

# KIP-733: change Kafka Streams default replication factor config


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## Status

**Current state:** *Accepted*

**Vote thread:** [Re: \[VOTE\] KIP-733: change Kafka Streams default replication factor config](#) (there is no DISCUSS thread)

JIRA:



Unable to render Jira issues macro, execution error.

**Released:** 3.0.0

Please keep the discussion on the mailing list rather than commenting on the wiki (wiki discussions get unwieldy fast).

## Motivation

Since Kafka 2.4.0, it is possible to rely on the broker default replication factor setting when creating a topic (cf [KIP-464: Defaults for AdminClient#createTopic](#)). Even if approved via KIP-464 already, Kafka Streams did not adapt this new feature yet, due to backward compatibility concerns. Given the upcoming major release, we want to enable this feature in Kafka Streams by default now. The main motivation is, that the current default `replication.factor=1` puts some burden on users to change the config when they put an application into production. While user are already able to change the config to `-1` if their brokers are on 2.4.0 or newer version, it's still an additional config they need to take care of.

## Public Interfaces

The default config of `replication.factor` should be changes.

## Proposed Changes

We propose the change the default value of `StreamsConfig.REPLICATION_FACTOR_CONFIG` from 1 to `-1` (meaning use broker default). We also change the "importance level" of `replication.factor` from HIGH to MEDIUM.

## Compatibility, Deprecation, and Migration Plan

This change may impact users running Kafka Streams applications against older brokers, i.e., 2.3 or older that don't support the `-1` config. For those uses, they would need to change the default before they can start a (new) application.

**Note:** if an existing application is upgrade, users won't be affected, because if internal replication/changelog topics exist already, no create topic request would be sent anyway. Only if a new application is deployed, or if an existing application is reset, and thus repartition/changelog topics would need to be created users might be affected. Because the application won't startup for this case, the impact is minor and can be considered non-critical. Applications already running in production won't break.

It is unclear how many users might be affected because they use older brokers than 2.4.0. However, we consider it an important improvement for default configs and want to take to opportunity of a major release to make this change (as it's technically breaking backward compatibility).

## Test Plan

Regular unit testing is sufficient to ensure that users get a descriptive error message if they hit this client/server incompatibility.

## Rejected Alternatives

N/A