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Spring Boot 9AM
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Spring Boot : Actuator with Admin Server

*) Actuator : Production Ready Endpoints (Readymade services).

=> If one application is developed and placed in production
then we need few additional services.

ex (additional services)
*. Is Application started?
*. What are objects created?
*. What are properties loaded?
*. What is the information of Application?
*. Schedulers details?
*. Caches Enabled?
*. Logger Details?
*. Threads, Heap details..

=> These additional services can be added to our project without writing code
Actuator. It is pre-defined code, you can enable/disable these services.

=> Generally for every REST/MS Apps we should enable Actuator.
=> We can check them in Dev/Test Env also, but mainly designed for Production.

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*) While creating project we should add one dependency:
spring-boot-starter-actuator

*) When we add above dependency then 2 services(Endpoints)
are activated by default with base path /actuator

URL:
http://localhost:8080/actuator

*) Here default endpoints are : health and info

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a) health : This endpoints shows status of application.
Is that started without any problem or not? UP/DOWN.

Enter URL:
http://localhost:8080/actuator/health

=> To see diskspace(RAM details, total, free, allocated data)
management.endpoint.health.show-details=always

=> Default is never (dont show), We can show same details only after login
management.endpoint.health.show-details=when-authorized

```
=> To disable health :
    management.endpoint.health.enabled=false

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b) info : meta-data of application.

=> Like Project Name, version, client, location, copy rights info..etc
=> Syntax to add info is
         info.key=val

--example: application.properties------
info.app.title=ABCD-APP
info.app.version=3.2 GA
info.client.name=NIT
info.client.license=NIT-NEW

URL:
http://localhost:8080/actuator/info

Q) How can we modify default base path?
A) Add below key
  management.endpoints.web.base-path=/mytest

*) We can use even / also base path, but you may not see all endpoints
  But we can access still with full path as:
http://localhost:8080/info
  [It is not recomanded]

Q) How can we activate all endpoints? (or) Specific endpoints
A)
 To activate all:
   management.endpoints.web.exposure.include=*
 To activate Specific
   management.endpoints.web.exposure.include=health,beans,env


Q) How can we exclude specific endpoints ?
A)
# to activate all
management.endpoints.web.exposure.include=*
# to exclude provided
management.endpoints.web.exposure.exclude=health,info,beans,env

============================================================
c) beans : To check what are objects created in application we can use
           this endpoint. Enable this endpoint

management.endpoints.web.exposure.include=*
 (or)
management.endpoints.web.exposure.include=beans

URL:
 http://localhost:8080/actuator/beans

d) env : Environment - Properties (key=val) which are loaded into
Application
```

```
 http://localhost:8080/actuator/env

e) configprops : To find keys loaded into app using
@ConfigurationProperties
http://localhost:8080/actuator/configprops

f) scheduledtasks : To find your scheduled tasks
http://localhost:8080/actuator/scheduledtasks

g) mappings : For given Request URL which class and method are
executed
       what is the output...etc
http://localhost:8080/actuator/mappings


*) Admin Server : Provides one common UI for All MS# Actuator outputs.
   Now we need not to check each and every MS# URL manually.


=======Coding steps===============================================
1. Admin Server Project
Name : SpringBoot2AdminServer
Dep  : Admin Server

*. properties
# any port number
server.port=9988

*. AT starter class: @EnableAdminServer

*. Run main class

---MS# Project--------------
2.
 Name : SpringBoot2EmployeProject
 Dep  : web, actuator, admin client

*) propertie files
#management.endpoints.web.base-path=/
#management.endpoints.web.base-path=/mytest

#management.endpoints.web.exposure.exclude=health,info,beans,env

#management.endpoint.health.show-details=always
#management.endpoint.health.show-details=when-authorized
#management.endpoint.health.enabled=false

#management.endpoint.info.enabled=false
info.app.title=ABCD-APP
info.app.version=3.2 GA
info.client.name=NIT
info.client.license=NIT-NEW

management.endpoints.web.exposure.include=*
# Provider AdminClient --Admin server URL
spring.boot.admin.client.url=http://localhost:9988
```

*) RestController

```
package in.nareshit.raghu.rest;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.http.ResponseEntity;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;
import org.springframework.web.client.RestTemplate;

@RestController
@RequestMapping("/employee")
public class EmployeeRestController {

	@Autowired
	private RestTemplate rt;

	@GetMapping("/show")
	public ResponseEntity<String> showMsg() {
		return ResponseEntity.ok("Hello");
	}
}
```

*) AppConfig

```
package in.nareshit.raghu.config;

import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;
import org.springframework.web.client.RestTemplate;

@Configuration
public class AppConfig {

	@Bean
	public RestTemplate rtemplate() {
		return new RestTemplate();
	}
}
```

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Run Apps

a. Admin Server

b. MS# app

c. Enter URL

 http://localhost:9988/applications

d. Click on Application name

e. Click on ID shown

f. Check all services