Here are the key background processes involved in Data Pump operations:

**1. Master Process (DMnn)**

* **DMnn** is the main process for coordinating the entire Data Pump job. The "nn" part is a placeholder for a numeric identifier assigned to this process (e.g., DM00).
* It tracks the state of the Data Pump job, monitors the progress, and controls the worker processes.
* The master process also manages the restart and resumption of Data Pump jobs if they are interrupted.

**2. Worker Processes (DWnn)**

* **DWnn** represents the worker processes, where "nn" is a numeric identifier (e.g., DW00, DW01).
* Each worker process is responsible for performing the actual data or metadata movement.
* The master process assigns specific tasks (like table data export or import) to the worker processes.

**3. Parallel Query (PQ) Processes (PQnn)**

* **PQnn** are Parallel Query processes used to improve the performance of large Data Pump jobs by executing them in parallel.
* These processes allow Data Pump to split large tables into smaller chunks and process them in parallel, reducing overall execution time.
* The degree of parallelism can be controlled by the user when running Data Pump jobs (using the PARALLEL parameter).

**4. Shadow Processes**

* Data Pump also interacts with standard Oracle shadow processes that manage communication between the user session and the database.
* These processes are responsible for tasks such as session management, query execution, and handling user requests during the Data Pump job.

**5. Direct Path API**

* When possible, Data Pump uses Oracle's **Direct Path API**, which allows data to bypass certain layers of the Oracle Database and go straight to disk or memory. This greatly improves the speed of Data Pump operations.

**6. Coordinator Process**

* In some cases, the Data Pump job may also include a coordinator process that helps to assign and manage work across different nodes in a Real Application Cluster (RAC) environment.

**Monitoring Data Pump Jobs**

* You can monitor Data Pump jobs using the **DBA\_DATAPUMP\_JOBS** and **DBA\_DATAPUMP\_SESSIONS** views.
* The **V$SESSION\_LONGOPS** view also provides information about the progress of long-running Data Pump operations.