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Information Server DataStage

Configuring Information Server DataStage to use PAM authentication

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This presentation describes how to configure Information Server DataStage® to use Pluggable Authentication Module, referred to as PAM throughout this presentation.

Objectives

- What is PAM authentication
- What platforms is PAM supported on
- Enabling DataStage with PAM
- PAM configuration file

The objectives of this presentation are to describe what PAM authentication is and what the different platforms that DataStage with PAM are supported on. This presentation also explains how to enable DataStage to authenticate using PAM and how to add to or create the required DataStage entries in the PAM configuration file.

What is PAM?

- Pluggable Authentication Module
- Authenticate against LDAP and Active Directory user registries
- Must be configured on DataStage engine tier

PAM allows DataStage to authenticate against LDAP and Active Directory user registries. PAM must already be configured on the DataStage server before you can configure DataStage to use PAM for authentication. Be sure that your LDAP or Active Directory users can login to the DataStage server using their LDAP credentials.

Supported platforms

- Linux® and UNIX®
  - IBM AIX®
  - HP-UX
  - Sun Solaris
  - Linux

- Windows®
  - DataStage will authenticate against Active Directory
  - PAM is not required
  - No configuration required

Configuring DataStage to authenticate using PAM is supported for all UNIX and Linux platforms. DataStage on Windows will authenticate against Active Directory as well. Windows platforms do not use PAM so no additional configuration is needed.

Enabling DataStage with PAM (1 of 2)

- Edit the $DSHOME/uvconfig file and set:
  AUTHENTICATION 1

  Example uvconfig entry:
  # AUTHENTICATION - Specifies the method by which UNIX user
  #   authentication is done. Currently, the following methods
  #   are supported:
  #
  #   0) Standard O/S Authentication (default)
  #   1) Pluggable Authentication Module (PAM)
  #
  #   This value should only be changed with a full understanding
  #   of the implications, as improper setting of this value can
  #   lead to the environment being unusable.
  AUTHENTICATION 1

To enable DataStage with PAM, login to the DataStage server as root or as the DataStage Administrator and change your working directory to the DSEngine directory. Edit the uvconfig file and set the Authentication parameter to 1. The authentication parameter's default is 0.

Enabling DataStage with PAM (2 of 2)

- Set DataStage environment
  - . ./dsenv
- Stop DataStage Engine
  - bin/uv –admin –stop
- Regen uvconfig file
  - bin/uv –admin –regen
- Start DataStage Engine
  - bin/uv –admin -start

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You now need to properly set your environment for DataStage by sourcing the dsenv file. From the DSEngine directory, type:

. ./dsenv

The next step is to stop the DataStage Engine. Be sure you are still in the DSEngine directory and as root or the DataStage administrator user run:
bin/uv –admin –stop

After the DataStage engine has stopped, you will need to regen the uvconfig file to re-create the .uvconfig file. To do this, from the DSEngine directory run:

bin/uv –admin –regen

Next, restart the DataStage Engine by running:

bin/uv –admin –start

Adding to or creating PAM configuration file

- Check bitness of DataStage:
  $ file $DSHOME/bin/uvsh
  /opt/is801/InformationServer/Server/DSEngine/bin/uvsh: ELF 32-bit LSB executable, Intel® 80386,
  version 1 (SYSV), for GNU/Linux 2.2.5, dynamically linked (uses shared libs), not stripped
- Check bitness of PAM libraries
  $ cd /lib/security
  $ file pam_stack.so
  pam_stack.so: ELF 32-bit LSB shared object, Intel 80386, version 1 (SYSV), stripped

Before adding to or creating the PAM configuration file, it is important to determine the bitness of your DataStage installation and the bitness of the PAM libraries. To check the bitness of the DataStage install, run:

file $DSHOME/bin/uvsh where $DSHOME is set to your DSEngine directory.

In this example, the DataStage Engine is 32 bit. Next, compare this to the bitness of the PAM library that you are using in the configuration file to be sure they are the same. In this example you are in the /lib/security directory and ran:

file pam_stack.so

You can see that the PAM library is 32 bit as well. The next step is to edit or create the PAM configuration file.

Adding to or creating PAM configuration file for Linux

- Create file named dsepam in /etc/pam.d directory

All Linux

```
#%PAM-1.0
auth            include         system-auth
password        include         system-auth
account         include         system-auth
```

On all Linux systems, you must create a file named dsepam in the /etc/pam.d directory. This slide displays examples of a dsepam configuration file for Linux. Your entries may be different depending on the level of security that you want. Refer to your PAM documentation if you require more information.

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Adding to or creating PAM configuration file for AIX

▪ Edit the /etc/pam.conf file

IBM AIX with 32 bit DataStage

dsepam	auth	required	/usr/lib/security/pam_aix
dsepam	account	required	/usr/lib/security/pam_aix
dsepam	session	required	/usr/lib/security/pam_aix
dsepam	password	required	/usr/lib/security/pam_aix

IBM AIX with 64 bit DataStage

dsepam	auth	required	/usr/lib/security/64/pam_aix
dsepam	account	required	/usr/lib/security/64/pam_aix
dsepam	session	required	/usr/lib/security/64/pam_aix
dsepam	password	required	/usr/lib/security/64/pam_aix

For IBM AIX you will need to edit the /etc/pam.conf file as the root user and add the appropriate dsepam entries. This slide displays the correct entries for both 32 and 64 bit DataStage on AIX.

Adding to or creating PAM configuration file for Solaris

HPUX and Sun Solaris 32 and 64 bit

- No dsepam entries required

Configuring Information Server DataStage to use PAM authentication

On an HPUX and Solaris system, you do not need to make any changes to PAM. All you need to do is make the required changes to uvconfig as described earlier in this presentation.

64 bit DataStage and Kerberos

- **IBM AIX with 64 bit DataStage and Kerberos**

- Same changes to uvconfig and pam.config as shown in previous slides

- Edit /usr/lib/security/methods.cfg
  - Under the section KRB5A_64 add a new line:
    program_64 = /usr/lib/security/KRB5A_64

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If you are on an AIX system with 64 bit DataStage and you are using Kerberos for authentication, you will need to make the same changes to the uvconfig and pam.conf file as shown in the previous slides. In addition, you will need to edit the methods.cfg file under /usr/lib/security and add a new line under the section KRB5A_64. The new line will be:

program_64 = /usr/lib/security/KRB5A_64

Fix Pack 1 for 8.1 no installed – UNIX and Linux

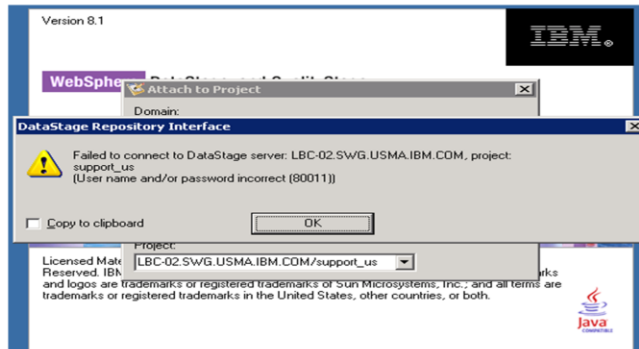- At 8.1 Solaris, HPUX and Linux will require JR31215
- JR31215 included in 8.1 FP1

Configuring Information Server DataStage to use PAM authentication

There is an issue for Information Server 8.1 on all UNIX and Linux platforms except AIX where the wrong PAM library is being called. This will cause the DataStage PAM authentication to fail with an 80011 error even if everything is configured correctly. You will need to either install Fix Pack 1 to correct the problem or install the patch for JR31215 if you do not want to install Fix Pack 1.

Error 80011 – Username or password or both are incorrect

- Connection error 80011
- IBM Education Assistant

  http://publib.boulder.ibm.com/infocenter/ieduasst/imv1r0/index.jsp?topic=/com.ibm.iea.datastage/datastage/8.1/ProblemDetermination.html

Configuring Information Server DataStage to use PAM authentication

If you receive an 80011 error when attempting to login to the DataStage Client after you have completed the configuration of Information Server DataStage for PAM, see the IBM Education Assistant module called "Connection Error 80011" for troubleshooting techniques.

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