Best Practices of High Volume Personalized Information Bursting using SAP BusinessObject Intelligence Platform 4.0

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Learning Points

- Overview of publication capabilities
- Best practices on how to configure a publication
- Knowledge of ideal system set-up for optimal publication performance
Agenda

- Introduction into the publishing process and modules
- Required Servers for CR Publications based on XI 4.0
- Best Practices
  - Source Documents
  - Dynamic Recipients
  - Performance
Definitions

- Publishing is a process that collects many reports (Crystal Reports or WebIntelligence + External Documents) and distribute it to a mass audience.
Who uses Publications?

- **Roles:**
  - **Administrators**
    - Create profile names and profile targets
    - Assign profiles to specific users or groups
    - Mail-Server configuration
  - **Publisher**
    - Create publications for distribution
    - Select recipients for the publication
    - Apply profiles to the publication
    - Define targets of the publication
  - **Recipients**
    - Receive publications
    - Subscribe to and unsubscribe from publications
Publishing versus Scheduling (Overview)

- **Scheduling**
  - Only one destination (Email, BI Inbox, FTP, Disk) and format per schedule
  - Ability to set report parameters/prompts per schedule
  - No personalization possible; each recipient will see the same data

- **Publishing**
  - Ability to distribute personalized reports to enterprise recipients and/or external recipients
  - Multiple reports per publication, including static documents
  - Wide-range of output formats (though they differ per reporting type)
  - Publish to multiple destinations (Email, BI Inbox, FTP, Disk) at once
  - Merge multiple reports into one PDF or Zip file (PDF for CR only)
  - Ability to add custom functionality by using publication extensions
  - Ability to use Delivery Rules for Crystal Reports
  - Ability for users to subscribe to a publication
Modules of the Publication

- Source documents
- Profiles
- Dynamic Recipients
- Destinations
- Delivery Rules
- Recurrence
- Publication Extensions
Source Documents

- It is possible to mix a set of documents in a publication: -> PDF, doc, etc. Additionally it is possible to select/deselect the regeneration option.
Profiles

- Profile is a key concept of publishing. User can get their own profile values. Profiles a mapped to parameters or filters (datafield)

- Example of a profile:
  - Profile Name: Profile North America
  - Profile Values:
    - USA (Field: Country)
    - SAP (Field: Customer)

The publication will filter all data automatically without parameters in the reports.
Profiles

Profile value
Country = USA

Personalization

<table>
<thead>
<tr>
<th>Country</th>
<th>City</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Vancouver</td>
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<td>Houston</td>
<td>777</td>
</tr>
<tr>
<td>USA</td>
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Profiles in filter

- Profiles can be used to filter a database field in the publication. Additionally it is possible to set the parameter of the report to a profile.
Dynamic Recipients (1/2)

- Personalization is captured in a separate Crystal Reports or WebIntelligence report
- Useful for users that do not have an account at the BOE system
- Useful for changing parameters dynamically
Dynamic Recipients (2/2)

Possible Datasource: Excel
Destinations of an Publication

- Destinations: Multi-selection is Possible

1. Server/Network Drive
2. Email
3. FTP - Server
4. Personal folder in BI Launchpad

- Recommendation: Using of Placeholder:

%SI %NAME%-%SI %STARTTIME%-%SI %OWNER%.%EXT%
Destinations: Personalized Placeholders (4.0 FP3)

- Once personalization has been set up for a publication, personalized placeholders appear in the Add placeholder list on the Destinations page.
- For every filter of a report, two personalized placeholders will appear:
  - One placeholder is for the field name.
    \[
    \%<\text{field name}>-\text{NAME}\%
    \]
  - The other placeholder is for the personalized value of the field.
    \[
    \%<\text{field name}>-\text{VALUE}\%
    \]
Delivery Rules for Crystal Reports Publications

- If you want to define rules, the Crystal Reports must include warning messages. Example: If the Sales revenue is > then 1000 then the condition is true.

Delivery Rules

1. Must be created in Crystal Reports first
2. If the rule is true the publication will distribute the artifacts
3. ....
Recurrence options

- Recurrence Options: Define Recurrence Pattern
  - Hourly, daily, weekly, monthly, day of month, first Monday in month, last day of month, day of week of month
Publication Extensions

- Flexibility to invoke custom code (in Java) in the publication processing workflow
  - Post report-processing – for customization of the artifacts to be distributed
  - Post delivery -- for special housekeeping/archiving, custom destination, system integration, etc.
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Required Servers for CR Publications based on XI 4.0

- Adaptive Processing Server
  - Publishing Service
  - Publishing Post Processing Service (Can be on different server than the Publishing Service)
- Adaptive Job Server
  - Publication Scheduling Service
  - Destination Delivery Scheduling Service
  - Crystal Report 2011 Scheduling Service / Crystal Reports Scheduling Service
- Input File Repository Server
- Output File Repository Server
- Central Management Server
- Report Application Server
- Crystal Report Cache Server
  - required only for creating the publication, not for scheduling the publication
- Crystal Report Processing Server
  - required only for creating the publication, not for scheduling the publication
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Best Practices: Source Documents

- Use publication log files to troubleshoot errors in failed publications.
- If you are using parameter-based personalization for Crystal reports, set parameters to default.
- View and schedule dynamic content documents individually before you add them to a publication.
- Avoid unnecessary data refreshes.
Best Practices: Dynamic Recipients

- Sort dynamic recipient sources according to the recipient ID column.
- For Crystal report dynamic recipient sources, ensure the database configuration information is correct.
- If you use Crystal report dynamic recipient sources, consult your administrator to ensure the Report Application Server (RAS) is configured correctly.
  - The RAS must be configured to read at least the same number of database records as the number of recipients in the dynamic recipient source. For instance, to process a dynamic recipient source with data for 100,000 recipients, the RAS must be set to read more than 100,000 database records.
Best Practices: Publication Performance (1/4)

- Adaptive Processing Server (APS)
  - If both CPU and memory for the APS are heavily utilized during publication runs:
    - Move the APS to a faster machine that has more available CPUs and SAP BusinessObjects Business Intelligence platform 4.0 Feature Pack 3 or later installed. The server will automatically scale to use more CPUs.
    - Isolate the Publishing Service and the Publication Post Processing Service on dedicated APS instances and remove unused services hosted on the server. Each service will consume more shared resources (request thread pool, memory, and CPU consumption) on the APS, and publishing performance may improve.
Publishing Service

- Horizontally "scaling out" of the Publishing Service across multiple APS instances (on one or multiple machines) will enable more publication instances to be processed concurrently.

- In contrast, a single publication job (for example, one with 1,000,000 recipients) is not shared across Publishing Services hosted on different APSs and horizontally scaling out the Publishing Service will not improve processing time for a single publication, regardless of the number of recipients.

- For publications with many recipients, vertically scale the APS on machines that have more CPUs and RAM. This will enable the Publishing Service to concurrently process more recipients and the APS to generate more jobs.
Best Practices: Publication Performance (3/4)

- **Publishing Service**
  - Because publishing is a disk-heavy process, use a machine with fast I/O or SAN disks for the FRS.
  - Use the publishing cleanup option. For a large publication that does not need redistribution or to view artifacts in the report, do not select the default destination.
  - (Crystal report publications) Select **One database fetch for each batch of recipients** if you do not need to apply unique refresh security for each recipient. Database access will be batched into multiple concurrent, smaller queries.
  - (Web Intelligence publications) Select **One database fetch for all recipients** or **One database fetch per recipient**. When you select One database fetch for all recipients for a large publication, to break up the database query into multiple smaller atomic queries, enter
    
    -Dcom.businessobjects.publisher.scopebatch.max.recipients=<integer>
    
    on the command line of all APSs that host the Publishing Service.
Publishing Post Processing Service

- The Publishing Post Processing Service is called when the **Package as ZIP File** check box and/or the **Merge Exported PDF** check box is selected or when custom post-processing plugins are enabled on a publication. For publications with both check boxes selected, you must create additional Publishing Post Processing Services to improve publication processing time.

- The amount of work the Publishing Post Processing Service receives is limited by how the Publishing Service is scaled. Horizontally scaling out the Publishing Post Processing Service spreads the ZIP- and PDF-merging workload across multiple Publishing Post Processing Services hosted on different Adaptive Processing Servers.
Key Learnings

- Overview of publication capabilities
- How to configure a publication
- Knowledge of ideal system set-up for optimal publication performance
Questions?

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