

Overview

Unity Satellite Business

One interface to satellite connectivity

Mobileware Unity

Single environment to all satellite business & networks

- Dynamic Provisioning, Billing, Monitoring, Support
- Real time across all – hereunder prepaid, monitoring
- One API (web service) to global satellite provisioning
- Inmarsat I4/GX, Iridium, Thuraya, Orbcomm, Eutelsat....
- Advanced Self care functionality across any level
- Integrated POP for Inmarsat GX, I4, Thuraya, Iridium, VSAT...

Main Functionality

Specialized in development of unified provisioning, convergent billing, real-time monitoring for satellite operators.

PROVISIONING

BILLING

MONITORING

Complete Satellite Business Environment.

Uniform Satellite Provisioning

- Frontend – Easy and simple Provisioning in a uniform way
- Operator Dashboard – Advanced adjustments
- Service orders w. multiple workflow
- Interfaces all Bootstrap Enabled for easy integration
- Iridium, Thuraya, Inmarsat I4, Inmarsat GX, Eutelsat VSAT
- Self care functionality across any level w. permission control
- Bulkloading across users, packages, inventory with drag & drop
- Services can be build based on Easy to use Product Wizard
- Multi language, Multiple branded interfaces...
- Adaptive User Expirence (UX compliant)
- A single API interface for easy integration
- Highest possible security level (OWASP, ISO27001, OAuth2...)

Convergent Satellite Billing

- Real time CDR processing from all satellite networks
- Instant access to rated traffic data
- CDR mediation from Inmarsat, Intelsat, Iridium, Thuraya...
- Rating performed on 3 level in a single loop
- Advanced rating plan management – drag & drop
- Rerating, Reprocessing failed traffic, Manual Injection..
- Single invoice capability - floating / fixed periods – Invoice print groups
- Many Business divisions – separate invoice/credit numbers
- Multi currency rating – integrated ECB, - Convergent billing reports
- Credit notes, AR, GL, integrated traffic report builder, advanced taxation
- Direct integration with major financial systems – SAP, Navision..
- Complete end to end billing in a highly flexible way

Real time monitoring

- Real time CDR processing = Real time monitoring
- Minimize credit risk – increase revenue stream
- Send email, SMS, files, web service commands..
- Spending, Usage monitoring on packages, users...
- Auto suspend, resume packages based on monitoring
- Manage usage with auto throttling of throughput
- Multi language Templates with partner logo etc..
- Dynamic Notification templates integrated with Apache Velocity capability allowing smart notification as well as HTML notification with Base64

POP Environment

- POP Manager that integrate Unity with any POP environment in realtime
- Integrated IPAM server for IP management
- Complete advanced POP environment for New York & Amsterdam
- Juniper based firewalls and routers API integrated to Unity POP Manager
- Redundant Radius server setup for Inmarsat I4, GSM 4G and Thuraya
- IMSI authentication across multiple IP addresses per terminal
- Full Grafical - End customer self care across firewall settings
- The cheapest & most advanced POP offer on the market today
- Range of integrated services, Web Acceleration, WAN acceleration, compressed email/messaging/file services, data throttling, real time debugging with customer access to own logs, Aero access manager for aircraft Internet, VoIP integration...

One Environment for All

Simple, Flexible and Powerfull

- Unity have been developed of the last 19 years into a rock solid satellite business environment
- Functionality and Advanced technology made simple
- Deliver any needed part of a solid satellite envornment
- Provisioning, billing and monitoring in a powerfull setup
- Basically plug & play into all major satellite services in the sky
- Environment that is open and easy to evolve

Some Reference Customers



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Complete Satellite Business Setup



Billing



Hardware



Integration



Portal Front-End



Inventory



Support



Full Self-Service

A single environment for all to operator a satellite business – allowing customers access to own data.



Provisioning



Prepaid System



Traffic Mediation



Open Standards



Multilevel Customer handling

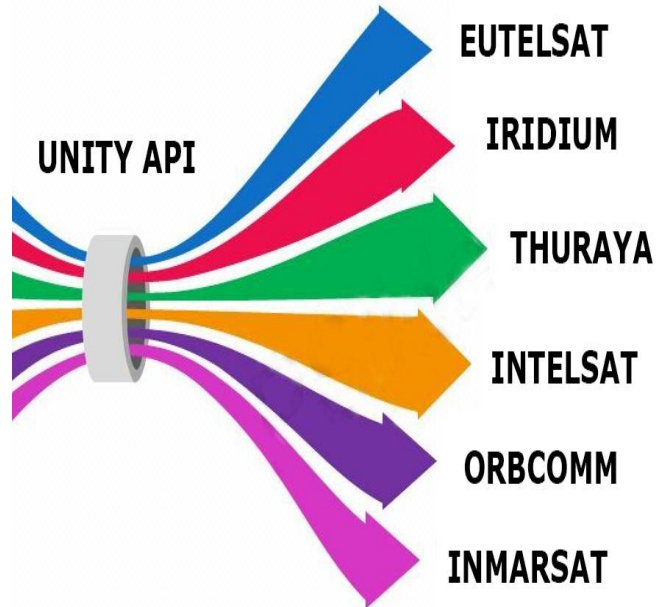


Order Management



POP interaction

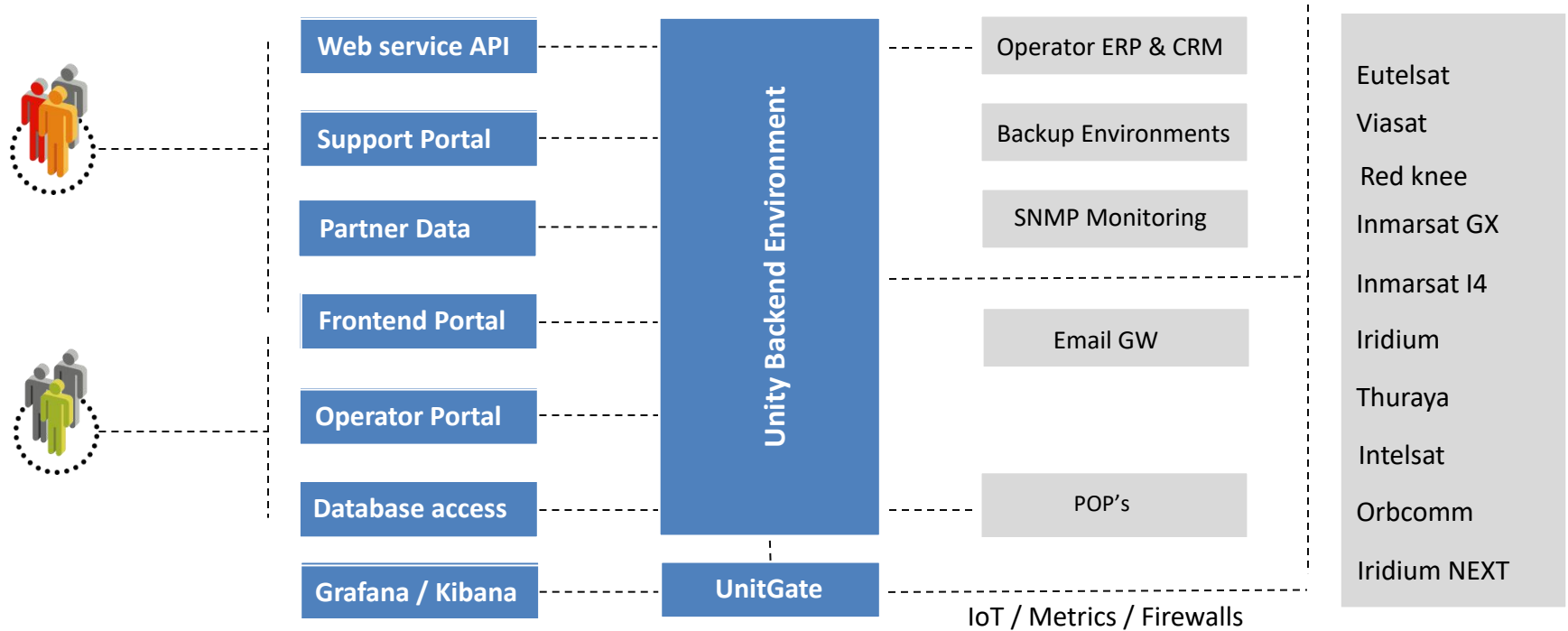
Fast and Easy access to any service



Unity are a complete end to end Satellite Business Environment - a single uniform solution directly integrated to basically all satellite networks.

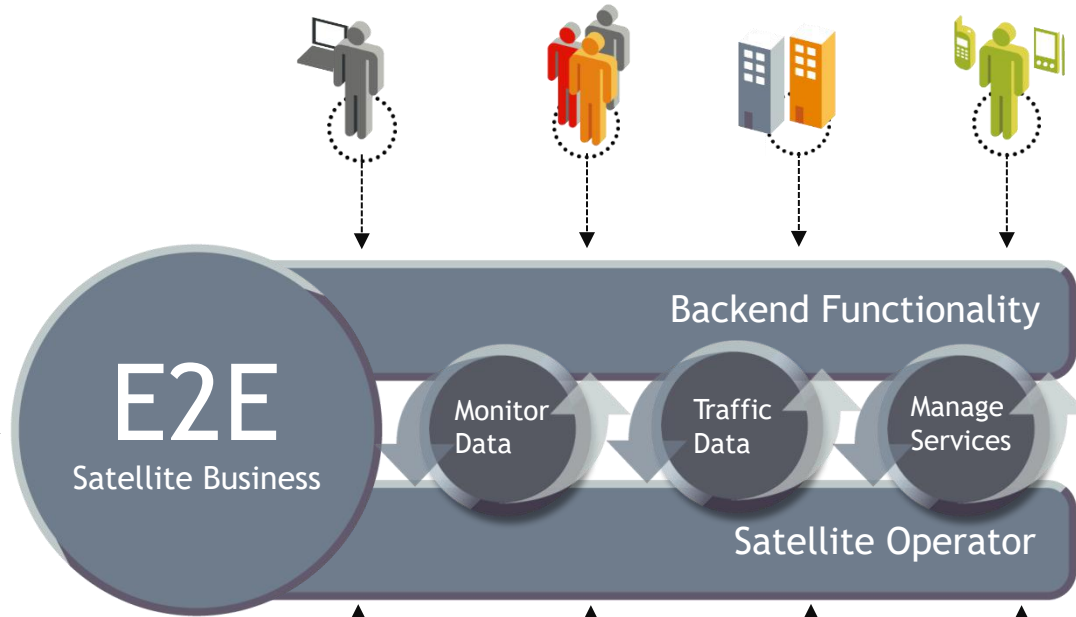
- Unified Provisioning
- Convergent Billing
- Real time Monitoring
- Full Self care
- Single Invoicing
- Revenue Assurance
- Comprehensive Notifications
- Single Sign On (SSO)
- Highly Secure Architecture
- Redundant, Highly Scalable
- Single API for all satellites
- Multi currency, Multi Language
- Complete Financial integration
- Many Extra modules

High Level Block Structure





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Front-end & Dashboard Environment

E2E

Satellite Business

Monitor
Data

Traffic
Data

Manage
Services

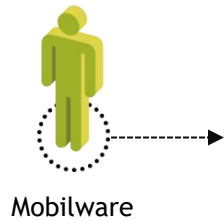
Backend Functionality

Satellite Operator

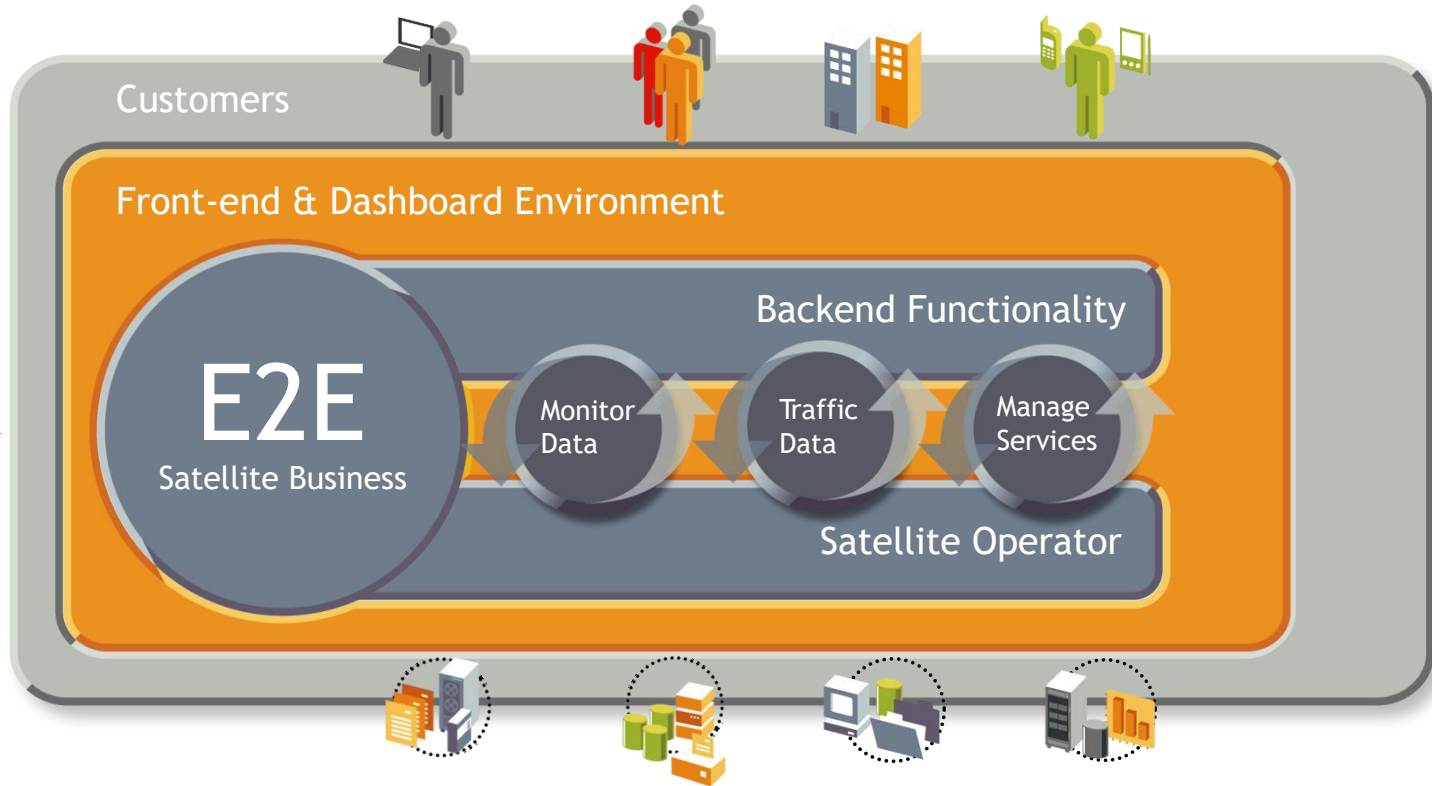


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Customers



Mobilware Front-end & Dashboard Environment

Mobilware Unity

Complete Satellite Business Setup



Mobilware



MOBILEWARE

Multiple Solution Options

Multiple Solution Options

- Simple Cloud Environment
- Redundant Cloud Environment
- Redundant Cloud Environment with GEO failover
- Local Redundant Environment
- Source code – Including developer environment and deployment center allowing to build on top of Unity components (Hit the Gropund Running)
- Scalability – Basically any of the above can scale linked to the implemented stateless communication

Different model options

CLOUD SAAS

MW manage complete platform

- Fully operated in MW private cloud
- Hardware delivered by MW
- MW Support & Development
- Backup based on server images and incremental Database backup
- Easily scalable and can be deployed world wide
- Cheapest solution

Sample customer: Navarino - Using this to operate their Iridium & Inmarsat I4 & Inmarsat I5 services across the different customers providing real time self care...

MW = mobileware

OPERATOR SAAS

MW manage in operator location

- Operator hosted environment
- Operator deliver hardware and databases
- MW manage all remotely across software, backup and supervision
- Typically equipped with more memory than cloud based – giving better performance
- More costly linked to hardware and more work to handle remotely – no deployment option

Sample customer: KDDI are using this model in a Geo redundant setup where KDDI manage solution in Japan and MW manage redundant failover solution in New York.

OPERATOR DEV

Operator manage & develop platform

- Hit the ground running!
- Operator hosted environment
- Hardware delivered by Operator
- Access to source code on Gitlab
- Comprehensive Development training
- Operator can develop own modules on top
- Highly customizable – bootstrap, open framework
- Making it easy to build 'own' environment
- MW support and maintain core modules

Sample customer: Honeywell as well as Airbus Defense using this for Nato, Spanish military, French MOD... MW have in this setup also build their POP environment in France to handle Inmarsat I4, Inmarsat I5, Thuraya as well as Iridium services.

Simple Cloud Environment

- Mobilware operate out of the 16 biggest Internet Exchange points in the world where we are having secure (ISO27001) environments in place to operate a stand alone environment
- This environment need minimum 3 servers – this is a absolut minimum configuration
- Mobilware handle servers, software and database – backup are performed automatically periodically with image snap shoot for extrem fast recovery as well as with incremental database backup
- Directly integrated with one of our deploymewnt environments
- Monitoring are handled from our environment in Copenhagen

Redundant Cloud Environment

- Unity in a redundant cloud setup will have all functionality replicated across multiple servers
- Unity have integrated end to end API calls that perform system validation that are used for smart failover across all level.
- Databases are replicated MASTER-MASTER-MASTER in a loop typically based on MariaDB but any database are supported including Oracle or MySQL

Redundant GEO Cloud Environment

- Two different Geographical locations in example New York and Amsterdam
- Special data replication implemented linked to normal database replication isn't good at handling large distances
- Each environment are implemented as a stand alone processing billing data from the same source data
- Provisioning replication are managed using data replication in Unity

Local Redundant Environment

- Operator deliver the needed hardware as well as a replicated database in case of redundancy
- Mobilware install and operate the installed environment
- Completely open for the operator to be adding own developed modules that integrate into Unity core software using well defined API calls or direct database access.

Own Environment with Source Code

- Operator get Unity installed and integrated to basically any satellite API and traffic CDR interface
- Mobilware perform implementation, integration and share source code setup that allow operator to build or modify any functionality on top of Unity many core modules.
- Airbus Defense are an example utilizing this model – where they are operating more than 70 servers running Unity across French military, Norwegian military, British military, German military, Spanish military, NATO...
- This is a highly advanced setup model that allow the operator to immitiatly have all interfaces to standard satellite networks fully in place and yet having the ability to build own setup on to of the many API capabilities.
- Comprehensive Documentation across all area's from installation, operation as well as development.

Architecture Overview

Conceptual model of Unity

- Uniform & Advanced User Experience (UX) across all interfaces
- Flexible structure divided into reusable modules
- Highly scalable – all connectivity implement in a stateless way
- A simple and easy way to access ‘complete’ satellite world
- Adapt easily to any existing and future requirements
- Open standards and best practise across system architecture
- Build with security as a major driver

System Architecture

Frontend, Operator Dashboard, Backend, Database, POP environment

Main Components in Unity

FRONTEND

Frontend modules

- Unity API handler module
- Frontend module
- Security scanner module
- Authentication module
- Validation module
- Single Sign On module

OPERATOR DASHBOARD

Operator Dashboard modules

- Authentication module
- Package Wizard module
- Product catalogue module
- Rating plan Wizard module
- Invoice & Credit note module

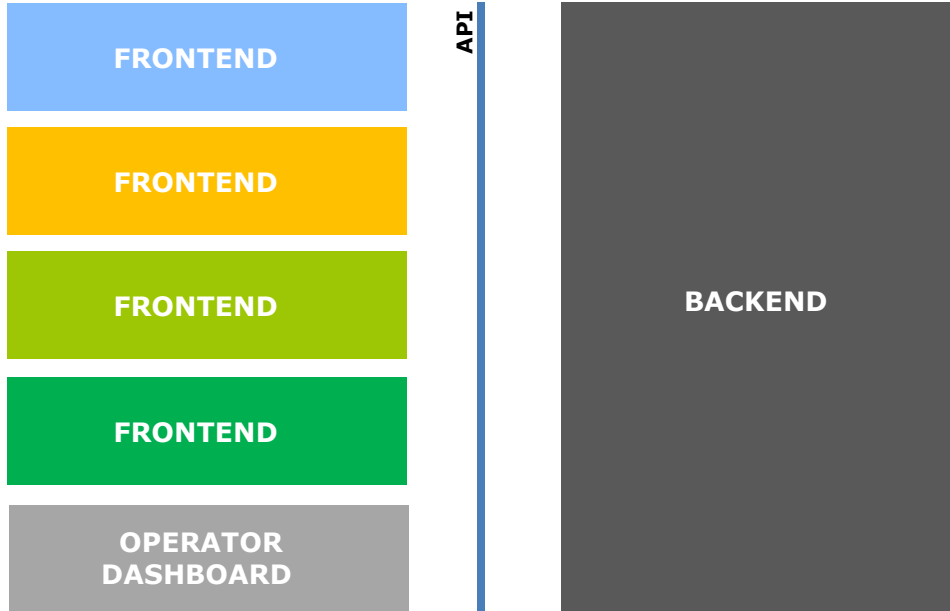
BACKEND

Backend modules

- Unity API handler module
- Provisioning
- Hardware delivered by
- Hit the ground running!
- Operator hosted environment
- Hardware delivered by Operator
- Access to source code on Gitlab
- Comprehensive Development train
- Operator can develop own mod
- Highly customizable
- Making it easy to build 'own' envir
- MW support and maintain core

Unity contain a long list of isolated modules, these are implemented across mainly three building blocks.

Highly modular so it can adapt



Multiple Frontends

- Multiple Frontends in possible different layout
- Frontends with dedicated URL
- Frontends installed with Load balancing

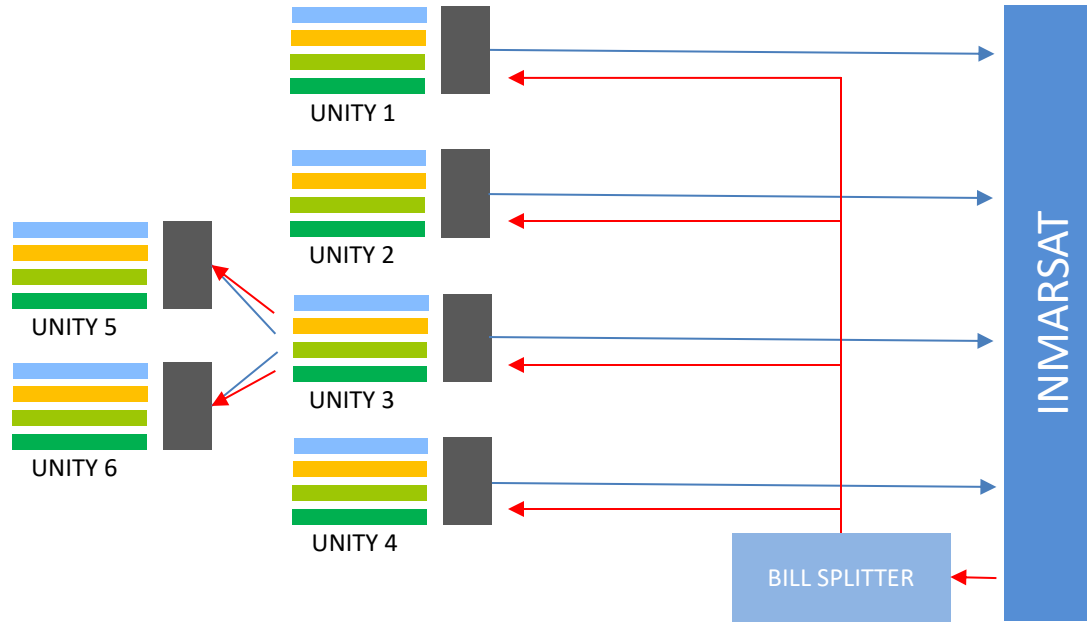
Multiple Backends

- Multiple Backends can be operating
- Each Backend will monitor the other Backend
- Database replication will handle data is the same

Unity Larger Projects

- Adapt Large projects in satellite business
- Build easily a dedicated interface setup
- Adapt Layout, Colours, Functionality
- Sample: Phillipine Election project
- Sample: Red Cross in Africa

Multiple Unity on a single Account



Sample: Single Inmarsat Account

- One account for multiple Unity setup
- Work with Iridium, Viasat, Thuraya...
- This allow multiple REAL TIME setup

Bill Splitter

- Based on IMSI range will it Split Traffic
- Also offer complete system separation
- All taking place in real time

Real Time Provisioning

- Any connected Unity block is real time
- Complete separation needed for military

Multiple Satellite Accounts

- Gather multiple Inmarsat accounts in one
- Gather multiple Iridium accounts in one
- Share services across Business Units

Inmarsat just added as sample, same with Iridium, Thuraya and similar.

Software Release Architecture

Gitlab, Deployment System, Test, Beta, Production..

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Multiple Environments

When a new Unity release are ready and have associated release notes then will they be available for uploading into the operators Test environment - when approved through testing can it be deployed on Staging Environment for Live testing - after this have been completed can it be deployed into Production Environment - an end to end process that ensure highest possible level on new software releases.



Test Environment

Staging Environment

Production Environment

Test Environment

- Environment in stand alone configuration
- Connected to remote satellite operators test interfaces across Inmarsat I4, Iridium, Thuraya
- Test environment will be used for comprehensive testing of new releases
- Can be used for internal training
- Test of new products as well as rating plan and product template testing
- Test Environment normally 3 servers with no POP manager access

Staging Environment

- Environment directly connected to Live Satellite networks that allow real testing
- Allow real testing end to end
- Can be connected to POP Manager and allow real POP provisioning
- Integrate directly with Inmarsat I4, Iridium, Thuraya, Eutelsat...

Production Environment

- Deployed after completed testing on Staging Environment
- Production setup can be different than staging, linked to redundancy as well as scalability
- Security can cause many more servers to be in production environment

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Software Development & Deployment

- Unity are developed in dedicated framework for Java and PHP
- Software framework is a platform for developing software applications which define the structure of programming system
- Advantage of using frameworks is – applying coding in a standardized format, higher security, faster development, easier integration and elements included are well documented.
- Software versioning and software repositories are stored in our Gitlab Servers that automatically manage versioning and allow multiple developers to be working in an organised way on the same code base.
- Mobileware have developed a deployment environment (Unity Deployment Software) that integrate directly with Gitlab and fully automate and manage software deployment from our two main locations in Singapore and Amsterdam.
- Gitlab are not just used for code repository – it also maintain changes linked to database part – their will together with software releases often be database updates adding extra fields and similar – Gitlab will handle these associated SQL scripts.
- Deployment servers will maintain each single operators configuration files – that mean all software and configuration are fully available from Gitlab.

Redundancy Architecture

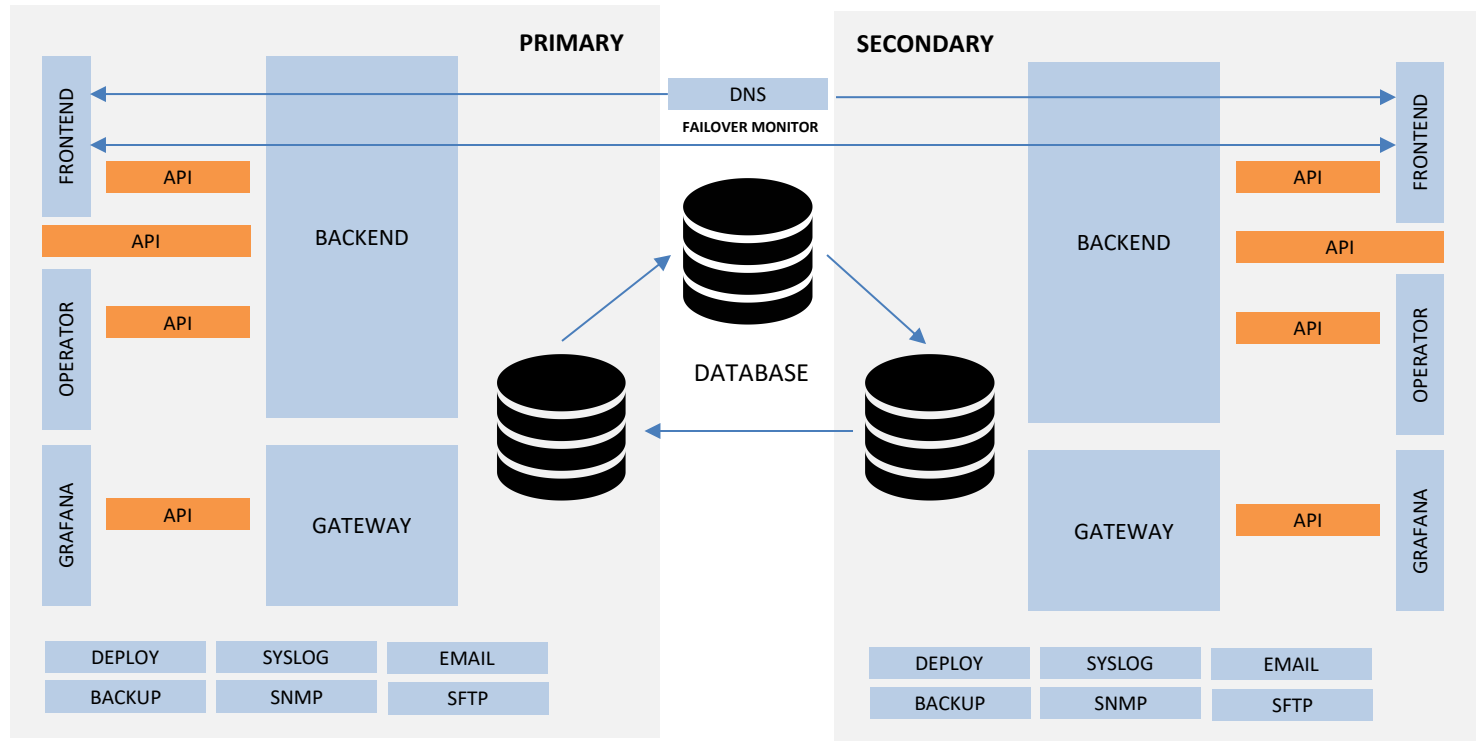
Primary, Secondary System, Replicated Database Environment

Redundancy

- Install Unity in many sizes having different level of redundancy
- Unity are having all communication performed in a stateless design that allow multiple backend as well as multiple frontend servers
- Any part of Unity can be scalled and made redundant
- Multiple frontends, multiple backends allow easy and simple redundancy when to come to hardware
- Redundancy setup with Unity are configured as two standalone systems where backend billing simply first get processed through the first server and following through the next server.
- Provisioning are build into a single server node in each side – server performing provisioning will automatically when succesfull generate same simcard as internal users in the secondary server.

Hardware Architecture

Unity can be scaled and delivered in many shapes dependant on the operators requirements for redundancy, scalability, security and similar - below is a typical sample implementation.



Backup Architecture

Software Deployment Center, Server Images backup, Database backup

Backup

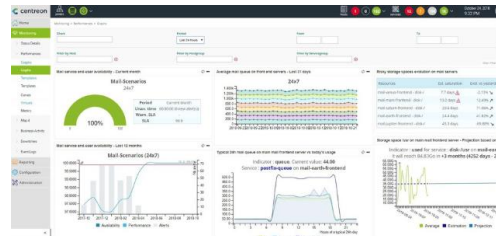
- Actual source code as well as operator configuration are all in Gitlab in two locations across Amsterdam and Singapore – this is getting automatic backup every night in each location
- Operator data in their production system are all in the database environment associated with each operator – this are getting backups performed in different ways
 - In cloud environment are databases backed up standard through server image backup every 3 days – or for premium support every 3 hours
 - Databases are as well getting backed up in the old facion way using incremental database backup using Percona XtraBackup
 - Replicated database environments are all installed with 3 database servers running master-master-master in a loop, when a database backup is performed will one of the servers be locked and a backup is performed after it is initiated again will is sync.
 - Operator located databases are getting backup performed by the operator in their own environment.
- UnitGate – metric collection from Inmarsat GX/FX as well as IoT/M2M data are stored in ElasticSearch that are file based – Unity have ElasticSearch running in two servers equipped with 32 Gb RAM each as a cluster – captured files get auto backup perfoemd into rackbased Synology units.

Monitoring Architecture

SNMP, API monitoring, Syslog, Rotating logfiles, Autobanning monitoring

Monitoring

- Mobileware are running Centreon with integrated Nagios SNMP monitoring across all platforms and have developed a list of special API calls that perform end to end module monitoring across Unity functionality.
- Dedicated API calls have been implemented to report a long list of key monitoring points related to performance across provisioning, billing and module processes.
- Operator can get own SNMP monitoring implemented if solution are locally installed or their existing monitoring can be calling Unity monitoring API calls
- Unity will provide real time interfaces for service orders, failed service orders, processed
- CDR flow, mediation, collector, rating, monitoring...



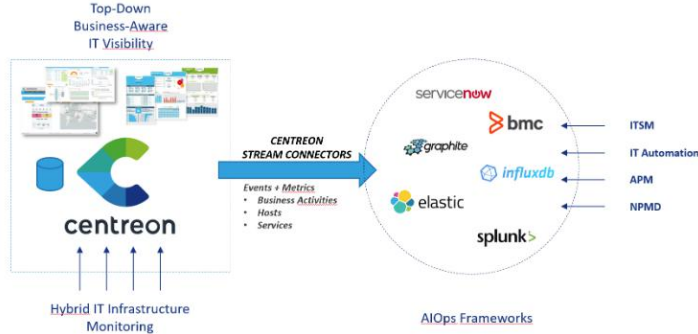
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Centreon in Unity

Our monitoring did back in time use Nagios - this have been replaced with Centreon that are based on Nagios but offer a easy to use interface and at the same time a far more advanced monitoring capability that allow streaming data monitoring - basiocally will it be able to gather data from hardware, applications as well as data patterns.

Unity have as listed implemented dedicated data flow API calls that allow Centreon to monitor health of the actual data flow and not just processes and hardware status - Centreon will see CDR errors, Provisioning work flow, remote satellite operator connectivity, CDR delivery...



Hardware Architecture

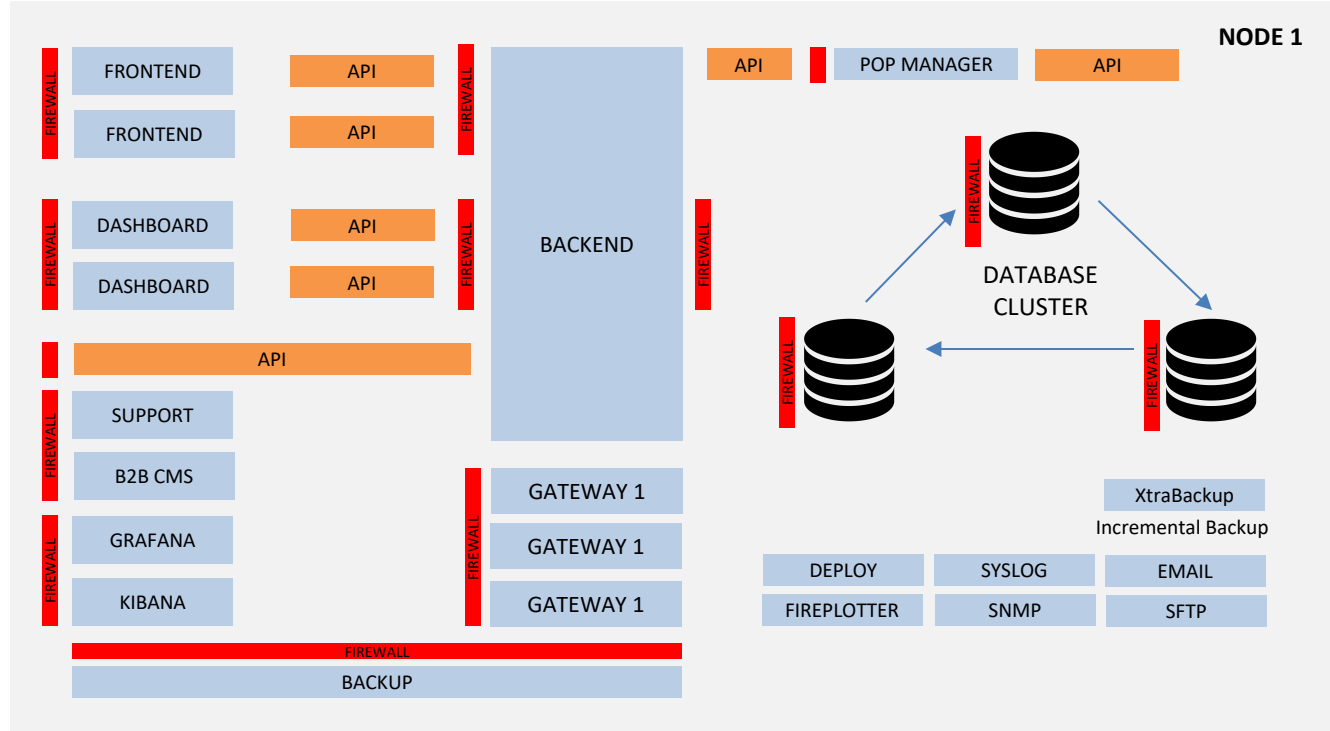
Redundant hardware, Stateless and Unlimited Scalability

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Hardware Architecture

Unity can be scaled to fit basically any level of redundancy, load as well as offer multiple frontend interfaces - so the below diagram are mainly listing a standard Unity node - in case of redundant setup will it be duplicated.

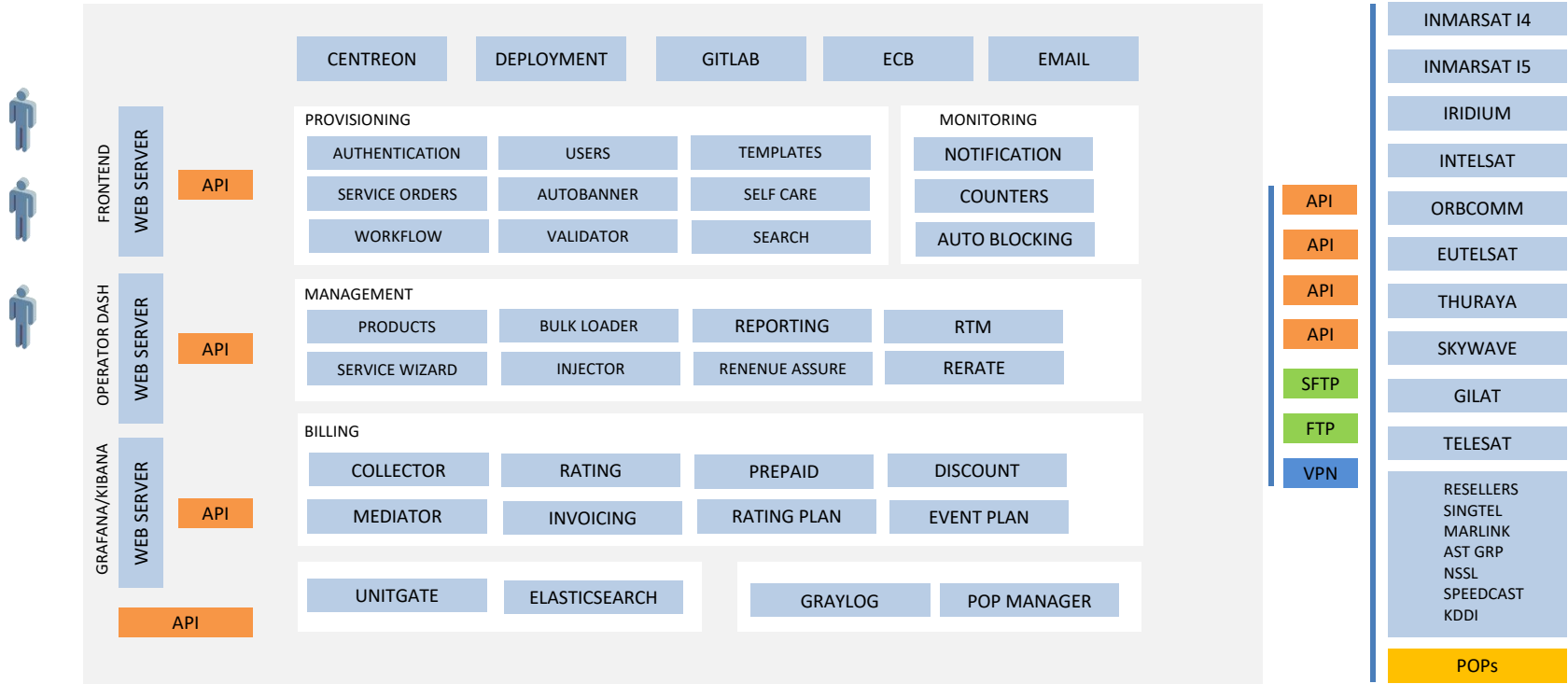


Software Architecture

Open Standards, Highly modular, Stateless Connectivity, Security

Software Architecture High Level

Unity consist of hundreds of modules - below are listed some of the main modules.



Software Framework behind Unity

Laravel Framework for frontend & Operator Dashboard

Bootstrap as GUI standard – Responsive Design – NGINX – JSON API

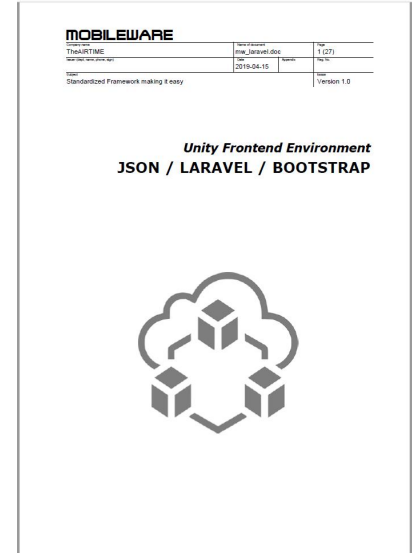
Speed of development – in a standardised and order way

Large benefit in using open standards and well tested libraries.

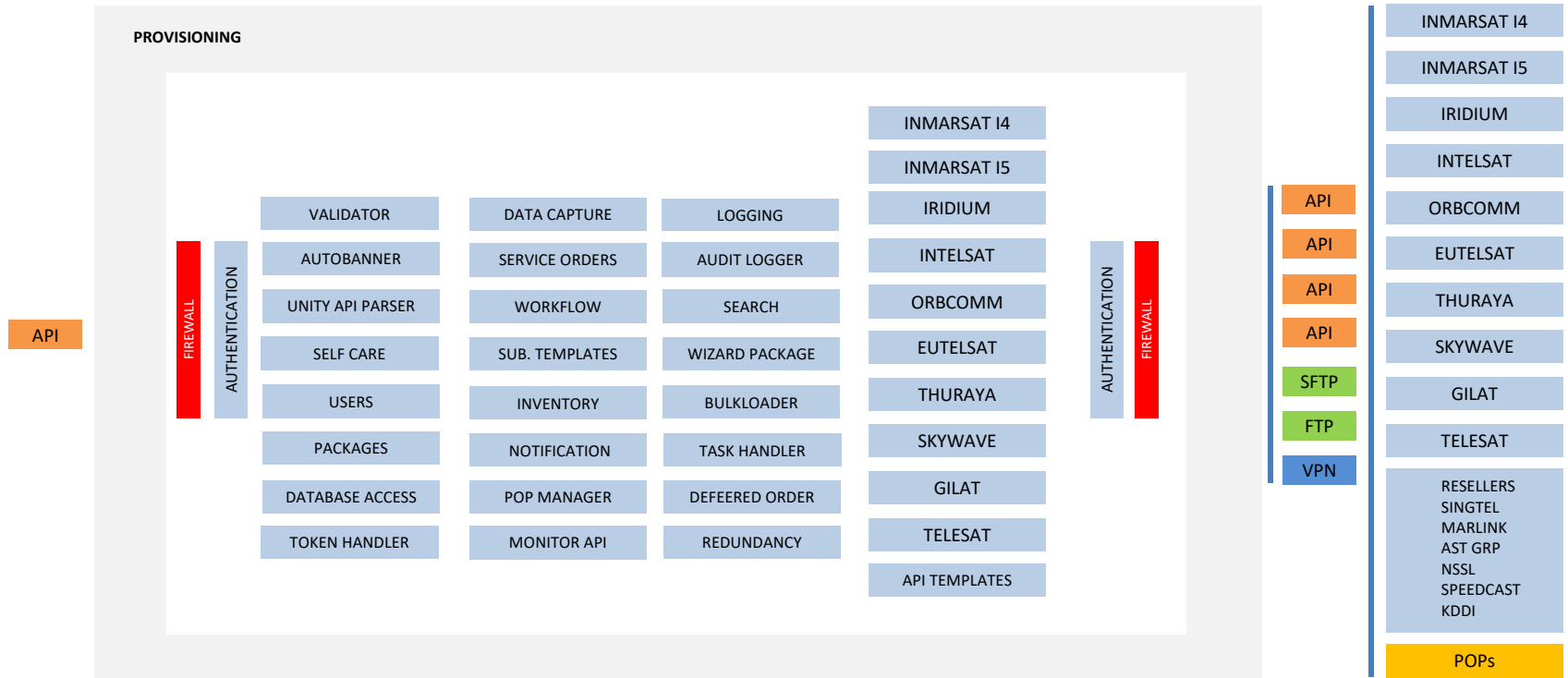
Standardised Security and Authentication to ensure solid setup

Unity are very easy to start working on top of linked to using standard tools across a modules and interfaces.

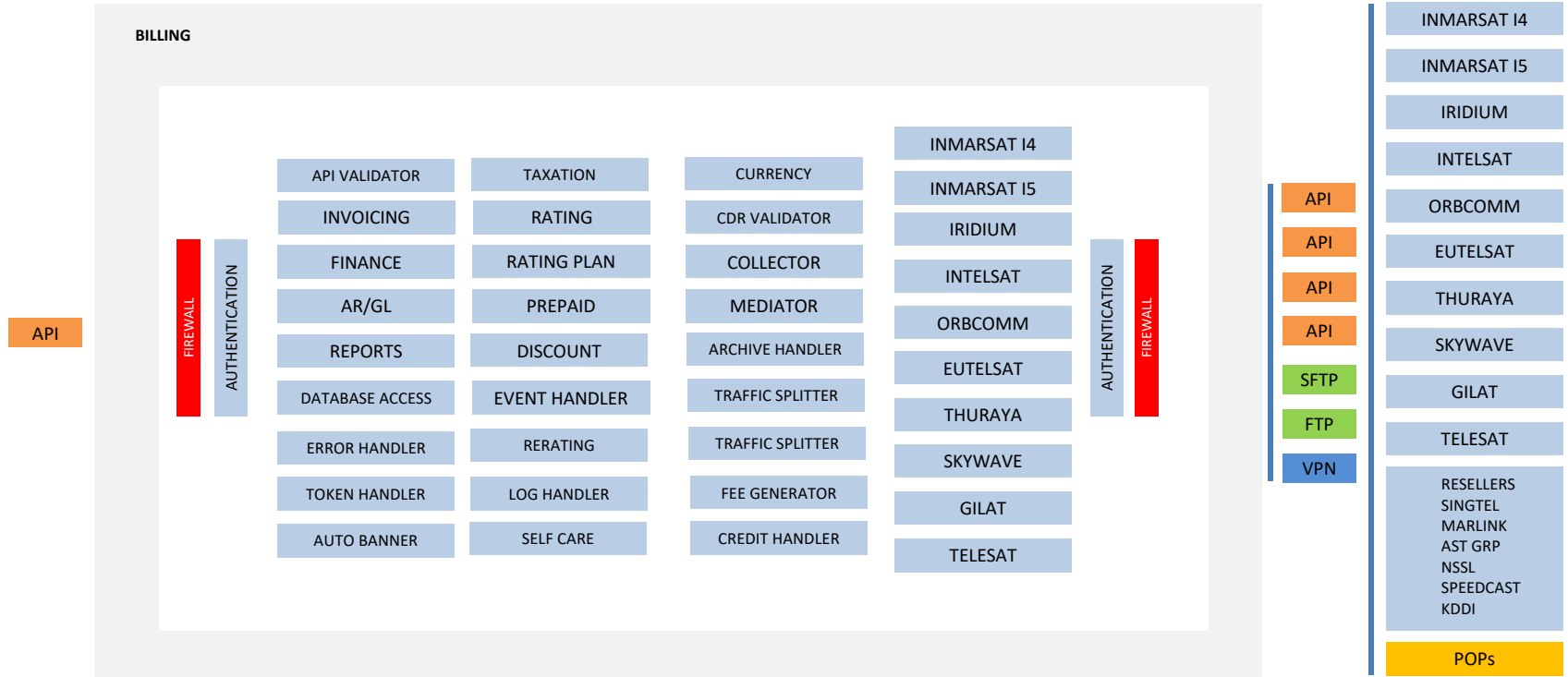
Lots of online help to be available for Laravel, bootstrap, Oauth2, Responsive design, web services, centos...



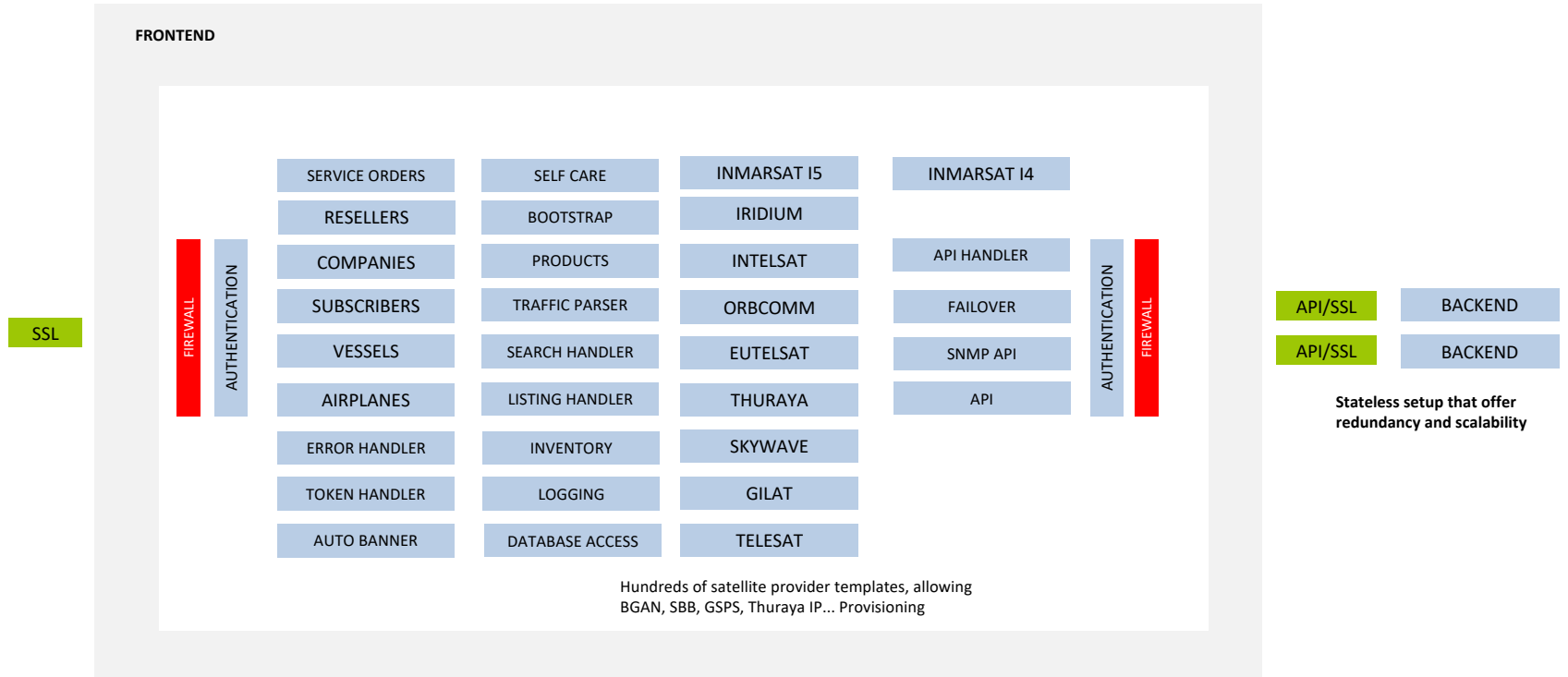
Backend Architecture Provisioning



Backend Architecture Billing



Frontend Architecture



UX Architecture

User Experience are making satellite easy to operate and use

UX (User Experience) in Unity Design

- Making all interfaces extremely user friendly are one of the key points in Unity
- Make an interface that are simple and yet powerful
- Integrated validation – field by field, page by page, product dependant...
- Integrated help where it is needed – in fields, sample files etc.
- Multi Language allover – French, English, Portuguese, Japanese...
- Environment based on open standards like Bootstrap for easy Layout adaption
- Design & Layout in Responsive Design that adapt to devices
- Easy to use, Drag & Drop interfaces, Only displaying possible options, Simplified interfaces...
- Dynamic context based menu's that align with:
 - Roles
 - Content
 - State
 - Type

Unity UX Information Architecture

Our GUI interfaces are constantly being improved linked to UX experience – from best practise to customer feedback.

Guidelines:

- Organisation of structure herunder menu's + sub menus + page tabs
- Labling need to be simple and yet very describing
- Navigation including hide/unhide fields 0 Dynamic content based menu's
- Search need to be generic and yet adaptive to content
- Export made simple and easy to use
- Wireframes when needed before implementation
- Standardised Layout across pages and sites - Bootstrap

Data Architecture

Databases – Naming - Data transparency with Revenue assurance

Database Architecture

Database are build with three nodes using MariaDB in replicated mode: master-master-master








Database naming are implemented so that each table have a meaning full naming and the same encount for fields defined inside each table – sample can be table name ‘rawcdr’ that will contain raw cdr data, or ‘cdr’ that will contain mediated cdr data. This naming convention make it really easy to build new joins and make it easy to learn the structure.

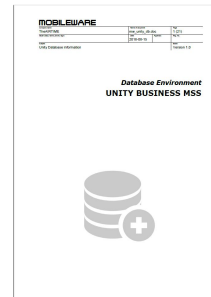
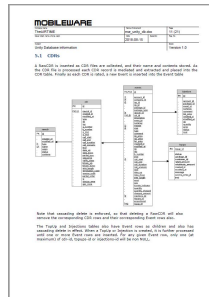
Database Architecture structure are getting defined and documented using Dataedo

Database architecture is done as a 3-tier architecture across presentation layer, business logic Layer including API logic, to dta access layer. And after implementation have database structure been applied Normalization – making sure a systematic approach in decomposing tables to eliminate data redundancy and eliminate undesirable characteristics.

1.13. Table: cdr

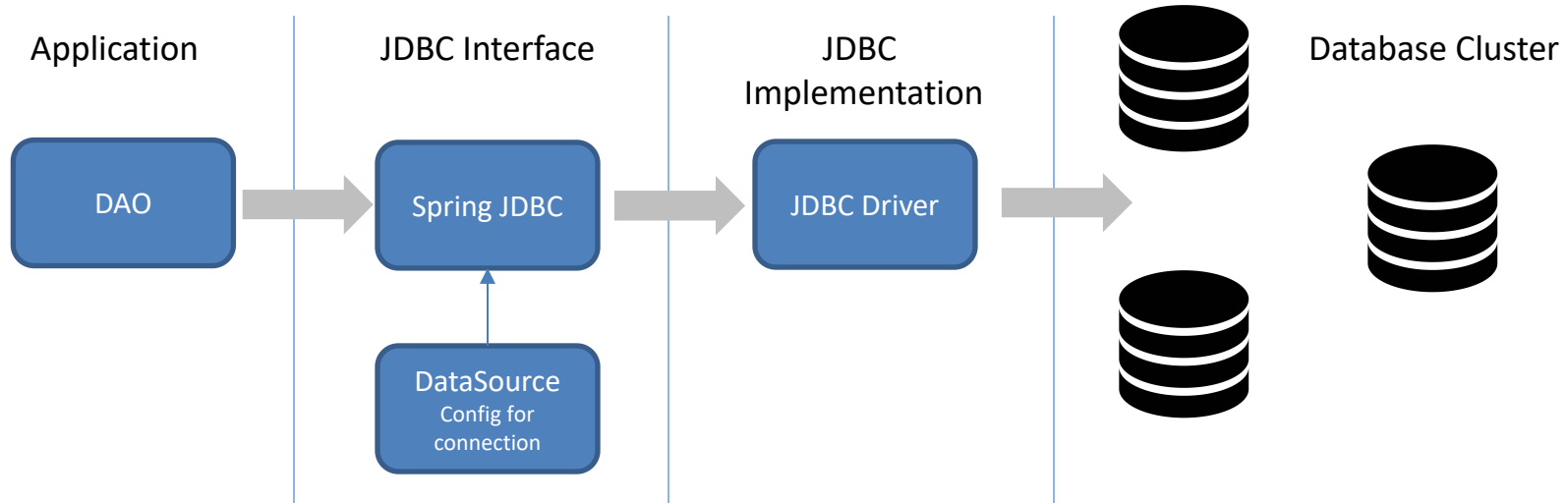
Columns

	Name	Data type	Description / Attributes
	 id	bigint(19, 0)	PK Identifier Identity / Auto increment
	rawcdr_id	bigint(19, 0)	FK to the parent raw CDR file file produced this CDR record
	created_at	timestamp	Automatically inserted timestamp upon creation Nullable Default: CURRENT_TIMESTAMP
	modified_at	timestamp	Triggered automatically to update timestamp on modification Nullable Default: CURRENT_TIMESTAMP
	type	varchar(32)	VOICE, SMS, GPRS, IP
	dp	varchar(32)	DP Identity



Database Access Layer - Architecture

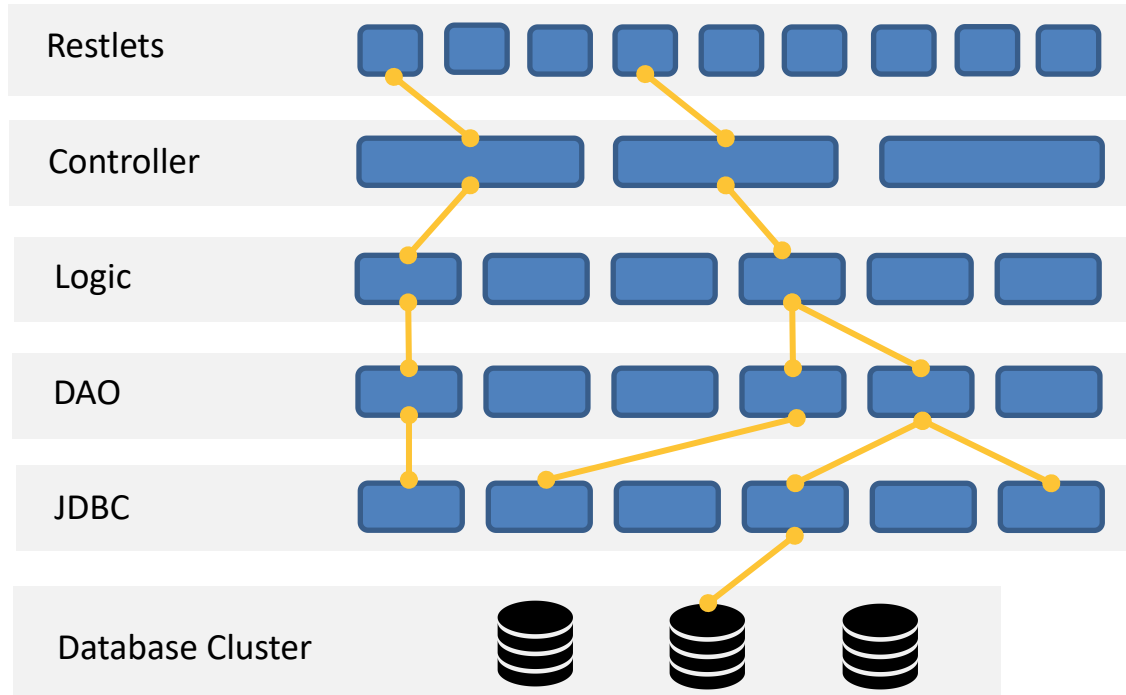
Database access are using DAO/JDBC access layer architecture to allow different database base models to be used.



DAO is an object that deliver an abstract interface to our database structure

Database Access Logic - Architecture

Database access logic end to end presented in blocks.



Data Access model

- ER Diagrams
- Attributes
- Database entities
- Relationships

Data Access Queries

Data Transparency - RA

Across multiple satellite networks are captured a very large amount of data, it can be difficult to get a good grip on what is going on inside the system end to end.

Unity are having integrated revenue assurance (RA) generation that generate multiple Excel sheets every month that each cover a dedicated area and do highlight all the main points, it could be provisioning, where it will be listing all about users, packages, states, service orders, workflow or it could be billing that will be listing cdr flow, errors, traffic types, trends.. Or inventory reports that show all about MSISDN numbers, IP addresses, simcards...

Home / Report / Export Directory / Revenue Assurance Export

Invoice Export | CDR Export | Revenue Assurance Export

revenue_assurance_export

201811 8 items	201906 6 items
201907 6 items	201908 6 items

Home / Report / Export Directory / Revenue Assurance Export

Invoice Export | CDR Export | Revenue Assurance Export

revenue_assurance_export → 201909

RA_CDR_201909.xls 65 KB	RA_INVOICE_20190... 737 KB
RA_PACKAGE_2019... 25 MB	RA_PROVISIONIN... 51 KB
RA_TEMPLATES_20... 46 KB	RA_USER_DATA_20... 7 MB

Information Architecture

Documentation, Video Training, Support Architecture

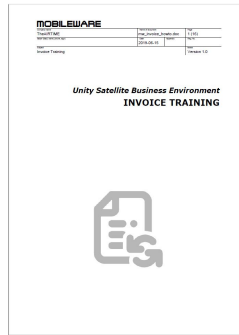
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Training Material

Unity are born with comprehensive documentation across all parts of the system and the flow. In case operator have the development part then will installation guidelines, operation guidelines and similar be fully available.

- 01_GETTING_STARTED
- 02_VIDEO_TRAINING
- 04_FRONTEND
- 05_OPERATOR_DASHBOARD
- 10_PROVISIONING
- 11_MONITORING
- 12_BILLING
- 13_INVOICING
- 14_NOTIFICATION
- 20_HANDS_ON_TRAINING_MATERIAL
- 21_UNITY_API
- 22_REVENUE_ASSURANCE
- 23_POP_MANAGER



BGAN-Sim-Bulk-Upload



BGAN-Subscription-Package-Wizard



Failed-CDR's



FBB-Subscription-Package-Wizard



Force-Package-Status



Front-End-Creat-Company



Front-End-Creat-Reseller



Front-End-Creat-Subscriber



GSPS-Subscription-Package-Wizard



Managing-Products-Product-Catalogue



MSISDN-Bulk-Upload



Operator-Dashboard-Overview

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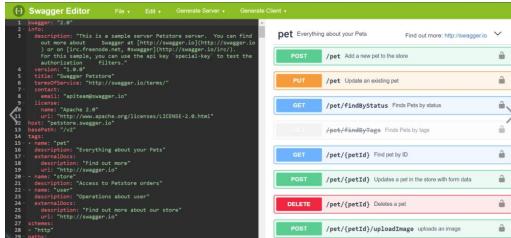
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Developer Tools

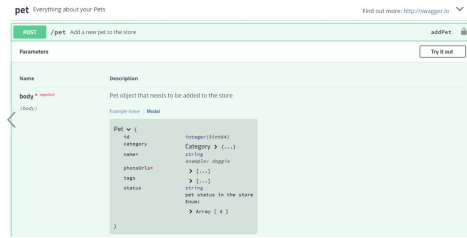
Operators can decide to get into different levels of building on Unity, it can be development inside the many template areas where example scripting languages like Apache Velocity are supported – allowing Operator to apply intelligence into their notifications or similar.

Or it can be building on Unity API interfaces where we offer a complete online developer setup based on Swagger API tools or it can be using our API documentation tools.

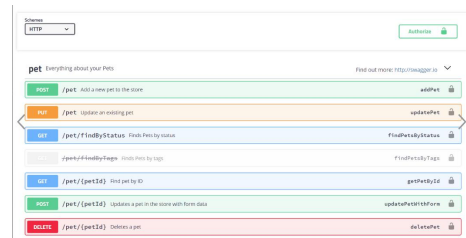
Or for the advanced Operator can they be applying own modules on top of Unity interacting with database layout or our well defined API interfaces – could example be to interact with notification module – having a module running that based on database triggers or data flow would need to send an outgoing notification in the foirmat of a file transfer, SMS message or a simple email.



```
Swagger Editor
1
2
3 description: This is a simple server Petstore server. You can find
4 out more about...
5
6
7
8
9
10
11
12
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16
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30
```



```
pet Everything about your Pets
POST /pet Add a new pet to the store
Parameters
name
description
body
Pet {
  id: Integer (int64)
  name: string
  category: Category { ... }
  photoUrls: string[]
  tags: { ... }
  status: string
}
Example value: {
  id: 1
  name: "doggie"
  category: {
    id: 1
    name: "Dogs"
  }
  photoUrls: [
    "http://www.swagger.io/d/doggie"
  ]
  tags: [
    "tag1"
  ]
  status: "available"
}
```



```
pet Everything about your Pets
POST /pet Add a new pet to the store
Parameters
name
description
body
Pet {
  id: Integer (int64)
  name: string
  category: Category { ... }
  photoUrls: string[]
  tags: { ... }
  status: string
}
Example value: {
  id: 1
  name: "doggie"
  category: {
    id: 1
    name: "Dogs"
  }
  photoUrls: [
    "http://www.swagger.io/d/doggie"
  ]
  tags: [
    "tag1"
  ]
  status: "available"
}
```

Support Environments

Unity are born with comprehensive documentation across all parts of the system and the flow. In case operator have the development part then will installation guidelines, operation guidelines and similar be fully available.

Mobilware

Support No: +45 46949266 support999

Ticket Management

Department Management

Group Management

User Management

TICKETS PENDING

OPEN TICKETS

TODAY 0

THIS WEEK 3

THIS MONTH 1

Trouble Tickets

0 Open Tickets
0 Pending Tickets
2 Closed Tickets

System Status

Frontends OK
Backends OK
Databases OK

FAQ

News

Operator Dashboard

Messages

10 New messages

Dashboard Tickets Management Group Management User Management

Support No: +1 424 229 2833

Tickets History

ID	Subject	Group	Firstname	Reply	Priority	Status	Create At	SLA
5234	H4 SBB TTY's rate plan selection need	BE	Igor	Reply	High	ANSWERED	2019-10-30 16:41	13 Hours 28 Minute
5233	H4 SBB Create Package Template changed oncountry/	BE	Igor	Reply	High	IN PROGRESS	2019-10-28 22:39	1 Day 19 Hours 42 Minute
5230	BONETA: Add Service Package ok	NO Technology	mariano_activations	Reply	High	IN PROGRESS	2019-10-25 11:58	2 Days 19 Hours 52 Minute
5229	CHANGE DEFER DATE OF DEACTIVATION_R	NO Technology	mariano_activations	Reply	High	ESCALATED	2019-10-23 13:31	15 Hours 52 Minute
5216	Consulting about Migration errors	KO	Maria_M	Reply	Medium	IN PROGRESS	2019-10-18 08:23	7 Days 14 Hours 48 Minute
5204	VP Bundle - 520546- Subscriptions High Data Usage	NO Technology	mariano_activations	Reply	Medium	ANSWERED	2019-09-29 09:36	31 Days 15 Hours 15 Minute
5175	GPRS Registered SIM Card	GB	Teresa	Reply	High	IN PROGRESS	2019-09-29 09:16	96 Days 23 Hours 11 Minute
5167	REQUEST TO AUTOMATIC RESUME FIB SIM CARDS	NO Technology	mariano_activations	Reply	High	ESCALATED	2019-09-18 09:03	29 Days 19 Hours 30 Minute
4837	Integration	GB	Teresa	Reply	High	IN PROGRESS	2019-09-27 09:34	139 Days 4 Hours 15 Minute
4814	Intech-Plan	GB	Teresa	Reply	High	ANSWERED	2019-09-18 11:52	182 Days 19 Hours 01 Minute

Showing 1 to 10 of 11 entries

Open Change Status

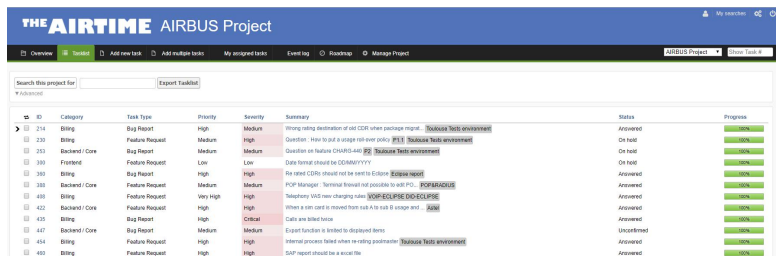
Unity Support environment architecture are build so that it is fitting directly into Unity normal setup – all based on same Bootstrap and can easily be adapted to fit with operator specific implementations, it is as well able to handle integrated SLA monitoring in direction of customers.

Mobilware are using this ticket module but it is also available for operators to add to their business in their NOC environment.

Project Environments

Unity have a simply fied version of Jira implemented that easy and simple adapt to specific project – allowing implementation or project progress to be managed.

Project planning and progress are normally not handled in our support environment as it is different team members that are dealing with the information and the tasks.



ID	Category	Task Type	Priority	Severity	Summary	Status	Progress
214	Billing	Big Report	High	Medium	Wrong billing destination of old CSR when invoice moved. Subsidiary Test environment	Answered	100%
215	Billing	Feature Request	Medium	High	Question: How to add a change the order policy. PSE - Subsidiary Test environment	On hold	0%
215	Backend/ Core	Big Report	Medium	Medium	Question on Nature CHANGELAN PSE - Subsidiary Test environment	On hold	0%
390	Frontend	Feature Request	Low	Low	Date format should be DD/MM/YYYY	On hold	0%
390	Billing	Big Report	High	High	The order CSRs should not be sent to Citeline. Subsidiary Test environment	Answered	100%
391	Backend/ Core	Feature Request	Medium	Medium	PCP Manager: Terminal should not possible to set PC. PSE - Subsidiary Test environment	Answered	100%
446	Billing	Feature Request	Very High	High	Telephone VLD now charging rate. VOR-EOLPSE DISCLOSE	Answered	100%
422	Backend/ Core	Feature Request	High	High	When a link card is received from sub A to sub B upon inv. PSE	Answered	100%
415	Billing	Big Report	High	Critical	Cash are short twice	Answered	100%
447	Backend/ Core	Big Report	Medium	Medium	Export function is linked to displayed items	Unconfirmed	0%
454	Billing	Feature Request	High	High	Internal process failed when re-rating goodman. Subsidiary Test environment	Answered	100%
455	Billing	Feature Request	High	High	Self-report should be a success	Answered	100%

Security Architecture

Security a highly important Functionality

THE AIRTIME

Mobileware Group

Security as a major requirement

- All functional units are separated with own security block
- Hardware level – can easily separate into a swift range of modular building blocks if needed linked to security
- Software level (OS & Coding) – OWASP Secure Coding Practices
- Interfaces (API's / Firewalled / Realtime Scanned)
- Usernames / Passwords – Salted Hash Algorithm
- Single Sign On – Token based with Certified OpenID Certified

Security

- All servers have own Firewall
- Real-time security monitoring
- Auto banning of IP addresses
- SSL certificated – highest security level
- HP Fortify scanning – OWASP scanning
- Military grade security on interfaces
- VPN access for maintenance
- Audit Trace on all levels
- ISO 27001 environment security
- Front-end to back-end connectivity 100% secure REST JSON based 'no direct database access like in traditional unsecure setup'



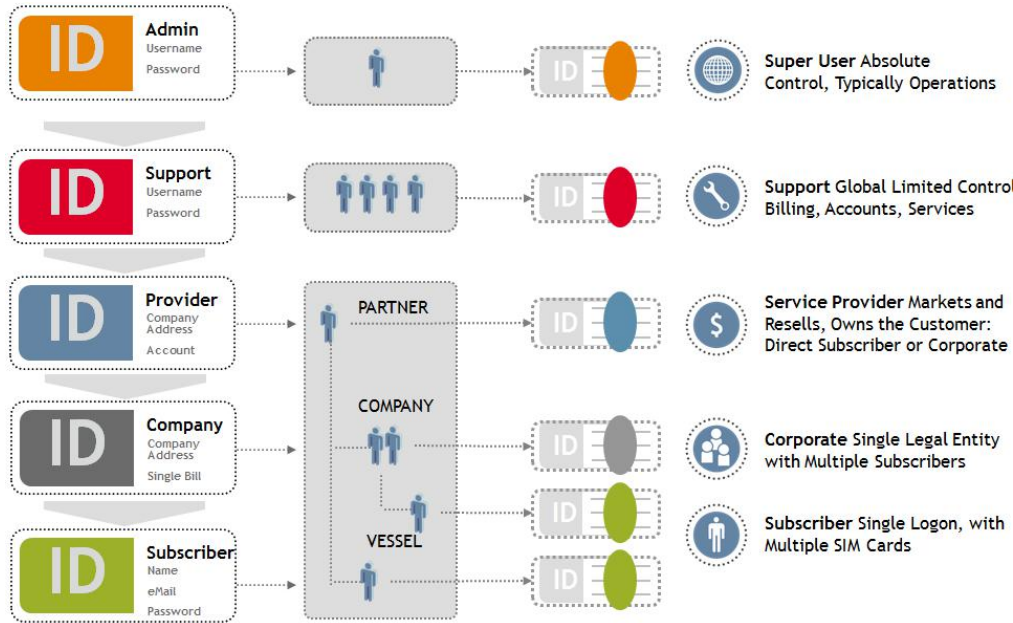
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Secure Software Coding

- Input validation - Output Encoding
- Authentication & Password Management (Token Oauth2 – SSO - username/password handling)
- Token & Sessin Management – In a Fully Stateless Manner
- Access Control / VPN – Real time monitoring and Auto banning
- Cryptographic Practises – One Way Salted Hash Algorithmes
- Error Handling and Logging
- Data Protection – Communication Security (SSH/VPN/SFTP/Secure APIs)
- Database Security
- File Management – Memory Management
- General Coding Practices
- Scanning – OWASP / HP Fortify / Fireplotter
- See details in 'MW_SECURE_CODING' + Document

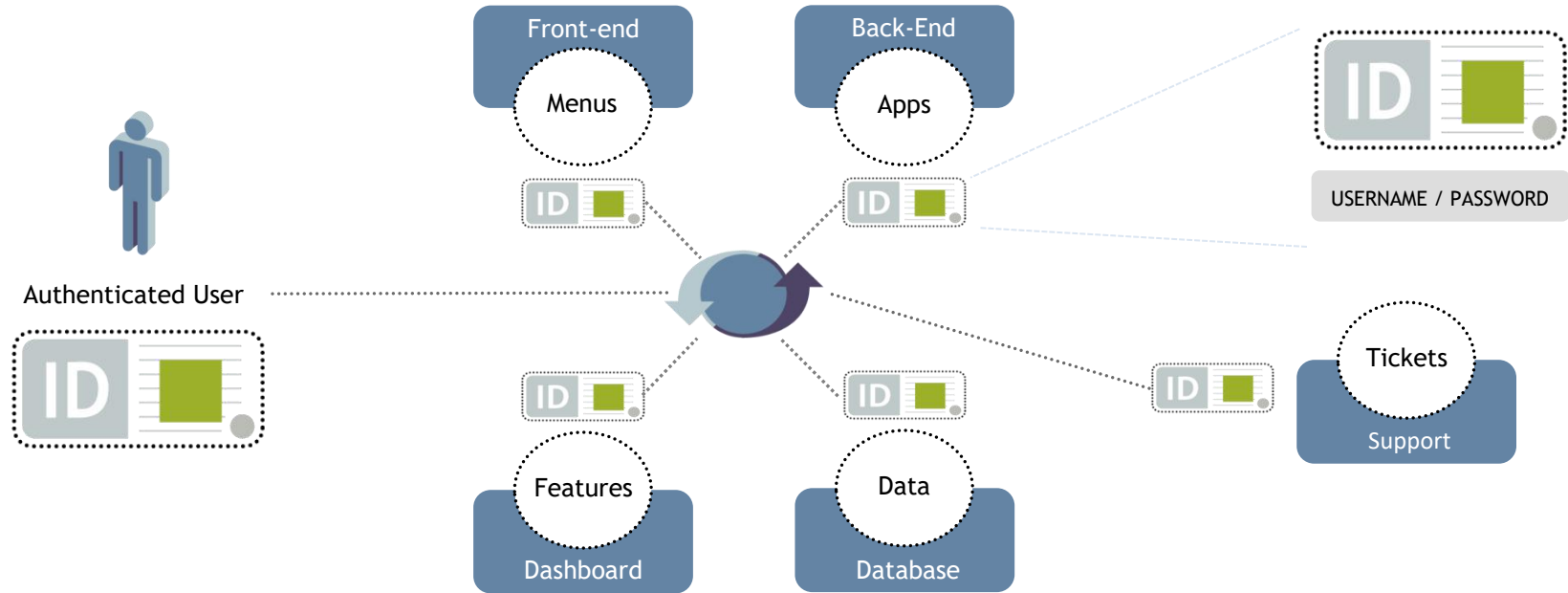
Authentication Hierarchy Security



Role based – but each users can be adjusted in permission settings

- Self-Care on all levels
- Upper level can own users
- Role based content
- Role based menu structure
- Manage Content based menu
- Support access all levels
- Alias accounts on all levels
- Contact users like pilots...

Single Sign On (SSO)

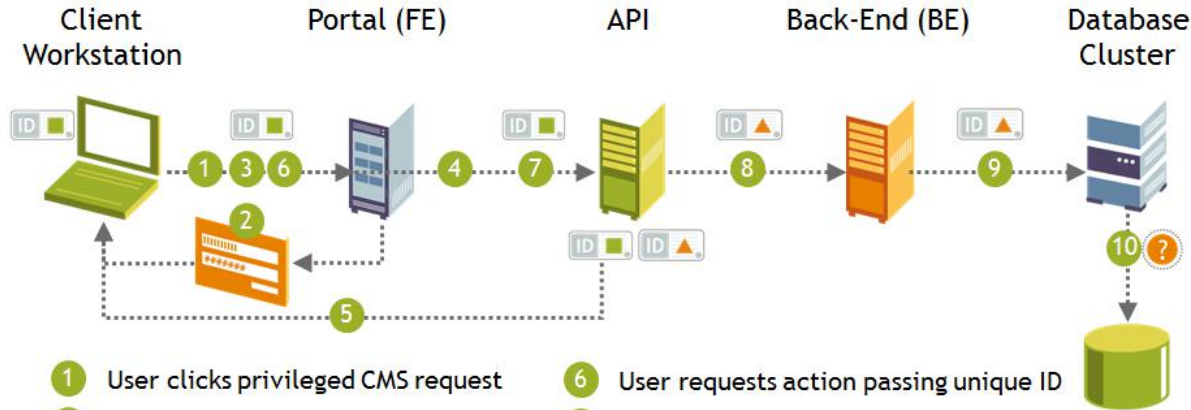


Token based access management – Stateless connectivity like Google that ensure highest possible security as well as allow any part to be scaled across many servers.

Token-based Architecture

- All interfaces are divided into need to access security levels
- All login and API calls are fully based on Token Architecture
- All modules communicate between each other using internal API calls – can be provisioning that need to send request to notification module – all using Oauth 2.0
- Token Service is the cornerstone for secure APIs – It is responsible for issuing tokens with information about the incoming request for our access control decisions.
- All using stateless architecture that allow high scalability as well as allowing a fully redundant environment setup.

Multi-Level Authentication



- 1 User clicks privileged CMS request
- 2 CMS displays login box
- 3 User enters the Username/Password
- 4 After local login, CMS forwards login
- 5 API creates unique one-off session ID & returns it to the user
- 6 User requests action passing unique ID
- 7 CMS forwards session ID to API
- 8 API maps ID and invokes REST JSON on
- 9 BE queries DB for internal ID and roles
- 10 Action is authorised & stack un-wound



Security highly imp

THE AIRTIME

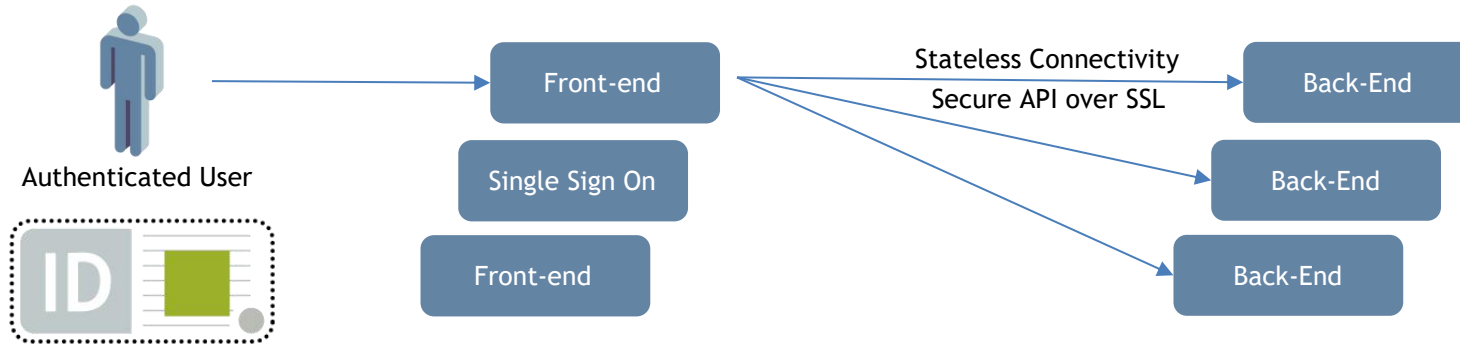
Mobileware Group

Dynamic Firewall Architecture

- Unity do consist of multiple hardware nodes each handling seperate parts – it can be Frontend, Backend, Operator Dashboard, Database, Graylog, ElasticSearch, POP Manager...
- Each single node will have integrated a dynamic firewall that work together with login and auto banner software
- Any repeated wrong flow will result in automated banning of the source and will in real time be reported to our security scanner

Secure Internet Access - Architecture

Only Frontend Servers (FE) are having full access to Internet, FE servers are hardened



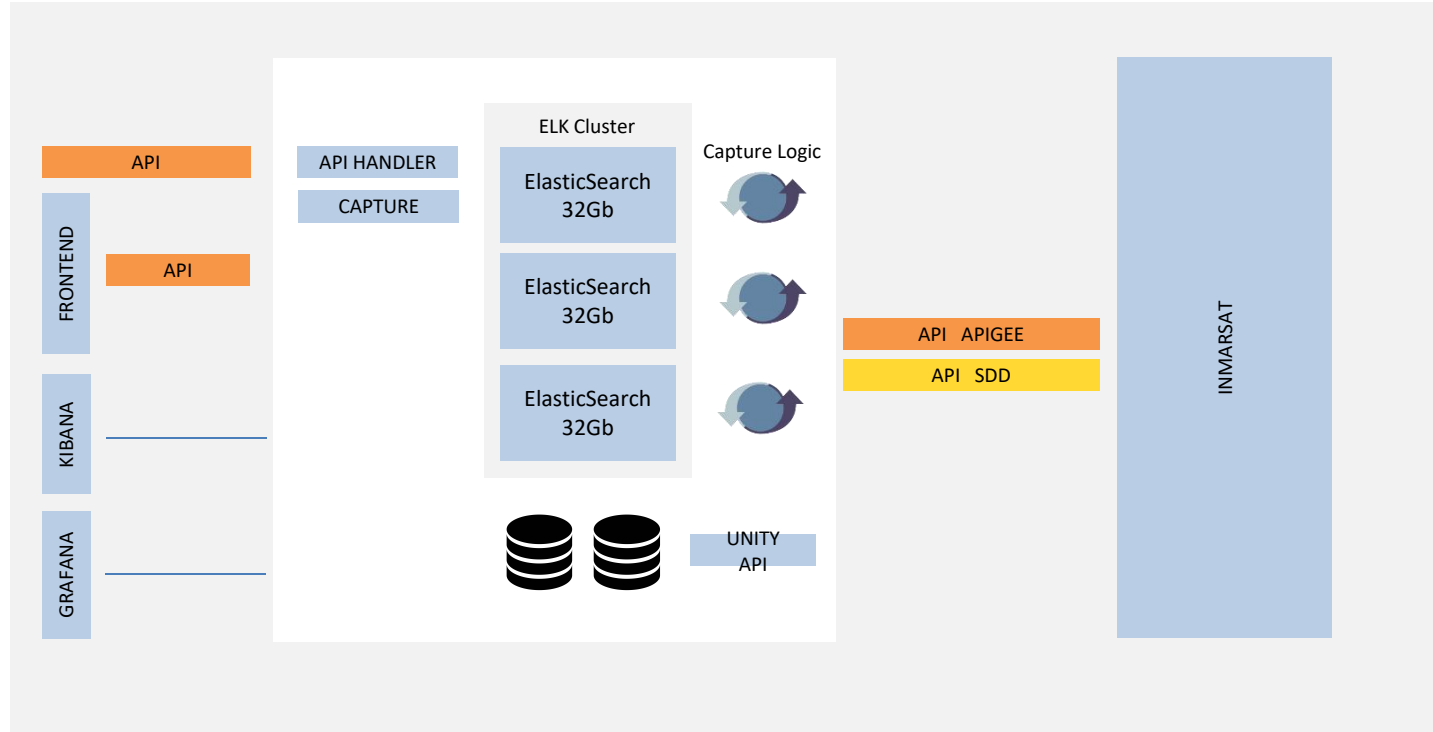
Each Frontend server are installed with a hardened version of Centos - and are equipped with a secured NGINX server - basically only delivering layout and colours - absolutely no data installed. The Stateless implementation allow many backends to be installed and many frontends to be installed - basically offering high scalability.

GX Metric Architecture

ElasticSearch, Grafana, Advanced Metric Collector, Unity ELK API

GX Metric Architecture

Unity can be scaled and delivered in many shapes dependant on the operators requirements for redundancy, scalability, security and similar - below is a typical sample implementation.

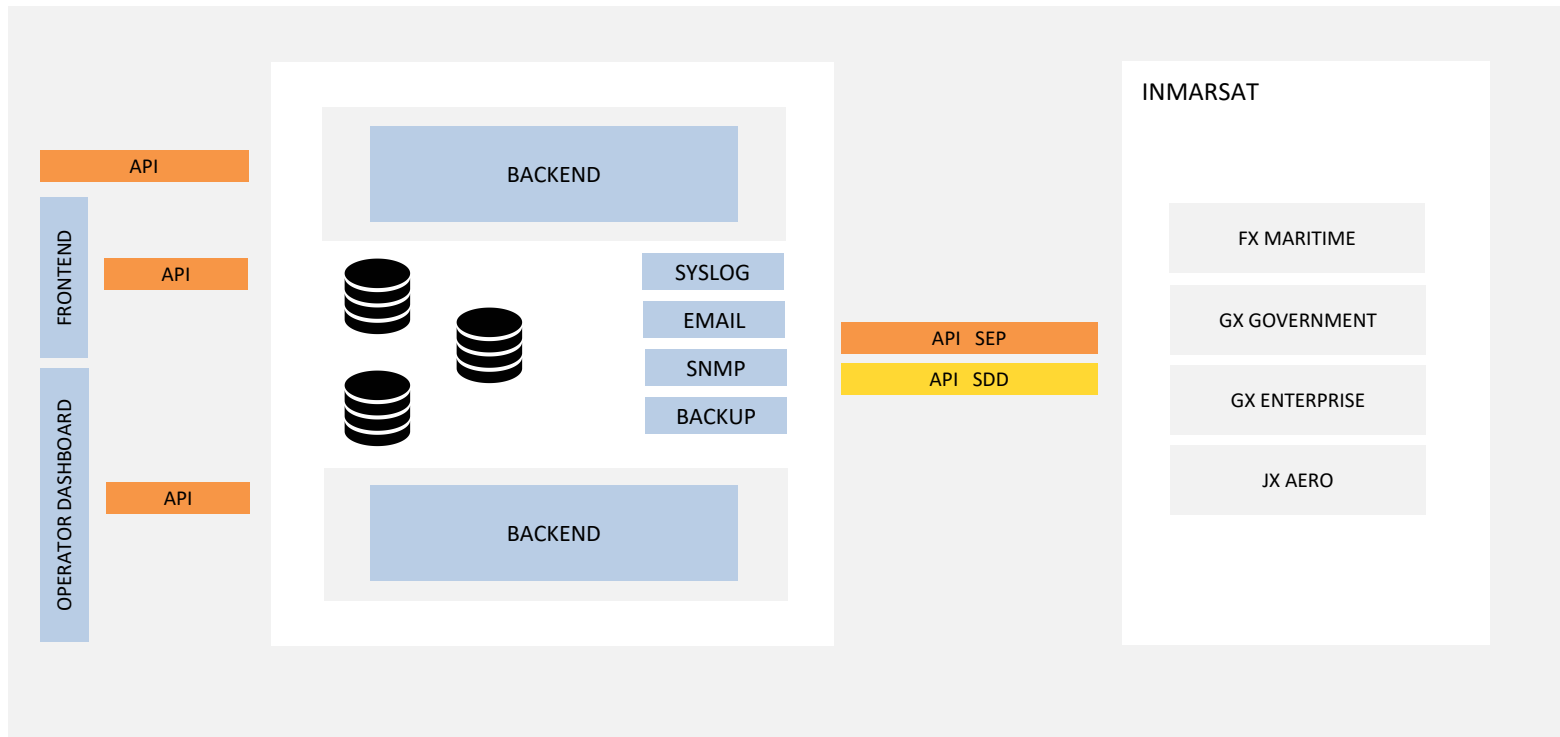


GX System Architecture

ElasticSearch, Grafana, Advanced Metric Collector, Unity ELK API

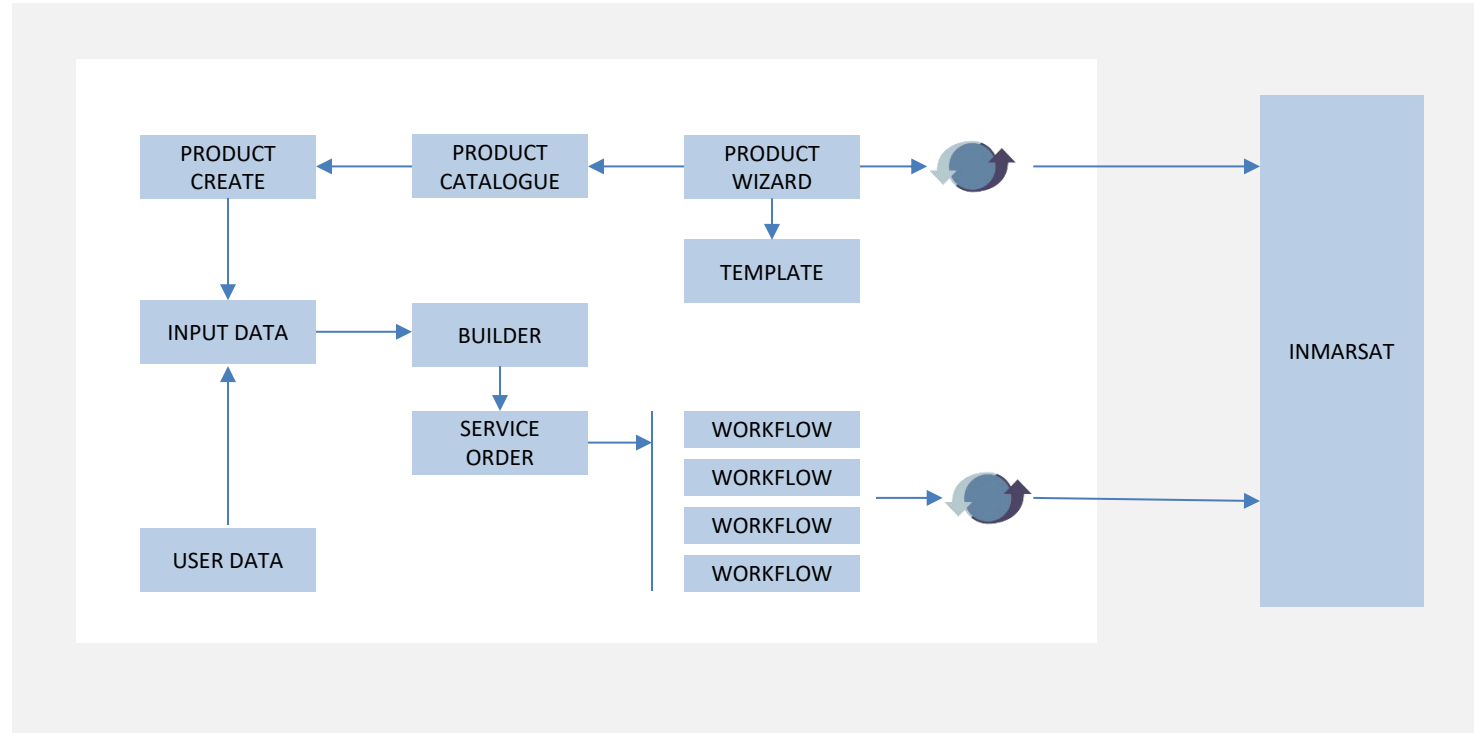
GX System Architecture

GX system architecture.



GX Provisioning logic

GX Provisioning are complex with lots of options to be adjusted and toggled.



GX SDD Architecture

Replacing Cisco SEP API with new Inmarsat SDD API

Unity new SDD Architecture - products

- Unity are in the existing Inmarsat SEP setup generating new products using Package wizard that are directly integrated with Inmarsat sales catalog and the underlying associated product data configuration needed for a package
- This product wizard are linked to the current Inmarsat offerings for VAR tier1 and VAR tier2 – meaning each single operator will automatically only have access to build products that Inmarsat have enabled for them.
- When a product is selected then will Unity automatically preconfigure hundreds of configuration data that get added to the associated product template for a given product.
- The staff member the build and design the new product can manage the different core settings in the background so that when a staff member in NOC, activation team or an external partner perform actual terminal activation will they only need very basic knowledge – selecting product , add TPK and potentially select number of IP addresses to be used on a given terminal.
- All other parameters across port settings, SVN, BGP and similar are all preconfigured on template level.
- In the new SDD are we implementing the same functionality into our package wizard as this deliver an unmatched level on UX experience to the end users performing the daily work - 'basically making a complex Inmarsat GX/FX/JX simple to use.

Troubleshooting Architecture

Architecture that make service order handling transparent

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Mobileware Group

Direct access to machine room

Normally is the complex part provisioning actions being processed through dedicated API interfaces when these take place will they always be processed through service orders that can have undelaying workflow orders – on billing will a failure result in a CDR failure and issue can be sorted and following can rerating be applied. When it come to provisioning is it a little more complex – and to give better access to what is taking place have we in service order interface integrated the ability to view each API request and response – simply by clicking on the green or red leds:

Dashboard Provisioning Billing Monitoring Inventory Prepaid Sale Orders Operator Supports Settings Topup

Home / Provisioning / Service Order / Service File

Service Order Service File

VIEW SERVICE FILE

ID: 565537
File Name: REQ_1234567890-ActivatePackage-188961-20170829-085114.xml

Service File:

```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <ns3:order xmlns:ns3="http://sd.cisco.com/oss/fulfillment">
3   <orderName>Marketable Package</orderName>
4   <orderType>Marketable Package</orderType>
5   <transactionOrder>Subscription</transactionOrder>
6   <item name="Marketable Package" version="1.0">
7     <namespace name="MARKETABLE_PACKAGE_DETAILS">
8       <parameter name="ADMINISTRATIVE_VAR_EXTERNAL_ID" type="String" value="VAR000000000012345"/>
9     </parameter>
10    <parameter name="MARKET_ID" type="String" value=""/>
11    <parameter name="CONTRACTS" type="Array">
12      <parameter name="CONTRACT" type="Object">
13        <parameter name="ID" type="String" value="9878675643"/>
14        <parameter name="DURATION" type="String" value=""/>
15        <parameter name="DESCRIPTION" type="String" value="FX-100 4:1 1536/384 NTS"/>
16      </parameter>
17    </parameter>
18    <parameter name="CURRENCY" type="String" value="USD"/>
19    <parameter name="EXTERNAL_CUSTOMER_ID" type="String" value=""/>
20    <parameter name="FIXED_FEE_PENALTY" type="String" value="10.07"/>
21    <parameter name="GRACE_PERIOD" type="Long" value=""/>
22    <parameter name="INSTALLATION_CHG" type="String" value="0"/>
23    <parameter name="MARKET" type="String" value=""/>
24    <parameter name="MAXIMUM_PENALTY" type="String" value="30"/>
25    <parameter name="HPI_PACKAGE_ID" type="Long" value="2000007"/>
26    <parameter name="HPI_Band" type="String" value="FX-100 4:1 1536/384 NTS"/>
```

Dashboard Provisioning Billing Monitoring Inventory Prepaid Sale Orders Operator Supports Settings Topup

Home / Provisioning / Service Order / Service File

Service File

VIEW SERVICE FILE

ID: 565537
File Name: REQ_ActivnPackage188961-2016893-17300.xml

Service File:

```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <ns3:order xmlns:ns3="http://sd.cisco.com/oss/fulfillment">
3   <orderName>Marketable Package</orderName>
4   <orderType>Marketable Package</orderType>
5   <transactionOrder>Subscription</transactionOrder>
6   <item name="Marketable Package" version="1.0">
7     <namespace name="MARKETABLE_PACKAGE_DETAILS">
8       <parameter name="ADMINISTRATIVE_VAR_EXTERNAL_ID" type="String" value="VAR000000000012345"/>
9     </parameter>
10    <parameter name="MARKET_ID" type="String" value=""/>
11    <parameter name="CONTRACTS" type="Array">
12      <parameter name="CONTRACT" type="Object">
13        <parameter name="ID" type="String" value="9878675643"/>
14        <parameter name="DURATION" type="String" value=""/>
15        <parameter name="DESCRIPTION" type="String" value="FX-100 4:1 1536/384 NTS"/>
16      </parameter>
17    </parameter>
18    <parameter name="CURRENCY" type="String" value="USD"/>
19    <parameter name="EXTERNAL_CUSTOMER_ID" type="String" value=""/>
20    <parameter name="FIXED_FEE_PENALTY" type="String" value="10.07"/>
21    <parameter name="GRACE_PERIOD" type="Long" value=""/>
22    <parameter name="INSTALLATION_CHG" type="String" value="0"/>
23    <parameter name="MARKET" type="String" value=""/>
24    <parameter name="MAXIMUM_PENALTY" type="String" value="30"/>
25    <parameter name="HPI_PACKAGE_ID" type="Long" value="2000007"/>
26    <parameter name="HPI_Band" type="String" value="FX-100 4:1 1536/384 NTS"/>
```

Dashboard Provisioning Billing Monitoring Inventory Prepaid Sale Orders Operator Supports Settings Topup

Home / Provisioning / Service Order

Service Order Work Plan

Search

D	✓	☑	Status	Type
●	●	●	OK	PACKAGE
●	●	●	OK	REMOTE SITE
●	●	●	OK	REMOTE SITE
●	●	●	OK	REMOTE SITE

Sample Environment

The following will mainly be showing some sample interfaces

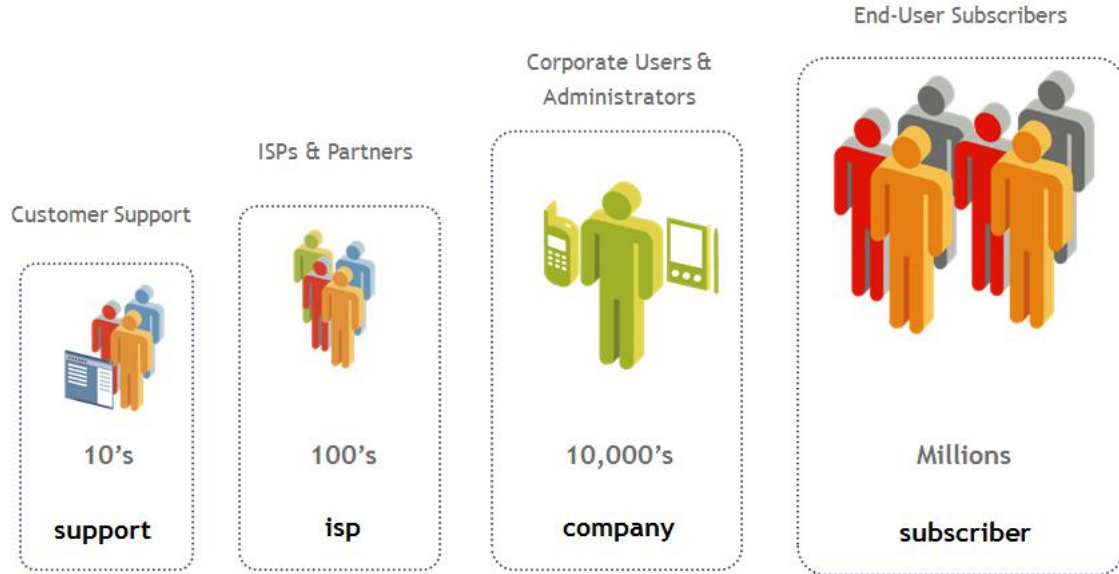
Frontend Environment

Frontend

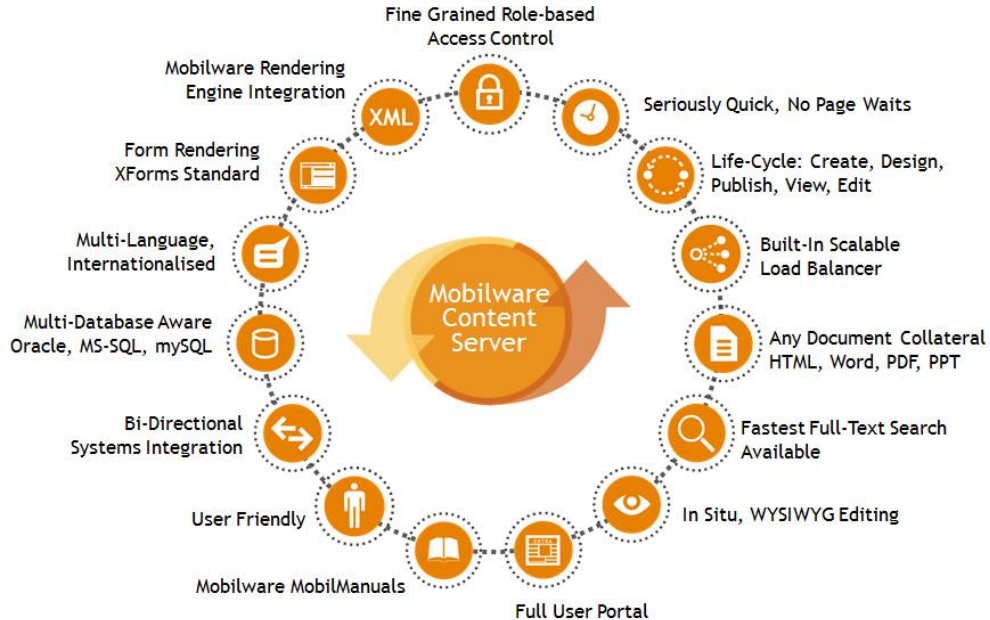
- Front-end is providing extremely easy to use Customer Self-Care
- Allow Operator activation team to perform daily tasks
- 100% web based – no windows legacy components
- Access w. browsers from our 16 world wide cloud points
- Build on latest secure standards w. java, php, velocity, secure unix
- Latest Bootstrap Layout – allow fastest standard layout changes
- [Link Bootstrap1](#) [Bootstrap2](#) What is Bootstrap!
- Responsive design – Running on Laptops, HD desktops, Ipads, mobile devices...
- Integrated form field error handling + integrated help
- Advanced error respond messages based on years expirence
- Dynamic data filling from parent level, from external databases...
- Taking satellite user interfaces to a completly new level



One Environment for All

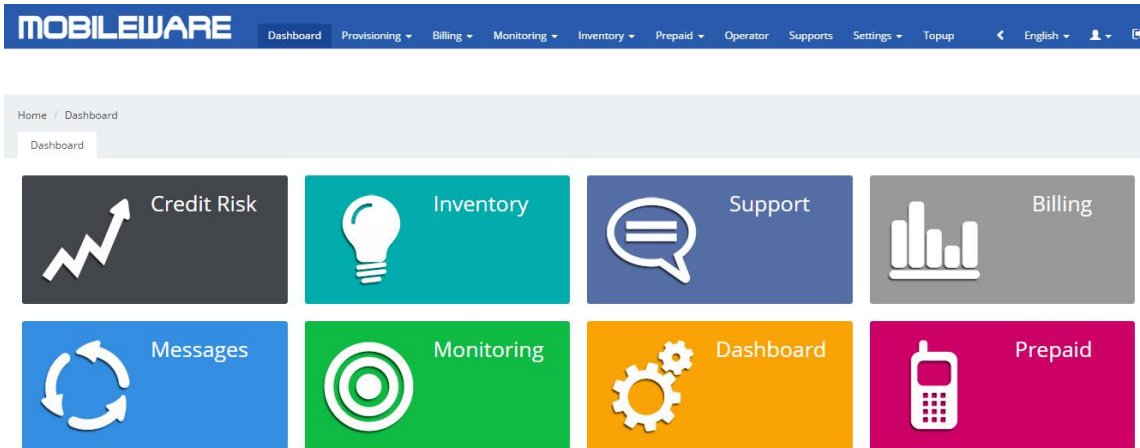


Frontend Environment



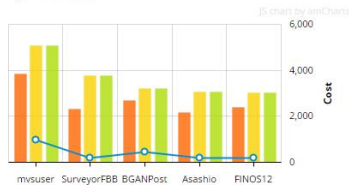
- Bootstrap Layout
- Apache / Unix - centos
- 100% web service based REST JSON
- Form error handling
- Dynamic field validation
- Object Oriented Design
- Many Frontend on one backend
- Responsive Design
- Real time data handling - Fast

Frontend – Sample Views

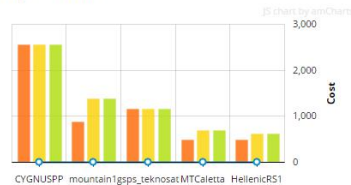


- Sample view – many layouts
- Top menu / side menu etc...
- Support Level
- Partner Level
- Company Level
- Subscriber Level
- White lable for large customers

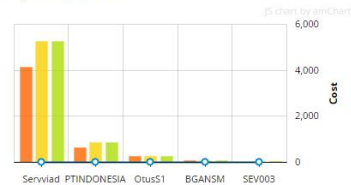
Top 5 Data



Top 5 Voice



Top 5 Stream



Metro Start page with focus on warnings – allow operator and reseller to fast see if they are running example low on inventory.

Frontend – Sample Views

Company name	Status	Network status	Reseller ID	Contact	Details	Reference	Created At
TOYOTA GROUP JAPAN	ACTIVE	ACTIVE	18390	比高 日本人の氏名	Toyota 秋篠宮	SAP 19925	Feb 16, 2015 3:56:31 PM
CNN MEDIA GROUP	ACTIVE	ACTIVE	18362	Niels Johnsson	CNN Broadcast Group	SAP 19925	Feb 16, 2015 11:49:18 AM
SHELL FUEL GROUP	ACTIVE	ACTIVE	18290	Rikke Smidth	Oil Rig Communication	SAP 19925	Feb 9, 2015 4:56:08 PM
SONY MEDIA EUROPE	ACTIVE	ACTIVE	17990	Lee Chang Nee	Sony Studio Group	SAP 19925	Jan 14, 2015 5:10:22 PM
CHINA TELESAT LTD	ACTIVE	ACTIVE	17554	根據作為基本的 您呼	尚書, 紫雲上	SAP 19925	Dec 9, 2014 3:57:41 PM
SAT RUNNER AB	ACTIVE	ACTIVE	17182	Lasse Malm	Satellite Shop	SAP 19925	Nov 11, 2014 2:42:08 PM
MARITIME TRACKER APS	ACTIVE	ACTIVE	16946	Henrik Hansen	World wide tracking	SAP 19925	Oct 28, 2014 2:47:38 PM
TELECOM ITALIA	ACTIVE	ACTIVE		Marizio Tammer	Telecom Operator	SAP 19925	Oct 24, 2014 3:29:01 PM
NANVMAN NEW ZEALAND	ACTIVE	ACTIVE		Torben Handler	Industrial Tracking/Mining	SAP 19925	Sep 26, 2014 3:56:02 PM
USA DID MILITARY	ACTIVE	ACTIVE		General SR.Lambert	Marine Com Group	SAP 19925	Sep 16, 2014 11:17:53 AM
OCEAN COAST AB	ACTIVE	ACTIVE		Belinda Bramsnaes	Coast Guard USA	SAP 19925	Aug 15, 2014 1:58:17 PM
SHIPPING GROUP	ACTIVE	ACTIVE	15938	Jan Egehorn	Vessel Tracking	SAP 19925	Aug 7, 2014 6:51:38 PM
WORLD MARINE	ACTIVE	ACTIVE	15846	Miller Nash	Ocean monitoring	SAP 19925	Jul 30, 2014 1:59:38 PM
DEXTER SATCOM	ACTIVE	ACTIVE	15826	บริษัท ไม่นานาชาติ จำกัด	บริษัท ไม่นานาชาติ	SAP 19925	Jul 29, 2014 4:34:42 PM
DEEP WATER BOX	ACTIVE	ACTIVE	15586	Benny Plommer	Measurement Globally	SAP 19925	Jul 3, 2014 8:23:57 AM
GERMAN ARMY	ACTIVE	ACTIVE	14938	Bjarne Hubert	Military services	SAP 19925	May 9, 2014 4:49:50 PM
SAMSUNG	ACTIVE	ACTIVE	14162	Gaham Nanning	Data collection	SAP 19925	Mar 10, 2014 4:49:34 PM
LOCPOINT	ACTIVE	ACTIVE	13970	Henrik Christensen	M2M monitoring and Remote cont	SAP 19913	Feb 21, 2014 10:37:14 AM
COBHAN SEATEL	ACTIVE	ACTIVE	13950	Joergen Smidth	Test of satellite equipment	SAP 19925	Feb 20, 2014 3:41:41 PM
FLEETMON	ACTIVE	ACTIVE	13934	Bendte Poulsen	Vessel Tracking	SAP 19925	Feb 19, 2014 6:31:08 PM

All integrated menus are context based allowing them to adapt automatically to user, package and similar.

Multi language site interfaces allow easy adaption to specific local regions.

Aim at displaying all content on a single page – removing the need for page scrolling.

Frontend – Sample Views

The screenshot displays the MobilWare operator portal interface. The top navigation bar includes 'Home', 'Company', and 'Company Edit'. The left sidebar lists various menu items such as 'Dashboard', 'Provisioning', 'Service Order', 'Support', 'Reseller', 'Company', 'Subscriber', 'Package', 'Billing', 'Monitoring', 'Inventory', 'Prepaid', 'Operator', 'Support', 'Settings', and 'Tools'. The main content area is titled 'Company Edit' and contains several sections:

- Company Details:** Fields for Company name (TOYOTA GROUP JAPAN), Reference (SAP 19925), Contact (比嘉 日本人の氏名), Details (Toyota 新車), Currency (USD - US Dollar), Internal Account, Virtual Account, Anonymous Account, and Customer Type (Reseller).
- Contact Details:** Fields for Web Site URL (www.toyota.com) and Work Phone (6600202002).
- Address Details:** A map view showing the location in Japan, with fields for Address (1-5-2 Higashi-Shimbashi), City (Shodome City Center), and PO Box (PO-5543).
- User Information:** Fields for User Name (SAVANTUM111), Password, Repeat Password, Email (petri.kotah@savantum.com), Preferred Language (English), External Account ID, Account Owner (SetLogin Europe), and Business Type (BIGAN Broadband).
- Mobile Information:** Fields for Mobile Phone (6628788388282) and Fax (6676078776).

Dynamic form adaption minimize user errors, the different user interfaces are automatically adapting to the type of action.

Integrated validation are done locally in browser as well as on dedicated field from backend data via JSON API calls. Enter example username and it will be on the fly validated.

Each field will be equipped with a small helper icon that will guide the user to what can be entered and in what format.

Frontend – Sample Views

The screenshot displays a web application interface for managing prepaid packages. On the left is a dark sidebar with a navigation menu. The main content area shows a table of packages under the 'Package Prepaid' tab. A context menu is open over the row for package ID 901112116386411, listing various actions. A green callout box points to the menu with the text: "Context based menus are role based + generated based on actual content of the line – in this case a prepaid package".

IMSI	MSISDN	Friendly Name	Status	Network status	Company name
901112116198932	870776305637	GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	Beijing Firstnav Commerce
901112114206712		FBB INM PC-FBSMALLVESS	ACTIVE	ACTIVATED	OCEAN COAST AB
901112116309715		GSPS INM PC-GSPSWHOLESALE	ACTIVE	ACTIVATED	Cellhire PLC
901112112565692		BGAN INM PC-BGANPREPAYGEO	ACTIVE	ACTIVATED	ENERGY WEST
RADII_TEKNOLOGI_ISATHUB		SCAP INM PC-ISATHUBPOOL	ACTIVE	ACTIVATED	VESTAS DENMARK
901112112702151		SCAP INM PC-ISATHUBPOOL	ACTIVE	ACTIVATED	VESTAS DENMARK
901112116326202		GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	MARTEL SATCOM
901112116261377		GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	Beijing Hailu Tech Co. Ltd
901112116261116		GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	Beijing Hailu Tech Co. Ltd
901112116378101		GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	DEXTER SATCOM
901112112003098		BGAN INM PC-BGANMBSA	ACTIVE	ACTIVATED	Customs and Border Protection Service
901112116386411		GSPS INM PC-GSPSALLOWANCE	ACTIVE	ACTIVATED	ERZIA Technologies SL
901112116378114		GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	DEXTER SATCOM
901112112702236		SCAP INM PC-ISATHUBPOOL	ACTIVE	ACTIVATED	OCEAN COAST AB
901112116362230		GSPS INM PC-GSPSWHOLESALE	ACTIVE	ACTIVATED	MOUNTAIN CLIMB LTD
901112114105071		FBB INM PC-FBSMALLVESS	ACTIVE	ACTIVATED	Cardland Marine

Frontend – Sample Views

The screenshot shows the Singtel dashboard interface. At the top, there is a navigation menu with items like Statistics, Provisioning, Service Order, Monitoring, Inventory, Dashboard, FAQ, Settings, and Topup. Below the menu, there are tabs for Home, Provisioning, Vessel, and Location. A dropdown menu is open under 'Location', showing options like Traffic Data, Group Package Overview, Spending & Usage, and Notifications. The main content area is titled 'VESSEL LOCATION' and displays a map of East China Sea with various cities labeled in Chinese and English, including Shanghai, Nanjing, and others.

Sample with top menu – this menu also adapt to the actual authenticated role

The screenshot shows the AST dashboard interface. At the top, there is a navigation menu with items like Statistics, Provisioning, Service Order, Monitoring, Inventory, Dashboard, FAQ, Settings, and Topup. Below the menu, there are tabs for Home, Monitoring, and Spending. A dropdown menu is open under 'Spending', showing options like Usage. The main content area displays a table of SIM card data with status indicators. A legend at the top indicates: Over max (red), Over warning/high (orange), Good (green), and Notification is not enabled (grey). The table has columns for SIM Card Number, MSISDN, Mobile Number, Type, Enabled, Suspension, Max, Warning, and Amount. The data rows show various SIM card numbers and their corresponding status indicators.

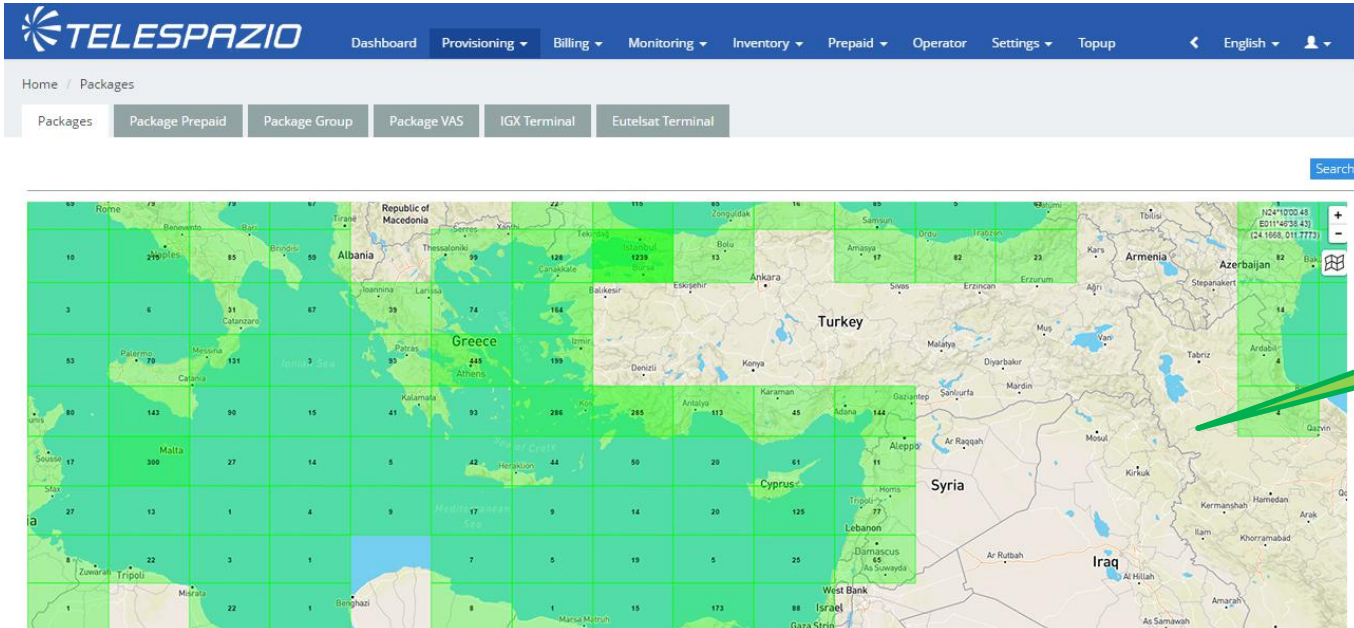
SIM Card Number	MSISDN	Mobile Number	Type	Enabled	Suspension	Max	Warning	Amount
6987091241825201	0011211825201	87077814694	GSFS	TRUE	FALSE	0.00	0.00	9677.39
6987091241827470	0011211827470	87077814670	GSFS	TRUE	FALSE	0.00	0.00	1408.15
69870913414195430	00112114195430	87077390270	FBB	TRUE	TRUE	0.00	0.00	12.10

Monitoring sample fast showing user that all it ok with green color

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Mobileware Group

Frontend – Sample Views



Fast overview over all installed and running terminals with green color

Frontend – Sample Views

Home / Provisioning / Subscriber

Subscriber Vessel Aircraft

TYPE	Company name	Status
	Communities and Local Gov	ACTIVE
	TOYOTA GROUP	ACTIVE
	company2530432	ACTIVE

Confirmation Required

Redeem

Company name: SCARY AIRE
Simcard (IMSI): 901112112000480
MSISDN: 870772600631
Current Wallet Balance: 21 USD
Voucher Value:
Voucher Number:
Note:

Redeeming voucher have never been easier – reseller just select simcard then will redeem interface show matching unit values – and following free vouchers

Home / Package / Package Control

Package Package Edit Package Control Package Upgrade Package Quid Change Subscriber

MopTestReseller - 901112112000457

Operating Control Usage Control

Usage Voice Usage Data Usage Streaming

Usage Control

Control Enabled

Usage Control Period * Daily (midnight)

Voice Usage Control

Maximum Usage (mins) 5

High Use Trigger (mins) 3

Data Usage Control

Maximum Usage (MB) 5

High Use Trigger (MB) 3

Streaming Data Usage Control

Maximum Usage (mins) 5

High Use Trigger (mins) 3

Small icons to illustrate type + dedicated tabs for vessel, aircraft allowing better presentation when listing data

Monitoring view are made easy to read with High guide line, Max guidelines for notification and autosuspend

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Mobileware Group

Frontend – Sample Views

Package Create Package

Satellite System Spending Control Usage Control Service Restriction Extra Data Optional AMSISDN Deferred Activation

Select Satellite System

Satellite System * LAND - INMARSAT BGAN

Inmarsat

LAND - INMARSAT BGAN * BGAN ISATHUB

BGAN ISATHUB * 80045004500 - ISATHUB Freeuse

Note

Mobile Number *

ICC *

IMSI *

Operator control what each reseller see in all drop down boxes – when reseller select group will box be presented

Reseller can then select package/product group like prepaid, standard, scap groups – when selected will next box be presented meaning only relevated fields are displayed

Based on selected package type will drop down automatically be filled with available ICC no's

IMSI get auto filles together w inventory type + voicemail pin

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Mobileware Group

Frontend – Sample Views

Traffic view are presented in real time, for reseller level, companu/group, for subscriber/vessel/airplane as well as for each package, possible to go from overview to detailed view

Home / Billing / Traffic Data / Package

Package Package Traffic Search

MSISDN	IMSI	Package ID	Scap ID	Package type	Account ID	Description	Usage			Price		
							Total	Bill	Unit	DP Price	Reseller Price	List Price
870772600506	901112112000483	900013143		PST	30089	Activation - Free Use	0.000	0.000		0.000	0.000	0.000
						Background IP	3.555	3.555	MB	0.000	14,220	14,220
						Monthly Subscription	0.000	0.000		0.000	0.000	0.000
						Voice - BGAN / PSTN	4.550	4.750	min	0.000	2,380	2,380
						TOTAL				0.000	16.600	16.600
870772600507	901112112000484	902502500		PRE	30089	Activation - Free Use	0.000	0.000		0.000	0.000	0.000
						Background IP	5.630	5.630	MB	0.000	22,520	22,520
						BGAN 25 Unit Voucher	0.000	0.000		25.000	26.500	26.500
						Monthly Subscription	0.000	0.000		0.000	0.000	0.000
						Redemption of Voucher: 44274498074417 Value: 0.00	0.000	0.000		0.000	0.000	0.000
						Redemption of Voucher: 58237436753720 Value: 0.00	0.000	0.000		0.000	0.000	0.000
						Voice - BGAN / PSTN	2.167	2.500	min	0.000	1,250	1,250
						TOTAL				25.000	50.270	50.270
						Activation - Free Use	0.000	0.000		0.000	0.000	0.000
						GSPS 100 Unit Voucher	0.000	0.000		65.000	68.900	68.900
870776471268	901112116357564	903023067		PRE	30089	Monthly Subscription	0.000	0.000		0.000	0.000	
						Redemption of Voucher: 136694111438468 Value: 0.00	0.000	0.000		0.000	0.000	
						TOTAL				65.000	68.900	68.900

Menu can be pushed in to make more space for data

Frontend – Sample Views

Voucher

[Hide Search](#)

Batch ID

Service

Status

Voucher Number

User ID

MSISDN

IMSI

Redeemed From

Redeemed To

Maximum Results

[Search](#)

TYPE	Service	Unit	Status	Blocked	Assigned	Voucher Number	Subscriber	MSISDN	IMSI
GSPS	TYPE6	100	REDEEMED	-	CELL CITY	222748076181135	Nisha Ramnarine	-	-
GSPS	TYPE6	100	CREATED	-	CELL CITY	145782262236816	-	-	-
GSPS	TYPE6	100	REDEEMED	-	CELL CITY	176852055656081	Nisha Ramnarine	-	-
GSPS	TYPE6	100	REDEEMED	-	CELL CITY	52950839101074	Nisha Ramnarine	870776471271	901112116389427

Site is made so that a lot of the components can be in hide or unhide mode – to allow maximal display for data

Search is available on basically all interfaces – search often contain more search options than the displayed fields, allowing example search for operators ERP reference number across inventory, packages and similar.

Frontend – Sample Views

The screenshot displays the 'Satlogin Support' provisioning interface. On the left is a dark sidebar with navigation options: Dashboard, Provisioning (selected), Service Order, Customer Support, Reseller, Company, Subscriber, and Package. The main content area shows a breadcrumb 'Home / Package' and two tabs: 'Package' and 'Package Prepaid'. A green success message banner reads 'You have been updated successfully'. Below this is a table with four columns: IMSI, MSISDN, Friendly Name, and Status. The table contains three rows of data for 'GSPS Prepay 2012' packages, all with an 'ACTIVE' status.

IMSI	MSISDN	Friendly Name	Status
901112116389428	870776471677	GSPS Prepay 2012	ACTIVE
901112116389437	870776471272	GSPS Prepay 2012	ACTIVE
901112116389427	870776471271	GSPS Prepay 2012	ACTIVE

Acknowledge messages as well as error messages are clearly displayed in the top and often contain associated data

Frontend – Sample Views

Home / Package / Package Control

Package

Package Edit

Package Control

Package Upgrade

Package QoS

Change Subscriber

INTERNATIONAL SATELLITE SERVICES INC - 901112116357426

Spending Control

Usage Control

Spending Control

Suspend Enabled

Maximum Spend *

35

Spending Control Mechanism

Spending Control

30

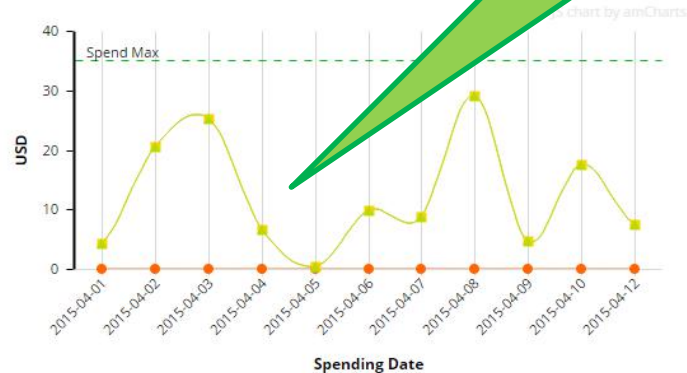
High Balance Trigger

0

Low Balance Trigger

0

Additional Email to Notify



Spend amounts are often presented next to monitoring adjustments fields to make it easier to set a correct monitoring value

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Mobileware Group

Frontend – Sample Views

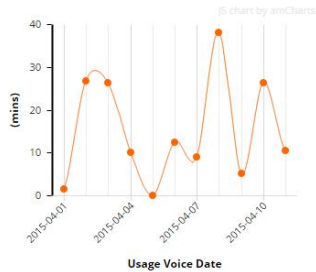
Home / Package / Package Control

Package Package Edit Package Control Package Upgrade Package QoS Change Subscriber

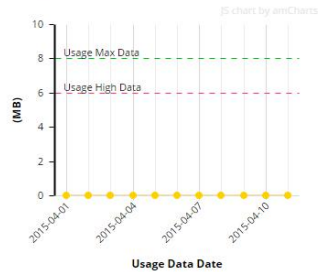
INTERNATIONAL SATELLITE SERVICES INC - 901112116357426

Spending Control Usage Control

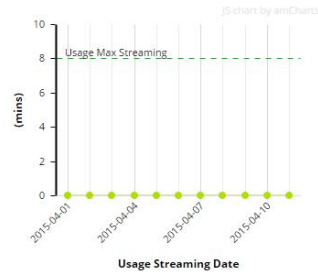
Usage Voice



Usage Data



Usage Streaming



Usage Control

Control Enabled

Usage Control Period * Daily (midnight)

Voice Usage Control

Maximum Usage (mins)

Data Usage Control

Maximum Usage (MB) 8

High Use Trigger (MB) 6

Streaming Data Usage Control

Maximum Usage (mins) 8

Spend amounts are often presented next to monitoring adjustments fields to make it easier to set a correct monitoring value

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Frontend – Sample Views

Intelligent data filling in many places.
Example below enter 'vessel call sign'
click vessel search and data get
automatically filled in other fields.

Vessel Details

Vessel Name: *	<input type="text" value="EMMA MAERSK"/>	?	Vessel Call Sign: *	<input type="text" value="OYGR2"/>	?
Vessel Country: *	<input type="text" value="Denmark"/>	?	<input type="button" value="Vessel Search"/>		
Vessel Type: *	<input type="text" value="Merchant"/>	?	Vessel Forward ID:	<input type="text"/>	?
Vessel IMO: *	<input type="text" value="9321483"/>	?	Vessel Home Port: *	<input type="text" value="Tuborg"/>	?
Vessel MMSI: *	<input type="text" value="220417000"/>	?	Vessel Registry Port: *	<input type="text" value="Tuborg"/>	?
Vessel AAIC:	<input type="text" value="DK01"/>	?	Vessel Build Year: *	<input type="text" value="2012"/>	?
Vessel Tonnage: *	<input type="text" value="300794"/>	?	Self-Propelled?:	<input checked="" type="checkbox"/>	?
Persons on Board: *	<input type="text" value="4"/>	?	Sea-Going?:	<input checked="" type="checkbox"/>	?
			Over 100 Tons GRT?:	<input type="checkbox"/>	?

Frontend – Sample Views

MOBILEWARE Dashboard Provisioning Billing **Monitoring** Inventory Prepaid Operator Supports Settings Topup < English

Home / Monitoring / Group Package Overview

Group Package Overview

■ Good ■ Over warning/high/max

Scap ID	TYPE	Created	TYPE	Allowance			USED			Percentage of Used (%)		
				Money	Voice	Data	Money	Voice	Data	Money	Voice	Data
SCP6010170	annual	Dec 1, 2013 9:09:58 AM	money	8,568.00	0.00	0.00	144.54	0.00	0.00	<div style="width: 1.69%;"></div> 1.69%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6008810	monthly	Oct 14, 2013 5:03:58 PM	data	0.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6006485	annual	Aug 13, 2013 3:13:58 PM	money	42,840.00	0.00	0.00	12,246.20	0.00	0.00	<div style="width: 28.59%;"></div> 28.59%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6006040	monthly	Aug 13, 2013 10:46:05 AM	money	322.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6006480	annual	Aug 9, 2013 10:42:54 AM	money	9,792.00	0.00	0.00	259.99	0.00	0.00	<div style="width: 2.66%;"></div> 2.66%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6004150	quarterly	Aug 1, 2013 9:55:20 AM	money	5,355.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6002920	monthly	Jul 10, 2013 2:49:15 PM	money	616.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6004025	monthly	Jun 21, 2013 5:20:27 PM	money	322.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%
SCP6003010	annual	Jun 3, 2013 6:43:45 PM	money	8,568.00	0.00	0.00	0.00	0.00	0.00	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%	<div style="width: 0.00%;"></div> 0.00%

Monitor your packages in a simple way – here group packages – click on any and see direct usage on simcards in group

Frontend – Sample Views

MOBILEWARE Dashboard Provisioning ▾ Billing ▾ Monitoring ▾ Inventory ▾ Prepaid ▾ Operator Supports Settings ▾ Topup < English ▾ 👤 🔄

Home / Dashboard / Messages

Messages

Send messages to partners with new products, have system send automated notifications or parse Inmarsat messages..

Notice Type	Notice Source	Notice Subject	Notice Body	Notice Link	Created At	Notice From	Notice To	Acknowledge At
NEWS	OPERATOR	This is a message to Reseller HW	View	www.mobilware.com	Apr 22, 2015 7:19 AM	Apr 22, 2015 8:08:18 AM	Jun 18, 2015 8:08:26 AM	Acknowledge
NEWS	OPERATOR	Real time Iridium now available	View	-	Apr 21, 2015 7:06:42 PM	Apr 21, 2015 7:07:45 PM	May 30, 2015 7:07:49 PM	Acknowledge
NEWS	OPERATOR	New Prepaid Redeem Launched	View	-	Apr 21, 2015 7:03:56 PM	Apr 21, 2015 7:05:35 PM	May 30, 2015 7:05:39 PM	Jun 19, 2015 2:52:57 PM
SYSTEM	SYSTEM	Backup Image created 01 APR 2015	View	-	Apr 21, 2015 7:01:36 PM	Apr 21, 2015 7:02:55 PM	Apr 30, 2015 7:02:59 PM	May 7, 2015 6:47:04 AM
INFO	OPERATOR	CDR format available	View	edocs.mobilware.dk/test	Apr 16, 2015 12:42:24 PM	Apr 3, 2015 12:43:36 PM	Apr 23, 2015 12:43:27 PM	Apr 17, 2015 6:58:41 PM
INFO	OPERATOR	New Prepaid Top-up Environment	View	-	Apr 16, 2015 12:40:49 PM	Apr 1, 2015 12:43:32 PM	Jul 1, 2015 12:43:20 PM	Apr 16, 2015 12:43:31 PM

Previous **1** Next

[Export CSV](#) [Export XLS](#) [Export PDF](#)

Partners Activations – Self care

The screenshot shows the 'MOBILEWARE' dashboard with a navigation menu (Dashboard, Provisioning, Billing, Monitoring) and a breadcrumb trail (Home / Packages / Create Package). The 'Create Package' tab is active. Below the navigation, there are tabs for 'Satellite System', 'Spending Control', 'Usage Control', 'Service Restriction', 'Extra Data', and 'Options'. The 'Satellite System' tab is selected, displaying a form with the following fields:

- Satellite System * (Dropdown menu: INMARSAT BGAN MENU)
- Inmarsat (Section header)
- INMARSAT BGAN MENU * (Dropdown menu: BGAN INTERNAL PACKAGES)
- BGAN INTERNAL PACKAGES * (Dropdown menu: BGAN Test/Demo FU 644)
- Note (Text input field)
- Mobile Number * (Text input field with a dropdown arrow)
- ICC * (Text input field with a dropdown arrow)
- IMSI * (Text input field)
- Voice Mail PIN * (Text input field)
- Industry Code * (Dropdown menu: Select Industry Code)

Only inventory matching selected package will be presented – meaning no mistyping or entering already used inventory

What a partner see in the drop down interfaces are managed by the operator from the dashboard product catalog.

If a partner can activate a package type then when selecting this type will the system look for free inventory matching.

Tab based provisioning will step by step allow the partner to easily provision a new product.

Simply enter needed data in the first tab and then click create will have the system handling all or customize by changing in tabs.

Partners Voucher Redeem

MOBILEWARE Dashboard Provisioning Billing Monitoring Inventory Prepaid

Home / Packages

Confirmation Required

Redeem

Company name: MVS MARINE Ltd

Simcard (IMSI): 901112116378038

MSISDN: 870776305835

Current Wallet Balance: 61.8 USD

Voucher Value: 25 - 25 units - GSPS TYPE 6

Voucher Number: 145479201210189

Note:

[Confirm](#) [Cancel](#)

IMSI	MSISDN	Package	Status	Company	Prepaid	Expire	Wallet
901112116378008	870776112309						
901112116378038	870776305835						
901112116378005	870776725352						
901112116378006	870776112579						
901112116378040	870776111929						
901112116378004	870776112314						
901112116370435	870776112580						
901112116362677	870776112315						
901112116370883	870776105450	GSPS INM PC-GSPSPREPAY	ACTIVE	ACTIVATED	MVS MARINE Ltd	PRE	
							100.00
							61.80
							490.58
							489.28
							99.35
							102.00
							102.00
							-0.73
							51.30

When a partner need to top-up any type of prepaid then when selecting top-up will system automatically only show assigned vouchers fitting subscription

Frontend



100% Web Driven:

Subscriber, Corporate User, ISPs, Customer Support and Admins



Clientless: Browser only, no client software to, upgrade, maintain or patch. Runs on any modern browser or device.



Multi-Homed:

Multiple Domains per site
Layout adapt automatically



Security:

SSL can be applied to any or every page



Multi-Site: Multiple Sites per installation (you can host many ISPs or partners from the same installation)



Locales and Cultures:

Multiple languages per site (UTF-8 supports any language) Japanese, Spanish, Chinese...

Frontend



Personalised Environment:

Login, MyAccount, MyProfile, MyBill, MyHistory



Administrator Selectable Templates:

each site or even each site section or page can have its own look and feel



Self-Care and Support: Online Sign-Up, Charging, Download, Knowledge Base, How-To, FAQ, Report a Problem

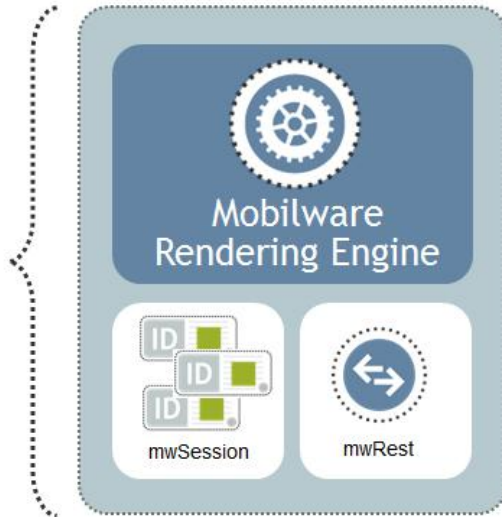


Full Self-Service Environment:

Sign-Up, enter credit-card, choose MSISDN number, go!

Frontend

Front-End
Content
Server



100% REST JSON and
Secure PHP



Applies API processing to
transform JSON content into
custom presentation



Mediates Front-End requests
with the REST JSON protocol
to the Back-End



Secure Session Management,
maps external ID to secret ID
never exposed to users



Standards based and future
proof, XML, XSL, Xforms, CSS,
HTTP, SSL

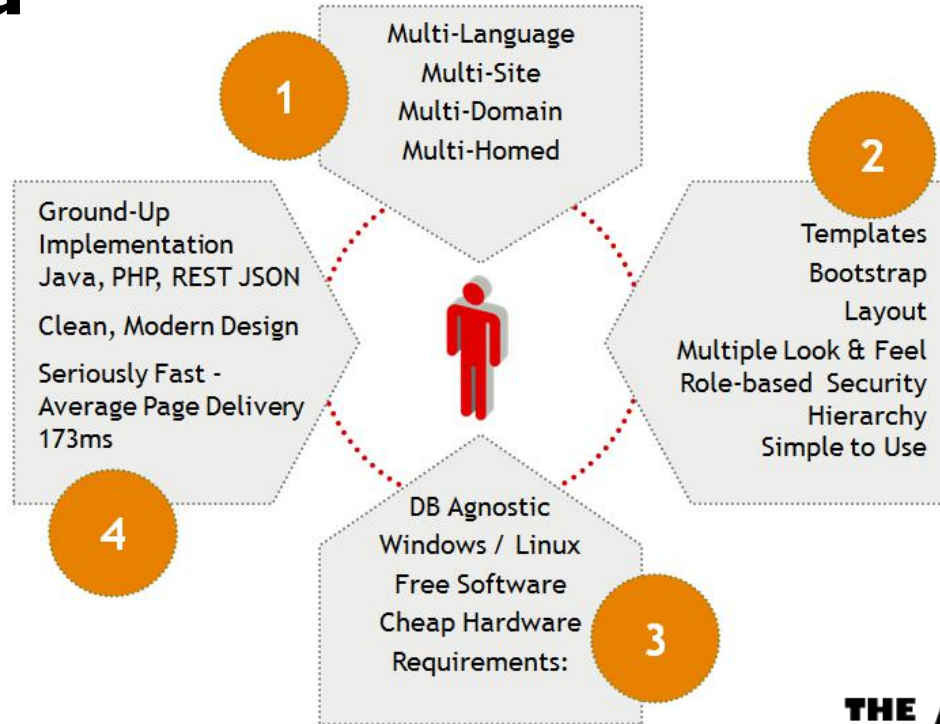


Content and Presentation
separation - device
independent & multi-channel

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Frontend



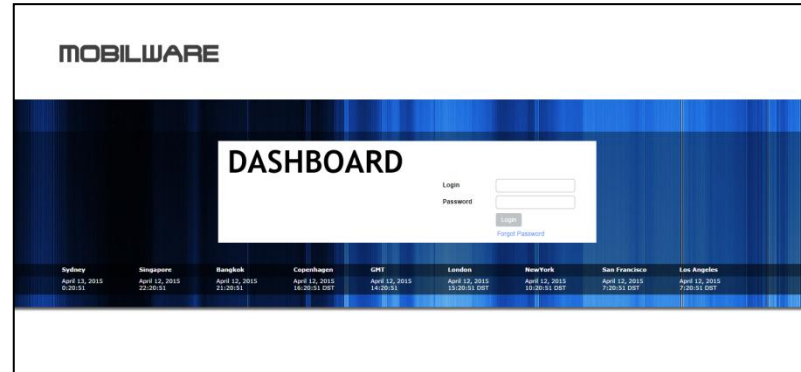
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Operator Dashboard

Operator Dashboard

- Operator Dashboard allow Operator to manage 'All'
- Design new products – using Wizards
- Drag & Drop new rating plans into system
- Configure dialling plans, event plans, geo zones ...
- Monitor provisioning work flow even for partners
- Monitor Spending levels on packages, vessels, airplanes...
- Monitor usage across data, voice, streaming ...
- Manage notification templates across work flow / monitoring
- Generate invoices, re-process failed CDR data, rerate
- Release and assign inventory across sims, msisdn, ip addr...
- Get statistical overviews – top5 users, abnormal usage...
- Monitor credit risk, generate revenue reports...
- And a lot more!



Operator Dashboard Sample

The screenshot shows the Mobileware Operator Dashboard. The top navigation bar includes 'MOBILEWARE' and various menu items: Dashboard, Provisioning, Billing, Report, Inventory, Prepaid, Notification, Monitoring, Advance, and a search icon. The 'Provisioning' menu is expanded, showing 'Product Catalogue', 'Country Plan', and 'Templates'. Below the navigation, there are tabs for 'Catalogue' and 'Package Groups', and a '+ Create Product' button. A search bar is located on the right side of the table.

Menu Level	Menu Group	Product Group	Product Name	Status	Scap	Service	TEMPLATE ID	Menu Access
TOP_MENU_LEVEL	BGANGROUP	INMBGAN	INMARSAT BGAN MENU	ACTIVE	NO	BGAN	-	🔒
TOP_MENU_LEVEL	GSPSGROUP	INMGSPS	INMARSAT GSPS MENU	ACTIVE	NO	GSPS	-	🔒
TOP_MENU_LEVEL	FBBGROUP	INMFBB	INMARSAT FBB MENU	ACTIVE	NO	FBB	-	🔒
SUB_MENU_LEVEL	BGANGROUP	catastbgan	BGAN INTERNAL PACKAGES	ACTIVE	NO	BGAN	-	🔒
SUB_MENU_LEVEL	BGANGROUP	catastbganscap	BGAN SCAP PACKAGES	ACTIVE	YES	BGAN	-	🔒
SUB_MENU_LEVEL	BGANGROUP	cat400	BGAN 400 PACKAGES	ACTIVE	NO	BGAN	-	🔒
SUB_MENU_LEVEL	BGANGROUP	cat420	BGAN 420 PACKAGES	ACTIVE	NO	BGAN	-	🔒
SUB_MENU_LEVEL	BGANGROUP	cat424	BGAN 424 PACKAGES	ACTIVE	NO	BGAN	-	🔒

The screenshot shows the 'Update Product Access' form. It includes fields for Product Name (BGAN 424 PACKAGES), Service (BGAN), Menu Level (2), and Menu Group (BGANGROUP). There are checkboxes for 'Support' and 'Reseller'. The 'Reseller Access' section shows a list of resellers: hwpartner, GLOBALSAT, PARADIGM, and Castsat, each with a dropdown arrow.

Manage products offered in direction of partners – and handle what they can access in a smart way...

Operator Dashboard Sample

MOBILEWARE Dashboard Provisioning Billing Report Inventory Prepaid Notification Monitoring Advance English

Home / Billing / Invoices Management

Invoices Management Invoice Template Invoice Bank Details Invoice

Automatic page refresh in 47 seconds. Search

Billing Period	Period Start Date	Period End Date	Period Type	Modified	Invoice Status	Generate Invoices	Approve Invoices
201509	2015-09-01	2015-09-30	M1	2015-08-04 06:33:24	-	-	-
201508	2015-08-01	2015-08-31	M1	2015-08-04 06:33:28	-	-	-
201507	2015-07-01	2015-07-31	M1	2015-07-25 00:00:55	-	-	-
201506	2015-06-01	2015-06-30	M1	2015-06-25 00:00:14	COMPLETED	Generate	Approve
201505	2015-05-01	2015-05-31	M1	2015-06-19 11:43:23	APPROVED	Approved	Approved
201504	2015-04-01	2015-04-30	M1	2015-06-19 11:43:27	APPROVED	Approved	Approved
201503	2015-03-01	2015-03-31	M1	2015-04-23 04:31:59	APPROVED	Approved	Approved
201502	2015-02-01	2015-02-28	M1	2015-04-17 12:50:25	APPROVED	Approved	Approved

Generate draft invoices at any time – approve PDF invoices and process then so that are added to customers frontend and send in an email.

Direct integration to major ERP systems – like direct SAP Tax calculation API access or SAP payment request API integration...

Draft invoice generation, Credit note generation, Out of cycle invoice generation...

Operator Dashboard

- Manage Provisioning related admin tasks
- Managed Billing related admin tasks
- Monitor workflow, rated traffic
- Manage partner product access for self-care
- Operator Dashboard build basically like front-end
- Designed for HD screens at Operator max size
- Manage notification setup and templates
- Manage Advanced Rerating of packages, products
- Drag and drop new rating plans into system
- Manage inventory across sim, msisdn, amsisdn, IP..
- Manage prepaid – generate vouchers, assign vouchers
- Perform trouble shooting based on audit data
- Generate reports across activations, cdr failures...
- Release inventory for reuse
- Move vessel to new owners
- Upgrade packages

Operator Dashboard Subscription Design

MOBILEWARE Dashboard Provisioning Billing Report Inventory Prepaid Notifica

Home / Provisioning / Templates / Subscription

Subscription Notification Package Wizard Rating Plan Wizard

+ Upload Template

Name	TEMPLATE ID	Reseller ID	User ID	IMSI	Created	Last Modified	Status	No
BSCAPMID480203Q	8004800304	-	-	-	2011-07-02 12:03:43	2013-05-31 21:36:01	ACTIVE	Up
GSPS Wholesale	1003000	-	-	-	2011-07-04 14:58:19	-	-	Ins
GSPS Allowance	1003001	-	-	-	2011-07-04 14:59:32	-	-	Ins
GSPS Prepay	1003002	-	-	-	2011-07-04 14:59:33	-	-	Ins
GSPS Free Use	1003003	-	-	-	2011-07-04 14:59:33	-	ACTIVE	Ins

- Design new products based on templates
- Any type of products can be added to templates that offer advanced capabilities
- Use template wizard to design products in a few steps

Home / Provisioning / Templates / Package Wizard

Subscription Notification Package Wizard Rating Plan Wizard

Package ID:

Source Name:

Source Technology:

BSS Package Definition ID:

Package Plan:

Operator Dashboard Reports

BMS Report	Start	End	
201509	2015-09-01	2015-09-30	M1
201508	2015-08-01	2015-08-31	M1
201507	2015-07-01	2015-07-31	M1

- Financial reports
- Revenue reports
- Activation reports
- Traffic reports
- Credit risk reports
- Inventory reports
- Failed CDR reports
- Usage reports



Fast overview of the business

Offer a fast overview of the turnover across all resellers as well as specific resellers



Export Functionality

Any presented page can be exported to CSV format

Operator Dashboard Rating plans

The screenshot shows the Mobileware Operator Dashboard for Rating Plans. The navigation menu includes Dashboard, Provisioning, Billing, Report, Inventory, Prepaid, Notification, Monitoring, and Advance. The Billing menu is open, showing options like Invoices Management, Customer Invoices, Currency rate, Rating Plan, Dialing Plan, Tax Plan, Event Plan, CDRs, Termination Cause, and Close Billing Period. The Rating Plan page has tabs for Rating Plan, Rating Plan Specific, and Import. A search bar is present with Search and Reset buttons. A list of rating plans is shown on the left, including BSCAPMID480203Q - 8004800304, GSPS Wholesale - 1003000, GSPS Allowance - 1003001, GSPS Prepay - 1003002, GSPS Free Use - 1003003, GSTDN660M - 729066003000, GALLN660M - 729066003001, GALLFHC660M - 729066003007, GALLN660Y - 729166003005, GALLFHC660Y - 729166003009, GSPS Prepay (Vega Tunnel 103) - 7293002, and GALLN660Q - 729366003004. A table of rating plan details is shown on the right, with columns for Event ID, Service, DP Price, Reseller Price, End-User Price, Event Type, Status, and Plan Expiry. The table contains 7 rows of data.

Event ID	Service	DP Price	Reseller Price	End-User Price	Event Type	Status	Plan Expiry
1028	Voice - GSPS / BGAN	0.50000	0.81000	0.81000	GSM	ACTIVE	Clone Edit Deactive History
1037	Voice - GSPS / SPS	0.75000	1.22000	1.22000	GSM	ACTIVE	Clone Edit Deactive History
1050	Voice - GSPS / FBB	0.50000	0.81000	0.81000	GSM	ACTIVE	Clone Edit Deactive History
1060	Voice - GSPS / SBB	0.50000	0.81000	0.81000	GSM	ACTIVE	Clone Edit Deactive History
1508	Voice - GSPS / Iridium	2.85000	4.68000	4.68000	GSM	ACTIVE	Clone Edit Deactive History
1509	Voice - GSPS / Globalstar	2.85000	4.68000	4.68000	GSM	ACTIVE	Clone Edit Deactive History

Find and manage rating plans in an easy way – many different ways to manage rating plan data ..

CDR rerate or reprocess

MOBILEWARE Dashboard Provisioning Billing Report Inventory

Home / Advance / Re Process Failed CDRs

Re Process Failed CDRs

Month: * -- Please select --

Limit of CDRs: * -- Please select --

IMSI: *

MSISDN: *

CDR ID: *

Error Message: *

Date: *

Submit

MOBILEWARE Dashboard Provisioning Billing Report Inventory

Home / Advance / Re Rating Plan

Re Rating Plan

Month: * 201507

Re Rate By: * IMSI

IMSI: * 90100100101012

Submit

Reprocess easily failed CDR data – identify, the correct needed change and then reprocess failed data..

In the case of faulty rates and similar – the just select Re rating and select the metode then will all rated traffic even back in time be corrected..

System perform historical snap shot of all counters end of every month – that allow system to rerate based on know points.

Operator Dashboard Notifications

MOBILEWARE Dashboard Provisioning Billing Report Inventory Prepaid Notification Monitoring Advance English

Home / Monitoring / Monitor User

Spending Monitor Report Monitor User Monitor IMSI Monitor Notification Report Email Search

ID	Source	Billing Period	Subject	Message	Email	Status	Mobile Number	SMS
98	ISDN_Report_381	201408	Notification Email	Report Name : ISDN_Report_381 Company ID : 993 Reseller ID : 381 Customer ID : 14006 IMSI : 901112112437409 Total usage of period 201408 is 10,863.60 USD. This amount was exceeded 5 USD.	mobilware@astconnections.com	SEND	07879420941	Total amount of this period
94	ISDN_Report_381	201406	Notification Email	Report Name : ISDN_Report_381 Company ID : 993 Reseller ID : 381 Customer ID : 14006 IMSI : 901112112437409 Total usage of period 201406 is 933,704.52 USD. This amount was exceeded 5 USD.	mobilware@astconnections.com	SEND	07879420941	Total amount of this period
				Report Name : ISDN_Report_381				

- Workflow notifications
- Monitoring notifications
- Info notifications
- Reminder notifications
- Out of Bundle notifications
- Prepaid Low Balance...

- HTML emails w. Base64
- SMS notifications
- Remote system notify

Bulkloading across users and packages

The screenshot shows the MobileWare Bulk Provisioning interface. At the top, there is a navigation bar with the MobileWare logo and several menu items: Dashboard, Provisioning, Billing, Report, Inventory, Prepaid, Notification, and Monitoring. Below the navigation bar, there is a breadcrumb trail: Home / Advance / Bulk Provisioning / Reseller. Underneath the breadcrumb, there are four tabs: Reseller, Company, Subscriber, and Subscription. The main area features a large grey box with the text "Drop CSV Here" and "100 / 100 %". Below this, there is a table with columns for Reseller Name, First Name, Last Name, Notify, Username, Password, and Email. The table contains three rows of data. At the bottom of the interface, there is a "Produce" button.

Reseller Name	First Name	Last Name	Notify	Username	Password	Email
name1	firstname	lastname	name1	57#2o9#acD	name1@theairtime.com	USD
name2	firstname	lastname	name2	57#2o9#acD	name2@theairtime.com	USD
name3	firstname	lastname	name3	57#2o9#acD	name3@theairtime.com	USD

Intelligently bulk load many users or many packages directly using drag & drop..

After drag & drop select what each single data set identify in drop down boxes..

Loader will manage load into example Inmarsat so that it is done in the fastest possible way..

This have been used example for PH Election activating 7500 users + 7500 terminals for SingTel

Auto generated report emails

Home / Monitoring / Report Email / Create New Report Email

Report Email Create New Report Email

Report Type: * -- any -- ⓘ

Email: * ⓘ

Delimiter: * -- Please Select -- ⓘ

Report File Name: * ex. airtime_cdr_overview ⓘ

Email Enable: ⓘ

Create Back

Home / Monitoring / Report Email / Create New Report Email

Report Email Create New Report Email

Report Type: * DAILY ACTIVATIONS OVERVIEW ⓘ

Email: * ⓘ

Delimiter: * ⓘ

Report File Name: * ⓘ

Email Enable: ⓘ

Create Back

- any --
- COMPANY DAILY CDR
- DAILY ACTIVATION ALL
- DAILY ACTIVATIONS OVERVIEW**
- DAILY CDR
- HOURLY CDR
- IMSI DAILY CDR
- IMSI DAILY CDR MORE DETAILS
- ISP DAILY CDR
- ISP DAILY CDR I4MOBBW
- ISP DAILY CDR WITH DATA USAGE
- ISP DAILY CDR WITH DATA USAGE AND EVENT ID
- ISP DAILY CDR WITH DATA USAGE WITH QUANTITY
- MONTHLY CDR

- Background reports to Partners
- Different formats
- Activation reports
- Traffic reports
- Monitoring reports
- Inventory reports
- Failed CDR reports
- Usage reports

Prepaid Voucher management

The screenshot shows the 'MOBILEWARE' dashboard with a navigation menu including Dashboard, Provisioning, Billing, Report, and Inventory. The breadcrumb trail is 'Home / Inventory / Voucher Create'. The 'Voucher Create' page is divided into three main sections: 'Batch Details', 'Voucher Values', and 'Voucher Assignment'. Each section contains several form fields with dropdown menus and text inputs, each accompanied by an information icon. At the bottom left, there is a blue 'Create' button.

MOBILEWARE Dashboard Provisioning Billing Report Inventory

Home / Inventory / Voucher Create

Voucher Create

Batch Details

Number of Vouchers * -- Please select -- ⓘ

Service Type * BGAN Streaming ⓘ

Notes/Description ⓘ

Activation Window * 1080 ⓘ

Redemption Window * 1080 ⓘ

Voucher Values

Voucher Unit Value * 100 ⓘ

Inventory INMARSAT BGAN ⓘ

Voucher Assignment

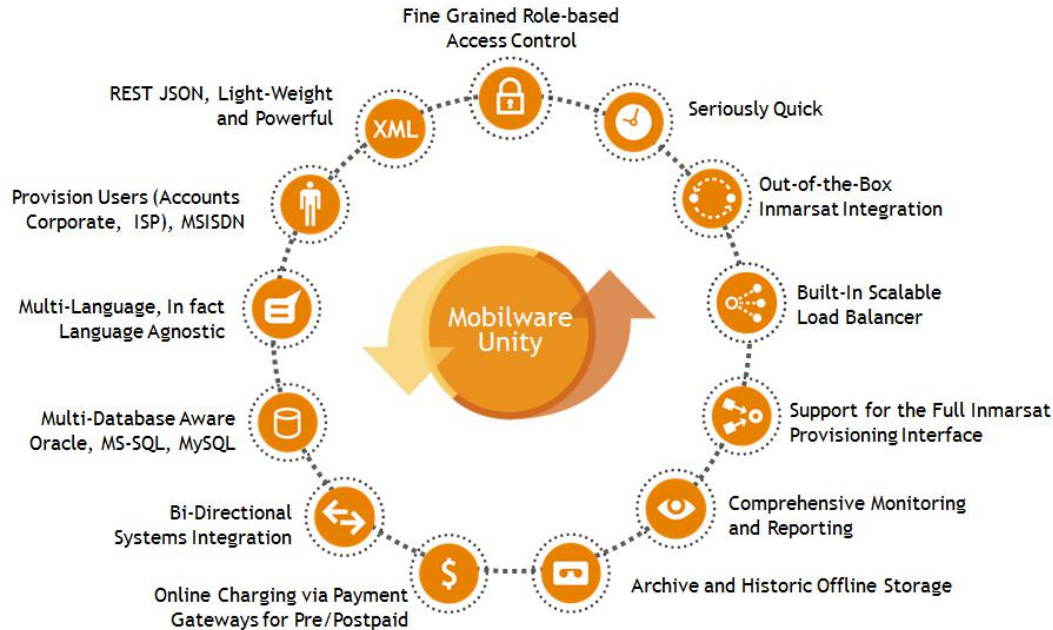
Assign to Reseller ⓘ

Create

- Complete Voucher Management Environment
- Create internal vouchers
- Assign vouchers to partners
- Manage external Vouchers from ex. Inmarsat on GSPS/BGAN
- Interfaces only allow partners to see free and available vouchers
- Many ways to top up a voucher
- Direct Iridium top up
- After top up will credit expire be presented directly on a package
- Before credit expire will system generate a notification
- Direct billing on voucher top up on partner

Backend Environment

Backend Environment

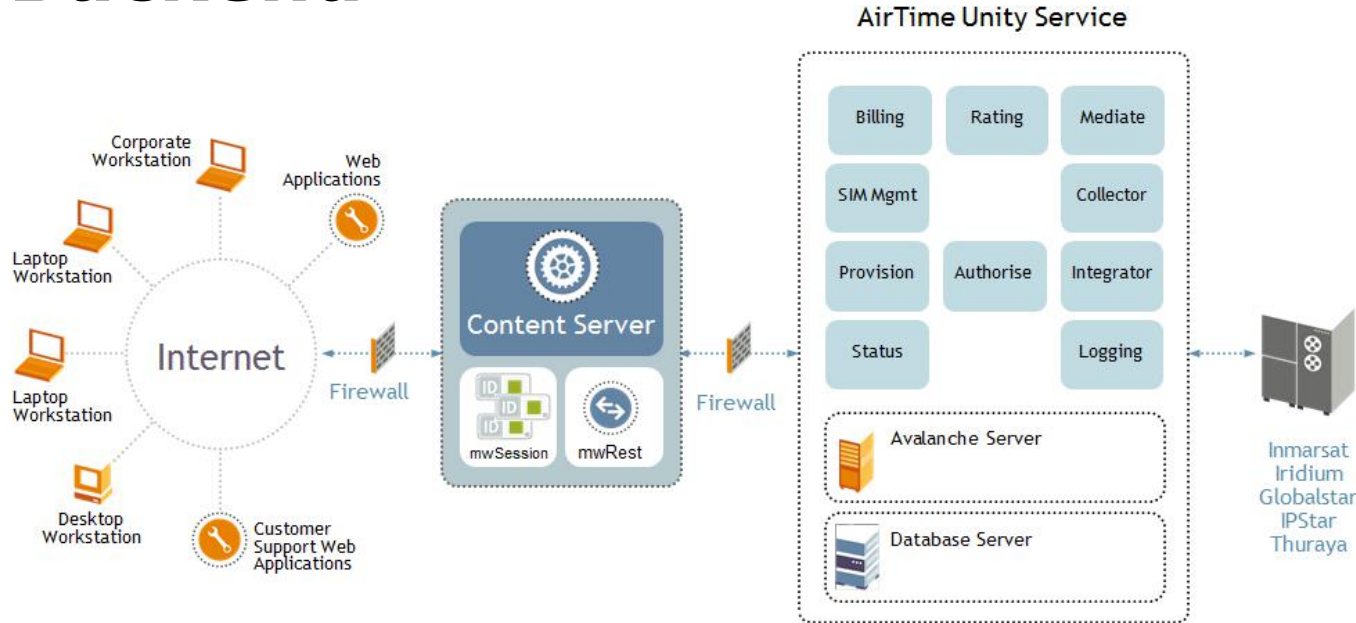


- Enterprise Java - unix
- Internal web service API REST JSON
- Internal old API – REST XML
- Integrated firewalls closed externally
- All completely stateless implemented
- Flexible & Scalable Design
- Many Frontend on one backend
- SNMP monitoring – internal scripts

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Backend



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Mobileware Group

Provisioning Functionality

Authentication & Roles

- Stateless Provisioning Authentication
- Roles: Admin, Support, Reseller, Company, Subscriber
- Reseller, Company, Subscriber create, edit, list, delete
- Package create, edit, suspend, resume, hibernate, disconnect, move, upgrade/downgrade...

Integrated Provisioning APIs

- Inmarsat I4 services – BGAN, FBB, SBB, GSPS, M2M
- Inmarsat GX SEP services - Tinmarsdat Redknee API
- Iridium Openport, Thuraya, AST, SingTel, Globecomm

Monitoring & Notification

- Monitor provisioning workflow and send notifications
- Notify on new company, subscriber creations
- Notify on new package activation
- Sending welcome letter to customer with package details

Package Types

- Postpaid, Prepaid, Geo Packages, Group packages
- Wholesale packages intelligently managed
- Reseller, Company, Subscriber create, edit, list, delete
- Package create, edit, suspend, resume, hibernate, disconnect, move, upgrade/downgrade...
- Zone packages, FleetOne, IsatHub, M2M...

Inventory management

- Simcard management incl. assignment process
- MSISDN, AMSISDN, CMSISDN management
- IP address + Routing management
- Voucher management, create, decrypt, redeem, lifetime..

One Satellite Provisioning API

- Complete open provisioning API – REST JSON
- Developer Sandbox – directly connected to Inmarsat & Iridium

Billing Functionality

Mediating almost any format

- Inmarsat I4 format, Iridium TAP2
- Thuraya, Globalstar, AST, SingTel, MVS
- Stratos, Airbus, Station711, KVH...
- Basically cover any Satellite product

Billing Elements

- Billing periods monthly, quarterly, yearly, bi-yearly..
- Prorated fees and allowance at activation
- Recurring fee – One time fees – forward and backward billing
- Money bundle, Usage bundle, Zone billing
- Minimum charge, increment, min. Period ...

Self-Care & Invoicing

- Comprehensive Self-Care across any traffic data & own monitoring
- Real time monitoring allowing customers to receive traffic notifications
- Complete invoicing capability across reseller, company, subscriber level
- Long range of invoicing templates available – summary / details
- Direct access to PDF invoices & Reports with graph overview

Real time Billing

- Collect from SFTP, FTP, SSH, Email, File....
- Mediate standard formats TAP2, Inmarsat, D91, csv...
- Rating all possible traffic types PST, PRE, GRP, GEO...
- Real time processing, Reprocessing, Rerating...
- Manage rating plans, dialling plans, event plans...
- Rating on many levels, source, operator, reseller, enduser
- Invoicing on bank, creditcard, prepaid
- Account receivable, Revenue monitoring, Traffic reporting..
- Rate own services, radius traffic data, crew call records...

Prepaid

- Complete Prepaid System integrated
- Complete voucher management system integrated
- Work on top of Inmarsat, Iridium, Thuraya prepaid
- Intelligent voucher topup interface
- Redeem with credit card – or for resellers without voucher
- Dedicated voucher rating system

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Mobileware Group

Monitoring Functionality

Monitoring

- Monitor workflow and send notifications
- Monitor spending on multiple levels + notify
- Monitor usage – data – voice – streaming.. + notify
- Autosuspend / Resume on given triggers
- Customized monitoring + generate partner traffic files
- Send Data Throttling to Radius
- Comprehensive notification solution ...

Notification

- Any provisioning workflow related actions can generate notifications to multiple levels
- Package activation notification – welcome email with all details and link to customers to access Self-Care directly
- Spending notification – high/max for subscriber level
- Spending notification – high/max for package level
- Usage notification - high/max for data, voice, streaming
- Prepaid wallet expire notification
- Prepaid no credit notification
- Prepaid topup notification

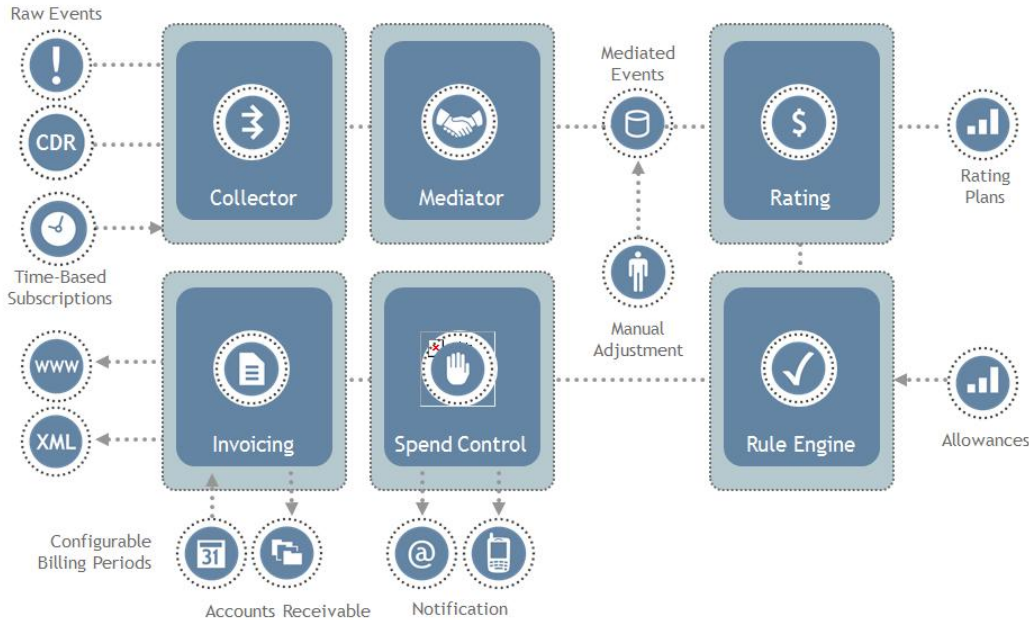
M2M management & monitoring

- Provision M2M terminals
- Offer wholesale M2M management
- Resell as group package, prepaid or postpaid
- Remote manage your M2M installations
- Capture data directly from your remote M2M units

Locpoint Remote terminal management

- Integrate directly with Cobham Locpoint
- Manage your terminals remotely
- Change software settings

Billing Parts



- Collector
- Mediation
- Rating
- Billing
- Invoicing
- Reconciliation (AR)
- Monitoring Spend & Usage

Billing Rating Plan



Default Rating Plan

All package templates should have a default rating plan assigned



Customer Specific Rating Plans

Define only difference from Default Plan.



Terminal Specific Rating Plans

Define only different from Customer Specific or Default Rating Plan.

Terminal
Specific

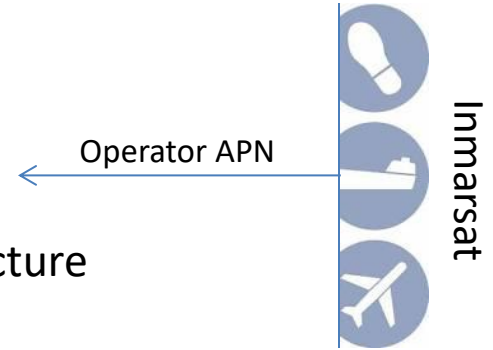
Customer
Specific

Default
Rating plan

Backend Integration

POP integration

- Direct integration into operator POP environments
- Assign static IP addressed to Radius servers
- Assign firewall profiles to operators Juniper / Cisco infrastructure
- Assign routing profile for special customer setup
- Provision operator specific services like crew call, voip, web acceleration ...
- Process radius generated CDR traffic data
- Send Data Throttling to Radius when high or max monitoring triggers are reached
- Our POP manager deliver self-care across POP functionality



POP Manager

- API between Unity and POP Manager – REST JSON based
- Manage Radius server IP to IMSI assignment – Replicating across Radius Servers
- Manage Firewall Profiles, Rule set, Firewall Rules
- Manage extra IP addresses using username / password linked to IMSI
- POP manager provide enhanced Self-care capabilities for end customers
- Manage profiles, ruleset and firewall settings in an easy and yet powerful manner

Unity provisioning API

- A single web service provisioning API for all satellites
- Complete online developer sandbox



MOBILWARE

Online API

Mobilware Sample API online document for provisioning version 2

Description

[Contact Us](#)

billing : request billing

Show/Hide | List Operations | Expand Operations | Raw

company : request company

Show/Hide | List Operations | Expand Operations | Raw

POST	/companies	Request create company
GET	/companies	Find companies
PUT	/company/{id}	Request update company by id

ERP integration

- Our provisioning setup integrate directly with existing ERP
- External customer id from ERP are able to be used for invoicing
- Each traffic type can in rating plans get ERP traffic id number added
- Reporting in typically CSV format is easy to adapt
- Already integrated to SAP, Navision, Mamut...
- Tax lookup through example SAT API call or Payment request through SAP API
- Credit card token handling through integration to example Paymetrix



Report server integration

- Mobilware Unity have integrated report server that easy generate standard reports
- Our platform offer direct VPN access for standard report servers
- SAP Crystal reports – JasperReport Server and similar are plug & play
- Reporting in typically CSV format is easy to adapt



Support Environment

Ticket System

MOBILWARE ☰

Support No : +45 46949266 support999 ▾

Home :: Ticket

Ticket Management <

Department Management <

Group Management <

User Management <

TICKETS PENDING

OPEN	TICKETS
TODAY	0
THIS WEEK	3
THIS MONTH	1

Trouble Tickets

0 Open Tickets
0 Pending Tickets
2 Closed Tickets

System Status

Frontends OK
Backends OK
Databases OK

FAQ

News

Operator Dashboard

Messages

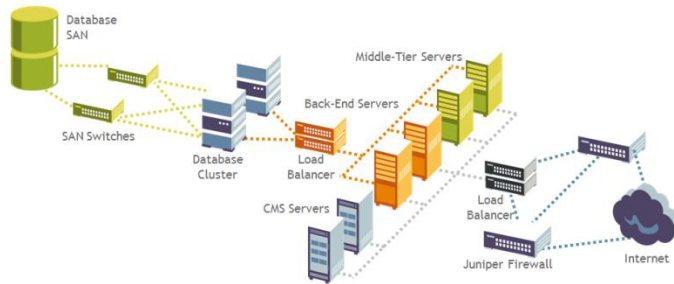
10 New messages

Support Environment

- Standard Ticket Environment
- Phone & Email support
- Change request form for special changes
- Online document server – comprehensive documentation
- Access to our Sprint Task planner system for development
- Training sessions across functionality
- Bulk Loading tools – Excel sheet + Documentation
- Direct GUI access to Database data – SQLYOG / SQLPRO supported as VPN is needed
- Direct tunnel access to server log files

Backup Environment

- Each Operator installation are running on 'dedicated setup' – no sharing w. other operators
- Daily are a 'server image' snapshot taken – allowing super fast recovery to take place
- UTC midnight are database backup performed to our backup site location in Copenhagen
- Database backup are taken full one time weekly – and incremental daily w perscona
- We test install one time monthly that backup is working
- Our Copenhagen location can fast recover setup as an emergency site
- Our Copenhagen site have full access to Inmarsat I4, Inmarsat GX, Iridium, Thuraya...



Deployment Environment

- All software deployment are taking place from our Singapore and Amsterdam based Deployment Sites
- This site keep track of software versions – why and when updates are loaded
- This deployment setup allow us to fast deploy software in a highly controlled manner
- Our developers are mainly located in Asia – support in Asia and Europe
- Deployment environments are directly integrated with Gitlab servers making software management easy and simple

Direct Database access

SQLyog Ultimate - [MW_DB/mobilware_kd - mw_dq@10.1.50.101 - Using SSH tunnel to 86.58.149.217*]

File Edit Favorites Database Table Others Tools Powertools Window Help

mobilware_kd

MW_DB

mobilware_kd

- Tables
 - accounts
 - addresses
 - audit
 - audit_data
 - billing_period
 - cdr
 - cdr_failures
 - collected_files
 - companies
 - contacts
 - countries
 - credit_cards
 - currencies
 - destination
 - dialing_plan
 - event_plan
 - events
 - filter_ip
 - filter_rest
 - ftp_active_file_records
 - ftp_remote_file_records
 - ftp_transferred_file_records

Query X History Info

Autocomplete: [Tab]->Next Tag, [Ctrl+Space]->List All Tags, [Ctrl+Enter]->List Matching Tags.

```
1 SELECT * FROM rating_plan WHERE mobilware_package_id='108';
```

1 Result 2 Profiler 3 Messages 4 Table Data

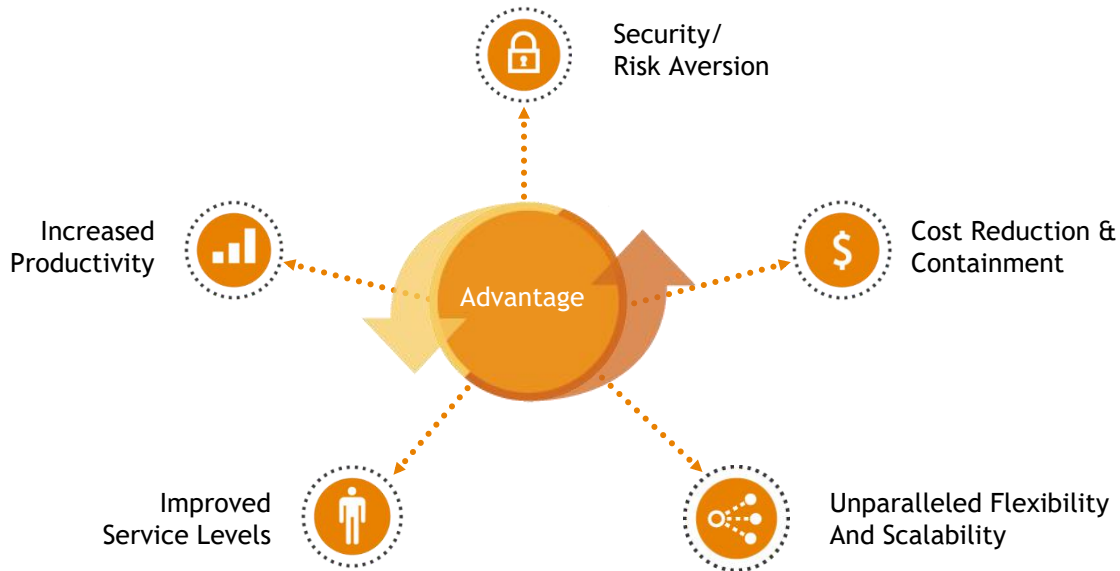
(Read Only) Limit rows First row: 0

id	isp_id	user_id	imsi	event_id	mobilware_package_id	service_des
<input type="checkbox"/>	2	(NULL)	(NULL)	(NULL)	2001	108 Monthly Sub
<input type="checkbox"/>	6	(NULL)	(NULL)	(NULL)	2000	108 Activation
<input type="checkbox"/>	10	(NULL)	(NULL)	(NULL)	1029	108 Basic voice
<input checked="" type="checkbox"/>	14	(NULL)	(NULL)	(NULL)	1030	108 Basic voice
<input type="checkbox"/>	18	(NULL)	(NULL)	(NULL)	1510	108 Basic Voice
<input type="checkbox"/>	22	(NULL)	(NULL)	(NULL)	1508	108 Basic Voice
<input type="checkbox"/>	26	(NULL)	(NULL)	(NULL)	1050	108 BGAN/FB
<input type="checkbox"/>	30	(NULL)	(NULL)	(NULL)	1502	108 BGAN-HSD/FB
<input type="checkbox"/>	34	(NULL)	(NULL)	(NULL)	1501	108 Basic Voice
<input type="checkbox"/>	38	(NULL)	(NULL)	(NULL)	1503	108 Basic Voice
<input type="checkbox"/>	42	(NULL)	(NULL)	(NULL)	1504	108 Basic Voice
<input type="checkbox"/>	46	(NULL)	(NULL)	(NULL)	1506	108 Tmnsat-R-H

- Direct Database access
- Secure VPN access
- Edit data directly like in Excel
- Import / Export into csv
- Extract data with SQL
- Tools: SQLYOG / SQLPRO

Our Competitive Advantage

Competitive Advantage



- ✓ One Interface to Business
- ✓ Real-time operation
- ✓ Instant monitoring
- ✓ Managed workflow
- ✓ More focus at sales
- ✓ System keep evolving
- ✓ Open standards
- ✓ Highly secure setup
- ✓ Satellite made Easy

World Wide Break Out Points



Private cloud in Amsterdam, London, Tokyo, New York...

Deployment site in Singapore, Backup center Copenhagen

- ✓ World wide presents
- ✓ Private Cloud
- ✓ Gigabit connectivity
- ✓ Deployment site
- ✓ Backup site
- ✓ Global support

Satellite Business as SaaS

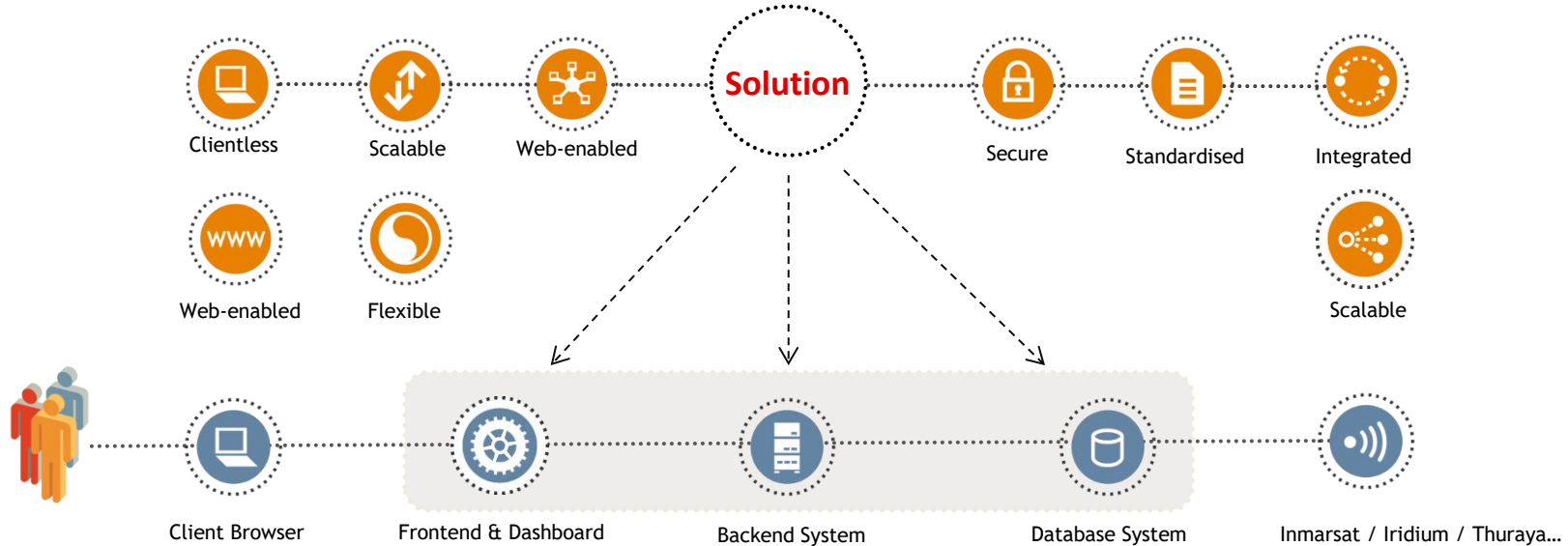


Install, Configure, Run

Time to market are fast – we establish hardware environment in example New York, install complet setup from our devlopment environment in Singapore – load inventory and the setup is ready for business.

Based on Open Standards

All based on latest open standards - no legacy software that demand licenses like windows.



Our Advantages



Time to Market

The System is ready to deploy and configure, already Integrated with satellite systems.
Typical install time, 2 weeks.



Cost

No start-up costs, low-monthly fee, pay-as-you-go.



Flexibility

Unparalleled ability in the Industry on both a technical and commercial level.

Our Advantages



Hosting & Cloud breakout

We deploy solution directly as close to the operator as possible in biggest Internet Exchange point on Gigabit connectivity - performing complete image cloning nightly.



Support

We have our support located globally and monitor all for non-stop availability.



Maintenance

In addition to support; feature upgrades, patches and new releases are also available.

Our Advantages



Self-Care

Empower the user by enabling full online subscriber self-care and support, online bill presentation, help, downloads and more. Manage provisioning, traffic data, monitoring...



Self Sign-Up

Drive customers to a domain, they sign-up, provide payment details all on-line - without intervention of support personnel - operator manage all connectivity for partners & users.



Efficiency

Leverage the power of a self-care environment which produces numerous operational efficiencies.

Our Advantages



Global Network & Security

Mobilware provide a military grade secure network topology and will oversee deliver, install and configuration, turn the key - ready to go.



Satellite Operator Integration

Our provisioning, billing and prepaid system are already integrated directly with major satellite networks like example Inmarsat, Iridium...



Operator POP integration

Our setup integrate directly with operators own POP environment - interacting with firewalls and radius servers - assigning static IP addresses, manage routing, firewall profiles...

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Mobileware Group

Our Business Model

Business model overview

Capex & Opex

- Operator pay nothing at upstart
- Absolut minimal risk no Capex
- All features installed
- License based model fixed fee
- Irrespective of number is users
- System keep evolving
- Change Request

What is included?

- Provisioning, Billing, Monitoring...
- Open API to all major satellite systems
- Hardware setup in breakout points
- Integration to Inmarsat, Iridium...
- Integration to internal systems like ERP...
- Training sessions
- Comprehensive online documentation
- Support, Ticket Environment
- Upgrades, Backup, Bug fixing...

Dedicated Development

Dedicated Development

Highly skilled in satellite business

We can develop customized solutions in most areas offering you a fast time to market development for a low price.

Mobilware have developed satellite products for the last 15 years – for a lot of the big operators and resellers.

We have build Inmarsat POP environments based on Juniper or Cisco for several operators, created remote managed M2M solutions.

It is also possible to get dedicated programmers located in our facilities in India or Thailand.

SingTel sample: Philippine Election

Developed and executed the Philippine election setup two times for SingTel across 7400 islands basically the worlds biggest ever satellite installations.

Cobham sample: Locpoint

Rework Locpoint to be released in new Bootstrap design making it easier to use.

AST Group – Prepaid system


Develop prepaid system for wholesale packages – sample usage is on IsatHub wholesale.

Mobileware


The Airtime Company

The Airtime a Mobileware Group company are we dedicated to develop Business Environments for the fortrunning Satellite Business.

Located in Europe, Asia and Middel east on following locations:

 **Office / Development**
5/12 Wireless Rd.
10330 Lumpini
Bangkok - Thailand

 **Office / Support**
Købmagergade 2
1150 Copenhagen
Denmark

 **Office**
Dubai Internet City
DIC 16 3 Floor Office 328
Dubai

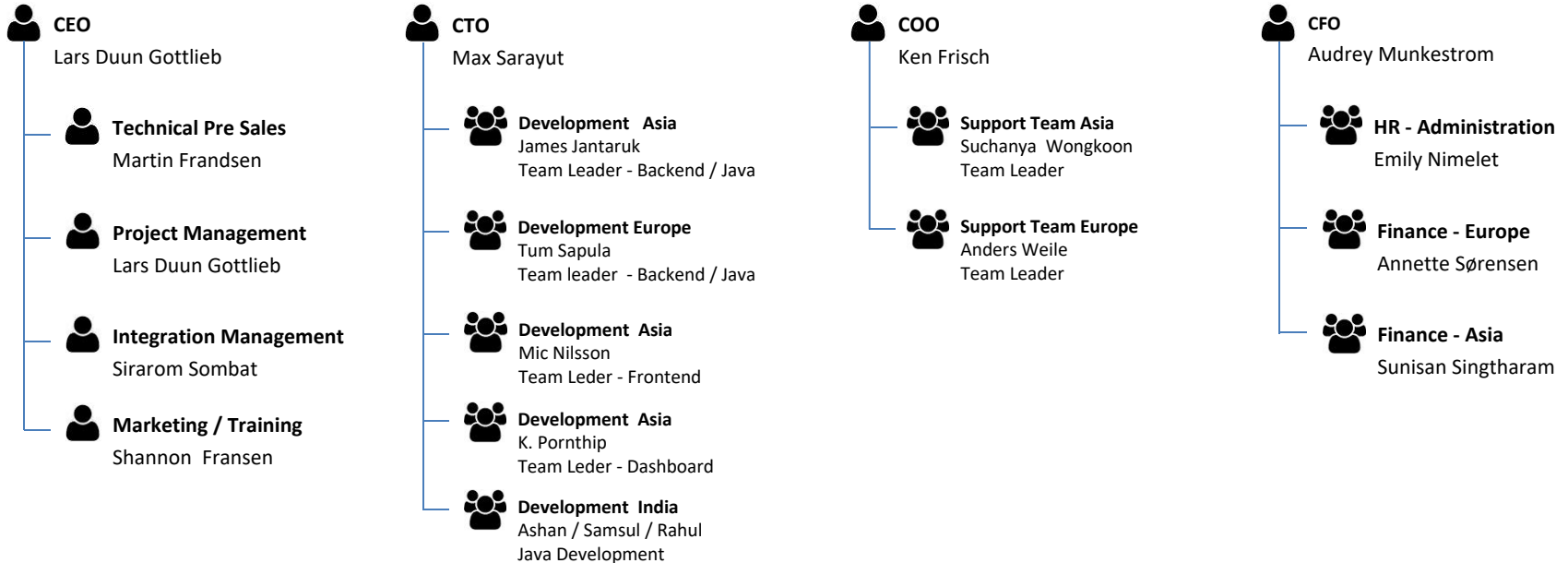
 **Development / Support**
193 Rachadapisek Rd.
10110 Klongtoey
Bangkok - Thailand

 **Datacenter**
Smedeland 32
2630 Glostrup
Denmark

 **Office**
Præstebakken 30
2610 Rødovre
Denmark



Company Organisation



Why us?

Dedicated to Satellite Business

The combination of market-leading solutions and an affordable service model, have already created win-win partnerships between ourselves and some of the world's largest service-providers in Europe, the Americas, Asia, Africa and the Middle East.

Our solutions help you automate your billing, provisioning and customer care operations into a single environment, improving your profitability and customer satisfaction.

With a worldwide team of professionals, we help ambitious companies make innovation happen. Our aim is to create strong and sustainable business value through strategy and strong technical design.

Developing across the entire customer experience, our interdisciplinary teams create compelling products, features, services and experiences driving customer engagement resulting in measurable business growth.

Why Us?

Because no one else does it like we do, low prices, highly skilled support, market leading solutions, time to market almost zero. Our employees' creative minds thrive on diversity. So be prepared to see things in a new and smarter way.

We aren't big-headed design freaks who think we have all the answers. We invite you to contribute, challenge and help us understand precisely what your needs are.

At 'The Airtime' we believe meaningful innovation can only occur with a partnership between us. we never lose sight of the real world, a global economy where markets and money demand no-fuss fixes, invisible ones, even.

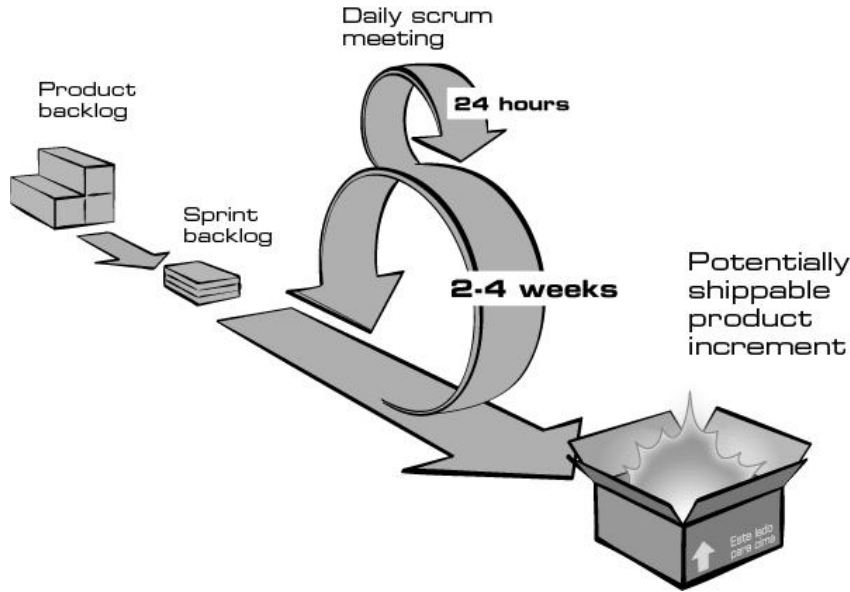
Because our design is about more than visually pleasing webpages, it's about powerful solutions that give your company a long-term competitive edge.

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Development Process

Agile Sprint Development



- ✓ Agile Development Process
- ✓ Sprint Functionality Backlog
- ✓ Sprint Tasks
- ✓ Scrum meetings daily
- ✓ Internal Online Task system
- ✓ More focus at quality

Inmarsat GX integration

See dedicated slides linked to this

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Unity Inmarsat GX system

Provisioning

- VAR & Sub VAR integration (multiple)
- Operator onboarding
- Site onboarding
- Terminal create, delete
- Intelligent and very simple data handling using advanced templates
- Workflow fully automated
- Smart package wizard integrating with Inmarsat sales catalog
- Temporary deactivate management
- Complete web service available

Billing, Monitoring, Assurance

- Inmarsat deliver no traffic billing CDRS
- Unity manage all subscription fees
- Collect assurance data across 88 metrics
- Store all historically in 5min intervals
- Present all data in graphical format
- Unity produce informative CDRs
- Allow monitoring with triggers

Unity Inmarsat GX integration

Inmarsat SEP

- Integrate to SEP API environment
- Integrate to sub VAR sales catalog
- Inmarsat > manual provisioning
- Unity > Automated provisioning
- Uniform provisioning

Inmarsat Gateway (APIGEE)

- Integrate to APIGEE environment
- Pulling terminal data id's
- Pulling notification messages
- Pulling metrics in 5 min interval
- Terminal related and network related
- Traffic data, CIR, Latency
- Location, Altitude...

Single Prepaid system

- One prepaid for all satellite systems
- Manage underlying prepaid systems
- Integrate with Inmarsat prepaid system
- Integrate with Iridium prepaid system
- Integrate with Thuraya prepaid system
- Integrated own prepaid system with own vouchers
- Single Top-up interface across all networks
- Web topup, Voucher topup, credit card top-up interface...

Simplified Prepaid Management

See dedicated slides linked to this

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