



Executive Briefing: Lotus Notes and NDS Integration Technologies

INTEROPERABILITY	
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Purpose of this Document

The purpose of this document is to compare existing technologies which may be used to integrate Lotus Notes R5 and Novell's Novell Directory Services (NDS). For organizations which have made a significant investment in both Lotus Notes R5 and NDS, several potential strategies may be used to minimize the burden of supporting a Notes R5 infrastructure:

- Provide Single Sign-On Capabilities for NDS Clients to Notes
- Use NDS/LDAP Authentication for Notes Web Access
- Provide Single-Point Administration for User/Group Creation in NDS and Notes
- Use NDS as the Central Store for all Notes User Certificates

Single Sign-On Capabilities for NDS Clients to Notes

This is the capability to provide a single login for both the NDS network and Lotus Notes environments. Although different products accomplish this in different ways, the end result is the same: users logging into a NetWare client-enabled workstation would only be required to login once at the Novell Login screen. Upon starting the Lotus Notes client, NDS would transparently pass the required credentials of the user to the Notes login process.

Use NDS/LDAP Authentication for Notes Intranet Access

This capability would allow NDS user accounts and passwords to be used for authenticating into the Notes Web Access environment. Generally, any users requiring access to Notes environment will require a Notes account (in addition to the user's NDS account) to be established before access will be permitted. This also means that the user's passwords between production Notes and NDS are not synchronized and could lead to users having to remember different passwords for these environments.

LDAP (Light-Weight Directory Access Protocol) could be used to link NDS and Notes' directories together. When a user accesses the Notes environment via a web browser, the user is prompted for a user account and password. This information is validated against the user's NDS object. If correct, the user gains trusted access to Notes. Additionally, LDAP allows for these NDS user objects to be used in the ACL assignments of Notes databases, etc.

Single-Point User/Group Creation and Administration for NDS and Notes

The ability to simplify the user creation and maintenance process is generally desired in most organizations. In this scenario, the administrator(s) would create all new users in NDS and have this user information automatically replicate the users in the Domino Directory. Furthermore, if subsequent modifications are made to this user information in either NDS or the Domino Directory, it should replicate the modifications to the other environment automatically.

Use NDS as the Central Store for all Notes User Certificates

Users need to access their certificate file when they first load and authenticate to the Notes client. When travelling between workstations and locations, this forces the user to either maintain the file in a home directory or carry the file around on a floppy disk. In either scenario, the user is prompted for the location of this file and must locate it before authentication can be completed. Furthermore, if the workstation is shared by more than one person, the new user must “switch” ids. This switching of ids can cause additional confusion for the user.

In order to streamline the Notes authentication process for roaming users, the ability to store the contents of each user’s certificate file (USER.ID) as a property of the user’s NDS object would eliminate the need to maintain a separate user certificate file. Since users are guaranteed to be authenticated via NDS regardless of the workstation or location in which they are currently located, the Notes user certificate information would always be easily accessible. This feature could logically exist as part of the single sign-on component mentioned earlier in this document—the NDS user certificate would be supplied to Notes automatically. This further streamlines the Notes authentication process for the user.

Technologies Evaluated

NetVision Synchronicity for Notes 2.0

Product Overview: Synchronicity provides directory synchronization between NDS, Notes, NT, Active Directory, Exchange and NetWare 3.x. This product is supported and recommended by Novell. This product also provided basic single sign-on capabilities between NDS and Notes.

Pros:

- This product was developed closely with Novell and is recommended by Novell.
- This product appears to be one of the best alternatives for directory synchronization between NDS and Notes which is currently available.
- Also works with other platforms such as NT, Active Directory and Exchange.

Cons:

- Novell is positioning its dirXML product as a long-term replacement to this product.
- Some IPX dependencies exist. This may pose an issue for organizations migrating to “pure IP.”
- Provides only limited NDS/Notes single sign-on capabilities via password synchronization.

Novell dirXML

Product Overview: dirXML is a new product from Novell which serves as an advanced meta-directory for connecting and synchronizing NDS and other directories. This product most directly competes with NetVision's Synchronicity. Novell intends to arm dirXML with connectors (also termed as drivers) for most popular directories. Preferably, connectors replicate directory information via various standard protocols such as XML, XLS and LDAP. If the target directory does not support XML, XSL or LDAP, then the connector is written to use the directory provider's native APIs.

Pros:

- This is a pure Novell product and is recommended over Synchronicity as the long-term answer to directory synchronization in an NDS environment.
- Completely integrated with NDS.
- Provides connectors for Lotus Notes, Active Directory, Netscape, NDS and ERP applications in the first release. More platforms are planned for the future.

Cons:

- As of this writing, dirXML is a beta product. Novell plans to release a shipping version by mid 2000.
- Based on NetWare 5 and eDirectory (NDS 8.x). Requires NDS infrastructure to be running eDirectory.
- Does not inherently provide single sign-on capabilities to Notes. Novell has positioned its Single Sign-On for Notes product as the companion technology to provide these capabilities.

Novell Single Sign-On for Notes

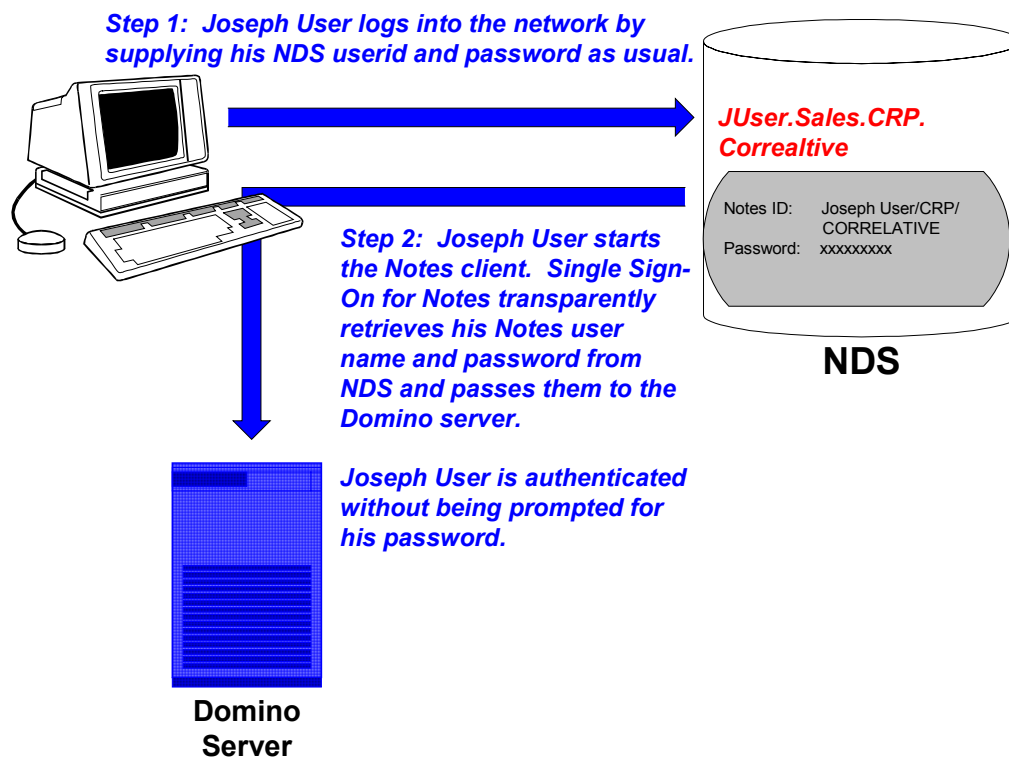
Product Overview: Provides advanced single sign-on capabilities between NDS and Notes via the “secret store.” This secret store maintains the password of the user certificates (USER.ID file) in NDS. When Notes is accessed, this product transparently passes the user’s password (in the secret store) to Notes.

Pros:

- This product is a pure Novell product. It is also the latest direction which Novell recommends for single sign-on capabilities to Notes.
- Is completely integrated with the NetWare Client and is part of a line of single sign-on products which Novell provides.

Cons:

- Requires NetWare 5 and eDirectory (NDS version 8.x). An organization can not fully leverage this product until they are running eDirectory.
- Currently, does not store the user certificate (USER.ID) in the secret store. This means that the USER.ID file is still required and must be accessible by the Notes client. It is unclear if Novell will implement the storing of the USER.ID file in the secret store in the future.
- Does not provide single point administration capabilities—other products are required to provide these capabilities.



Novell LDAP Services for NDS

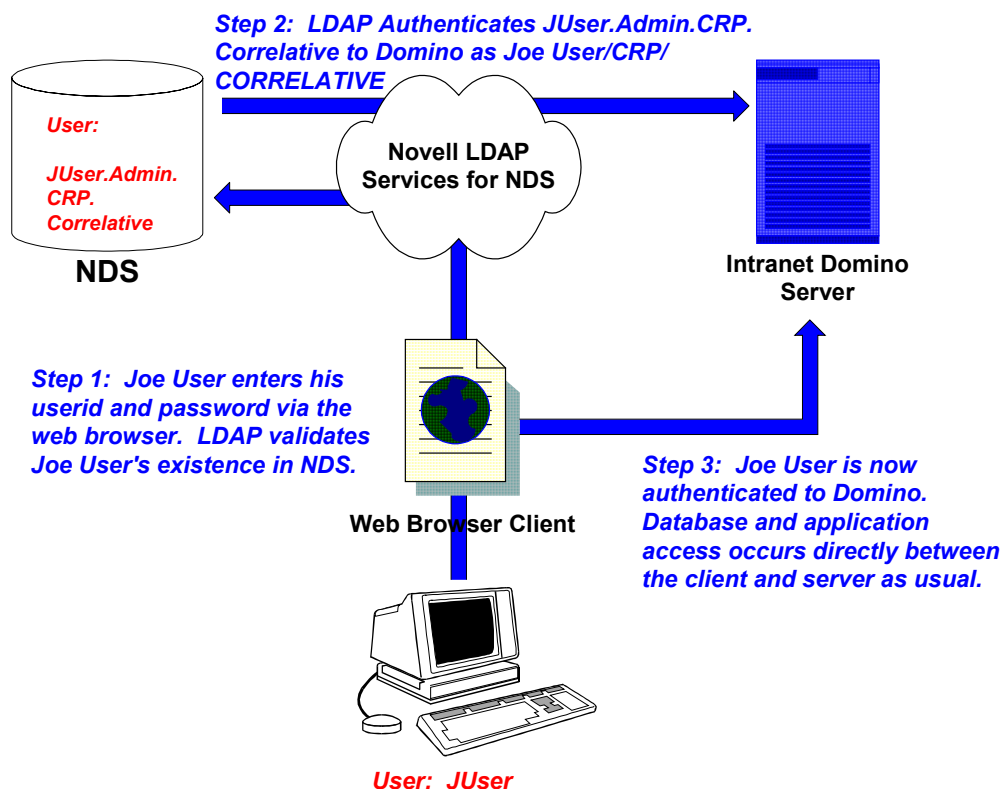
Product Overview: Provides Light-Weight Directory Access Protocol support to NDS. Allows selected portions of the NDS tree to be published as an LDAP directory. Applications such as Domino can use this LDAP directory to authenticate users, perform searches, etc.

Pros:

- Could be used to eliminate duplicating/defining users in a pure Web-based Domino domain.
- This is a pure Novell product and Novell's recommended solution for LDAP.
- Is included with NetWare 5 and free.
- Completely integrated with NDS.
- Optionally, supports SSL encrypted communications between client and servers.

Cons:

- LDAP is only targeted to aid the authentication of web-based users accessing the Intranet domino servers. It does not provide single sign-on capabilities to internal networked Notes users.
- In order to implement SSL, an internal Certificate Authority (CA) must be developed or an external CA such as Entrust or Verisign will need to be used. Novell's PKI Services is included with NetWare 5 and provides the internal CA. However, implementing SSL and CAs will require significant planning and infrastructural consideration.



Product Comparisons

<i>Product</i>	<i>Viable Option Now?</i>	<i>Viable Option in Future?</i>	<i>Requires NetWare 5?</i>	<i>Provides Single Sign-On for Notes</i>	<i>Provides NDS/LDAP Authentication for Web Access</i>	<i>Provides Single-Point Administration for NDS and Notes</i>	<i>Uses NDS as Central Store for User Certificates</i>
Net/Vision Synchronicity for Notes 2.0	Yes	No, Novell is moving toward dirXML for these capabilities	No	Yes, Limited	No	Yes	No
Novell Single Sign-On for Notes	Yes	Yes	Yes	Yes	No	No	No, maybe in future release
Novell LDAP Services for NDS	Yes	Yes	No, but recommended	No	Yes	No	No
Novell dirXML	Expected Mid 2000	Yes	Yes	No, must be used with Single Sign-On for Notes	No	Yes	No

Recommendation

Single Sign-On Capabilities for NDS Clients to Notes

Product Recommended: *Novell's Single Sign-On for Notes*
Infrastructure Required: NetWare 5.x and eDirectory

Synchronicity for Notes 2.0 was the only competitor to this product reviewed. Synchronicity for Notes provides only basic single sign-on features and its long-term viability is questionable. Furthermore Synchronicity has some IPX dependencies which further limits its viability for organizations seeking a pure-IP solution.

Use NDS/LDAP Authentication for Notes Web Access

Product Recommended: *Novell LDAP Services for NDS*
Infrastructure Required: NetWare 5.x

Novell LDAP Services for NDS provides the highest level of integration and support in an NDS environment. Novell is committed to open Internet standards such as LDAP. Furthermore, LDAP is provided free-of-charge with NetWare 5.

Single-Point User/Group Creation and Administration for NDS and Notes

Product Recommended: *Novell dirXML*
Infrastructure Required: NetWare 5.x and eDirectory

Synchronicity for Notes 2.0 was the only competitor to this product reviewed. Although Synchronicity for Notes is currently one of the more mature products in this arena, its long-term viability is questionable. Furthermore, Synchronicity has dependencies on IPX which further limits its viability in the NetWare 5 infrastructure. Novell recommends dirXML as its long-term strategic solution for these services.

Use NDS as the Central Store for all Notes User Certificates

Product Recommended: No Product Currently Meets Requirements

Currently, no product reviewed provide complete storage of user certificates in NDS. Novell Single Sign-On for Notes may support this feature in a future release, but no delivery date has been provided.

About Correlative and the Author

Correlative is an international consulting and outsourcing company. Correlative specializes in providing cutting-edge networking, directory services, e-commerce, groupware, and training solutions.

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