The Printer Working Group

IPP Reprint Password Use Cases

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Review Concepts and Terminology

Terminology

- Job Instructions [PWG 5100.11]

  - Information that affects how the job and its associated documents are to be processed
    - Job Template Attributes
    - Some Operation Request Attributes
    - Other attributes (such as defaults) that are applied to a Job

- Job Submission Operations [PWG 5100.11]
  - IPP operations that create jobs and send document content
    - Print-Job
    - Print-URI
    - Create-Job
    - Send-Document
    - Send-URI

Terminology

- ## Retained Job [PWG 5100.11]
  - A Job that the Printer retains in the Job Retention Phase[1] after processing it, for an implementation-defined period (including zero seconds) or removed by an explicit Delete-Job or Purge-Jobs operation
  - An exact copy of a Retained Job can be processed using a Reprocess-Job[2] operation.
  - A modified copy of a Retained Job can be processed using a Resubmit-Job operation.

- ## Saved Job [PWG 5100.11]
  - A Saved Job is a Retained Job that the Printer retains indefinitely (until removed by a Delete-Job or Purge-Jobs[2] operation) so that a copy of it can be reprinted any time using the Reprocess-Job[2] or Resubmit-Job operations, rather than aging the job out after an implementation-defined period.

[1] See [RFC8011] section 5.3.7.2 Partitioning of Job States

[2] Deprecated

Operations and Attributes

- "job-password" [PWG 5100.11]
  - Information that affects how the job and its associated documents are to be processed. This includes the Job Template Attributes, some Operation Request Attributes, and other attributes (such as defaults) that are applied to a job.

- Job Submission Operations [PWG 5100.11]
  - The Job-Submission Operations are the IPP operations that create jobs and send document content, namely Print-Job, Print-URI, Create-Job, Send- Document and Send-URI. See [RFC8011] for further information.

- Retained Job [PWG 5100.11]
  - A Retained Job is a job that the Printer retains in the so-called Job Retention Phase (see [RFC8011] section 5.3.7.2 Partitioning of Job States) in the job's terminal state ('completed', 'aborted', or 'canceled') after processing it, for an implementation-defined period (including zero seconds) or removed by an explicit Delete-Job or Purge-Jobs operation. An exact copy of a Retained Job can be processed using a Reprocess-Job operation. A modified copy of a Retained Job can be processed using a Resubmit-Job operation.

- Saved Job [PWG 5100.11]
  - A Saved Job is a Retained Job that the Printer retains indefinitely (until removed by a Delete-Job or Purge-Jobs operation) so that a copy of it can be reprinted any time using the Reprocess-Job or Resubmit-Job operations, rather than aging the job out after an implementation-defined period.
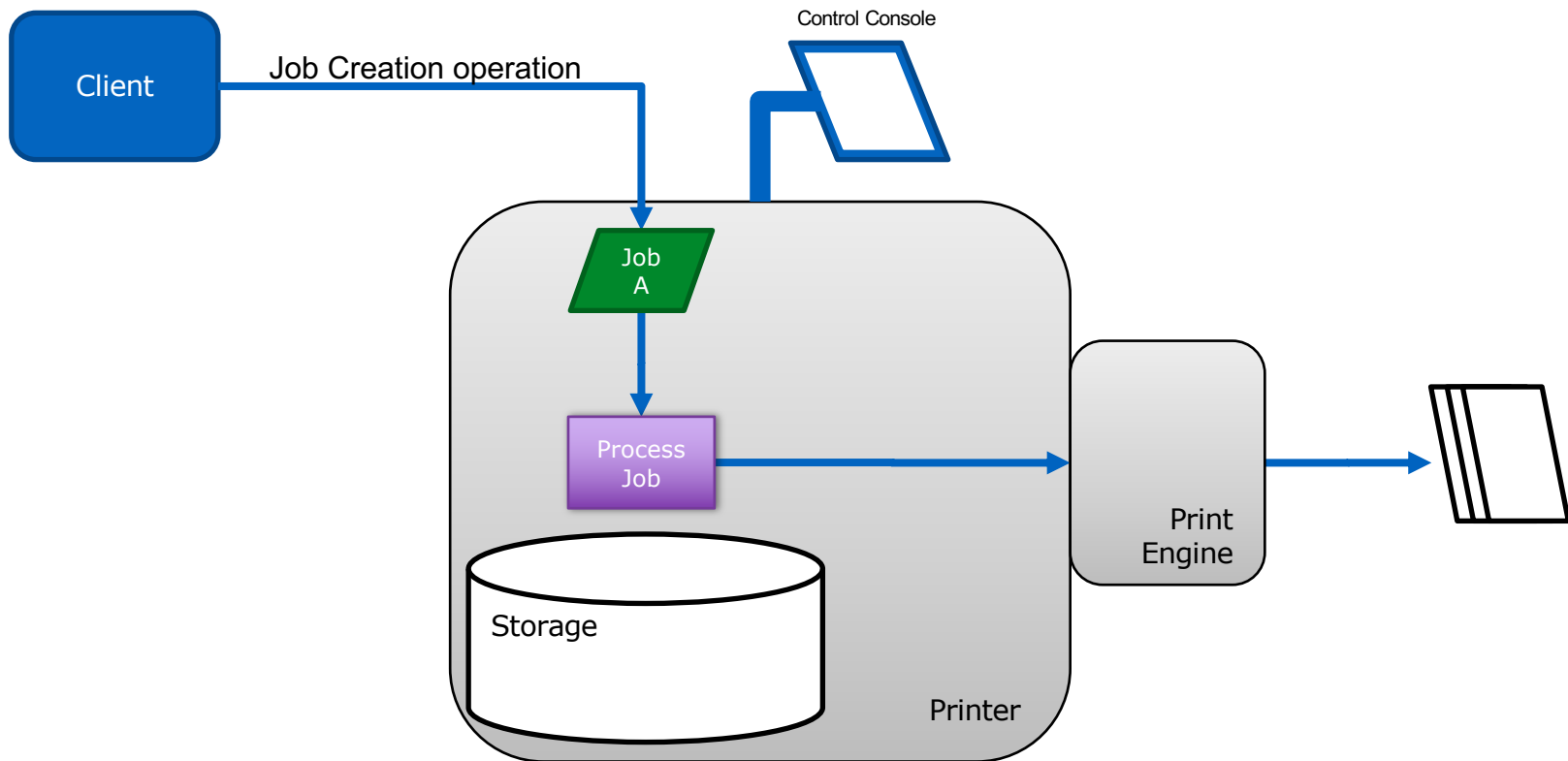
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Common Supported Use Cases

- U1: Job Submitted to Print
- U2: Job Submitted with Job Password
  - "job-password" → no job processing until password provided
- U3: Job Submitted as a Saved Job
  - "job-save" → job processing causes job to be saved
- U4: Print a Saved Job via IPP Resubmit-Job
  - Reprint caused by Client IPP operation
- U5: Print a Saved Job via Control Console
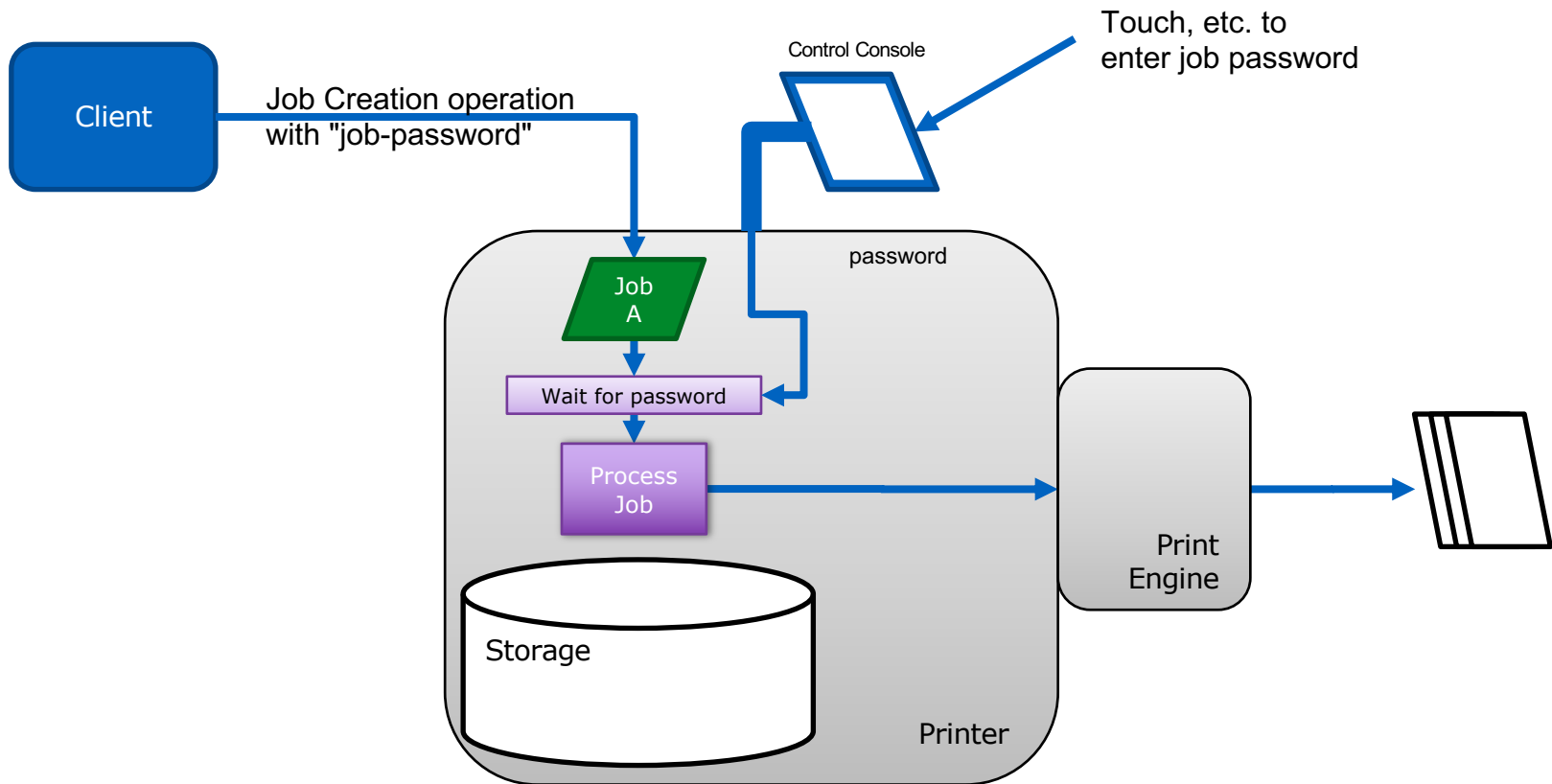 - Reprint caused by direct user interaction with printer (no IPP)

U4: Print a Saved Job via IPP Resubmit-Job
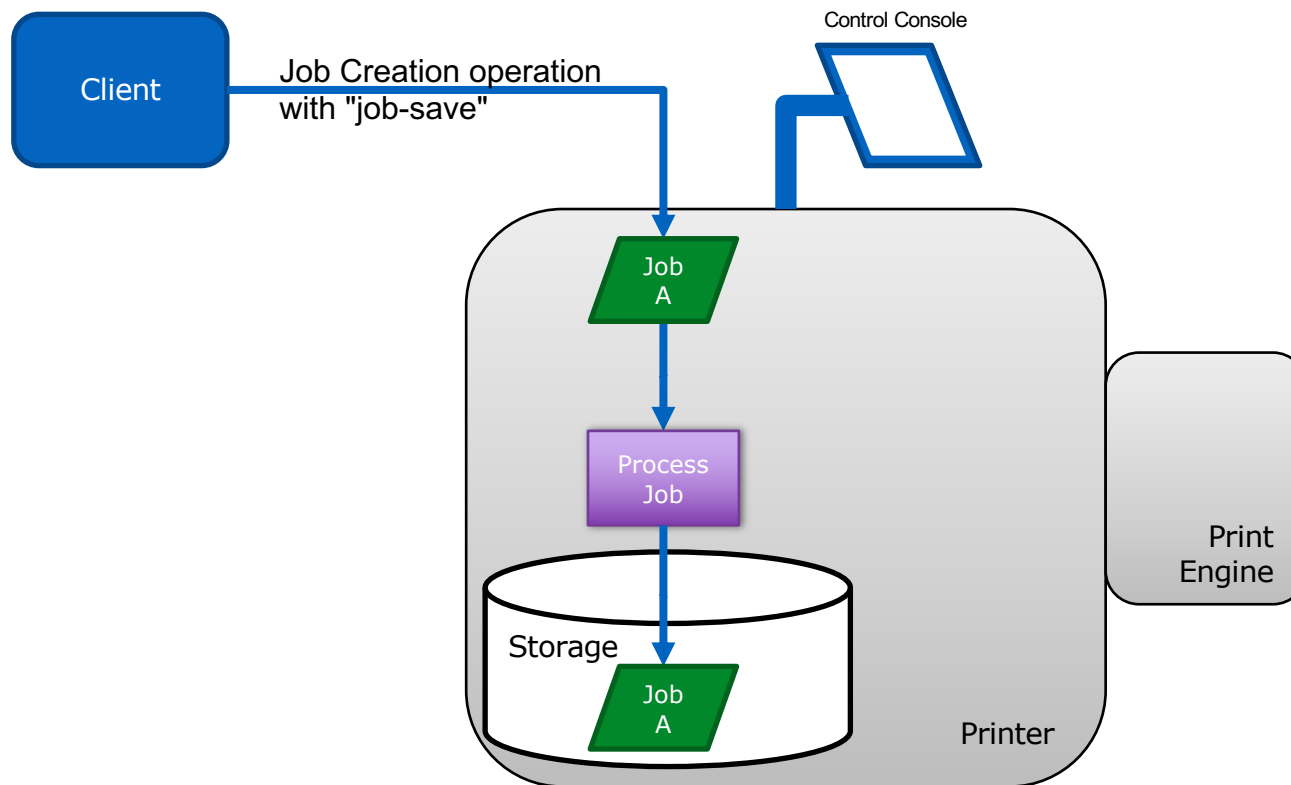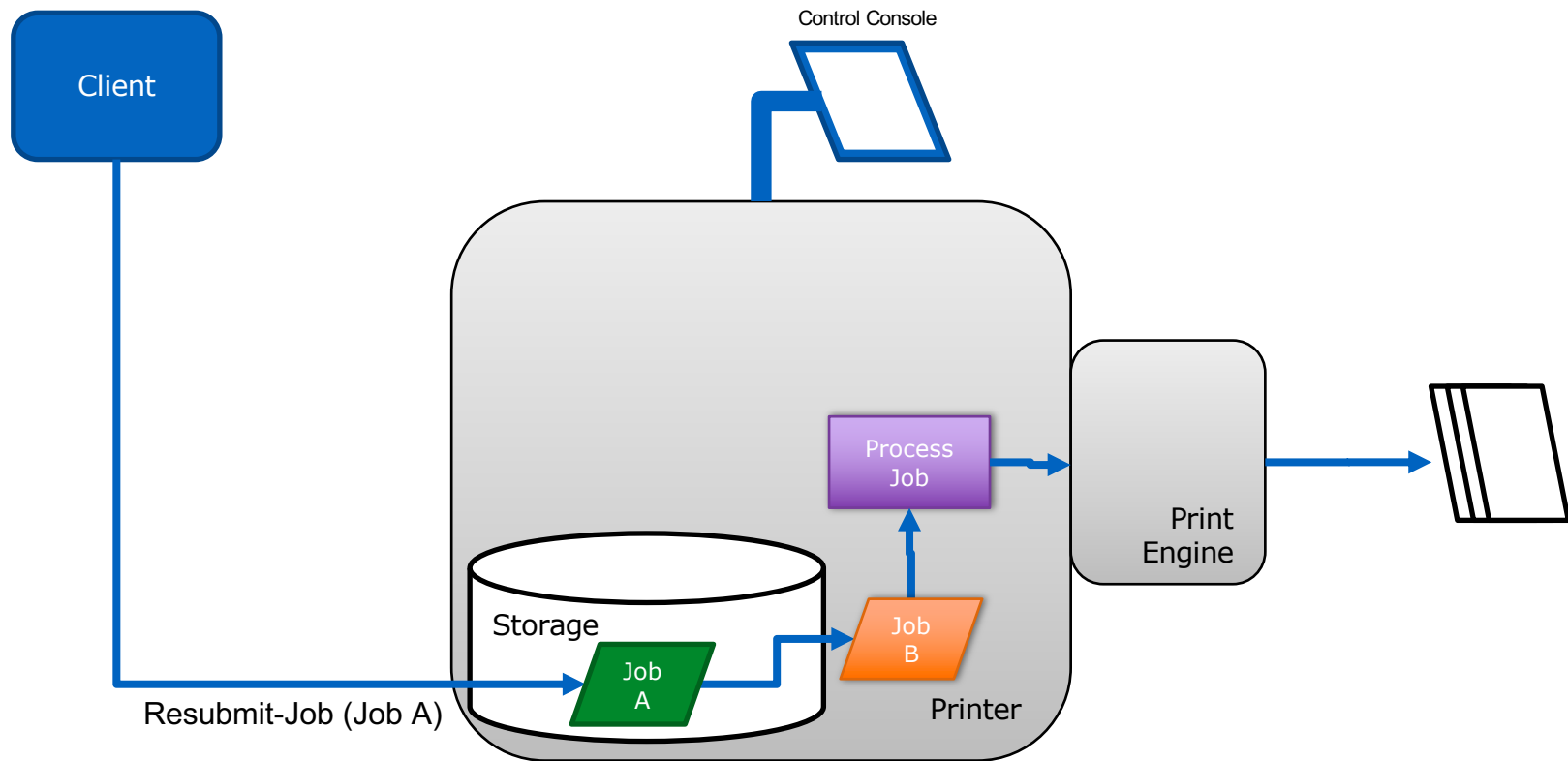

Control Console

Client

Resubmit-Job (Job A)

Storage

Job A

Job B

Process Job

Print Engine

Printer

U5: Print a Saved Job via Control Console

Client

Control Console

Touch, etc. to select retained job Job A for reprint

Process Job

Print Engine

Storage

Job A

Job B

Printer

IPP Password Protected Job Gaps

- JPS2 defined "job-password" and "job-save-disposition" such that they cannot usefully interoperate to support a password protected retained job use case

- This use case has been important to some vendors' customers

- With IPP's increasing prevalence in the marketplace and its shift in use to more mainstream printing, gaps such as this one should be filled

Touch, etc. to enter job password

Control Console

Client

Job Creation operation with "job-password"
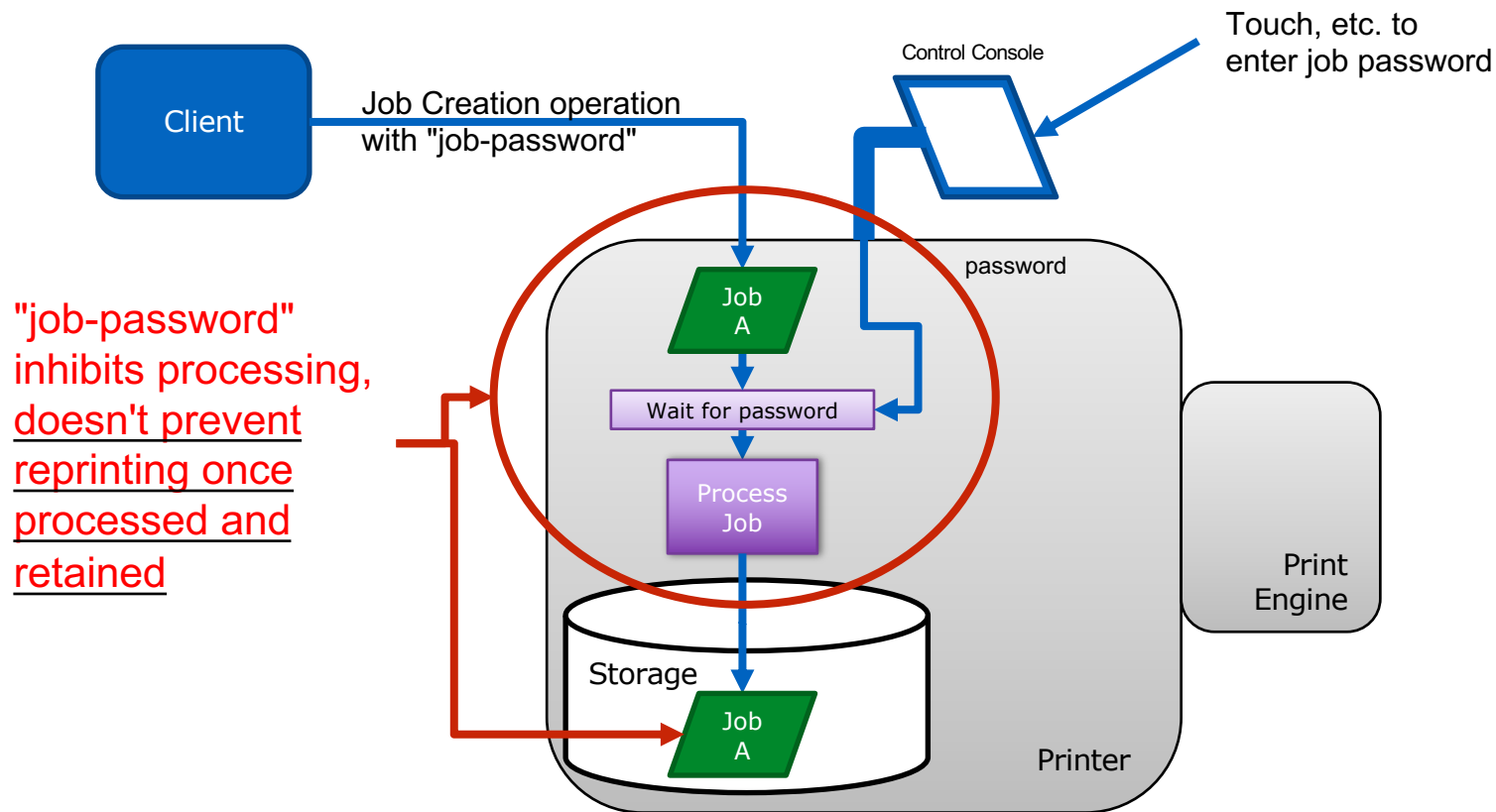
password

"job-password" inhibits processing, doesn't prevent reprinting once processed and retained

Job A

Wait for password

Process Job

Storage

Job A

Print Engine

Printer

IPP Job Print Password

Existing attributes do not satisfy this requirement

- "job-password" inadequate because of its semantics
    - Explicitly associated with the target Job, but doesn't get copied on Restart/Reprint/Resubmit-Job.
    - Inhibits "processing" of the job, regardless of the nature of the processing, so in conflict with "save-disposition" = 'save-only'

- "document-password" depends on the document format directly supporting authentication credentials

- Saved Job [PWG 5100.11]

  A Saved Job is a Retained Job that the Printer retains indefinitely (until removed by a Delete-Job or Purge-Jobs[2] operation) so that a copy of it can be reprinted any time using the Reprocess-Job[2] or Resubmit-Job operations, rather than aging the job out after an implementation-defined period.

- 4.3.1.1 Reprinting using the Reprocess-Job operation

  The Reprocess-Job operation [RFC3998] re-processes a copy of any Retained Job after processing was completed, canceled, or aborted. In order to prevent the Printer from aging out a Retained Job, the client can supply a "job-save-disposition" Job Template attribute (see section 7.9) in a job submission. In this case the Printer retains the job (until removed by a Delete-Job or Purge-Jobs operation) as a Saved Job, so that a client can reprint the job using Reprocess-Job any time subsequently.

- 4.3.1.2 Reprinting using the Resubmit-Job operation

  The Resubmit-Job operation (see section 5.4 below for a complete description) re-processes a copy of any Retained Job in the same way as Reprocess-Job (see section 4.3.1.1), with the addition of being able to supply additional operation and Job Template attributes that will affect the processing of that copy of the job by either override the values of existing attributes or providing additional attributes.

So: sending "job-save-disposition" is what causes the printer to not age out a Retained Job, thus making it a Saved Job

Well, now I'm not so sure...

- 7.9 job-save-disposition (collection)
  The OPTIONAL "job-save-disposition" Job Template attribute is used to archive/save the Document Data of a job, such that the job can be re-printed on demand at some undefined time in the future.

Wait...what? What about the "Job Instructions"? How is only saving the document data the same as saving the Job?

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IPP Job Print Password

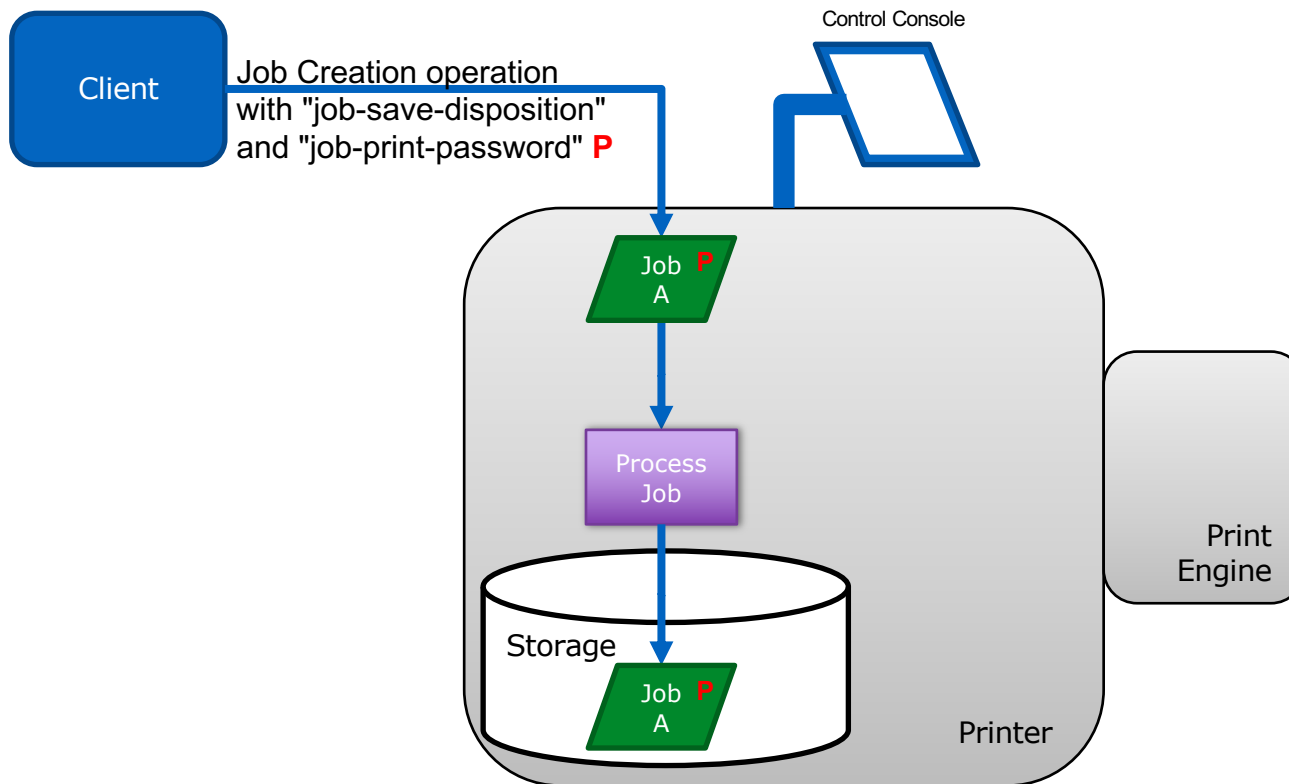# IPP Job Print Password

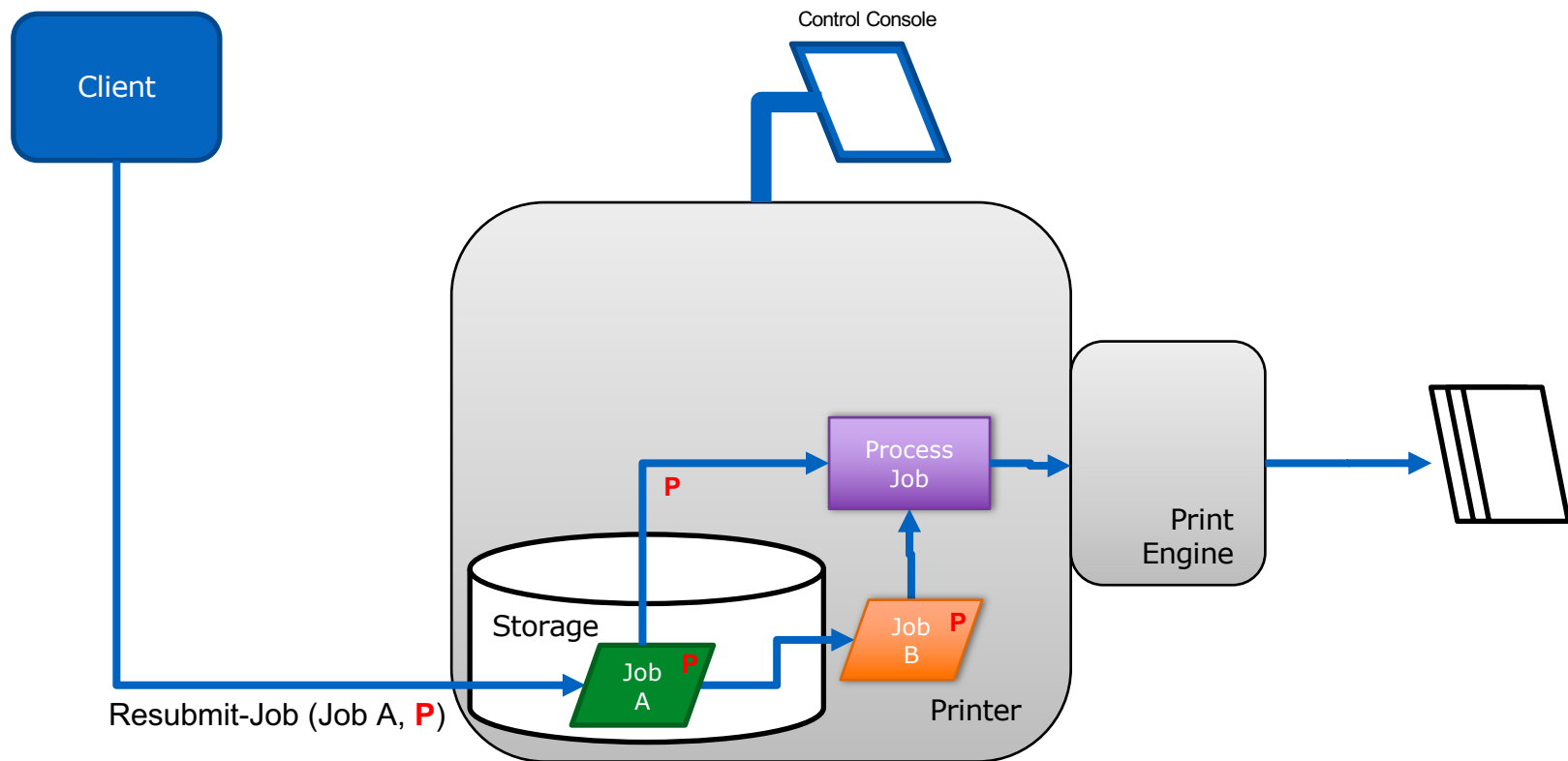Goal: Define a "print" password for an IPP Job that:

1. Causes the Printer to request the matching password whenever the Job is to be <u>printed</u>

2. Is retained if and when the Job is copied (e.g. Resubmit-Job, direct control panel interaction)

3. Is set at time of original Job creation

4. Is not changeable once set

5. Is not exposed via any IPP operation response[1] or via any non-IPP protocol

[1] Fetch-Job was discussed as an exception to this rule in earlier "job-reprint-password" drafts
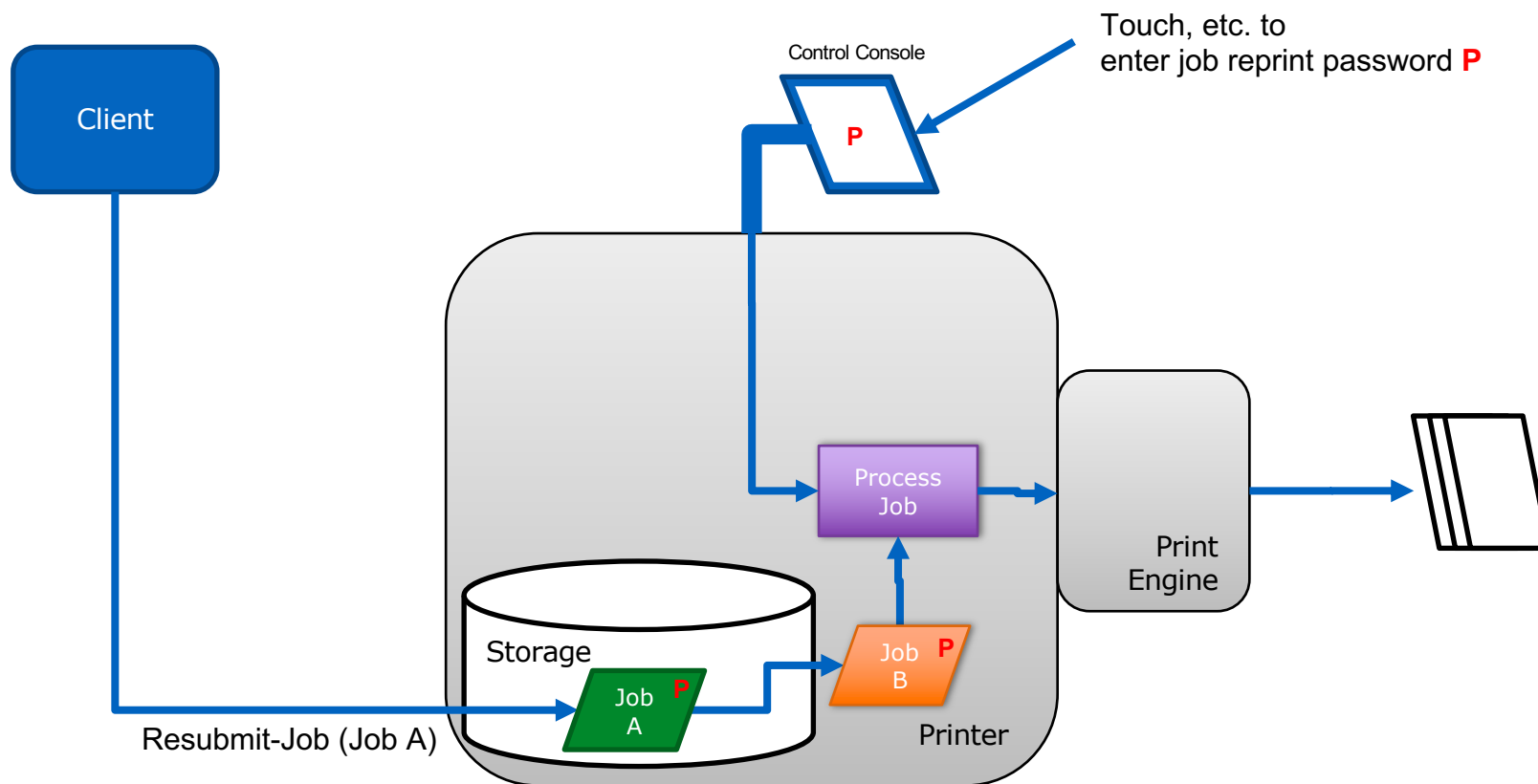
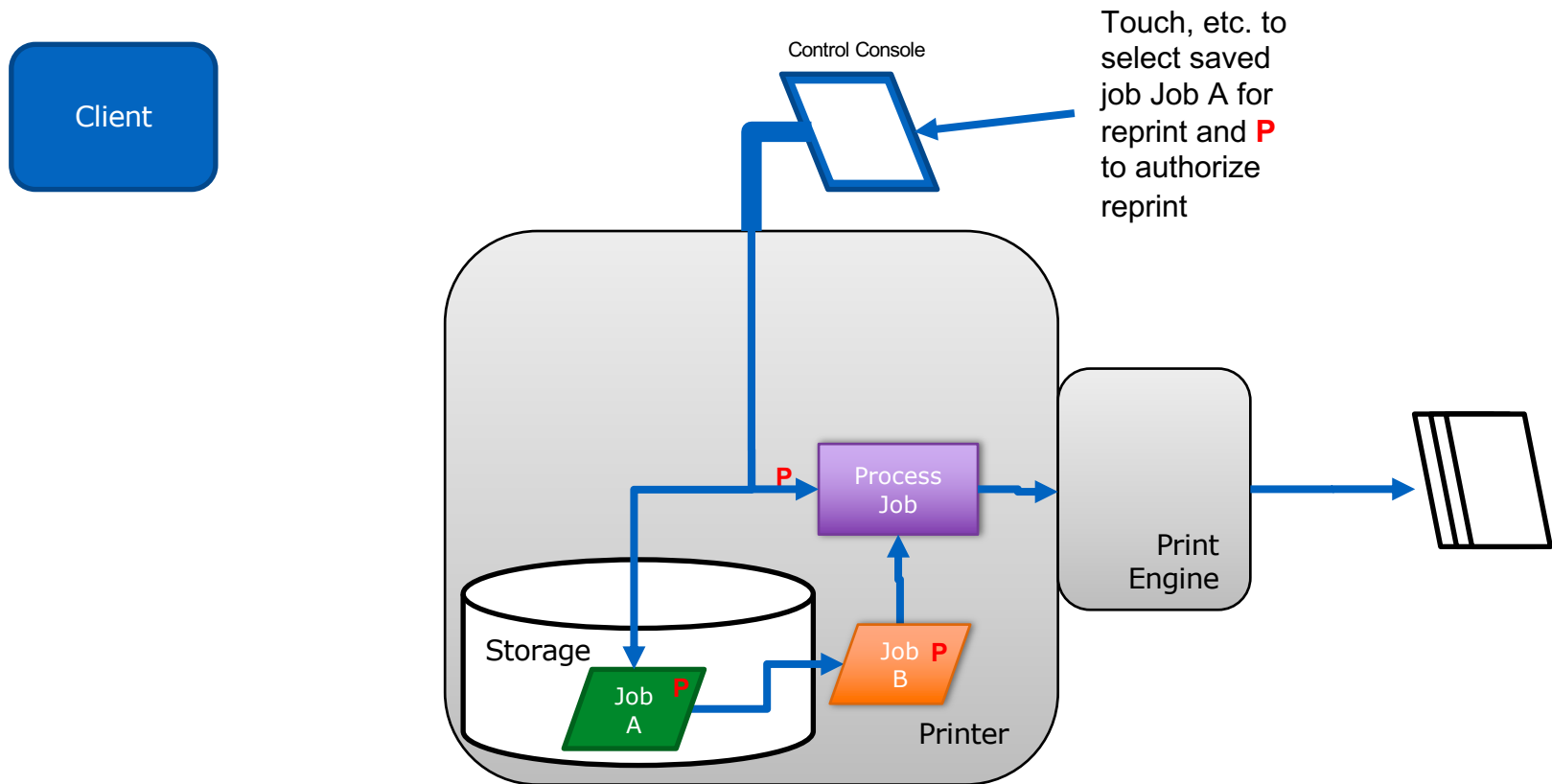# U7: Job Submitted as a Saved Job with Job Print Password

Control Console

Client

Job Creation operation
with "job-save-disposition"
and "job-print-password" **P**

Job
A **P**

Process
Job

Storage

Job
A **P**

Print
Engine

Printer

Control Console

Client

Storage

Job
A
P

Job
B
P

Process
Job

P

Print
Engine

Printer

Resubmit-Job (Job A, **P**)

Touch, etc. to
enter job reprint password **P**

Control Console

Client

Process
Job

Print
Engine

Storage

Job
A **P**

Job
B **P**

Printer

Resubmit-Job (Job A)

U10: Print a Saved Job via Control Console

Client

Control Console

Touch, etc. to select saved job Job A for reprint and **P** to authorize reprint

Process Job

Print Engine

Storage

Job A **P**

Job B **P**

Printer

- **U7: Job Submitted as a Saved Job with Job Reprint Password**
  - "job-reprint-password" is persistent

- **U8: Print a Password Protected Saved Job via IPP Resubmit-Job and Password (1)**
  - IPP Resubmit-Job specifies Saved Job to be printed
  - IPP Resubmit-Job supplies password matching "job-print-password" to authorize print

- **U9: Print a Password Protected Saved Job via IPP Resubmit-Job and Password (2)**
  - IPP Resubmit-Job specifies Saved Job to be printed
  - Printer prompts User for password matching "job-print-password" to authorize print

- **U10: Print a Password Protected Saved Job via Control Console**
  - Saved Job to be printed selected via console
  - Printer prompts user for password matching "job-print-password" to authorize print
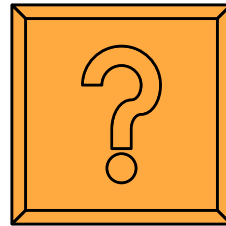
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Backup