

Client Authentication Using an Authinfo File

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Client Authentication Using an Authinfo File

Introduction

Some SAS servers and spawners require client authentication in the form of a user ID and password. Often these credentials are embedded in a SAS program. When password information is not available, an attempt is made to find an authinfo file. An authinfo file contains credentials that can include one or more user IDs, passwords, host names, and port numbers to authenticate to multiple servers and spawners. It is an alternative to including passwords in programs.

You can use an authinfo file to sign on to SAS servers and spawners without having to specify credentials elsewhere.

Note: SAS Studio 5.2 (Basic) uses the user credentials that were used to launch the workspace server to authenticate your connection to CAS. SAS Studio 5.2 (Basic) does not use the authinfo file for authentication unless it is forced to, as described in *SAS Viya Administration: Authentication*.

SAS allows the authinfo file to be located somewhere other than in the default location. The path to the authinfo file can be specified by one of the following language elements:

- `AUTHINFO=` option in the CAS statement
- `AUTHINFO =` system option
- `AUTHINFO` UNIX environment variable
- `NETRC` environment variable

The order of precedence can differ for SAS products and is documented with each product.

Create an Authinfo File

Note: It is a requirement that the authinfo file be in UTF8 encoding.

UNIX

In your home directory, create a file named `.authinfo`. For example, in command-line mode:

```
touch ~/.authinfo
```

The file must have Read and Write permissions only for the owner. Use `chmod` to change the permissions:

```
chmod 600 ~/.authinfo
```

When you list the file, the permissions should look like the following:

```
-rw-----
```

Windows

On Windows systems, the authinfo file permissions can include Read access for any user or group, but must not include access for the following groups:

- Everyone
- Authenticated Users
- Built-in Users

The default location is your Windows home directory with a filename of `_authinfo`. The leading underscore is intentional. Your Windows home directory is identified by the `%HOMEDRIVE%` and `%HOMEPATH%` environment variables. Most often, the directory path is as follows:

```
C:\Users\your-userid\_authinfo
```

After you create the file, use `icacls` to change the permissions:

- 1 Grant yourself explicit full control of the file:

```
icacls _authinfo /grant <your-userid>:F
```

- 2 Remove the inheritance:

```
icacls _authinfo /inheritance:r
```

- 3 List any remaining permissions:

```
icacls _authinfo
```

- 4 If any permissions remain, other than your explicit permission that was added in Step 1, remove them:

```
icacls _authinfo /remove <id-to-remove>
```

Authinfo File Format

About the Authinfo File Format

The format of an authinfo file is based on the [.netrc file specification](#) that is used for FTP login. In addition to the .netrc file standards, the authinfo specification allows for putting commands in the file, as well as using quoted strings for passwords. The quoted strings allow for spaces within passwords and user IDs.

You must explicitly specify a user ID and password in the authinfo file. You can also explicitly specify a host and a port number. However, if a host is explicitly specified, the credentials are used only for connections to that host. If a port is explicitly specified, the credentials are used only for connections to that port. If DEFAULT is specified in the place of a host and a port, the credentials are used for any host and port combination.

You can create a single authinfo file that includes the credentials to connect to any number of servers or spawners in your environment.

Note: To be compatible with other systems that use similarly formatted files, SAS accepts the following aliases for host, port, and user keywords:

- `machine = host`
 - `protocol = port`
 - `login = user`
-

Single User ID and Password

If you have a single user ID and password that you use to authenticate to all servers and spawners, you need only a single entry in your authinfo file:

```
default user your-userid password your-password
```

Note: *Default* must be all lowercase when it is used in an authinfo file in place of an explicit host and port.

Different Credentials for Different Hosts

If you have different user IDs and passwords for different hosts, but all servers on any one host have the same user ID and password, specify each user ID and password for each host in the authinfo file:

```
host hostname1 user your-userid1 password your-password1
host hostname2 user your-userid2 password your-password2
```

Different Credentials for Different Servers or Spawners on the Same Host

If you need to specify different user IDs and passwords for different servers or spawners on the same host, add a port specification in the authinfo file:

```
host hostname port port1 user your-userid1 password your-password1
host hostname port port2 user your-userid2 password your-password2
```

Same Credentials with Few Exceptions

If you use the same user ID and password for most servers and spawners with a few exceptions, specify the exceptions first (with host and port or just host) and the default common user ID and password last in the file:

```
host hostname port port1 user your-userid1 password your-password1
host hostname user your-userid2 password your-password2
default user your-userid password your-password
```

Encode Passwords

You can also use PROC PWENCODE to encode the password. For example,

```
proc pwencode in='your-password' method=sas004;
run;
```

where *sas004* is the encoding method.

Copy the resulting encoded password into the authinfo file so that it looks similar to the following:

```
default user your-userid password {SAS004}11EF1B08B31C406FEF5D3B00A0354302DE1F1F5D84181C93
```

For more information, see [“PWENCODE Procedure” in Base SAS Procedures Guide](#).

Authinfo File Location Precedence

If a SAS product uses an authinfo file, it does so based on the following precedence:

- 1 Product-specific options.
- 2 The AUTHINFO= SAS system option.
- 3 The AUTHINFO environment variable.
- 4 The NETRC environment variable.
- 5 The default location of the authinfo file.

Note: SAS Studio 5.2 (Basic) does not use the authinfo file by default. To use the authinfo file in SAS Studio 5.2 (Basic), you must specify either the [AUTHINFO= SAS system option](#) or the [AUTHINFO= CAS statement option](#).

See Also

For more information, see the following resources:

- [Authinfo File](#) in *SAS Viya Administration: Authentication*
- [NETRC — Linux Man Page](#)
- [“AUTHINFO Environment Variable”](#) in *SAS Companion for UNIX Environments*
- [“AUTHINFO= System Option”](#) in *SAS System Options: Reference*
- [“CAS Statement”](#) in *SAS Cloud Analytic Services: User’s Guide*
- [“USER=user-ID”](#) in *SAS Cloud Analytic Services: User’s Guide*

