



# OVERVIEW

MINEOPERA TE OP PRO 3.0



# AGENDA

- ARCHITECTURE
- HARDWARE FEATURES
- OFFICE MANAGER IMPROVEMENTS
- NEW LP SHOVEL AND TRUCK REACT PANEL



# AGENDA

- LEGACY EQUIPMENT IMPROVEMENTS
- SUPPORTED HARDWARE
- SUPPORTED PLATFORM
- SUPPORTED OS

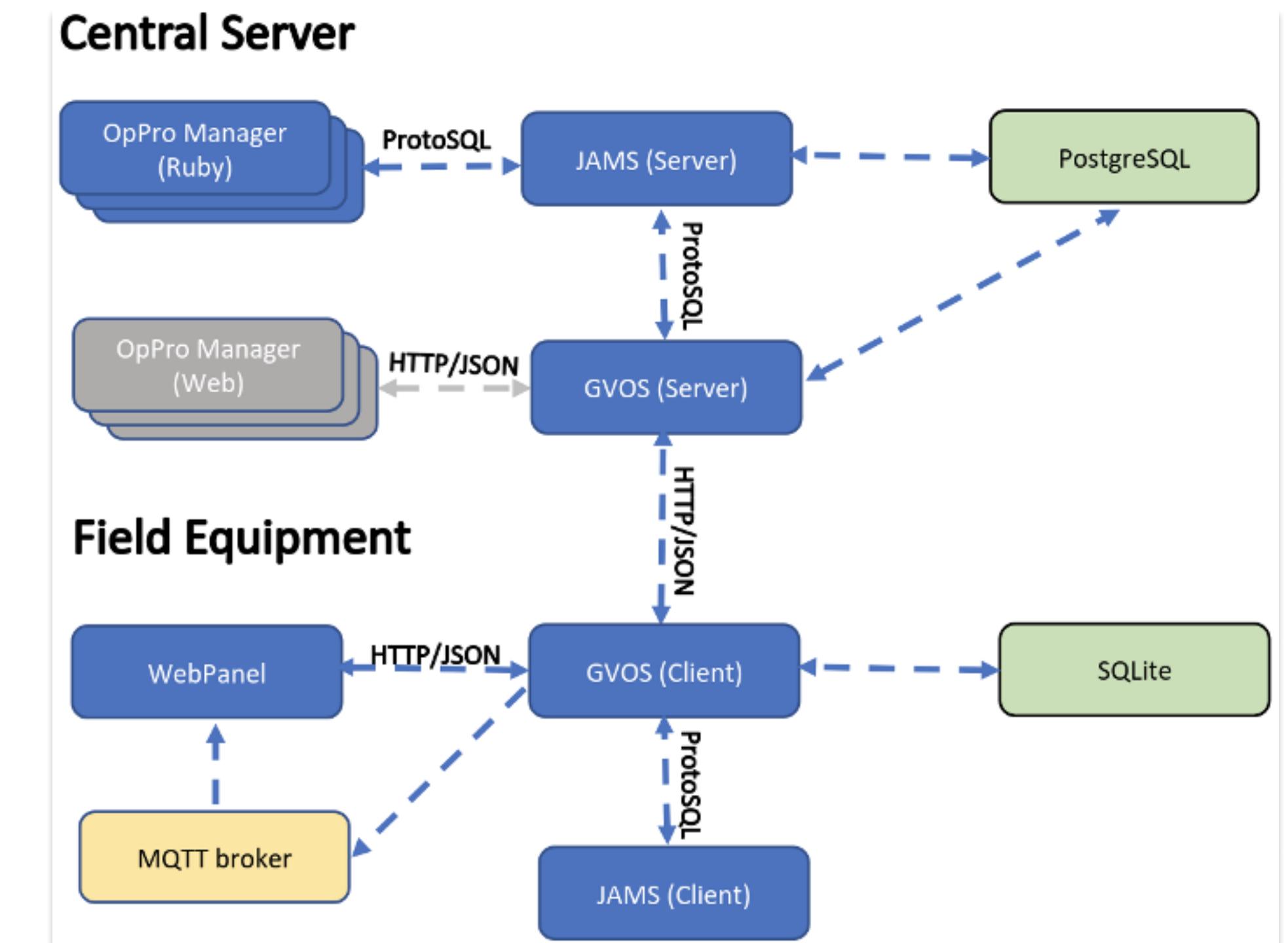


# AGENDA

■	SUPPORTED PACKAGES
■	FIXED ISSUES
■	CLIENT INFORMATION PACK
■	NEXT TOPICS



# ARCHITECTURE





# ARCHITECTURE

- GVOS SERVICE FOR NEW UI/UX
- GVOS AND JAMS COMMUNICATE THROUGH PROTOSQL FOR NEW UI/UX
- JAMS IS REPLICATOR FOR LEGACY PANELS (RUBY)
- GVWEB, GVMQTT, NGINX SERVICES



# HARDWARE FEATURES

- PEER TO PEER
- INTERNAL UHF RADIO
- ADDITIONAL CONSTELLATIONS
- 4G COMMUNICATIONS



## PEER TO PEER

- OFFLINE GRADE / MATERIAL UPDATES
- ACCURATE TRUCK / SHOVEL CYCLES
- LEVERAGES CORE DUAL 802.11 WIFI HARDWARE



- COMPATIBLE WITH 450 MHZ RADIOS
- FASTER GPS DATA PROCESSING IMPROVES ACCURACY AND SOLUTION
- DOES AWAY WITH WIFI CORRECTIONS
- AVAILABLE ON COREHP WWU

# INTERNAL UHF RADIO



# ADDITIONAL CONST.

- THREE CONSTELLATIONS FOR LP (GPS, GALILEO, BEIDOU or GPS, GALILEO, GLONASS)
- FOUR CONSTELLATIONS FOR HP (GPS, GALILEO, BEIDOU, GLONASS)
- DETAILS SHOWN ON LEGACY EQUIPMENT ONLY



# 4G COMM.

- CONNECT TO MOBILE NETWORK
- NETSWITCH TECHNOLOGY



# OFFICE MANAGER IMPROVEMENTS

The screenshot shows the HxGN MineOperate OP Pro software interface. The top navigation bar includes links for Applications, Equipment, Locations, Operations, Engineering, Maintenance, Lineup, Shift, Optimiser, Admin (which is highlighted in green), and Data Validation. Below the navigation bar, the title bar reads "HxGN MineOperate OP Pro > Admin". On the right side of the title bar is a button labeled "Add Views". The main content area is titled "Configurations" and contains a table with four columns: Module, Devices, Application, and Attribute. The table lists various configuration items, primarily related to the "OFFICE" module, using the "jminegraph" application and the "init" attribute. Some entries also mention "supervisor", "JSPanel", and specific attributes like "restart\_enabled" and "dump\_lookup".

Module	Devices	Application	Attribute
shift_restart_view	OFFICE	jminegraph	init
jminegraph		jminegraph	restart_enabled
ShiftRestart			model
processing_rate_view	OFFICE	jminegraph	init
processing_rates_importer_deleted		processing_rates_importer	dump_lookup
jspanel	supervisor	JSPanel	chpp_kpis
ChppKpi			model
drill_layer_view	OFFICE	jminegraph	init
drill_pattern_layer_view	OFFICE	jminegraph	init
drill_pattern_view	OFFICE	jminegraph	init
drill_pb_layer_view	OFFICE	jminegraph	init
drill_point_view	OFFICE	jminegraph	init
drill_support_view	OFFICE	jminegraph	init
drill_view	OFFICE	jminegraph	init
drillmenu_view	OFFICE	jminegraph	init
shift_drill_productivity_view	OFFICE	jminegraph	init
shift_drill_transaction_view	OFFICE	jminegraph	init



■ HOME BUTTON

■ PIN BUTTON

■ DETACH BUTTON

■ ATTACH BUTTON

# OFFICE UI/UX



■ CLOSE BUTTON

■ MINIMIZE BUTTON

■ FULL SCREEN BUTTON

■ RESTORE BUTTON

# OFFICE UI/UX



# OFFICE UI/UX

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OLD MENU SYSTEM CAN BE CONFIGURED



# OFFICE MTC REGION FILTER

- SUPPORTS MINES WITH MULTIPLE REGIONS
- HAUL COLUMN DISPLAY ALL PATHS FOR GIVEN REGION
- REGION PATHS DON'T APPEAR IF A REGION IS NOT SELECTED



# JAMS STATUS

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SHOWS JAMS STATUS IN WINDOWS TRAY



# LOG FILE ENHANCEMENT

- USERS CAN NOW SEND OP PRO MANAGER LOG FILES TO SERVER
- TRANSFER LOG FILE FUNCTION IS IN MANAGER SYSTEM MENU
- HELPFUL MESSAGES SHOW STATUS OF LOG TRANSFERS



# BROADCAST NMEA TOOL POSITION

TOOL AND HPGPS POINTS CAN BE REBROADCASTED AS NMEA  
SENTENCES



- CONFIGURABLE TIME FOR BREAK POPUP TO REVIEW UPCOMING BREAKS
- CONFIRM BREAKS BEFORE ACTIVATING
- MANUAL TIEDOWN ASSIGNMENTS
- EXCLUDE LOADING UNITS FROM BREAK

# BREAK FUNCTION IMPROVEMENT



- BREAKS CAN BE CANCELED
- BREAK OPTIMIZATION (LOAD AND DUMP QUEUE AND WAIT TIME CONSIDERATION)
- STAGGER BREAK START TIMES IN DIFFERENT AREAS
- BREAKS VIEW DISPLAY CURRENT SHOVEL OR REGION WHERE TRUCKS WILL BE SELECTED FOR BREAK

# BREAK FUNCTION IMPROVEMENT



- NEW LOGIC FOR SELECTING TIEDOWN LOCATIONS
- MUST TIEDOWN EMPTY BY BREAK TYPE FUNCTIONALITY
- MESSAGES ARE SENT TO DISPATCHER WHEN BREAKS START AND END
- CURRENT BREAK FIELD POPULATED WHEN BREAK STARTS

# BREAK FUNCTION IMPROVEMENT



# BREAK FUNCTION IMPROVEMENT

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CANCELED AND ACCEPTED FIELDS RESET WHEN BREAK ENDS



- IMPROVED PROJECTED IDLE TIME
- LOGIC FOR REASSIGNMENT KEEP PREVIOUS ASSIGNMENT OR PLACE EQUIPMENT IN STANDBY
- SHOVEL AND DUMP REASSIGNMENT LOGGING
- ASSIGNMENT AND REASSIGNMENT VIEW PROVIDE OPTIMIZER CONSIDERATION DETAILS

# OPTIMIZER IMPROVEMENT



- PROJECTED SHIFT TOTAL FOR SHOVEL AND DUMP TON HOURS
- SHOVEL PRIORITY LOGGING SHOW PRIORITY AND COVERAGE EFFECTS
- IMPROVED RESTRICTIONS
- VIEW LP PATHS PER TRUCK TYPE AND INDIVIDUAL TRUCKS

# OPTIMIZER IMPROVEMENT



# **SHIFT DUMP COMMENTS**

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SHIFT DUMP AND SHIFT STATE VIEW HAVE A COMMENT FIELD



# REACT PANEL





# REACT PANEL

- AVAILABLE FOR LP TRUCK AND LP SHOVEL
- RUNS IN BROWSER ON DISPLAY 9
- CONFIGURABLE DOCK FOR CUSTOM FUNCTIONALITY
- JAMS AND GVOS RUN ON **CORE**



# REACT PANEL

- NO REPLICATOR CLIENT OR DB ADAPTER
- REPLICATION HANDLED BY GVOS
- DB QUERIES HANDLED BY PROTOSQL
- NEW FILE SYSTEM



# LEGACY EQUIPMENT IMPROVEMENTS

- UNATTENDED SHOVEL DUMP SELECTION
- CONFIGURABLE FONTS FOR JSPANEL TABLE
- ORE DISCRIMINATOR SUPPORT
- IF ONLY ONE TIME CATEGORY REMOVE REASON OR TIME CATEGORY SELECTION



# RESOLVED ISSUES

- JTABLE BREADTH FIRST IMPLEMENTATION
- CONFIGURABLE FONTS FOR JSPANEL TABLE
- SQL SERVER / AGENT SERVICES CRASH FIXES
- ZERO CAPACITY, ZERO FEED RATE DUMP LP PATHS



# SUPPORTED HARDWARE

■	COREHP (WW, WWG, WWU )
■	CORELP (WW, WWGB)



# SUPPORTED PLATFORM

- 2.25 MIN VERSION FOR LEGACY RUBY PANELS
- 2.26 MIN VERSION FOR NEW REACT PANELS



# SUPPORTED OS

- UBUNTU 16.04 MINIMUM VERSION
- UBUNTU 20.04 RECOMMENDED VERSION



# SUPPORTED PACKAGES

- POSTGRES 9.5 MINIMUM VERSION
- POSTGRES 12 RECOMMENDED VERSION
- SQLITE 3.11.0 VERSION (SERVER)



# CLIENT INFORMATION PACK

- PROVIDE TEAM DETAILS
- PROVIDE FEATURE OVERVIEW
- PROVIDE PROJECT SCHEDULE



# NEXT TOPICS

- MORE ON ARCHITECTURE
- MINE OPERATE OP MANAGER FEATURES
- REACT PANEL TRAINING
- GVOS TRAINING



# NEXT TOPICS

- REACT SIMULATION / TROUBLESHOOTING