

# Web Development with Ext JS for Delphi Developers

Fernando Rizzato  
Embarcadero Technologies  
[fernando.rizzato@embarcadero.com](mailto:fernando.rizzato@embarcadero.com)

# Agenda

- What is the Sencha Ext JS?
- How to obtain and install the framework
- Getting started with the Ext JS library
- Overview of Embarcadero RAD Server
- Your first RAD Server project
- Integrating Ext JS with RAD Server

# What is the Sencha Ext JS?

- Ext JS stands for Extended JavaScript - a popular JavaScript framework that provides a rich interface for building web applications with cross-browser support
- Ext JS contains a collection of customizable visual controls like grids, pivot grids, forms, charts, trees, etc.
  - 115+ high-performance, pre-tested and integrated UI components
- Ext JS features a flexible layout manager that helps organizing the display of data and content across multiple browsers, devices, and screen sizes

# What is the Sencha Ext JS?

- Ext JS also brings a advanced data packet to dissociate the data layer from the interface. This package supports client-side collections with features like sorting and filtering.
- Ext JS projects can be based on the MVC (model-view-controller) or MVVM architecture (model-view-viewmodel)
  - <https://www.sencha.com/blog/ext-js-5-mvc-mvvm-and-more/>

# Versions

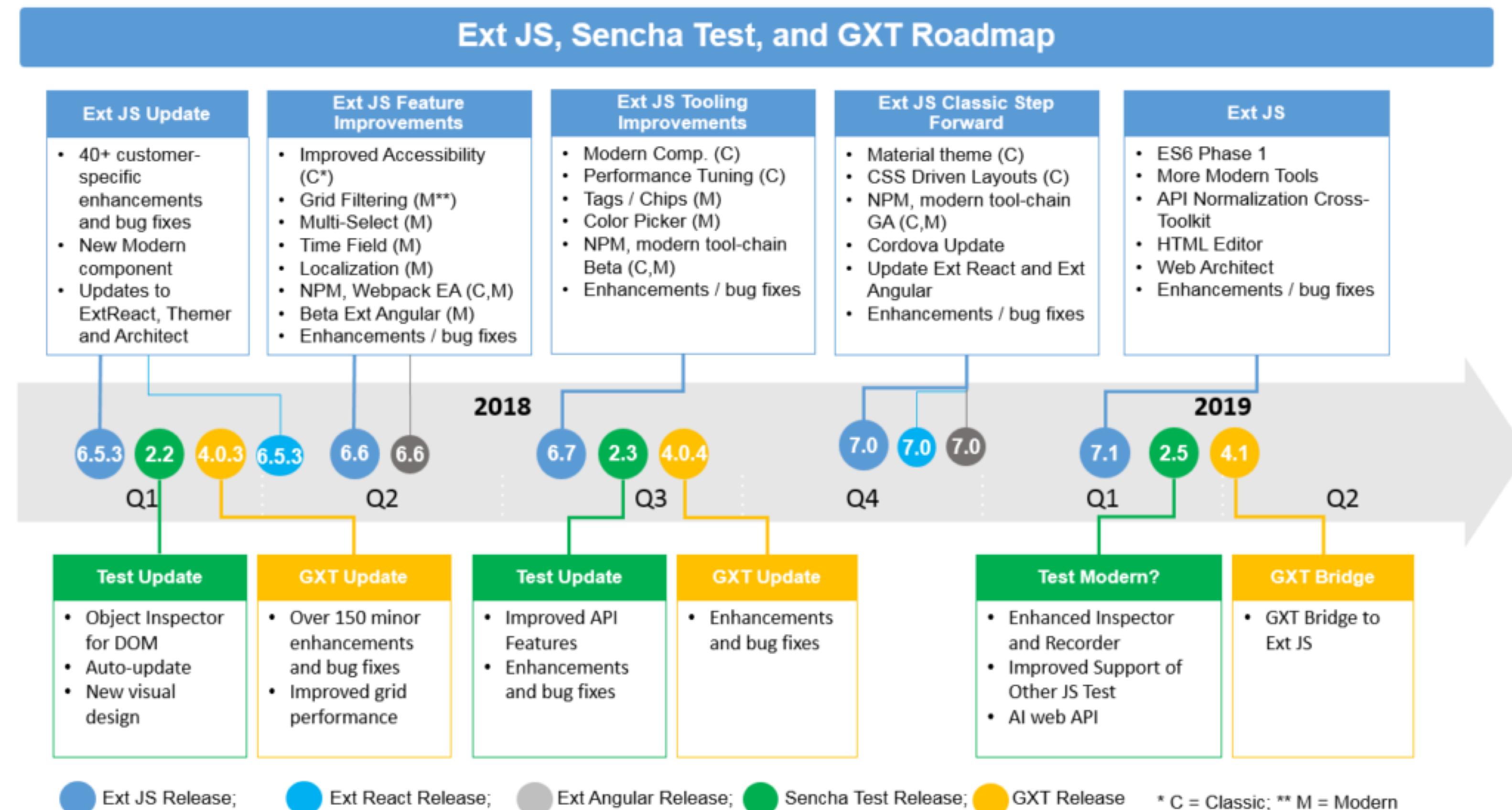
- **Ext JS 1.1** - The first version of Ext JS was developed by Jack Slocum in 2006. It was a set of utility classes, which is an extension of YUI. He named the library as YUI-ext
- **Ext JS 2.0** - Released in 2007. This version had a new API for web desktop application with limited features. This version doesn't have backward compatibility with previous version of Ext JS
- **Ext JS 3.0** - Released in 2009. This version added new features as chart and list view but at the cost of speed. It had backward compatibility with version 2.0

# Versions

- Ext JS 4.0 - After the release of Ext JS 3, the developers of Ext JS had the major challenge of ramping up the speed. Ext JS version 4.0 was released in 2011. It had the complete revised structure, which was followed by MVC architecture and a speedy application.
- Ext JS 5.0 - Released in 2014. The major change in this release was to change the MVC architecture to MVVM architecture. It includes the ability to build desktop apps on touch-enabled devices, two-way data binding, responsive layouts, and many more features.
- Ext JS 6.0 – Released in 2015. This version merges the Ext JS (for desktop application) and Sencha Touch (for mobile application) framework.

# Roadmap

- Latest version: Ext JS 6.5.3 (Jan/2018)
- <https://www.sencha.com/blog/sencha-product-roadmap-update/>



# How to obtain and install the framework

- Sencha Ext JS is made available under Commercial License or the GNU General Public License version 3 (GPLv3). The Commercial License requires the payment of a fee for each developer
- If you choose not to pay a fee and use the GPLv3 license, you are required to release the source code of any program that you distribute that uses Ext JS
- A 30 days trial is available for Ext JS (the full package)
  - <https://www.sencha.com/products/extjs/evaluate/>
  - <https://www.sencha.com/legal/sencha-software-license-agreement/>
- Open source (GPLv3) edition
  - <https://www.sencha.com/legal/GPL/>

# Getting started with the Ext JS library

Demos

# Overview of Embarcadero RAD Server

- RAD Server is a set of solutions for creating and deploying service-based applications (Service Oriented Architecture, Micro Services Architecture, etc.)
- RAD Server enables developers to quickly build new application back-ends or migrate existing Delphi or C++ client/server business logic to a modern services based architecture that is open, stateless, secure and scalable
- RAD Server can be distributed on a private Windows or Linux server, or cloud on Amazon, Rackspace, Azure, etc.

# Overview of Embarcadero RAD Server



## **REST End Point Publishing**

An all-in-one turnkey foundation for your application back end APIs and Services



## **Integration Middleware**

Integrations provide out of the box connectivity with external servers, applications and services.



## **Application Services**

A collection of ready to use key built-in services to power your application.

Includes core functions such as user directory services and user management, push notifications, user location tracking, and built-in data storage.

# RAD Server Architecture

System Database



Pluggable EMS  
packages (bpl)

EMS Server

- Version
- API
- Users
- Groups
- Installations
- Push
- Edgemodules

- Resource A1
- Resource A2

- Resource B1

- ...

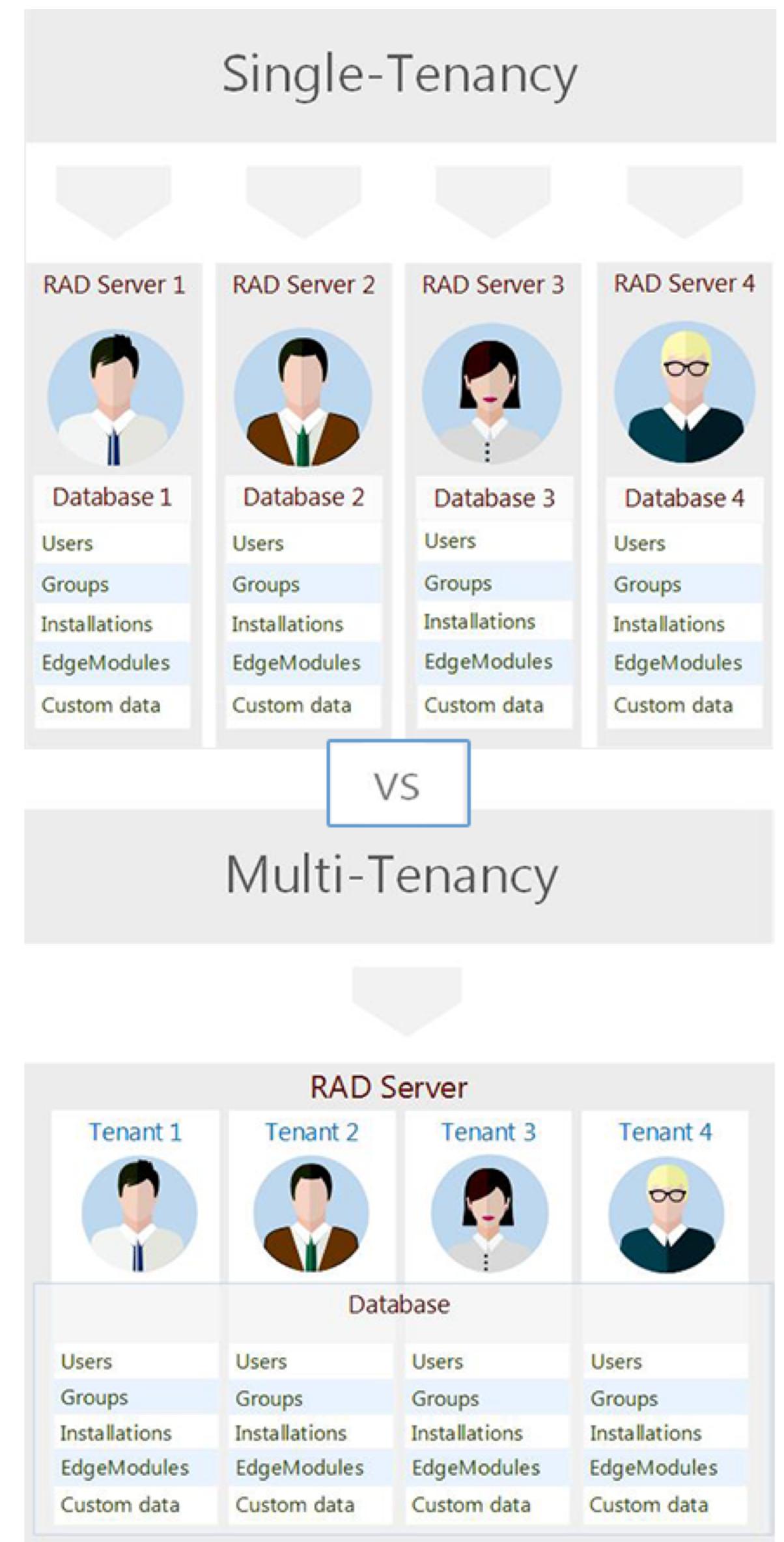
HTTP Clients



# RAD Server Enhancements

## Multi-Tenancy Support

- A single RAD Server instance with a single RAD Server database connection can now support multiple isolated tenants
- Each tenant has a unique set of RAD Server resources including Users, Groups, Installations, Edge Modules, and other data
- Tenant Administration: Create new tenants, edit existing ones, add, edit or delete tenants

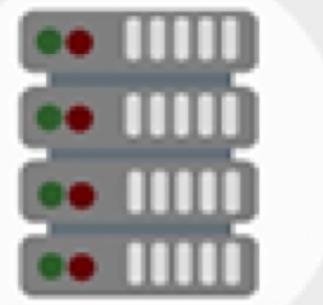
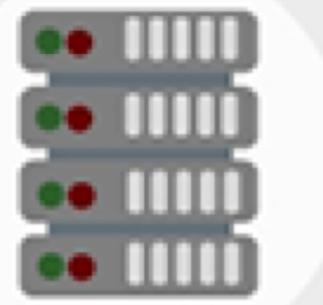
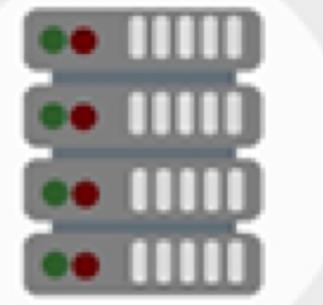
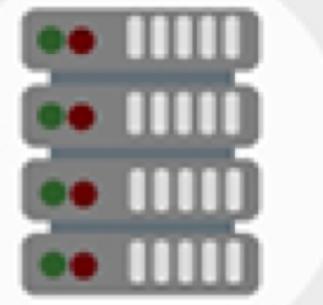


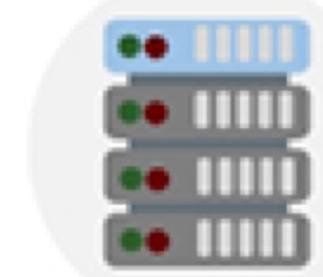
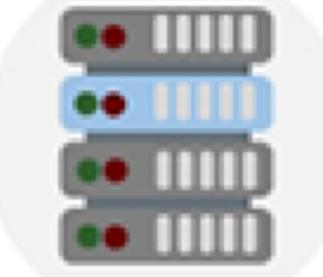
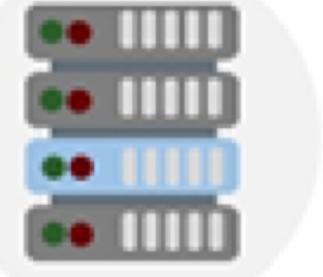
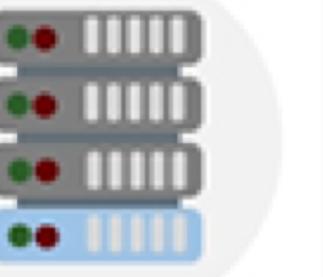
# RAD Server

Single-Tenancy

vs

Multi-Tenancy

RAD Server 1	RAD Server 2	RAD Server 3	RAD Server 4
			
Database 1	Database 2	Database 3	Database 4
Users	Users	Users	Users
Groups	Groups	Groups	Groups
Installations	Installations	Installations	Installations
EdgeModules	EdgeModules	EdgeModules	EdgeModules
Custom data	Custom data	Custom data	Custom data

RAD Server			
Tenant 1	Tenant 2	Tenant 3	Tenant 4
			
Database			
Users	Users	Users	Users
Groups	Groups	Groups	Groups
Installations	Installations	Installations	Installations
EdgeModules	EdgeModules	EdgeModules	EdgeModules
Custom data	Custom data	Custom data	Custom data

# How to obtain and install RAD Server

- RAD Server requires the Enterprise Edition of RAD Studio, Delphi or C++ Builder
- A 5-user development and evaluation license is part of your Delphi/C++ standard installation
- A RAD Server distribution license is required in order to deploy your RAD Server solution
- Since 10.2.2 we have included a RAD Server Single Site deployment license in the Enterprise+ editions for Delphi, C++ Builder or RAD Studio

# Getting started with RAD Server

Demos

# Integrating Ext JS with RAD Server

- Ext Proxies
  - AJAX
  - REST
- Using CMD to create a new Ext JS application and connecting to a RAD Server backend
- Using Architect to create Ext JS applications in the RAD way
  - A CRUD with RAD Server and Ext JS
  - Ext JS Grid Editing with a RAD Server backend

# Integrating Ext JS with RAD Server

Demos

# More Information (Sencha)

- <https://www.sencha.com/products/extjs/#overview>
- [http://docs.sencha.com/extjs/6.5.3/guides/getting\\_started/getting\\_started.html](http://docs.sencha.com/extjs/6.5.3/guides/getting_started/getting_started.html)
- [https://docs.sencha.com/cmd/guides/extjs/cmd\\_app.html](https://docs.sencha.com/cmd/guides/extjs/cmd_app.html)
- <http://examples.sencha.com/extjs/6.0.0/examples/>
- <https://fiddle.sencha.com/#view/editor>
- [https://www.sencha.com/blog/ext\\_js-from-scratch-part-1/](https://www.sencha.com/blog/ext-js-from-scratch-part-1/)
- [https://www.sencha.com/blog/ext\\_js-from-scratch-part-2/](https://www.sencha.com/blog/ext-js-from-scratch-part-2/)
- <https://docs.sencha.com/extjs/6.5.1/modern/Ext.data.proxy.Rest.html>
- <https://spring.io/guides/gs/consuming-rest-sencha/>
- <http://www.extjs-tutorial.com>

# More Information (RAD Server)

- RAD Server e Beacon Fence no Saitobaru Museum
  - <https://www.youtube.com/watch?v=fdOt9-K8oTQ>
- RAD Server, The Perfect Back-end for your Apps
  - <https://youtu.be/HY0JRJPvjsU>
- Beyond The Beacon Fence
  - [https://youtu.be/1\\_cWhDmvxJk](https://youtu.be/1_cWhDmvxJk)
- Beacon Fencing con RAD Studio, Delphi y C++Builder
  - <https://youtu.be/bJG4UEjuMeM>
- ThingConnect Devices
  - <https://youtu.be/tQIYAlvfpPQ>

# More Information (RAD Server)

- REST Endpoint Publishing
  - <https://goo.gl/H8yM9I>
- IoT Edgeware
  - <https://goo.gl/rO2528>
- ThingConnect IoT Device Components
  - [http://docwiki.embarcadero.com/RADStudio/Tokyo/en/ThingPoints\\_Overview](http://docwiki.embarcadero.com/RADStudio/Tokyo/en/ThingPoints_Overview)
  - <http://docwiki.embarcadero.com/IoT/en/ThingConnect>
- Location Tracking
  - <http://docwiki.embarcadero.com/IoT/en/BeaconFence>
  - [http://docwiki.embarcadero.com/IoT/en/Using\\_BeaconFence](http://docwiki.embarcadero.com/IoT/en/Using_BeaconFence)
  - <https://community.embarcadero.com/blogs/entry/beaconfence-and-beacons-tips-from-our-development-team>



# Thank you!

Questions and Answers

