



Technical Release Notes

Version 5.12.20

Release Information

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 Author: FORCAM GmbH

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Overview

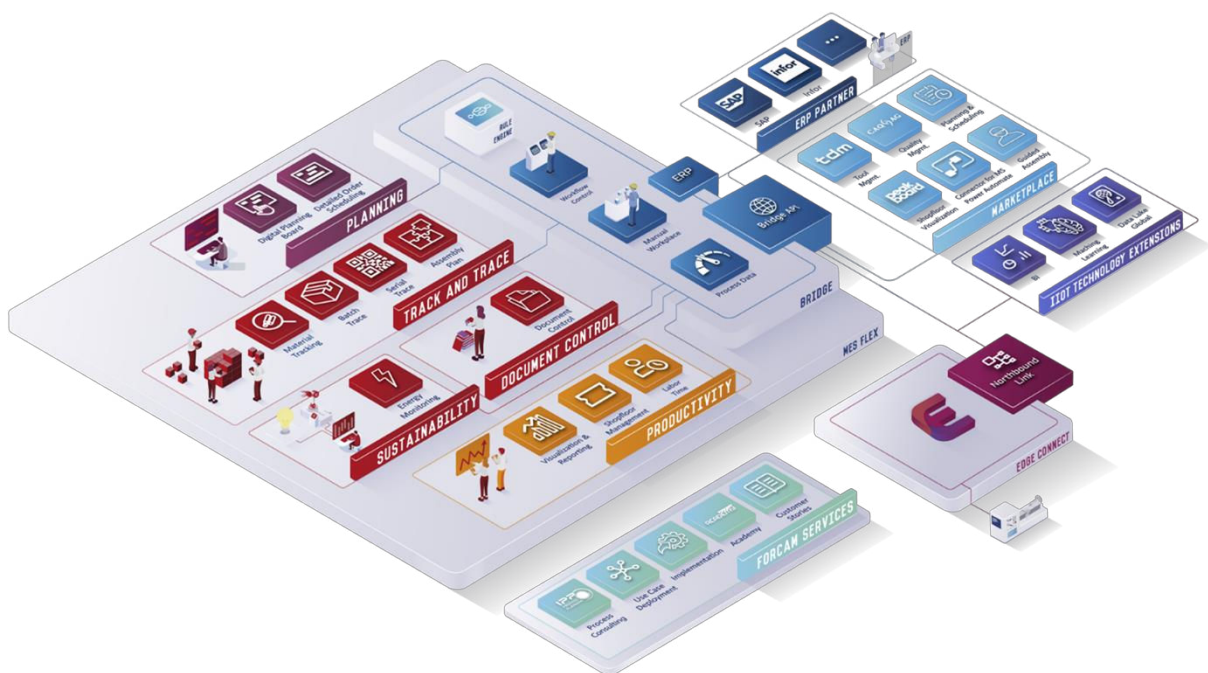
FORCAM provides companies with all the information they need to control and optimize their production. The modular IIoT solution FORCAM FORCE MES FLEX is as flexible as the needs of customers. With a variety of production apps, FORCAM helps companies to make their processes more transparent and improve their workflows. In this way, companies create the basis for optimization measures and sustainable success, thereby ensuring their competitiveness.

FORCAM is always endeavored to optimize the solution FORCAM FORCE MES FLEX further, to enrich it with functions, offering customers consistent growth and greatest possible use. For this purpose, several releases are published throughout the year.

This document lists technical changes during the 5.12.20 release. It provides an overview about configurations and parameters that are new or changed for FORCAM FORCE MES FLEX. For changes in the functionality, please refer to the Functional Release Notes of this release.

Detailed descriptions of the individual functions can be found in the respective product documentation.

 In some cases, there are no technical changes. These are marked accordingly.



Productivity

ActivityStepChooser Improvement

Affected module	Affected area	Status
Workbench	SFT	Changed

None.

Duration Filter for Operating State Corrections

Affected module	Affected area	Status
Workbench	Corrections	New

None.

Enhanced Ticket Creation: Flexible Selection and Data Validation

Affected module	Affected area	Status
FFWorker	SFT	Changed

None.

DPB – Extension with Workplace Availability

Affected module	Affected area	Status
Workbench	Configuration	Changed

With a JAVA migration the new DPB configuration attribute to consider the availability will be available.

Force Common

Tomcat Hardening 10.7 and 10.18

Affected module	Affected area	Status
Forcam FORCE	Apache Tomcat	Changed

Disable session facade recycling in Tomcats

There is a new property for the tomcat service definitions:

```
Dorg.apache.catalina.connector.RECYCLE_FACADES
```

Print final webxml during tomcat start

In the context.xml of the Tomcat the logEffectiveWebXml is enabled

```
<Context logEffectiveWebXml="true">
```

Support for New MongoDB Version

Affected module	Affected area	Status
Forcam FORCE	MongoDB	Changed

Mongo Database

Before upgrade to Mongo DB 5.0. Please check the current Mongo DB version. It should be 4.2. Mongo DB upgrade is possibly only to next major version means to upgrade to 5.0 first needs to upgrade to 4.4 and then 5.0 version.

Mongo DB OS Compatibility:

Before installation of Mongo DB please check the OS. Here is the compatibility:
<https://www.mongodb.com/compatibility>

Operating Systems (OS) compatible with MongoDB

MongoDB provides OS compatibility with all the major operating systems.

Linux

MongoDB provides compatibility for the following Linux platforms and distributions:

- Amazon Linux 2
- Debian 9 and 10
- RHEL / CentOS 6, 7 and 8
- SLES 12 and 15
- Ubuntu LTS 16.04, 18.04 and 20.04

Windows Server 2016 and 2019

MongoDB is compatible with the 64-bit versions of [Windows Server 2016 and 2019](#) on x86_64 architecture.

macOS

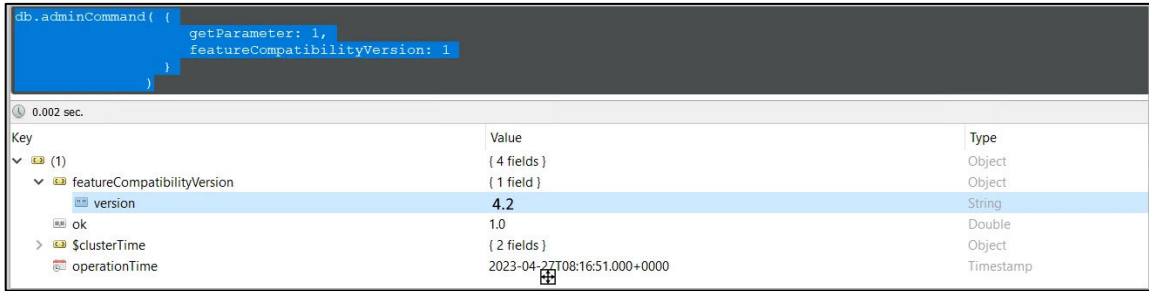
You can install [MongoDB](#) on your macOS using the Homebrew package manager.

View the complete compatibility matrix for all supported OS platforms in the [MongoDB manual](#).

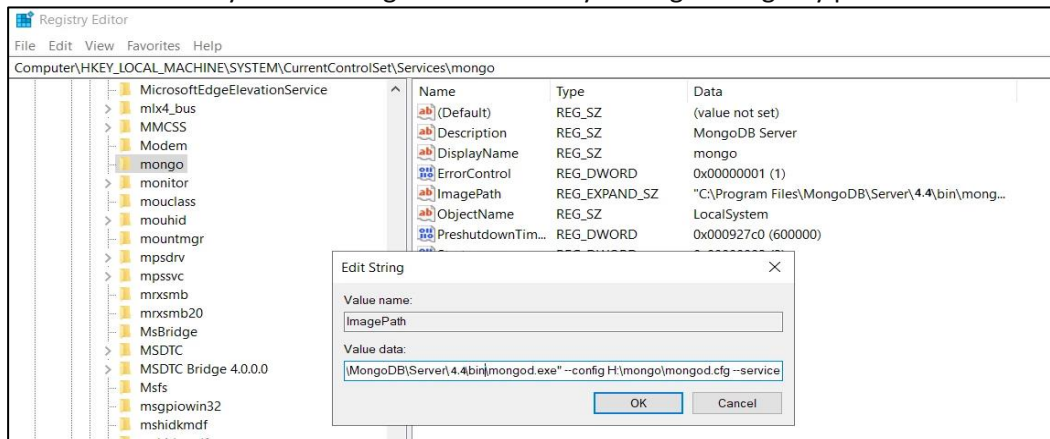
Mongo DB Upgrade 4.2 to 4.4

- Run the following command in Robo Mongo tool or Mongo shell which should return 4.2.

```
db.adminCommand( {
  getParameter: 1,
  featureCompatibilityVersion: 1
})
```



- Download the Mongo DB Version 4.4 based on the operation system either community edition or enterprise edition.
- Install the Mongo DB 4.4 (Unselect “Run as a service” and “Mongo DB Compass”).
- Stop the current Mongo DB running service.
- Change the binaries of current Mongo DB service to new Mongo DB.
 - For Replica Set: <https://www.mongodb.com/docs/v4.4/release-notes/4.4-upgrade-replica-set/>
 - For Standalone: <https://www.mongodb.com/docs/v4.4/release-notes/4.4-upgrade-standalone/>
 - In case of window you can change the binaries by editing the registry path



- Run the Mongo DB service with updated binaries.
- Run the following command in Robo Mongo tool or Mongo shell to set the feature compatibility.

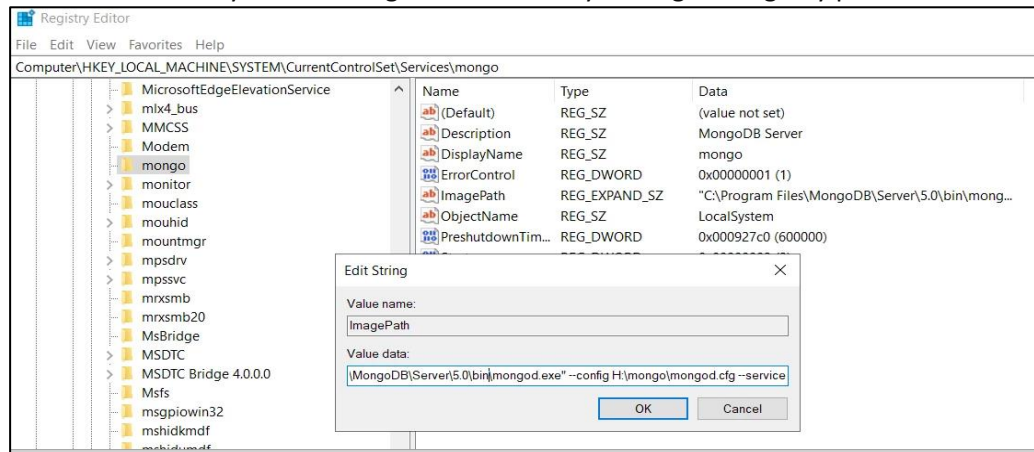

```
db.adminCommand( { setFeatureCompatibilityVersion: "4.4" } )
```
- Again, check the feature compatibility version using command now it should return 4.4


```
db.adminCommand( { getParameter: 1, featureCompatibilityVersion: 1 } )
```

Mongo DB Upgrade 4.4 to 5.0

- Download and install the Mongo DB 5.0 based on OS and edition.
- Stop the current Mongo DB running service.
- Change the binaries of current Mongo DB service to new Mongo DB
 - For Replica Set: <https://www.mongodb.com/docs/v5.0/release-notes/4.4-upgrade-replica-set/>
 - For Standalone: <https://www.mongodb.com/docs/v5.0/release-notes/4.4-upgrade-standalone/>

- In case of window you can change the binaries by editing the registry path



- Run the Mongo DB service with updated binaries.
- Run the following command in Robo Mongo tool or Mongo shell to set the feature compatibility.


```
db.adminCommand( { setFeatureCompatibilityVersion: "5.0" } )
```
- Run the Mongo DB service with updated binaries.
- Again, check the feature compatibility version using command now it should return 5.0


```
db.adminCommand( { getParameter: 1, featureCompatibilityVersion: 1 } )
```


FFSetup

Removal of org.hibernate.criteria API

Affected module	Affected area	Status
FFWorker	SFT	Changed

SFT Groovy activity steps:

In groovy scripts instead of org.hibernate.criteria now JpaPredicates have to be used when using the ffruntime DataService and/or the GroovyRuntimeAccessService.

The following steps have to be done to migrate existing Groovy Scripts which are using the org.hibernate.criteria API.

The imports must be changed:

```
import org.hibernate.criterion.Criterion;
import org.hibernate.criterion.Restrictions;
```

must be replaced by:

```
import com.forcam.na.common.jpa.criteria.JpaPredicate;
```

Restrictions have to be replaced by JpaPredicates:

```
Restrictions.eq("field", value)
Restrictions.eqOrNull("field", value)
Restrictions.in("field", values)
Restrictions.ne("field", value)
Restrictions.lt("field", value)
Restrictions.le("field", value)
Restrictions.gt("field", value)
Restrictions.ge("field", value)
Restrictions.isNull("field")
Restrictions.isNotNull("field")
Restrictions.neProperty("field1", "field2")
Restrictions.like("field", value)
Restrictions.ilike("field", value)
Restrictions.between("field", value1, value2)
Restrictions.and(Restrictions.eq("field1", value1), Restrictions.eq("field2", value2))
Restrictions.or(Restrictions.eq("field1", value1), Restrictions.eq("field2", value2))
```

now becomes:

```
JpaPredicate.eq("field", value)
JpaPredicate.eqOrNull("field", value)
JpaPredicate.in("field", values)
JpaPredicate.notEqual("field", value)
JpaPredicate.lessThan("field", value)
JpaPredicate.lessThanOrEqualTo("field", value)
JpaPredicate.greaterThan("field", value)
JpaPredicate.greaterThanOrEqualTo("field", value)
JpaPredicate.isNull("field")
JpaPredicate.isNotNull("field")
JpaPredicate.notEqualAttribute("field1", "field2")
JpaPredicate.like("field", value)
JpaPredicate.ilike("field", value)
JpaPredicate.between("field", value1, value2)
JpaPredicate.not(JpaPredicate.in("field", values))
JpaPredicate.and(JpaPredicate.eq("field1", value1), JpaPredicate.eq("field2", value2))
JpaPredicate.or(JpaPredicate.eq("field1", value1), JpaPredicate.eq("field2", value2))
```

Appendix

Abbreviation/Term	Meaning
API	Application Programming Interface
DB	database
OS	Operating System
SFT	Shopfloor Terminal