirect(smallurl)
    end if
%>
```

This is a lot of manual work. [BrowserHawk](#) will do this for you automatically, taking all browsers into effect.

How do I control printing from ASP?

14,743 requests - last updated Tuesday, July 11, 2000

Printing happens on the CLIENT. Therefore, you can only control anything to do with printing, from the client... and not from ASP. Changing margins, header & footer, hiding some things on your page from printing, forcing page breaks, and even initiating the printer at all are tasks that can only be accomplished from the CLIENT side. Please keep in mind that you can't (and shouldn't want to) FORCE the user to print your page, or do so without telling them (i.e. allowing them to confirm) that you're about to send data to your printer.

Heidi Houston demonstrates a way to invoke the Print dialog:

<http://members.tripod.com/~housten/printing.html>

And Mead Co. provides an effective solution which adds the ability to control many of IE's printing features from scripting:

<http://www.meadroid.com/scriptx/index.htm>

You can hide things from printing by using a different style sheet setting for screen and print media types:

<http://www.w3.org/TR/REC-CSS2/media.html>

And you can force a page break at certain points in your document:

<http://www.w3.org/TR/REC-CSS2/page.html>

A couple of other useful printing techniques can be found here:

<http://msdn.microsoft.com/workshop/author/script/dhtmlprint.asp>

Now whether the 'other' browser is up to all these tasks is beyond me... and isn't really on-topic here. This is an ASP site, after all. :-)

How do I schedule ASP files?

14,328 requests - last updated Thursday, May 24, 2001

1. Use the AT command and Windows Scripting Host (or the more rudimentary task scheduler) to schedule a VBS file at certain intervals.

First, change the ASP to a VBS file. This is accomplished by (1) changing the extension to VBS; (2) changing all `server.createobject` calls to `createobject`; and, (3) removing all `<%%>` delimiters and any browser-destined code (for example, `response.write` statement or client-side HTML). I didn't run into any further complications, but YMMV.

You store the VBS file in the filesystem, and use the AT command to schedule it (this actually schedules its execution with NT's schedule service). At a command prompt, you can use AT by itself to see a list of tasks currently in the schedule. You can use AT `/?` to find out all its syntax possibilities.

For example, to get a file to run every weekday at 9:00 am, I launch this batch file (the first line clears existing entries):

```
at /delete /y
at 9:00 /every:m,t,w,th,f d:\net\shared\getdata.vbs
```

Notice there is no web server involved; the file is accessed directly through the file system. Once I got over the "a user has to be logged in" and "the tasks have to be reset when rebooted" hurdles (both of which I believe are problems with the particular machine that is not under our control), all has been running fine for me.

2. If all you are doing is database work in SQL Server, you might consider using a job. This will allow you to keep all the processing of the job within your database, and prevent the complications associated with multiple systems, connections, and adapting ASP code to be non-ASP-like in behavior.
3. Kris Eiben suggests: If it's a high-traffic site, you might also be able to put something in `session_OnStart`, using an application variable with the last time the function was run and checking to see if the right amount of time has passed.

Along the same lines, check out [this article](#) at powerasp.com - it shows you how to use `global.asa`, a

text file and datediff to schedule execution... though timing is never exact because it relies on visitors actually hitting your site.

4. Build an ASP page and leave a browser open on the machine, with a <meta> refresh (this is by far the ultimate kludge).

How do I make sure my ASP question gets answered?

12,436 requests - last updated Saturday, January 13, 2001

Posting to a newsgroup requires a little bit of netiquette.

1. Make sure your system date and time are valid. If you post in the future, your question will rarely be answered with anything but sarcasm.
2. Please be specific. Don't say that a page you have "does not work" or is "broke." Define what "does not work" means. Display your code, particularly the line that is causing the error (along with the exact error message). If you are getting database errors, copy the error verbatim **and** include the resulting SQL string that is being attempted (most errors that are posted to the groups would have been caught long before that, had the user replaced `conn.execute(sql)` with `response.write(sql)`). Specify which version of everything you're running: IIS 2, 3, 4 or 5; PWS 1.x or 4.0; which operating system (W95/W98/WME/NTWks/NTServer/W2KPro/W2KServer/XPPro/XPHome); which database platform you're connecting to (and version); and which version of MDAC you are using. The more information people have, the better they'll be able to help you.
3. Please do not cross-post to all 3 groups just because they're about ASP. Someone will answer your question if you post it in the right group. If you put a blanket question out across all 3 groups in an effort to get more response, many people (myself included) will be much less eager to answer your question. This is mainly because the experts in the database group are not likely able to answer your questions about CDONTS, or at least that's not their specialty. So to them, your post is just noise as opposed to signal. Also, many server issues will likely be better handled in the group `microsoft.public.inetserver.iis`.
4. CHECK THIS FAQ FIRST. If you ask a question that's already answered in the FAQ, at least one of the answers you get will be a link here. Again, this simply wastes time and bandwidth. Please look over the recent posts in the newsgroup. 80% of new posts are ones that were asked and answered within the past 2 days, and too often within the past 2 hours. Doing a quick scan of the topics in the newsgroup might save you from posting your question at all, let alone waiting for a response (which, in this case, would often just be directions to scrolling down to a specific post anyway). Along these lines, [Google](#) is an outstanding resource; I recommend you all try out its advanced search feature. Instead of waiting for answers from people who may be listening in this group today and have time to post an answer, you can enter your search criteria, time frame, specific groups (e.g. `*asp*` or `*iis*`) and you can even include (or exclude) a poster's name from the result set. Their database is humungous, encompassing all posts made to these groups at least...

5. Please provide a relevant and meaningful subject line. "Help! It's broken." or "I have an ASP problem" are not very helpful subject lines. To make it easier for people to help you, put something more specific there, like "SQL Error: Error in update statement" or "DeleteFile() error: object doesn't support this property or method."
6. Please do not lash out unreasonably at people trying to help you, just because they didn't provide the exact answer you were looking for, or pointed you to sufficient documentation instead of dropping everything to write your entire application for you. Keep in mind that these people are volunteers and they are helping you of their own free will. Mistreat them, and they'll stop helping you. If you don't like an answer they give, move on to the next one... and if you absolutely **must** call names, do it in private mail.

For official newsgroup rules, see Microsoft's [Rules of Conduct...](#)

What is wrong with Session_OnEnd()?

12,336 requests - last updated Sunday, October 28, 2001

1. Why does Session_OnEnd not fire?

Session_OnEnd is unreliable. Do not create applications that rely on Session_OnEnd to occur, because it doesn't always happen. This is a known bug and seems to have been reduced (if not eliminated entirely) in IIS 5.0, which ships with Windows 2000. This bug is one of many reasons to not store recordsets, connections or other objects in session variables (see [Article # 2053](#)).

So is there any way to get around this? Well, let's say you have an application that stores session data in a database. When the session ends, you want to clean up that data, right? If the user logs out properly, you can do this from session_onEnd. If leave your site in any other way, the session data will be stored forever. For this example, let's say your session timeout is the default, 20 minutes.

On every page, you should update the session record(s) to reflect the CURRENT time for that user. This way, the record will become stale if there's no activity... and if they don't log out, you still have some way of identifying that their session has, indeed, expired (whether that window is still open, or they've gone to xxx.com, or they've closed their browser, or whatever).

Then you could create a stored procedure that runs every 20 minutes (or the value of session timeout, or every hour, or once a day) by scheduling a job through SQL Server Agent. This stored procedure would scan the table and set inactive (or delete) any records older then <x> minutes. You could also use it to delete any temporary files or folders that the user was using on the server during their session.

2. Why can't I use server.mapPath or response.redirect?

Session_OnEnd does not support the request, response or server objects. The only built-in objects you can use are session and application. So, for example, if you need to use a server.mapPath directive, store the fully qualified path in an application variable BEFORE the session ends. However, in limited testing, I was able to use these objects in files #included in global.asa (for the technique, see [Article #2144](#)).

How do I use ASP to [...]

12,311 requests - last updated Friday, October 13, 2000

...access a user's favorites list, make my site their home page, delete their cache, delete their history, remove one item from their cache, remove one item from their history, write to a text file on their hard drive, figure out their home page, determine their custom settings, put a shortcut to my home page on their start menu, force them to download a file without a prompt, change their default download folder, adjust their page margins for printing, automatically print a page without a prompt, change their default printer, disable the edit button, disable view source, disable the back/forward buttons, change their default browser/e-mail client/newsreader, "borrow" their e-mail address, read a key from their registry, change their security settings, force them to save my web page to their hard disk, change their "browse in a new process" setting, change their screen size/resolution/color depth, force them to download an ActiveX control/plugin, automatically run an EXE on the client, force them to enable cookies, grab or delete files from their machine without asking, or force them to view my Java applets even though they have disabled Java?

- A. **You don't.** At least not from ASP (and preferably not from anywhere else either!). There are very good reasons why each of these things is either extremely difficult (usually requiring an ActiveX control) or impossible. To get a better sense of this, imagine how you would feel if the aspfaq.com site (or any other site, for that matter) did any of these things to YOUR computer.

How do I control access to an area?

12,167 requests - last updated Tuesday, November 13, 2001

Check out these articles:

[Implementing a secure site with ASP](#)

[IIS Security Overview](#)

If you want to roll your own permissions, then creating a login for a section of your web site is fairly easy. First, create a login form (loginForm.asp):

```
<form action=loginHandler.asp method=post>
    Username: <input type=text name='username'><BR>
    Password: <input type=password name='password'><BR>
    <input type=submit Value='Log In'><BR>
</form>
```

Next, create a login handler (loginHandler.asp):

```
<%
    u = lcase(request.form("username"))
    p = lcase(request.form("password"))

    '-----
    '-- check to see that the form was completely filled out--
    '-----
    if u="" or p="" then
        response.redirect("loginForm.asp")
    end if

    '-----
    '-- check for a match, this could be against a database!--
    '-----
    if u<>"myusername" or p<>"mypassword" then

        'access denied
```

```
        response.redirect ("loginForm.asp")
    else

        ' let them in!
        session("login")=true
        response.redirect ("hiThere.asp")
    end if
%>
```

Finally, at the top of each page, you test the session variable that you assigned in the script above:

```
<%
    if not session("login") then
        response.redirect("loginForm.asp")
    end if
%>
```

You could also do something similar using a database, where you would only have to check that the username and password exist in a table of many u/p combinations (in the above example, you have to manually program each username/password you want to support).

How do I make JavaScript send values to ASP?

11,028 requests - last updated Sunday, July 9, 2000

This question is asked a LOT. "How do I set a session variable equal to something that was just created in client-side script?" You CAN'T. Because ASP is processed on the server, and JavaScript isn't processed until AFTER the results of ASP have been passed to the client, the only way to send JavaScript variables to ASP is to invoke another ASP page (e.g. submit a form, client-side redirect, auto-post to a hidden frame, etc.). Makes sense too, since you can't USE the new session variable until you load another ASP page anyway.

Why do I get a 500 Internal Server error for all ASP errors?

10,904 requests - last updated Friday, January 18, 2002

If you're using IE5 and/or developing on Windows 2000, you might find it difficult to debug ASP errors in a browser. This is because IE5 has a ridiculous default option that suppresses errors to a more "friendly" error (which, IMHO, is a lot more cryptic than what they'd get otherwise). This comes back to the user as a 500.100 Internal Server Error, and doesn't leave the user much information to pass on to the webmaster.

To circumvent this silliness and get real ASP errors, go to IE's Tools/Internet Options menu, and on the advanced tab, uncheck "Show friendly HTTP error messages."

After you've disabled this default setting, refresh the page in question. There are four possible outcomes: (1) the page will magically work again; (2) the page will give you a more detailed error (e.g. Stack Overflow or Syntax Error), including a line number; (3) you will get "Server Application Error" - which means that at some point IIS got confused about the current application; or (4) you will still see non-descript error messages.

If (4) is what happens, open Internet Services Manager, go to the home directory tab of your default web site or application, click on configuration, go to the Debugging tab, and make sure "Send detailed error messages to the client" is selected. Click Apply/OK/OK etc. to get out of there and try your page again.

If (3) is what happens, you can remedy this simply by going into Internet Services Manager. Right-click the application in question (or Default Web Site, if an application is not relevant), select properties, hit the "Home Directory" tab, click the "Remove" button, and then click the "Create" button. Follow with Apply/OK etc and get out of Internet Services Manager. Refresh your page, and all should be well again.

If you are still getting errors like 'page not found' then go into Internet Services Manager, right-click Default Web Site, choose Properties, and on the Home Directory tab, click the Configuration button. On the App Debugging tab, make sure "Send detailed ASP error messages to client" is selected.

See [Q261200](#) for more information.

Where do I get ASP?

10,246 requests - last updated Tuesday, October 30, 2001

=====

Windows 95 / NT 4.0 Workstation

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The latest version of Personal Web Server / IIS is 4.0. It includes ASP 2.0, and is found in the Windows NT 4.0 Option Pack, which you can download [here](#). If you are running NT 4.0 and IIS 3.0 / Peer Web Services, these products do NOT include ASP. You will have to find ASP.exe to make ASP work; however, I'm not going to place the link here because I strongly believe that you should use version 4.0.

After installing the Option Pack, you'll want to [re-]install [Service Pack 6a](#) (which, among other things, updates ASP.dll and fixes several security holes in IIS), and also keep your MDAC components up to date by watching the [MDAC download page](#) for new releases.

=====

Windows 98

=====

Find "pws.exe" on the Windows 98 CD. THAT is the version you should be installing, NOT the one from the web site and NOT the one from the FrontPage CD. After installing PWS, keep your MDAC components up to date by watching the [MDAC download page](#) for new releases.

=====

Windows 2000 Professional

=====

Windows 2000 includes a scaled-down version of IIS 5.0. If you didn't install IIS during initial installation, you can find it under Control Panel >> Add/Remove Programs >> Add/Remove Windows Components.

=====

Windows Millennium / XP Home

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[Article #2079](#) contains a description of Microsoft's lack of support for these configurations, as well as workarounds to make them work correctly.

=====

Windows XP Professional

=====

Windows XP includes a scaled-down version of IIS 5.1. You will likely have to go to the Control Panel >> Add/Remove Programs, Add/Remove Windows Components to configure this service, as it's not installed by default.

All "scaled-down" versions of IIS / PWS have the following restrictions: 10 connection limit, you cannot use host headers / multiple web sites, and you cannot change the port of HTTP services.

How do I get the user's IP address or browser information?

9,554 requests - last updated Sunday, October 28, 2001

The user offers up many environment variables without even knowing it. You can learn a LOT about these variables by running the following script:

```
<table>
<%
    for each x in Request.ServerVariables
        Response.Write("<tr><td>" & x & "</td><td>")
        Response.Write(Request.ServerVariables(x))
        Response.Write("</td></tr>" & vbCrLf)
    next
%>
</table>
```

Here is a JScript equivalent:

```
<table>
<script language='JScript' runat=server>
    var svColl = Request.ServerVariables();
    for(sv = new Enumerator(svColl); !sv.atEnd(); sv.moveNext())
    {
        var nm = sv.item();
        Response.Write("<tr><td>" + nm + "</td><td>");
        Response.Write(svColl(nm) + "</td></tr>");
    }
</script>
</table>
```


How do I protect my ASP code?

9,017 requests - last updated Tuesday, June 26, 2001

As we all know, ASP code is relatively safe from surfers. When people try to download ASP code, all they see is the processed HTML (unless you haven't [patched the ::\\$DATA bug](#)).

Many people are concerned, however, about protecting their ASP code from prying eyes (either code they are distributing to clients, or code that sits on a shared server).

You can compile your code into DLLs. Often this isn't an option, because most hosts won't accept custom components (some, like Data Return, will accept it -- if you turn over administrative control and allow them to review your source code). Read [this article](#) for a tutorial on creating a simple VB6 ActiveX DLL.

The other option is to use [Windows Script Encoder](#). However, before you decide to go this route, make sure you read [this article](#), which demonstrates how easy it is to reverse engineer these 'encoded' scripts.

How do I manage a session across multiple windows?

8,587 requests - last updated Monday, November 12, 2001

You can't do this reliably. This is because Internet Explorer has a setting called "browse in new process" which, if enabled, forces a new session with each new window. Use a key in the querystring, tied to a cookie or a form, if session state across windows is a necessity. See [the fake volleyball store](#) for a working example.

Microsoft says there is no direct workaround for this, but goes into more detail about how it can happen randomly in [Q196383](#).

Also, starting with IE 5.01, this setting is no longer in the Advanced Options, but pre-determined -- depending on the amount of RAM in the system. This is described in [Q240928](#).

The short version: don't rely on maintaining sessions across multiple windows.

Why do I get an HTTP Header or Object Moved error when trying to redirect?

8,484 requests - last updated Monday, July 10, 2000

Header Error

The short answer is to execute any `response.redirect` calls before any client-side code, including the opening `<html>` tag. The long answer is to use `response.buffer = true` first, which can allow you to display content before redirecting...

Object Moved

When using `Response.redirect` with certain browsers, you can get the Object Moved error message. One way to prevent this from happening is using `response.clear` first (note that buffering must be enabled):

```
<%  
    Response.Expires = 0  
    Response.Buffer = true  
    ' ...  
    Response.Clear  
    Response.Redirect "http://www.domain.com"  
%>
```

This is an undocumented 'feature' of IIS 4.0 (but fully documented in IIS 5.0).

Thanks to Michel Thiffault for submitting this information.

How do I run ASP on other web servers besides IIS?

8,125 requests - last updated Monday, October 1, 2001

While ASP runs best, easiest and completely on IIS with NT Server / Windows 2000, there are some products available which allow you to run ASP on other web servers (and even other platforms).

ChiliSoft (www.chilisoft.com) have several ports for other platforms, including O'Reilly's, Apache and Netscape on NT, and a couple even on Unix.

Halcyon (www.instantasp.com) seem to have a pretty decent offering as well.

Finally, [NodeWorks](#) has a module to run ASP on Apache.

How can I give them a better 404 message?

7,696 requests - last updated Tuesday, June 26, 2001

That boring 404 error message leaves a lot to be desired. Wouldn't it be nice to be able to log those errors, find out where the bad links are coming from, and most importantly, inform the user that the URL they entered is incorrect (and, where applicable, suggest to them where they should have gone)?

Using a rarely-documented feature of IIS 4 and up, you can do all of these things and more. What you want to do is create a page in your site called 404.asp. This is the page that will be presented instead of that stock grey page, so you'll likely want to make this page look like the rest of your site. [Here is an example](#).

One important thing to note is that this page should reference all images and links relative to your root folder, as the 404.asp file will actually execute in whichever folder it's called from. For example, if you have `` and that image only exists in your root folder, then if someone calls `/folder/no-exist.htm`, the image will show up as a broken link because it does not exist in `/folder/` ... therefore you should always use `` or ``. Same goes for links, they should be relative to the root URL, not to the folder that 404.asp resides in.

Once you have built a standard 404 page, you can make IIS intercept 404 errors and present this page instead by following these steps:

1. Open Internet Services Manager
2. Expand the trees until you see Default Web Site
3. Right-click Default Web Site and choose Properties
4. Highlight the Custom Errors tab
5. Scroll down to 404 and click Edit Properties...
6. Choose URL from the Message Type listbox
7. In the URL> textbox, type the relative path of your 404 page
(Starting with the slash (/) that indicates your root)

You may want to add a bit of flexibility to this code; for example, you can display the page they were trying to reach by accessing the querystring:

```
<%  
    b = request.servervariables("query_string")  
    msg = ""  
    if len(b) > 0 then  
        ' Take out "404;" from querystring  
        msg = ", " & right(b,len(b)-4) & ", "  
    end if  
    Response.Write "Sorry, the URL you were looking for" & msg & " is not  
available."  
%>
```

Keep in mind that once you hit the 404 ASP page, you no longer have access to any anchor or querystring information they originally asked for.

There are many other things you could do, such as send an automated e-mail or append a log file every time someone hits a 404. After collecting data on non-existent pages that are queried often, you could anticipate them by checking the value of **b** above and suggesting where they should go instead.

For a more in-depth article on building a 404-centric application, see the following:

<http://msdn.microsoft.com/library/en-us/dnvb600/html/404track.asp>

How do I check for ENABLED cookies / javascript?

7,586 requests - last updated Monday, October 16, 2000

There are several components which will allow you to determine if cookies or javascript are SUPPORTED. You can even do it yourself, with minimal knowledge of browser versions (and where in the dev timeline these features were introduced). But knowing whether or not they're supported is far less than half the battle: the key is whether or not they're ENABLED.

There is a component that tells you whether these things are enabled (NOTE: it does NOT do this exclusively from the SERVER), and many other important facets of a unique user's browser. It's called BrowserHawk:

<http://cyscape.com/products/bhawk/bcadv.asp>

You can do this yourself as well, but it's a much lengthier coding process.

Cookies:

Set a cookie, redirect, and try to read that cookie. If you can't, then cookies are disabled. Here is some sample code:

cookietest.asp:

```
<%  
    response.cookies("enabled")="1"  
    response.redirect("cookietest2.asp")  
%>
```

cookietest2.asp:

```
<%  
    if request.cookies("enabled")="1" then  
        response.write("cookies are enabled")  
    else  
        response.write("cookies are not enabled")  
    end if  
%>
```

JavaScript:

Populate default.asp with a hidden form (with POST method, action=default2.asp) and a link to default2.asp in <noscript> tags. Use JavaScript to post to the next page, then try and read from the request.form collection. If it's empty, they used the link (and Javascript is disabled). One caution: Netscape 2.0 will execute <script> as well as <noscript>. Here is some sample code:

scripttest.asp:

```
<form method=post action=scripttest2.asp name='hiddenform'>  
    <input type=hidden name=enabled value="1">  
</form>  
  
<form method=post action=scripttest2.asp name='visibleform'>  
    <input type=hidden name=enabled value="0">  
    <input type=submit value=" Proceed >> ">  
</form>  
  
<script>  
    document.hiddenform.submit();  
</script>
```

scripttest2.asp:


```
<%  
    if request.form("enabled")="" then  
        ' user bypassed checker  
        response.redirect("scripttest.asp")  
    else  
        if request.form("enabled")="1" then  
            response.write("scripting is enabled")  
        else  
            response.write("scripting is not enabled")  
        end if  
    end if  
%>
```

This solution is a little messy, as most users will see the first page for an instant. However if this information is crucial to the rest of your application, it is a reasonable trade-off.

What's the deal with IIS 5.0 and ASP 3.0?

7,527 requests - last updated Wednesday, December 13, 2000

I see these questions all the time, here are the answers:

1. Can I run IIS 5.0 and/or ASP 3.0 on NT4?

- A. IIS 5.0 is not available for Windows 95, Windows 98, Windows ME or Windows NT 4.0. If you need any of the new functionality in ASP 3.0, then you also need to upgrade to Windows 2000. IIS 5.0 cannot be downloaded... it is on the media CD for your OS, and can be installed by going to Add/Remove Programs, Add/Remove Windows Components.

2. Does Windows 2000 Professional ship with PWS or IIS?

- A. PWS does not exist in the world of Windows 2000. Pro, Server and Advanced Server all ship with IIS 5.0. There are still connection limitations when you run IIS from Professional (as with PWS on Workstation).

3. Where else can I learn about IIS 5 and ASP 3.0? (A.K.A. what's the difference between IIS 4 and IIS 5?)

- A. Here are a couple of links to get you started:

[Internet Information Services Features](#)

[IIS 5.0 Technical Overview](#)

[Leveraging ASP in IIS 5.0](#)

[Q222487](#) INFO: What's New in ASP with IIS 5.0

[Q250979](#) IIS 5.0 Release Notes

How do I make sure people go to page x before page y?

7,522 requests - last updated Sunday, July 9, 2000

There are three valid answers to this, depending on how you want to handle it.

- (1) If you need to make sure that someone has been to a.asp before you will process anything on b.asp, you can set a session variable in a.asp that flags a.asp as having been visited. Check for this session variable in b.asp; if it exists/is true, do the processing.
- (2) If you need to make sure that someone goes directly from a.asp to b.asp, check `Request.ServerVariables("HTTP_REFERER")` in b.asp. If it's not a.asp, then they didn't arrive here through the proper route.
- (3) If you need to make sure that b.asp is only accessed once per session, you can set a session variable that says `("been_here_already")=true` ... in that page, check to see if that variable exists... if it does, that means they've already been here.

Does order matter when using < % % >, <script runat=server>, and different languages?

7,376 requests - last updated Monday, September 4, 2000

YES.

Run these two scripts:

(a)

```
<%@language="vbscript"%>

<script language="VBscript" runat=server>
    response.write("1<p>")
</script>

<script language="jscript" runat=server>
    Response.Write("2<p>");
</script>

<%
    Response.write("3<p>")
%>

<script language="jscript" runat=server>
    Response.Write("4<p>");
</script>

<script language="VBscript" runat=server>
    response.write("5<p>")
</script>
```

(b)

```
<%@language="JScript"%>

<script language="VBscript" runat=server>
    response.write("1<p>")
</script>

<script language="jscript" runat=server>
    Response.Write("2<p>");
</script>

<%
    Response.Write("3<p>");
%>

<script language="jscript" runat=server>
    Response.Write("4<p>");
</script>

<script language="VBscript" runat=server>
    response.write("5<p>")
</script>
```

Pay particular attention to the order of the numbers that display on the screen, and compare it to the order of execution in your scripts. In the best case, by mixing the two techniques you could have odd displays such as this. In the worst case, you could have functions that are undefined, because you actually called them before you initiated them.

My biggest recommendation: don't mix <%%> and <script runat=server>. Use one or the other.

Tom Stone adds that this is the order of execution:

1. scripts in non-default language
2. scripts using <% %>
3. scripts in default language

Why do I get script errors on one machine but not another?

7,156 requests - last updated Tuesday, May 8, 2001

This usually occurs with new methods or functions, such as FileSystemObject, try{} or With. The cause is that you have a script library that is older than the documentation or sample code you are working from. Here are the errors you might receive:

```
Microsoft VBScript compilation error '800a03ea'  
Syntax error  
/<file>.asp, line <line>
```

or

```
Microsoft VBScript runtime error '800a01b6'  
Object doesn't support this property or method: '<method or property>'  
/<file>.asp, line <line>
```

or

```
Microsoft VBScript compilation error '800a0400'  
Expected statement  
/<file>.asp, line <line>
```

or

```
Microsoft VBScript compilation error '800401f9'  
Error in the DLL  
/<file>.asp, line <line>
```

(Keep in mind that there is always the outside chance that you misspelled the property/method, or are using a component where that property or method is in fact not supported.)

Here are my recommended updates for Win 9x / NT 4.0:

1. NT 4.0 Option Pack
2. Service Pack 6a
3. updated scripting engines
4. Latest MDAC

If you are running Windows 2000, then it is almost certain you are either misspelling the method/property, or using a method/property that doesn't exist in the component you are accessing. An exception might be new methods introduced in the 5.5 or 6.0 scripting engines, such as JScript's new push method for arrays.

When I run a page in my browser, why does the ASP code not execute?

6,511 requests - last updated Saturday, January 20, 2001

There is usually a limited number of reasons why this would happen. They are as follows:

- you do not have IIS or PWS installed
- you did not save your page with an .asp extension
- you did not place your ASP page in your web root / structure, or you put it in a place that does not have "execute script" permissions
- you accessed the file by typing c:\<path>\<file>.asp or by double-clicking it within Windows Explorer (ASP pages need to be interpreted by a web server, not a file system)
- you expected to response.write code using <% varname %> syntax when you should use <%= varname %> syntax (that equality sign is important).

If none of the above applies to you, then it is likely that you have some kind of misconfiguration (or else you are getting an error message). Post your configuration, code and any errors you get to microsoft.public.scripting.asp.general and someone will help you solve your problem.

Where can I host ASP pages for free?

6,464 requests - last updated Thursday, January 17, 2002

Well, they say there's no such thing as a free lunch. In most cases, I'd have to agree. Most web hosts out there expect something in return for their 'free' web space, usually in the form of mandatory advertising (often including those blasted popups).

Below is a list of ISPs offering free web space on NT servers, allowing you to use ASP. Most have limitations, be it performance, or space, or database access, and of course almost always advertising. But filter through them, you might find one you like. Let us know if you find a great deal.

<http://www.webhostme.com/>

<http://www.brinkster.com/>

Action Jackson has a list:

<http://www.actionjackson.com/hosts/results.asp?cost=0>

You can also search for good deals at <http://www.webhostdir.com/> and <http://www.hostindex.com/> ... they might not be free, but many are under \$10/month (and/or have a "one-time, lifetime" fee). For example:

<http://www.atfreeweb.com/>

<http://www.awebhosting.net/>

<http://www.gzinc.com/>

<http://www.hostingplans.com/>

<http://www.sharpwebservices.com/>

<http://www.usware.net/>

<http://www.webstrikesolutions.com/>

<http://asp4free.ravenna2000.it/> (Italian)

A word of warning though: don't sell this kind of deal to a client. For your own personal web space, they might be okay (and even then, I would stick to those who have a refund policy)... Experience has proven to me, time and time again, that you get what you pay for. Once in a while you'll find a gem, but when it's someone else's business on the line, it just isn't worth the risk...

How can I stop Photoshop from opening ASP files?

6,335 requests - last updated Sunday, July 9, 2000

This is a known issue, but only occurs if you install Photoshop AFTER applications such as Visual InterDev (or, shudder, FrontPage). When setting up a new system, do yourself a favor, and be sure to install Photoshop FIRST.

Here are the steps to fix your problem the right way:

- (1) start, run, regedit
- (2) Expand HKEY_CLASSES_ROOT
- (3) Find a folder named ".asp"
- (4) Right-click the folder and choose "delete"
(back up your registry if you're not sure)
- (5) Close the registry editor
- (6) Next time an asp page is double-clicked, you will get the "Choose a program to run this file" window.
Choose the application that you would like to use to edit the code (e.g. Notepad or InterDev) and make sure that the check box on the bottom ("Always use this file...") is checked.

Why does my page render (properly) in IE and not in Netscape?

5,964 requests - last updated Sunday, July 9, 2000

Netscape is much more stringent about properly formatted HTML documents. If, for example, you use a `<table>` and there is no closing `</table>`, the table will not be displayed. If Netscape is in your target audience, make sure that all HTML tags (at least those that require it) have closing tags. Mind you, it's not a bad habit to follow even when Netscape ISN'T in your target audience.

How do I get the login name / username from the person visiting my page?

5,907 requests - last updated Friday, September 8, 2000

If you have disabled Anonymous access, then you should be able to retrieve the value from:

```
<%  
    Response.Write Request.ServerVariables("LOGON_USER")  
%>
```

Note that your users must be using Internet Explorer to support Challenge/Response (IIS 4.0) or Integrated Windows Security (IIS 5.0).

If you can't disable Anonymous access, and/or need to support Netscape, then there is a possible alternative, provided you're not using DHCP. If your users have static IP addresses, you could store their usernames in a table and do a lookup against their IP:

```
<%  
    Response.Write Request.ServerVariables("REMOTE_ADDR")  
%>
```

If you can't enforce either of those things, then you may have to resort to forcing your users to log in (even only once, then storing a cookie). I suppose this depends on balancing the importance of knowing who is on the site versus every user having to log in.

Why does REMOTE_HOST return an IP address instead of a name address?

5,398 requests - last updated Sunday, October 28, 2001

IIS does not automatically do reverse DNS lookups - by default, Request.ServerVariables("REMOTE_HOST") is populated with the same value as Request.ServerVariables("REMOTE_ADDR") - which is simply an IP address. According to [Q245574](#) and [Q297795](#), you can configure IIS to handle DNS lookups. Barring that ability, here are some components that will facilitate it without altering IIS:

[AspDNS](#) (ServerObjects)

[ASPDNS](#)

[BrowserHawk](#)

[DNS LookUp](#)

[DSDNS](#)

[DynuDNS](#)

[HexDNS](#)

[LyfDNS](#)

[Simple DNS+Traceroute](#)

Remember that reverse DNS lookups on every request can be a significant burden on your server... so only implement one of these solutions if you really need it!

Why is Netscape slow in IIS 5.0?

5,335 requests - last updated Friday, March 16, 2001

A minor change introduced with IIS 5.0 may, in obscure situations, cause Netscape to render a page a bit slowly (though never by a minute, which I believe was an exaggeration by one individual). However, Microsoft did not do this to thwart Netscape. All they did was change the response.buffer default property to "TRUE" (it was "FALSE" in IIS 4.0).

When response.buffer is set to TRUE, the entire page is processed and stored in a "buffer" -- not being sent to the client until the entire page is processed. When response.buffer is set to FALSE, the page is "streamed" to the client as it is processed - so you will see some lines of text, then the server will churn out some more lines and they will appear, and so on until the page is finished.

So, if you are having this problem, try setting the following at the top of the page (you can also uncheck "Enable buffering" in the configuration/app options tab of any application, or the default web site, in Internet Services Manager):

```
<%  
    Response.Buffer = False  
%>
```

In addition to the above solution, Peter Krantz tells us the following:

If you are running Windows 2000 you can easily fix this by bringing up the task manager, selecting the Process tab, right-clicking the netscape.exe image and setting the priority to Low which means that the IIS will be prioritized over netscape to process the form.

Remember that, in either case, Netscape is always going to have problems with HTML rendering, particularly with complex tables and CSS. This is just a fact of the Internet: Netscape has a terrible rendering engine (which makes it a GREAT test browser). I have found that, the more complex the page, the longer Netscape will take to load it... and this is independent of web server settings, web server software, and even platform.

Can I detect plug-ins/ActiveX controls from ASP?

5,218 requests - last updated Monday, July 10, 2000

Not with ASP alone. You can use client-side code, to some extent. Here is an example for Nav3+ and IE 3.02+ that detects Flash 2.0:

```
<%
' This ASP section pre-determines which
' script to send ... VBScript or JavaScript

a = lcase(request.servervariables("http_user_agent"))
if instr(a,"msie")>0 then
    if instr(a,"98")>0 or instr(a,"95")>0 or instr(a,"nt")>0 then
        ie32="true"
        ' IE 3 or greater on 32-bit
    end if
elseif instr(a,"mozilla/3")>0 or instr(a,"mozilla/4")>0 then
    if instr(a,"opera")<=0 then
        nn="true"
        ' NN3 or greater
    end if
end if

if ie32 then
%>

<script language="vbscript">
if scriptEngineMajorVersion > 1 then
    on error resume next
    FIn=(IsObject(CreateObject("ShockwaveFlash.ShockwaveFlash")))
    if FIn then
        msgbox "Flash Installed!"
    else
        msgbox "Flash not installed."
    end if
end if
</script>

<%
```



```
elseif nn then
%>

<script language="JavaScript">
FIn = navigator.plugins["Shockwave Flash 2.0"];
if (FIn)
{
    alert("Flash Installed!");
}
else
{
    alert("Flash not installed");
}
</script>

<%
    end if
%>
```

Of course instead of alert and msgbox statements, you would document.write <object> and <embed> tags or alternate content, depending on the outcome of your test.

If this seems like too much work, you may consider looking at [BrowserHawk](#) which allows you to detect all kinds of client-side plug-ins and controls from ASP.

How do I access my server's registry from an ASP page?

4,967 requests - last updated Sunday, October 28, 2001

Here are some components available to do read from and/or write to the registry:

[ADEX Registry](#)

[ASP MagicBundle](#)

[DES RegEdit](#)

[MS Registry Access 1.0](#)

[RegEdit Library](#)

[Stonebroom.RegEx](#)

How do I make Visual InterDev's debugging features work?

4,866 requests - last updated Wednesday, January 30, 2002

Visual InterDev's debugging features are useful for some people (I am not one of those people). But many people have problems getting them working, and keeping them working. This can be due to misconfigured systems from the get-go, or from installing software afterward that causes conflicts or errors that may not be visible.

One common misconception is that if you can install VI, you can run the *server* debugging tools. AFAIK, VI's debugging tools only run on Windows NT and Windows 2000... they will not run on Windows 9x clients (though client-only debugging can function). Also, they work best if they are running ON the server that is hosting the ASP files. Remote debugging works -- allegedly -- but reports I've heard grade it mediocre at best.

If you've already installed InterDev's server extensions, search for a file called VIDDBG.exe. From a command prompt, issue the following code:

```
<drive>:\<path>\VIDDBG.EXE /server > videbug.txt
```

This will run diagnostics on the debugging tools, and may help you determine why they're not working. In any case, if you're going to be fixing them, you'll likely need to (re-)install the server extensions.

If you're running NT 4.0, you'll want to reinstall SP4 or greater before starting. Next, find the file SETUP.EXE in the \VID_SS\ folder on the CD-Rom (this will be on Disc 1 of Visual InterDev, or Disc 2 of Visual Studio Pro or Enterprise). Double-click this file to launch the installation. Finally, reinstall the latest service pack for Visual Studio (at the time of writing, that is SP4).

For more information on Visual InterDev debugging, see the following articles:

[Q244272](#) INFO: Visual InterDev 6.0 Debugging Resources

[Microsoft Visual InterDev 6.0 Debugging](#)

If you are getting errors (e.g. 'Unable to contact web server') or are having trouble making debugging work, see the following KB articles:

[Q220166](#) PRB: Troubleshooting "Unable to Contact Web Server" in Visual InterDev

Q195954 PRB: "Unable to Contact Web Server" Error Creating New Project

Q194013 PRB: No Warning From VID Debugger If Connection to Server Fails

Q167661 PRB: Visual InterDev Cannot Connect to PWS or Share

Q191560 FIX: Contacting Web Server to Open Web Project Never Times Out

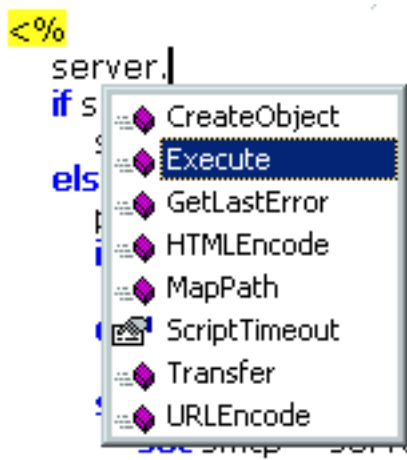
How do I get IntelliSense to see ASP 3.0 methods?

4,796 requests - last updated Wednesday, October 31, 2001

Methods like `Server.Transfer` and `Server.Execute` are not in Visual InterDev 6.0's IntelliSense (the little drop-down that completes methods and properties for you). Many people have asked why this is, especially when InterDev is installed on Windows 2000 with IIS 5.0 and ASP 3.0 installed.

I will try to explain what is going on, from my limited vantage point. IntelliSense itself gets its information from type libraries; in this case, it is a file with a `.tlb` extension. Since InterDev 6.0 does not detect which operating system / web server version it is being installed alongside, it ships with ASP 2.0's type library, not ASP 3.0's -- hence the currently missing method names.

So how do you get the new type library to be recognized by Visual InterDev? Is it even possible?



Yes, it is possible; observe the screen shot at left. It includes `server.transfer` and `server.execute`.

How did I do it? There are a few hoops to go through...

1. Ensure that all Visual Studio components are closed.
2. Go to `<path>\Microsoft Visual Studio\Common\IDE\IDE98\.`
3. Rename **asp.tlb** to **asp.tlbak** (just in case).
4. Place [this TLB file](#) in that folder.

(Note also that `Server.URLPathEncode`, an undocumented method, has been removed from the new type library.)

The instructions for creating this TLB file are documented in [Q261101](#) -- but the methodology behind it requires OLEView and midl.exe to be installed and enabled on your machine. Also, if your machine isn't running ASP 3.0 (e.g. you develop on NT 4.0 and deploy to Windows 2000), you have to copy the new `asp.dll` to your local machine... I figured it would be easier to just give you the file. :-)

It seems that with the Visual Studio.NET Betas and Windows XP Professional (RTM Build 2600), you don't need to add this type library at all.

Of course, if you are afraid of messing up your system, do not alter your environment. This operation is not officially supported by Microsoft.

How do I fix the ::\$DATA bug?

4,783 requests - last updated Monday, September 18, 2000

The only way this could be a concern for you is if you're still running NT 4.0 with Service Pack 3. <shudder>

Eliminate the problem by installing [Service Pack 6a](#). More info here:

[Q197464](#) How to Detect the ::\$DATA Attack in IIS Log Files

[Q232449](#) Sample ASP Code May be Used to View Unsecured Server Files

Why do server.transfer and server.execute not behave as advertised?

4,684 requests - last updated Sunday, July 9, 2000

If you are running IIS 4.0 / PWS 4.0 (or earlier), this is because the documentation you obtained these directives from is specifically for IIS 5.0. These features are not available in previous versions.

What is wrong with Request.ServerVariables("HTTP_REFERER")?

4,657 requests - last updated Wednesday, July 4, 2001

The situations where this servervariable works include the following methods of a browser loading a URL:

- A straight HTML <a href>
- A form submit (POST or GET) using a submit button or <input type=image>
- A form submit (POST or GET) using JavaScript

The situations where it doesn't work:

- A link from Favorites
- A click on 'Home' or a Link with a defined URL
- A JavaScript location.href or location.replace()
- Typing the URL directly in the browser
- Using Response.Redirect
- Using Response.AddHeader or <meta http-equiv=refresh> to redirect
- Loading the URL with XML (see [Article #2173](#))

Obviously, this variable cannot be relied upon for many situations.

Here is the code I used to test with. Ref.asp contains the following code:

```
<%  
    response.write "Referer: " & request.servervariables("http_referer")  
%>
```

And ref.htm contains the following:

```
<%
    Response.AddHeader "Refresh", "10;URL=ref.asp"
    ' interchanged with the <meta> version:
%>

<meta
    http-equiv='refresh'
    content='10;URL=ref.asp'>

<form method=GET action=ref.asp name=getform>
    <input type=submit value=' Go there (GET) >> '>
    <input type=image style='cursor:hand'>
</form><p>

<form method=POST action=ref.asp name=postform>
    <input type=submit value=' Go there (POST) >> '>
    <input type=image style='cursor:hand'>
</form><p>

<a
    href='ref.asp'>Go
there - straight link</a><p>

<a
    href='#'
    onclick='window.location.href="ref.asp";return false;'>Go
there - javascript href</a><p>

<a
    href='#'
    onclick='window.location.replace("ref.asp");return false;'>Go
there - javascript replace</a><p>

<a
    href='#'
    onclick='document.getform.submit();return false;'>Go
there - javascript GET</a><p>

<a
    href='#'
    onclick='document.postform.submit();return false;'>Go
```

there - javascript POST

You'll notice that in Netscape 4, the referer is translated properly in all cases. With this exception, I think we're all glad, overall, that the number of users with Netscape 4 is quickly diminishing! :-)

Can I run IIS on Windows Millennium or Windows XP Home?

4,483 requests - last updated Tuesday, December 4, 2001

Many people switching from Windows 98 to Windows ME or XP Home Edition have been disappointed to find that PWS is not included. Microsoft also does not support the installation of any web server on these products. Many people have witty answers like "install Apache" or "switch to Linux." These might be realistic workarounds in their eyes, but are clearly not an option for most people who would be asking the question in the first place.

Here are explanations from Microsoft's Knowledge Base:

[Q266456](#) Personal Web Server Is Not Included with Windows Millennium Edition

[Q304197](#) Personal Web Server Is Not Included with Windows XP Home Edition

The latter KB article, when it was numbered Q310090, actually described how to work around the problem in Windows XP. They have since removed that article and renumbered it, and the advice they gave has vanished without a trace (that'll teach me to not copy it locally!). Their current statement is that the only way to get web server support within XP Home is to upgrade from a previous 9x-based OS with a web server installed.

If you're going to go that route (or if you have yet to upgrade to XP Home), here is a helpful link for getting the Option Pack to install in Windows ME:

http://billsway.com/notes_public/PWS_WinMe.txt

(If you have Windows 95 or Windows 98, and don't have a web server installed, see [Article #2075](#) for info on configuring the Option Pack.)

Finally, just for giggles, here is a tutorial for setting up an Apache web server on XP Home:

<http://rain.prohosting.com/~starman2/apache.shtml>

If you need ASP support, I recommend developing on Windows 2000 Pro or Windows XP Pro. If your machine can support it, I would use Windows 2000 Server or Advanced Server. You should use whatever environment would most accurately reflect your true production setting. I don't know too many commercial web sites that are running on Windows 9x, but I do know that there are several problems reported daily by people developing in one architecture and deploying on another... these are mostly due to security / permissions issues on the

deployment machine(s) that didn't exist in the development environment.

Why can't I use #EXEC in an ASP page?

4,338 requests - last updated Thursday, September 14, 2000

#EXEC directives are processed by ssinc.dll, not asp.dll... therefore, this directive is only supported in .shtml files (or files with any other extension that is mapped to ssinc.dll through IIS). Like ASP files, .shtml files can only be processed correctly when accessed through a web server.

Why can't I browse localhost without a connection?

4,207 requests - last updated Sunday, July 9, 2000

If you use a dial-up connection, IE defaults to "modem." Unfortunately, when it does this, it can't see the web server on your own machine.

In Internet Options, on the Connections tab, change "modem" to "LAN" - the only side effect is that you can no longer rely on IE to automatically dial your ISP for you.

Now you should be able to hit <http://localhost/> or <http://127.0.0.1/> or <http://yourmachinename/>.

Should I use VBScript or JScript for ASP?

4,145 requests - last updated Monday, February 4, 2002

This question is asked fairly regularly. Really, it comes down to preference. If you come from a VB or VBA background, VBScript would probably be the logical choice. If you're already familiar with JScript on the client side, or have a strong background in C, C++ or Java, then it's the language you should use. However, if you anticipate asking or looking for help with code issues, that might tip the scales back to VBScript. This is because most samples you'll find online, and most people hanging around the newsgroups to help you, deal with VBScript. In any case, here is my short list of pros for each language:

VBScript

- functionality previously missing (eval, execute) now in v5
- more intuitive object creation / destruction
- outside of MSDN, most samples and help are geared to VBScript

JScript

- code reuse (since most of you will be writing client-side JScript)
- array has built-in sort method, which has proven useful to me at least

For those planning large, high-traffic sites, you might want to take into account that each language is proficient at certain things. So, if performance is an issue, you should consider that:

- Peter Hanus discovered that VBScript is faster in almost all operations except pattern-matching and bit-shifting (these results are published in an article on ASPToday.com, which charges for access).
- In [another article](#), greyMagic software goes to great lengths to show that, in their experiments, JScript is faster.

Personally, I prefer VBScript. I like its more English-like syntax, its error handling, and collection enumeration. I don't recall ever using both languages in the same page, though I do have a few pages in a recent application that are written completely in JScript (one such page puts a list of files from a folder into an array, sorts them into alphabetical order, and returns them to an application). To be completely sold on VBScript, you may just have to buy a ridiculously overpriced subscription to ASPToday.com.

Manohar Kamath has written a thorough article on this topic, outlining the pros and cons of each language:

http://www.kamath.com/columns/my3cents/mtc002_scripting.asp

How do I make my ASP page 'sleep'?

4,093 requests - last updated Tuesday, May 22, 2001

There is a free component that will help you do this; it is called WaitFor 1.0 and is available at [ServerObjects Inc.](#)

If you are using SQL Server (or have access to one), you can try out the followign script (adapted from a post by Pierre W):

```
<%  
    Set conn = Server.CreateObject("ADODB.Connection")  
    ' note that you don't need to indicate a database:  
    conn.Open "<connection string>"  
  
    ' indicate a number of seconds, up to 59  
    sleep = 10  
  
    ' make sure timeout doesn't expire!  
    conn.commandTimeout = sleep + 5  
  
    ' if you neede more than 59 seconds, you will need to adjust the SQL:  
    conn.Execute "WAITFOR DELAY '00:00:" & sleep & "'"<br>  
    conn.close:      Set conn = Nothing  
%>
```

How do I increase timeout values?

4,079 requests - last updated Monday, November 12, 2001

For most timeout situations, my first suggestion would be to improve the code's efficiency so that it doesn't time out at all. I realize, however, that some timeout issues are beyond the developer's control (e.g. waiting for a response from a remote server). Also, there are many scenarios where you would want to increase the session timeout so that users can "stay" longer.

Server.ScriptTimeout

This value indicates how long, in seconds, the server will let an ASP script run until it is stopped by the server. The default value is 90 seconds. An error occurs if a script requires more time than this value allows, but you can override the default. To change this value in an individual ASP page, you can add this code:

```
<%  
    Server.ScriptTimeout = 180  
%>
```

To change this value for an entire application, open Internet Services Manager, go to the Home Directory tab of the application, click on configuration, and alter the ASP Script timeout field on the "App Options" tab. If you do not have access to the web server directly, you can also use [ADSI](#) to change this value. Keep in mind that you can only override the default with a value GREATER than that stored in the metabase.

Session.Timeout

This setting controls how long, in minutes, a user's session will last. While it is wise to keep this value short for efficiency's sake, there are cases where that's just not enough time for users to get things done in your application (for example, if you have a client-side tool where the user is changing properties but not making requests to the server until they are done). The default is 20 minutes, and once 20 minutes of inactivity has occurred, the session expires and all session variables are lost. You can increase the session timeout in an ASP page or in global.asa's Session_onStart() method with the following code:

```
<%  
    Session.Timeout = 45  
%>
```

To change this value for an entire application, open Internet Services Manager, go to the Home Directory tab of the application, click on configuration, and alter the Session timeout field on the "App Options" tab. This metabase setting is also exposed to ADSI.

conn.connectionTimeout

Where conn is an ADODB.Connection object that is not yet open, the connectionTimeout property will indicate the amount of time, in seconds, to wait for an ASP application to initially connect to the data source. The default is 15 seconds; to override the default, use syntax as follows:

```
<%  
    Set conn = Server.CreateObject("ADODB.Connection")  
    conn.ConnectionTimeout = 120  
    conn.Open <connectionString>  
%>
```

commandTimeout

CommandTimeout tells the server how long to wait, in seconds, for completion of any command sent to the data source. This value is editable before and after the connection has been opened. The default is 30 seconds, but you can override it like this:

```
<%  
    Set conn = Server.CreateObject("ADODB.Connection")  
    conn.Open <connectionString>  
    conn.CommandTimeout = 120  
%>
```

Note that you can also apply a commandTimeout value to a command object, and it will behave independent of the commandTimeout value associated with the connection object. So for specific stored procedures or other

commands being executed explicitly through the ADODB.Command object, you could have a longer timeout than that of the connection object. The syntax for the command object is almost identical:

```
<%  
    Set cmd = Server.CreateObject("ADODB.Command")  
    cmd.CommandTimeout = 120  
%>
```

Note that Oracle drivers do not support the commandTimeout property, up to and including MDAC 2.7. See [Q251248](#) for more information.

Can I use IP address to uniquely identify visitors?

4,076 requests - last updated Sunday, December 10, 2000

Not reliably.

Depending on the method of the user's connection, he or she may be sharing a single IP address with dozens of other users (as in the case of a corporate office accessing through a single server) or with thousands of other users (as in the case of AOL's huge proxy server).

You could uniquely identify users by storing their information in a database on your side, and store a cookie on their machine that simply stores the primary key of the table so you can look up their data easily. You could also store all information on their machine in a cookie. Both of these solutions, of course, require that cookies are enabled (which cannot always be relied upon).

A method I've used for maintaining state without cookies / session variables is to pass primary key information from page to page in hidden forms. For a simple example of doing this, check out our [cookieless shopping cart](#) article. You could easily extend this to add a username and password so people could look up their data on a successive visit.

Why can't I pass querystring information AND links to #bookmarks?

4,059 requests - last updated Wednesday, December 13, 2000

ASP has issues with #bookmarks. These #bookmark references (and, depending on the syntax, all querystring variables) are usually ignored when passed in combination with querystring information, e.g.:

```
<a href="default.asp#bookmark?id=1">G0</a>
```

OR

```
<a href="default.asp?id=1#bookmark">G0</a>
```

A workaround is to pass the bookmark as a querystring value, retrieve it and move to the bookmark using client-side script. For example, in your link:

```
<a href="default.asp?id=1&bk=bookmark">G0</a>
```

Then in default.asp:

```
<html>
<body>
<a name="bookmark">Bookmark</a>
</body>
<%
    bk = request.querystring("bk")
    if bk <> "" then
%>
<script>
    self.location.hash="#<%=bk%>";
</script>
<%
    end if
%>
</html>
```

I tend to put the script at the end of the page, rather than at the beginning, since Netscape has a nasty habit of firing JavaScript before the whole page is loaded.

Why does global.asa not fire?

3,920 requests - last updated Tuesday, January 9, 2001

Well, that depends on which part of global.asa is failing. If it is only session_onEnd(), then see [Article #2078](#) for an explanation of the problem.

If none of the methods in global.asa are firing, then there are two common scenarios:

- (a) there is a syntax or other error in the global.asa file, or
- (b) the global.asa file resides in a folder that is NOT marked as an application.

If (b) is not the problem, I suggest extracting the subs by themselves and running them in an independent ASP page... this will tend to weed out errors.

How do I embed apostrophes (') and quotes (") in a string?

3,780 requests - last updated Sunday, December 10, 2000

Even though they're not necessary in some cases, you have several options for returning HTML with proper quotes around filenames and parameters:

```
Response.write "<a href='somepage.asp'>Some Text</a>"
Response.write "<a href=\"\"somepage.asp\">Some Text</a>"
Response.write "<a href=" & chr(34) & "somepage.asp" & chr(34) & ">Some
Text</a>"
```

In server-side JScript/JavaScript:

```
Response.Write("<a href='somepage.asp'>Some Text</a>");
Response.Write("<a href=\"\"somepage.asp\">Some Text</a>");
Response.Write('<a href=\'\'somepage.asp\'\'>Some Text</a>');
```

How do I persist a shopping cart without session variables?

3,757 requests - last updated Sunday, October 1, 2000

To work properly, session variables require that cookies be enabled on the client's browser. Many people have disabled cookies, usually after reading a Jesse Berst article where he evangelizes how cookies are the devil and judgment day is coming soon for all those who use them.

My initial gut reaction to the initial question is always as follows:

How many people out there are seriously afraid of cookies so much that they'll disable them entirely, yet trust your site enough to give you their credit card number online?

The discussion always goes further than that, of course. Sometimes the boss -- who always knows best -- just wants it that way. Sometimes the programmer doesn't understand the difference between asking someone to store temporary information on their machine and handing over their credit card information. Sometimes shopping carts are created and then, at checkout time, there is an option for the user to fax or phone in their credit card details to complete the transaction.

In any case, there are times where session variables would come in handy even when cookies are disabled. Many sites have implemented a solution similar to what I'm about to describe.

You have a database table strictly for generating numbers to replace the usual session ID. Once a user has one of these session IDs, it is appended to URLs for links and forms.

Anything they do, and any items they add to their cart, are inserted into a separate table with the session ID alongside to identify them.

There are other ways to get around missing cookies, of course. This, IMHO, is the simplest to implement, and would require minimal changes to your existing architecture. You would use the database structure for retrieving session information and do away with the session variables altogether (unless you don't already get enough of the 'code two web sites for the price of one' dilemma with Netscape and IE).

There is a sample application now available online at <http://www.aspfaq.com/cart/> - you can play with the cart and download the sample code.

Why does IIS 5.0 stop serving ASP pages?

3,719 requests - last updated Sunday, October 28, 2001

You might find that your machine becomes corrupt occasionally. IIS is still running, most functions work (HTML pages and images etc. still serve correctly), but ASP pages no longer run properly. These scripts seem to timeout endlessly, never returning an error message or timeout warning (unless generated by the browser).

What may have happened is that your Windows Access Method (IWAM_<machine>) account has gone out of sync, or your application has changed such that IWAM can no longer function correctly. The easiest solution, according to Stefan B. Schachner, is to re-sync the IWAM account. You can do this in a couple of quick steps at a command prompt:

- CD to the AdminScripts folder (under Inetpub)
- Type **cscript synciwam.vbs**

For more information on the IWAM account, and more verbose steps at producing the same results as above, see [Q195956](#) and [Q236855](#)...

After the above failed, one thing that has worked for some people is to change the Application Protection level of the Default Web Site to Low. This is found by right-clicking the application, choosing Properties, and moving to the bottom of the Home Directory tab.

You may also want to check out [Article #2180](#) if your pages use FileSystemObject and you have Norton Anti-Virus installed.

Finally, if you only have certain ASP pages that are hanging the system, you'll want to check them for infinite loops. The most common is:

```
<%  
    do while not rs.eof  
        ' stuff  
    loop  
>%
```

Since there is no rs.movenext right after the **'stuff** line, the ASP code will just keep processing the same record over and over again, until you flip the kill switch.

How do I zip / unzip files from ASP?

3,516 requests - last updated Thursday, October 4, 2001

There are many components that will allow you to do this. Remember that these components are designed to allow ASP to zip and unzip files that are on the SERVER. If you are interested in zipping / unzipping files that the client has, these components will be no good to you unless you first [upload the files to the server!](#)

[RemoteZip/ServerZip](#)

[Xceed Zip](#)

[SA-Archive](#)

[DynaZIP](#)

[WaspZip](#)

[aspEasyZIP](#)

[Zip/Unzip](#)

I've used the last component in the list, Zbitz' Zip/Unzip. It is simple yet robust and very reliable. After much testing, I am about to deploy it in a commercial project.

Using PKZip Command Line with Windows Script Host - sample code!

Assuming, of course, that you have [Windows Script Host](#) installed, and that you have the ability to install programs and alter configuration on your server, you can call PKZip Command Line from Windows Script Host (which, in turn, you can run from ASP). Here are some instructions to get you started:

- a. Download PKZip Command Line from [PKWare](#)
- b. Run the install for PKZip Command Line

The following steps are required in Windows 2000 and Windows XP.

- c. Right-click My Computer, hit Properties
- d. On the Advanced tab, click Environment Variables
- e. Under 'User variables for <USER>', you will find the PATH variable
- f. This PATH variable will include the PKZip folder
- g. Click Edit... and copy the PKZip folder section
- h. Under System Variables, double-click PATH
- i. Add a semi-colon to the end of the path, and paste the PKZip folder without the quotes
- j. Click OK, Apply, and OK.

Now, provided IUSR_<machine> has appropriate permissions to the destination folder, you can run a script like this:

```
<%  
    set shell = server.createobject("WScript.Shell")  
    zipCommand = "pkzipc -add " & server.mappath("/") & "\test.zip c:\*.log"  
    shell.Run zipCommand, 1, true  
    set shell = nothing  
%>
```

Can I create an array's size dynamically?

3,361 requests - last updated Sunday, December 10, 2000

VBScript's arrays have quite a few limitations, but there are ways around most of them. In this case, you need to dimension a variable and then re-dimension it as an array. You may have noticed that an error occurs (800A0402 - Expected integer constant) if you try this:

```
<%  
    x = 15  
    Dim demoArray(x)  
%>
```

However, here is a working example for dynamically creating a single-dimension array:

```
<%  
    x = 15  
    Dim demoArray()  
    ReDim demoArray(x)  
%>
```

And here is an example for creating a multi-dimensional array:

```
<%  
    x = 15  
    y = 10  
    Dim demoArray()  
    ReDim demoArray(x,y)  
%>
```

How do I time my ASP code?

3,295 requests - last updated Tuesday, January 23, 2001

Many people have asked how they can time their ASP script, to see how efficient they are (even down to the millisecond). Here are two techniques to do this (one has millisecond accuracy, and one can be used to derive it indirectly).

The first method uses the timer() object, introduced in VBScript version 5.0. This returns the number of seconds that have passed since midnight -- sounds useless, but the value contains a sparsely documented gem: milliseconds! Yes, you heard right. So you can use script like the following to measure the number of milliseconds that pass between the start and end of some arbitrary block of code.

```
<%  
    ' get timer before task begins:  
  
    starttime = Timer()  
  
    ' do some task, e.g.:  
  
    Do While z < 350000  
        z = z + 1  
    Loop  
  
    ' get timer after task completes:  
    endtime = Timer()  
  
    ' display results:  
    Response.Write "The task completed in " & endtime-starttime & " s"  
    Response.Write " (" & (endtime-starttime)*1000 & " milliseconds)."  
%>
```

Make sure you put some substantial code in there to test that this really works (most simple tasks don't take long enough to measure a difference; it took 350000 iterative addition calls to register 1 second of process time on my machine). Change the number in the loop above and you will see the difference.

The second method measures the number of times a certain task can be executed within a given number of seconds.


```

<%
    ' set number of seconds:
    numSeconds = 5

    ' set counter:
    counter = 0

    ' get starttime:
    starttime = now()

    ' set endtime to some time more than numSeconds in the future:
    endtime = dateadd("n", numseconds + 1, starttime)

    ' loop until numSeconds have passed, resetting endtime each loop:
    Do Until DateDiff("s", starttime, endtime) = numSeconds
        endtime = Now()
        counter = counter + 1
    Loop

    ' display results:
    Response.Write "In " & numSeconds & " seconds, the task completed " &
counter & " times."
    Response.Write "<br>(Average time per loop: "
    Response.Write FormatNumber(numSeconds*1000/counter,0,-1,0,-1) & "
milliseconds.)"
%>

```

[Side note A: Don't forget to weigh in datetime and other calculations within your loops, they add CPU time to the process as well. To see the difference, add the 'sometime = Now()' within the first script above, and note the performance difference. In my tests, a simple call to Now() more than doubled the time required to finish the loop.]

[Side note B: Speed of a script is a very small percentage of the battle -- you need to test your scripts under heavy load and make sure the server can handle it. Because if the server goes down, Joe User isn't going to be waiting an extra millisecond or two to get his results; he's going to be waiting until your pager goes off at 4 a.m. and you fix the problem!]

Why do I get an 'overflow' error using CInt?

3,273 requests - last updated Sunday, July 9, 2000

"Integer range" is between -32768 and 32767. If you expect that the number you are converting to an integer may be outside of that range, use cLng() instead (to convert it to a Long datatype, which has a range between -2,147,483,648 and 2,147,483,647). If your number is outside of THAT range, it probably isn't stored as a number in the database, since the Long datatype has the same range as SQL Server 7's "INT" datatype. :-
)

How do I use extensions other than .ASP for ASP files?

3,243 requests - last updated Thursday, October 26, 2000

- Open up Internet Services Manager
- Right-click your computer name
- Under Master Properties, with WWW Service highlighted, click Edit...
- On the Home Directory tab, click Configuration...
- On the App Mappings tab, click Add
- Using the browse button, locate asp.dll in your Inetsrv folder
- In the extension box, type the extension you want to map to asp.dll
- Click Apply or OK however many times is required
- Close Internet Services Manager (if it asks you to save console settings, say yes)
- Make an ASP file with your new extension, and navigate to it via
`http://servername/filename.newExtension`

How do I ping from ASP?

3,092 requests - last updated Sunday, October 28, 2001

There are many components that can handle running a ping from ASP.

ASPPing

C2GPing

DesPing

DSPing Pro

DynuDNS

kutil

NETDLL

w3 Utils

Alternatively, you could use ASPExec or WSH to run a ping from the command line, pipe it to a text file, and then use FileSystemObject to read the results from the text file.

Where can I find out about .NET?

2,991 requests - last updated Monday, January 7, 2002

aspfaq.com is not a source for learning about Visual Studio.NET and ASP.NET, at least not yet. There are, however, several useful places for you to get more information about .NET. The most comprehensive are Microsoft's [.Net Home Page](#), [ASP.NET Home Page](#), and a newly-implemented [.NET Article Index](#) ... other information is available from independent sources:

<http://www.dotnetwire.com/>

<http://www.devx.com/free/press/2000/vsresources.asp>

<http://www.asp.net/>

<http://www.aspnextgen.com/>

<http://www.aspng.com/aspng/index.aspx>

And of course there are some great newsgroups covering ASP.NET on Microsoft's public news server:

[microsoft.public.dotnet.framework.aspnet](#)

[microsoft.public.dotnet.framework.aspnet.webservices](#)

[microsoft.public.dotnet.languages.csharp](#)

[microsoft.public.dotnet.languages.jscript](#)

[microsoft.public.dotnet.languages.vb](#)

[microsoft.public.dotnet.languages.vc](#)

[microsoft.public.dotnet.samples](#)

[microsoft.public.dotnet.scripting](#)

#2103 : Where can I find out about .NET?

microsoft.public.dotnet.academic

What is this error 'An unhandled data type was encountered'?

2,676 requests - last updated Tuesday, January 23, 2001

This usually happens when you mix up names of string/numeric variables and array variables. For example:

```
<%  
    f = "hello"  
    ...  
    f = split(someothervariable,somedelimiter)  
    ...  
    response.write(f)  
%>
```

To get rid of this error, check the line it occurs on for any variables used, then scan through the file for any other use of that same variable name.

Can I run IIS 5.0 / ASP 3.0 on Windows NT 4.0 or Windows 9x?

2,608 requests - last updated Tuesday, October 30, 2001

No. See [Article #2075](#) for information on obtaining web server products for these operating systems.

What is this 'Cannot detect OS type' error with NT 4.0 Option Pack?

2,549 requests - last updated Monday, September 18, 2000

From KB article [Q230287](#):

When installing IIS 4.0 on a computer running Windows NT Server, the NetLogon and Computer Browser services must be running. If these services are not running, you will receive a dialog that says "Cannot detect OS type" and Setup will fail.

See also [Q205328](#) and [Q250262](#)

How do I FTP files from ASP?

2,429 requests - last updated Sunday, October 28, 2001

[Keep in mind that the following components are used for file GET/PUT operations between the SERVER and an FTP server. These components do not facilitate FTP operations to/from the client's system.]

[ASPInet](#) (ServerObjects.com)

[DynuFTP](#)

[etiveFTP](#)

[Mabry's FTP/x](#)

[PowerTCP FTP](#)

How do I stress test my ASP application?

2,425 requests - last updated Wednesday, January 9, 2002

The following is a list of tools and services you can evaluate. Most of the software products have evaluation versions, and most have shortcomings. One or another may be right for you depending on your needs.

TOOLS

Empirix e-Load

Evolvable WebTest

Innovate-IT PureLoad

Ladybug(.NET)

Microsoft's Web Application Stress Tool

OpenSTA

ParaSoft WebKing

Portent Web Load

Radview WebLoad

Rational SiteLoad

RedHill Networks' WebSpray

Segue Silk Performer

SR TestWorks

Technovations' WebSizr

WebART

WebPerformance Trainer

Webserver Stress Tool

SERVICES

KeyLabs Testing Services

Why won't QueryString values work with Server.Execute?

2,333 requests - last updated Sunday, August 6, 2000

IIS 5.0's Server.Execute command is fairly useful. However, as many people have pointed out, if you use a QueryString value, you receive this error:

Invalid URL form or fully-qualified absolute URL was used. Use relative URLs.

Even when your URL *IS* relative (removing the QueryString value makes the page function properly).

Unfortunately, Microsoft has yet to recognize this officially as a bug. So in the meantime, you must rely on session variables or database entries to retrieve any information you would like to pass to the target page.

How do I make my ASP page refresh?

2,319 requests - last updated Tuesday, June 19, 2001

You can use the Response.AddHeader method to force a timed or delayed refresh / redirection in an ASP page. The following code will cycle the current page every ten seconds (and is functionally equivalent to adding a <META REFRESH> tag to the HTML):

```
<%  
    Response.AddHeader "Refresh", "10"  
%>
```

And the following code will redirect to <http://www.aspfaq.com/> after 35 seconds:

```
<%  
    Response.AddHeader "Refresh", "35;URL=http://www.aspfaq.com/"  
%>
```

Note that this also prevents referer information from being passed (see [Article #2169](#) for other examples).

Can I host multiple sites in Workstation or Professional?

2,293 requests - last updated Tuesday, October 30, 2001

No. These operating systems have some limitations compared to their server counterparts. One is the way that PWS (NT 4.0) and IIS (Windows 2000, Windows XP Pro) are configured... two of the biggest obstacles people find with the lower-grade OS is that client connections are limited to 10, and that you can only host one web site. You also cannot configure the HTTP service's port from its default of 80; this means anyone on a cable network (e.g. @home, RoadRunner) that has shut off port 80, is going to have to bite the bullet and upgrade (or switch providers).

What do I need to know about Response.Redirect?

2,267 requests - last updated Tuesday, November 6, 2001

- Basics of Response.Redirect
 - Why can't I...
 - Is there an alternative?
-

Basics of Response.Redirect

When you request a page from a web server, the response you get has some headers at the top, followed by the body of the page. When viewed in your browser the headers are never seen, but are used by the browser application. I have the following page called test.asp;

```
<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>

</BODY>
</HTML>
```

When I request that from the web server this is the reply I get;


```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:07:44 GMT
Connection: close
Content-Length: 134
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=OMCJFABDNCDLLBKAPNHJBKHD; path=/
Cache-control: private

<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>

</BODY>
</HTML>
```

The first line returns the status of the response, in this case "200 OK" which means everything is fine. The following lines are headers, these are in the format of

Name: Content

So in our example the web server is identifying itself as Microsoft-IIS/5.0, it also sends its date and time, the content type and it also instructs the browser to store a cookie. This cookie contains your session ID and is used by IIS to remember who you are. After the headers there is a blank line then the actual HTML to be shown in the browser.

If I request a page that does not exist then we get this back;

```
HTTP/1.1 404 Object Not Found
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:11:54 GMT
Connection: close
Content-Type: text/html
Content-Length: 3243

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<html dir=ltr>

<head>
<style>
a:link {font:8pt/11pt verdana; color:FF0000}
a:visited {font:8pt/11pt verdana; color:#4e4e4e}
</style>

<META NAME="ROBOTS" CONTENT="NOINDEX">

<title>The page cannot be found</title>
...
```

As you can see, the status is now "404 Object Not Found" and the HTML is generated for us by the web server. So the web server uses different response status types to inform the browser the nature of the response itself. Let's modify our test.asp code to read this;

```
<%
    response.redirect "test2.asp"
%>

<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>

</BODY>
</HTML>
```

Note the code at the top of the page that does a "response.redirect". If we request this page we get the following;

```
HTTP/1.1 302 Object moved
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:16:35 GMT
Connection: close
Location: test2.asp
Content-Length: 130
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=ANCJFABDFLBLHMKIJ0IOKJDM; path=/
Cache-control: private

<head><title>Object moved</title></head>
<body><h1>Object Moved</h1>This object may be found <a
HREF="test2.asp">here</a>.</body>
```

The status is "302 Object moved" and note that the actual HTML following the Response.Redirect is not sent to the client. After all, if the page is going to be redirected why send any content? When Internet Explorer gets this type of response it gets the file to be directed to via the Location header

Location: test2.asp

And issues another request to get test2.asp. IIS does something clever for us here as well; just in case your browser does not understand 302 headers it generates HTML giving the user a link that they can manually click on. If you are going through a firewall you may have actually seen this code sometimes in your browser. However Internet Explorer **does** understand 302 headers so shows no page, but simply requests the new page instead.

That is the simple mechanism where by the web server responds to your requests for pages, however IIS gives us two delivery mechanisms; buffered or non-buffered. When buffering is off IIS sends HTML to the client as it is generated. With buffering on, IIS holds all HTML in a buffer until the page has finished processing, it then hands the HTML to the client in one big batch.

Try this code;

```
<% Response.Buffer = true %>
<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<%
for i = 1 to 10000
    Response.Write i & "<br>" & vbCrLf
next
%>
</BODY>
</HTML>
```

Notice that we are programmatically setting the buffering mode to True, i.e. we want the page buffered. When you navigate to this page the browser will sit and wait, and all of a sudden you'll see 10000 lines in your browser. If you update the code to turn buffering off;

```
<% Response.Buffer = false %>
```

Then you will see the page gradually grow in size until all 10000 lines have been written. Note that IIS4 and IIS5 have different default options for buffering. In IIS4 it is off by default, and in IIS5 it is on by default. This means that if you omit the "Response.Buffer =" code then IIS4 will default to false, and IIS5 to true.

Let's look at how buffering and redirection can come into conflict. In the following sections I'll explicitly turn buffering on or off so that the code works the same under IIS4 and IIS5.

Update test.asp to read;

```
<% Response.Buffer = false %>
<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>

<%
    Response.Redirect "test2.asp"
%>

</BODY>
</HTML>
```

The response.redirect is now mid-way through the page. If we view this page we see the following in the browser;

```
Hello

Response object error 'ASP 0156 : 80004005'

Header Error

/Examples/test.asp, line 12

The HTTP headers are already written to the client browser. Any HTTP
header modifications must be made before writing page content.
```

Why do we get this error? Remember that a normal page is sent with "200 OK" in its response headers, and a redirect is "302 Object moved". When IIS hits the first piece of HTML output;

```
<HTML>
```

it deduces that this is a standard "200 OK" page and that the browser should be sent output as it is generated. So it sends this;

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:07:44 GMT
Connection: close
Content-Length: 134
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=OMCJFABDNCDLLBKAPNHJBKHD; path=/
Cache-control: private

<HTML>
```

As more HTML is generated it is also sent to the browser to be displayed. When it hits the `response.redirect` command it has a problem. In order to re-direct it needs to send a "302 Object moved" header but it can't as it has already sent a "200 OK" header, thus the error about not being able to modify the headers.

Now change the code so that buffering is on;

```
<% Response.Buffer = true %>
<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>

<% response.redirect "test2.asp" %>

</BODY>
</HTML>
```

And try again, this time it works. With buffering on, IIS stores all output in a buffer until the page has completed. So by the time it gets to the redirect it will have this in its buffer;

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:07:44 GMT
Connection: close
Content-Length: 134
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=OMCJFABDNCDLLBKAPNHJBKHD; path=/
Cache-control: private

<HTML>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft Visual Studio 6.0">
</HEAD>
<BODY>

<p>Hello</p>
```

However it has not sent anything to the client yet. So when it hits your redirect it simply throws away anything in it's buffer and replaces it with this instead;

```
HTTP/1.1 302 Object moved
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:16:35 GMT
Connection: close
Location: test2.asp
Content-Length: 130
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=ANCJFABDFLBLHMKIJ0I0KJDM; path=/
Cache-control: private

<head><title>Object moved</title></head>
<body><h1>Object Moved</h1>This object may be found <a
HREF="test2.asp">here</a>.</body>
```

That is sent to the client and the browser can be redirected.

So to avoid the error when doing a redirect, either put the redirect before any output, or turn on buffering. Remember that if you are using IIS4 you have to turn on buffering programmatically, if you

use IIS5 it is done by default. However if you rely on buffering being turned on you should always explicitly add it to your code. That way you won't get problems when you move to a different web server or when Microsoft decide to change the default again. You can also configure buffering to be on or off by default via the IIS MMC.

Why can't I...

...redirect to a frame?

HTTP is a request/response technology. The browser requests a page from the server, and the browser displays the response. For a page to appear in a frame, it is that frame that must make the request. You can't make a request in one frame and have the response piped to another. Only the requester can get the response.

To work around this you should create HTML that does the frame manipulation on the client;

```
<html>
<body>

<p>My page is here</p>

<script>
parent.targetframeName.location.replace('page2.asp');
</script>

</body>
</html>
```

This will cause "targetframeName" to request page2.asp, thus showing the response in that frame.

...POST variables when doing a redirect?

When you submit a FORM with the GET method, your browser does not do anything clever, it simply appends the FORM elements to the end of the page in the ACTION parameter. When you submit a FORM using the POST method an entirely different mechanism is used. When your browser gets the 302 response, it reads the new location from the Location header and simply requests that page. You

can simulate a GET submission by simply tagging on the parameters yourself, thereby emulating what the browser does. So if you do;

```
<% Response.Redirect "test2.asp?myparam=123" %>
```

the resulting header looks like this;

```
HTTP/1.1 302 Object moved
Server: Microsoft-IIS/5.0
Date: Mon, 19 Mar 2001 15:16:35 GMT
Connection: close
Location: test2.asp?myparam=123
Content-Length: 130
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQQGQQJWO=ANCJFABDFLBLHMKIJ0IOKJDM; path=/
Cache-control: private

<head><title>Object moved</title></head>
<body><h1>Object Moved</h1>This object may be found <a
HREF="test2.asp?myparam=123">here</a>.</body>
```

So the browser requests "test2.asp?myparam=123", thus passing on your parameters. Emulating a POST, however, is not that simple and the Redirect process simply does not support it.

The workaround is similar though, you should generate the appropriate HTML to do the job yourself;

```
<html>
<body>

<form name=frmTest action=page2.asp method=POST>
<input type=hidden name=txtMyVar value="Hello">
</form>

<script>
document.frmTest.submit();
</script>
```

```
</body>  
</html>
```

The only problem with this is that you are relying on scripting support from the client.

Is there an alternative?

Yes, IIS5 gives us an alternative to doing a `response.redirect`. You can now use the `Transfer` or `Execute` method of the `Server` object. So instead of doing `response.redirect "page2.asp"` you can simply `server.transfer "page2.asp"`. It is all done at the server so will work even if you have already sent some output to the client.

Another option is to emulate a redirect using a COM object that lets us request another ASP page within our script code. For more details on this see [Article #2173](#).

This article submitted by Adrian Forbes - April 18, 2001

How do I solve 'The server failed to load the application' errors?

2,248 requests - last updated Tuesday, April 17, 2001

Several people have reported error number 8007053D recently. There is a KB article that goes into depth about it (and how to fix it):

[Q238665](#)

There is another that applies to similar W3SVC errors that might appear in your event log.

[Q200514](#)

How do I prompt a "Save As" dialog for an accepted mime type?

2,240 requests - last updated Wednesday, December 19, 2001

Often you will want a user to download / save a TXT, XLS, GIF, HTML or other file type that the browser would normally simply open and display within the browser. Here is one method I've used to force a prompt, in a file called ml1.asp:

```
<%  
    fn = "ml1.jpg"  
    FPath = "c:\" & fn  
    Response.AddHeader "content-disposition","attachment; filename=" & fn  
    Set adoStream = Server.CreateObject("ADODB.Stream")  
    adoStream.Open()  
    adoStream.Type = 1  
    adoStream.LoadFromFile(FPath)  
    Response.BinaryWrite adoStream.Read()  
    adoStream.Close: Set adoStream = Nothing  
    Response.End  
%>
```

And from the page where you want to launch this Save As dialog, you can do any method of redirection. Here are a few examples:

```
<%  
    response.redirect("ml1.asp")  
%>
```

```
<meta http-equiv='refresh' content='0;url=ml1.asp'>
```

```
<a href='ml1.asp'>Download ml1.jpg</a>
```

```
<script>  
window.location.replace('ml1.asp');  
</script>
```

Now keep in mind that the user can just decide to open it if they choose.

How do I access all active sessions on the server?

2,195 requests - last updated Tuesday, January 23, 2001

You can't access one user's session from another session (even if you are physically at the machine). However, you can follow our [cart example](#) to some extent, and store all the session data in a database. Keep a column called 'active' which indicates whether the user is still there. When the user logs out (or after a specified time period, which you can schedule using a job in SQL Server), you turn the active flag to off. Passing a single integer session variable around, and querying the database when you need to, is much more efficient and scalable than storing all those values in session variables anyway (even if you need all the values on every single page!). I just finished re-working a very major application to handle things this way (partly for performance, and partly because the session variables were becoming unruly and unpredictable).

Remember, don't use sessionID as a key, and expect to uniquely track users (see [Article #2085](#) for more info).

Should I use sessionId to uniquely identify users (e.g. primary key)?

2,084 requests - last updated Saturday, January 20, 2001

NO. SessionID is a "random" string and, as noted in the documentation for all versions of IIS, can be repeated. So if you store information for a user based on the SessionID value, be very aware that a new person next week might happen to get the same SessionID value -- this will either violate a primary key constraint, or mix two or more people's data.

How do I get the lbound/ubound of the nth element in a multi-dimensional array?

2,072 requests - last updated Sunday, December 10, 2000

This one is a tricky one, and displays another weakness in VBScript's array object. While most things in VBScript are 0-based, the "collection" of elements in a multi-dimensional array is actually 1-based. The default element for lbound/ubound values (these give the lowest and highest numbers in the array) is the first element. So, when you have a multi-dimensional array, the following commands do the exact same thing:

```
<%  
    dim demoArray(10,20)  
    Response.Write ubound(demoArray)  
    Response.Write ubound(demoArray,1)  
%>
```

The ,1 indicates that you want the ubound for the FIRST element in the array. So, extending that, here is how to get the lbound/ubound for other elements in the array:

```
<%  
    dim demoArray(10,20,30)  
    Response.Write ubound(demoArray,2)  
    Response.Write ubound(demoArray,3)  
%>
```


How do I generate unique GUIDs from ASP?

2,052 requests - last updated Sunday, October 28, 2001

There is a free component that will help you do this; it is called GUIDMaker and is available at [ServerObjects Inc.](#)

If you have access to SQL Server from your ASP page, you can call the following script:

```
<%  
    set conn = Server.CreateObject("ADODB.Connection")  
    conn.open "<connection string>"  
    set rs = conn.execute("SELECT newid()")  
    Response.Write rs(0)  
    ' ...  
%>
```

Or from ASP, you can use this:

```
<%  
    Function GetGuid()  
        Set TypeLib = Server.CreateObject("Scriptlet.TypeLib")  
        GetGuid = TypeLib.Guid  
        Set TypeLib = Nothing  
    End Function  
    Response.Write GetGuid()  
%>
```

How do I protect my client-side JavaScript code?

2,031 requests - last updated Tuesday, October 30, 2001

This has been asked thousands of times over the past few years. Everyone wants to know how they can prevent nosy people from viewing or stealing their JavaScript. I have always responded with:

"If my browser can read it, so can I."

"If you don't want people to steal your JavaScript, don't put it on the web."

I have also often thought the following:

"If your Javascript is so revolutionary, you should probably be able to figure this out too."

"And if someone does steal your script, consider it a compliment."

In the past, many people have suggested ways to slow people down, and discourage casual, non-persistent people. But there has never been a way to stop anyone with a little more resourcefulness than your average house fly. <G>

Some of the solutions that have been offered in the past, and their workarounds:

Proposed fix	Workaround(s)
Load the JS in a new window, with toolbar disabled	- view source by right-clicking within the window
Disable right-click by capturing oncontextmenu	- disable Javascript temporarily - use a browser that doesn't support oncontextmenu - load 'view-source:<url>'
Use JavaScript across frames, iframes, ilayers	- not difficult to find the proper page
Use JavaScript to write JavaScript	- disable JavaScript temporarily
'Hide' the script using a remote JS file	- the .js file is in your cache
Encode the script using an encoder	- Microsoft's encoder was broken easily; perhaps you can write a better one

Obfuscate with unSpace or similar tools	- all this does is obfuscate, it doesn't make it hard to copy at all
All of the above	- a resourceful person will still be able to see your script, even if you employed all of the above at once

Other legitimate ways to view JavaScript sent to the browser is by using packet sniffing technology,

Here is a funny excerpt from a post by Jeff Cochran, back in 1997:

Put the source on a floppy disk and bury it in a mason jar in your back yard. Make sure you delete all references to it from your system. To be extra sure, bury it blindfolded at night so you can't remember where it is in case foreign spies try to beat the location out of you.

Of course, you could write it as a Java Applet to make it tougher to figure out, but then, if you knew how to do that you'd probably also be able to write something really worth protecting...

Jeff

PS: The mason jar trick works well to protect your .GIF files from being downloaded too...

UPDATE October 30, 2001

After many attempts at hiding my JavaScript code, I was thwarted every single time - by people using tactics ranging from intuitive to downright clever.

Once again, I have to tell you... if you need to hide your JavaScript code, you probably shouldn't put it on the web.

Can I dictate the load order of files on the client from ASP?

2,012 requests - last updated Tuesday, January 23, 2001

Some people have asked whether or not they can specify that certain HTML elements (such as images, Flash, applets etc.) load before others in an HTML page.

While there are certainly ways to handle this with client-side code (DHTML and JavaScript), the answer is NO. ASP runs on the server, and simply returns HTML to the client. That's it.

Where can I find out about running Perl in IIS?

1,947 requests - last updated Tuesday, July 11, 2000

ActiveState has helpful [documentation](#) and [downloads](#) that will help get you up and running with Perl in no time.

How do I refresh global.asa without restarting the application?

1,917 requests - last updated Sunday, May 27, 2001

Plenty of people have asked how they can manually force global.asa to fire, without stopping and starting the web server or application. They already know they can't hit global.asa directly with a browser; this ends up in a 500-15 HTTP Error (Requests for global.asa not allowed).

There is a way around this. This example will deal with forcing the application_onStart() routines to fire, without disrupting the server.

The trick is to keep the logic in an #include file, and store that as an ASP page you can hit manually. Yes, many people aren't aware that you can #include a file in global.asa, but you certainly can. Here is some syntax within global.asa:

```
<script language=vbscript runat=server>
sub application_onStart()
</script>
    <!--#include virtual='/admin/start-app.asp'-->
<script language=vbscript runat=server>
end sub
</script>
```

The trick is that both global.asa and the #include file must have matching script types... no <%%> delimiters. The ASP page should also include straight script (no subs or functions) and not use any response-related methods. So your start-app.asp file should look like this:

```
<script language=vbscript runat=server>
' do stuff
' insert into database
' set application variables
' etc etc.
</script>
```

Now this code will fire in the application_onStart() event, but you can also override it by hitting <http://yourserver/admin/start-app.asp> as well.

This is very handy; however, I first employed this technique back during one of the first global.asa-related security exploits.

Why won't my session variables stick?

1,741 requests - last updated Monday, June 11, 2001

Make sure that:

1. cookies are enabled in your browser - session variables require cookies.
2. You haven't disabled session state in Internet Services Manager.
3. If you are relying on session or application variables created in global.asa, that global.asa is in fact firing (see [Article #2076](#)).

How do I embed ASP delimiters (<% or %>) in a string?

1,659 requests - last updated Tuesday, January 23, 2001

Many people get choked up when trying code similar to the following:

```
<%  
    Response.Write "<table width=100%>"  
%>
```

This will result in an 'Unterminated string constant' error. Using ASP delimiters within a string should be handled with care. Here are two alternatives to the above syntax:

```
<%  
    Response.Write "<table width='100%'">"  
    Response.Write "<table width=100%" & ">"  
%>
```

For simplicity's sake, I prefer the first of the two methods - partly because it's much easier to read, and partly because any HTML attribute that isn't a number should be enclosed in quotes of some kind.

This is a trivial example, of course; but the same principals apply when creating an ASP file using FileSystemObject.

How do I comment blocks of ASP code?

1,224 requests - last updated Wednesday, September 19, 2001

Many people get frustrated because VBScript doesn't allow you to comment blocks of code; instead, a REM or ' is required before every line. Other languages, such as Java, JavaScript, Perl, and T-SQL allow the use of delimiters such as /* comments */ which allow you to comment single or multiple lines without much fuss. So is there a way to do this in VBScript as well?

Yes! Here are two ways of preventing a block of code from writing... the first requires two comments to make it run / not run, the second requires one line change.

```
<%  
    Sub doNotExecuteThisCode  
        For Each x In Request.Form  
            Response.Write x & "<br>"  
        Next  
        Response.End  
    End Sub  
%>
```

Now, to execute the code again, simply comment the Sub and End Sub lines:

```
<%  
    'Sub doNotExecuteThisCode  
        For Each x In Request.Form  
            Response.Write x & "<br>"  
        Next  
        Response.End  
    'End Sub  
%>
```

The following method uses simple logic to enter a code block.

```
<%  
    ExecuteCodeBlock = FALSE  
    If ExecuteCodeBlock Then  
        For Each x In Request.Form  
            Response.Write x & "<br>"  
        Next  
        Response.End  
    End If  
%>
```

Now, to execute the code again, simply change the value of ExecuteCodeBlock to TRUE:

```
<%  
    ExecuteCodeBlock = TRUE  
    If ExecuteCodeBlock Then  
        For Each x In Request.Form  
            Response.Write x & "<br>"  
        Next  
        Response.End  
    End If  
%>
```

FWIW, the latter method is likely a little less efficient, since the If logic is actually tested. I use it all the time, however, since it's much easier to set a debug flag on or off to affect a group of blocks of code.

How do I determine which version of IIS / ASP I'm running?

1,205 requests - last updated Sunday, May 20, 2001

There are a few answers to this question.

1. If you are running Windows 2000, you are running IIS 5.0 / ASP 3.0.
2. If you are running Windows XP, you are running IIS 5.1 / ASP 3.0.
3. If you are running Windows NT 4.0 or Windows 9x, you can determine which version of IIS / PWS you are running by one of the following methods:

```
<%  
    response.write(Request.ServerVariables("SERVER_SOFTWARE"))  
    ' returns "Microsoft-IIS/4.0" for IIS 4.0 + ASP 2.0  
%>
```

OR

Look for Windows NT 4.0 Option Pack in Add/Remove Programs (Control Panel). If it is there, you are running IIS 4.0 (NT Server) or PWS 4.0 (NT Workstation or Win9x).

OR

- A. Do a search for ASP.DLL on your system
- B. right-click it and select Properties
- C. Check the version tab:

IIS 3.0 / PWS 1.0x should show 1.x

IIS 4.0 / PWS 4.0 should show 2.x

IIS 5.0 should show 5.0.2195.x

How do I host multiple web sites on one IIS box?

1,182 requests - last updated Monday, February 26, 2001

Check out this resource at IISFAQ.com, and this one at IISAnswers.com

How do I turn a KB Article #, like Q191987, into a usable URL?

1,124 requests - last updated Thursday, December 6, 2001

So, some schmuck in a newsgroup told you to go see Q191987, and now you're wondering how to get there?

DUH! That's simple, it's <http://support.microsoft.com/support/kb/articles/Q191/9/87.asp> ...

Now, for most of us, understanding or remembering how to convert the KB article number into Microsoft's convoluted URL format could be quite a chore. There are other options.

If you have MSDN Library installed, you can open it and search for that string. (If you don't have an MSDN Library subscription, I highly recommend getting one. They're relatively cheap, and easily outperform searching the online versions of the KB and MSDN -- by about 50 times.)

If you have IE 5.0 or greater installed, and haven't changed your default search engine, Microsoft has set up a RealNames alias for MSKB, so you can simply type "mskb Q191987" (without the quotes) in IE's address bar, hit Enter, and off you go. There are three other ways you can append a KB article number to a 'more friendly' URL:

<http://support.microsoft.com/?id=kb;;Q191987>

<http://support.microsoft.com/directory/article.asp?ID=KB;EN-US;Q191987>

<http://support.microsoft.com/servicedesks/bin/kbsearch.asp?Article=191987>

Not so hard, right? Now, to do this bit by yourself, copy the following piece of code and save it in a local HTML file:

```
<form name=a onsubmit='return false'>
  <input type=text name=kb>
  <input type=button onclick='go();' value=' Go '>
</form>
<script>
function go()
{
  var url=http://support.microsoft.com/?id=kb;;'+document.a.kb.value;
  window.open(url,'','');
}
// do your own debugging, this doesn't check for first letter = Q or len = 7
</script>
```

How do I round a number *properly* with VBScript?

1,085 requests - last updated Sunday, April 1, 2001

Admittedly, VBScript's built-in round function leaves a lot to be desired. Thanks to Anthony Sullivan and Mike Trinder for helping me to build the following function, which seems to work a lot better in all cases:

```
<%  
    Function roundit(number,decPoints)  
        decPoints = 10^decPoints  
        roundit = round(number*decPoints+0.1)/decPoints  
    End Function  
%>
```


Why do I get 'Cannot use parentheses when calling a Sub'?

1,078 requests - last updated Monday, March 26, 2001

If you are calling a function that has no return value, or a simple sub-routine, you omitted the CALL keyword before the function/sub call, or added parentheses. The solution, according to MSDN:

To correct this error

- Remove the parentheses from the subroutine invocation.
- Use the Call statement to invoke the subroutine instead.

Is there an easier way to patch IIS 4.0 or IIS 5.0?

1,021 requests - last updated Monday, January 7, 2002

On May 14th, Microsoft made a cumulative patch for both Windows NT 4.0 / IIS 4.0, and Windows 2000 / IIS 5.0. The patch fixes all security issues from NT 4.0 Service Pack 5 onward (in Windows 2000, it fixes ALL issues for IIS 5.0). This patch should be much easier to apply than combing through the many individual patches that have been available prior to May 14th.

Here is where you can download the patch and get more information:

[Microsoft Security Bulletin MS01-026](#)

And on November 14, 2001, Microsoft issued version 2.1 of the IIS Lockdown Tool (which now also includes the URLScan utility):

[IIS Lockdown Tool](#)

You should also watch the following URLs for updates, some of which may affect your environment:

[Security Bulletin Search](#)

[Windows 2000 Post-SP2 Hotfixes](#)

Why do I get 'HTTP/1.0 Invalid Application Name' errors?

1,000 requests - last updated Thursday, September 14, 2000

There are a few KB articles which describe this error.

[Q163501](#) FIX: INVALID APPLICATION NAME Error in Active Server Pages

[Q172217](#) ASP Returns Invalid Application Name Error Message

[Q189653](#) Exchange Virtual Directory Cannot Be IIS Home Directory

What kind of object is Response.Crackers?

971 requests - last updated Tuesday, November 13, 2001

I'm sorry if you're out there Mike, but I had to exploit this one a bit and have some fun with it (at your expense). On November 12th, Mike posted the following after tirelessly searching for information about "crackers":

```
OK, go to www.aspfaq.com, and search for "cookies."
```

```
I got 5 hits, the second was #2058 "How do I check for enabled cookies..."
```

```
That page has two examples, cookietest and cookietest2:
```

```
if request.Crackers("enabled")="1" then
    response.write("cookies are enabled")
else
    response.write("cookies are not enabled")
end if
```

```
Yet if you search for the term "crackers," nothing is found.
```

As it turns out, Mike is running cookie-blocking software called [Proxomitron](#) -- if you have this software installed, and you are viewing code samples on the web, you might be surprised to see references to objects like 'Request.Crackers' and 'Response.Crackers'. Fact is, this software is simply intercepting the HTML that comes into your browser, and replacing all instances of '.cookies' with '.crackers' ...

So, if you go to Oreo.com, you might be a little confused when you see the following recipe:

SURPRISE OREO TUNNEL CAKE

```
The tunnel inside this angel food cake is filled with chocolate pudding,
finished with Oreo crackers and chilled to create a surprising dessert course.
```

Of course, this won't happen, but I wanted to embellish the story a little bit. Some people were a little mean, and called Mike "crackers" in response. A little confused, and understandably so, but not crackers. In any case, it was quite funny -- and I hope nobody is disgruntled about me sharing it here. After all, it could have happened to you.

How do I know which version of VBScript my server is running?

934 requests - last updated Monday, May 7, 2001

This should do the trick:

```
<%  
    response.write "VBScript Engine: "  
    response.write ScriptEngineMajorVersion  
    response.write "."  
    response.write ScriptEngineMinorVersion  
%>
```

If you have direct access to the machine (either physically or through remote control software), you can do one of the following:

1. Use Windows Scripting Host, if it is installed. Save the following script as .vbs and double-click it:

```
msgbox ScriptEngineMajorVersion & "." & ScriptEngineMinorVersion
```

2. Use client-side VBScript. Save the following as .html, and open with Internet Explorer:

```
<script language='vbscript'>  
    msgbox ScriptEngineMajorVersion & "." & ScriptEngineMinorVersion  
</script>
```

3. Finally, you could right-click **vbscript.dll**, which should be in **%windir%\system32**, choose Properties, and look at the Version tab.

How do I detect the browser's encryption level / cipher strength?

876 requests - last updated Sunday, June 10, 2001

In any HTTPS page, you can ask for:

```
<%  
    Response.Write Request.ServerVariables("HTTPS_KEYSIZE")  
%>
```

Note that this information is not available to ASP until a SECURE connection has been negotiated.

Why does DLLHOST.EXE take all my memory and/or CPU?

841 requests - last updated Wednesday, November 21, 2001

COM Objects

Since DLLHOST.EXE keeps references to your COM objects, it may be that these objects have memory leaks. Pore through your custom objects and make sure you release all references. If you are using C++/ATL, make sure to use "." as opposed to "->" when destroying pointers. If you are using Visual Basic, make sure that you have read [Q264957](#), [Q281630](#) and that you have set Retain in Memory and Unattended Execution. If you are using a third party vendor's object, check their web site to see if they have released any patches to fix memory leaks.

Data Access Components

Sometimes this can be caused by MDAC components - either by poor implementation, a faulty install, or a true memory leak in the component. Eliminate the possibilities by getting the most recent version from <http://www.microsoft.com/data/>.

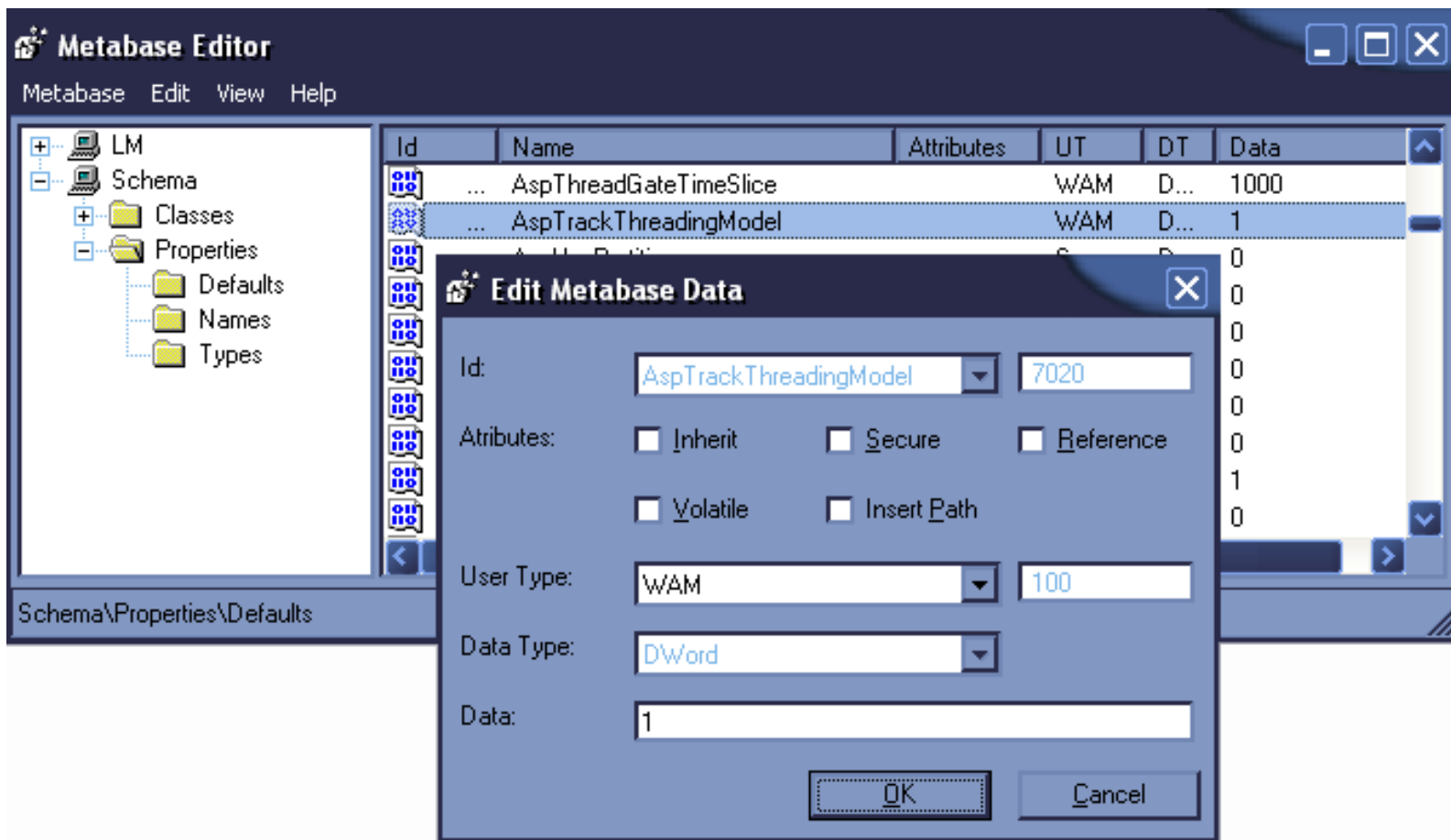
ASPTrackThreadingModel

One reason could be that your Metabase has a setting of 0 for ASPTrackThreadingModel. For optimal performance, this setting should be 1.

To verify / solve this issue, download the Metabase editor (MetaEdit 2.2) from [Q232968](#).

Once it is installed:

- Launch the editor (from the Administrative Tools menu).
- Expand 'Schema'
- Expand 'Properties'
- Highlight 'Defaults' and scroll for ASPTrackThreadingModel
- Double-click that key
- if Data says 0, change it to 1, click OK, close the editor, reboot.



Too Many Applications

Perhaps you simply expect one server's resources to handle too many web sites / applications.

Bonehead Mistakes

Yes, we've all made these. Before you go opening a ticket with Microsoft, make sure your code doesn't look like this:

```
<%  
    Dim i  
    i = 1  
    Do While i < 10  
        Response.Write "I'm going to steal your memory."  
    Loop  
>%
```

Other examples are very large loops (e.g. for i = 1 to 10000000000), forgetting to close / set objects to nothing, circular references, forgetting rs.movenext within a do while not rs.eof / loop construct, recursive functions, returning massive amounts of data from SQL Server or Access to an ASP page, storing ADO objects in the session or application objects...

Still haven't solved it?

Well, you could use performance monitor to at least narrow down the application(s) causing the problem. Under Internet Services Manager, try changing the application protection under Internet Services Manager to High (isolated). Right-click the Default Web Site (or the troublesome application), choose Properties, and on the Home Directory tab, change the application protection option. Hit Apply, OK, exit ISM and try and reproduce the problem. This may take some experimentation.

If you have several COM objects and you can't narrow down which is causing the problem, put each in its own application, and wail on each one (in a realistic environment) until you reproduce the problem.

See [Q253706](#) for more information on tracking down memory leaks.

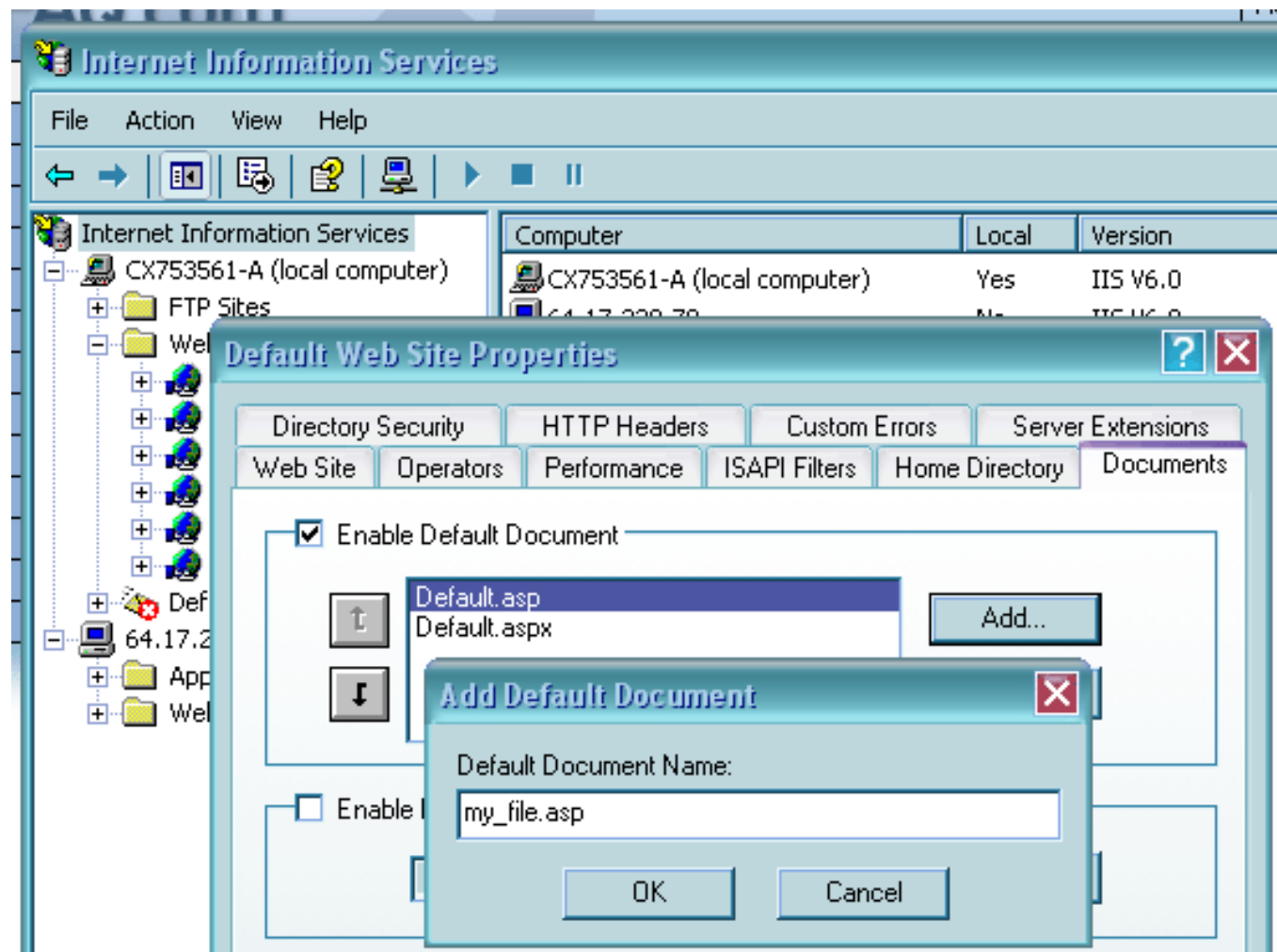
How do I change document names / extensions in IIS / PWS?

802 requests - last updated Monday, October 29, 2001

Open up Internet Services Manager. In IIS / PWS 4.0, this is on the Start Menu under Windows NT 4.0 Option Pack / Internet Services Manager. In IIS 5.0 / Windows 2000, this is under Administrative Tools in the control panel. (I have a shortcut to this tool on my taskbar; if you do a lot of work in the MMC tool for IIS, you may want to do the same.)

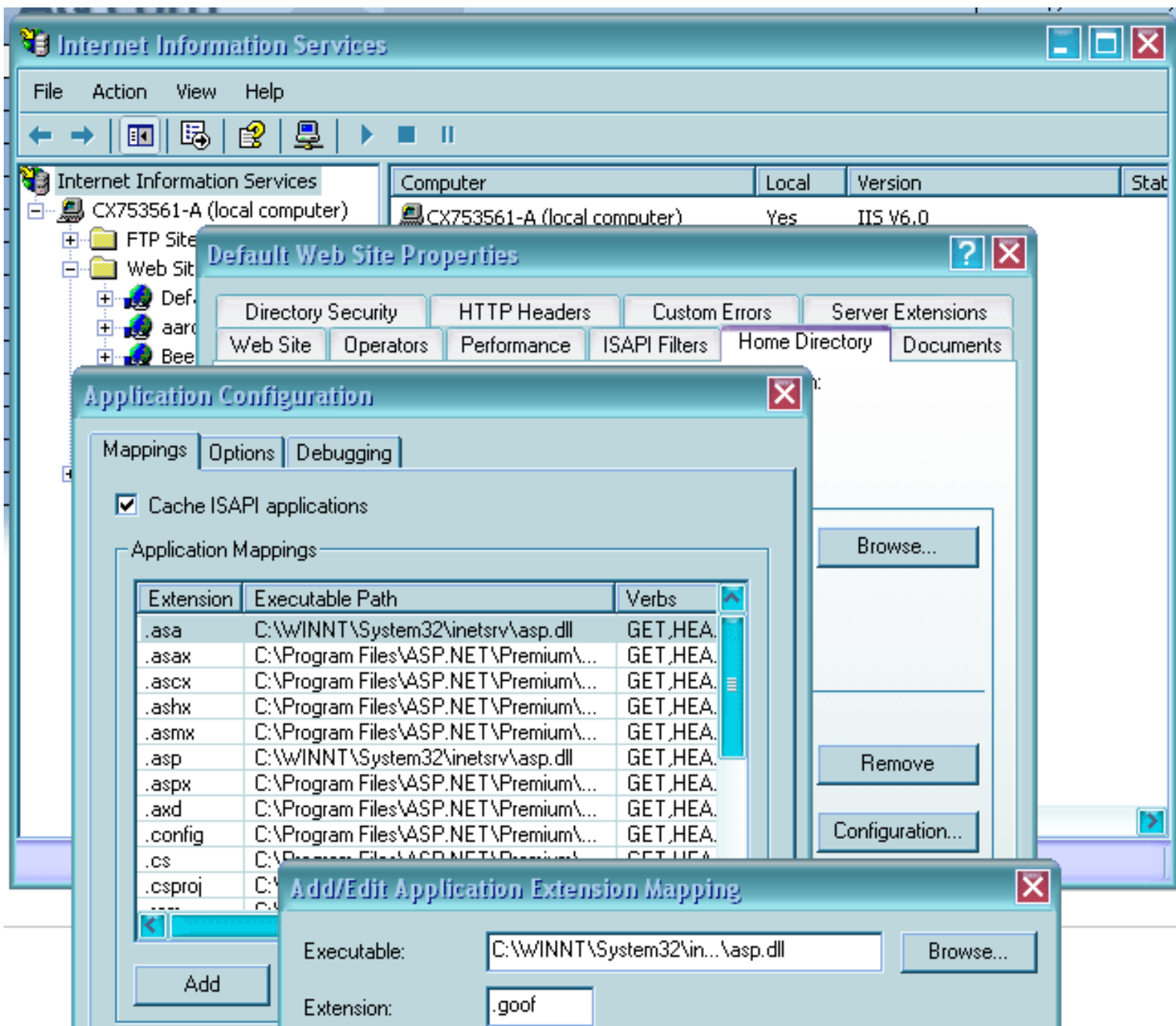
To change/add document names, for example if you want **http://www.yoursite.com/** to display that way, but actually load **http://www.yoursite.com/my_goofy_file.asp**, then follow these steps:

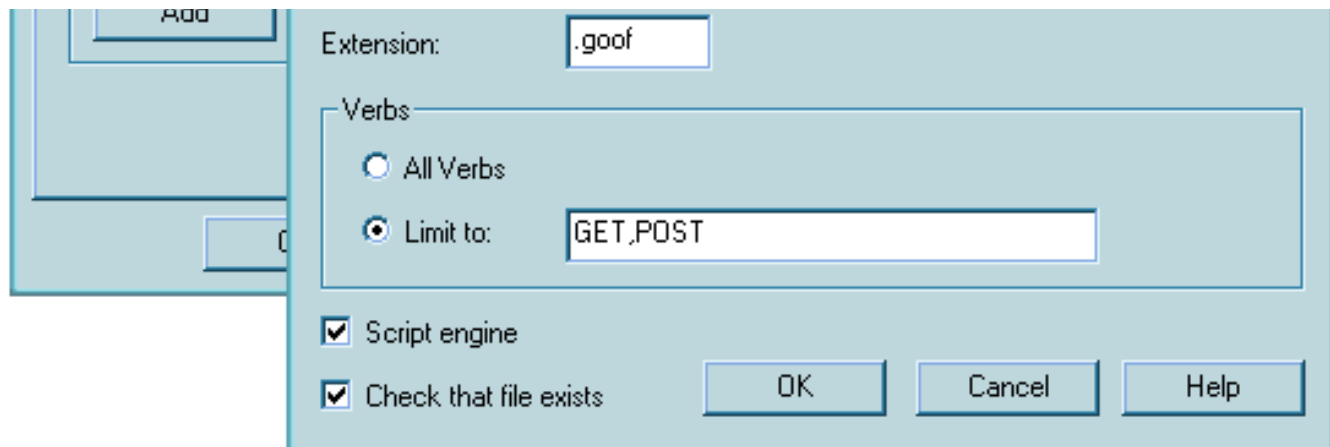
1. Right-click 'Default Web Site' (or the application in question)
2. Choose 'Properties'
3. On the 'Documents' tab, make sure 'Enable Default Document' is checked
4. Select the 'Add...' button, type in the filename you wish to override default.asp
5. Click OK, then click the up arrow next to the file list to push your new file to the top of the list
6. Click Apply, OK, and close IISAdmin (if you are asked to save console settings, choose Yes).



To add a documentation extension, for example if you want **<file>.inc** to actually run as an ASP file and be parsed by ASP.DLL, then follow these steps:

1. Right-click 'Default Web Site' (or the application in question)
2. Choose 'Properties'
3. On the 'Home Directory' tab, choose 'Configuration...'
4. On the 'Mappings' tab, choose 'Add'
5. Under 'Executable' browse for ASP.DLL (located in %system%\inetsrv\)
6. For 'Extension' type in the extension you wish to use (including the leading period)
7. The only verbs you should need are GET and POST (see MSDN for information on HEAD, OPTIONS, TRACE etc.)
8. Click OK, Apply, OK, and close IISAdmin (if you are asked to save console settings, choose Yes).





How do I solve 'The specified procedure could not be found' errors?

801 requests - last updated Thursday, May 10, 2001

This issue will come up if you fixed the "f**k Government" worm issue, outlined and patched at the following URL:

[MS00-086](#)

You can resolve this issue simply by (re-)applying NT 4.0 Service Pack 6a.

Visit [Microsoft's security site](#) for other security bulletins, patches and updates.

What do I do when IIS 5.0 will not start?

796 requests - last updated Wednesday, April 25, 2001

After installing / removing applications, or manually removing Client for Microsoft Networks directly, you may find that IIS 5.0 suddenly will not start. Errors that may appear in the event log are:

- The service did not respond to the start or control request in a timely fashion; or,
- The authentication service is unknown.

There is a [comprehensive article](#) at IISFAQ.com that will help with this problem.

Why do I get an error about a 'Smart HTML interpreter'?

661 requests - last updated Wednesday, April 11, 2001

This seems to be a pretty common error with (shudder) FrontPage 2000 Server Extensions.

For possible resolution, see [Q205540](#) and/or [Q261971](#)...

I have plenty of RAM, why do I get an 'Out of memory' error?

365 requests - last updated Saturday, October 27, 2001

You may have seen this error before:

```
Microsoft VBScript runtime error '800a0007'  
Out of memory  
/<file>.asp, line <line>
```

This message has little to do with the amount of RAM you have. I have a workstation with 1 GB of RAM, and I have seen this error when developing locally.

VBScript has inherent limitations on the amount of space it can allocate to elements such as dynamic arrays. So, if you try this:

```
<%  
    dim bigArray(7000,7000)  
  
    ' or  
  
    el1 = 50  
    el2 = 400  
    el3 = 475  
    dim hugeArray()  
    redim hugeArray(el1, el2, el3)  
%>
```

You will almost certainly get an error message.

What is Event ID 36, and how can I get IIS running again?

304 requests - last updated Wednesday, November 21, 2001

Many people have discovered Event ID 36 in their Event Log, and associate it with a time where ASP stopped serving on their IIS 5.0 server (HTML continues to serve fine). This is usually associated with a failure with an error number of 2147500034 (80004002). This particular error is associated with the message "No Such Interface Supported"... which is a bit ambiguous, to say the least. Here are the various solutions that have worked for different people with this error in the past, from conservative to aggressive:

- Issue an IISRESET() call, which will restart the IIS-related services.
- Check that IIS' Application Mappings for ASP are intact, under IIS' Home Directory / Configuration interface.
- Move the Application from high to medium to low application protection, re-testing your ASP pages each time.
- Remove the Application and recreate it.
- Re-synchronize your IWAM account by running C:\inetpub\Adminscripts\synciwam.vbs (see [Q255770](#) for more info).
- stop IIS, run the following commands, then restart IIS:

```
regsvr32 c:\winnt\system32\oleaut32.dll  
regsvr32 c:\winnt\system32\inetsrv\asp.dll
```

- Reinstall the distributed transaction coordinator from C:\WINNT\system32\dtcsetup.exe
- Apply Windows 2000 SP2, MDAC 2.6 or 2.7, and all relevant security fixes.
- If you have Crystal Reports 8 installed, uninstall IIS 5.0 from Add/Remove Programs, install the [Seagate fix](#), reinstall IIS 5.0, and reboot.
- See [Q297519](#), [Q271071](#), [Q257267](#), [Q238665](#), [Q195956](#)

How do I convert exchange rates in ASP?

297 requests - last updated Thursday, November 1, 2001

Here are three tools that will look up exchange rates in real-time, allowing you to perform conversions and other calculations:

[Cloanto Currency Server](#)

[IISCartEX](#)

[VoltoFXP](#)

There is also an XML interface to Oanda's currency rates:

<http://www.oanda.com/products/fxml/>

As an alternative, while I don't advocate slurping from other sites, you could rig up the MSXML objects or some other POST-emulating behavior to scrape from a site like <http://www.xe.net/ucc/> or <http://finance.yahoo.com/m3?u>.

Why do I get 'Type Mismatch' when using the Session object?

289 requests - last updated Tuesday, November 13, 2001

This is usually because session state has been disabled, either through the Internet Services Manager GUI, or with the `@EnableSessionState` directive. To use the Session object, session state must be enabled for the application.

How do I display the Euro symbol (€) in my ASP pages?

250 requests - last updated Thursday, January 3, 2002

Being a relatively new concept, the Euro is not covered under any special Session.LCID value (at least not that I know of) for use with VBScript's FormatCurrency function. But there is an HTML entity to represent the character, so it is trivial to wrap a presentation layer for such currency in your own function. I tend to use emphasis on the character as it is a rather weak-looking HTML entity.

```
<%  
    Function FormatEuro(n)  
        If IsNumeric(n) Then  
            FormatEuro = "<b>#8364;</b>" & FormatNumber(n,2)  
        Else  
            FormatEuro = "<b>#8364;</b>" & n  
        End If  
    End Function  
  
    Response.Write(FormatEuro(48.24))  
%>
```

How do I make the search engines index my ASP pages with QueryStrings?

235 requests - last updated Monday, January 28, 2002

As you may know, most of the popular search engines -- for various reasons -- do not index pages that have querystring parameters. So, what site owners must resort to in order to get into the search engines is to make static copies of their dynamic data.

While you can do this yourself manually (e.g. write an admin interface that uses FileSystemObject to re-write HTML files when data changes), there are ISAPI filters out there that will help you index with the search engines and still keep all of your content fresh. Here are the first two I have come across:

[IISRewrite](#)

[URLReplacer](#)

[XCache](#)

[XQASP](#)

If you know of any other tools, please [let us know...](#)

How do I embed a TAB character into source code?

233 requests - last updated Sunday, October 28, 2001

Sometimes you want to make your HTML source code more readable, or insert consistent indents into non-HTML elements like an e-mail. You can that with either of the two following commands:

```
<%  
    Response.Write(vbTab)  
    ' or  
    Response.Write(CHR(9))  
%>
```

How can I increase the amount of connections in Workstation / Professional?

220 requests - last updated Tuesday, October 30, 2001

NT 4.0 Workstation, Windows 2000 Professional and XP Professional all come with an inherent limit of 10 simultaneous connections. This is because it is a business / development operating system, not a Web server. This OS should be used for testing your ASP applications, not deploying them or hosting them in the real world. You will need to get a flavor of Server to do this...

How do I change the default server scripting language in InterDev?

179 requests - last updated Thursday, November 1, 2001

In Visual InterDev 1.0, choose Options from the Tools menu, and then select the HTML tab. In the Default scripting language area under Active Server Pages, select a language.

In Visual InterDev 6.0, right-click the name of the project in the Project Explorer, and then choose Properties. Choose the Editor Defaults tab, and then under Default script language, select a new default.

In Visual InterDev.NET, there are two methods (though neither work for me yet):

(a) with an ASP file open, click View, Property Pages, and on the General tab there is a dropdown at the bottom for server-side scripting language. When I attempt to change this to JScript, InterDev shuts down with a "Microsoft Development Environment has encountered a problem and needs to close. We are sorry for the inconvenience." blah blah blah...

(b) with an ASP file open, click View, Properties Window, and in that environment you'll see one of the properties is 'defaultServerScript' with a dropdown next to it. When I attempt to change this to JScript, I get the error "Invalid Property Value: Value null was found where an instance of an object was required."

I'm running Beta 2 on XP Pro, and the RC on XP Advanced Server 3541. YMMV.

How do I protect my images and other visual content?

117 requests - last updated Wednesday, January 23, 2002

In short, you can't. If you don't want people using your images or layout ideas, don't put them on the web. There are many ways to retrieve images, so don't bother using client-side JavaScript to trap right-click events (I can get around that simply by disabling JavaScript, using a browser without onContextMenu support, or using my PrintScreen button).

How do I change a list into a set of table rows and columns?

10 requests - last updated Tuesday, February 5, 2002

Developers often have sets of things they want to present to a user, and the typical way is to process each element and then put some kind of vertical space (e.g. <hr> or <p>).

Many times, these developers want an easy way to display more information without all the vertical space. Image thumbnails, for example, that are 20 pixels wide, don't need their own 'row' in most HTML interfaces. So what we want to do is say "let's display n of these per row, and when we reach n, start a new row." Here is a code sample that will handle any number of elements, and any number of columns. Download the code and try it out; just change the first two values and play with it. This code should be easy to adapt to your recordsets, array processing, etc.

```
<%  
    ' number of elements, e.g. recordcount  
    numElements = 11  
  
    ' # of columns in the table:  
    numCols = 5  
  
    ' populate some dummy data  
    dim tmpArray()  
    redim tmpArray(numElements-1)  
    for k = 0 to numElements-1  
        tmpArray(k) = "Item " & cstr(k+1)  
    next  
  
    ' all right, let's start the table  
    response.write "<table border=1>"  
  
    ' enter the loop  
    for i = 0 to numElements-1  
        ' control variable, to determine if we need  
        ' to pad the last column(s) with space  
        needFooter = true  
        if i mod numCols = 0 then  
            ' beginning of row  
            response.write "<tr>"
```

```

        end if
        ' display each cell
        response.write "<td>" & tmpArray(i) & "</td>"
        if i mod numCols = numCols - 1 then
            ' end of row, so don't need to pad
            response.write "</tr>"
            needFooter = false
        end if
    next
    if needFooter then
        ' okay, we need to put in the balance columns
        response.write "<td colspan=" & _
            numCols - (i mod numCols) & _
            "> </td></tr>"
    end if
    response.write "</table>"
%>

```

If you were using recordset data, you would only adjust a few items. The following code assumes an open recordset called rs, that is not EOF, and with sufficient properties to get a recordcount:

```

<%
    numElements = rs.recordcount
    numCols = 5

    i = 0
    do while not rs.eof
        needFooter = true
        if i mod numCols = 0 then
            response.write "<tr>"
        end if
        response.write "<td>" & rs(0) & "</td>"
        if i mod numCols = numCols - 1 then
            response.write "</tr>"
            needFooter = false
        end if
        i = i + 1
        rs.movenext
    loop
    if needFooter then

```

```
        response.write "<td colspan=" &_  
            numCols - (i mod numCols) &_  
            "> </td></tr>"  
    end if  
    response.write "</table>"  
%>
```