



Fondation Partager le Savoir
Sharing Knowledge Foundation



United Arab Emirates



ankabut
عنكبوت

**Providing Education & Research
services to UAE Institutions at no cost.**

Dr. Ahmed Dabbagh
Director, Services & Strategy

UAE Advanced Network for Research & Education
International Conference on Sharing Knowledge in the Mediterranean (8)
Rabat, Morocco , 10th May 2013



01

Ankabut At a Glance



Ankabut vision

3.3 Knowledge-based and highly productive economy

Innovation, research, science and technology will form the pillars of a knowledge-based, highly productive and competitive economy, driven by entrepreneurs in a business-friendly environment where public and private sectors form effective partnerships

4.0 First-rate Education

All Emiratis will have equal opportunity and access to **first-rate education** that allows them to develop into well-rounded individuals, enhance their educational attainment, and achieve their true potential, contributing positively to society



UNITED
IN KNOWLEDGE

A Competitive Economy Driven by Knowledgeable and Innovative Emiratis

A diversified and flexible knowledge-based economy will be powered by skilled Emiratis and strengthened by world-class talent to ensure long-term prosperity for the UAE

UAE doesn't need Technology Transfer,
UAE needs Knowledge Transfer

***Dr. Eesa Bastaki, CEO ICT-Fund
"Made in UAE"
ICTRF2011, May 15th 2011***





What is ANKABUT ?



Ankabut is the United Arab Emirates' Advanced Research and Education Network (NREN). It offers educational and research networks **connectivity to other education networks around the world.**

Ankabut also **co-operates on a national, GCC, regional and international arena representing the UAE in conferences, exhibitions and forums.**

NRENs around the World



Africa

Sub-Saharan Africa (UbuntuNet)
Ghana
Kenya (KENET)
Malawi (MAREN)
South Africa (TENET)
Uganda (RENU)

East Asia & Pacific

Asia (APAN)
South&East Asia (TEIN2)
Australia (AARNET)
China (CERNET,CSTNET,NSFCNET)
Fiji (USP-SUVA)
Hong Kong (HARNET)
Indonesia (ITB)
Japan (SINET, WIDE, JGN2)
Korea (KOREN, KREONET2)
Malaysia (MYREN)
New Zealand (KAREN)
Philippines (PREGINET)
Singapore (SingAREN)
Taiwan (TANet2, ASNet)
Thailand (UNINET, ThaiSARN)
Vietnam (VINAREN)

Europe & Central Asia

Europe (GEANT2)
Armenia (ARENA)
Austria (ACOnet)
Belgium (BELNET)
Croatia (CARNet)
Czech Rep. (CESNET)
Cyprus (CYNET)
Denmark
(Forskningsnettet)
Estonia (EENet)
Finland (Funet)
France (Renater)
Georgia (GRENA)
Germany (G-WIN)
Greece (GRNET)
Hungary (HUNGARNET)
Iceland (RHnet)
Ireland (HEAnet)
Italy (GARR)
Kazakhstan (KAZRENA)
Latvia (LATNET)
Lithuania (LITNET)
Luxembourg (RESTENA)
Malta (Univ. Malta)
Netherlands (SURFnet)
Norway (UNINETT)

Poland (PIONIER)
Portugal (RCTS2)
Romania (RoEduNet)
Russia (RBnet, RUNNET)
Slovakia (SANET)
Slovenia (ARNES)
Spain (RedIRIS)
Sweden (SUNET)
Switzerland (SWITCH)
United Kingdom
(JANET)
Tajikistan (TARENA)
Turkey (ULAKBIM)
Uzbekistan (UZSCI)

Mid-East & N.Africa

U.A.E. (ANKABUT)
Algeria (ARN)
Egypt (EUN/ENSTINET)
Jordan (JUNET)
Lebanon (NCSR)
Morocco (MARWAN)
Palestinian Terr. (PadI2)
Syria (HIAST)
Tunisia (MRST)
Oman (OMREN)
Qatar (QFREN)

Americas

Latin America (redCLARA)
Argentina (RETINA)
Bolivia (ADSIB)
Brazil (RNP2/ANSP)
Canada (CA*net)
Chile (REUNA)
Colombia (RENATA)
Costa Rica (CR2Net)
Ecuador (CEDIA)
El Salvador (RAICES)
Guatemala (RAGIE)
Honduras (UNITEC)
Mexico (Red-CUDI)
Nicaragua (RENIA)
Panama (RedCyT)
Paraguay (ARANDU)
Peru (RAAP)
United States (Internet2)
Uruguay (RAU2)
Venezuela (REACCIUN2)

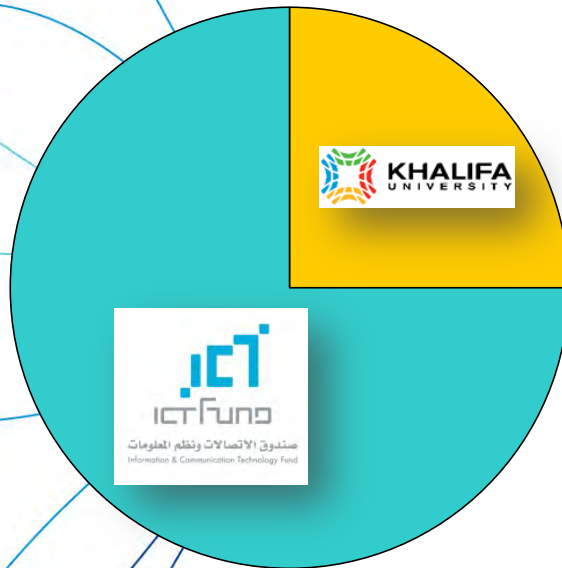
South Asia

India (ERNET)
Nepal (NREN)
Pakistan (PERN)
Sri Lanka (LEARN)

Network Funding

Date	Activity
7-Aug-2006	<p>ANKABUT formation MoU</p> <p>MoU on Establishing a Consortium for UAE Research and Education Network (ANKABUT) between KU, IAT, ZU, UAEU, HCT</p>
3-Dec-2006	<p>Internet2 and ANKABUT interconnect MoU</p> <p>MoU between Internet2 and Etisalat University College</p>
27-May-2007	<p>Dante and ANKABUT interconnect MoU</p> <p>MoU between DANTE and Etisalat University College</p>
5-Apr-2009	<p>Funding Agreement</p> <p>Signed between ICT FUND and Khalifa University to fund the ANKABUT Project</p>
5-Jul-2009	<p>Contract</p> <p>Signed between Etisalat and Khalifa University for building a new network for Education and Research in UAE</p>

Current funding



- ICT fund funded the ANKABUT project for the initial five years of operation
- During this time ,KUSTAR manages ANKABUT in partnership with ETISALAT

Future funding

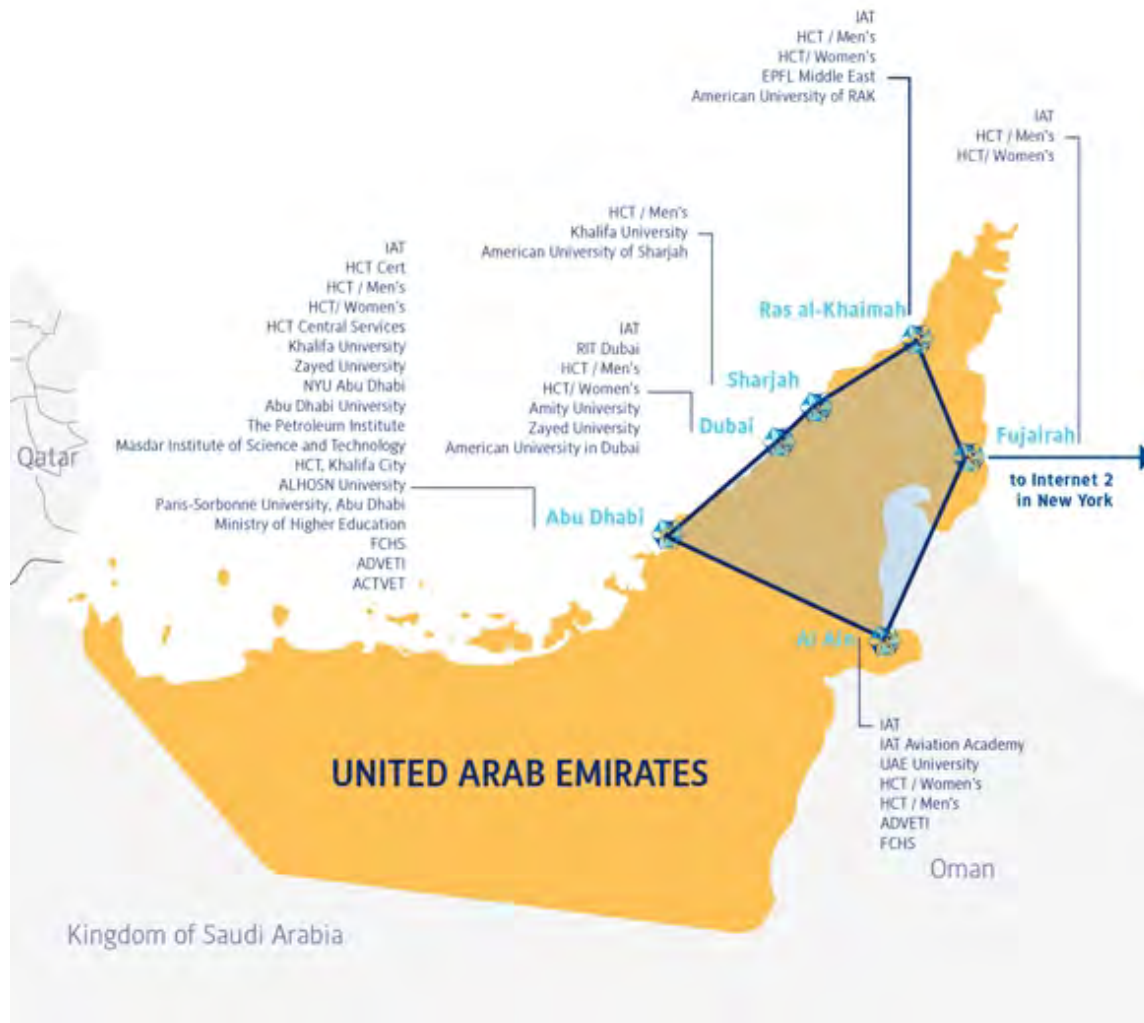


- Beyond the 5 years, ANKABUT will be spun-off as an independent organization with ownership stakes held by its users.

Ankabut at A Glance

Highlights...

- Has become a Local Internet Registry (**IPV4,IPV6**)
- Increased international bandwidth to a **155 mbps** leased line with Internet2.
- Placed an **Internet1** link in the Sharjah Router
- Has connected/connecting **56** academic **1Gbps** Access links.
- Has created **DNS, NTP, Email and Web hosting, Video.Conf, Grid-Computing, High Performance Computing, Virtual Classroom** services.





Eligibility to Join Ankabut

- 1. All Higher Education Institutions**
- 2. Other research and development institutions**
- 3. Schools**
- 4. Zoos**
- 5. Museums**
- 6. Public libraries**
- 7. Health Services and Centers**
- 8. Other organizations may be provided with a connection with the express agreement of Ankabut & eligible sponsor**



@ World Summit in Information Society 2012
Geneva, 16/05/2012

Ankabut was selected by TRA as one of the three best ICT projects in UAE during 2012 :

- **Ankabut**
- **EmiratesID**
- **Sharjah e-Gov**





eFADA, UAE Library Consortium

Abu Dhabi, 20/02/2013

**Ankabut was successfully launched the unique of its kind
Library Consortium for Academic & Research in UAE**





02

The Benchmark

-Network

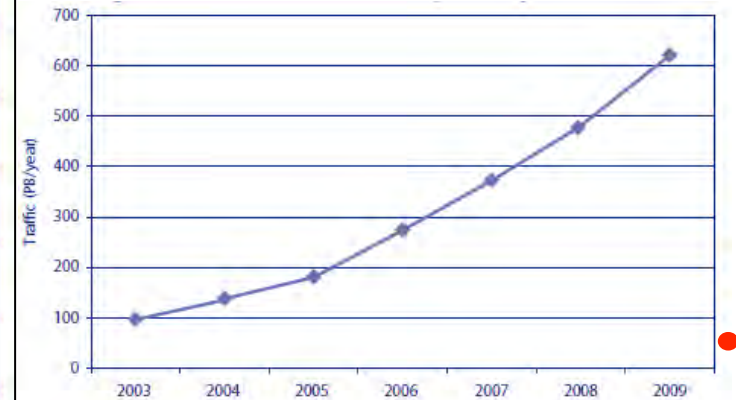
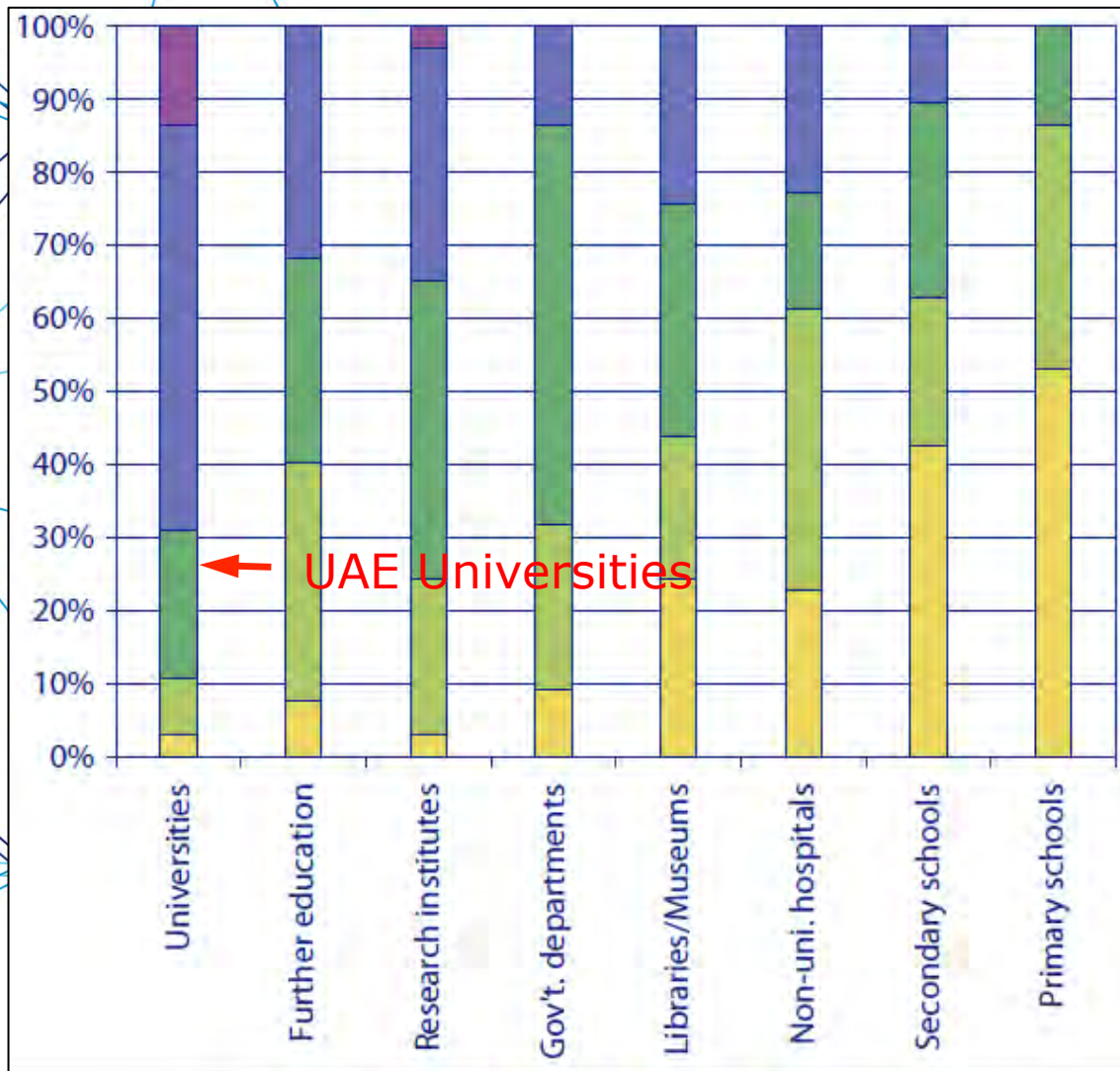
-Services & Budget

Benchmark

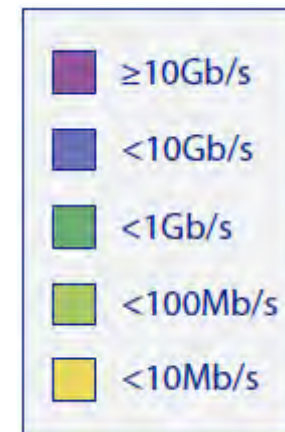
National Research and Education Networks



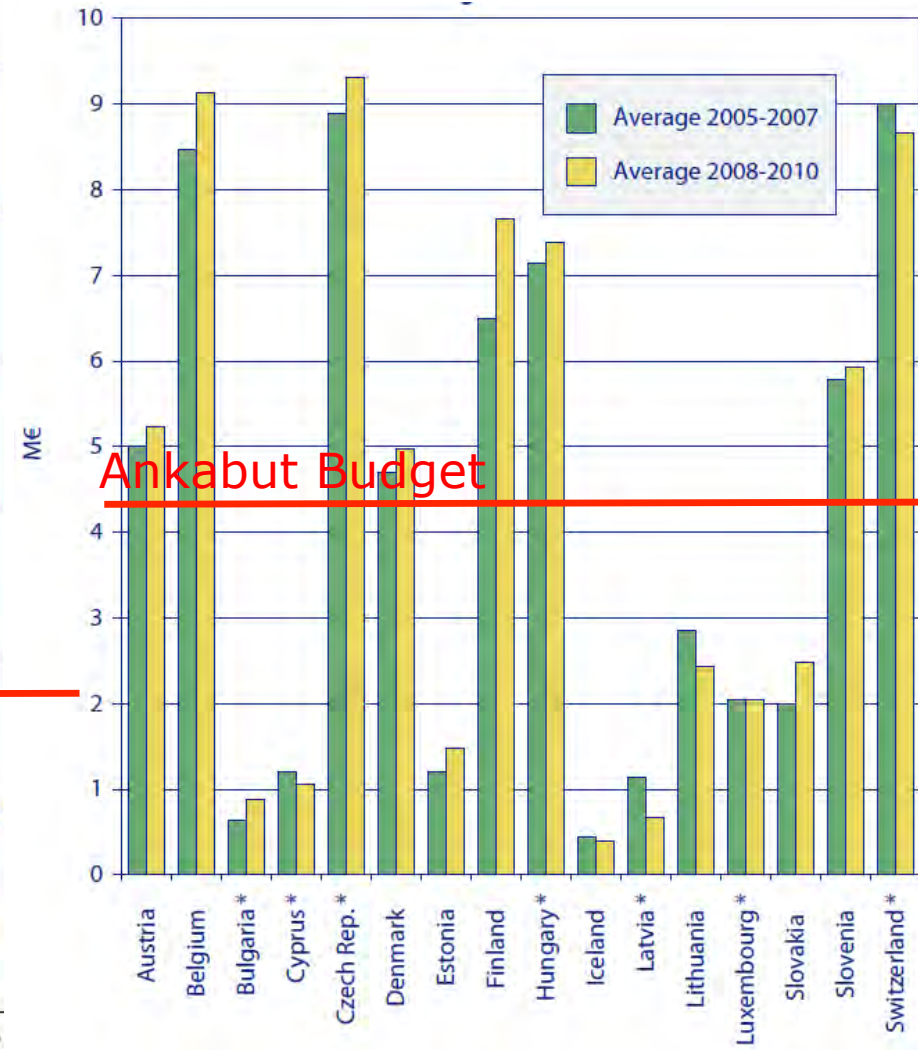
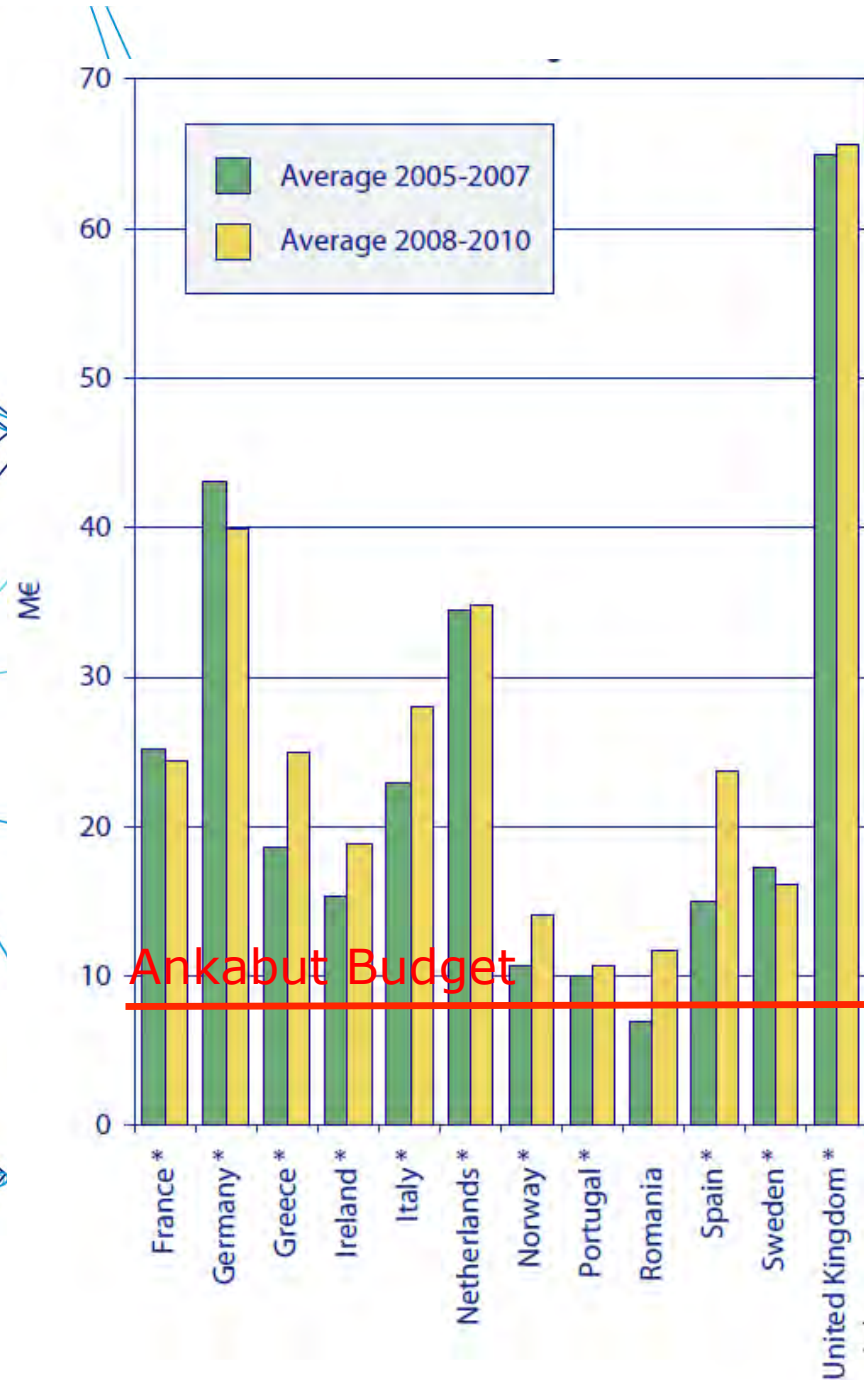
Bandwidth in use across Europe's Education Sector



700 Terabytes



Annual NREN Budget





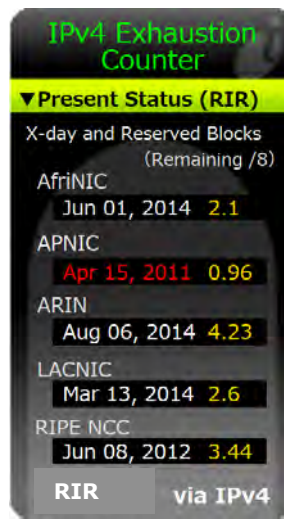
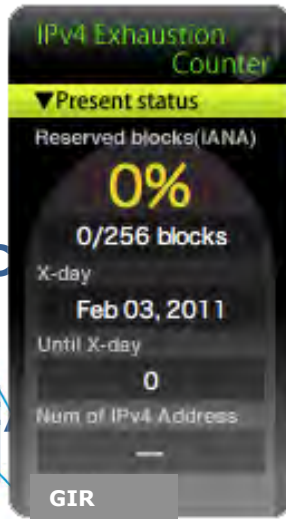
03

- **Ankabut Network**
 - IP Registry

GIR: IANA


RIR: RIPE NCC

RIR: Ankabut
Etisalat/DU

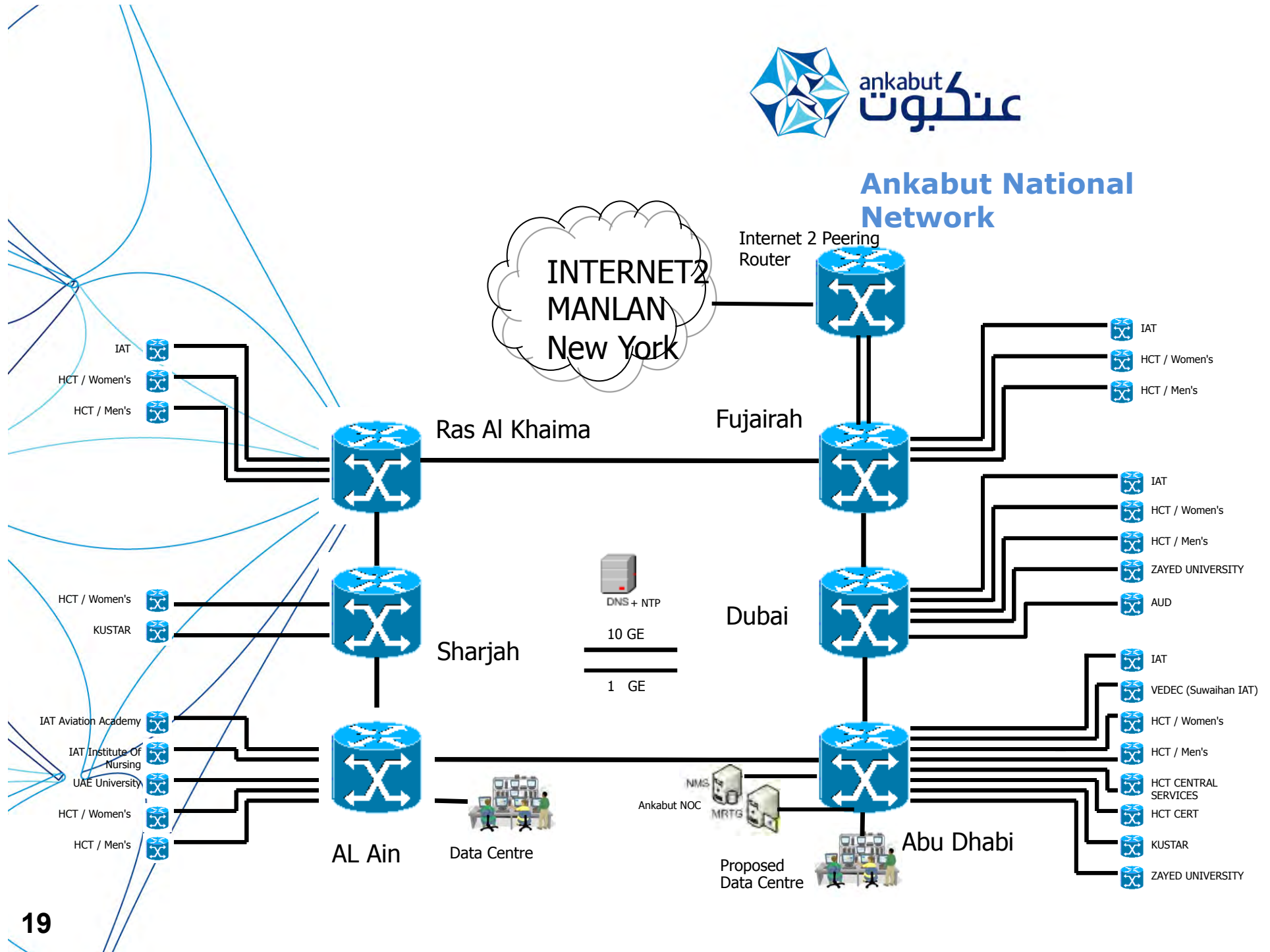


Local Internet Registry

Ankabut Provides Data Network Addressing to the Community

Entity	PI Resources		
	IPv4	IPv6	AS Number
Ankabut	109.205.24.0/21 176.74.48.0/21	2a00:1b00::/32	AS47862
UAE University 	178.250.248.0/22 194.69.1.0/24 178.250.248.0/23 178.250.250.0/23	2a02:1718::/32	AS51182
American University in Dubai (AUD)	194.153.153.128/25	2001:67c:2040::/48	AS52216
Higher Colleges of Technology (HCT)	31.29.64.0/19		AS56479
Paris-Sorbonne University Abu Dhabi	91.229.64.0/23	2001:67c:2348::/48	AS39031
New York University Abu Dhabi (NYUAD)	91.230.41.0/24	2001:67c:2350::/48	AS50811
Abu Dhabi University (ADU)	91.231.11.0/24	2001:67c:23e8::/48	AS57143
Zayed University (ZU)	193.33.102.0/23	2001:67c:23f0::/48	AS57163
American University of Sharjah (AUS)	193.33.172.0/23	2001:67c:2408::/48	AS57171

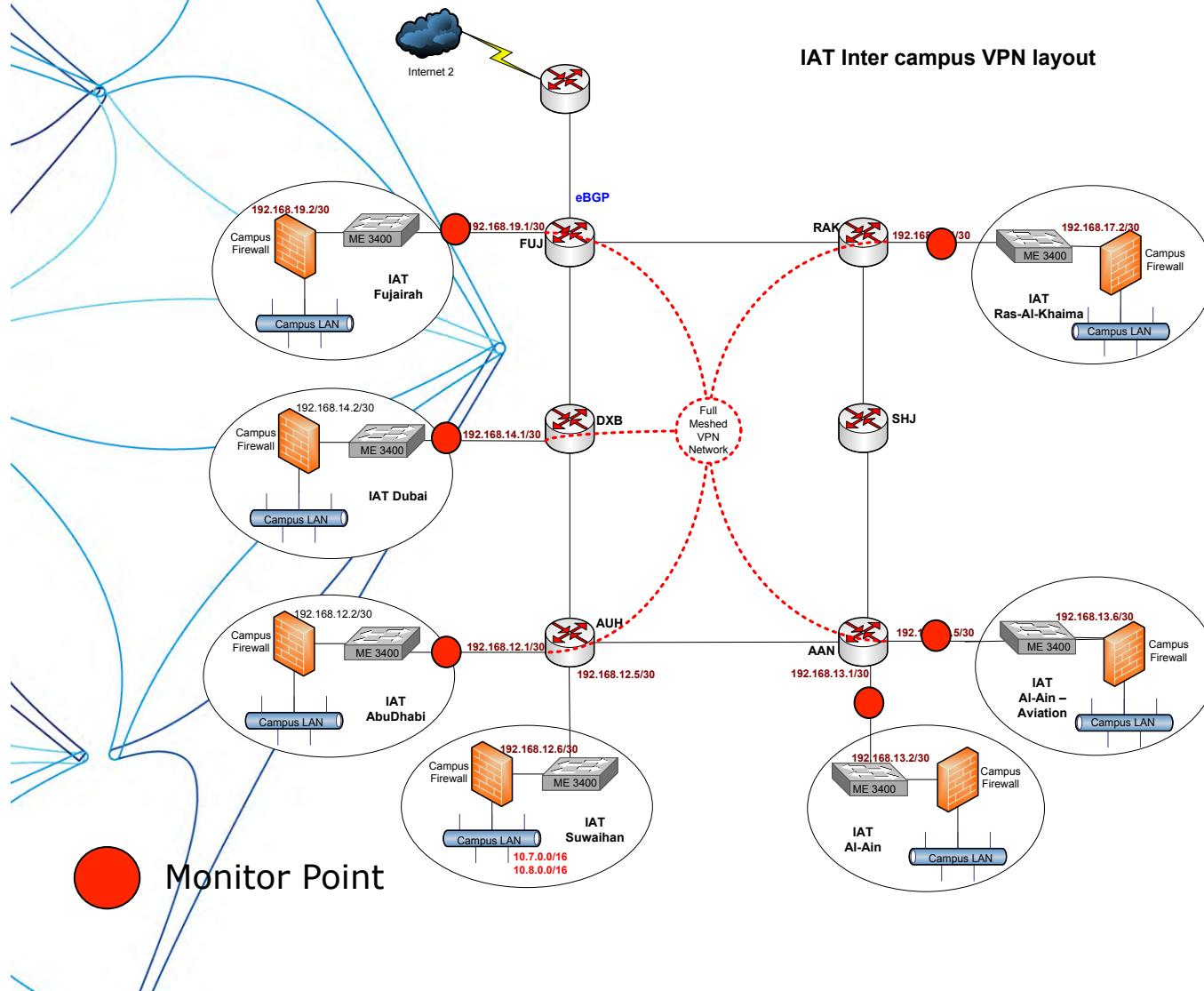
Ankabut National Network



Institute of Applied Technology - Topology

VPN Connectivity

IAT Inter campus VPN layout



-60% off bill

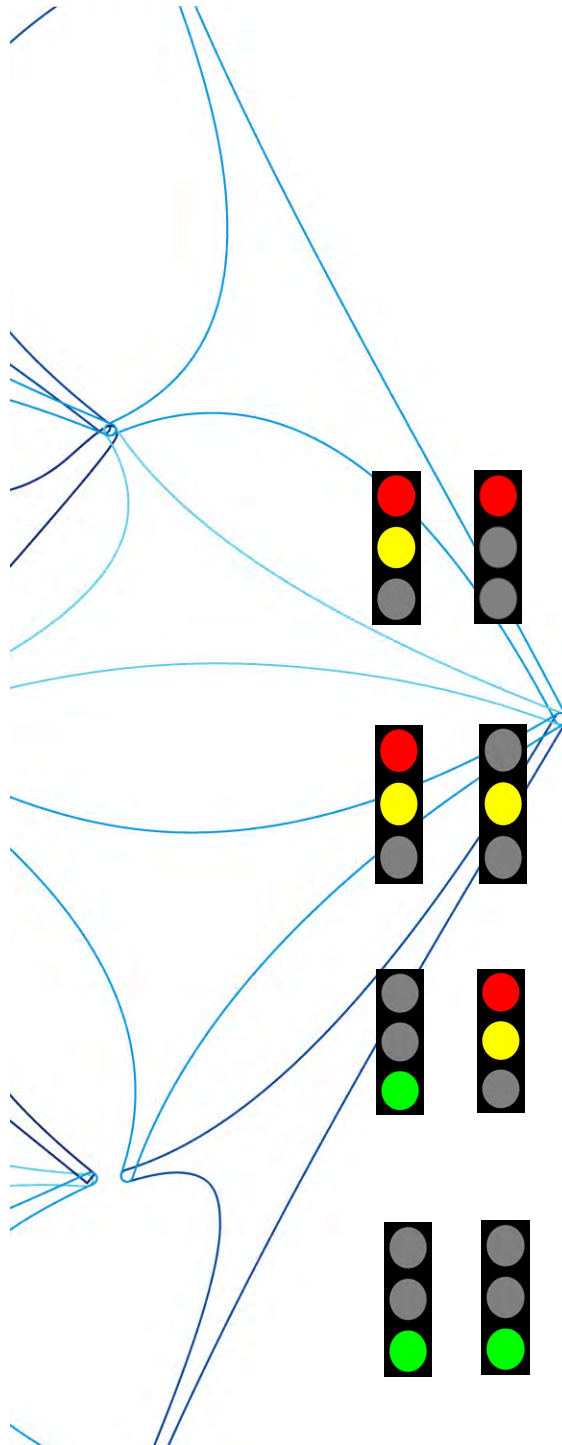
The left side of the page features a complex, abstract white line drawing on a blue background. The drawing consists of multiple overlapping, curved lines that form a series of pointed, leaf-like or petal-like shapes. These shapes are arranged in a way that they seem to radiate from a central point on the right, creating a sense of movement and depth. The lines are thin and delicate, contrasting sharply with the solid blue background.

04

2012 Services Status



2012 Services : Projects Status



•The UAE Educational Disaster Recovery Solution

- Meeting w/ CIOs and founded a Task-Force Team
- Started implementing a Pilot project with EPFL_RAK

•The UAE e-Education Platform

- Preparing a national strategy to adopt Ankabut as the main ESP for the Ministry of Education "Smart Learning"

•The UAE Unified Communications between Higher Education Institutions

- "Multi-Party Video/Audio Conferencing" + Calendaring over the network is ready as Phase 1 of Unified Comm.

•The UAE Consortium of Library

- A task-force team was founded. e-FADA bylaw reviewed. The consortium will be created soon.

Services:

Ongoing Projects (2)



•**Virtual Classroom**

- Alcatel-Lucent hosted a smart solution of Virtual Classroom as a Demo at Ankabut premises.

•**High Performance Computing**


- Intel offered 4 nodes latest technology HPC to Ankabut. Training sessions will be conducted next year

•**AE_Ankabut_01 Grid Computing**

- Production site is under development. Good progress. Grid schools will be conducted as well



•**Ankabut Certification Authority**

- Ankabut is Registration Authority from INFN and MAGRID. Final Accreditation step to IGTF is ongoing



04.1

Ankabut e-Education

Service Available	User Satisfaction
	



eEducation Status





- 1. Connect and provide services to MOE Training Centers (3 over UAE)**
- 2. To support ICTFund Initiative to connect the 21 Virtual Labs for MOE**
- 3. To connect with ADEC school network**
- 4. To be the strategic partner of Sheikh Mohamed Bin Rashed Initiative "Smart Learning"**
- 5. Negotiate with Learning Software providers National license prices**
- 6. Provide VLMS to Institutions (4 Moodle sites)**



04.2

**Video-Conferencing Over
the Network**

Service Available	User Satisfaction
	



Video Conferencing

Highlights...

- Is implementing a network wide Video Conf. MCU
- Fully Interoperable
- Calendar & Scheduler



Account Request Form

Please fill in the blanks below to request an account for the Video-Conferencing service. Fields marked with (*) are mandatory.

Personal Information

Title: * _____

Full Name: * _____

Organization: * _____

Position: * _____

Emirate: * _____

Address Line 1: * _____

Address Line 2: _____

User Account Specifications

User Name: * _____

E-mail Address: * _____

Phone Number: _____

Work Telephone: _____

Mobile Telephone: _____

Contact Preferences

Contact Preferences:

Telephone

Email

Research and requirements

Research Area: * _____

Storage Requirements: _____

CPU Hours Requirements: _____

Message: _____

About Ankabut

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Ankabut also co-operates on a national, GCC, regional and international arena representing the UAE in conferences, exhibitions and forums. Ankabut aims to offer QoS based networks with IPv4/IPv6, multicast and introduce advanced services on a "Closed Group Network" with "Public Interest Purposes".

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Contact Us

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Khalifa University
PO Box 127788
Abu Dhabi, UAE

Phone: +971 2 401 8000
Fax: +971 2 447 2442
Website: www.ankabut.ae

For other inquiries and general information about Ankabut: info@ankabut.ae



انكابت
ankabut

شبكة الأبحاث المتقدمة للتحقق والتعليم
UAE Advanced Network for Research and Education

ANKABUT VIDEO CONFERENCING "CMADesktop"

Users' Manual


Copyright © Ankabut 2012



Users' Manual for VC

MADE BY STUDENTS





User Manual for desktop client

Getting started

About CMA desktop: Ankabut provides its users with a tool on your PC to make video conferences using Ankabut. This tool is called CMA desktop. Beside videoconferencing you can send instant messages and share your desktop content.

Request for Ankabut account:


- 1- Go to this Link: www.ankabut.ae
- 2- Download the excel file
- 3- Fill in the form
- 4- Submit the form to helpdesk@ankabut.ae and wait for your account confirmation

Download CMA desktop:

- 1- Go to this link: www.ankabut.ae
- 2- Download this file
- 3- Extract the file

Installation: To setup the CMA Desktop application, follow these steps:

- 1- Click on **CMADesktop**
- 2- Select the Software Language and Click OK
- 3- Click Next
- 4- Read the license agreement and select I accept the terms in the license agreement and press Next
- 5- Specify Ankabut server address by clicking Specify and enter the server address h323.ankabut.ae then Click Next




Click Next

Click Install

Click finish

Sign into CMA Desktop: To login into your desktop videoconferencing account, follow these steps:



- 1- Enter ankabut, username
- 2- Enter your password
- 3- Tick this box if you want your PC to remember this password
- 4- Tick this box if you want your PC to sign in automatically
- 5- Click Help me with signing in if you faced any problems in signing in to your account
- 6- Click sign in

Main window Icons guide:

- Start a video Call
- Start Chatting
- Start a video call with this contact
- Start chatting with this contact
- This contact is in a call know
- This contact is invited to share presence information
- The availability of this contact is unknown
- This contact is not available
- Show my video preview window
- Hide my video preview window
- Show Contacts Directory
- Placed Call






Copyright © Ankabut 2012 1



	On demand Customer	On Demand Virtual Rooms Charged by the hour
	Mobile Customer	Point to Point
	Hosting Customer	Multi to Multi Point
	Active Directory	Legacy Connectivity
	UC Platform	Web
		Mobile & Tablets
		Conference Rooms
		Extended Voice
		Extended Video
		Extended Mobile





UC In-a-Box









Government






Int'l Providers



-  Ankabut
-  Ankabut Partners
-  Government
-  International Providers





Unified Communication



School



Government



Sick Student



Laboratory



University



College



Consultant



Homework



Expert




Parents



Traveler





Lecture



04.3

UAE Library Consortium

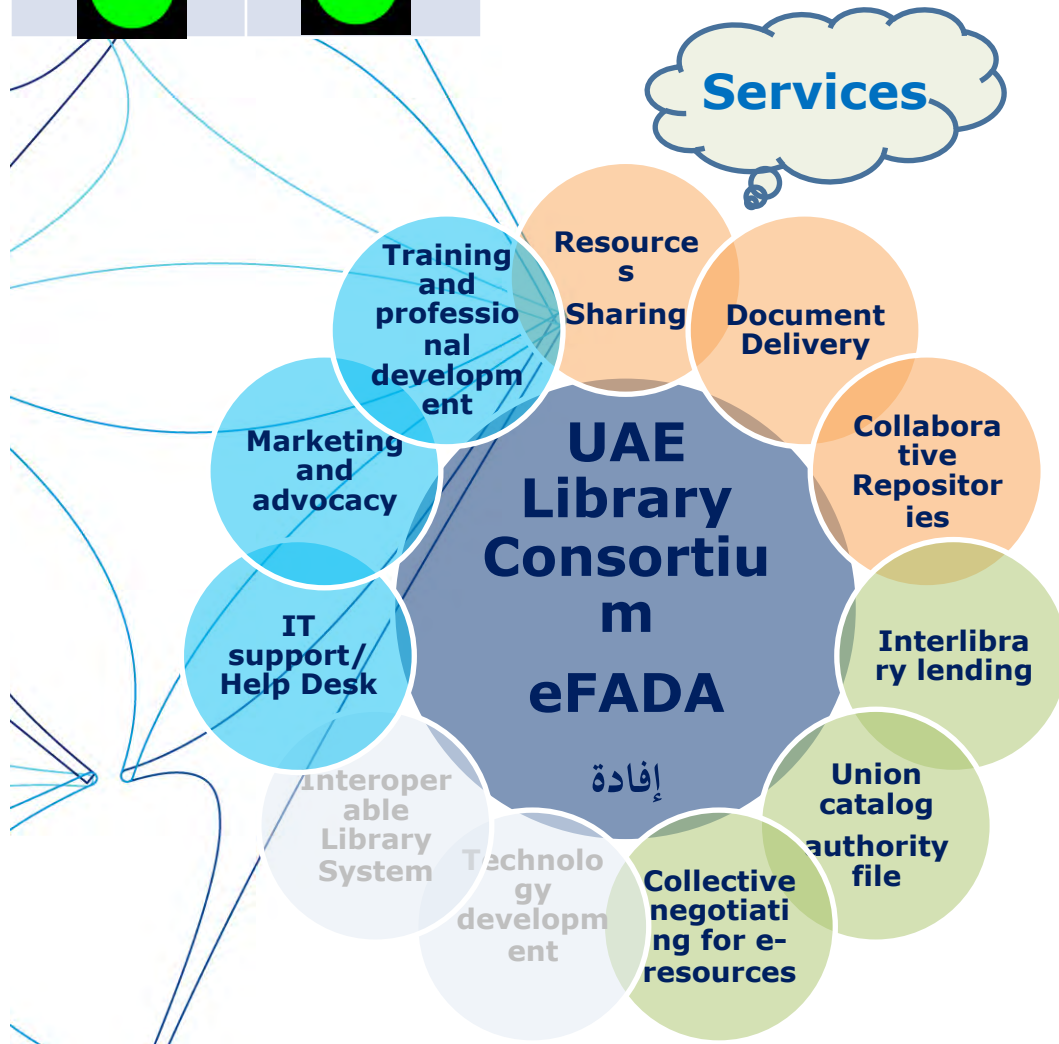
Service Available	User Satisfaction
	



We don't start from scratch



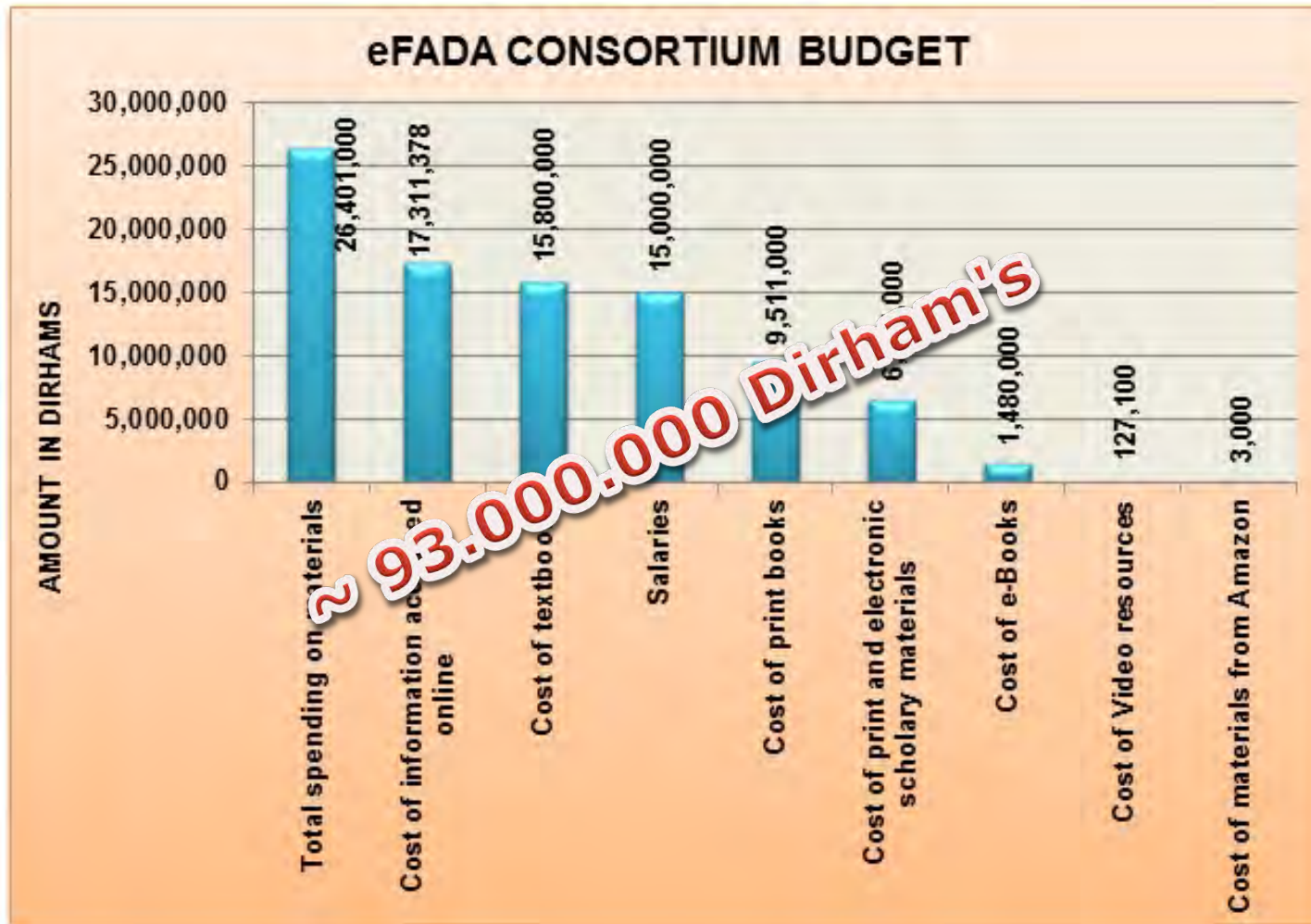
- ✓ **Governing Board**
- ✓ **Library Manager**
- ✓ **Policies**
- ✓ **Procedures**
- ✓ **System Librarian**
- ✓ **Fund**
- ✓ **Finance**



-40%



Survey on Library Budget May/2012

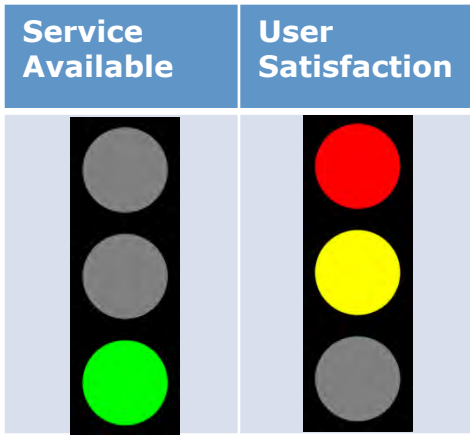


Only 10 Institutions answered to the Survey

04.4

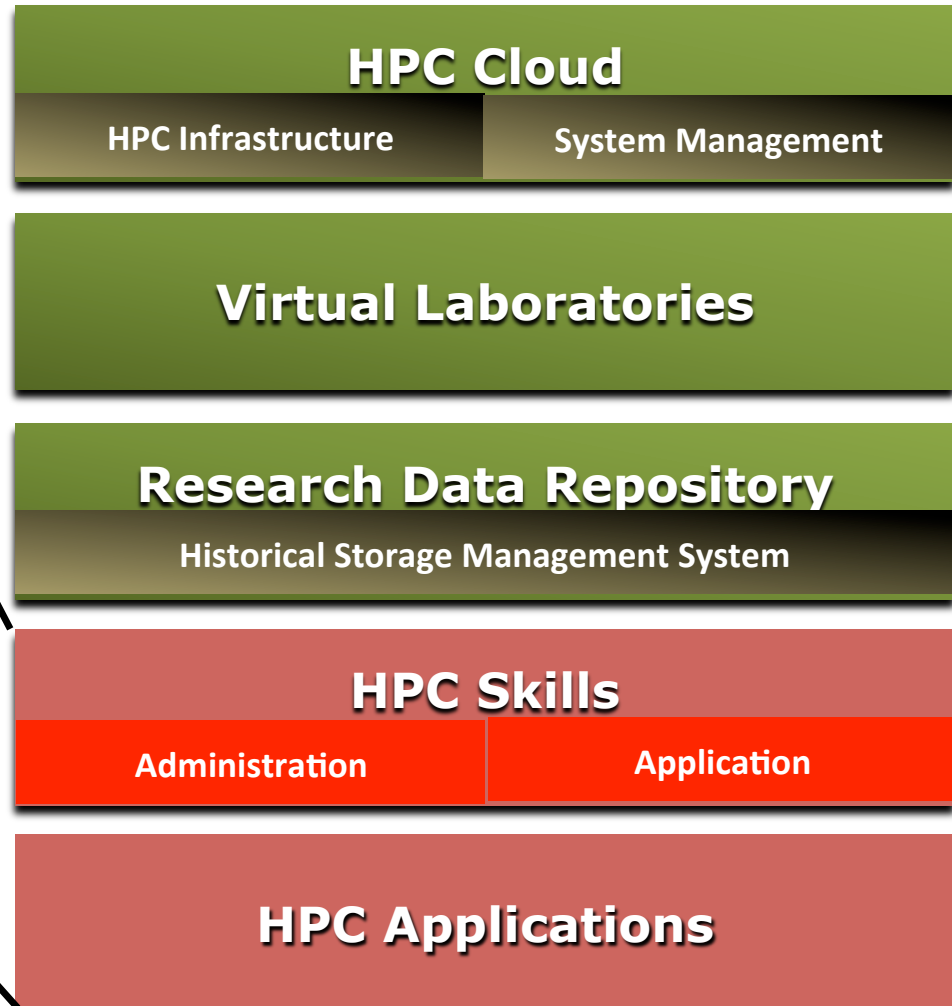
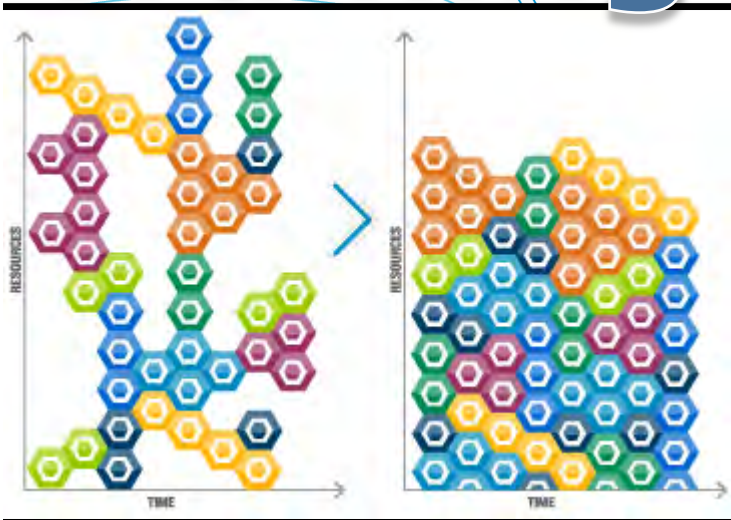
High Performance Computing





Ankabut HPC

Training



Account Request Form

Please fill in the blanks below to request an account for the HPC service. Fields marked with (*) are mandatory.

Personal Information

Title: _____
 Full Name: _____
 Organization: _____
 Position: _____
 Emirate: _____
 Address Line 1: _____
 Address Line 2: _____

User Account Specification:

User Name: _____
 E-mail Address: _____
 Phone Number: _____
 Work Telephone: _____
 Mobile Telephone: _____

Contact Preference:

Contact Preferences:

Telephone
 Email

Research and requirements:

Research Area: _____
 Storage Requirements: _____
 CPU Hours Requirements: _____

Message: _____

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 Fax: +971 2 447 2442
 Website: www.ankabut.ae

For other inquiries and general information about Ankabut: info@ankabut.ae



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UAE Advanced Network for Research and Education
شبكة الأبحاث المتقدمة للتحليلات والحوسبة

ANKABUT High Performance Computing "HPC"

Users' Manual

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HPC Users' Manual

MADE BY STUDENTS

Institution	# Users	Applications
KUSTAR	2	Aerospace, Nuclear
Masdar	2	Computation, Env.
UAU	1	Biology

Introduction

Ankabut provides its users with a Platform for High Performance Computing (HPC) to facilitate the process of simulation, problem solving, and data analysis in a quick and easy way and to get out the most efficient results you look for.

Figure 1 represents the high level design for the robust cluster used in Ankabut HPC service.



Figure 1: High level design for HPC cluster in Ankabut

The master host is responsible for managing, administrating, and monitoring the cluster. It is connected to the computing hosts through a 1 Gb Ethernet network switch. Ankabut HPC cluster has 4 parallel computing hosts. Each one of them has 16 cores (CPUs).

Manual Objective

The objective of this user manual is to show and represent the simple usage of a complex HPC Platform.

Account Request

- Go to the Ankabut website www.ankabut.ae and download the request form.
- Fill in the required details.
- Submit the form to operation team at Ankabut: helpdesk@ankabut.ae
- Wait until the system administrator sends your login details.

Web Interface Access

- Go to the website: <http://hpcankabut.ae>
- The Ankabut High Performance Computing interface will show up:



Figure 2: Platform HPC interface

Platform Life Cycle

There are five main stages for a job to be completed when using the Platform. These stages are shown in Figure 3 and then described below:



Figure 3: Job life cycle

Submitting a job:
 A submission host (end-user) submits jobs to the master host. Ankabut HPC provides two different ways to submit jobs. For each submitted job, Ankabut HPC administrator will assign a unique ID number.

Queuing and scheduling a job:
 Once a job is submitted, it will go to the queue the user selected in the submission form. If no queue is specified when submitting the job, the job is submitted to the default queue (normal). Generic submission form provides you with different queuing methods:

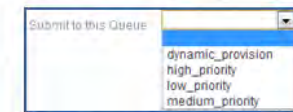



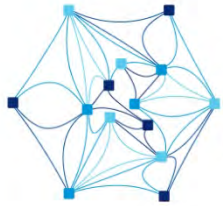
Figure 4: Queuing

When jobs are in queues, the scheduler decides which particular job to run first based on many parameters:

The background features a complex, abstract white line art design on a solid blue background. The design consists of multiple overlapping, curved lines that form a series of interconnected, organic shapes, resembling a stylized network or a series of overlapping petals. The lines are thin and white, creating a delicate, web-like structure that extends across the left and center of the page.

04.5

UAE Grid Computing



ankabut grid
شبكة عنكبوت



ankabut
عنكبوت

Ankabut Grid
Computing

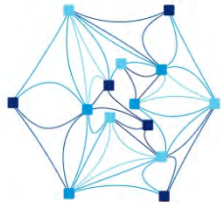


ANKABUT has participated in the Joint EUMEDGRID-Support/EPIKH School for Computing Grids (seasons).

Ankabut built up a seed system for the National Grid initiative in the UAE. Ankabut can dispatch jobs on to the world's grid system using the gLite middleware.

The Grid Site in Abu Dhabi is **the first grid site ever installed in the GCC as part of the EUMEDGRID-Support e-Infrastructure.**

Ankabut is seeking Grid partners to grow the distributed computing environment within the UAE.

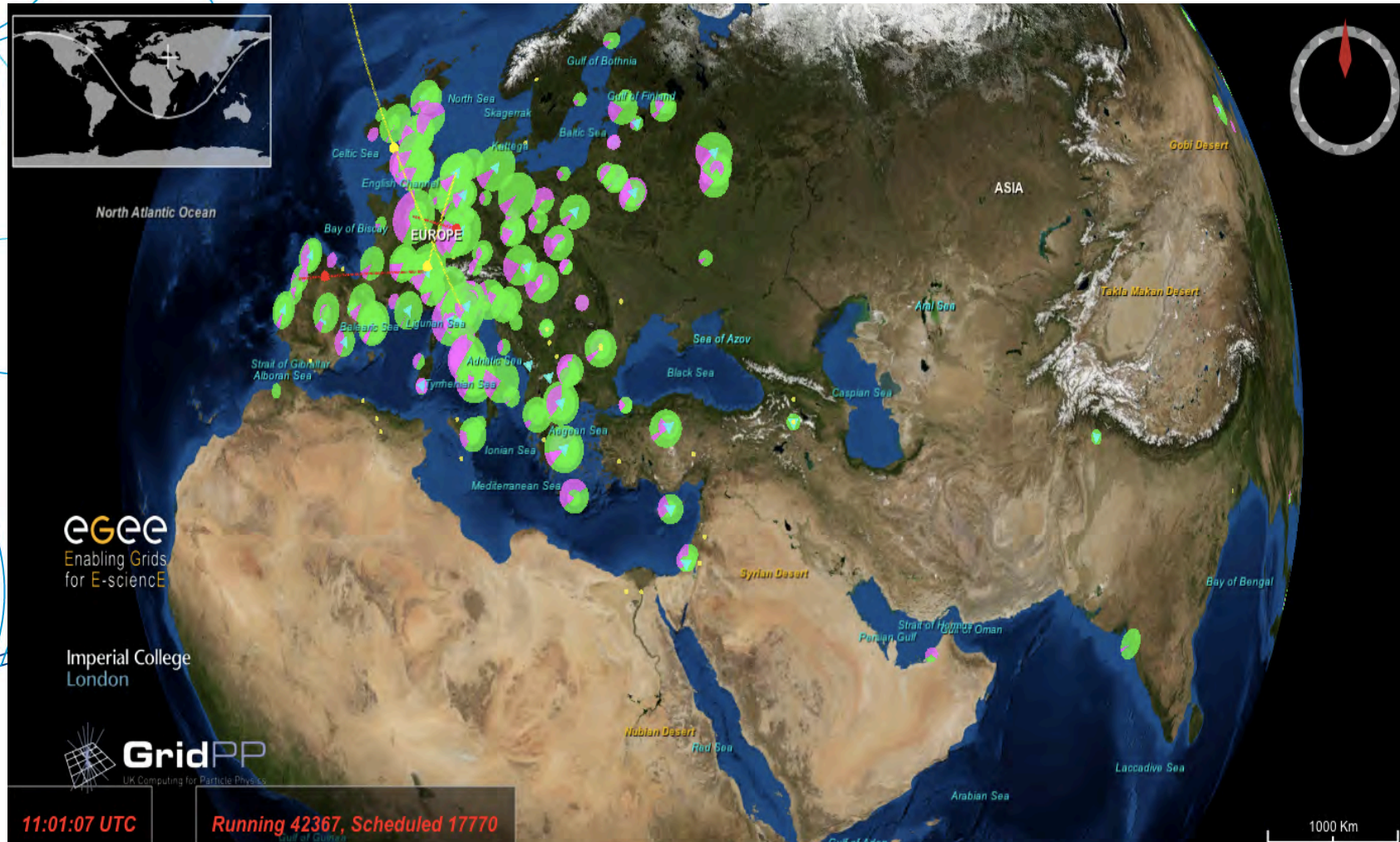



ankabut grid
شبكة عنكبوت



ankabut
عنكبوت

Ankabut is on the World Grid Map





04.6

Research & Social Community



English | عربي

عن أيادي | المكتبة الإلكترونية | اقرأ مع أيادي | الشركة المسندة لتجسين

اتصالات etisalat

Twitter Facebook YouTube

أيادي

أرادينا معكم

نهتم في أيادي بدعم مجتمع دولة الإمارات العربية المتحدة، وتعزيز التنمية الفكرية عند جيل الشباب، ولذلك بادرننا إلى إطلاق مكتبة "أيادي" الإلكترونية في الدولة، نعمل في "أيادي" بشكل وثيق مع وزارة التربية والتعليم من أجل تعزيز ورفع مستوى الثقافة من خلال هذه المكتبة الإلكترونية التي تهدف إلى تنمية القدرات الفكرية للطلاب وتمكينهم من الوصول إلى المصادر التعليمية الرئيسية مثل المراجع والأبحاث، بالإضافة إلى مواد التطوير الذاتي، كما تعمل أيادي مع شركاء آخرين لدعم مشاريع التنمية الفكرية وتداول المعرفة واتاحة وسائل تكنولوجيا مساعدة، تجسد الشراكة الاستراتيجية بين "أيادي" و"وزارة التربية والتعليم" في مشاريع متعددة تتشارك في الأهداف منها مسابقة "اقرأ مع أيادي" التي تم إطلاقها بالتعاون مع وزارة التربية والتعليم بوصفها شريكاً استراتيجياً في هذه المبادرة وتهدف مسابقة "اقرأ مع أيادي" إلى تشجيع الطلاب على القراءة وللاهمهم نحو تحقيق الاستقلالية الذاتية واكتشاف قدراتهم لتمكينهم من رسم مستقبلهم.

تسجيل دخول

عضو جديد دخول

استعادة كلمة المرور

ankabut عنكبوت

مجلس الإمارات للتقنية

**Helped Ayaadi
"Etisalat Fund for
Social
Responsibility" to
negotiate eBooks
and obtained
excellent price (4
times less)**



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المهبة الوطنية للبحث العلمي



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UAE Open Source Software Research & Development Center (OSSRDC)

MADE BY
STUDENTS



Dataverse used by **Researchers** to **publish**, **share**, **reference**, **extract** and **analyze research data**.

Zayed University Students to use Ankabut Network for Open Source Project



05

2013 Services Status



Our Strategy



1. Our Services Roadmap will be linked to **OUR MEMBER NEEDS**

2. Work collaboratively with members

3. Do projects together :

1. FID

2. HPC

3. EduRoam

4. Etc...

Ankabut Services Roadmap for 2013

Member benefits Features	2012	2013	Description	Stakeholders
Security & Authentication Services				
<u>Federated Identity</u>		✓	Management and use of identity information across organization boundaries. Allows organizations to participate in inter organization authentication and authorization.	Decision Makers CIO IT Department Researchers Faculty Students
<u>EduRoam</u>		✓	Eduroam (education roaming) is the secure, world-wide roaming access service developed for the international research and education community. It allows students, researchers and staff from participating institutions to obtain Internet connectivity across campus and when visiting other participating institutions by simply opening their laptop.	Decision Makers CIO IT Department Researchers Faculty Students
Communications Services				
<u>Unified Communications</u>		✓	Using communication tools connected to Institutions Identity Management for smooth communication and exchange of information.	Decision Makers CIO IT Department Researchers Faculty Students
<u>Videoconferencing</u>	✓	✓	Inter-Operability between different Institutions video systems and Ankabut by connecting to a Multi-Point Control Unit.	Decision Makers CIO IT Department Researchers Faculty Students

Ankabut Services Roadmap for 2013

Member benefits Features	2012	2013	Description	Stakeholders
E-Science Services				
<u>High Performance Computing</u>	✓	✓	Create a trust interface to connect all High Performance Computing in UAE Institutions to be used for shared computing resources in research	IT Department Researchers
Software & Cloud Services				
<u>Inter-Library services (eFADA)</u>	✓	✓	Create UAE Repositories. Manage International subscriptions fees. Help the Consortium to build one centralized Database for hard/soft books to all members.	Decision Makers CIO IT Department Researchers Faculty Students
<u>Offsite Disaster Recovery</u>	✓	✓	Education Institutions could have their host/warm/cold backup sites managed by Ankabut as a centralized service	Decision Makers CIO IT Department
<u>Virtual Desktop Infrastructure</u>		✓	Educational Institutions could have their PC desktops as virtual machines deployed and managed by Ankabut.	Decision Makers CIO IT Department Researchers Faculty Students
<u>Hosting & Housing and Co-location</u>		✓	Educational Institutions applications can be hosted and managed by Ankabut, like websites, dns, emails, mailing list, etc,.... Housing educational servers and application.	CIO IT Department Researchers Faculty Students

<p>UAE ADVANCED NETWORK FOR EDUCATION & RESEARCH</p> <p>Ankabut Services Roadmap 2013: version 1:0 Author : Dr. Ahmed Dabbagh Date : January 27th 2013</p>	
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Milestone #	Milestone Description	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
Unified Communications & VideoConferencing													
eFADA													
FID													
1	Ankabut Access Management Federation initiation												
2	FID Service Catalog												
3	Develop the Concept of Ankabut Pilot Project												
4	Implement the Pilot Project												
5	Market the concept for larger number of Idps												
6	Show progress at Sept Ankabut Users' Meeting												
7	Explore new members to join (not more than 7)												
8	Work on federation of non web-based applications												
EduRoam													
DR/BC													
HPC													
VDI													
Co-Location & Hosting													



06

Ankabut Outlook



New Data Center FULLY CLOUD

Ankabut Data Center is implemented with the highest Network requirements needed to support:

- 1. IPV6**
- 2. Multicast**
- 3. Disaster Recovery, Business Continuity, Hosting, Housing**
- 4. Virtualization**
- 5. Sharing, Provisioning, Billing,...**

The Data Center target date for operation is:

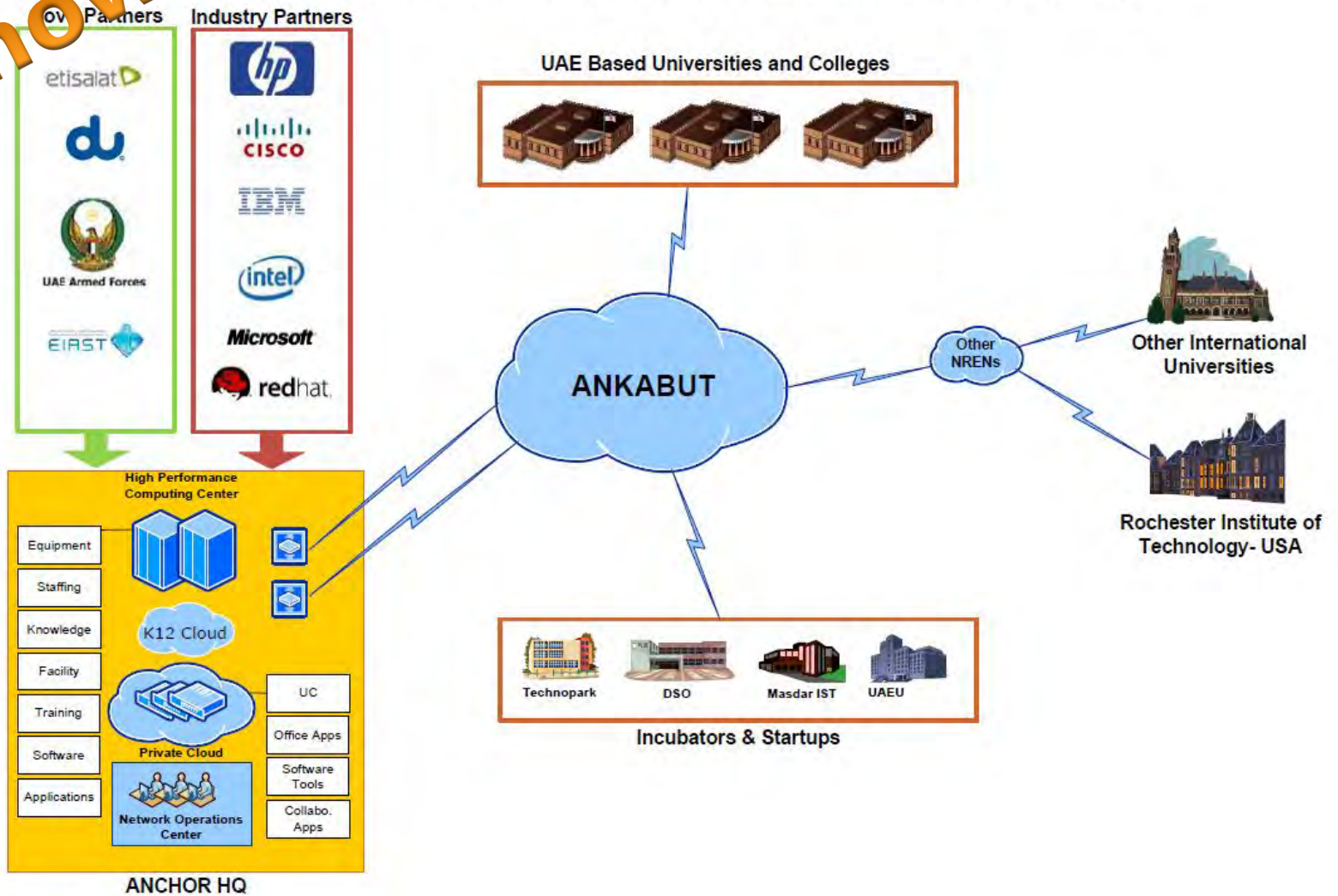
May 15th 2013

UAE Knowledge HUB

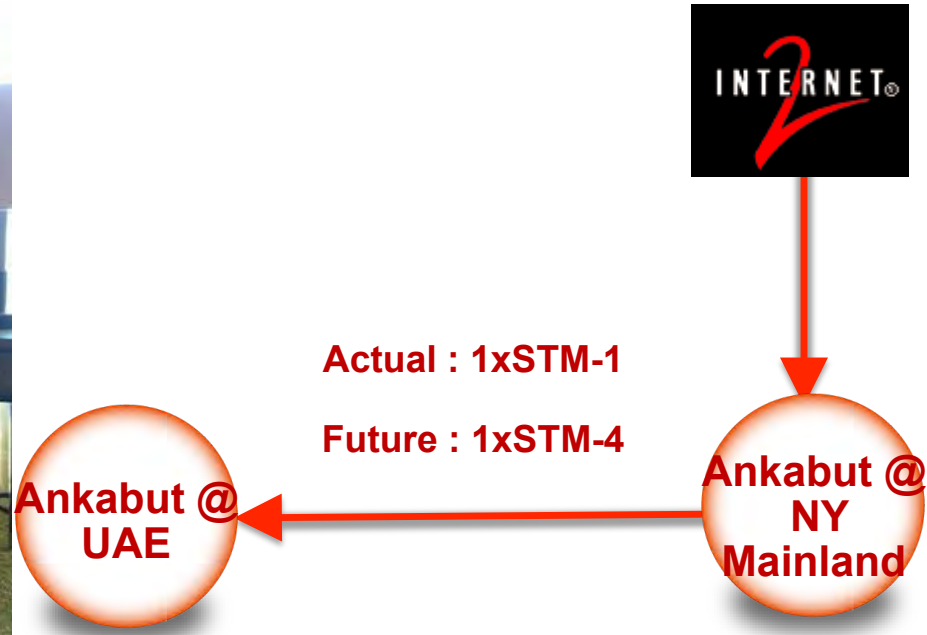


ANCHOR

Ankabut National Cloud & Hypercomputing ORganization (ANCHOR)



Ankabut International Connection



Highlights :

- 1- MoU signed between Ankabut & I2
- 2- To have UAE as the Knowledge Hub for the region
- 3- To be very attractive for the neighbored countries to connect internationally

UAE Knowledge Hub for International Connection



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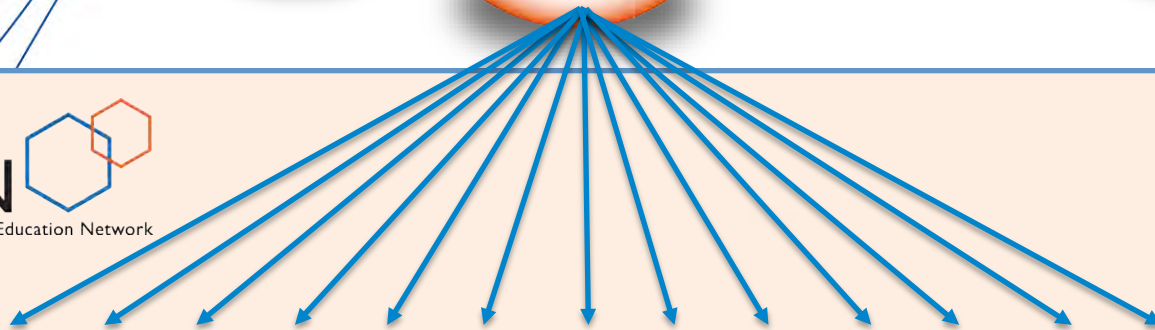


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ASREN

Arab States Research and Education Network



Arab R&E communities



Questions

Ankabut



Thank You