



Title: Uso de la arquitectura de mini servicios: Gestión de servicios

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Introduction

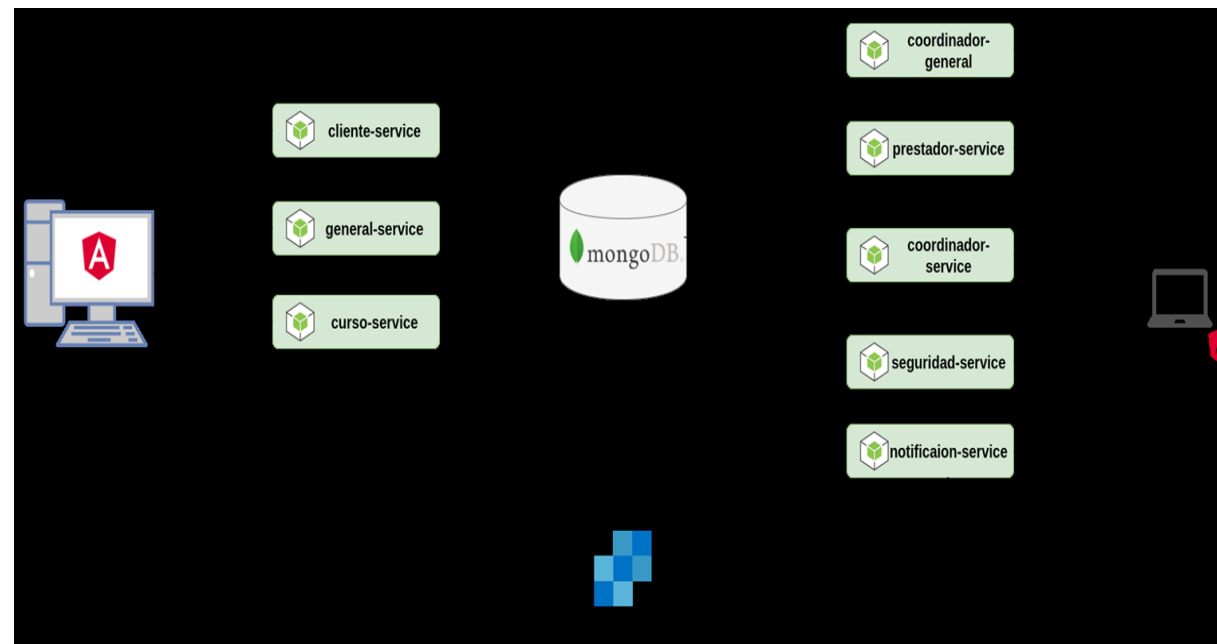
For this work, an analysis of the current process of the TecNM incubators was carried out at the national level. Therefore, the need arises for a system that automates and standardizes these tasks, therefore an architecture is required that is capable of supporting users nationwide, and provides the expected high availability. This job is to find and implement an architecture that provides decoupling, speed and easy deployment in the cloud.

Methodology

The SCRUM methodology is used to carry out this project, since for its development the participants were divided into two teams, due to the extension of the computational system. And SCRUM is characterized by offering a methodological framework that allows managing collaboration between various teams. SCRUM has another essential characteristic in this development, that it is designed for projects with a high level of uncertainty, as is our case, where the architecture of miniservices will be tested and the degree of improvements it provides will be identified.

RESULTS

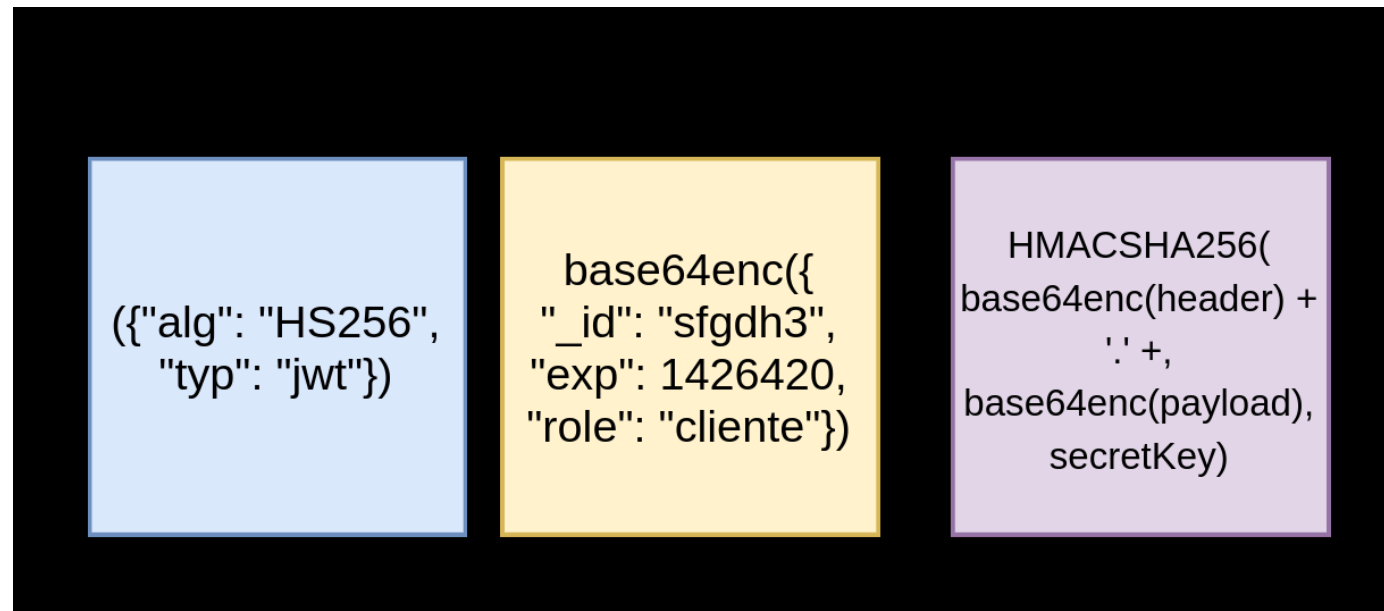
Dadas las necesidades del sistema de incubadoras del TecNM se decidió optar por una arquitectura de miniservicios, por cumple con un desarrollo ágil, desacoplamiento, fácil despliegue en la nube, migración sencilla a una arquitectura de microservicios, compartir un origen de datos (base de datos Mongo).



RESULTS

The architecture raises two clients with Angular, one of them dedicated to the back office, that is, the administrative part of this system, incubator coordinators, general coordinators and service providers. The client application takes care of the business logic of the system.

The security of the set of miniservices is managed by the security miniservice, which manages the jwt-tokens according to the roles, that is, incubator coordinator, general coordinator, service provider and client, this miniservice is in charge of managing time lifetime of tokens, deny access of invalid tokens, etc.



As shown in the architecture, the clients (angular) are in charge of communicating with the miniservices, depending on the information needed, they are in charge of making requests with the respective miniservices.

RESULTS

The development of the interfaces for the resource management and project monitoring modules are shown below.

Coordinador de Incubadora

Manuel Jimenez Lopez
Coordinador de Incubadora

Inicio

Solicitudes de servicio

Perfil

Prestadores de servicio

Candidatos a servicio

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Pagos

Reservaciones

Gestión de recursos

Nota: La cantidad disponible el día de hoy

Informe general

24,040
Recursos totales

23,868
Recursos disponibles

172
Recursos ocupados

Recursos con poco stock

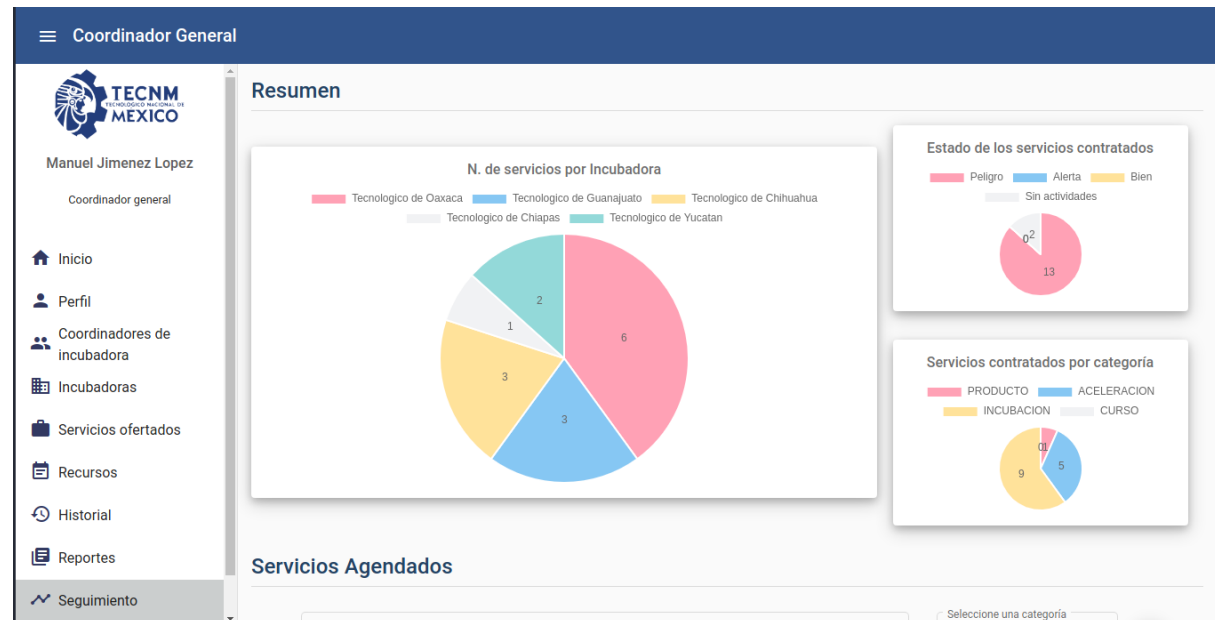
Nombre	Cantidad	Cantidad Disponible	Acciones
SLEEK FRESH SHIRT	9	9	+ - x d
UNBRANDED RUBBER SHOES	8	3	+ - x d
RTYERTYRT	3	3	+ - x d
REFINED GRANITE SAUSAGES	3	3	+ - x d
FGHFGDH	1	1	+ - x d

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The resource management shows a summary of the resources that we have today, the total amount, available and occupied of the resources, it categorizes the information according to the stock of the resources that are available.

RESULTS

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RESULTS

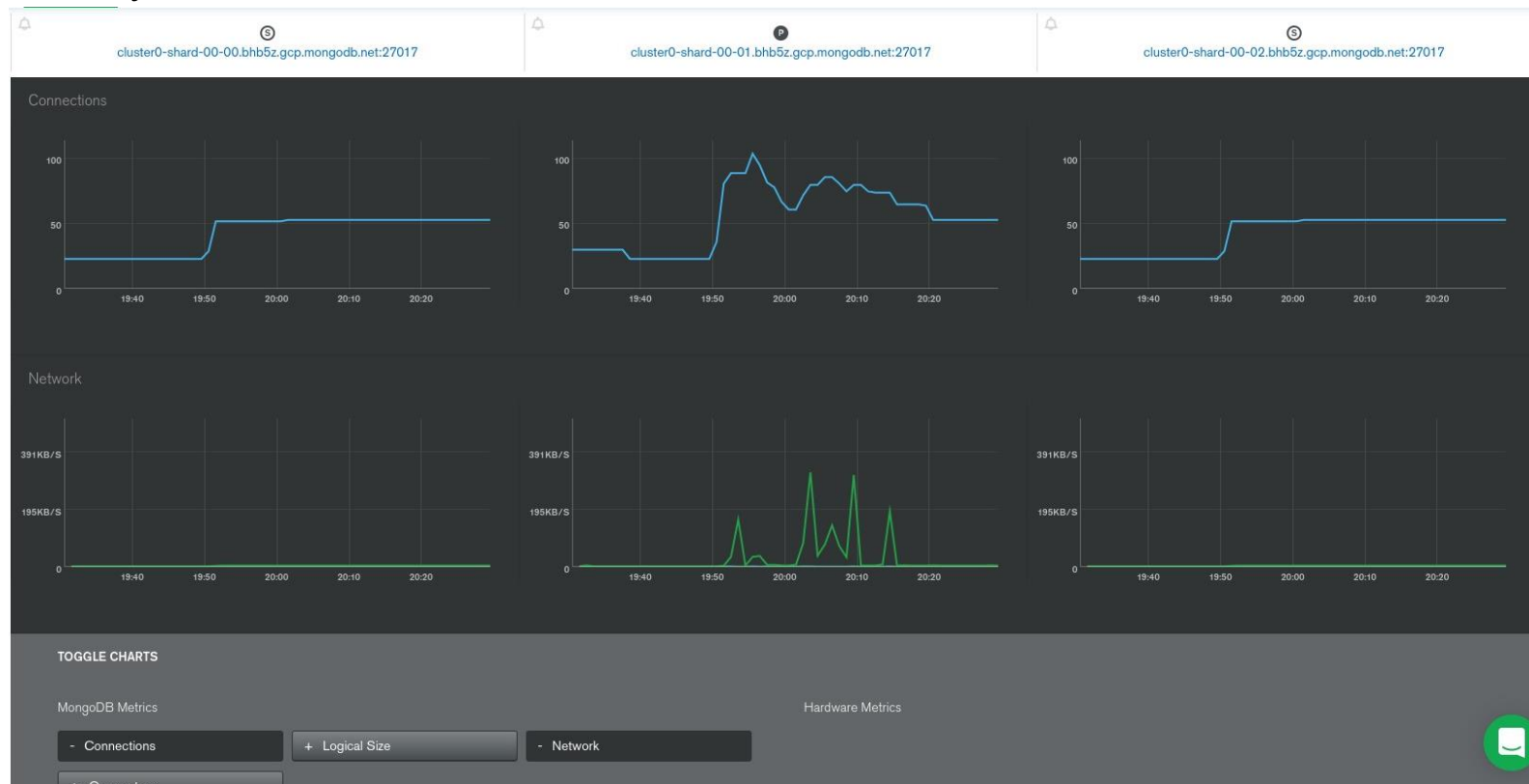
In the monitoring module, it shows the services contracted by the incubator, the status of the contracted services and the types of services that are contracted.

The screenshot displays a web application interface for monitoring services. The header shows the user role as 'Coordinador General'. The main content area is titled 'Servicios en Curso' and features a search bar for 'Nombre del servicio' and a category dropdown menu set to 'TODAS'. Below the search bar, four service cards are shown, each with the TECNM logo and a progress indicator (0.0% with a count of completed tasks out of total tasks).

Entity	Service Type	Start Date	End Date	Progress
TECNOLOGICO DE OAXACA	ACELERADORA	Aug 31, 2020	Sep 10, 2020	0.0% (0/0)
TECNOLOGICO DE GUANAJUATO	NATIONAL MARKETING ANALYST	Sep 16, 2020	Oct 12, 2020	0.0% (0/1)
TECNOLOGICO DE OAXACA	CUSTOMER GROUP PRODUCER	Sep 17, 2020	Oct 17, 2020	0.0% (0/1)
TECNOLOGICO DE OAXACA	HUMAN ACCOUNTABILITY DESIGNER	Sep 9, 2020	Sep 26, 2020	0.0% (0/11)

RESULTS

The MongoDB Atlas hosting service offers database monitoring tools. The tool allows observing metrics of the performance of the database, it can be observed in the graph that despite having a mini-services architecture, the use of the network and the connections to the database are stable and do not represent a risk in performance of the system.



CONCLUSIONS

The use of miniservices allows the development of Computer Systems more adaptable to future improvements, with the implementation of reengineering. Since it encapsulates processes within services, allowing independence between processes.

It allows collaborative work between groups of programmers, a very important issue in very large systems.

And mini-services allow you to move quickly to a microservices architecture as the system grows. Without the need to implement microservices from the beginning when the system is still small, with miniservices the complexity is less but you are ready for the migration to microservices.



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