



Process Software

*Addressing the Net with
Directory-Enabled IP*

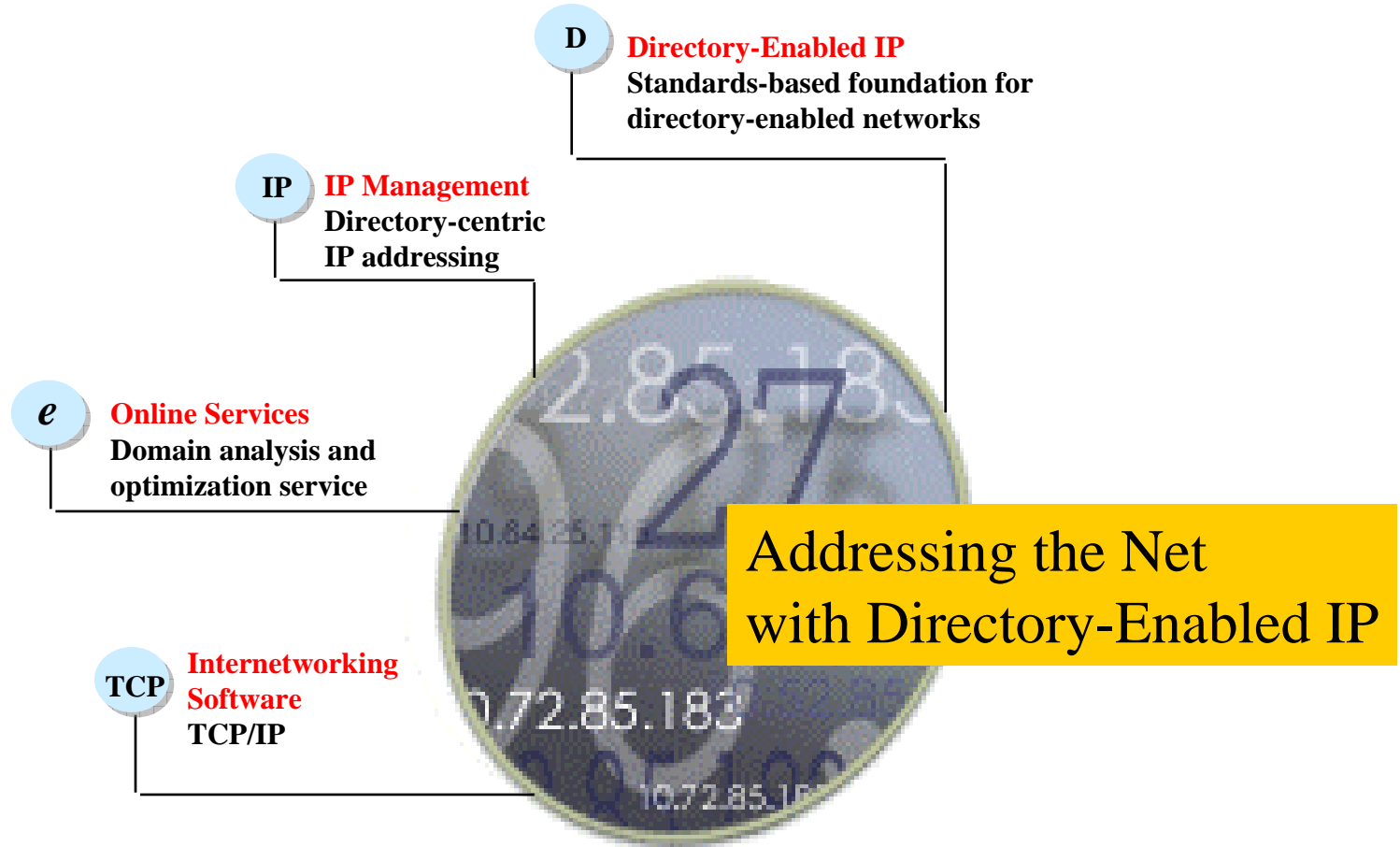
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1



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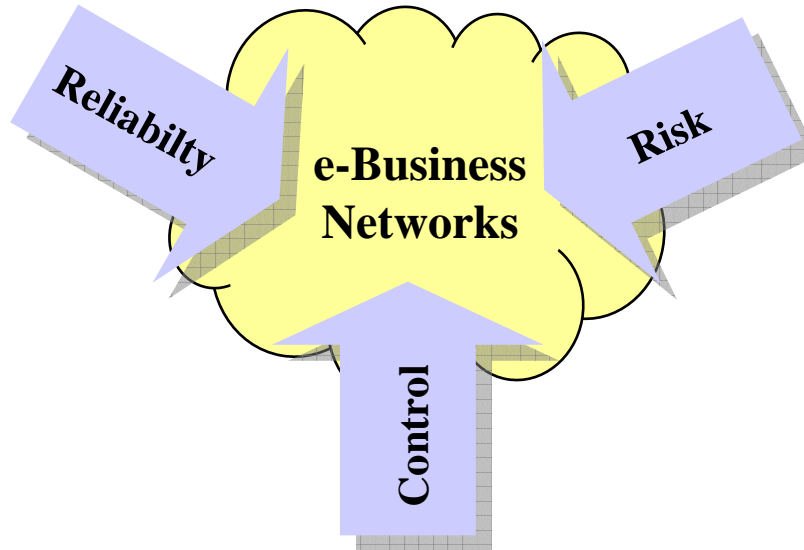


Directory-Enabled *e*-Business Networks

*Addressing the Challenges to
IP Infrastructure*



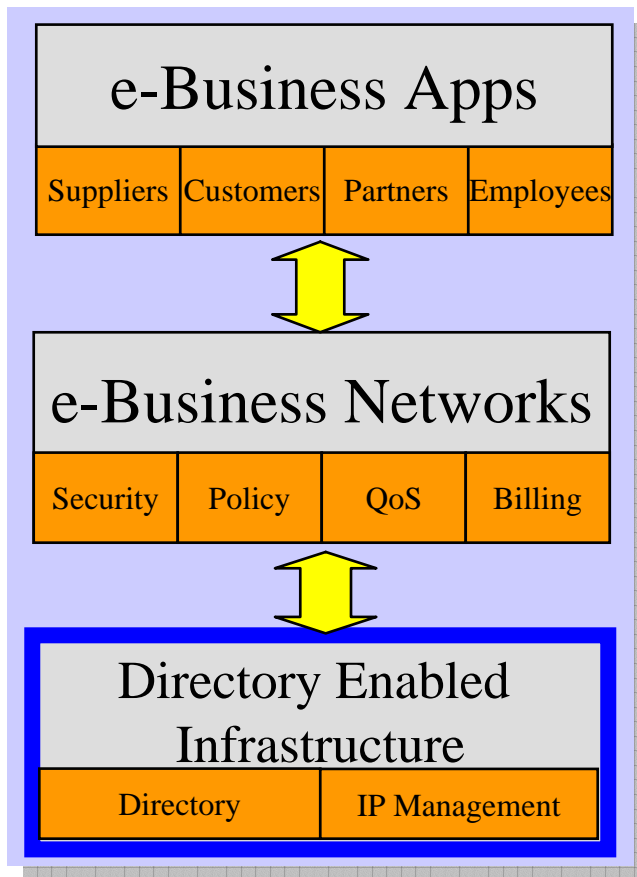
e-Business Network Challenges



- *e*-Business apps are driving next generation IP networks
- *e*-Business networks require new controls and standards
- Directories address security, data and user mgmt issues
- *e*-Business networks start with Directory-enabled infrastructure



Addressing the Challenge



Directory-enabled infrastructure:

- Reliability
 - Robust standards-based infrastructure components ensure high network uptime
- Risk
 - Directories provide data integrity & security across heterogeneous networks
- Control
 - User information can be associated, accessed and shared with apps and services



Process Software Solution

*Addressing the Net with
Directory-Enabled IP*

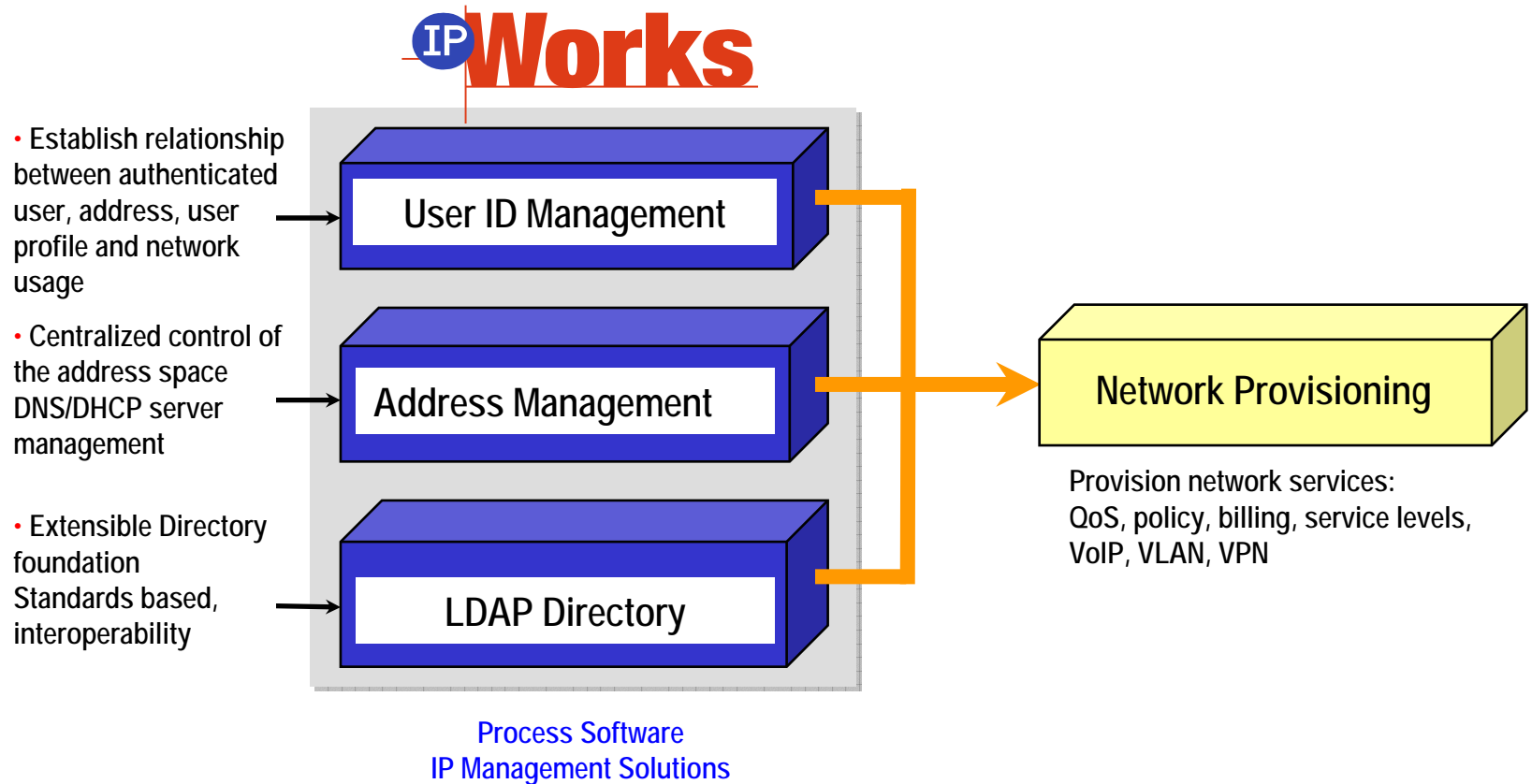
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Directory-Enabled IP Management





IP Address Works v2.0

Latest version addresses Directory-enabled infrastructure control and management





IP AddressWorks

The screenshot shows the IP AddressWorks software interface. The title bar reads "IP AddressWorks - Server: 127.0.0.1 - Partition: Sample Network". The menu bar includes File, Edit, Add, View, Tools, Reports, Window, and Help. The main window displays a tree view on the left with categories like Accounting, Engineering, Servers, and Technical Support. The main pane shows a table of nodes with columns for Name, Domain Name, Address, and MAC Address.

Name	Domain Name	Address	MAC Address
sirius.sample.com	sirius.sample.com	10.16.95.1	AA:00:04:00:01:08
rigel.sample.com	rigel.sample.com	10.16.95.2	
deneb.sample.com	deneb.sample.com	10.16.95.3	08:00:2B:E4:63:CC
juliet.sample.com	juliet.sample.com	10.16.95.4	00:00:F8:23:26:E9
altair.sample.com	altair.sample.com	10.16.95.5	00:A0:24:80:2F:E9
algol.sample.com	algol.sample.com	10.16.95.6	08:00:2B:E4:63:9F
gobbo.sample.com	gobbo.sample.com	10.16.95.7	00:08:C7:52:4F:09
lodovico.sample.com	lodovico.sample.com	10.16.95.8	
cr900ex2.sample.com	cr900ex2.sample.com	10.16.95.9	00:00:F8:9D:5A:00
pursuit1.sample.com	pursuit1.sample.com	10.16.95.10	00:20:AF:DA:26:71
mira.sample.com	mira.sample.com	10.16.95.11	AA:00:04:00:0B:08
laserjet1.sample.com	laserjet1.sample.com	10.16.95.12	08:00:09:7D:09:C3
touchstone.sample.com	touchstone.sample.com	10.16.95.13	08:00:2B:E5:30:40
nosleep.sample.com	nosleep.sample.com	10.16.95.14	
marketing.sample.com	marketing.sample.com	10.16.95.15	
alcor.sample.com	alcor.sample.com	10.16.95.16	AA:00:04:00:10:08
kraz.sample.com	kraz.sample.com	10.16.95.17	00:60:08:A0:8C:A2
enif.sample.com	enif.sample.com	10.16.95.18	
acrux.sample.com	acrux.sample.com	10.16.95.19	00:20:AF:F5:88:83
merope.sample.com	merope.sample.com	10.16.95.20	00:00:F8:1F:37:D3
gacrux.sample.com	gacrux.sample.com	10.16.95.21	00:60:08:A0:8C:57
becrux.sample.com	becrux.sample.com	10.16.95.22	00:60:08:A0:8C:8A
johnslip.sample.com	johnslip.sample.com	10.16.95.23	
nash.sample.com	nash.sample.com	10.16.95.24	AA:00:04:00:18:08

- Centralized control and management of IP Addresses and robust DNS/DHCP servers
- Flexible, user-friendly node-based interface
- Directory-enabled architecture with centralized LDAP directory
- Adheres to industry standards
- Standard DHCP Safe failover
- IP resources tracked across servers and subnets
- Data import and export capability
- Drag/Drop for single/group moves
- Heterogeneous (NT, Unix, VMS)
- Extensive auditing, logging and reporting



IP AddressWorks 2.0

- Deployment
 - Deployment of DNS using Domain analysis tool (DNSworks)
 - Flexible import/export
- Enterprise-strength IP management services
 - Extensive access control/SNMP management
 - Robust, high performance DNS/DHCP services

“ . . . That’s also why it’s essential to have DHCP and a DNS redundant configuration, so that a failure doesn’t stop a user from logging on. IP AddressWorks has an intelligent failover process. It’s very resilient.”

Andrew Darling, UMASS



IP Address Works 2.0

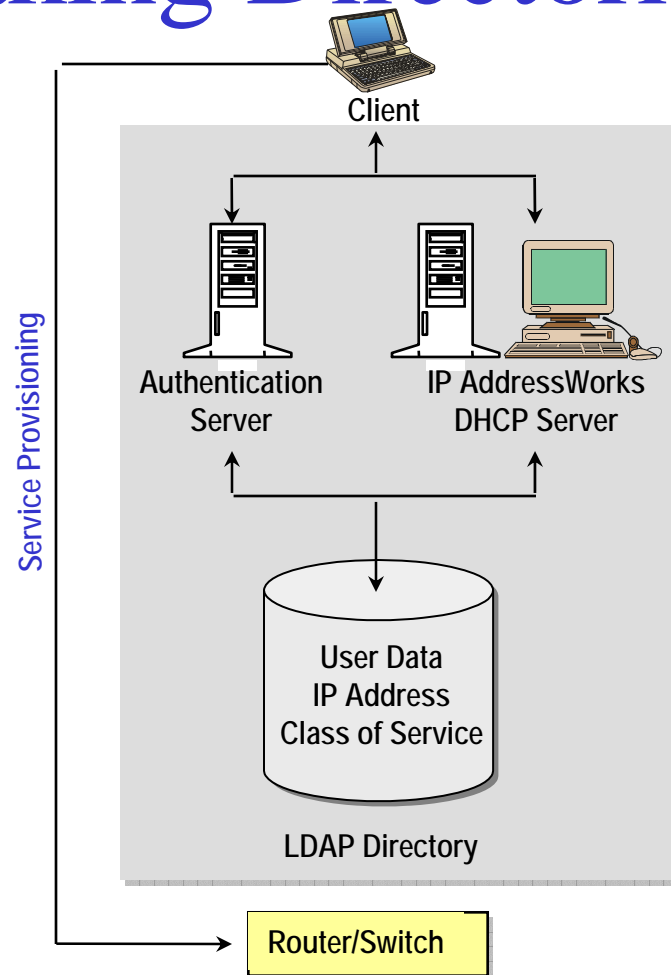
- Foundation for directory-enabled networking
 - Directory-centric approach/data shared with other apps
 - Unique directory transaction processor ensures data integrity
 - Maintains referential integrity between objects in the directory
 - Supports multiple directories
 - Provides directory-enabled foundation for e-Business

“IP Address Works is critical to our network operation. The product’s directory-centric architecture is a key reason for success. AddressWorks supports LDAP and is very flexible and extensible. When thousand of students and faculty log on from different locations, they are essentially altering their own IP addresses, and this only works because you have an accessible LDAP directory . . . “

Andrew Darling, UMASS



Making Directories Real



Service Provisioning Example

- Client requests authentication
- Authenticated client is matched to user data in LDAP directory
- Client requests IP address from DHCP
- Returned address reflects class of service which is based upon user data
- Client connects to the network via Router/Switch
- Router/Switch enforces class of service based on IP address
- Client receives authorized services



Directory-Enabled User Identity Management



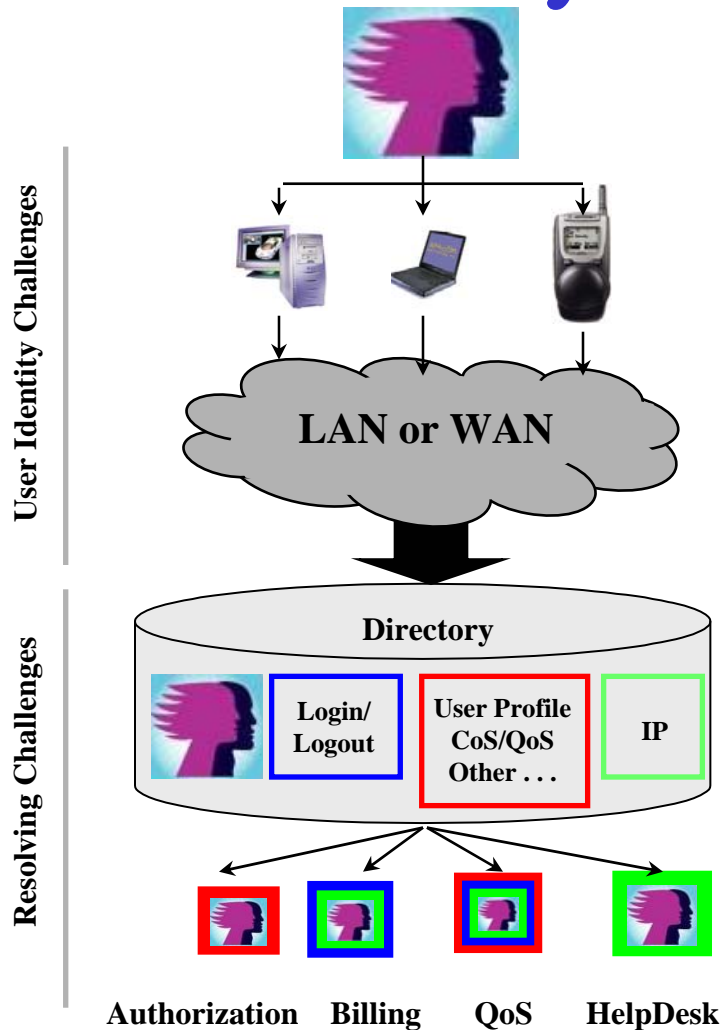


User Identity Requirements

- Ability to identify authenticated user
 - Identify and track user log-in/log-out with user profile
 - Identify and track IP address, MAC address etc
- Establish relationship between user and network
 - Bind user name, user profile, IP address into unique identity
 - Reflects user persona at specific instant in time
- Enable network provisioning based on user identity
 - User persona determines what network services to provision
 - IP address delivers/enforces network services (i.e. Help Desk)

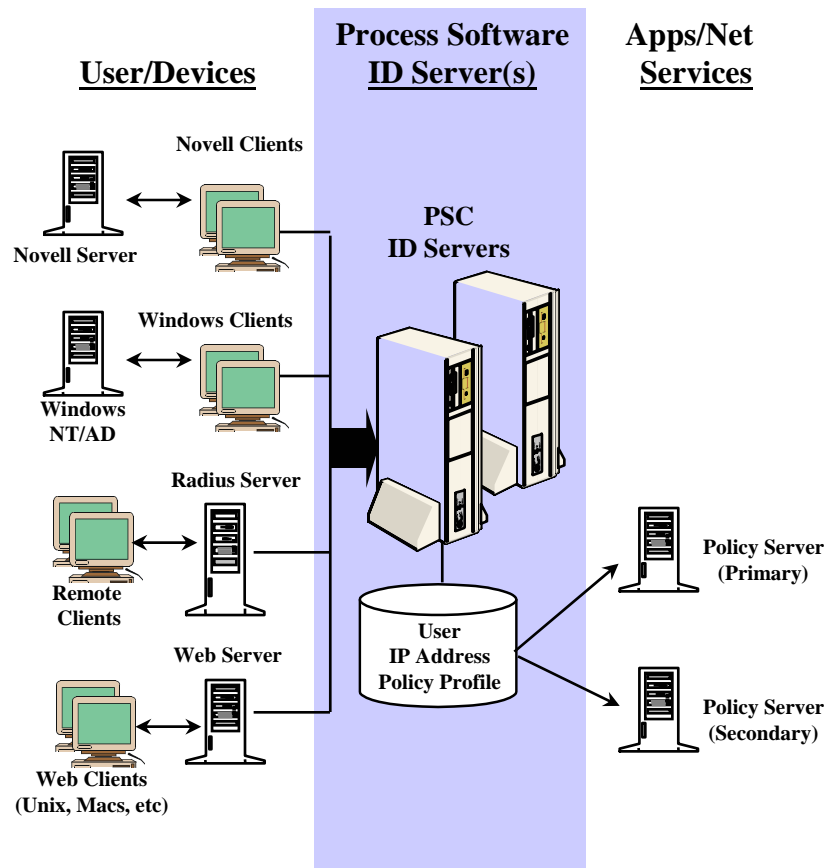


User Identity Management





Policy Management Example



Users/Devices

Users authenticate themselves to network

ID Server(s)

Establish relationship between user and network

Apps/Net Services

Policy server provisions QoS profile based on user ID



Unique Differentiation

- User identity management
 - Non-disruptive dynamic user identification management creates the authenticated user to address relationship within directory
 - Standards-based design leverages authentication services, facilitates and lowers deployment cost & enables extensions
- Directories
 - Leverage IPworks LDAP-based design and PSC expertise to exploit directory advantages and create innovative directory APIs and management tools
 - Standards work with DHCP and user/address schemas establishes PSC as a leader; IP address and user are the essential element for advanced network services



Introducing DNSworks

First Online IP Service Offering



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DNS Errors - Costly and Visible

- DNS errors are visible and costly (e.g. eBay & AT&T)
 - Corporations lack DNS skilled resources & automation
 - *e*-Business efforts cannot afford DNS server problems
- Complexity and frequency of DNS configurations
 - DNS configuration is manually intensive and error prone
 - IP networks are dynamic with moves, adds and changes
- Technological advances will increase DNS errors
 - Microsoft Active Directory migration
 - DNS BIND upgrades



Introducing DNSworks

Online DNS analysis service that identifies and resolves network problems before they can affect the network

Service Profile

Create your domain analysis service profile:

- Enter the Domain to be analyzed.
- Select the frequency you would like the Domains to be analyzed.
- Enter up to 5 email addresses of individuals to receive the analysis reports
- [Read zone transfer policy](#)

100 Domains Allowed / 10 Domains Selected				
	Domain (e.g. process.com)	Frequency	When	Email Report (Up to 5 addresses; separate by a semicolon)
1.	<input type="text" value="jprocess.com"/>	<input type="text" value="ON DEMAND"/>	<input type="text" value="N/A"/>	<input type="text" value="test@process.com"/>
2.	<input type="text" value="jipworks.com"/>	<input type="text" value="DAILY"/>	<input type="text" value="6:00"/>	<input type="text" value="test@process.com"/>
3.	<input type="text" value="jdnsworks.com"/>	<input type="text" value="WEEKLY"/>	<input type="text" value="WED"/>	<input type="text" value="test@process.com"/>
4.	<input type="text" value="jipaddressworks.com"/>	<input type="text" value="MONTHLY"/>	<input type="text" value="28"/>	<input type="text" value="test@process.com"/>
5.	<input type="text" value="jprocessforward.com"/>	<input type="text" value="ON DEMAND"/>	<input type="text" value="N/A"/>	<input type="text" value="test@process.com"/>

- Analyze Domains on demand/schedule
- Identify DNS errors via comprehensive tests
- Deliver recommended solutions
- Resolve problems before they affect network



Solve DNS Issues in Minutes

Summary Report: test.com

(9) errors and (7) warnings found.

Type	No.	Description
	1	An MX record for a zone refers to a host name which is a CNAME record
	1	Unable to resolve the host name used in the NS, MX or CNAME record for the zone
	2	There is no PTR
	3	The name serv
	2	The name serv
	6	The reverse re host name

1. Identifies DNS problems and summarizes DNS errors and warnings

eDNSworks Error Summary - Netscape

Error Summary

Message summary:
The name server "theserver.problemdomain.com." is not listed in delegation data.

Message detail:
The server "theserver.problemdomain.com." is listed as being authoritative for the zone according to the zone data, but there is no NS record for that server in the delegation data. Delegation data and zone data should always match.

More info on this message:
in the zone data as being authoritative for the zone, but there is no NS the delegation data.

es not get queries for data in the zone.

egation data is correct and that the zone data and delegation data is

Print

Close this window

2. Provides drill-down detail information on errors and warnings

Solutions for: test.com

CHANGE

FROM: ipv6.process.com. IN MX 20 md.sparknet.net.

TO: ipv6.process.com. IN MX 20 superdomo.sparklist.com

CHANGE

FROM: www.ipv6.process.com. IN MX 10 md.sparknet.net.

TO: www.ipv6.process.com. IN MX 10 superdomo.sparklist.com

3. Offers specific solutions to resolve DNS errors and warnings



Conclusion

- Process Software's leading directory standards & Directory enabled *e*-business network infrastructure
- IPworks IP management solutions provide the foundation for Directory enabled *e*-Business networks
- IP AddressWorks addresses reliability and control of Directory enabled IP infrastructure
- IPworks provides user identification management for implementing Directory enabled applications
- DNSworks ensures a reliable DNS infrastructure for implementing *e*-Business networks



Recent/Upcoming Announcements

- Unisphere Solutions to OEM Process Software's IP AddressWorks technology for broadband, ISP and telco network management - 1/18
- Process Software releases IP AddressWorks 2.0: Builds foundation for managing directory-enabled apps and services - 1/24
- Process Software releases DNSworks: online DNS analysis and optimization service - week of 2/6
- IPworks user identity management - Q2/00



Process Software

Company Background



Company Overview

- Headquartered in Framingham, MA
- 125 employees
- Privately held, steadily growing and financially strong
- 1999 revenues of \$22M
- 5,000 engaged global customers



Directory & Network Standards

Directory Initiatives

- Directory Implementations
 - Dynamic address schema
 - Directory transaction mgmt
 - Netscape, IBM, Siemens
- Directory Bodies
 - Directory Interoperability Forum (DIF)
 - Directory Standard Mark-up Language (DSML)

Networking Initiatives

- DNS and DHCP Standards
 - Dynamic address schema
 - DHCP safe failover & others
 - DNS BIND 8.X & 9.0
- DMTF and IETF Standards
 - Directory enabled networking
 - Common info model (CIM)
 - IETF - policy networking



Partnerships

