

InoSphere

Cloud Services management platform



InoSphere has a modular architecture that allows to choose only necessary modules.

InoSphere allows:

- ◆ reduce the costs of infrastructure support
- ◆ automate the equipment management
- ◆ short the service delivery in 2-3 times
- ◆ provide the centralized management of any resources and hardware connected.

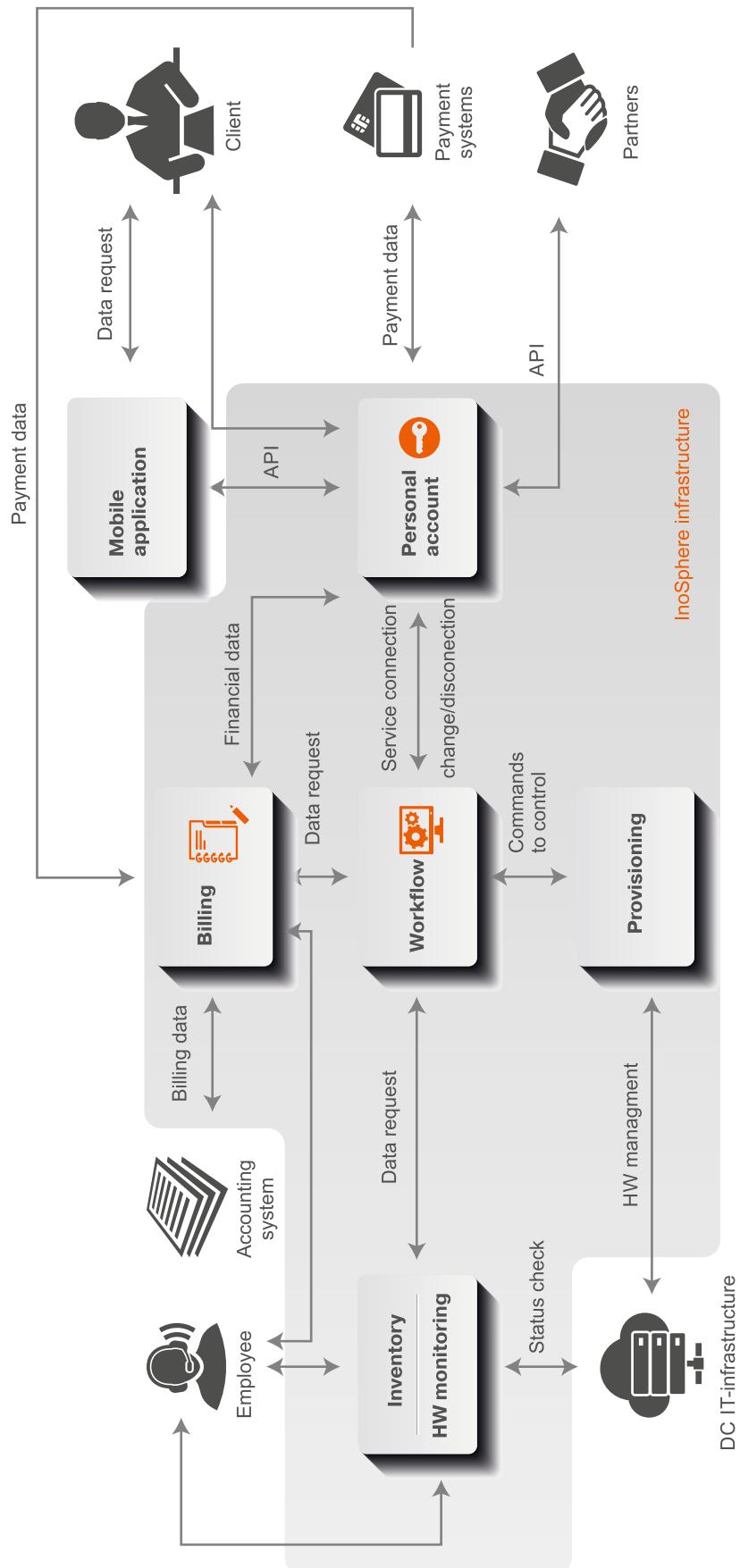
FUNCTIONALITY

- ◆ Automation of Service delivery business processes
- ◆ Provisioning: preparation of ICT infrastructure management in service and utilities
- ◆ Activation: hardware and software management for launch and stand by the services
- ◆ Inventory: monitor the system components and the user activity status according the services
- ◆ Equipment inventory: stock-tacking accessibility and zero-time availability
- ◆ Reports: technical reports for assessing the efficient of the ICT infrastructure: in general and by single data center or service
- ◆ Up to 10 data centers even in different geographical locations
- ◆ PaaS, IaaS and SaaS management provided simultaneously
- ◆ Multi-vendor virtualization system support: KVM, Xen, MS Hyper-V, VMware vSphere
- ◆ Multi-vendor server and storage hardware support: HP, IBM, DELL, Supermicro, etc.
- ◆ Multi-vendor network hardware support: Cisco, Juniper, HP, etc.

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ARCHITECTURE AND TECHNOLOGY



ADVANTAGES

InoSphere API:

- ◆ Flexible integration to customer's internal systems
- ◆ Fully customizable Personal Account interface for branding and extra functionality

InoSphere modular architecture allows to choose and integrate:

- ◆ Billing system (NetUP by default);
- ◆ Payment system: several payment gates such as internet-acquiring;
- ◆ Accounting system (1C v8 by default);
- ◆ IT Service desk system.

100% business processes of ICT services management and control:

- ◆ Business processes that match customer's real processes with step tracking and control;
- ◆ Control at the different levels:
 - ◊ Services (application software);
 - ◊ Resources (IP addresses, domains, routers, servers, etc.)
- ◆ The audits:
 - ◊ software and server hardware;
 - ◊ legislation requirements;
 - ◊ legal requirements from software vendors.

InoSphere maintenance simplified:

- ◆ Equipment is controlled real-time;
- ◆ Every step in business processes visualized in BPM;
- ◆ Shortest time to solve the troubles.

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BASED ON OPEN-SOURCE TECHNOLOGIES

- ◆ Default operating system is CentOS;
- ◆ Web application servers: JBoss AS, Apache Tomcat, HTTP load balancer on NGINX;
- ◆ Programming languages: Java, Freemarker, Spring Framework, Quartz, Bash;
- ◆ Workflow Management: open source Java-based BPM-system;
- ◆ MySQL and PostgreSQL databases.



HARDWARE REQUIREMENTS

Type	Server specification
Workflow (BPM)	2 x CPU 4cores x86, 32GB RAM, 2 x HDD 146GB 10K RPM (Raid 1)
Database	2 x CPU 4cores x86, 32GB RAM, 6 x HDD 300GB 15K RPM (Raid 10)
Billing	2 x CPU 4cores x86, 16GB RAM, 2 x HDD 146GB 10K RPM (Raid 1)
Personal Account interface	1 x CPU 4 cores x86, 32GB RAM, 2 x HDD 146GB 10K RPM (Raid 1) (VM enabled)
Inventory	1 x CPU 4 cores x86, 16GB RAM, 2 x HDD 146GB 10K RPM (Raid 1) (VM enabled)
Provisioning	1 x CPU 4 cores x86, 16GB RAM, 2 x HDD 146GB 10K RPM (Raid 1) (VM enabled)

PERSONAL ACCOUNT

Personal account allows to manage services for customers and staff, to obtain financial statistics and consumed services. Personal account is integrated with automatic calculation system.

The registration process for new customers, service management and calculations are fully automated. User makes all the control service actions by himself. This allows to minimize necessity of DC staff to invent the service management process.

The screenshot shows the 'SERVICES PERSONAL ACCOUNT' section. At the top, there's a header with user information (username, ID, balance) and a 'LOG OUT' button. Below the header is a sidebar with links for 'ACCOUNT', 'Profile', 'Payments', 'Financial statistics', 'Users', 'SERVICES' (with sub-options like 'Def (1062)', 'Wrt (1062)', 'HyperV', 'DNS'), 'Add service', and 'OTHER' (Activity Log, Technical support, Knowledge base). The main content area displays a table of services with columns for 'Code', 'Tariff plan', 'Start date', and 'Rub / month, VAT'. The table shows two entries: '1062' with a 'Start' tariff plan and '1063' with a 'Golf' tariff plan. A 'TOTAL:' row at the bottom indicates a total consumption of 320.00. A green 'SERVICES PERSONAL ACCOUNT' title bar is visible above the table.

1. The main interface of Personal account

New service activating occurs as simple as in regular store. The customer sees "Showcase" and buys the required services.

The screenshot shows the 'HOSTING AND IAAS INFRASTRUCTURE' and 'DOMAIN REGISTRATION' sections. Under 'HOSTING AND IAAS INFRASTRUCTURE', there are six service cards: 'Shared Hosting' (Shared hosting on Windows Server 2012 R2), 'Hyper-V' (Hyper-V R3 platform Hyper-V, administration service...), 'KVM' (Virtual Server on Linux), 'KVM Sidebar' (Scalable Server on Linux), 'Sidebar' (Sidebar service on Hyper-V), and 'Business Mail' (Corporate Microsoft Exchange mail-enabled). Each card has a 'BUY' button. Under 'DOMAIN REGISTRATION', there are three service cards: 'Domains in COM, NET (registration)' (Domains in COM, NET (registration)), 'Domains in ORG, BIZ, INFO (register...)' (Domains in ORG, BIZ, INFO (registration)), and 'Domain zone RU (registration)' (Domain zone RU (registration)). Each card also has a 'BUY' button. The background features a large orange banner on the right side.

2. Showcase service

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After service has been chosen, the customer will be prompted to choose a tariff package and DPC which selected service will be connected. Additional options are available according to the services.

Service	Start	Gear	Wave	Mega	Prime
Price	250 rubles.	500 rubles.	1000 rubles.	2200 rubles.	5500 rubles.
RAM, MB	1024	1024	2048	4096	8192
Number of processor cores	1	1	2	3	4
HDD, Gb	20	40	80	100	200
Location DC	Vladimir				
Select a virtual machine image	Windows Server 2012 R2 Standard English				
Choose a tariff plan	Start	Golf	Middle	High	Prime
Total per month:	500 rub.				

ADD CANCEL

3. Choosing tariff

For Sidebar service user can set individual settings with service cost dynamic calculation.

SLidebar

RAM, Mb: 4096

Number of cores: 4

HDD, Gb: 80

Select a virtual machine image: Windows Server 2012 R2 Datacenter English

Location DC: Vladimir

Cost per hour * / month 4,889 / 3520.00 rubles.
* Contains the estimated cost

RESET ADD CANCEL

4. Configuring services Sidebar

The client can observe all connecting, deleting, or changing service settings in the activity log.

ACTIVITY LOG

Number of	Personal Account	Date and time of recording	Transaction	Type of transaction	Title
46837	100059	02/09/2015 10:58:51	Application for Internet connection tariff plan Start	The process	Done
46854	100059	02/09/2015 10:45:50	The application for creating a new connection to the tariff plan Golf	The process	Done
46727	100059	02/09/2015 10:15:40	Application shutdown tariff Middle_1040	The process	Done
46726	100059	2/9/2015 9:36:39	Application shutdown tariff Middle_992	The process	Done
46531	100059	01/09/2015 19:57:17	An application for the creation of a database within the tariff plan Middle_992	The process	Done
46516	100059	01/09/2015 19:36:17	An application for the creation of a database within the tariff plan Middle_1040	The process	In work

5. Activity log

BILLING

One of the components of InoSphere is billing system NetUPUTM5. It stores information about the subscribers, services, and payments. Also it produces the billing of executed services in automatic mode. This system is certified for use in the telecommunications industry.

The screenshot shows the main interface of the NetUPUTM5 billing system. On the left, there is a vertical navigation menu with categories like System, Settings, Help, Users & Groups, Messages, Tarification, Reference book, Reports, Settings, Interfaces, Additional Features, IC, and Inventory. Under the Inventory section, there is a 'Users' icon. The main area displays a table of user data with columns: User ID, Login, Primary account, Full name, Block ID, Balance, IP (VPN), and IP (not VPN). The table contains numerous entries, with several rows highlighted in red, indicating specific subscribers. At the bottom of the table, there are pagination controls for 'Users per page' (set to 100) and 'Page' (set to 1 of 42). The status bar at the bottom right shows 'Server time: 9/9/15 3:25 PM GMT+03:00'.

6. The main interface of NetUPUTM5

Also system gives the opportunity for an individual VAT settings and changes of the value of connected services for each subscriber.

The screenshot shows a detailed view of a subscriber's services. The left sidebar has a 'User' section with 'Main', 'Additional', 'Contacts', 'Additional contacts', 'Groups', 'Other', 'Contracts', and 'Additional info'. Below that is a 'Tarification' section with 'Accounts', 'Service links' (which is highlighted in orange), 'Tariff links', and 'Technical parameters'. The main area is titled 'User test01' and shows a table of services. The table columns are: Service ID, Service name, Service type, Included in tariff plan, Basic price, Link ID, and Accounting period ID. The table lists various services such as AD, Планшетчик, Домен, Шаблон ОС, VM, etc., each with its respective details. A dropdown menu 'Select account' is set to '100622'.

7. Service connection subscriber

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NetUPUTM5 has wide opportunities of integration with different payment and accounting systems.

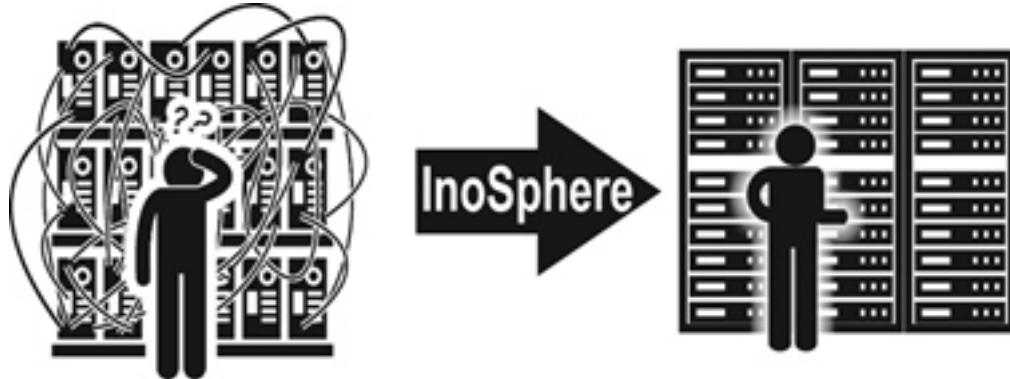
The screenshot shows a Windows application window titled "init@10.110.0.11 (Administrator)". The menu bar includes "System", "Settings", and "Help". The left sidebar contains navigation links: "Users & Groups", "Messages", "Tarification", "Reference book", and "Reports". Under "Reports", there are several categories: General, Traffic, Services, Other charges, Telephony, Telephony directions report, Sessions, Blockings, Payments, Internal Transfer, Expiring Payments, Invoices, Detailed Traffic, User Change Log, and Graphic Report. A "General" section is expanded, showing a small grid icon and a "Shortcut: ---". The main content area displays a table of payment data. The table columns are: Account ID, Login, Full name, Initial bal..., One-tim..., Periodic ..., IP traffic, Hotspot ..., Dial-up ..., IP telep..., Other c..., Tax sum, Total (n...), Payments, and Closing The table rows list various users and their transaction details. At the bottom of the table, it says "Row count: 46". The status bar at the bottom right indicates "Server time: 9/9/15 3:27 PM GMT+03:00".

Account ID	Login	Full name	Initial bal...	One-tim...	Periodic ...	IP traffic	Hotspot ...	Dial-up ...	IP telep...	Other c...	Tax sum	Total (n...)	Payments	Closing ...
100629	test002	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100630	test003	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100631	test004	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100632	irena007	Томаш...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100633	test007	Федор...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100634	dmitry	Якуб...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100635	dmitry0	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100636	test008	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100637	erif1	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100638	dmitry88	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100639	testasd	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100642	client-02	Egeria K...	-0.000	0.000	30.550	0.000	0.000	0.000	0.000	0.000	6.110	36.660	0.000	-36.660
100643	client-03	Astela OU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100644	client-04	Pohlen OU	-34.465	0.000	29.897	0.000	0.000	0.000	0.000	0.000	5.979	35.876	35.158	-35.184
100645	client-05	Pohlen ...	0.000	0.000	53.820	0.000	0.000	0.000	0.000	0.000	10.764	64.584	0.000	-64.584
100646	client-06	Pohlen ...	0.000	0.000	83.220	0.000	0.000	0.000	0.000	0.000	16.644	99.864	0.000	-99.864
100647	client-07	TaxBür...	-830.666	0.000	867.120	0.000	0.000	0.000	0.000	0.000	867.120	849.146	0.000	-848.640
100648	client-08	AO Mak...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100649	client-09	Hansab ...	-126.495	0.000	110.095	0.000	0.000	0.000	0.000	0.000	22.019	132.114	129.305	-129.304
100650	test-client-01	Aleksan...	323.790	0.000	169.615	0.000	0.000	0.000	0.000	0.000	33.923	203.537	0.000	120.252
100651	test999	не запо...	-422.867	0.000	200.000	0.000	0.000	0.000	0.000	0.000	40.000	240.000	0.000	182.867
100652	user01	внеш...	0.287	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.000	50.287
100653	user02	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100654	user03	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100655	user04	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100656	adtest	Тестов...	8974.397	0.000	27.182	0.000	0.000	0.000	0.000	0.000	4.893	32.074	-8942.000	0.322
100657	client-01	GT-Media	0.000	0.000	200.518	0.000	0.000	0.000	0.000	0.000	40.354	240.621	0.000	-240.621
100658	client-10	000 %...	0.000	0.000	79.998	0.000	0.000	0.000	0.000	0.000	79.998	0.000	-79.998	
100659	klient01	не запо...	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	180.482	2032.752	-11408....	19.089
Summary			13460.232	0.000	1852.270	0.000	0.000	0.000	0.000	0.000	180.482	2032.752	-11408....	19.089

8. Report on the payments received

INVENTORY

Inventory is a set of directories not associated with specific services or subscribers. In these directories all data of all data center resources are stored and systematized. The system keeps track of physical and virtual data center resources. Each accounting entity can have a set of attributes depending on the assigned role. The possibility of stock-taking network addressing data center is performed. It is also possible to track the resource occupation and utilization. System allows to support up to 5,000 pieces of equipment.



Data Centers

Add

1-3 of 3 data centers

ID	Product Name	Address
78	Vladimir	Revyaky
77	Moscow	Dataline
79	Ekaterinburg	Filanko

Racks

Add

1-1 of 1 rack

Product Name	Number of units
1	42

9. Data centers management

Server equipment

Add

Title: Pattern: DPC:
The role: IP address: Searching

1-24 of 24 Servers

ID	Title	Treatment	Pattern	DPC	Arrangement	Number of processors	Number of cores	RAM	HDD, MB	The role	IP address	Information	
Dedik - Test_1	90			Vladimir	r1: 3 + 3U			0	0	Dedic		Contact Story	
Dedik L - Port_5	90			Vladimir	r1: 12 + 3U			0	0	Dedic		Contact Story	
Dedik XL - Port_6	90			Vladimir	r1: 23 + 2U			0	0	Dedic		Contact Story	
Dedik XXL - Port_7	90			Vladimir	r1: 11 + 3U			0	0	Dedic		Contact Story	
zellseeva-127	90	active	1	Vladimir	r1: 2 + 2U	4	4	4	4	VMM server		Contact Story	
zellseeva-127-db	90	active	1	Vladimir	r1: 4 + 2U	4	4	4	4	VMM library server		Contact Story	
ndc-3h04	90	active	60	Vladimir	r1: 6 + 2U	2	2	6	6	The host VMM		Contact Story	
zellseeva-130	90	active	8	Vladimir	r1: 8 + 2U	2	2	2	2	Server management services	172.21.41.130	Contact Story	
zellseeva-128	90	active	2ff	Vladimir	r1: 1 + 1U	1	1	1	1	Client Domain Controller	172.21.41.128	sdc-client-01.client-test.parking.ru	Contact Story
zellseeva-126	90	active	- == -	Vladimir	r1: 1 + 1U	1	1	1	1	Primary DNS			Contact Story
zellseeva-127-prov	90	Not active	1	Vladimir	r1: 1 + 1U	1	1	1	1	Server management services	172.21.41.127		Contact Story
exchange	90	active	=	Vladimir	r1: 1 + 1U	1	1	1	1	MS Exchange Server			Contact Story
rdpgw-gpi-test	90	active	=	Vladimir	r1: 1 + 1U	1	1	1	1	Terminal Server Dedic		rdpgw.gpi-test.parking.ru	Contact Story

10. Hardware controls

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It is very easy to add new accounting unit – to fill the form up. Also there is a possibility of multiple accounting unit adding.

The screenshot shows a configuration form titled "Server hardware. Adding an entry". The form includes fields for identifying the hardware (ID, Title, Treatment, DPC) and specifying its type (Physical server selected). It also includes fields for manufacturer, pattern, arrangement (rack, unit, height), processor details (number of processors, cores), memory (RAM), storage (HDD, MB), DNS name, role, and information. A "Save" button is located at the bottom left of the form.

11. Form places a new accounting unit

Looking through all accounting units it is simple to see the detailed history of attribute changes. This allows you to know exactly who, when and most important what was changed in the configuration.

Updated	Golf	Old value	The new value	User
08/29/2014, 16:31	DNS name	exchange.client-test.parking.ru	testexchange.client-test.parking.ru	admin
07/10/2014, 9:34	DNS name	testexchange.client-test.parking.ru	exchange.client-test.parking.ru	admin
07/10/2014, 9:34	ID	testexchange	exchange	admin
07/09/2014, 12:32	DNS name	testexchange.gpi-test.parking.ru	testexchange.client-test.parking.ru	admin
07.09.2014, 12:00 PM	DNS name	testexchange.extest.local	testexchange.gpi-test.parking.ru	admin
01.07.2014, 17:45	RAM		1	admin
01.07.2014, 17:45	HDD, MB		1	admin
01.07.2014, 17:45	Title		on	admin
01.07.2014, 17:45	Treatment		active	admin
01.07.2014, 17:45	Number of processors		1	admin
01.07.2014, 17:45	Number of cores		1	admin
01.07.2014, 17:45	Information			admin
01.07.2014, 17:45	DNS name		testexchange.extest.local	admin

12. Table of changes in accounting unit

Network infrastructure will always be important. Accounting VLAN & IP networks.

VLAN ID				
Title	DPC	Interval VLAN	Title	Comment
<input type="radio"/>	<input type="checkbox"/> Vladimir	4 - 4	The group is free	<input checked="" type="checkbox"/> Story
<input checked="" type="radio"/>	<input type="checkbox"/> Vladimir	640 - 643	The group is free	<input checked="" type="checkbox"/> Story
<input type="radio"/>	<input type="checkbox"/> Vladimir	5 - 5	The group is free	<input checked="" type="checkbox"/> Story

VLAN			
Book / Rent reservations			
1-4 of 4 CDs			
	VLAN number	Information	Title
<input type="checkbox"/>	640	Free	
<input type="checkbox"/>	641	Free	
<input type="checkbox"/>	642	Free	
<input type="checkbox"/>	643	Free	

13. VLAN accounting

List of Internet networks				
Network Status	DPC	Net	VLAN	Network Status
<input type="radio"/>	<input type="checkbox"/> DPC	195.19.33.1 - 195.19.33.254	4	Available <input checked="" type="checkbox"/> Story
<input checked="" type="radio"/>	<input type="checkbox"/> Vladimir	195.19.34.1 - 195.19.34.254	643	Available <input checked="" type="checkbox"/> Story
<input type="radio"/>	<input type="checkbox"/> Vladimir	172.21.40.1 - 172.21.40.254	640	Available <input checked="" type="checkbox"/> Story
<input type="radio"/>	<input type="checkbox"/> Vladimir	201.40.43.1 - 201.40.43.2	641	Unavailable <input checked="" type="checkbox"/> Story
<input type="radio"/>	<input type="checkbox"/> Vladimir	ext.net	5	Available <input checked="" type="checkbox"/> Story

List of IP addresses													
Book / Rent reservations													
1	2	3	4	5	6	7	8	9	10	11	Lines per page:	25	1-25 of 254 IP-addresses
	Address	Title	Information										
<input type="checkbox"/>	195.19.34.1	Free	Story										
<input type="checkbox"/>	195.19.34.2	Free	Story										
<input type="checkbox"/>	195.19.34.3	Free	Story										
<input type="checkbox"/>	195.19.34.4	Free	Story										
<input type="checkbox"/>	195.19.34.5	Free	Story										
<input type="checkbox"/>	195.19.34.6	Free	Story										
<input type="checkbox"/>	195.19.34.7	Free	Story										
<input type="checkbox"/>	195.19.34.8	Free	Story										
<input type="checkbox"/>	195.19.34.9	Free	Story										
<input type="checkbox"/>	195.19.34.10	Free	Story										
<input type="checkbox"/>	195.19.34.11	Free	Story										
<input type="checkbox"/>	195.19.34.12	Free	Story										
<input type="checkbox"/>	195.19.34.13	Free	Story										

14. IP networks accounting

WORKFLOW

Business processes management system is a key element of the system, coordinating all the process in service management and task automatic execution . This system distributes responsible units to execute assigned tasks according the business processes.

All business processes can be customized for the needs of the certain customer. It doesn't require knowledge of programming languages, all changes can be made in the graphical process designer.

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SUPPORT AND MAINTENANCE

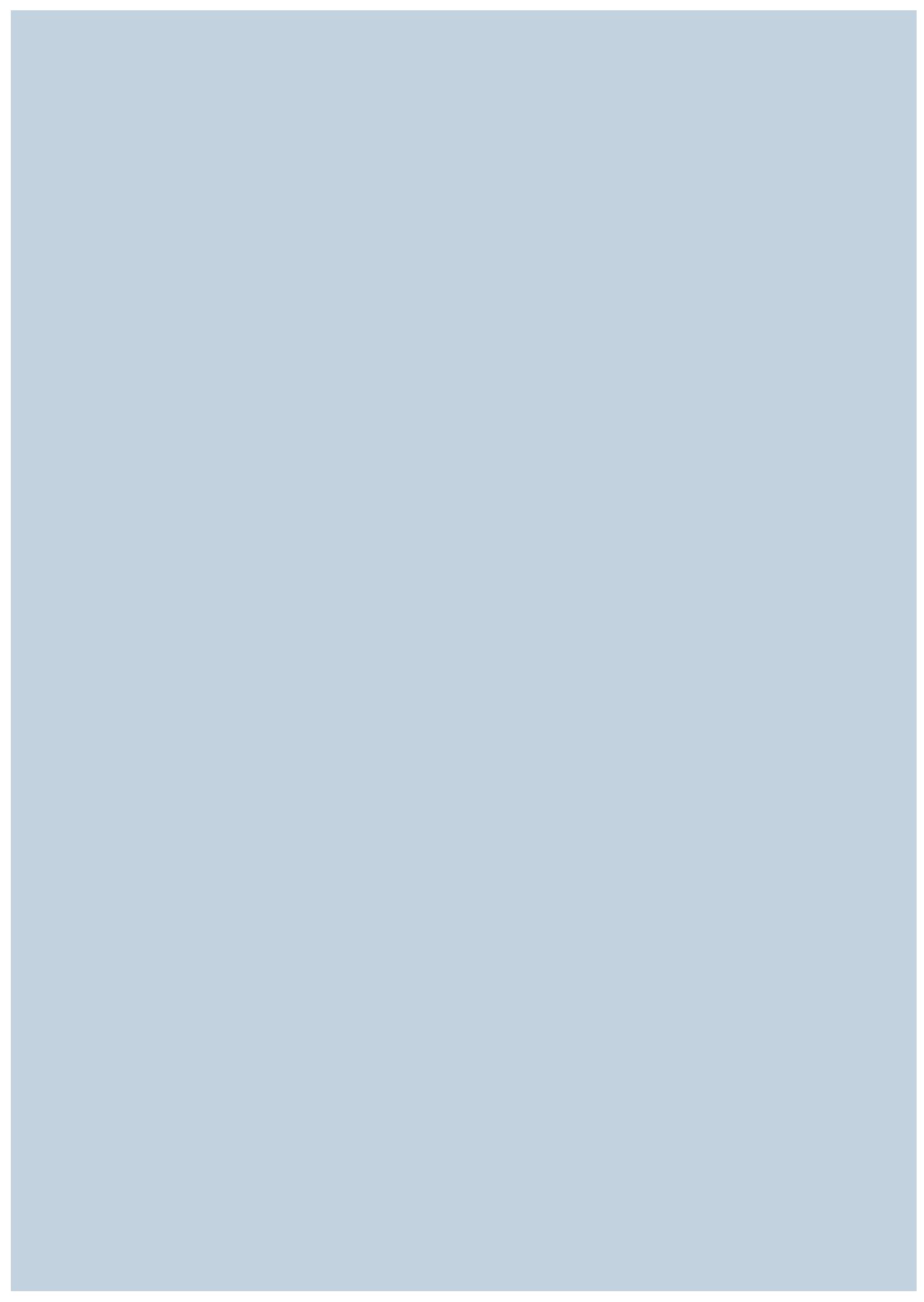
- ◆ Free system updates within the global update programme.
- ◆ Finalization discovered critical vulnerabilities.
- ◆ Indefinite technical support in the current system version.
- ◆ Development of the additional system capabilities.
- ◆ Revision and implementation of individual customer solutions.



DELIVERY AND IMPLEMENTATION

- ◆ System implementation from scratch from 14 days
- ◆ Setup payment gateway from 1 working day.







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