**FACTOM**

**COMMUNITY**

**Instructions:**

**Updating nodes in**

**Factom Authority Set**

**DOC 218**

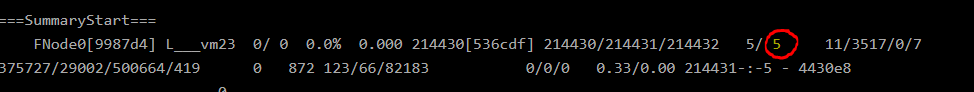
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| VERSION | DATE | CHANGED BY | CHANGES |
| 1.0 | 2019-10-15 | The 42nd Factoid AS, Factom, Inc | Initial document |
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1. Introduction
   1. This document’s purpose is to describe for ANOs how to appropriately update factomd for nodes in the Factom Mainnet Authority Set.
   2. A general call for update will be announced by the Factom Core Committee via appropriate channels, and will include as a minimum the following relevant information:
      1. New version designator (example: v6.4.3-alpine).
      2. Date by which all ANOs are expected to have executed update.

Note: Normally 7 days.

* + 1. A link to Doc [208](https://docs.google.com/spreadsheets/d/1fopTNg7ZnokwybEwC6H7W3vEAmNMkyFd_3xumDj5q0Q/edit?usp=sharing) (update tracking spreadsheet).
    2. **If applicable**: Information that the savestate file will be rebuilt.
    3. **If applicable**: Information about activation height.
    4. **If applicable**: Requirement that Audit servers are updated prior to federated servers.
    5. **If applicable**: Required update method (Alpha or Bravo).
    6. **If applicable**: Any other relevant information.
  1. There are two ways of proceeding to update a factomd node in the authority set, and both may be used at will if nothing else is specified in the announcement:
     1. **Method Alpha** *- “Brainswap”*
        1. This method involves updating factomd via first moving the associated Authority identity away to another factomd node, and only then shutting down factomd to update it.
        2. If the factomd node being updated is acting as a Federated Server the Federated Server is preserved with the ANO when proceeding via this method.
     2. **Method Bravo** *- “Shutting down”*
        1. Updating via Method Bravo involves shutting down the factomd Authority node without first brainswapping away the authority identity.
        2. If the factom node being updated is acting as a Federated Server, shutting it down will trigger an election within the authority set, and the node will be downgraded to an Audit Server.

1. Updating nodes (factomd)
   1. **Method Alpha** - Updating via Brainswap
      1. The process of performing an upgrade manually via Method Alpha is detailed [here](https://docs.factomprotocol.org/authority-node-operators/ano-guides-and-tutorials/updating-and-brainswapping-your-node).
      2. It is however recommended to use this automatic [Brainswap Script](https://github.com/Stamp-IT-io/brainswap) to execute the update via this method, as it will perform a host of automatic checks and verification to ensure the brainswap is executed normally. After the swap is executed then shut down and upgrade factomd, and then swap the identity back again to the original server.
      3. Confirm that you have updated the servers by proceeding to tick the right boxes in [Doc 208](https://docs.google.com/spreadsheets/d/1fopTNg7ZnokwybEwC6H7W3vEAmNMkyFd_3xumDj5q0Q/edit?usp=sharing) (update tracking spreadsheet).
   2. **Method Bravo** - Updating via shutting down
      1. Identify the correct time to shut down the Authority Node by opening up the associated factomd control panel and locate the following area on the “more detailed information” page.



* + 1. The red circle identifies which *minute* the node is on, and it **must be showing a minute between 3 and 7 (inclusive) when shutting down.**

Note: A network pause at the boundary between minute zero and one runs the risk of leaving the network in a non-restartable state. The blocks are saved to the database at the switch to minute 1 and if only some Federated servers save the block, restarting will require community-wide intervention.

* + 1. When the number shows a minute between 3 and 7, shut down the node by stopping the docker container. Next upgrade the docker image and restart.

Note: Only shut down one Federated node per block to reduce risks of unintended consequences.

* + 1. Confirm that you have updated the servers by proceeding to tick the right boxes in [Doc 208](https://docs.google.com/spreadsheets/d/1fopTNg7ZnokwybEwC6H7W3vEAmNMkyFd_3xumDj5q0Q/edit?usp=sharing) (update tracking spreadsheet).

Appendix A

Core Committee call for update template

Authority Node Operators,

Please update your factomd nodes to version: v10.0.0-alpine.

Updates should be completed by YYYY-MM-DD at XX:YY UTC.

After updating the nodes confirm that it has been successfully completed in Doc 208 (link below). Please also specify what kind of nodes (federated/audit) are associated with your identity/identities.

The factomd savestate file will/will not be rebuilt during this upgrade.

Please see Doc 218 below for instructions about how to update.

Doc 218 (Instructions for updating Factom Authority nodes):

<<https://docs.google.com/document/d/1ak_0i899Ix--ofKEfT32GmY5R7y2bWBSd3_cFMSkd2Q/edit?usp=sharing>>

Doc 208 (Update tracking spreadsheet): <<https://docs.google.com/spreadsheets/d/1fopTNg7ZnokwybEwC6H7W3vEAmNMkyFd_3xumDj5q0Q/edit?usp=sharing>>.

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The following information should be included in the announcement as applicable:

**If applicable**: During this update Audit servers should be updated prior to federated servers, as we would prefer that brainswapped/promoted (via faulting) servers becoming federated servers are already updated.

Please only update audit servers for now. A new announcement will be made when updates of federated servers are commencing.

**If applicable**: This release has an activation height of 123456789. You must update prior to this height or risk being faulted out of the authority set.

**If applicable**: There are two possible update methods described, and during this update ONLY Method ALPHA/BRAVO shall be used. The reason for this is XYZ.

**If applicable**: Any other relevant information.