**ACTIVE DIRECTORY CASE STUDIES**

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Case Study 1:

This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.

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| **Customer** | **Electrolux**  **(Global Leader in Home Appliance Industry)** |
| **Geo** | **Global Coverage – Primarily headquartered in EMEA & APAC** |
| **Business Requirements / Challenges** | * Fix ongoing AD related issues like DC replication, DNS etc. * Consolidation 70 AD domains spread across the globe. * Migrate DC’s from older Windows 2003 to Win 2008 R2 version. * Network latency to be reduced during end user login. * To deliver a seamless, cost effective support with matching SLA’s |
| **Project Overview** | * End state desired is to have multiple domains consolidated to single domain * Deployed a pilot to selected business unit for functional, usability and deployment testing * Implemented and consolidated AD infrastructure * Upgraded AD from Windows 2003 to Windows 2008 R2 * All AD objects migration performed with Quest migration tool * HCL staffed to provide admin & end user support coverage around the globe. |
| **Environment Details** | * 70 Local domains,400 domain controllers, * AD 2003, and Windows NT 4.0 * 120K Active directory objects excluding 1200 application Servers * 60 logistics center spread across 25 countries * Customized Group policies based on the user department / region. * Multiple applications dependent on AD Domain Controllers for LDAP auth. |
| **Client Benefit** | * Successfully upgraded the customer to Windows 2008R2 64-bit Domain Controller platform for AD. * Leveraged HCL Offshore delivery centres wherever possible leading to cost effective and efficient migration * Reduction in TCO resulting in decrease of AD Domain Controllers server’s footprints as well as Virtualizing servers wherever possible. * Simplified complexity of client environment leading to reduced administration efforts. * Successfully consolidated the AD and related Network services infrastructure * Automation with customized scripts simplified the processes and ensured seamless migration. * Increased user satisfaction by streamlining the Active Directory Infra. |
| Case Study 2:  This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below. | |
| **Customer** | **UTI**  **(Global Leader in Logistics and Supply Chain)** |
| **Geo** | * Global |
| **Business Requirement/Challenges** | * Redesign of 44 domains and consolidation of 212 domain controllers * Consolidation of 107 exchange servers spread across the globe. * AD related issues like replication, DNS etc. * To deliver a seamless, cost effective migration with no downtime. |
| **Project Overview** | * End state infrastructure hosted out of 3 data centres * Deployed a pilot to selected business unit for functional, usability and deployment testing * Designed and implemented consolidated AD and Exchange infrastructure * Upgraded AD from Windows 2003 to Windows 2008 R2 * Upgraded exchange 2003 to exchange 2010 which included * Migration of 12760 mailboxes spread across 107 servers. * All AD objects migration performed with Quest migration tool |
| **Environment Details** | * 44 domains,212 domain controllers, 107 exchange servers * AD 2003, MS exchange 2003 * 16483 user objects, 4643 contact objects and 3713 printer objects * 175 logistics centre spread across 23 countries |
| **Client Benefit** | * Successfully upgraded the customer to 64-bit platform for both AD and Messaging. * Leveraged HCL Offshore delivery centres wherever possible leading to cost effective and efficient migration * Business User Level Support: Help Desk Support, Application Availability * Monitoring & admin, Performance Mgmt. * Configuration management / Batch jobs support * Infra level Support: AD server’s management and Global Account Management. * Auditing and Governance support * Reduction of Legacy / End of Life Footprint * Increased Technology Alignment to Business Needs * Improved Utilization of Assets & Resources * Incident and Problem Management * Complete ownership of all Active Directory and Messaging environments * Participate in the application design as well as development phases to provide inputs towards the AD technical environment, its capacity and suggest the best option towards Directory and integration technology. |

Case Study 3:

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| This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below. | |
| **Customer** | **Iron Mountain Inc**  **(Leading enterprise information management services)** |
| **Geo** | * Global |
| **Business Requirement/Challenges** | * Need proper process and procedures to be defined to handle the AD environment. * Need end to end support to handle all issues (end user and admin related) around the globe in a 24\*7 model. * Security hardening to be improved with overall focus on keeping environment secured. |
| **Project Overview** | **Manage the AD Operations providing complete end to end support :**   * Close to 260K user objects * Active Directory forest and domain Administration and Maintenance * Managing Trust relationship * TCP/IP services (DNS, DHCP, NTP and LDAP) * Group Policy Management, domain level only * Microsoft patch management for Domain Controllers * Vendor Coordination in case of any issue with DC * AD forest covering 7 DC, across different region * One Domain to be decommissioned soon, as migration is going on in parallel |
| **Environment Details** | * There are about 85 domain controllers in the forest * NA region Domain has (27 + 2 (RODC)), across different region * LA region Domain has (18 DC), across different region * EMEA region domain has (21 DC + 2 RODC), across different region * ANZ region has (8 DC), across different region * Root domain for the forest is an empty root where admin and executive accounts exists * Users and other objects are existing in respective Domain * Global Catalog configured on all DC across forest and Domain * Active directory Recycle bin is not enabled in the domain * RMAD is used to take the backup of Active directory database |
| **Client Benefit** | * Complete end to end support provided for Active Directory environment * Active Directory contributed to customer’s initiative of building world class IT. * Specific set of activities (tools and processes) were defined based on the ITIL and Microsoft’s IO model for execution in order to move the company’s infrastructure to Rationalized level. * The first component of technology to move on the journey was an enterprise wide directory infrastructure. * Create Standard Operating Procedures (SOP’s) repository and maintain documentation of all AD related infra as per ITIL process. * Strict process & checklist exists to validate server Pre-requisites & hardening including any impact to the environment. * Automatic scripts created to pro-actively manage AD environment as well as any unusual login activities. * Every Sev 1 and Sev 2 tickets is followed by Root Cause Analysis (RCA) - Problem management ticket and tasks would be opened for various stakeholders and driven to closure. Lessons learnt would also be documented |

Case Study 4:

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| This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.   |  |  | | --- | --- | | **Customer** | **Allied Irish Bank (AIB)**  **(Leading commercial bank in Ireland)** | | **Geo** | * Global | | **Business Requirement/Challenges** | * Enhancement in user logon experience * Enhancement in accessibility of application * Fine Grained Password Policy for Admin accounts. * User experience to fast logon in client machine or devices. * Flat OU structure for Simplified Administration. | | **Project Overview** | **Manage the AD Operations providing complete end to end support :**   * Migration of existing AIB and EBS, AD users to new forest * Synchronization of new AD environment with existing AIB e-Directory * HCL proprietary monitoring tool integration for DC’s monitoring. * RES user GPO experiencing in new domain * DNS query load balancing. * Minimizing the number of domain controllers. * Enable the Recycle bin features. * Configuration of new features of windows server 2008R2 functional level, Fine grained password for admin credential. | | **Environment Details** | * AIB has single forest single domain structure with forest and domain functional level windows server 2003. * The operating system of domain controllers is Windows server 2003 R2 SP2. * There are two Novel e-directory environments. * The version of e-Directory is Novel e-Directory 8.8 SP7, Novel Identity Manager (IDM) 3.6.1 with Novel i Manager 2.6 SP4. * There are 35 domain controllers of Windows server 2003 R2 with SP2. * There are 29 Active directory sites and 30 physical locations. * Active Directory Trust is available between both domains. * There is separate forest which contains application resource. * All domain controllers are GC & Active directory integrated DNS. * No LDAP over SSL is configured (it means port no. 636 is not used). * DHCP is on network device “Infoblox” and managed by network team. * For external domain name resolution “Infoblox” is used and managed by security/Network team. * There is no roaming profile configured in domain. * DFS is installed in one domain and only one share is published * All domain controllers are configured as DFS name space server. * Replication of DFS is disabled. * “Apps” share is used during RIS for imaging of desktops and laptops. * CA server exists in domain and managed by Security team. * There is no terminal server is configured. Citrix is deployed to access the applications. * The following table lists the host names, AD sites and physical location of domain controllers | | **Client Benefit** | * A global organization like AIB needs a real-time infrastructure to enable employees to collaborate and serve our customers better. Active Directory helps simplify the complex infrastructure to support the rapid growth. * Two-Way trust established. * Domain and Forest functional level will be Windows server 2008R2 because current version of IDM 3.6.1 is not compatible with windows server 2012. * Three AD sites will be configured to consolidate the domain controllers. * All thirteen Domain Controllers will be AD integrated DNS. * All Thirteen Domain Controllers except Infrastructure Master FSMO role holder will be configured as Global Catalog. * Four Domain Controllers will be Windows server 2008R2 Std. and nine would be Windows server 2012 Std. * Flat OU structure will be designed as per the AIB requirements. * The design is finalized on basis of requirement of 15000 users including Shared/Generic Notes mailboxes and total no. of users under the scope of Active Directory migration is 13000. * Disabled and Junk/stale account would not be migrated to new forest. * HCL will use Power shell/VBS/AD tools to find out junk/stale/disabled accounts. * RES will be used for user-based GPO while computer/server-based GPO will be configured as Microsoft GPOs and will be configured as per the requirements on time to time basis. | |

Case Study 5:

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| This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.   |  |  | | --- | --- | | **Customer** | **Atlas Copco**  **(Leading industrial tools and equipment headquartered in Sweden** | | **Geo** | * Global | | **Business Requirement/Challenges** | **Manage the AD Operations providing complete end to end support**   * Vendor Coordination in case of any issue with DC * 24/7 support | | **Project Overview** | **All the listed below activities to be performed as a part of the Technology operations by AD team.**   * Active Directory forest and domain Administration and Maintenance * Managing trust relationship * TCP/IP services (DNS, DHCP, Infoblox, Network Protection Server, NTP and LDAP), however DNS, DHCP and NTP are configured on infoblox (Managed by Network team) Domain level DNS managed by AD team * emea.group.atlascopco.com – Emea * Group Policy Management, domain level only * Microsoft patches management for Domain Controllers * Coordination with Application Team * Licensing Management - KMS * Managing AD Federation Services (AD FS) * Managing AD Radius Servers | | **Environment Details** | * Atlas Copco has single forest single domain structure with forest and domain functional level windows server 2003. There are totally 4 domains * Active directory is designed to have one single forest root domain with three subdomains to cover all Atlas Copco regions worldwide. * All Domain controllers are act as Global catalog server and DNS Servers used for production environment aimed at managing the users, groups, computers and other network resources. Currently all Domain controllers are running with Windows 2008. * Forest and Domain Functional Level = Windows 2003 Native Mode. * Total DC's: 125 Domain Controllers across all sites. * 4 Root Domain * 24 Domain Controllers in NA * 55 Domain Controllers in Apac * 42 Domain Controllers in Emea * All Domain controllers stay DNS servers and Global catalogue Servers * DC’s are installed on dedicated physical hardware and on server-class virtualization products such as VMWare ESX, VMWare Server and Microsoft Virtual Server. * Forest root domain controllers are placed in all hub locations * Regional domain controllers are placed at suitable locations for each domain represented in the hub. As a rule, a regional domain controller should be placed in any site that has 100 or more users in it * Current Active Directory Forest and Domain functional level are set to Windows server 2003 native mode * Active directory replication is happen in HUB and SPOKE method * No resources will be share from Atlas Copco AD forest or Child domains to regional domains * All the Application currently depend on Active directory are compatible with Windows 2008 functional level * Atlas Copco currently using Microsoft native tools for AD administration * There are no application partitions created in Atlas Copco AD * AD Federation Services (AD FS) * AD Radius Servers | | **Client Benefit** | * Complete end to end support coverage achieving high SLA’s for delivery operations * All components like ADFS, Radius servers, DNS, etc. maintained with latest patches and hotfixes * Efficient patch management process | |

Case Study 6:

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| This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.   |  |  | | --- | --- | | **Customer** | **STANFORD HEALTH CARE**  **(Stanford Health Care is an academic health system and part of Stanford Medicine)** | | **Geo** | * Global | | **Business Requirement/Challenges** | * Fix ongoing AD related issues like Authentication, DNS Records Registration Failures etc. * Centralized administration and implementation of Group Policies ensures increased desktop availability. * Single Forest implementation allows the helpdesk to service all the desktops globally in the SHC network. * Need end to end support to handle all issues (end user and admin related) around the globe in a 24\*7 model * Need Centralized administration has also benefited the IT team; they can manage the infrastructure from a central location | | **Project Overview** | * **Manage the AD Operations providing complete end to end support:** * Managing to 98999 user objects * Active Directory Domain Services installation and configuration. * Managing Active Directory domain Services maintenance. * Active Directory Domain Services security and other Active Directory related tasks * Active Directory forest and domain Administration and Maintenance. * Managing trust relationship * Group Policy Management * Microsoft patches management for Domain Controllers * Vendor Coordination in case of any issue with DC * 24/7 support | | **Environment Details** | **AD Infrastructure and Object details in SHC**   * SHC has multi Forest/Domain structure with the trust enabled between them as required. * 30+ Domain Controllers which combines Windows 2008 R2/ 2012 R2 / 2016 Standard OS in the Environment. * SHC using Tools like Dell Recovery Manager and Change Auditor for AD backup / monitoring. * Using native GPMC for GPO management. | | **Client Benefit** | * Complete end to end support provided for Active Directory environment * Providing Object Lifecycle Management * Customize Administrative Model, EFFICIENCY. SECURITY, FLEXIBILITY * Centralized Organizational Unit Design * Best Practices Process Documented * Time Sync synchronization * Active Directory contributed to customer’s initiative of building world class IT. * Specific set of activities (tools and processes) were defined based on the ITIL and Microsoft’s IO model for execution in order to move the company’s infrastructure to Rationalized level. * The first component of technology to move on the journey was an enterprise wide directory infrastructure. * Strict process & checklist exists to validate server Pre-requisites & hardening including any impact to the environment. * Automatic scripts created to pro-actively manage AD environment as well as any unusual login activities. * Root Cause Analysis (RCA) - Problem management ticket and tasks would be opened for various stakeholders and driven to closure. Complete ownership of all Active Directory and Messaging environments | |

Case Study 7:

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| This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.   |  |  | | --- | --- | | **Customer** | **Unilever**  **(world's largest consumer goods company based in Netherlands and London)** | | **Geo** | * Global | | **Business Requirement/Challenges** | * **All the listed below activities to be performed as a part of the Technology operations by AD team.** * Active Directory Domain Services installation and configuration. * Active Directory Domain Services maintenance. * Active Directory Domain Services security and other Active Directory related tasks. * Active Directory forest and domain Administration and Maintenance * Managing trust relationship * Group Policy Management * Microsoft patches management for Domain Controllers * Vendor Coordination in case of any issue with DC * 24/7 support * Coordination with Application Team * Managing AD Federation Services (AD FS) * Managing Active Directory Application Mode (ADAM) | | **Project Overview** | **Manage the AD Operations providing complete end to end support:**   * Vendor Coordination in case of any issue with DC * 24/7 support | | **Environment Details** | * Active directory is designed to have one single forest root domain with three subdomains to cover all Unilever regions worldwide. * All Domain controllers are act as Global Catalog server and DNS Servers used for production environment aimed at managing the users, groups, computers and other network resources. Currently all Domain controllers are running with Windows 2003 and 2008. * Forest and Domain Functional Level = Windows 2003 Native Mode. * 173 Domain Controllers across all sites. * Unilever has two datacenters located in UK * Total DC's: 173 * All Domain controllers stay DNS servers and Global catalogue Servers * Forest root domain controllers are placed in all hub locations * Current Active Directory Forest and Domain functional level are set to Windows server 2003 native mode * All the Application currently depend on Active directory are compatible with windows 2003 and Windows 2008 functional level * Unilever currently using Microsoft native tools for AD administration * AD Federation Services (AD FS) * Active Directory Application Mode (ADAM) | | **Client Benefit** | * Widespread end to end support provided for Active Directory environment * Active Directory contributed to customer’s initiative of building world class IT. * Specific set of activities (tools and processes) were defined based on the ITIL and Microsoft’s IO model for execution in order to move the company’s infrastructure to Rationalized level. * Infra level Support: AD server’s management and Global Account Management. * Auditing and Governance support * Strict process & checklist exists to validate server Pre-requisites & hardening including any impact to the environment. * Automatic scripts created to pro-actively manage AD environment as well as any unusual login activities. * Automation with customized scripts simplified the processes and ensured seamless migration. * Various stakeholders and driven to closure. Lessons learnt would also be documented |   Case Study 8:   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | This case study highlights HCL’s contribution in handling a complex and large scale AD environment. Details below.   |  |  | | --- | --- | | **Customer** | **Merck**  **(world's one of the largest**[**pharmaceutical companies**](https://en.wikipedia.org/wiki/Pharmaceutical_companies)**in the world.)** | | **Geo** | * Global | | **Business Requirement/Challenges** | * All the listed below activities to be performed as a part of the Technology operations by AD team. * To deliver a seamless, cost effective migration with no downtime. * Need end to end support to handle all issues (end user and admin related) around the globe in a 24\*7 model * Network latency to be reduced during end user login. * User experience to fast logon in client machine or devices. * Plan an organizational unit (OU) structure based on delegation requirements. * Plan a security group hierarchy based on delegation requirements. | | **Project Overview** | **Manage the AD Operations providing complete end to end support:**   * Vendor Coordination in case of any issue with DC * 24/7 support | | **Environment Details** | * Merck is single forest Multi domain structure with forest and domain functional level windows server 2008r2. * There are 92 domain controllers of Windows server 2003 R2 with SP2. * All domain controllers are GC & Active directory integrated DNS. * 180000 user objects, 6443 contact objects and 3713 printer objects * Merck using Quest AD Manager Tool * Quest Audit Manager Tool | | **Client Benefit** | * Leveraged HCL Offshore delivery centres wherever possible leading to cost effective and efficient migration * Reduction in TCO resulting in decrease of AD Domain Controllers server’s footprints as well as Virtualizing servers wherever possible. * Automation with customized scripts simplified the processes and ensured seamless migration. * Improved Utilization of Assets & Resources * Incident and Problem Management * The first component of technology to move on the journey was an enterprise wide directory infrastructure. * Create Standard Operating Procedures (SOP’s) repository and maintain documentation of all AD related infra as per ITIL process. * Best Practices Process Documented * Time Sync synchronization * Centralized Organizational Model * Site Topology & Domain Controller Placement | | |