



# What's New In GridGain Web Console 2019.10

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# Agenda



- GridGain Overview
- Monitoring GridGain
- Web Console Basics
- Web Console Feature Overview
- Web Console distributions and Setup
- Demo



Photo by [Katie Moum](#)

# Ignite & GridGain In-Memory Computing Platform



Monitoring & Management

Security & Auditing

Segmentation Protection

Data Center Replication

Rolling Upgrades

Connectors (Kafka, GoldenGate, Hadoop)

Application Layer



Web-Scale Apps



IoT



Mobile Apps



Social Media

Machine and Deep Learning

Key-Value

SQL

Transactions

Messaging

Streaming

Events

Compute Grid

Service Grid

In-Memory Data Store

Data Layer



RDBMS



GridGain



NoSQL



Hadoop

Full, Incremental, Continuous Backups

Network Backups

Point-in-Time Recovery

Heterogeneous Recovery

# Monitoring & Managing GridGain & Ignite Clusters




- Simplify Cluster Configuration
- Load and Query Data
- Monitor Performance Metrics
- Perform Admin Operations
- Define Alerts & Triggers
- Access & Analyze Logs and Thread Data
- Facilitate Backup & Recovery



# GridGain Web Console



**GridGain**  
WEB CONSOLE

Configuration

Queries

Notebooks

Queries history

Running queries

**Monitoring dashboard**

Baseline topology

Rolling upgrade

Data replication


GridGain Web Console (2019.10.00)

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Help ▾


Greg Stachnick ▾

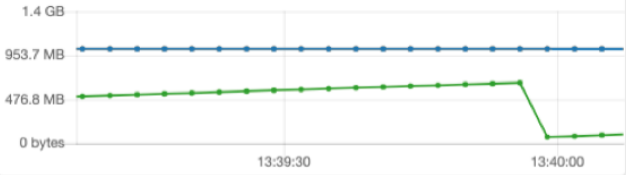
Dashboard **Demo cluster**


Cache group: No cache group 3 sec ▾

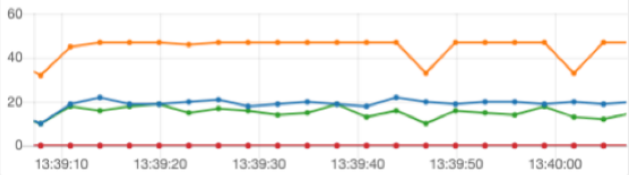
Average CPU and Heap Usage  Nodes: All Range: 1 min




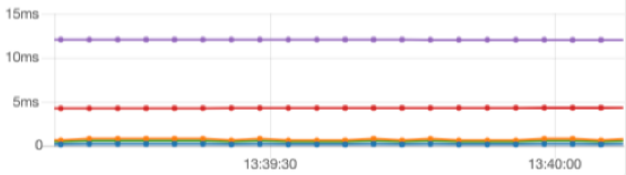
Heap Sizes  Nodes: All Range: 1 min




Cache Throughput Metrics  Caches: All Range: 1 min



Cache Latency Metrics  Caches: All Range: 1 min



Nodes 

Actions ▾

<input type="checkbox"/>	Node ID8	Filter by node ID...	Consistent ID	In baseline	Mode	Node IP	Version
<input type="checkbox"/>	0AE6C12C		demo-server-0	Yes	SERVER	192.168.75.140	8.7.5
<input type="checkbox"/>	6B51F75A		demo-server-1	Yes	SERVER	192.168.75.140	8.7.5
<input type="checkbox"/>	11EC9173		demo-server-2	Yes	SERVER	192.168.75.140	8.7.5
<input type="checkbox"/>	D766AF73		demo-server-3	Yes	SERVER	192.168.75.140	8.7.5

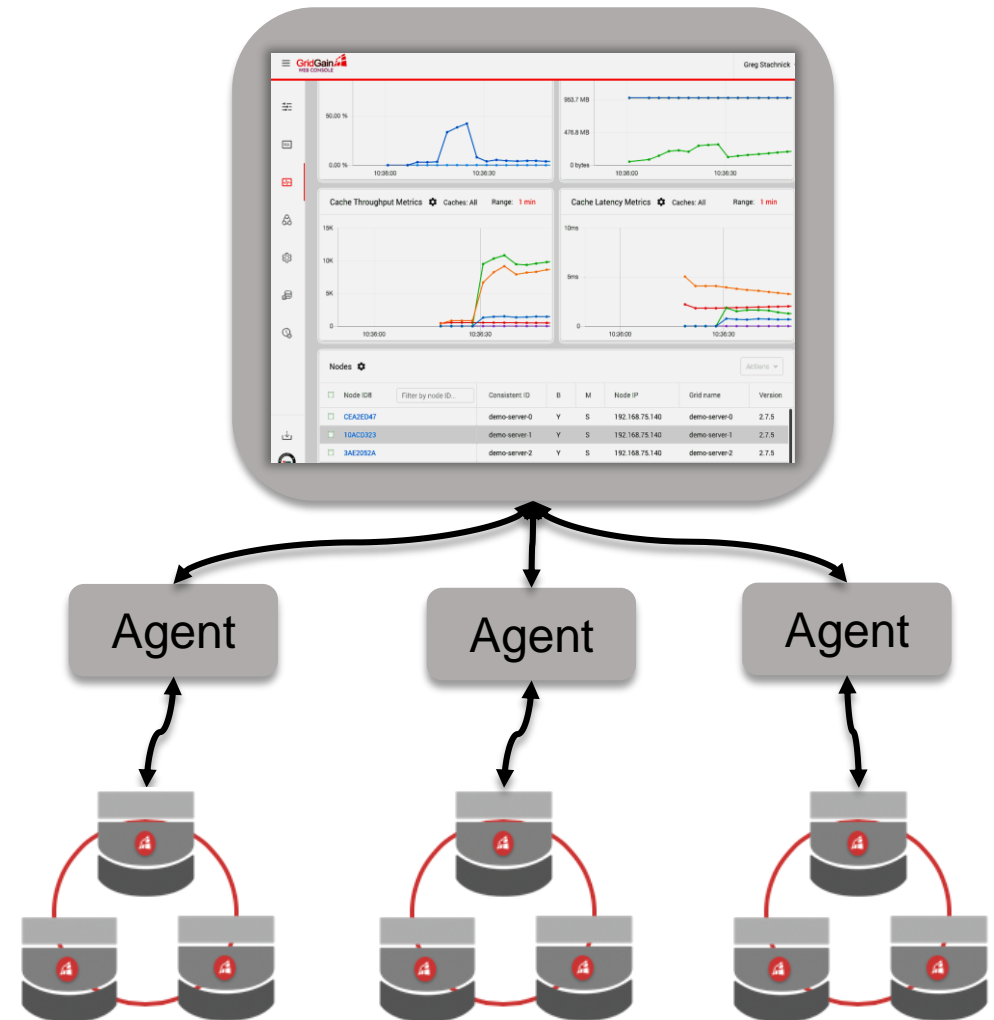
Total: 4 Showing: 4 Selected: 0 of 4 [Copy to clipboard](#) [More info](#)



# Web Console Architecture

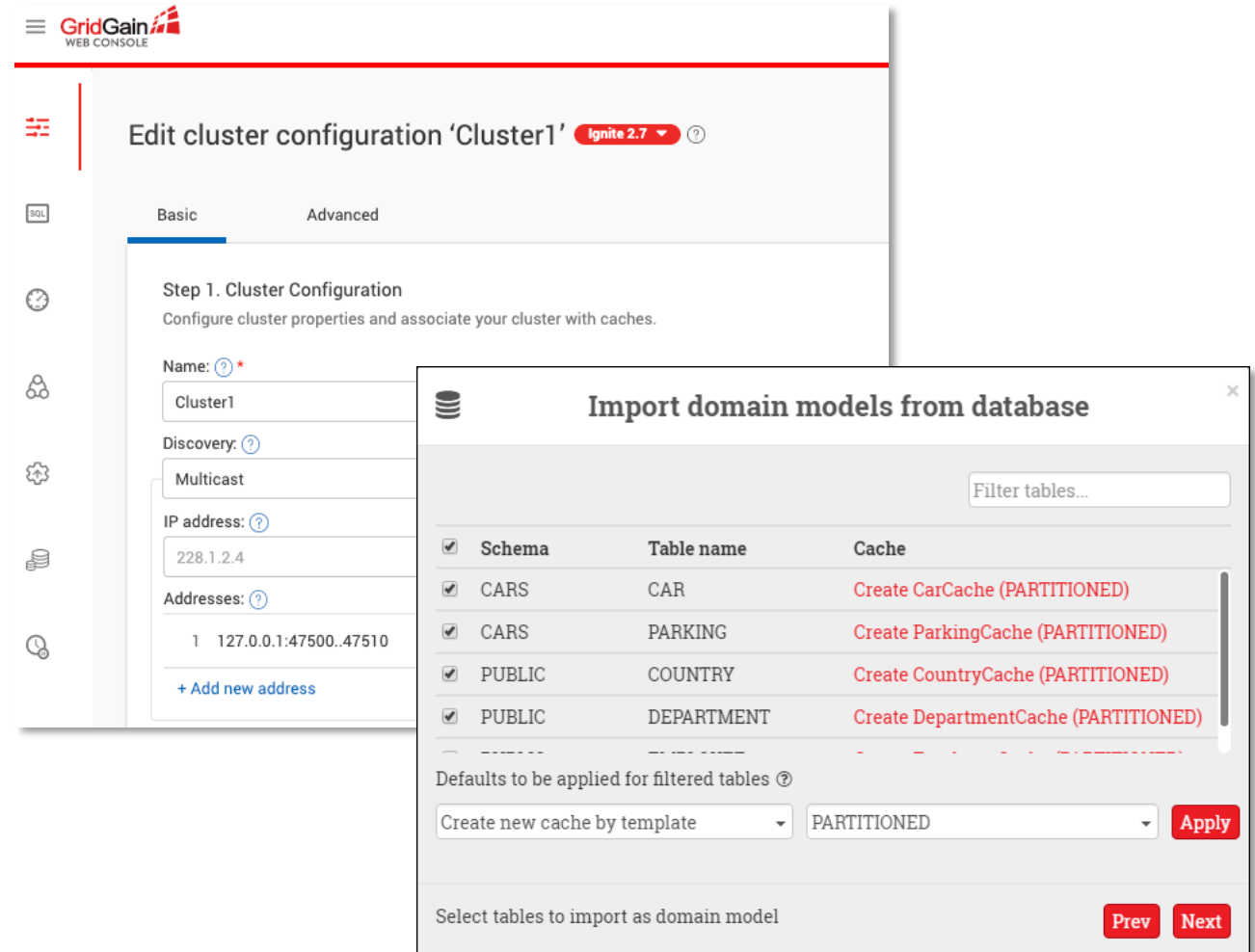


- Core Components
  - Web Console
  - Web Agent
  - GridGain/Ignite Cluster
- **NEW** Based on Java+Spring Boot
- **NEW** Uses Ignite Persistence to store metadata



# Cluster Configuration

- Wizard-based cluster& cache configuration creation
- Create entire configuration files or snippets
- Database Integration
  - Import Database Schema
  - Create Domain Model
  - Preload Data

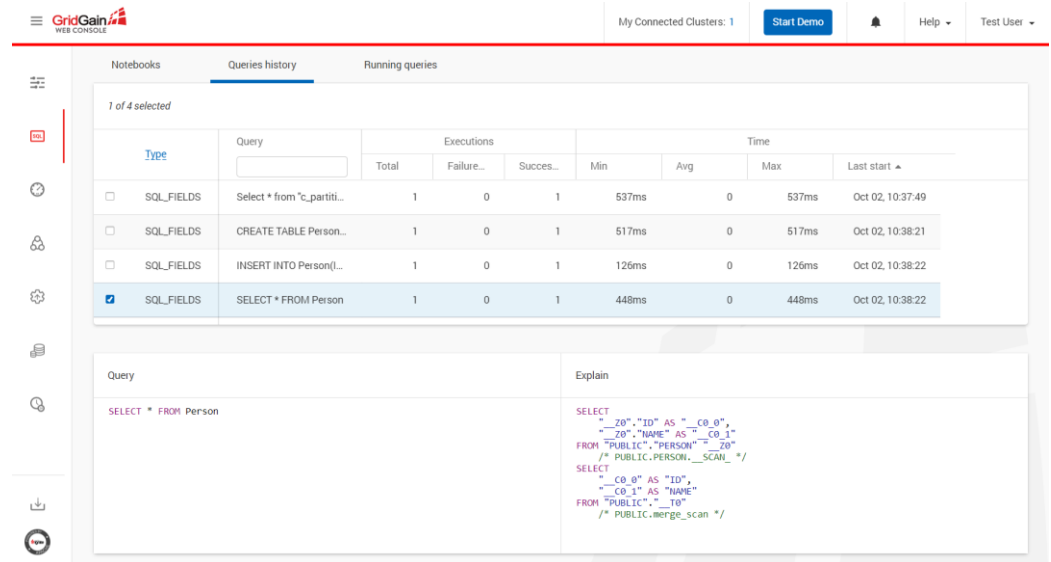


The screenshot displays the GridGain Web Console interface. The main panel shows the 'Edit cluster configuration' for 'Cluster1' using Ignite 2.7. The 'Basic' tab is active, showing 'Step 1. Cluster Configuration' with fields for Name (Cluster1), Discovery (Multicast), IP address (228.1.2.4), and Addresses (1 127.0.0.1:47500..47510). A sidebar on the left contains navigation icons. An overlay modal titled 'Import domain models from database' is open, featuring a table with columns for Schema, Table name, and Cache. The table lists four entries: CARS.CAR, CARS.PARKING, PUBLIC.COUNTRY, and PUBLIC.DEPARTMENT, each with a 'Create' button and '(PARTITIONED)' status. Below the table, there are dropdowns for 'Create new cache by template' and 'PARTITIONED', an 'Apply' button, and 'Prev'/'Next' buttons at the bottom.

Schema	Table name	Cache
CARS	CAR	Create CarCache (PARTITIONED)
CARS	PARKING	Create ParkingCache (PARTITIONED)
PUBLIC	COUNTRY	Create CountryCache (PARTITIONED)
PUBLIC	DEPARTMENT	Create DepartmentCache (PARTITIONED)

# SQL Notebooks

- Write & Execute SQL Queries against clusters
- Visualize SQL execution performance
- Integrated SQL editor
- Track running queries



The screenshot displays the GridGain Web Console interface. At the top, there's a navigation bar with the GridGain logo, a menu icon, and links for 'My Connected Clusters: 1', 'Start Demo', 'Help', and 'Test User'. Below this, the main content area is divided into three tabs: 'Notebooks', 'Queries history' (which is active), and 'Running queries'. The 'Queries history' tab shows a table with 4 selected queries. The table has columns for 'Type', 'Query', 'Executions' (Total, Failure, Success), 'Time' (Min, Avg, Max), and 'Last start'. The selected query is 'SELECT \* FROM Person' with a success rate of 100% and an average execution time of 448ms. Below the table, there's a section for the selected query, showing the 'Query' text and its 'Explain' plan.

Type	Query	Executions			Time			Last start
		Total	Failure...	Succes...	Min	Avg	Max	
<input type="checkbox"/>	SQL_FIELDS Select * from %c_partiti...	1	0	1	537ms	0	537ms	Oct 02, 10:37:49
<input type="checkbox"/>	SQL_FIELDS CREATE TABLE Person...	1	0	1	517ms	0	517ms	Oct 02, 10:38:21
<input type="checkbox"/>	SQL_FIELDS INSERT INTO Person(...	1	0	1	126ms	0	126ms	Oct 02, 10:38:22
<input checked="" type="checkbox"/>	SQL_FIELDS SELECT * FROM Person	1	0	1	448ms	0	448ms	Oct 02, 10:38:22

Query: SELECT \* FROM Person

Explain:

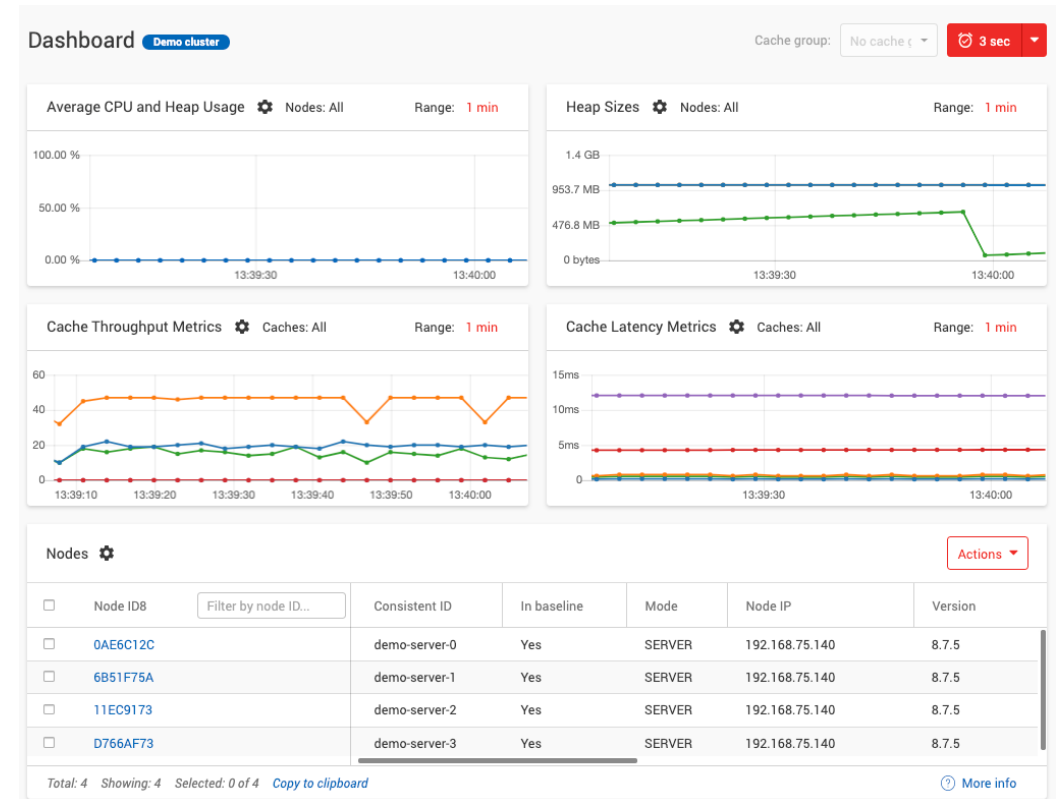
```
SELECT
  "_z0"."ID" AS "_co_0",
  "_z0"."NAME" AS "_co_1"
FROM "PUBLIC"."PERSON" "_z0"
/* PUBLIC.PERSON._SCAN_ */
SELECT
  "_co_0" AS "ID",
  "_co_1" AS "NAME"
FROM "PUBLIC"."_T0"
/* PUBLIC.merge_scan */
```




# Metrics Dashboard

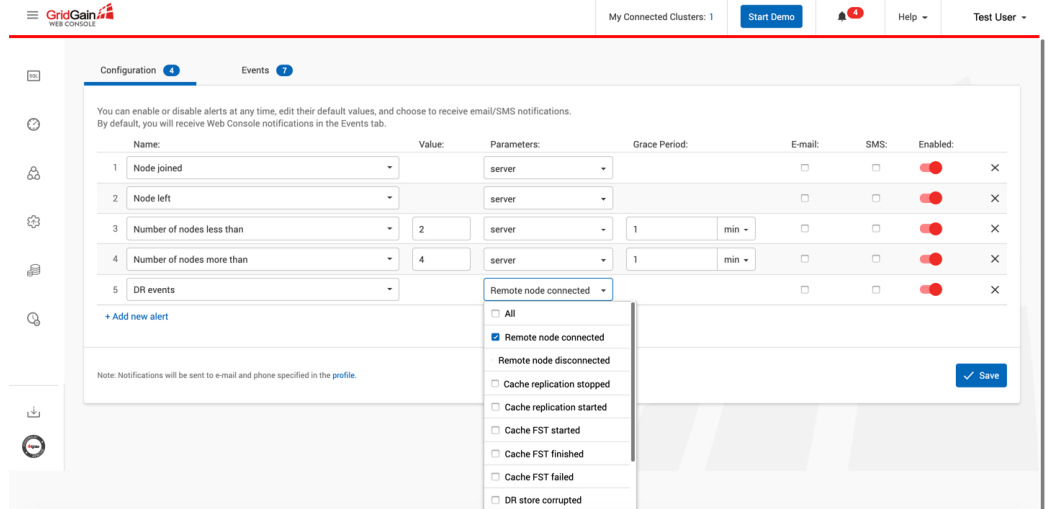


- Visualize Metrics Data
  - Heap
  - CPU
  - Memory
  - Storage
  - Throughput & Latency
  - Computations
- Perform operations on Clusters and Caches



# Alerts & Events

- Define Alerts for specific events
  - Node Join
  - Node Left
  - Min/Max # of Nodes
  -  – Data Center Replication Events
- Notification Options
  - UI
  - Email
  - SMS



The screenshot shows the 'Alerts & Events' configuration page in the GridGain Web Console. The page has a top navigation bar with the GridGain logo, 'My Connected Clusters: 1', a 'Start Demo' button, a user profile icon, 'Help', and 'Test User'. The main content area has two tabs: 'Configuration' (active) and 'Events'. Below the tabs, a message states: 'You can enable or disable alerts at any time, edit their default values, and choose to receive email/SMS notifications. By default, you will receive Web Console notifications in the Events tab.' A table lists five alerts:

Name	Value	Parameters	Grace Period	E-mail	SMS	Enabled	
1 Node joined		server		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	×
2 Node left		server		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	×
3 Number of nodes less than	2	server	1 min	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	×
4 Number of nodes more than	4	server	1 min	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	×
5 DR events		Remote node connected		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	×

Below the table is a '+ Add new alert' link. A dropdown menu is open for the 'DR events' row, showing a list of events: 'All', 'Remote node connected' (checked), 'Remote node disconnected', 'Cache replication stopped', 'Cache replication started', 'Cache FST started', 'Cache FST finished', 'Cache FST failed', and 'DR store corrupted'. A 'Save' button is at the bottom right of the configuration area. A note at the bottom left states: 'Note: Notifications will be sent to e-mail and phone specified in the profile.'

# Baseline Topology



- Used with Ignite Persistence
- Easily Activate/Deactivate clusters
- Add new nodes to Topology
- Stop and remove nodes

The screenshot shows a web interface for managing a cluster's baseline topology. On the left is a sidebar with navigation links: Configuration, Queries (with sub-links for Notebooks, Queries history, and Running queries), Monitoring dashboard, Baseline topology (highlighted in red), Rolling update, and Data replication. The main panel is titled 'Baseline Topology' and shows 'Cluster FAF29723' as 'Cluster active'. It features a 'Refresh' button and a 'Baseline Nodes' section with a gear icon and a note: 'If you need to remove node from Baseline, you should to stop it first. [More info](#)'. Below this is a table with columns for Consistent ID, Node ID, Status, and a Baseline toggle switch.

Consistent ID	Nod...	Status	Baseline
0:0:0:0:0:0:1%lo0,127.0.0.1,192.168.86.245:47...	3892F123	Online	<input type="checkbox"/>
0:0:0:0:0:0:1%lo0,127.0.0.1,192.168.86.245:47...	D681056A	Online	<input checked="" type="checkbox"/>

# Rolling Upgrade



- Tools to upgrade between GridGain versions
- Quickly look up which versions are deployed
- Automatically upgrades each node and rebalances data
- Does not require full cluster restart

Rolling Update Cluster 3599920E Cluster active 3 sec

My Nodes ⚙

Node ID	Node IP	Mode	Baseline Status	Version	Uptime	Busy %	Rebalance Status
05D66588	172.25.4.135	SERVER	Node in baseline	8.4.4	20m 42s	0.10%	Rebalance completed
A7BC4474	172.25.4.135	SERVER	Node in baseline	8.4.4	19m 22s	0.27%	Rebalance completed
C9FB9AB7	172.25.4.135	SERVER	Node in baseline	8.4.9	1m 53s	2.94%	<div><div></div></div> 13%

# Snapshots



- Create Snapshots
- NEW** • Compress Snapshots
- Schedule Snapshot operations
  - Wizard
  - NEW** – Cron expressions
- Manage existing Snapshots
- NEW** • Restore state through Point-in-Time Recovery

The screenshot displays the GridGain web console interface for managing snapshots. At the top, there's a header with the GridGain logo, navigation links, and user information. The main section is titled 'Snapshots' and shows a cluster status of 'Cluster active'. Below this, there's a 'My schedule' section with a table listing scheduled snapshot operations. The table has columns for Name, Command, Description, and Enable. One entry is visible: 'Full Daily snapshot' with command 'CREATE' and description 'Create full snapshot: daily and incremental: hourly'. Below the table, there's a summary bar showing 'Total: 1', 'Showing: 1', and 'Selected: 0 of 1'. The bottom section is titled 'Snapshots' and shows a table of existing snapshots. The table has columns for ID, Type, Start Time, Mode, and Caches. Two entries are visible: a 'FULL' snapshot with ID '1 569 986 966 070' and an 'INC' snapshot with ID '1 569 986 980 455', both started on '02/10/2019 10:29:26' and '02/10/2019 10:29:40' respectively, both in 'Alex Smith' mode. A summary bar at the bottom shows 'Total: 2', 'Showing: 2', and 'Selected: 0 of 2'.

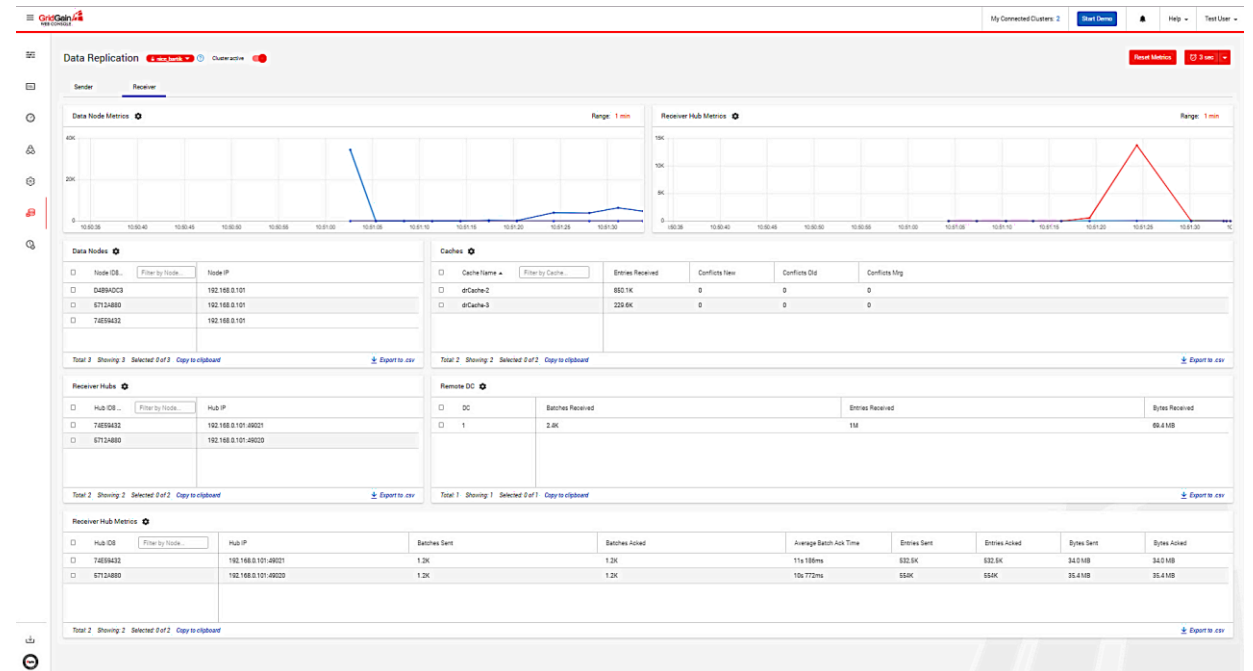
Name	Command	Description	Enable
Full Daily snapshot	CREATE	Create full snapshot: daily and incremental: hourly	<input checked="" type="checkbox"/>

ID	Type	Start Time	Mode	Caches
1 569 986 966 070	FULL	02/10/2019 10:29:26	Alex Smith	22
1 569 986 980 455	INC	02/10/2019 10:29:40	Alex Smith	22

# Data Center Replication




- Replicate cache data across clusters
- Active-Active or Active-Passive
- Monitor data transfer from Senders to Receivers
- NEW** • Pause and Resume Transfer Progress
- NEW** • DR-centric options added to Configuration screen
- NEW** • DR Alerts





# Web Console Distributions and Packaging



	Ignite & CE	Enterprise	Ultimate
Configuration	✓	✓	✓
SQL Queries	✓	✓	✓
Dashboard	✓ 	✓	✓
Rolling Upgrades		✓	✓
Data Center Replication		✓	✓
Snapshots			✓

- Hosted
  - console.gridgain.com
  - centrally managed
- On Premise
  - Direct Install .zip
    - Simply Download, Unzip, & Run
  - Docker
    - DockerHub public repository
    - Sample docker-compose files

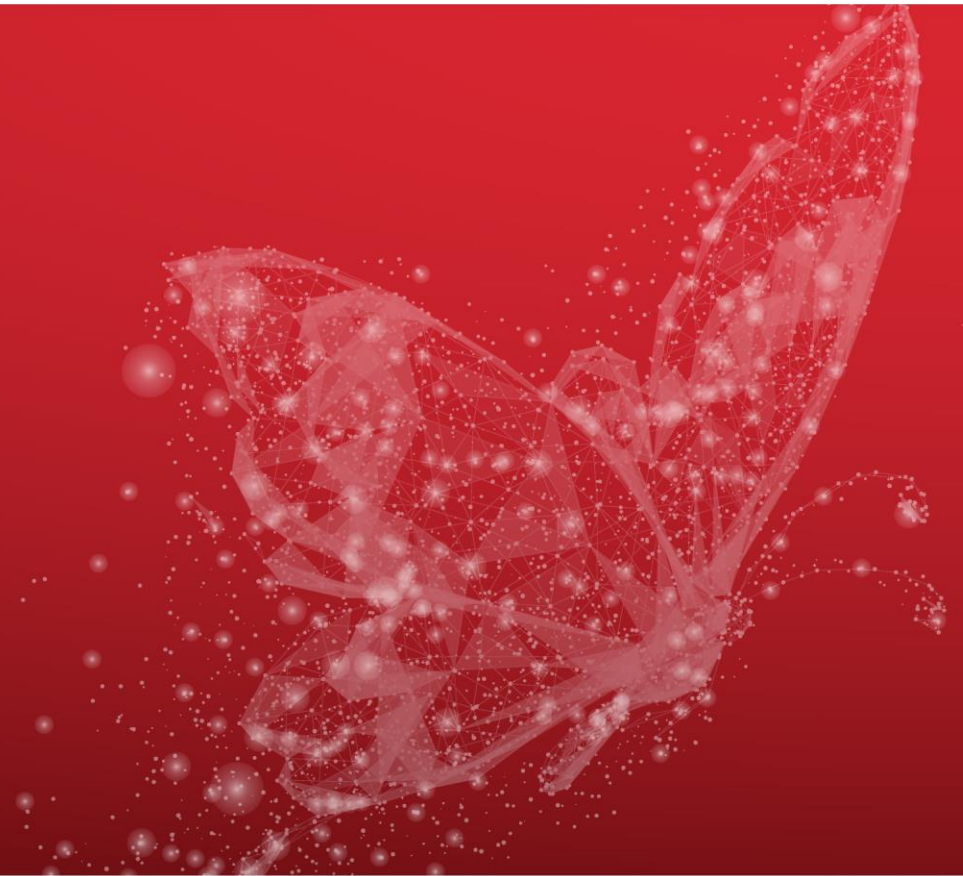
# Backward Compatibility for GridGain & Ignite



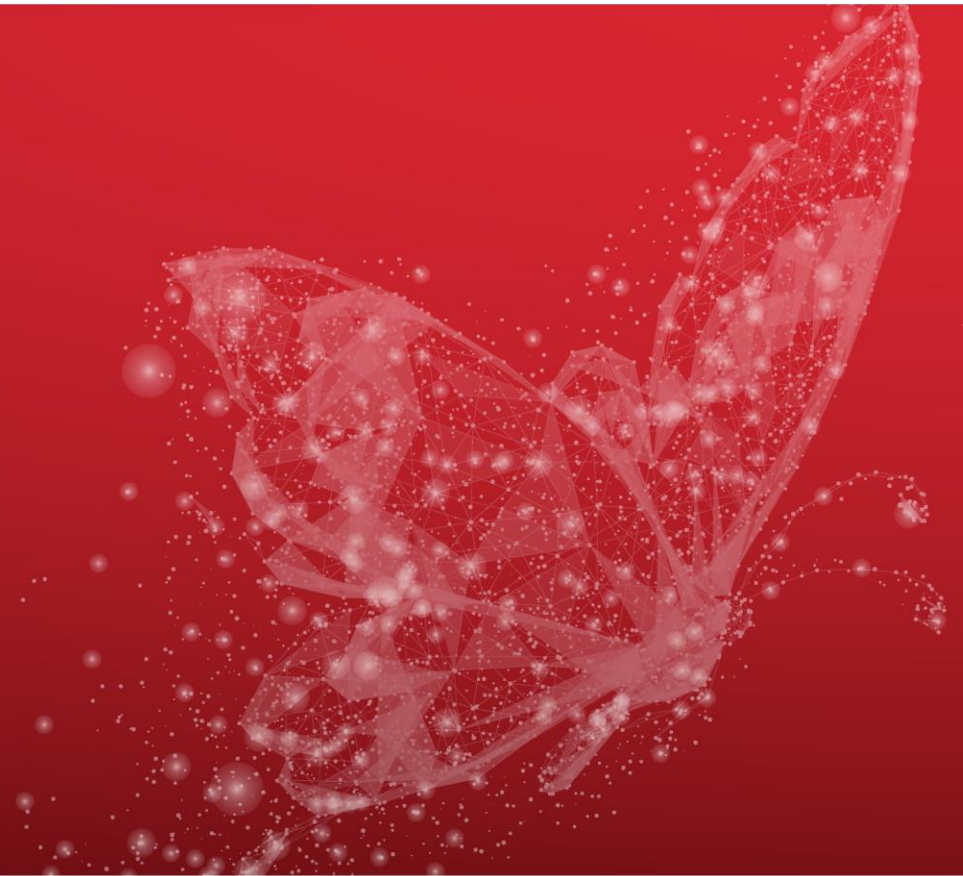
- Apache Ignite
  - 2.5.0
  - 2.7.x
- GridGain
  - 8.4.4+
  - 8.5.x
  - 8.7.x



# Demo



# Questions?



# GridGain Resources



- Webinars
  - Visit <https://www.gridgain.com/resources/webinars>
- Developer Portal
  - Visit <https://www.gridgain.com/developer>
- White Papers
  - Visit <https://www.gridgain.com/resources/papers>
- Videos
  - Visit <https://www.gridgain.com/resources/videos>
- Sign Up for The In-Memory Computing Summit (Nov 13-14)
  - Visit <https://www.imcsummit.org/>
- Free 30-Day Ultimate, Enterprise or Professional Edition Trial
  - Visit <https://www.gridgain.com/resources/download>

# Thank you

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