[redacted]

[redacted] Record ([redacted]) Process

Setup / Configuration / Troubleshooting

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Table of contents

Scope of this document 3

Intended audience 3

Glossary 4

Setup and configuration 5

1. Establish the [redacted] requirements 5
2. Create the script(s) 5
3. Test the process 6
4. Set up the jail 6
5. Configure system files 7

Troubleshooting 8

Background 8

How [redacted] files are received 8

Recovery Process 8

Triage 9

Pull scenario 10

Push scenario 11

Escalation 12

[redacted]-specific problem(s) 12

Multiple [redacted]s with same problem(s) 12

Scope of this document

This document details the steps required to set up and configure a new [redacted] Record ([redacted]) automated process between [redacted]® and a designated client (i.e., a regional [redacted].) This document also describes the steps needed to perform any subsequent troubleshooting.

Intended audience

The information contained in this document is intended to be used by [redacted]® Technical Operations personnel.

Glossary

The following terms are relevant to the content presented in this document.

Term	Definition
[redacted]	[redacted] Record. A file sent to a regional [redacted] by [redacted] which contains the details of a particular transaction performed by a subscriber belonging to that [redacted].
COS-based service	A level of service and/or features available to a subscriber based upon that subscriber's prearranged class of services with its regional [redacted].
COSbatch	COSbatch is a software product which ensures that background processes run at the appropriate times and dates and that they run according to any preconditions defined by any combination of external events, internal conditions and/or other background process(es).
Data pull	A data pull is a style of network communication where the initial request for data originates from the client, and then is responded to by the server.
Data push	A data push is a style of Internet-based communication where the request for a given transaction is initiated by the publisher or central server.
jail	Jail is a login tool. Jail works as a wrapper to the user shell, so that when the user logs into the machine, Jail is launched and a chrooted environment is activated.
Regional [redacted]	[redacted]'s customer. The regional [redacted] is the end user-facing entity in the network.
sftp	Secure File Transfer Protocol
ssh key	Secure Shell or SSH is a network protocol that allows data to be exchanged using a secure channel between two networked devices.[1] The encryption used by SSH is intended to provide confidentiality and integrity of data over an unsecured network, such as the Internet. SSH-Keygen is a Unix utility that is used to generate, manage, and convert authentication keys for ssh authentication.

Setup and configuration

1. Establish the [redacted] requirements

Not all regional [redacted]s' needs are identical; consequently, there are various distinctions incumbent within each particular [redacted]'s [redacted] data layout. The layout, or "schema", needs to be negotiated with the [redacted] before setup or configuration of the process can begin.

1.1. [redacted] Project Manager responsibility

[redacted]'s project manager will serve as liaison between the regional [redacted] and [redacted]'s [redacted] developer. The project manager will coordinate the gathering of information and documentation of the subsequent agreement between [redacted] and the regional [redacted]. This documentation will be handed off to the developer for implementation.

1.2. Regional [redacted] responsibility

The regional [redacted] will provide its [redacted] data content requirements to [redacted]'s project manager. The regional [redacted] will also partner with [redacted] in the testing and user acceptance of the associated [redacted].

1.3. [redacted] Developer responsibility

[redacted]'s developer will receive the data requirements from the project manager and perform the necessary tasks to implement the new [redacted] process.

2. Create the script(s)

2.1. Find an existing similar script

As of this writing, several regional [redacted]s are currently receiving regular [redacted]s from [redacted]; consequently, the most efficient method for creating a new [redacted] process is to copy an existing script on the *Batch01* server to the report user's home directory *(/home/reports/bin*) containing "similar" aspects and make the appropriate modifications to it.

2.2. Make a copy and modify

Typically, the modifications to an existing [redacted] script will include:

- [redacted]
- Filename
- Cross Reference variable
- COS-based [redacted] indicator
- Start time
- End time
- Sequence of the data fields

3. Test the process

After modifying an existing script according to the current requirements as received from the [redacted] via the data collection spreadsheet, testing will need to be performed.

3.1. Ensure that database updating is turned off

It is important that updating DOES NOT occur during the testing phase when implementing a new [redacted] process. The appropriate flag(s) should be turned off to ensure an overwrite does not occur. This is accomplished by "commenting out" the related three lines of code within the new user's script.

3.2. Create a sample

At this point, the developer should create a [redacted] containing a "sample" set of data for testing purposes.

3.3. Send a sample

The developer should send a sample [redacted] (as an email attachment) to the [redacted] for the [redacted]'s concurrence.

3.4. Turn updating back on

After testing has been successfully completed, the developer should reset the updating flag(s) to its/their original state (refer to step 3.1.)

Note: It may be advisable to wait until the script is placed into production before implementing this step.

4. Set up the jail

4.1. Create the user

Using the standard *useradd* tool, type the following at the command line (*newuser* would be replaced with the login id being created.)

- useradd *newuser*

4.2. Create a password

If both of the following conditions exist, a password will also need to be created:

- The corresponding regional [redacted] WILL be obtaining its [redacted](s) via a data "pull" method.
- The corresponding regional [redacted] WILL NOT be using ssh keys to log in.

If both of the preceding criteria have been met, type the following at the command line (*newuser* would be replaced with the login id being created.)

- passwd *newuser*

You will be prompted by the system to enter a new password for this account.

If, however, the corresponding regional [redacted] does not meet the aforementioned criteria, DO NOT create a password.

4.3. Set up a new jail

4.3.1. Create a directory

Create a jail directory for the new account by typing the following at the command line (*newuserjail* would be replaced with the desired directory name to be created.)

- mkdir /billing/*newuserjail*

4.3.2. Initialize the jail

Initialize the jail by typing the following at the command line (*newuserjail* would be replaced with the name of the newly created directory.)

- jk_init -j /billing/*newuserjail* sftp
- jk_init -j /billing/*newuserjail* jk_lsh
- jk_init -j /billing/*newuserjail* ssh

4.3.3. Move the user into the jail

Move the new user into its corresponding jail by typing the following at the command line (*newuserjail* would be replaced with the name of the newly created directory and *newuser* would be replaced with the log id of the newly created user.)

- jk_jailuser -j newuserjail *newuser*

5. Configure system files

In order to configure system files to conform to the standard in place, type the following at the command line (newuserjail would be replaced with the name of the newly created directory.)

- edit /billing/*newuserjail*/etc/passwd and change /home/ to /[redacted]/
- edit the system /etc/passwd file and change /home/ to /[redacted]/

The jail is now configured for this user. The user's home directory is /billing/*newuserjail*/[redacted]/*newuser* (*newuserjail* would be replaced with the name of the newly created directory and *newuser* would be replaced with the login id of the newly created user.)

Whenever *newuser* is logged in, the jailkit makes the environment appear (to any process accessing it) as /[redacted]/*newuser*. *Newuser* has access only to that directory and below. All access up the file system tree is blocked for this user.

Troubleshooting

Background

[redacted] records are exclusive to billable transactions, such as content purchases, MMS messages, etc. and may be produced hourly or daily.

In normal operations, the [redacted] process runs at prearranged times and stores the information in output files on the [redacted] server. The filenames are based on the individual customer's specification and contain, among other things, the creation date of the file. The individual records contain the date/time of the actual transaction as well as the date/time the [redacted] record itself was inserted into the [redacted] file.

How [redacted] files are received

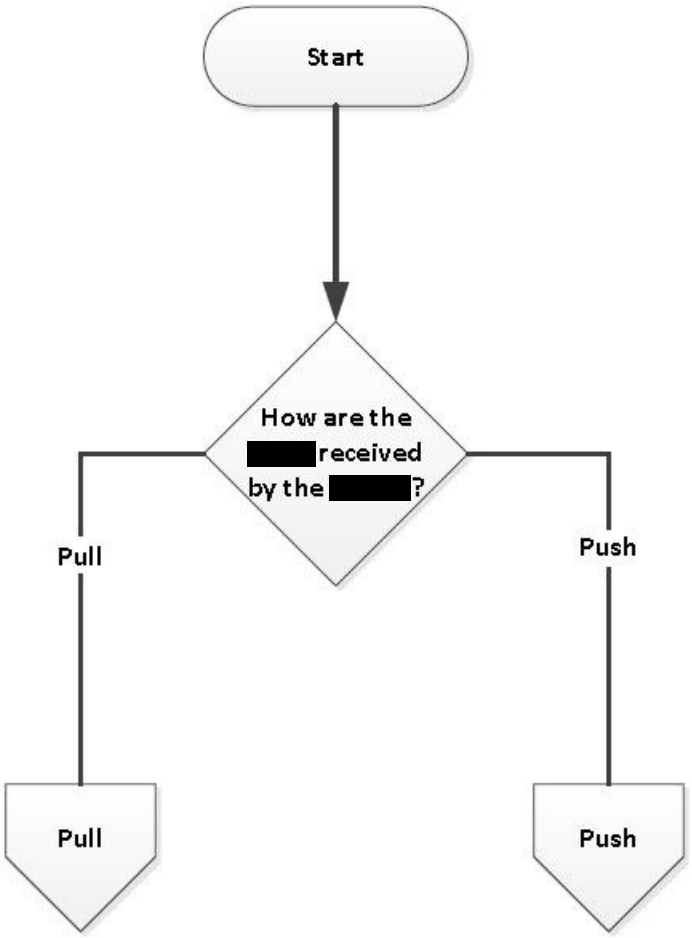
A particular [redacted] can opt to receive [redacted] files via its choice of a "Push" or "Pull" scenario:

- In a "Push" scenario, [redacted] connects to the [redacted]/billing vendor site at a prearranged time following the creation of the [redacted] file and transmits the file to the [redacted]'s site via SFTP (Secure File Transfer Protocol).
- In a "Pull" scenario, [redacted] simply leaves the [redacted] file in the [redacted] directory on [redacted]'s billing server. The [redacted]/billing vendor then uses its own method to collect the file from the billing server, typically via SFTP.

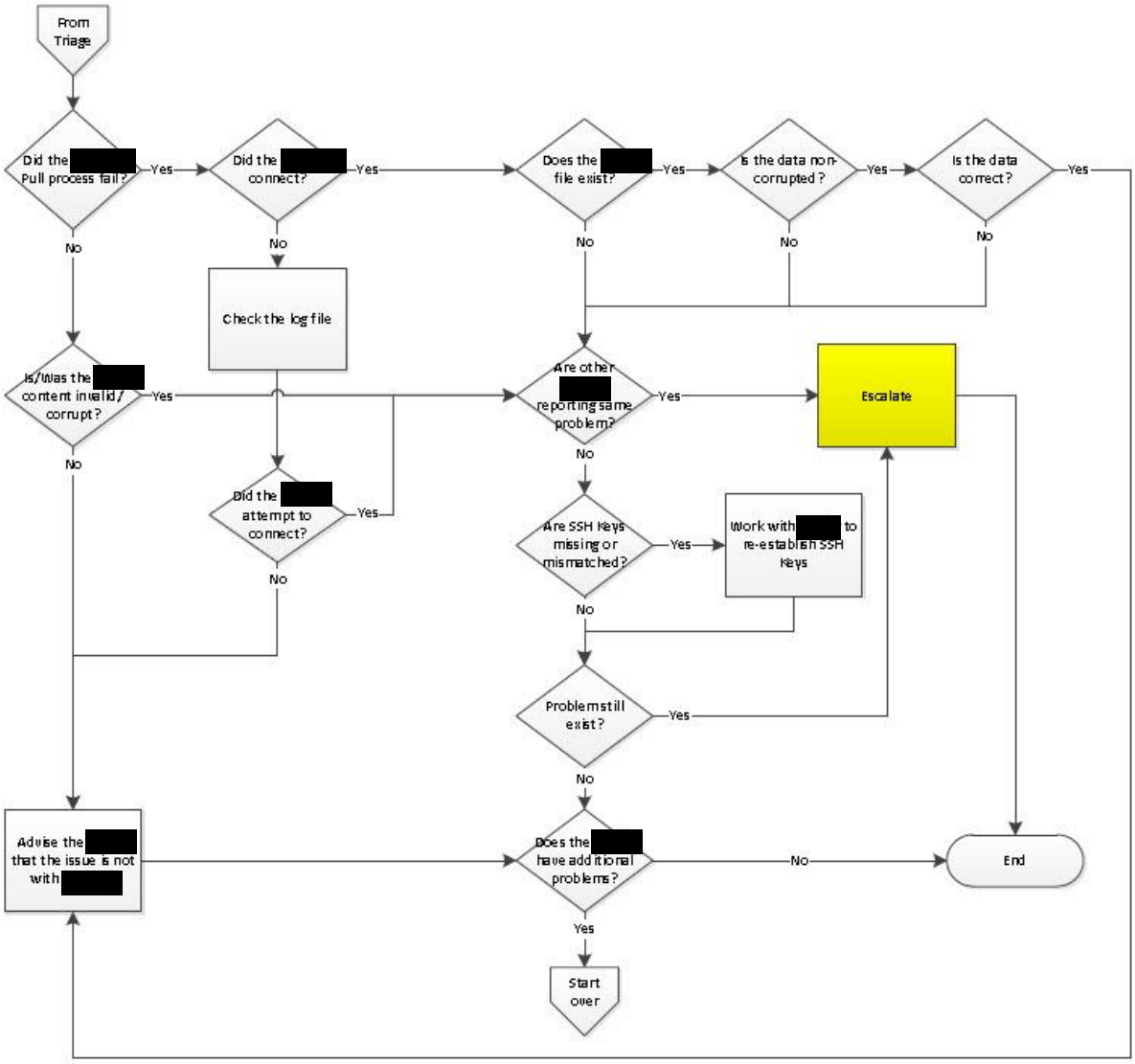
Recovery Process

If a network event disrupts the regularly scheduled [redacted] creation and/or batch, [redacted] researches and identifies the root cause of the missed [redacted] file(s) (see the flowchart, beginning on page 9.)

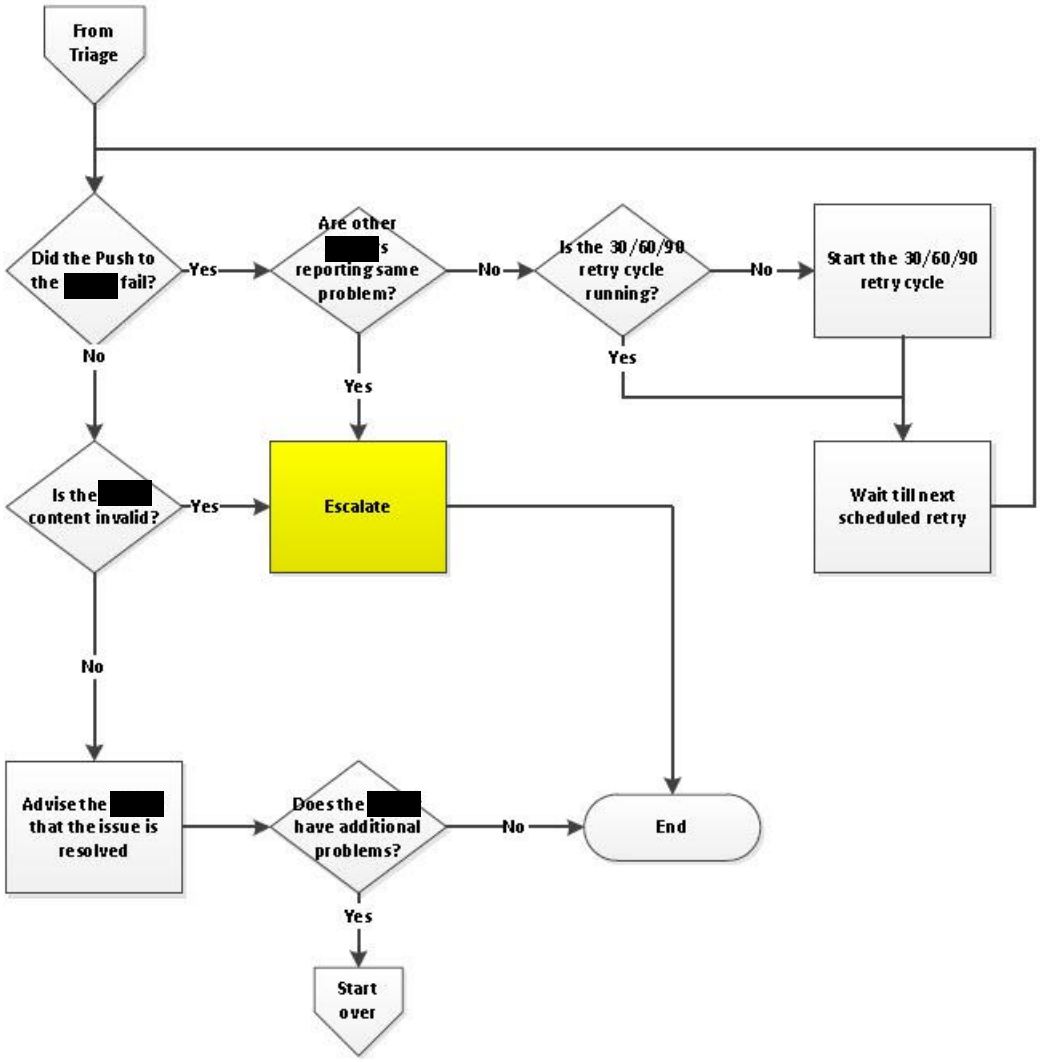
Triage


Start
How are the [redacted] received by the [redacted]?
Pull
Push
Pull
Push

Pull scenario



Push scenario



Escalation

If the 30/60/90 process does not resolve the problem, the following escalation process takes place:

[redacted]*-specific problem(s)*

If the problem is being experienced by a single [redacted] only, it is reasonable to enlist that [redacted]'s involvement with the troubleshooting effort. Contact the [redacted] and perform end to end testing with them to isolate the problem.

Multiple [redacted]s with same problem(s)

If the problem is being experienced by multiple [redacted]s, it is reasonable to assume that the problem likely lies with [redacted]. An email blast should be sent to all [redacted] DC Ops personnel (with a copy to the [redacted] CTO) enlisting their assistance in resolving the problem.