BRIEF DESCRIPTION

This document describes the alerts created to notify to Support Team by email when failover SQL Server events occur, proceed to identify the primary replica of Database BD\_INMOTION\_CAD and running automatically the certificate script.

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FAILOVER ALERT NOTIFICATION AND RUNNING CERTIFICATE

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# Objective.

To create and to alert failover events number 1480, so when this happens will be run a Job which will call a store procedure to determines who is the primary replica, similarly to determine if the database BD\_INMOTION\_CAD in the primary replica is synchronized with status online. If before conditions are true, then will be run the Store procedure (SYS\_SP\_CREATE\_CERTIFICATE) for creating the certificate.

Finally will be sent a notification by email to Support Team account.

# Scope.

The store procedure, jobs, alerts described in this document are applicable to Panamá SUME911 Environment.

# Prerequisite

To configure the alerts, jobs and store procedure described in this document, is prerequisite to have administrative Roles.

# Definitions.

* **Always On Availability groups:** The Always On availability groups feature is a high-availability and disaster-recovery solution that provides an enterprise-level alternative to database mirroring.
* **Always On Availability groups:** A database that belongs to an availability group. For each availability database, the availability group maintains a single read-write copy (the *primary database*) and one to eight read-only copies (*secondary databases*).
* **Primary Database:** The read-write copy of an availability database.
* **Secondary database:** A read-only copy of an availability database.
* **Availability replica:** An instantiation of an availability group that is hosted by a specific instance of SQL Server and maintains a local copy of each availability database that belongs to the availability group. Two types of availability replicas exist: a single *primary replica* and one to eight *secondary replicas*.
* **Primary replica**: The availability replica that makes the primary databases available for read-write connections from clients and, also, sends transaction log records for each primary database to every secondary replica.
* **Secondary Replica**: An availability replica that maintains a secondary copy of each availability database, and serves as a potential failover targets for the availability group. Optionally, a secondary replica can support read-only access to secondary databases can support creating backups on secondary databases.
* **Availability Group Listener**: A server name to which clients can connect in order to access a database in a primary or secondary replica of an Always On availability group. Availability group listeners direct incoming connections to the primary replica or to a read-only secondary replica.
* **Job**: A *job* is a specified series of actions that SQL Server Agent performs.
* **Alerts:** An *alert* is an automatic response to a specific event. For example, an event can be a job that starts or system resources that reach a specific threshold.
* **Operators**: An *operator* defines contact information for an individual responsible for the maintenance of one or more instances of SQL Server. In some enterprises, operator responsibilities are assigned to one individual.
* **Database Mail**: Database Mail is an enterprise solution for sending e-mail messages from the SQL Server Database Engine or [Azure SQL Database Managed Instance](https://docs.microsoft.com/en-us/azure/sql-database/sql-database-managed-instance-index). Using Database Mail, your database applications can send e-mail messages to users. The messages can contain query results, and can also include files from any resource on your network.
* **Error reported 1480**: This filtered error\_reported event occurs asynchronously after an availability replica role change. It indicates which availability database fails to change its expected role during the failover process.

# Flow Chart Description

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# Detailed Description

## Store Procedure DBO.SYS\_SP\_CREATE\_CERTIFICATE

This store procedure creates the certificates and let the users keep logged into the CAD without miss the authentication.

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## 6.2 Store Procedure DBO.SYS\_SP\_CHECK\_ISPRIMARY

This store procedure determines, who is the primary replica after the failover event. Besides, it determines the status of the database in the replica and If the database BD\_INMOTION\_CAD is online. If before is true, it will call the store procedure DBO.SYS\_SP\_CREATE\_CERTIFICATE.

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## JOB MobileTec - InMotion Monitor – Failover

To see the job configuration, follow next steps:

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| Open Instance SQL2\INM01\_BCC or SQL1\INM01\_NCC according the primary instance for BD\_Inmotion\_CAD.    Expand SQL Server Agent    Expand JOBS folder and select MobileTec - InMotion Monitor – Failover, as is highlighted in blue:    Right click in MobileTec - InMotion Monitor – Failover, and select Properties    In Job Properties – Mobiletec – Inmotion Monitor – Filover window, select steps tab – Run SP\_Failover and click on Edit button, as is highlighted in blue:    In Job Step Properties – Run SP\_Failure windows, General Tab: you can see that is configured the SP SYS\_SP\_CHECK\_ISPRIMARY with database BD\_InMotion\_CAD. |

## Alert MobileTec - AlwaysOn - Role Change 1480

To see the configuration of the Alert, follow next steps:

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| Open Instance SQL2\INM01\_BCC or SQL1\INM01\_NCC according the primary instance for BD\_Inmotion\_CAD.    Expand SQL Server Agent    Expand Alerts folders and select Mobiletec – AlwaysON – Role Change 1480.    Right click and select properties:    In Mobiletec – AlwaysOn – Role Change 1480, alert properties window, in General Tab you can see the error number of the event (1480) which is configured and the corresponding Database name: BD\_Inmotion\_CAD.    If this error happen, the alert run the JOB MobileTec - InMotion Monitor - Failover ([Uncategorized (Local)]) and will send a notification to Soporte Mobiletec.  In Mobiletec – AlwaysOn – Role Change 1480 alert properties window, select Response tab, see the option Execute JOB is checked with the Job *MobileTec - InMotion Monitor - Failover ([Uncategorized (Local)]).*    In Mobiletec – AlwaysOn – Role Change 1480, alert properties window, in Options Tab you can see the additional notification message to send, as shown below highlighted in blue: |

## 6.5 Database Mail Notifications

Using Database Mail, your database applications can send e-mail messages to users.

Previous the alert was configured a Database Mail account, to see the configuration follow next steps:

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| In SSMS connect to the Instance SQL2\INM01\_BCC or SQL1\INM01\_NCC according the primary instance for BD\_Inmotion\_CAD.    In object explorer window, expand Management folder and select Database Mail:    Right click in Database Mail and select Configure Database Mail:    In Database Mail Configuration Wizard window, click on next    In Database Mail Configuration Wizard window, select the option Manage Database Mail Accounts and Profiles and click on next, see highlighted in blue:    In database Mail Configuration Wizard window, select option View, change, or delete an existing account and click on Next.    Be sure, the configuration of the account is as is shown below, and close the window. |

# Conclusion

With this alert it will be possible to promise to SUME911 users CAD, their authentication will not be missed when occur a failover event. However, Support Team will be aware on time when this happen proceeding to check everything is ok.

This avoid the needing of running manually the certificate script from the primary server after the failover , nor will it be necessary, to ask the users to log out of the system to authenticate again, situation which was affecting their service.