

Artigo

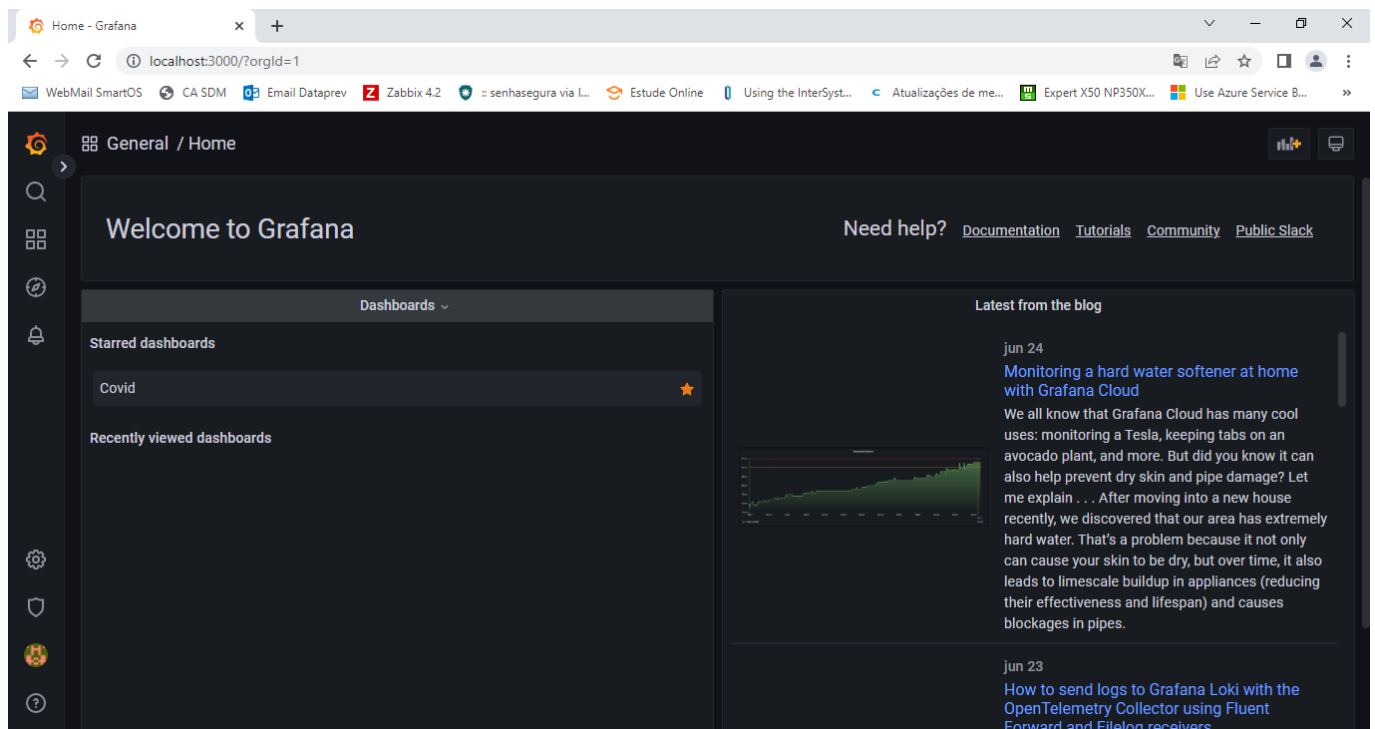
[Julio Esquerdo](#) · Jun. 27, 2022 9min de leitura

Usando o Grafana com o IRIS através do Infinity DataSource

Usando o Grafana com o IRIS através do Infinity DataSource

Grafana é uma aplicação web de análise de [código aberto multiplataforma](#) e visualização interativa da web. Ele fornece tabelas, gráficos e alertas para a Web quando conectado a fontes de dados suportadas. É expansível através de um sistema de plug-in. Os usuários finais podem criar painéis de monitoramento complexos usando criadores de consultas interativas, segundo a Wikipédia O Grafana pode ser baixado diretamente do seu site grafana.com.

Uma vez instalado, o Grafana se apresenta como um serviço que pode ser acessado a partir da porta 3000 do servidor onde foi instalado:



O Infinity DataSource é um plugin do Grafana que permite o acesso a diversas fontes de dados, recebendo diversos tipos de informação, tais como JSON, CSV, XML e outros. Mais informações em <https://grafana.com/grafana/plugins/yesoreyeram-infinity-datasource>.

Uma das formas possíveis de comunicação através do Infinity DataSource é o uso de uma API REST devolvendo um JSON. É esta a forma que vamos usar.

Vamos montar uma API REST devolvendo informações em JSON no Iris. Esta é uma tarefa bastante simples com a classe %CSP.REST.

Baseado nos dados disponibilizados pela WHO criamos uma base de casos de COVID no mundo:

```
Class who.globalCases Extends (%Persistent, %XML.Adaptor)
{
```

```
Property dateEvent As %Date(FORMAT = 3);
```

```
Property countryCode As %String;
```

```
Property countryName As %String;
```

```
Property region As %String;
```

```
Property newCases As %Integer;
```

```
Property cumulativeCases As %Integer;
```

```
Property newDeaths As %Integer;
```

```
Property cumulativeDeaths As %Integer;
```

```
Query buscar() As %SQLQuery(COMPILEMODE = "IMMEDIATE", CONTAINID = 1,
ROWSPEC = "dateEvent:%Date, countryCode:%String, countryName:%String, region:%String,
newCases:%Integer, cumulativeCases:%Integer, newDeaths:%Integer,
cumulativeDeaths:%Integer", SELECTMODE = "RUNTIME") [ SqlName = buscar, SqlProc ]
{
  SELECT %EXTERNAL(dateEvent) as dateEvent, countryCode, countryName, region,
  newCases, cumulativeCases, newDeaths, cumulativeDeaths
  FROM who.globalCases
}
```

```
Query top10() As %SQLQuery(COMPILEMODE = "IMMEDIATE", CONTAINID = 1,
ROWSPEC = "countryCode:%String, cumulativeDeaths:%Integer", SELECTMODE = "RUNTIME")
[ SqlName = top10, SqlProc ]
{
  SELECT top 10 countryCode, cumulativeDeaths
  FROM who.globalCases
  ORDER BY cumulativeDeaths DESC
}

}
```

E, baseado nesta classe de dados persistentes, criamos a classe REST:

```
Class who.rest Extends %CSP.REST
{
```

```
Parameter CONTENTTYPE = "application/json";
```

```
Parameter CHARSET = "utf-8";
```

```
XData UrlMap [ XMLNamespace = "http://www.intersystems.com/urlmap" ]
{
  <Routes>
  <Route Url="/test" Method="GET" Call="Test" />
  <Route Url="/data" Method="GET" Call="GetData" />
  <Route Url="/top" Method="GET" Call="Top" />
  </Routes>
}
```

```
ClassMethod Test() As %Status
{
  Set obj={
    "produto": "Api Who Demo",
    "versao": "1.00",
    "data": ($zdt($h,3,1))
  }
```

```
        Write obj.%ToJSON()

    Quit 1
}

ClassMethod GetData() As %Status
{

    Set saida={"respostas": []}

    Set st=##class(%SQL.Statement).%New()
    Set status=st.%PrepareClassQuery("who.globalCases","buscar")
    Set rs=st.%Execute()
    While rs.%Next()
    {
        Set obj = {
            "dateEvent": (rs.%Get("dateEvent")),
            "countryCode": (rs.%Get("countryCode")),
            "countryName": (rs.%Get("countryName")),
            "region": (rs.%Get("region")),
            "newCases": (rs.%Get("newCases")),
            "cumulativeCases": (rs.%Get("cumulativeCases")),
            "newDeaths": (rs.%Get("newDeaths")),
            "cumulativeDeaths": (rs.%Get("cumulativeDeaths"))
        }
        Do saida.respostas.%Push(obj)
    }

    Write saida.%ToJSON()
    Quit 1
}

ClassMethod Top() As %Status
{

    Set saida={"respostas": []}

    Set st=##class(%SQL.Statement).%New()
    Set status=st.%PrepareClassQuery("who.globalCases","top10")
    Set rs=st.%Execute()
    While rs.%Next()
    {
        Set obj = {
            "countryCode": (rs.%Get("countryCode")),
            "cumulativeDeaths": (rs.%Get("cumulativeDeaths"))
        }
        Do saida.respostas.%Push(obj)
    }

    Write saida.%ToJSON()
    Quit 1
}
}
```

Uma vez que montamos nossas classes e populamos as informações, podemos publicar a aplicação REST:

Editar Aplicação Web

localhost:52776/csp/sys/sec/%25CSP.UI.Portal.Applications.Web.zen?PID=%2Fwho

WebMail SmartOSCA SDMEmail DatavrepZabbix 4.2senhasegura via L...Estude OnlineUsing the InterSys...Atualizações de me...Expert X50 NP350X...Use Azure Service B...

InterSystems

IRIS Data Platform

Portal de Administração

HomeSobreAjudaContatoLogout

Menu

ServidorLAPTOP-1AM20UQLNamespace%SYSUsuárioUnknownUserLicenciado paraInterSystems IRIS CommunityConfiguraçãoIRIS_SEM_SSL

Sistema > Administração de Segurança > Aplicações Web > Editar Aplicação Web - (Configurações de segurança)

Editar Aplicação Web

Salvar

Cancelar

Edita a definição de aplicativo web /who:

Geral

Funções do Aplicativo

Funções de Correspondência

Nome

/who

Obrigatório. (por exemplo /csp/appname)

Descrição

Namespace

USER

Aplicativo padrão para USER: /csp/user

☐ Aplicação Padrão do Namespace

Enable Application

☒

Habilitar

☒ REST

Expedir Classe

who.rest

Obrigatório.

☐ Redirect Empty Path

☐

☐ CSP/ZEN

☐ Analytics

☒ Serviços de Web de Entrada

☐ Prevent login CSRF attack

Configurações de segurança

Recurso obrigatório

Agrupar por ID

Métodos Permitidos para Autenticação

☒ Não Autenticado

☐ Senha

☐ Cookie de Login

Configurações da sessão

Timeout de sessão

900

Segundos

Classe de eventos

.cls

A partir deste momento podemos consumir os dados:

localhost:52776/who/data

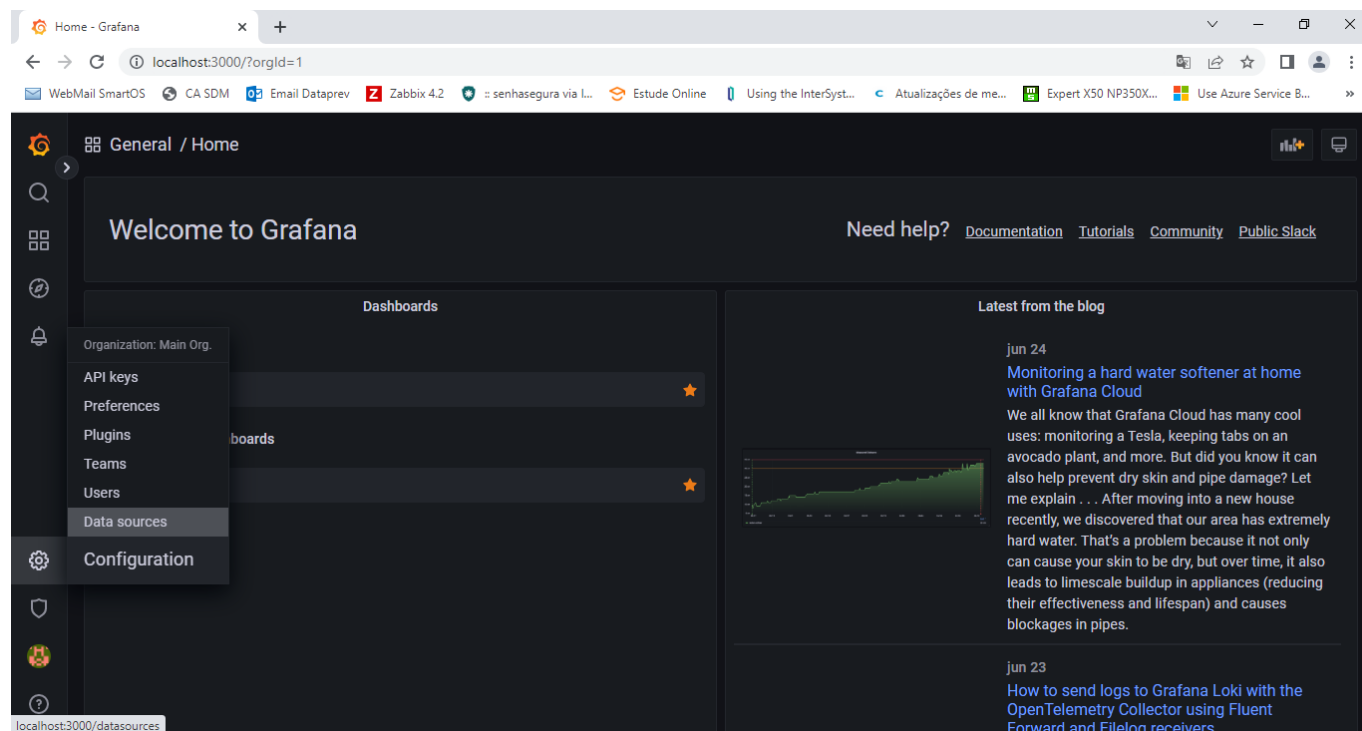
localhost:52776/who/data

WebMail SmartOSCA SDMEmail DatavrepZabbix 4.2senhasegura via L...Estude OnlineUsing the InterSys...Atualizações de me...Expert X50 NP350X...Use Azure Service B...

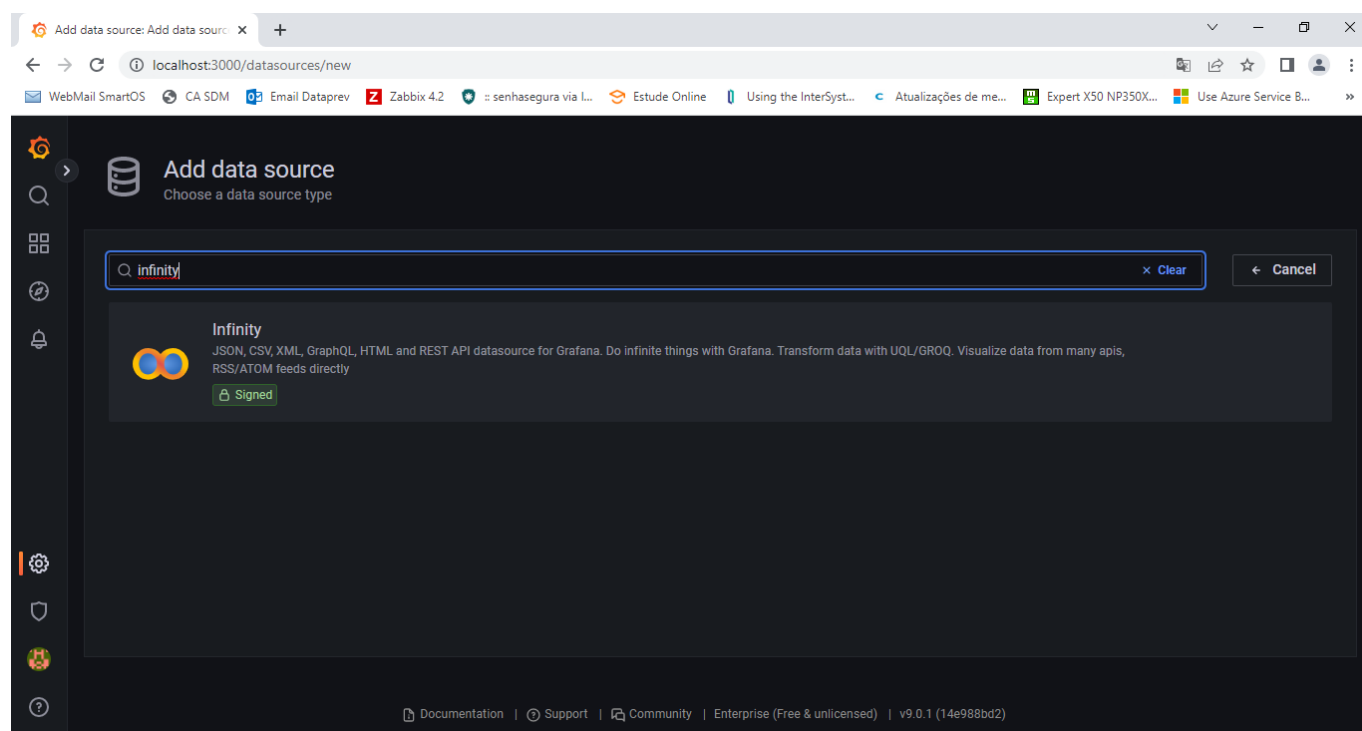
```
{
  "respostas": [
    {
      "dateEvent": "2022-06-24",
      "countryCode": "AF",
      "countryName": "Afghanistan",
      "region": "EMRO",
      "newCases": "0",
      "cumulativeCases": "181934",
      "newDeaths": "0",
      "cumulativeDeaths": "7715",
      "dateEvent": "2022-06-24",
      "countryCode": "AL",
      "countryName": "Albania",
      "region": "EURO",
      "newCases": "271",
      "cumulativeCases": "278211",
      "newDeaths": "0",
      "cumulativeDeaths": "3497",
      "dateEvent": "2022-06-24",
      "countryCode": "DZ",
      "countryName": "Algeria",
      "region": "AFRO",
      "newCases": "9",
      "cumulativeCases": "266015",
      "newDeaths": "0",
      "cumulativeDeaths": "6875",
      "dateEvent": "2022-06-24",
      "countryCode": "AS",
      "countryName": "American Samoa",
      "region": "WPRO",
      "newCases": "72",
      "cumulativeCases": "6414",
      "newDeaths": "0",
      "cumulativeDeaths": "31",
      "dateEvent": "2022-06-24",
      "countryCode": "AD",
      "countryName": "Andorra",
      "region": "EURO",
      "newCases": "325",
      "cumulativeCases": "43774",
      "newDeaths": "0",
      "cumulativeDeaths": "153",
      "dateEvent": "2022-06-24",
      "countryCode": "AO",
      "countryName": "Angola",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "99761",
      "newDeaths": "0",
      "cumulativeDeaths": "1900",
      "dateEvent": "2022-06-24",
      "countryCode": "AI",
      "countryName": "Anguilla",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "3411",
      "newDeaths": "0",
      "cumulativeDeaths": "9",
      "dateEvent": "2022-06-24",
      "countryCode": "AG",
      "countryName": "Antigua and Barbuda",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "8590",
      "newDeaths": "0",
      "cumulativeDeaths": "141",
      "dateEvent": "2022-06-24",
      "countryCode": "AR",
      "countryName": "Argentina",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "9341492",
      "newDeaths": "0",
      "cumulativeDeaths": "129016",
      "dateEvent": "2022-06-24",
      "countryCode": "AM",
      "countryName": "Armenia",
      "region": "EURO",
      "newCases": "0",
      "cumulativeCases": "423104",
      "newDeaths": "0",
      "cumulativeDeaths": "8625",
      "dateEvent": "2022-06-24",
      "countryCode": "AW",
      "countryName": "Aruba",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "40179",
      "newDeaths": "0",
      "cumulativeDeaths": "221",
      "dateEvent": "2022-06-24",
      "countryCode": "AU",
      "countryName": "Australia",
      "region": "WPRO",
      "newCases": "31877",
      "cumulativeCases": "7915074",
      "newDeaths": "51",
      "cumulativeDeaths": "9558",
      "dateEvent": "2022-06-24",
      "countryCode": "AT",
      "countryName": "Austria",
      "region": "EURO",
      "newCases": "9303",
      "cumulativeCases": "4400566",
      "newDeaths": "1",
      "cumulativeDeaths": "20015",
      "dateEvent": "2022-06-24",
      "countryCode": "AZ",
      "countryName": "Azerbaijan",
      "region": "EURO",
      "newCases": "26",
      "cumulativeCases": "793089",
      "newDeaths": "0",
      "cumulativeDeaths": "9716",
      "dateEvent": "2022-06-24",
      "countryCode": "BS",
      "countryName": "Bahamas",
      "region": "AMRO",
      "newCases": "52",
      "cumulativeCases": "35755",
      "newDeaths": "0",
      "cumulativeDeaths": "816",
      "dateEvent": "2022-06-24",
      "countryCode": "BH",
      "countryName": "Bahrain",
      "region": "EMRO",
      "newCases": "0",
      "cumulativeCases": "611631",
      "newDeaths": "0",
      "cumulativeDeaths": "1492",
      "dateEvent": "2022-06-24",
      "countryCode": "BD",
      "countryName": "Bangladesh",
      "region": "SEARO",
      "newCases": "1685",
      "cumulativeCases": "1962213",
      "newDeaths": "0",
      "cumulativeDeaths": "29135",
      "dateEvent": "2022-06-24",
      "countryCode": "BB",
      "countryName": "Barbados",
      "region": "AMRO",
      "newCases": "147",
      "cumulativeCases": "83242",
      "newDeaths": "0",
      "cumulativeDeaths": "472",
      "dateEvent": "2022-06-24",
      "countryCode": "BY",
      "countryName": "Belarus",
      "region": "EURO",
      "newCases": "0",
      "cumulativeCases": "982867",
      "newDeaths": "0",
      "cumulativeDeaths": "6978",
      "dateEvent": "2022-06-24",
      "countryCode": "BE",
      "countryName": "Belgium",
      "region": "EURO",
      "newCases": "12",
      "cumulativeCases": "4211511",
      "newDeaths": "2",
      "cumulativeDeaths": "31883",
      "dateEvent": "2022-06-24",
      "countryCode": "BZ",
      "countryName": "Belize",
      "region": "AMRO",
      "newCases": "202",
      "cumulativeCases": "62667",
      "newDeaths": "0",
      "cumulativeDeaths": "679",
      "dateEvent": "2022-06-24",
      "countryCode": "BJ",
      "countryName": "Benin",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "27122",
      "newDeaths": "0",
      "cumulativeDeaths": "163",
      "dateEvent": "2022-06-24",
      "countryCode": "BM",
      "countryName": "Bermuda",
      "region": "AMRO",
      "newCases": "195",
      "cumulativeCases": "15957",
      "newDeaths": "0",
      "cumulativeDeaths": "138",
      "dateEvent": "2022-06-24",
      "countryCode": "BT",
      "countryName": "Bhutan",
      "region": "SEARO",
      "newCases": "0",
      "cumulativeCases": "59674",
      "newDeaths": "0",
      "cumulativeDeaths": "21",
      "dateEvent": "2022-06-24",
      "countryCode": "BO",
      "countryName": "Bolivia (Plurinational State of)",
      "region": "AMRO",
      "newCases": "906",
      "cumulativeCases": "917537",
      "newDeaths": "0",
      "cumulativeDeaths": "21952",
      "dateEvent": "2022-06-24",
      "countryCode": "BA",
      "countryName": "Bosnia and Herzegovina",
      "region": "EURO",
      "newCases": "42",
      "cumulativeCases": "378370",
      "newDeaths": "1",
      "cumulativeDeaths": "15799",
      "dateEvent": "2022-06-24",
      "countryCode": "BW",
      "countryName": "Botswana",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "313493",
      "newDeaths": "0",
      "cumulativeDeaths": "2705",
      "dateEvent": "2022-06-24",
      "countryCode": "BR",
      "countryName": "Brazil",
      "region": "AMRO",
      "newCases": "71906",
      "cumulativeCases": "31890733",
      "newDeaths": "140",
      "cumulativeDeaths": "669530",
      "dateEvent": "2022-06-24",
      "countryCode": "VG",
      "countryName": "British Virgin Islands",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "6941",
      "newDeaths": "0",
      "cumulativeDeaths": "63",
      "dateEvent": "2022-06-24",
      "countryCode": "BN",
      "countryName": "Brunei Darussalam",
      "region": "WPRO",
      "newCases": "1064",
      "cumulativeCases": "159591",
      "newDeaths": "0",
      "cumulativeDeaths": "166",
      "dateEvent": "2022-06-24",
      "countryCode": "BG",
      "countryName": "Bulgaria",
      "region": "EURO",
      "newCases": "320",
      "cumulativeCases": "1169474",
      "newDeaths": "3",
      "cumulativeDeaths": "37238",
      "dateEvent": "2022-06-24",
      "countryCode": "BF",
      "countryName": "Burkina Faso",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "21044",
      "newDeaths": "0",
      "cumulativeDeaths": "387",
      "dateEvent": "2022-06-24",
      "countryCode": "BI",
      "countryName": "Burundi",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "42542",
      "newDeaths": "0",
      "cumulativeDeaths": "15",
      "dateEvent": "2022-06-24",
      "countryCode": "CV",
      "countryName": "Cabo Verde",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "58271",
      "newDeaths": "0",
      "cumulativeDeaths": "482",
      "dateEvent": "2022-06-24",
      "countryCode": "KH",
      "countryName": "Cambodia",
      "region": "WPRO",
      "newCases": "0",
      "cumulativeCases": "136262",
      "newDeaths": "0",
      "cumulativeDeaths": "3056",
      "dateEvent": "2022-06-24",
      "countryCode": "CM",
      "countryName": "Cameroon",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "120902",
      "newDeaths": "0",
      "cumulativeDeaths": "1930",
      "dateEvent": "2022-06-24",
      "countryCode": "CA",
      "countryName": "Canada",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "3897879",
      "newDeaths": "0",
      "cumulativeDeaths": "41363",
      "dateEvent": "2022-06-24",
      "countryCode": "KY",
      "countryName": "Cayman Islands",
      "region": "AMRO",
      "newCases": "0",
      "cumulativeCases": "26797",
      "newDeaths": "0",
      "cumulativeDeaths": "28",
      "dateEvent": "2022-06-24",
      "countryCode": "CF",
      "countryName": "Central African Republic",
      "region": "AFRO",
      "newCases": "0",
      "cumulativeCases": "14371",
      "newDeaths": "0",
      "cumulativeDeaths": "113",
      "dateEvent": "2022-06-24"
    }
  ]
}
```

Agora podemos usar o Grafana para consumir estas informações.

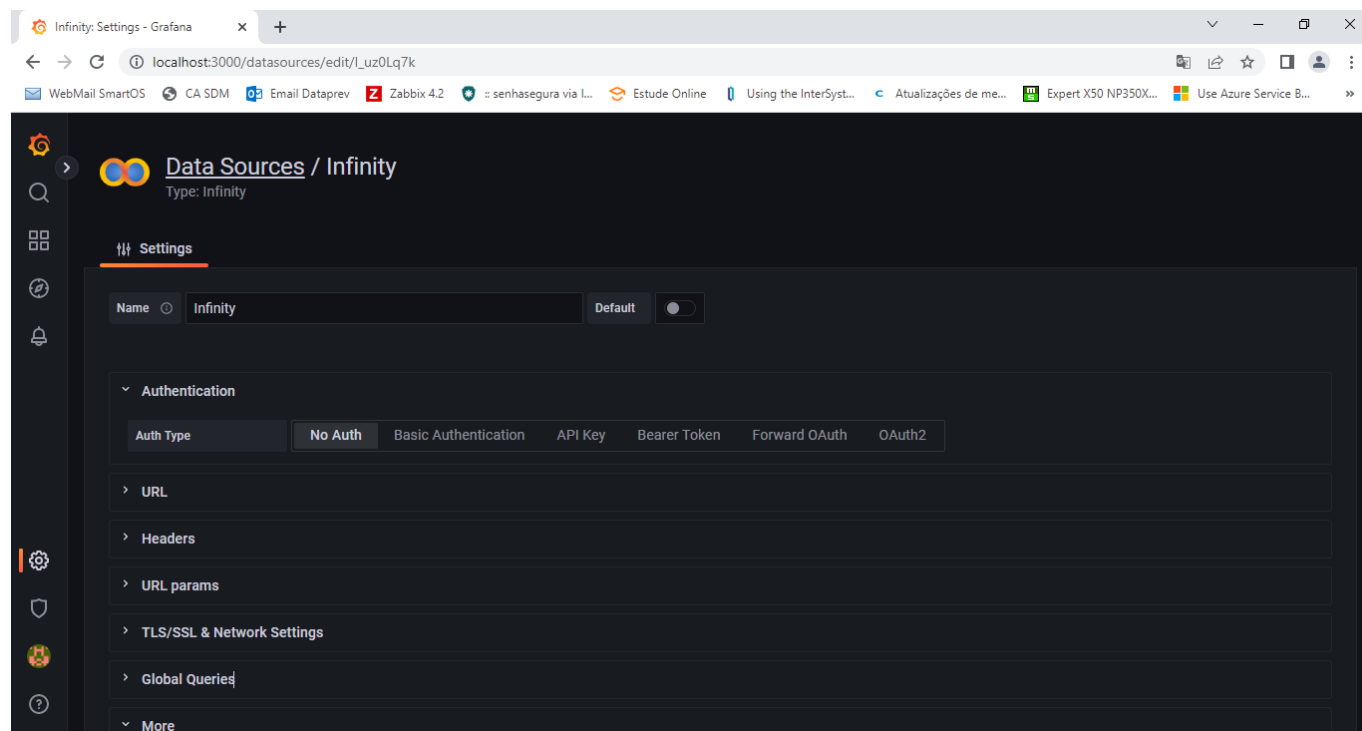
No Grafana, entre em Configuração->Data sources:



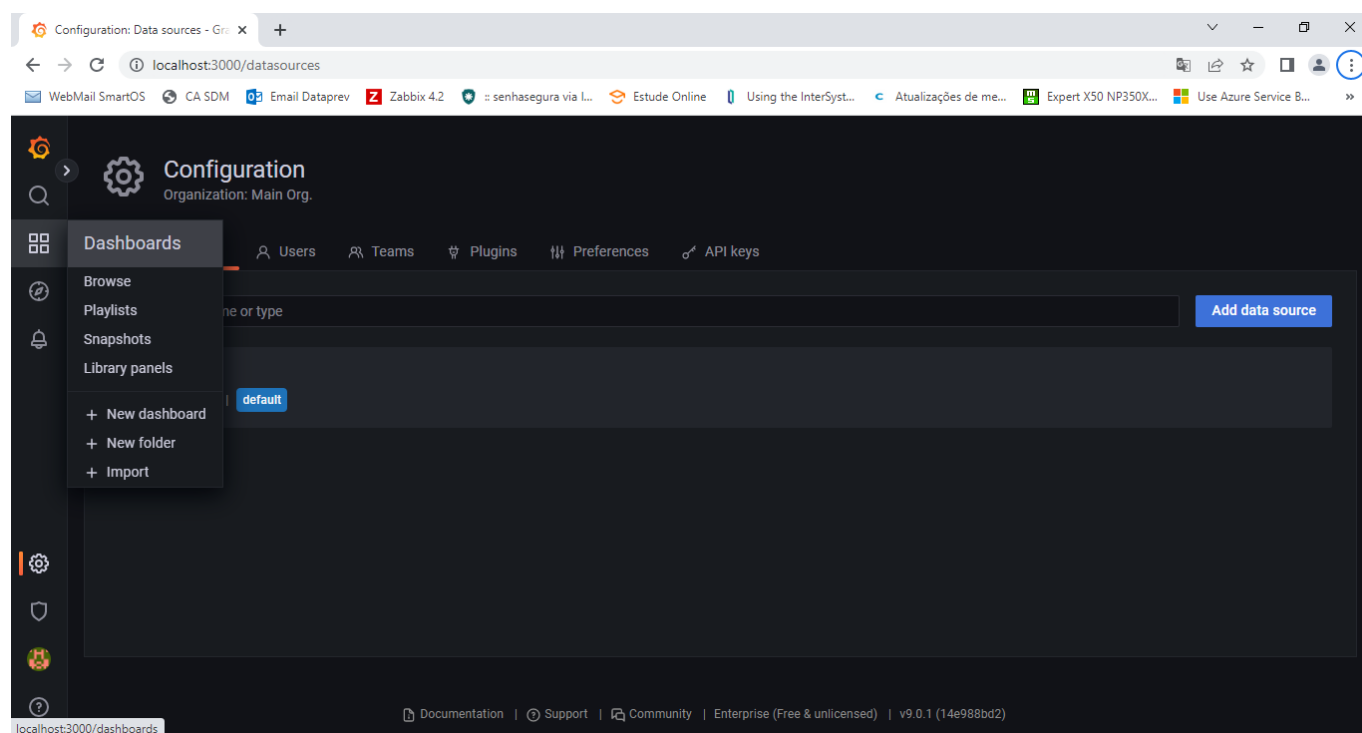
Crie um novo DataSource do tipo Infinity:



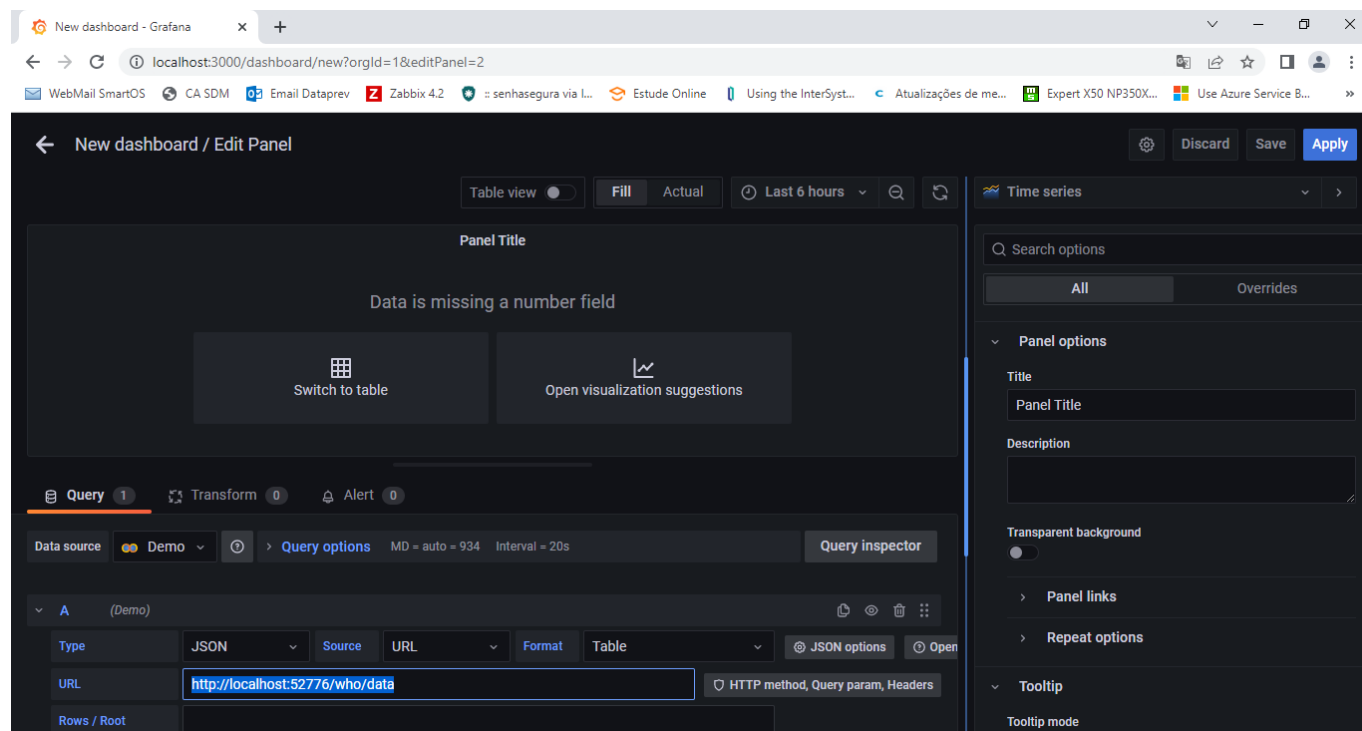
Preencha os dados de acesso a nossa API REST:



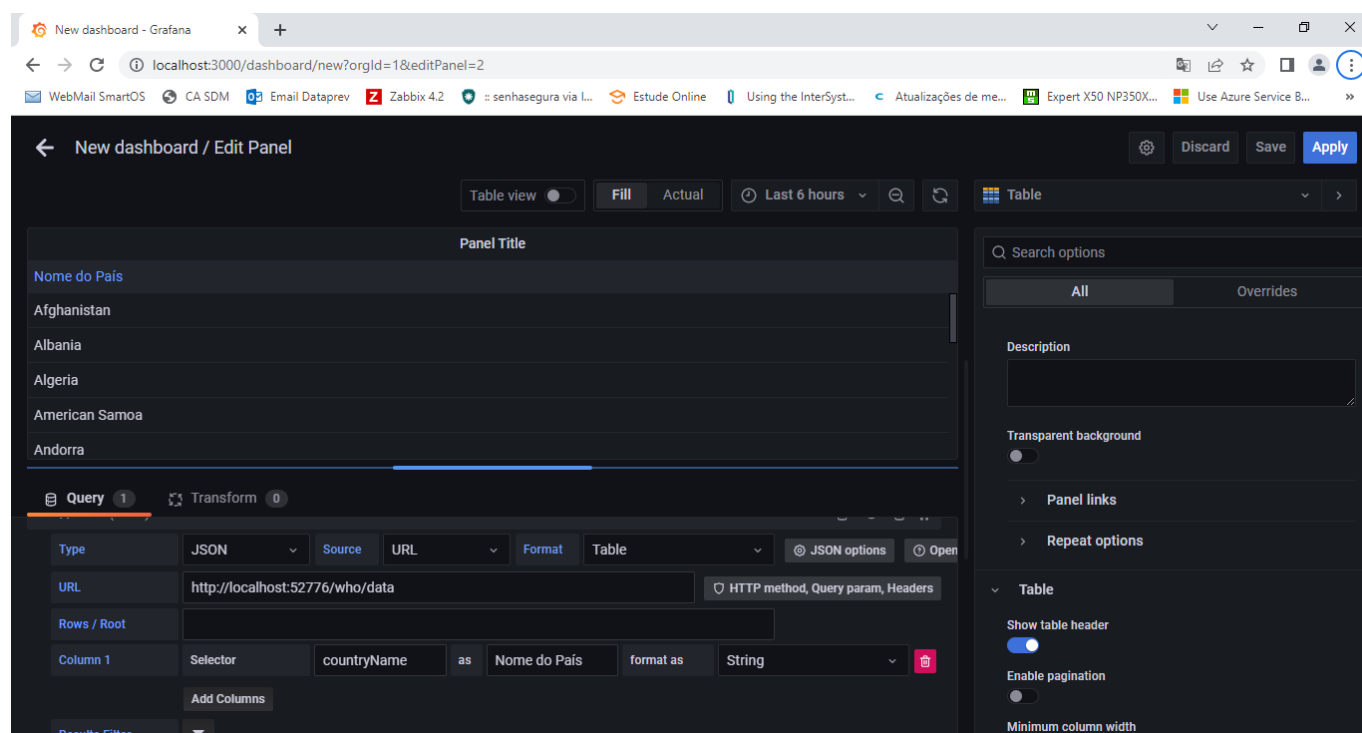
Vá para Dashboards:



Agora clique em New Dashboard->Add a new panel. Edite a URL que aparecerá no Datasource para apontar para o caminho do nosso serviço REST:



Vá adicionando as colunas que deseja visualizar:



Podemos ir incluindo novas colunas:

The screenshot shows the Grafana dashboard editor interface. The main panel is titled 'New dashboard / Edit Panel' and displays a table with the following data:

Nome do País	Mortes
Afghanistan	7715
Albania	3497
Algeria	6875
American Samoa	31
Andorra	153

The table is configured with two columns: 'Nome do País' (Selector, countryName, format as String) and 'Mortes' (Selector, cumulativeDeaths, format as Number). The data source is a JSON URL: `http://localhost:52776/who/data`. The right sidebar shows the 'Overrides' section with options for 'Table' (Show table header, Enable pagination, Minimum column width).

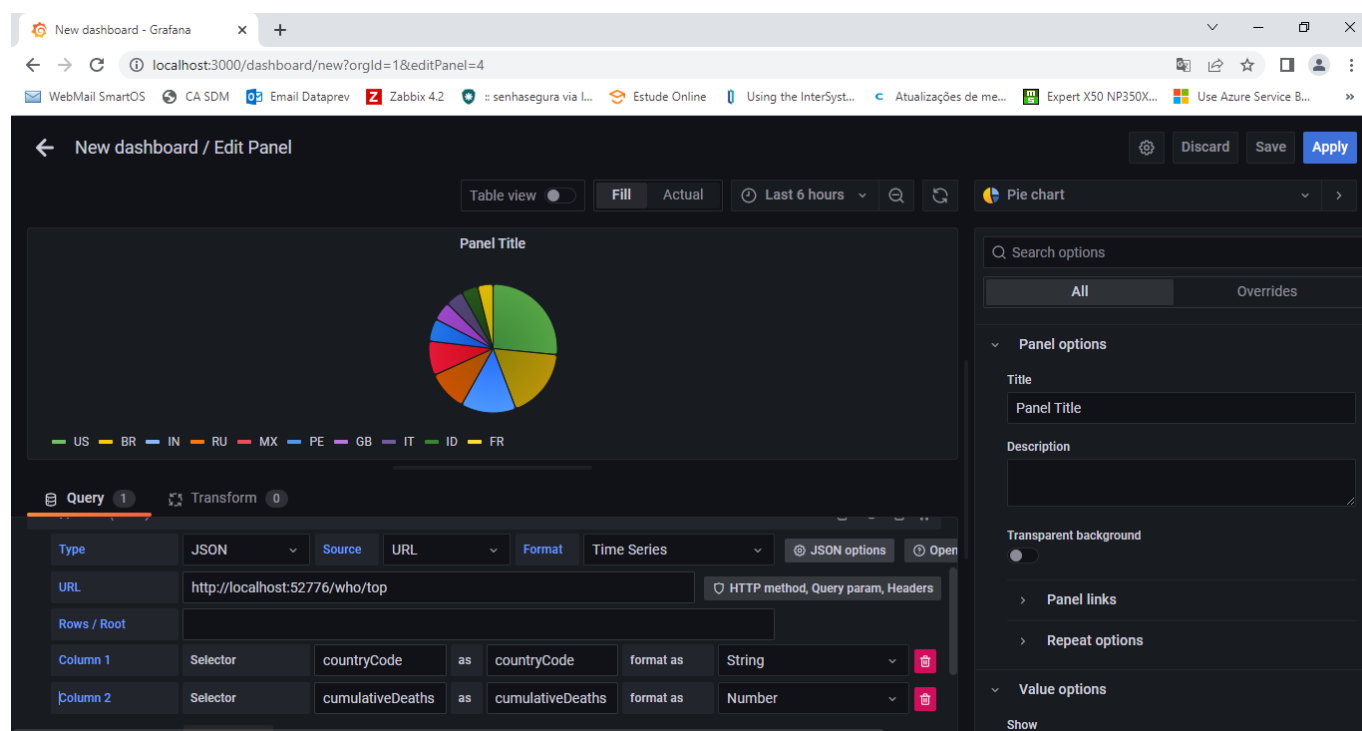
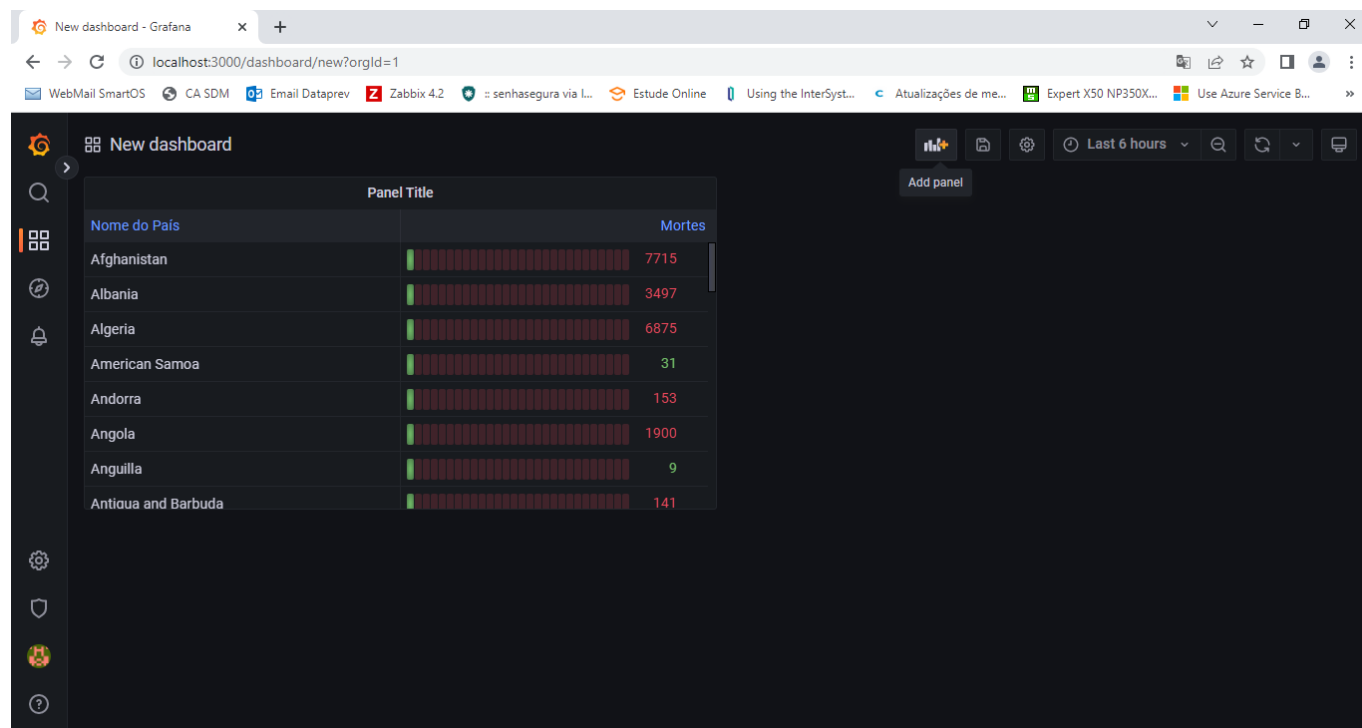
E podemos dar uma visualização para os dados (Opção Overrides):

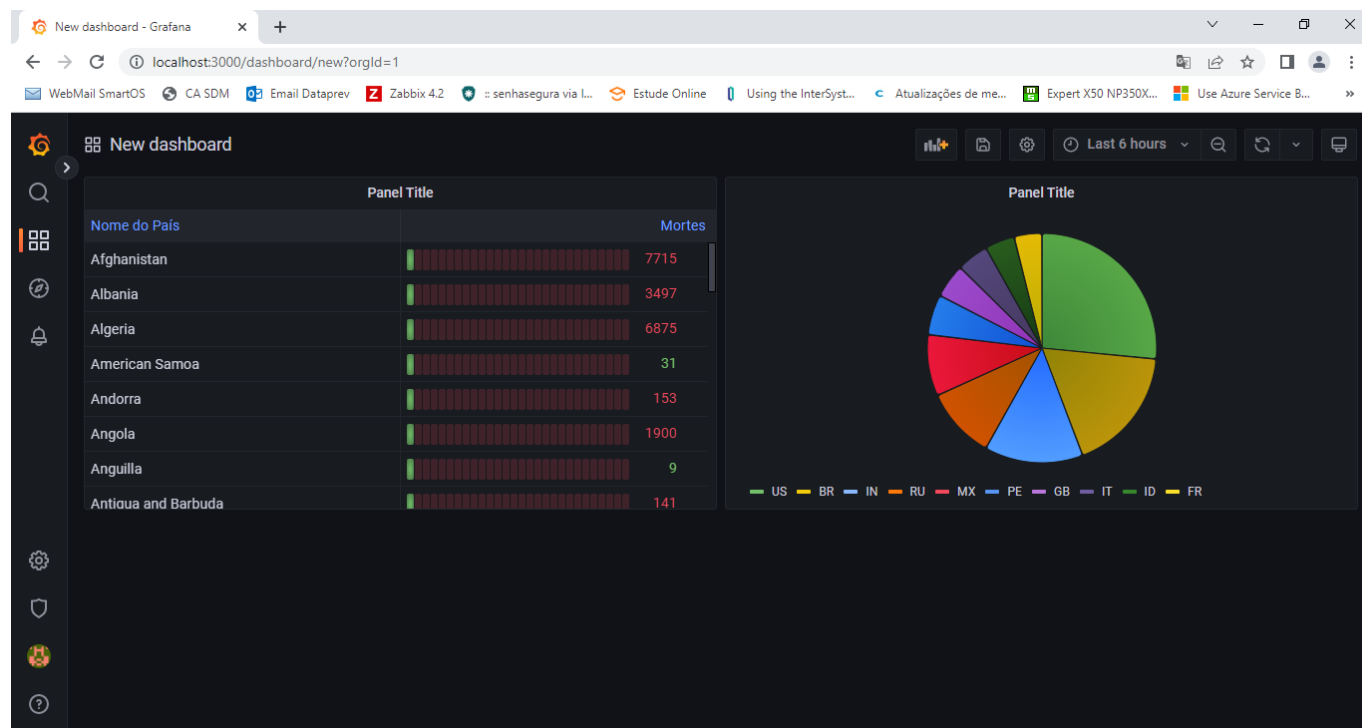
The screenshot shows the same Grafana dashboard editor interface, but with the 'Overrides' section expanded. The 'Override 1' section is configured with the following settings:

- Fields with name: Mortes
- Cell display mode: LCD gauge

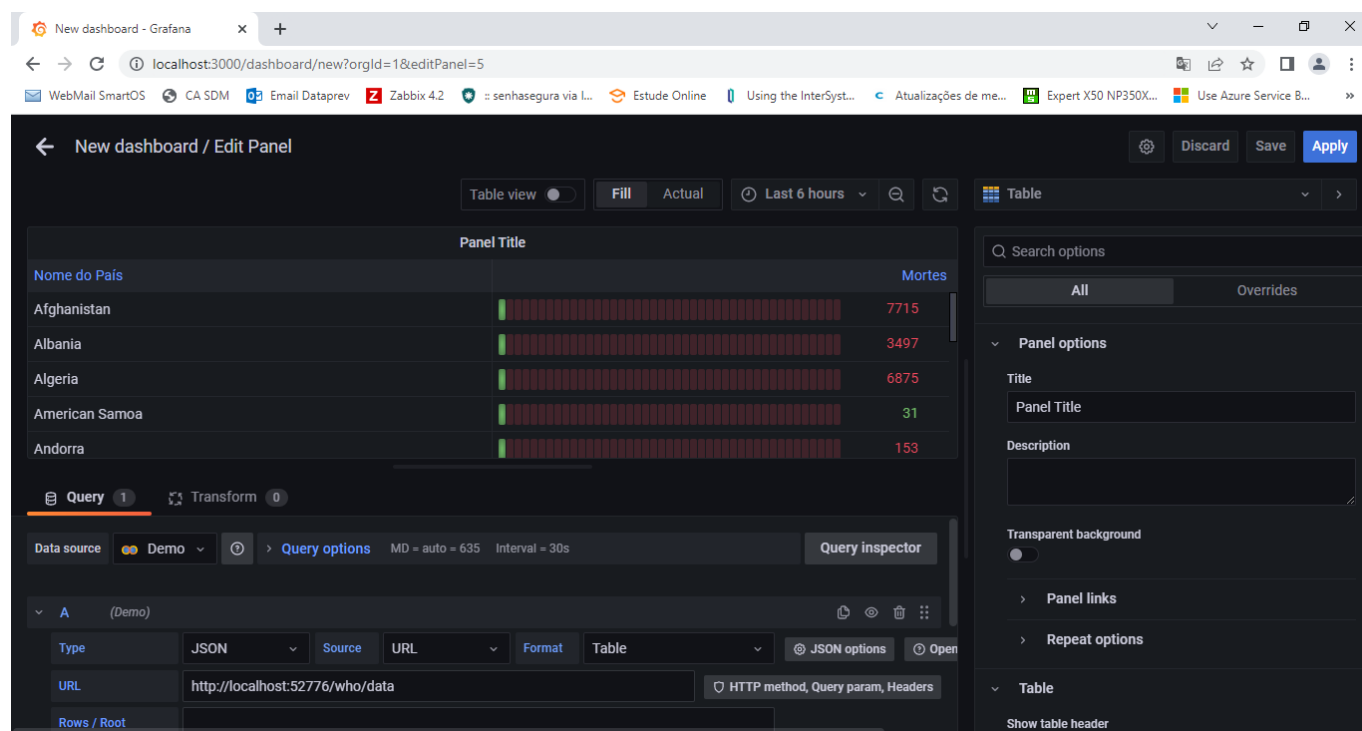
The table data remains the same, but the 'Mortes' column is now displayed as an LCD gauge for each row.

Podemos incluir outros painéis:

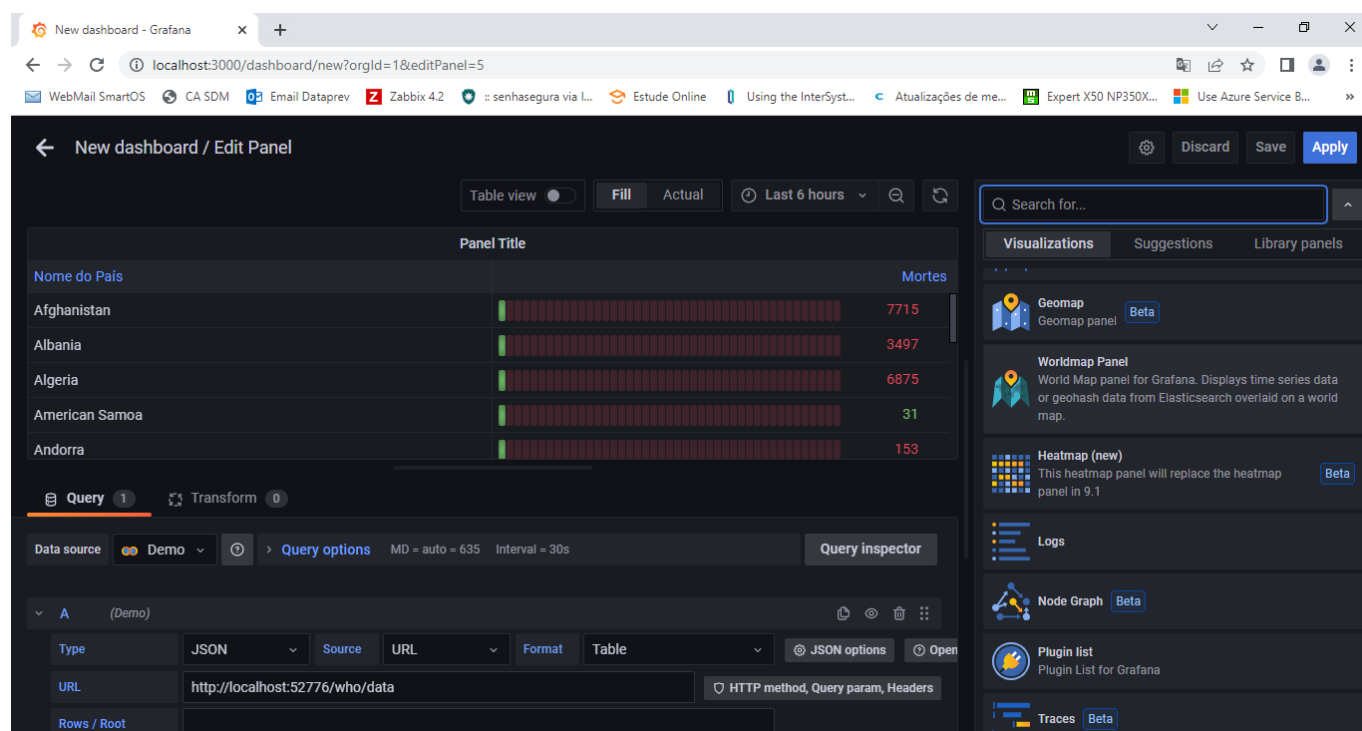




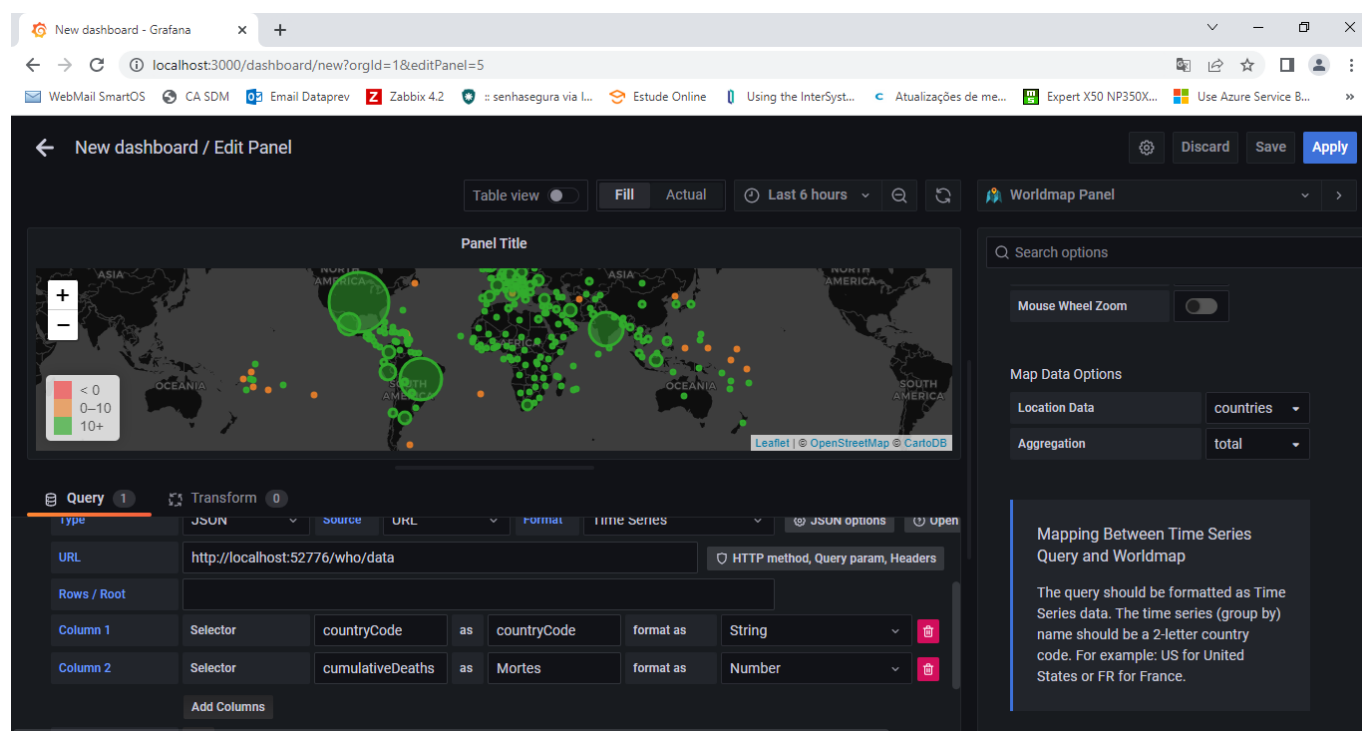
Podemos usar um painel existente como base para construção de outro. Clique no Panel Title->More->Duplicate. Para ajustar, clique em Panel Title->Edit:



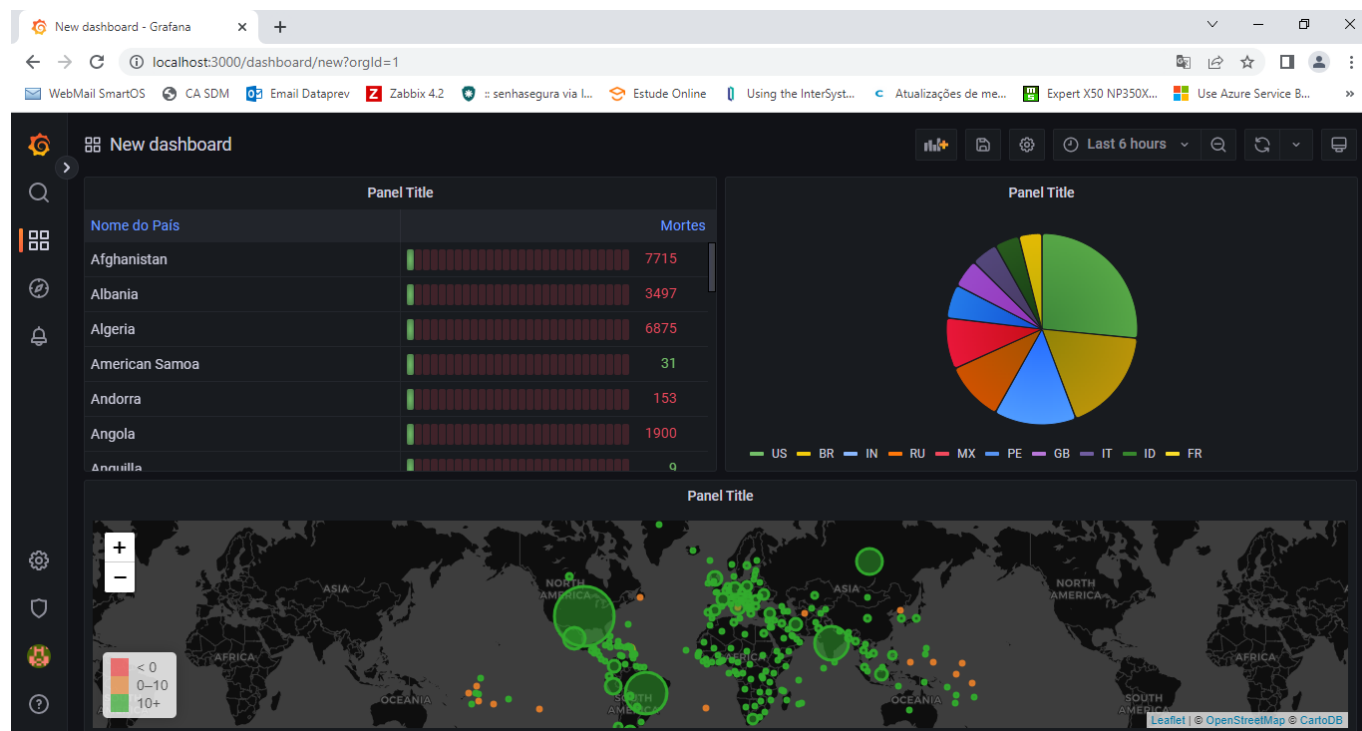
Troque o tipo de visualização para World Map:



Mude a coluna de visualização para countryCode e o Format para Time Series:



Pronto. Temos nosso dashboard montado, apresentando dados retornados do Iris via REST:



Podemos fazer mais ajustes, como trocar o título dos painéis, fazer customizações, etc. Agora é refinar o dashboard.

A grande vantagem aqui é que qualquer origem de dados do Iris pode virar um dashboard. Podemos pegar uma aplicação legada, construir uma classe REST que vá disponibilizar as informações e publicar um dashboard com mínimo esforço.

Utilizando o barramento de integração, o Iris pode se tornar o local para centralizar a publicação de diversos dashboards que conterão dados coletados de diversos sistemas.

Podemos ainda ter uma instância de Iris que seja um mirror de outra, de Produção, criada apenas para a geração de reports.

[#InterSystems IRIS](#)

URL de origem: <https://pt.community.intersystems.com/post/usando-o-grafana-com-o-iris-atrav%C3%A9s-do-infinity-datasource>