

**Overview of IBM
InfoSphere
Information
Server**

Lesson5:Administration



Lesson Objectives

- On completion of this lesson, you will be able to:
- Administer security, entitlements, clusters and high availability configurations, logs, schedules, and services, and back up data.



Administration Overview



- Both the IBM InfoSphere Information Server console and the IBM InfoSphere Information Server Web console provide administration capabilities.
- As part of InfoSphere Information Server administration, you set up and manage suite security. Security administration includes the following tasks:

Administration Overview



- Configuring and administering the user registry
- The user registry holds user account information, such as user names and passwords, that can be accessed during authentication. You choose a user registry for the suite to use. You can choose the internal InfoSphere Information Server user registry, or an external local operating system or lightweight directory access protocol (LDAP) user registry. Depending on the registry you choose and the topology of your installation, you might also have to map credentials from one user registry to another.
- Controlling access
- You create user accounts and groups. You assign roles to users and groups to specify which features users can use and which projects a user can access. User roles can be defined at several levels that build on one another.

Administration Overview Continued



- Auditing security-related events
 - Security-related events include all activities that set or modify security-related settings and all user authentications and application access attempts. You configure which events to log and how much information to include. You monitor and analyze the log information to help prevent unauthorized access to sensitive data.
- Administering account passwords
 - You periodically change administrator account passwords to comply with your security policies.
- Managing active user sessions
 - You view current active sessions, and manage session limits. If necessary, you can force one user or all users to disconnect.

Information Server Product Components



➤ The IBM WebSphere DataStage client enables you to administer projects, edit repository contents, and create, edit, schedule, run, and monitor ETL jobs.

- Three components comprise the DataStage client:
- DataStage Administrator
- DataStage Designer
- DataStage Director

DataStage Administrator

The DataStage Administrator enables you to:



Specify general
server defaults



Add and delete
projects



Set project
properties



Access the UniVerse
repository by using the
command interface

Information Server Product Components



➤ DataStage Designer

➤ DataStage Designer enables you to:

- Create, edit, and view objects in the metadata repository.
- Create, edit, and view data elements, table definitions, transforms, and routines.
- Import and export DataStage components, such as projects, jobs, and job components.
- Create ETL jobs, job sequences, containers, routines, and job templates.
- Create and use parameters within jobs.
- Insert and link stages into jobs.
- Set stage and job properties.
- Load and save table definitions.
- Save, compile, and run jobs.

Information Server Product Components



- DataStage Director
- DataStage Director enables you to:
 - Validate jobs.
 - Schedule jobs.
 - Run jobs.
 - Monitor jobs.
 - View log entries and job statistics.

Add/Remove Projects



- When you add a new project, you can specify that the new project inherits users and their associated roles from an existing project.
- You can also specify that a new project is protected.
- This is a special category of project and, normally, nothing can be added, deleted or changed in the project.
- Users can view objects in the project, and perform tasks that affect the way a job runs rather than the jobs design; specifically they can:
 - Run jobs v Set job properties v Set job parameter default values
- A newly created protected project is populated by importing developed jobs and components; only a user with the Production Manager role or Administrator role can perform the import, no other types of user can import into a special project.

How to Add/Remove Projects



➤ How to do?

- 1. Click the Projects tab in the Administrator window to move this page to the front.
- 2. Click the Add... button. The Add Project dialog box appears.
- 3. Enter the project name in the Name field. It is automatically appended to the default location for the new project. You cannot add a project to a locatin that already exists.

How to Add/Remove Projects



- 4. To change the default location, enter a new location in the Location on host field, or use the Browse... button to select a new location.
- 5. If you want the project to be a protected one, select the Create protected projected check box.
- 6. If you want to copy the users who can access the new project, and their roles, from an existing project, select Copy roles from existing project, and select the project from which to copy from the list.
- 7. Click OK.

How to Delete Projects



- Ensure that no users are connected to the project you want to delete.
- Click the Projects tab on the Administrator window to move this page to the front.
- Select the project you want to delete, then click Delete.
- You are prompted to confirm the deletion. If you confirm, the project is deleted immediately.

- Note:-InfoSphere DataStage returns an error message if you try to delete a project while another user is connected to it

How to Move Projects



- To move an InfoSphere DataStage project, you must export it to a file and then import it to the new location.
- You then need to delete the original project by using the Administrator client. Before attempting to move a project in this way, ensure that no one is running any jobs in it.
- The easiest way to do this is to start the InfoSphere DataStage Director, attaching to the project you want to move, and check whether any jobs are currently running.
- When you move projects, project level settings such as environment variable settings and project options are not included.

Setting Project Properties



- Click the Projects tab on the Administrator window to move the Projects page to the front.
- Select the project.
- Click the Properties button.
- The Project Properties window appears

Setting Project Properties (Cont..d)



- Pages in the Project Properties window to do the following:
- General:-Enable job administration from the Director client, enable runtime column propagation for parallel jobs, define a project-wide setting for auto-purge of the job log, set up environment variables, enable the automatic sharing of metadata when importing by using the connector import wizard, and generate operational metadata.
- Permissions:- View and assign InfoSphere DataStage user roles to users and groups for a particular project. You assign suite user roles in the IBM InfoSphere Information Server Web console.

Setting Project Properties (Cont..d)



- Tracing:- Enable or disable tracing on the InfoSphere Information Server engine.
- Schedule:- Set up a user name and password to use for running scheduled InfoSphere DataStage jobs.
- The Schedule tab is enabled only if you have logged on to a Windows server.
- Mainframe:- Set mainframe job properties and the default platform type. This page is enabled only if mainframe edition is installed.

Setting Project Properties (Cont..d)



- Mainframe:- Set mainframe job properties and the default platform type. This page is enabled only if mainframe edition is installed.
- Tunables:- Configure cache settings for Hashed File stages.
- Parallel:- Set parallel job properties and defaults for date/time and number formats.
- Sequence:- Set compilation defaults for job sequences.
- Remote. If you have specified that parallel jobs in the project are to be deployed on a USS system, this page allows you to specify deployment mode and USS machine details.

Unit objectives



After completing this unit, you should be able to:

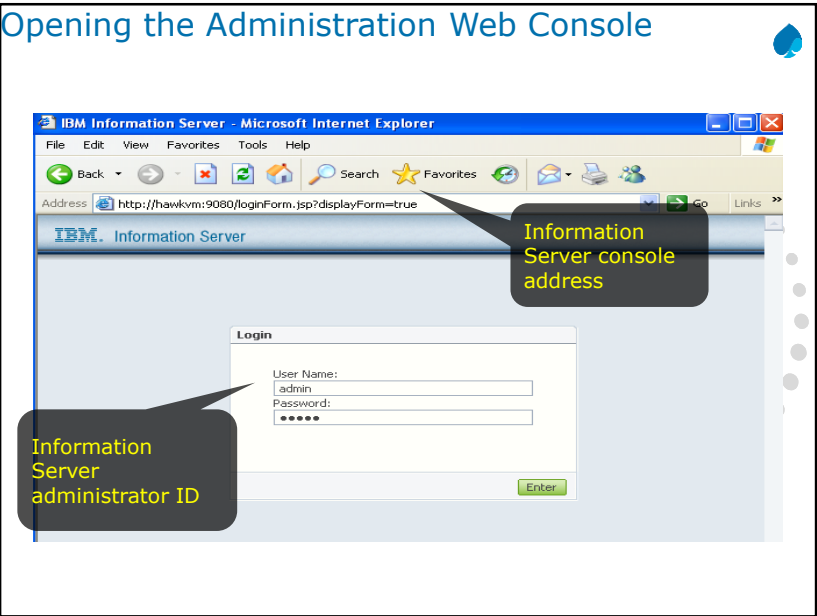
- Open the Administrative console
- Create new users and groups
- Assign Suite roles and Product roles to users and groups
- Give users DataStage credentials
- Log onto DataStage Administrator
- Add a DataStage user on the Permissions tab and specify the user's role

Information Server Administration Web Console



- Web application for administering Information Server
- Use for:
 - Domain management
 - Session management
 - Management of users and groups
 - Logging management
 - Scheduling management

Opening the Administration Web Console



Opening the Administration Web Console



- To open the Administrative Web Console, select Web Console for IBM Information Server Web Console.
- The console address is of the form: <http://machine:nnnn>.
- Here **machine** is the host name of the machine running the application server that hosts MetaData Server.
- **nnnn** is the port address of the console. By default, it is 9080.
- The Information Server administrator ID and password is specified during installation.
- After installation, new administrator IDs can be specified.

User and Group Management



- Suite authorizations can be provided to users or groups
 - Users that are members of a group acquire the authorizations of the group
- Authorizations are provided in the form of roles
 - Two types of roles
 - Suite roles: Apply to the Suite
 - Suite Component roles: Apply to a specific product or component of Information Server, e.g., DataStage
- Suite roles
 - Administrator
 - Perform user and group management tasks
 - Includes all the privileges of the Suite User role
 - User
 - Create views of scheduled tasks and logged messages
 - Create and run reports

User and Group Management (contd...)



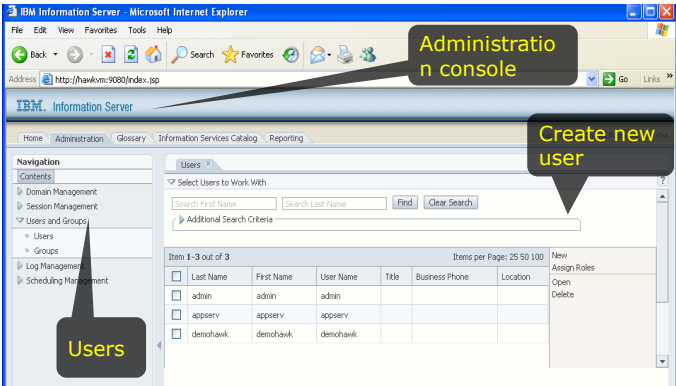
- Suite Component roles
 - DataStage
 - DataStage user
 - Permissions are assigned within Data Stage
 - Developer, Operator, Super Operator, Production Manager
 - DataStage administrator
 - Full permissions to work in DataStage Administrator, Designer, and Director
 - And so on, for all products in the Suite

User and Group Management (contd...)



- A user ID that is assigned Suite roles can immediately log onto the Information Server console.
- What about a user ID that is assigned a DataStage Suite Component role?
 - If the user ID is assigned the DataStage Administrator role, then the user will immediately acquire the DataStage Administrator permission for all projects.
 - However, the user will still not necessarily be able to log onto a DataStage client. Why?
 - Because DataStage credentials are maintained by Windows or LDAP. This means that the user ID must be created and exist on the DataStage Server machine.
- If the user ID is assigned the DataStage User role, one more step is required for any DataStage project that user will log onto.
- A DataStage Administrator must assign a Developer role to that user ID on the Permissions tab. This is done within DataStage, as we will see later.

Creating a DataStage User ID



- The process of creating a new group is similar to creating a new user. Users assigned to a group inherit the authorizations assigned to the group.

Assigning DataStage Roles

IBM Information Server

Home Administration Glossary Information Services Catalog Reporting

Help | About | Change Password | Log Out

Navigation

Contents

Domain Management

Session Management

Users and Groups

Users

Groups

Log Management

Scheduling Management

Users

Select Users to Work With

Create New User

User Name: dsadhin

Password: *****

Confirm Password: *****

Title:

First Name (Given Name): dsadhin

Last Name (Family Name): dsadhin

Instant Messaging ID:

Job Title:

Home Phone Number:

Office Phone Number:

Mobile Phone Number:

Roles

Suite

Role

Inherited

Suite Administrator

Suite User

Suite Component

Role

Inherited

Business Glossary Administrator

Business Glossary Author

Business Glossary User

DataStage and QualityStage Administrator

DataStage and QualityStage User

Information Analyzer Publisher Administrator

Groups

Assign Suite role

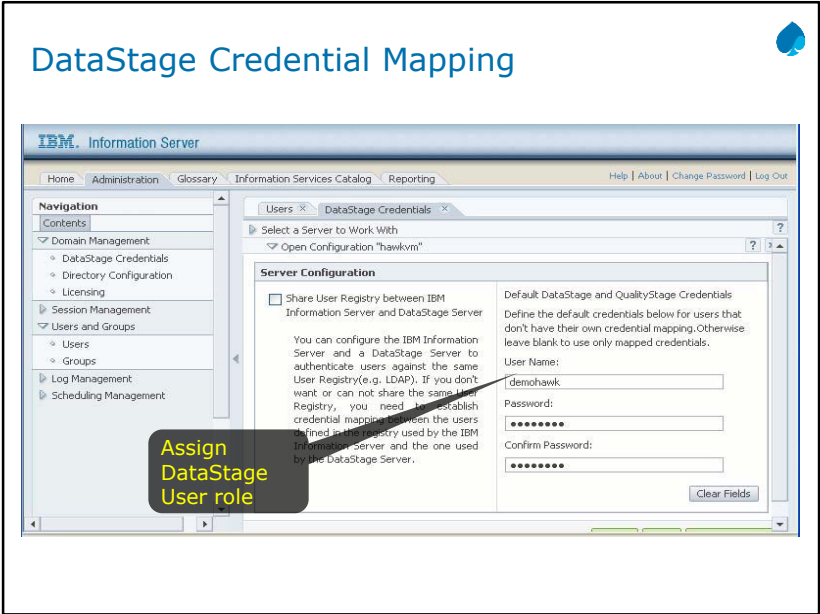
Assign DataStage User role

DataStage Credential Mapping

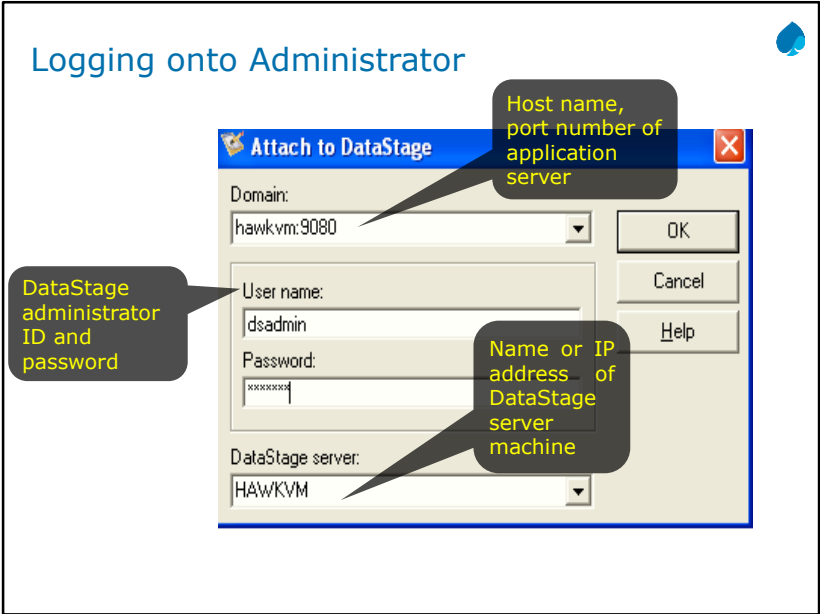


- Users given DataStage Administrator or DataStage User product roles in the Suite Administration console do not automatically receive DataStage credentials
 - Users with DataStage Administrator roles need to be mapped to a valid user on the DataStage server machine
 - This DataStage user must have file access permission to the DataStage engine/project files or Administrator rights on the operating system
 - Users with DataStage User roles need to be mapped to a valid user on the DataStage server machine and need additional DataStage-assigned permissions (developer or operator ...)

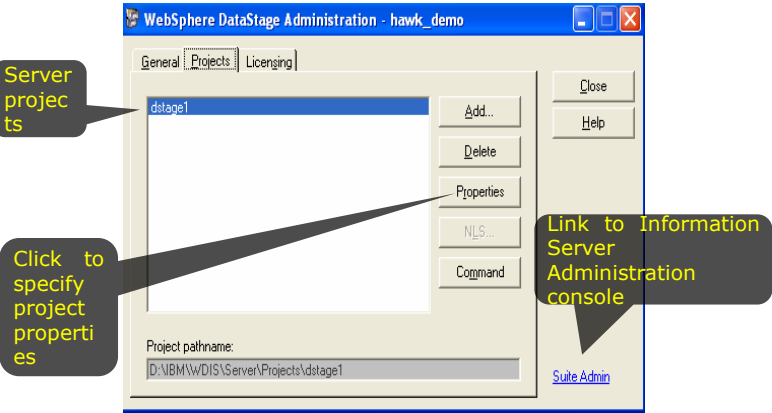
DataStage Credential Mapping



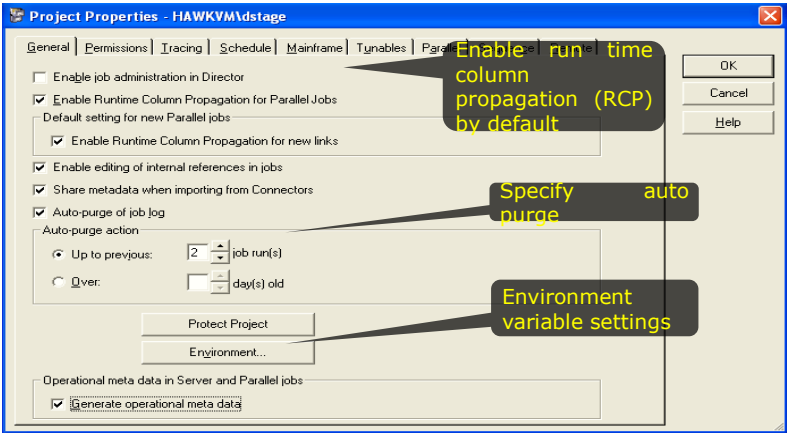
Logging onto Administrator



DataStage Administrator Projects Tab



DataStage Administrator General Tab



DataStage Administrator General Tab



- Runtime Column Propagation (RCP) is discussed in a later module.
- A running job generates many messages in the Director job log. Here you can specify that you want old messages purged.
- Click the Environment button to display environment variables settings.

Environment Variables

Parallel job variables

Environment variables

The following categorized environment variables are defined in this project. Either set a default value for an existing environment variable or add a new environment variable to the user defined category.

Categories:

- General
- Custom
- Parallel
- Operator Specific
- Reporting
- Compiler
- User Defined

Details:

Name	Prompt	Value
APT_AUTO_TRANSPORT_BLOCK_SIZE	Auto adjust transport	False
APT_BUFFERING_POLICY	Buffering policy	Automatic buffering
APT_BUFFER_DISK_WRITE_INCREMENT	Control buffer flush	1048576
APT_BUFFER_FREE_RUN	Buffer operator mem	0.5
APT_BUFFER_MAXIMUM_MEMORY	Virtual write buffer si	3145728
APT_BUFFER_MAXIMUM_TIMEOUT	Maximum buffer time	1
APT_CHECKPOINT_DIR	Check point director	
APT_CLOBBER_OUTPUT	Automatically clobber	False
APT_COLLATION_STRENGTH	Collation strength	Default
APT_CONFIG_FILE	Configuration file	C:/IBM/InformationServer/Server/Configurations/default.ap
APT_DATE_CENTURY_BREAK_YEAR	Default century break	1900
APT_DECIMAL_INTERMEDIATE_PRECISION	Default maximum pre	38
APT_DECIMAL_INTERMEDIATE_ROUNDING_MODE	Default rounding mo	Round toward the nearest representable value
APT_DECIMAL_INTERMEDIATE_SCALE	Default scale for de	10
APT_DEFAULT_TRANSPORT_BLOCK_SIZE	Default transport blc	131072
APT_DISABLE_COMBINATION	Disable operator com	False

Set to Default

All to Default

Variable Help

User-defined variables

OK

Cancel

Help

Environment Variables



- Click the Environment button on the General tab to specify environment variables.
- The variables listed under the Parallel branch apply to Parallel jobs.
- You can also specify your own environment variables under the User Defined branch.
 - These variables can be passed to jobs through their job parameters to provide project level job defaults.
- There are also other environment variables that are hidden from the GUI.

Environment Reporting Variables

Environment variables

The following categorized environment variables are defined in this project. Either set a default value for an environment variable or add a new environment variable to the user defined category.

Categories:

- General
- Customize
- Parallel
- Operator Specific
- Reporting
- Compiler
- User Defined

Details:

Name	Prompt	Value
APT_DUMP_SCORE	Report score	True
APT_MSG_FILELINE	Extra logging information	False
APT_NO_JOBMON	Disable job monitor	False
APT_PERFORMANCE_DATA	Performance data directory	
APT_PM_PLAYER_MEMORY	Report player memory allocation	False
APT_PM_PLAYER_TIMING	Report player calls	False
APT_PM_SHOWRSH	Show RSH commands	False
APT_PM_SHOW_PIDS	Show internal PIDs	False
APT_RECORD_COUNTS	Report record counts	True
APT_SHOW_COMPONENT_CALLS	User-overloadable function information	False
APT_STARTUP_STATUS	Extra startup messages	False
OSH_DUMP	Report step description	True
OSH_ECHO	Report step specification	True
OSH_EXPLAIN	Report terse step description	True
OSH_PRINT_SCHEMAS	Report schemas	True

Set to Default

Alt to Default

Variable Help

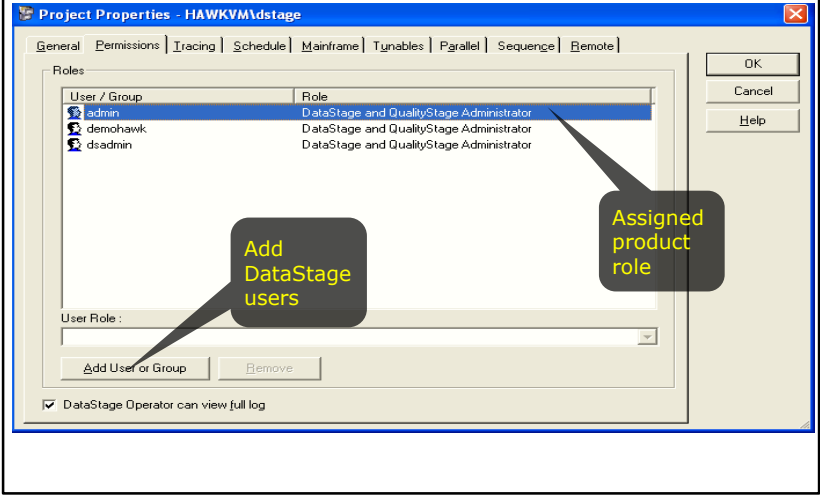
OK Cancel Help

Display Score

Display record counts

Display OSH

DataStage Administrator Permissions Tab

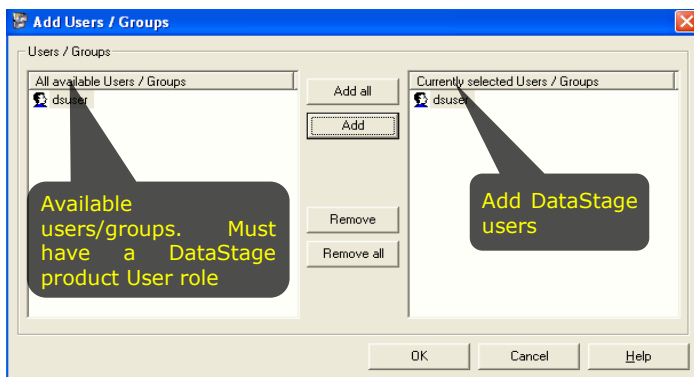


Permissions Tab



- This lists Suite users and groups that have a DataStage User or Administrator role.
- When Suite users or groups that have a DataStage Administrator role are added, they are automatically entered here and assigned the role of "DataStage Administrator".
- Suite users or groups that have a DataStage User role need to be manually added.
 - To accomplish this, click the Add User or Group button (which is hidden in this screen shot).
 - Then you need to select the DataStage user role (Operator, Super Operator, Developer, Production Manager) that this user ID is to have.

Adding Users and Groups



- Click the “Add User or Group” button to open this window. On the left are Information Server users and groups that have been given a DataStage User role.

Specify DataStage Role

The screenshot shows the 'Project Properties - HAWKVMdstage' dialog box with the 'Roles' tab selected. The dialog has tabs for General, Permissions, Tracing, Schedule, Mainframe, Tunables, Parallel, Sequence, and Remote. The 'Roles' tab contains a table with two columns: 'User / Group' and 'Role'. The table lists four users: 'admin', 'demohawk', 'dsadmin', and 'dsuser'. The 'dsuser' row is highlighted. A callout points to this row with the text 'Added DataStage user'. Below the table is a 'User Role' section with a list box containing five roles: 'DataStage and QualityStage Developer', 'DataStage and QualityStage Operator', 'DataStage and QualityStage Super Operator', 'DataStage and QualityStage Developer', and 'DataStage and QualityStage Production Manager'. The 'DataStage and QualityStage Developer' role is selected. A callout points to this role with the text 'Select DataStage role'. At the bottom of the dialog, there is a checkbox labeled 'DataStage Operator can view full log' which is checked. On the right side of the dialog, there are buttons for 'OK', 'Cancel', and 'Help'.

User / Group	Role
admin	DataStage and QualityStage Administrator
demohawk	DataStage and QualityStage Administrator
dsadmin	DataStage and QualityStage Administrator
dsuser	DataStage and QualityStage Developer

User Role :

- DataStage and QualityStage Developer
- DataStage and QualityStage Operator
- DataStage and QualityStage Super Operator
- DataStage and QualityStage Developer
- DataStage and QualityStage Production Manager

☒ DataStage Operator can view full log

Specify DataStage Role

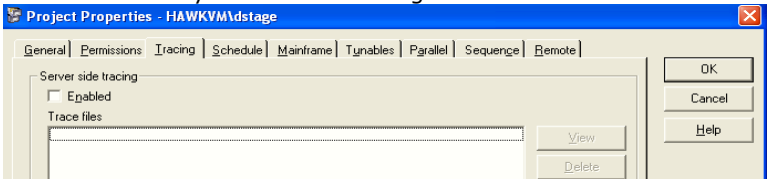


- Use this page to set user group permissions for accessing and using DataStage.
- All DataStage users must belong to a recognized *user role* before they can log on to DataStage. This helps to prevent unauthorized access to DataStage projects.
- There are four roles that can be assigned to a DataStage user:
 - DataStage Developer, who has full access to all areas of a DataStage project.
 - DataStage Operator, who can run and manage released DataStage jobs.
 - DataStage Super Operator, who can open Designer and view the Repository in a read-only mode.
 - DataStage Production Manager, who has create and manipulate protected projects.

DataStage Administrator Tracing Tab



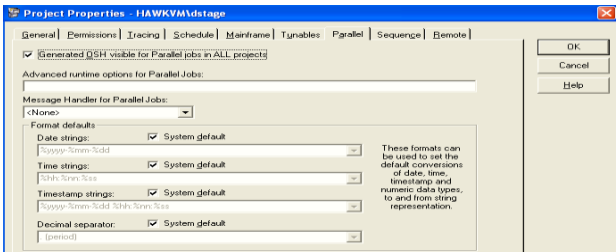
- This tab is used to enable and disable server-side tracing.
- The default is for server-side tracing to be disabled.
- When you enable it, information about server activity is recorded for any clients that subsequently attach to the project. This information is written to trace files.
- Users with in-depth knowledge of the system software can use it to help identify the cause of a client problem.
- If tracing is enabled, users receive a warning message whenever they invoke a DataStage client.



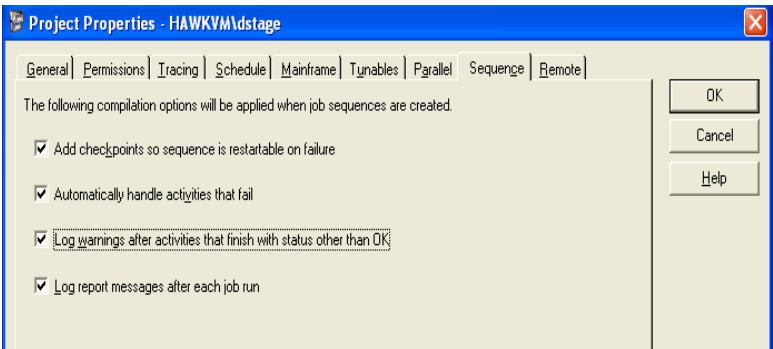
DataStage Administrator Parallel Tab



- Use this tab to specify Parallel job defaults.
- In addition to displaying the OSH generated by DataStage from Parallel jobs, you specify default formats for dates and times.
- In general, you should choose to display the OSH. This provides useful information about how your job works.

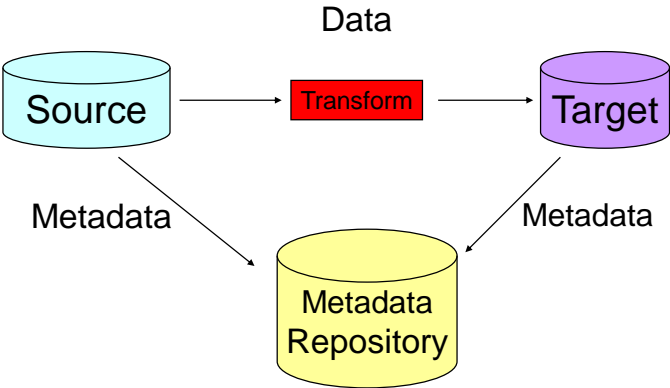


DataStage Administrator Sequence Tab



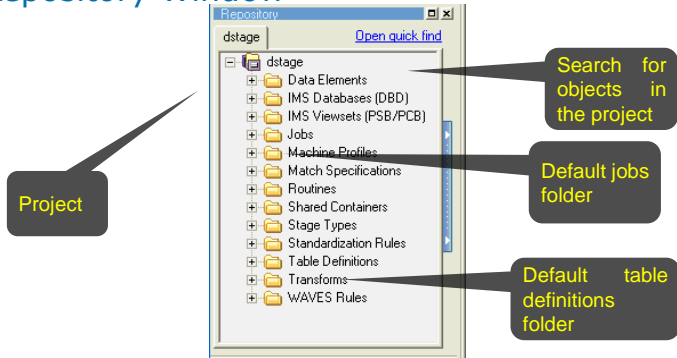
Importing and Exporting DataStage Objects

What Is Metadata?



Metadata is “data about data” that describes the formats of sources and targets. This includes general format information such as whether the record columns are delimited and, if so, the delimiting character. It also includes the specific column definitions and their datatypes.

Repository Window



- The Repository window displays the folders of objects stored in the repository for the DataStage project logged into.
- New folders can be created at any level in which to store repository objects.

Metadata is “data about data” that describes the formats of sources and targets. This includes general format information such as whether the record columns are delimited and, if so, the delimiting character. It also includes the specific column definitions and their datatypes.

Import and Export



- Any object in the repository window can be exported to a file
- Can export whole projects
- Use for backup
- Sometimes used for version control
- Can be used to move DataStage objects from one project to another
- Use to share DataStage jobs and projects with other developers

Import and Export



- Any set of DataStage objects, including whole projects, which are stored in the Repository, can be exported to a file.
- This export file can then be imported back into DataStage.
- Import and export can be used for many purposes, including:
 - Backing up jobs and projects.
 - Maintaining different versions of a job or project.
 - Moving DataStage objects from one project to another. Just export the objects, move to the other project, then re-import them into the new project.
 - Sharing jobs and projects between developers. The export files, when zipped, are small and can be easily emailed from one developer to another.

Export Procedure



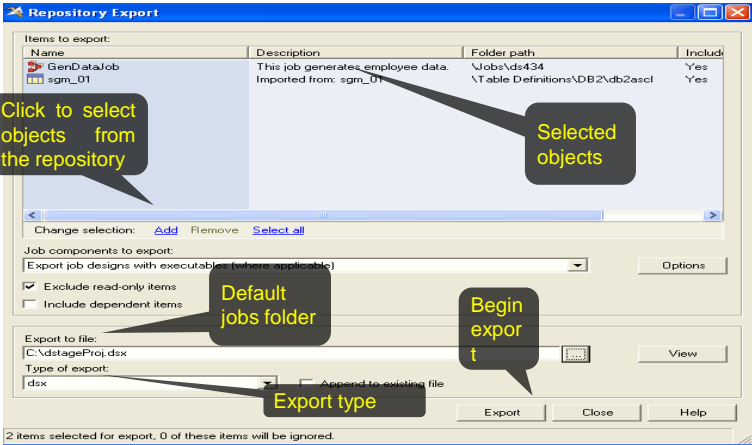
- Click "Export>DataStage Components"
- Select DataStage objects for export
- Specify type of export:
 - DSX: Default format
 - XML: Enables processing of export file by XML applications, e.g., for generating reports
- Specify file path on client machine

Export Procedure



- Click **Export>DataStage Components** to begin the export process.
- Any object in Manager can be exported to a file.
- Use this procedure to *backup* your work or to move DataStage objects from one project to another.
- Select the types of components to export.
 - You can select either the whole project or select a portion of the objects in the project.
 - Specify the name and path of the file to export to. By default, objects are exported to a text file in a special format. By default, the extension is **dsx**.
 - Alternatively, you can export the objects to an XML document.
- The directory you export to is on the DataStage *client*, not the server. Objects can also be exported from the list of found objects of a search. This procedure is discussed later in the course.

Export Window

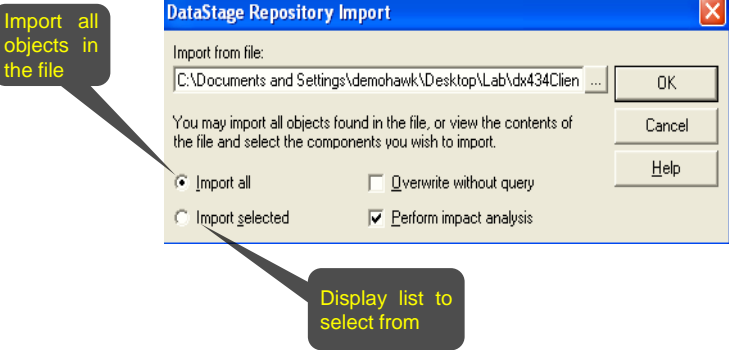


Import Procedure



- Click "Import>DataStage Components"
 - Or "Import>DataStage Components (XML)" if you are importing an XML-format export file
- Select DataStage objects for import.
- To import DataStage components, click **Import>DataStage Components**.
- Select the file to import.
- Click **Import all** to begin the import process or **Import selected** to view a list of the objects in the import file.
 - You can import selected objects from the list.
- Select the **Overwrite without query** button to overwrite objects with the same name without warning.

Import Options



For large imports, you may want to disable "Perform impact analysis." This adds overhead to the import process.

Q&A



1. Authorizations can be assigned to what two items?
2. What two types of authorization roles can be assigned to a user or group?
3. In addition to Suite authorization to log onto DataStage what else does a DataStage developer require to work in DataStage?



Q&A



1. Users and groups. Members of a group acquire the authorizations of the group.
2. Suite roles and Product roles.
3. Must be mapped to a user with DataStage credentials.

