



NetApp™

Go further, faster™

NetApp Manageability SDK (NM SDK) Product Overview

Mar 2010





NM SDK Overview

- Provides infrastructure to develop applications to **monitor** and **manage** NetApp® storage system.
- Bundle of open interfaces (APIs) to enable easy **development of interoperable** management solution
- Enables **integration** with third party management tool, orchestration tool, or home-grown tool in a customer environment.
- Product Offering includes:
 - SDK API library bindings in C/C++, .NET, Java and Perl
 - Supported on Windows, Linux (RHEL/SLES/OEL), Solaris, HP-UX, AIX, VMware ESX
 - Detailed documentation of APIs in Data ONTAP
 - Detailed documentation of APIs in DataFabric Manager suite:
 - APIs for Operations Manager, Performance Advisor, Provisioning & Protection Manager
 - **Web Services** support
 - Sample codes, Developer Tools, Design Guides
- Offered **free** of cost to customers and partners since June 2003
- More than 350 participating companies – both partners and customers
- Supported through:
 - [Forum](#) (Preferred)
 - Mailing List : dl-sdk-answers@netapp.com
 - NGS



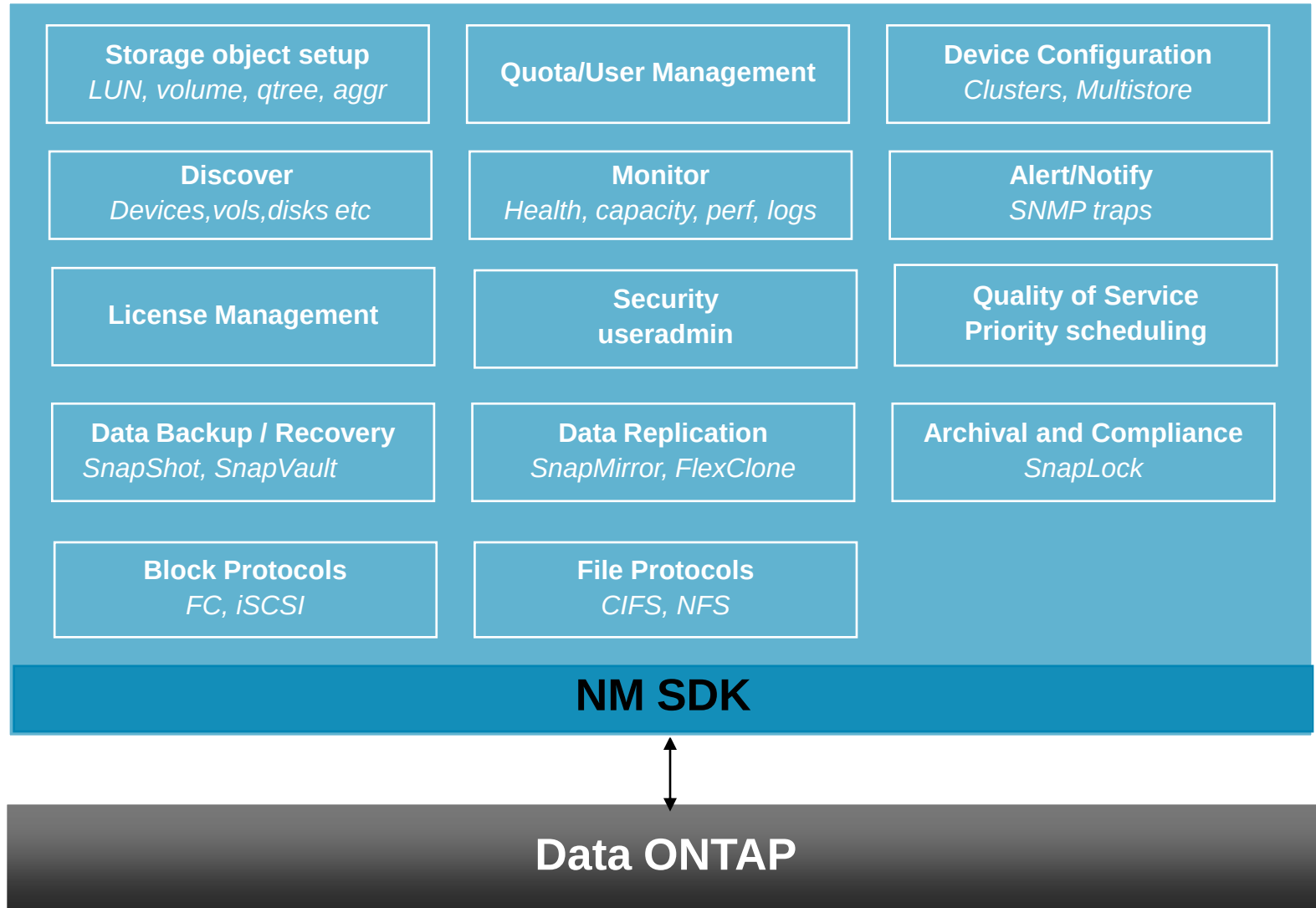
Features

- Provides access to [Data ONTAP](#) features through APIs.
- Provides access to all features of [DataFabric Manager Suite](#) of products through APIs.
 - Operations Manager
 - Performance Advisor
 - Provisioning Manager
 - Protection Manager
- Supported on multiple platforms
 - Windows, Linux (RHEL/SLES/OEL), Solaris, HP-UX, AIX, VMware ESX
- Supports multiple language interfaces
 - C/C++, C#, VB.NET, Java, and Perl
 - [Web Services](#) support for DataFabric Manager suite
- Supports multiple transport protocols
 - HTTP, HTTPS and Windows RPC
- Supports different authentication mechanisms
 - login/password, host.equiv and Windows RPC authentication
- Dynamic Library feature for C and C++

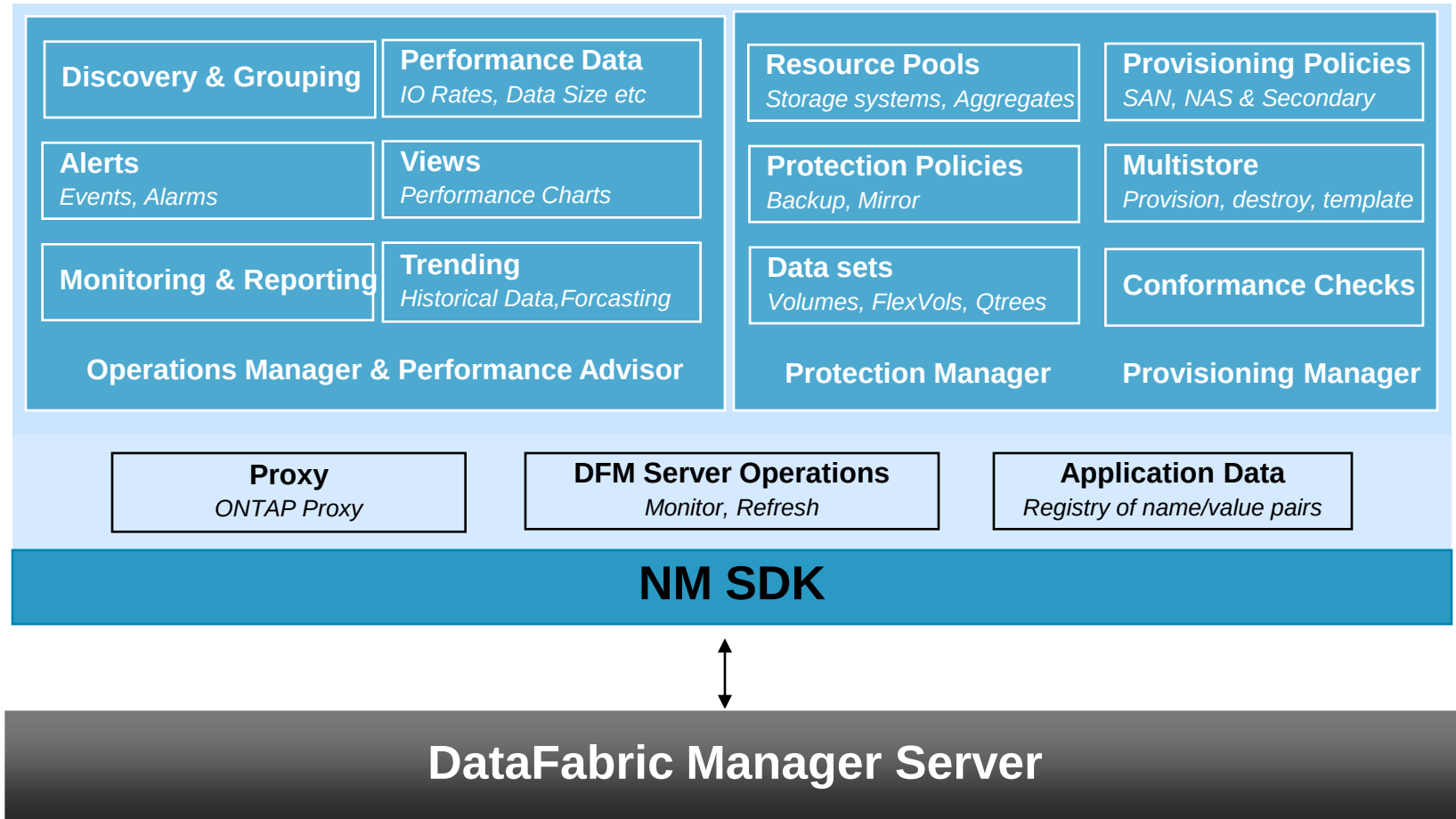
Features (contd..)

- SDK core APIs are a small set of immutable Core APIs
 - Easy to learn API programming
 - The existing core APIs ideally do not get changed, there may be new additions though.
 - Easy to add new ONTAP API commands
- Simple to use APIs
 - XML based request/response mechanism
 - XML type name-value pair arguments
- RBAC support
 - Make use of RBAC in Data ONTAP and Operations Manager
- Multithreading
 - SDK APIs are Thread-safe
- Faster integration and storage abstraction by leveraging policy based management tools as point of integration
 - Policy-based efficient storage provisioning
 - Policy-based data protection
 - Operational Monitoring

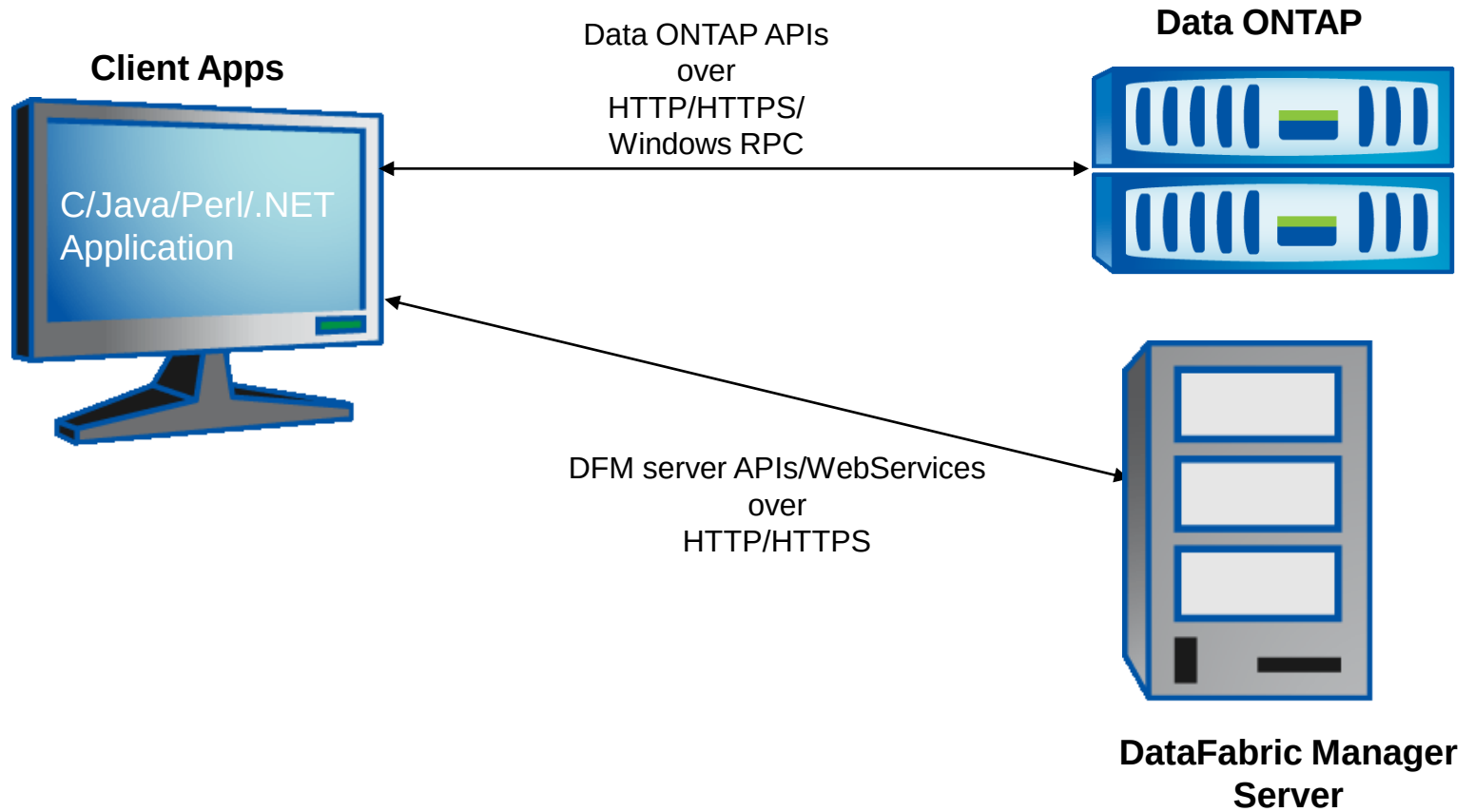
Capabilities of Data ONTAP APIs



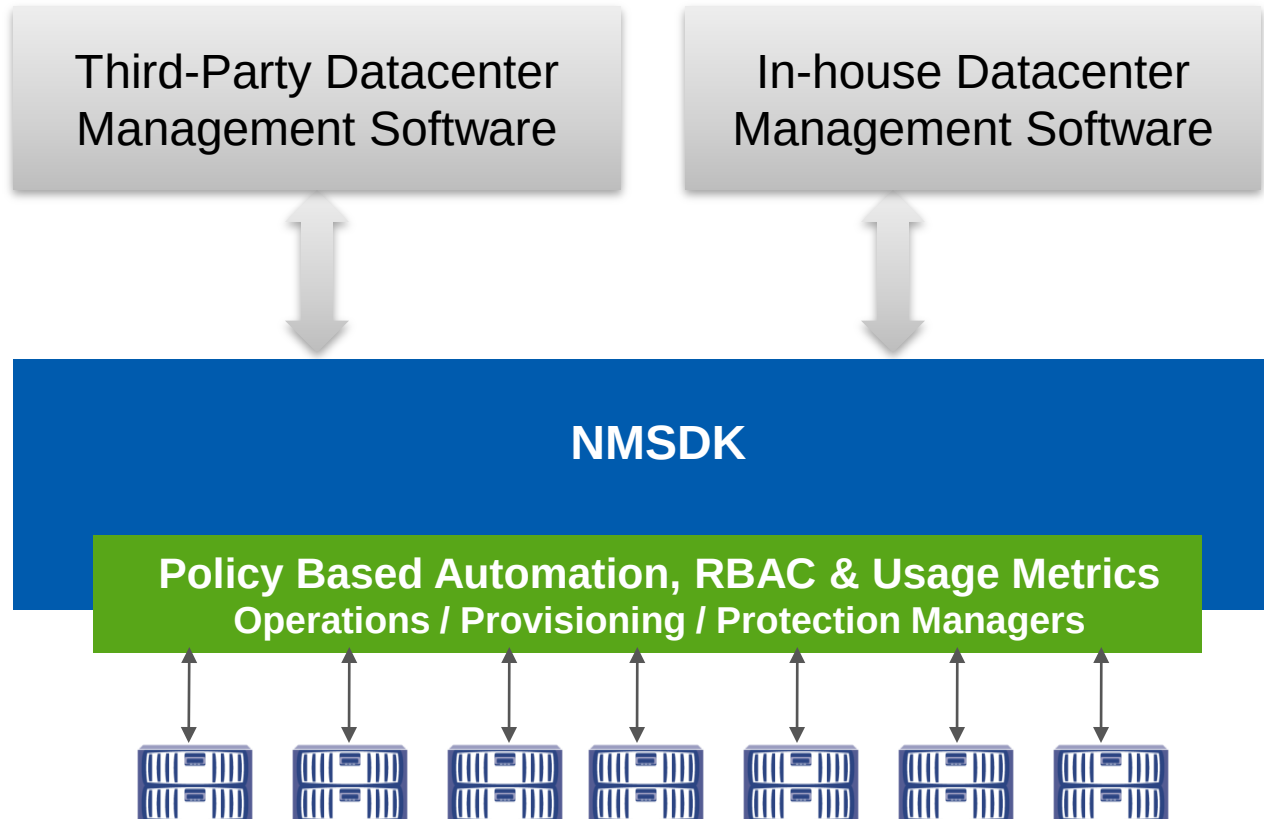
Capabilities of DataFabric Manager server APIs



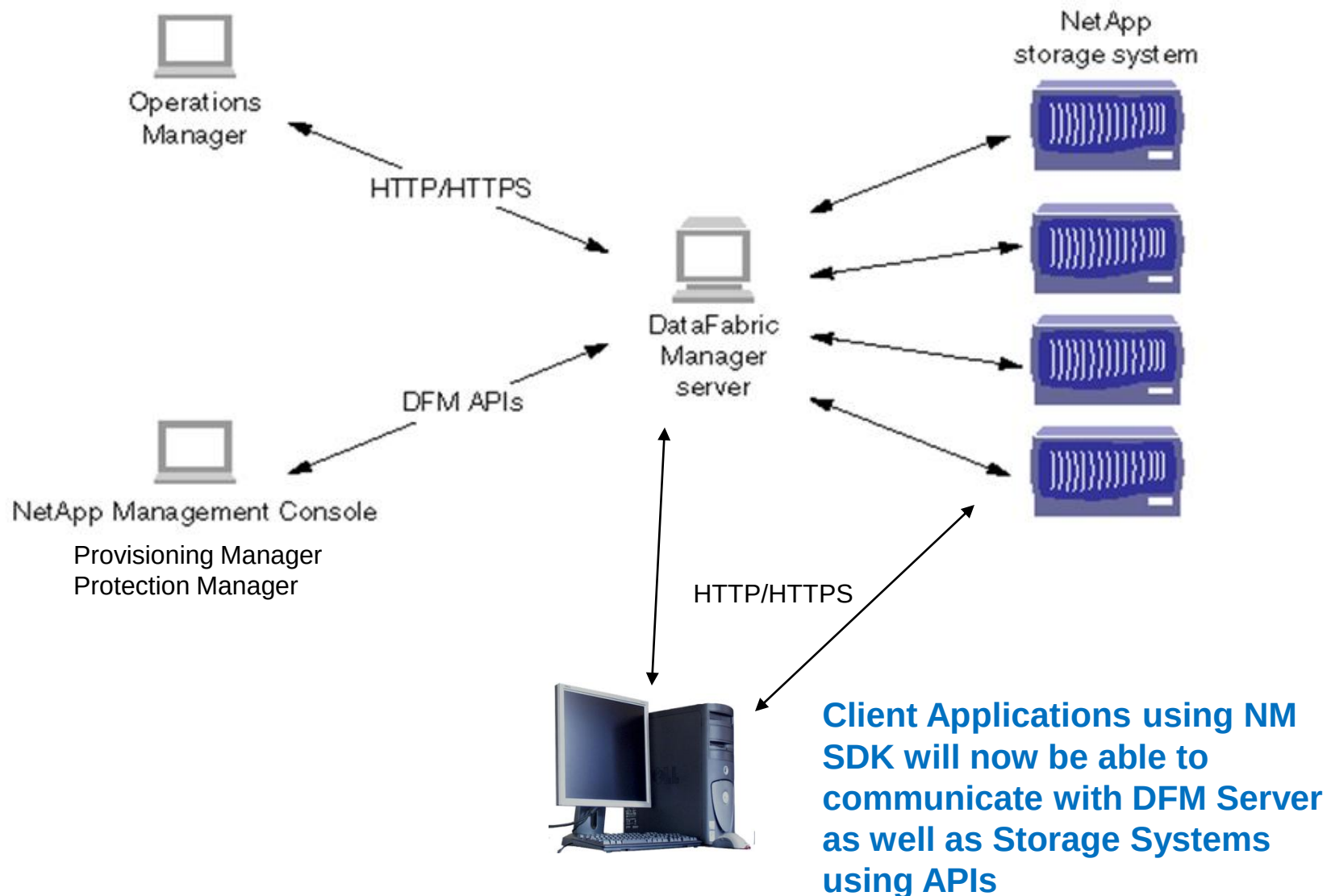
Simple Architecture



Enables Ecosystem Integration



Bigger Picture..



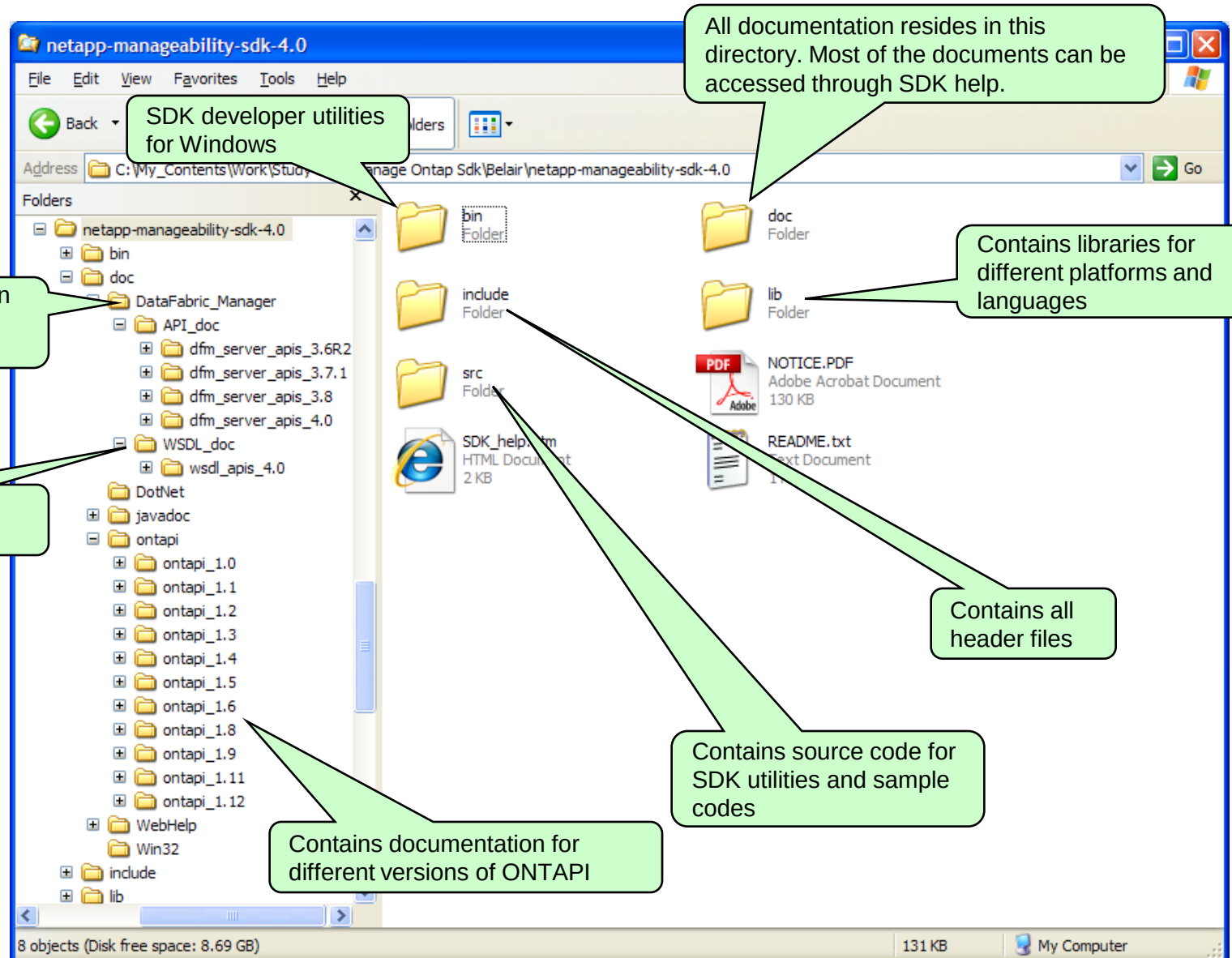
Language Support

Language	Software requirements
C, C++	Visual Studio 2005 for Windows. For debug version, use Microsoft Visual Studio 2005 SP1 8.0.50727.762. The following compilers are supported on UNIX-like platforms: To compile applications on a 32-bit UNIX-like environment, use GNU Make and GNU C/C++ Compiler. To compile applications on the 64-bit UNIX-like environment, use GNU C/C++ Compiler 3.2 or later.
Java	Sun Microsystem Java 1.4, 5.0, 6.0 HP-UX Java 1.4, 5.0, 6.0 AIX Java 1.4, 5.0, 6.0 Note: Java 5.0 and later supports the IPv6 feature
Perl	Perl 5.8, 5.10 On aix-thread-multi, install the "expat" module, which is the XML parser.
C#, VB.NET	Microsoft .NET Framework 2.0, 3.0, 3.5
PowerShell	PowerShell 1.0 Microsoft .NET Framework 2.0, 3.0, 3.5

Platform Support

Operating System	Versions
Windows 32-bit	2000, 2003, 2008
Windows 64-bit	Win 64 IA64, X64
Red Hat Linux (32-bit and 64-bit)	AS V3, V4, ES V3, V4, V5
Oracle Enterprise Linux	4.0
SUSE Linux (32-bit and 64-bit)	9.0, 10.0
Solaris SPARC 32-bit	8.0, 9.0, 10.0
Solaris SPARC 64-bit	8.0, 9.0, 10.0
Solaris x86 32-bit	10.0
Solaris x64-bit	10.0
AIX (32-bit and 64-bit)	5.2, 5.3, 6.1
HP-UX 32-bit	11.11 and later
VMware ESX server	3.0

Product Layout





Integrations using SDK - Examples

- ▶ **More than 350+ Customers and Partners using SDK**
- ▶ **Internal Integrations: all NetApp products utilize SDK**
 - SnapDrive Product Family
 - SnapManager Product Family
 - NetApp Host Attach Kit
 - NetApp Host Agent
 - Operations Manager (Formerly DFM)
- ▶ **Partner Integrations: some examples**
 - Symantec CommandCentral Storage – *Storage monitoring and management*
 - Oracle Content DB – *Snaplock Integration*
 - Tek-Tools Profiler – *Storage Monitoring and Management*
 - SyncSort Backup Express – *SnapVault Configuration and Management*
 - CommVault QiNetix suite – *Backup, Recovery, FPolicy integration*
 - IBM Tivoli Storage Manager (TSM) – *Snapshot Integration with SAP/DB2*
 - *Orchestration Tools*
- ▶ **Customer using SDK: A number of Top Enterprise Accounts**
 - European Auto-Maker
 - Big Banks and Financial institutions
 - Big Telecom Providers
 - Service Providers



SDK Support Channels

- SDK Discussion Forum:

- http://communities.netapp.com/community/interfaces_and_tools/interfaces?view=discussions

- This is the preferred way to get support
 - Use this for non-confidential queries and issues regarding the SDK

- SDK mailing list: dl-sdk-answers@netapp.com

- Use this dl for posting any confidential info

- NetApp Global Support (NGS)

- SDK customers and end customers of partner products can contact NGS to log issues related to SDK
 - NGS does not offer support on SDK usage during solution development



Thank You