

DARKMATTER: A UAE BASED CYBER SECURITY COMPANY

IGTF UPDATE

May 2017



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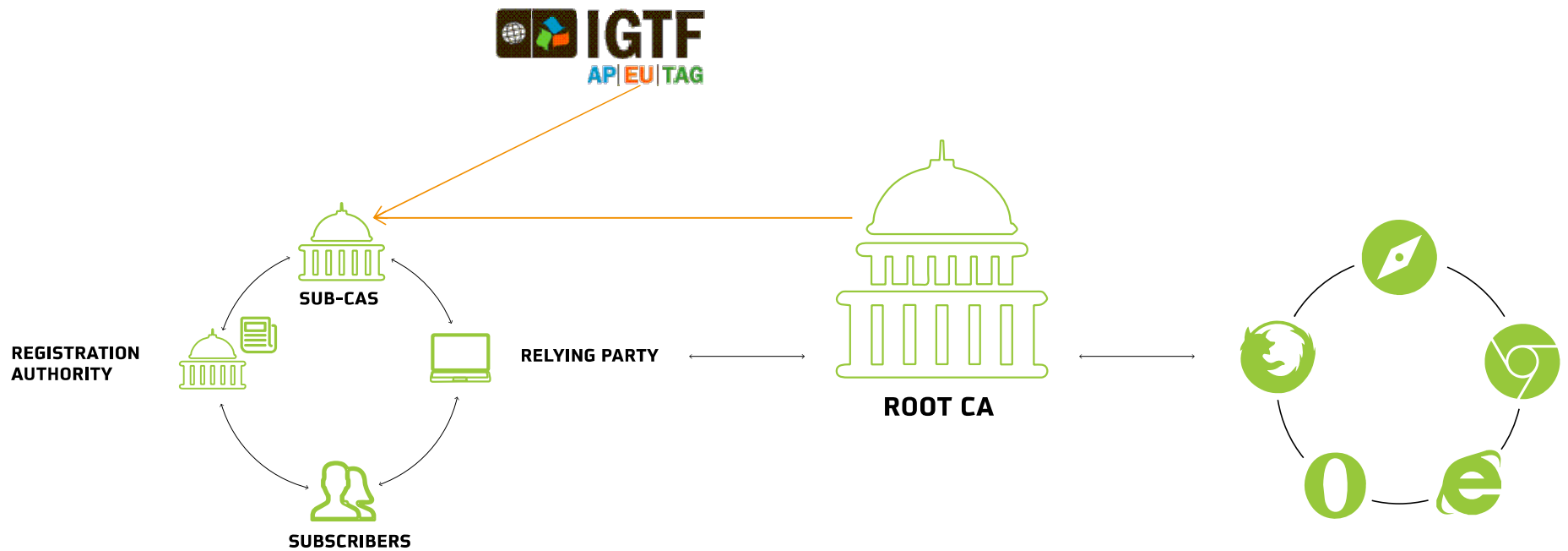
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DARKMATTER PKI STATUS UPDATE

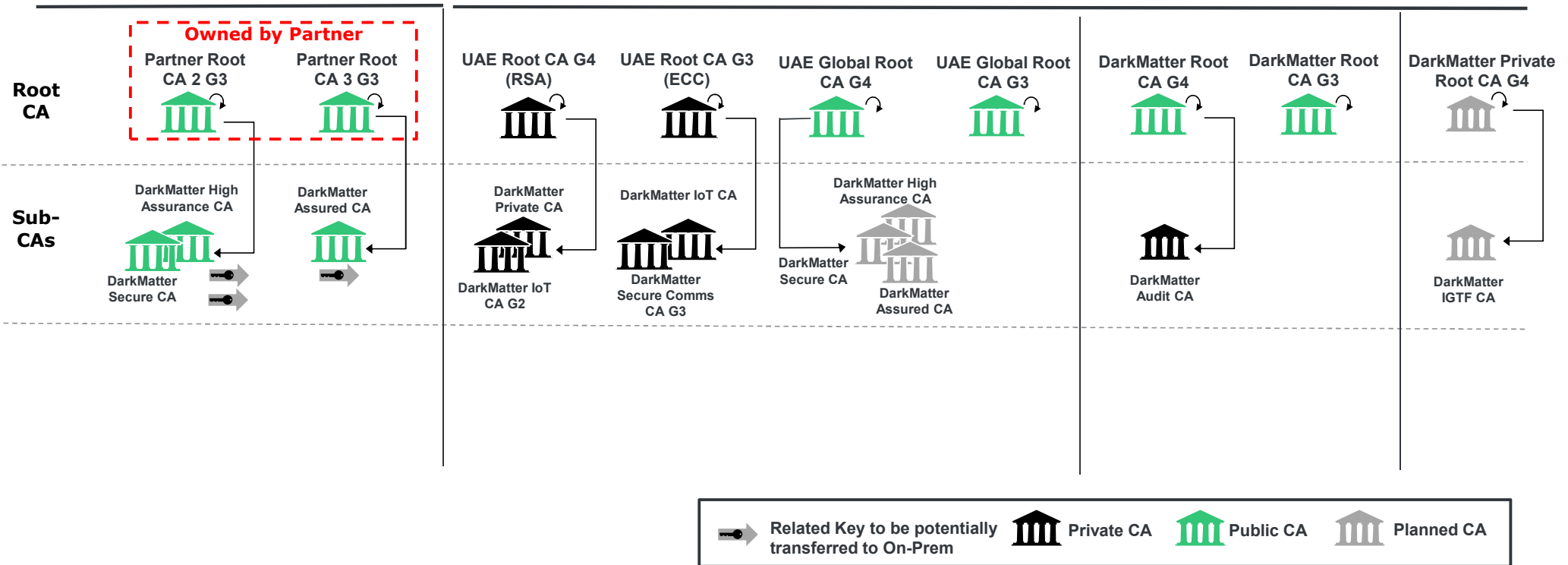
NATIONAL TRUST ANCHORS – PUBLIC TRUST



DARKMATTER CA ARCHITECTURE

Interim Solution – Foreign

On-Prem Solution – UAE Infrastructure



DARKMATTER PKI STATUS

- **DarkMatter Infrastructure build out**

- Production site: core CA/RA/VA + network security infrastructure in operation
- DR site: core CA/RA/VA + network security infrastructure in operation
- EJBCA platform with multiple redundant FIPS140 Level 3 HSMs
- Modular architecture with separation of CA, RA, VA modules where needed
- Offline Roots on separate HSMs
- Online RA requiring PKI based authentication, even for local access
- High capacity VAs for OCSP and CRL distribution
- Web landing page/Repository complete. Major upgrade by expected June 2017
- Significant expansion of RA module to facilitate Managed PKI use cases expected in August 2017
- International operations migrated to UAE infrastructure April 2017 under WebTrust audited process
- WebTrust audit in-process May 2017 – August 2017
- DarkMatter existing 2 Classic CAs (Public Trust) accredited at 39th EUGridPMA meeting
- DarkMatter licensed as Certificate Services Provider in the UAE (May 2017)

DARKMATTER IS NOW AN OFFICIAL UAE CSP



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Independent Accountant's Report

The Management of DarkMatter LLC

DarkMatter Root CAs

We have examined DarkMatter LLC (hereby, "DarkMatter") Management's Assertion that in restoring and protecting the UAE Root CA G3 and UAE Root CA G4 (collectively, "DarkMatter Root CAs") to the PKI appliances in the DarkMatter facilities in Abu Dhabi, UAE on 27 March 2017 with the following identifying information:

Root Name	Subject Key Identifier	Certificate Serial Number
UAE Root CA G3	23 a1 bc 83 d3 61 f3 4e 66 7d dd 29 95 74 8e cd f4 06 1c 45	09 a9 73 64 bf cd 75 5b
UAE Root CA G4	7f 9e 81 ee 5a d7 71 13 15 a7 76 68 ed a8 f4 ee da de 46 11	75 f9 6c a0 e5 80 9a 83

DarkMatter has:

- included appropriate, detailed procedures and controls in its 'Root Restore Procedures - for CRL Generation, OSCP Signing Certificates and Migration to UAE' script;
- restored and protected the DarkMatter Root CAs UAE Root CA G3 and UAE Root CA G4 to the PKI appliances; and
- validated the operational status of the DarkMatter Root CAs in the DarkMatter facilities in Abu Dhabi, UAE by issuing required OSCP Signing certificates and Certificate Revocation Lists from these Root CAs on 27 March 2017

based on the Certification Practices Statement Management Criterion 2.2, Asset Classification and Management Criterion 3.2, and Key Storage, Backup and Recovery Criterion 4.2 of the WebTrust [Trust Service Principles and Criteria for Certification Authorities v2.0](#).

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LICENSE NUMBER: CSP-[001\17]



CERTIFICATION SERVICE PROVIDER LICENSE

In exercise of powers given to The Telecommunications Regulatory Authority (the "TRA") of the United Arab Emirates (the "U.A.E."), as a Controller of Certification Service Providers which was granted under Cabinet Decision 8/291 of 2006 dated October 15, 2006, as the authority with responsibilities relating to the licensing, approval, monitoring and overseeing of the activities of Certification Service Providers according to Federal Law No. (1) of 2006 on Electronic Commerce and Transactions (the the "Act"), hereby issues this Certification Service Provider License to:

Dark Matter L.L.C.

With its U.A.E. main registered office at level 15, Aldar HQ., Abu Dhabi, United Arab Emirates

1. This License is issued by the TRA pursuant to the Act and the Ministerial Resolution No 1.Of 2008 Regarding the Issuance of the Certification Service Provider Regulations, and is subject to all of the terms and conditions set forth in them, and to any further conditions, terms, restrictions, and limitations imposed by the TRA from time to time.
2. This License permits the Licensee to operate as a Certification Service Provider in the U.A.E.
3. This license permits the Dark Matter LLC to operate as a Certification Service Provider in the U.A.E by means of a Certificates and attestations service provider limited to generating electronic certificates and signatures based on proprietary technology and self-signed that rely on X.509 technology for commercial purposes.
4. The effective period for this License begins on 18 – May – 2017 and expires on 18 – May – 2022 unless it is revoked or suspended before that date.

SIGNED and SEALED this day 18th of May, 2017



Hamad Al Mansoori
Director General



DARKMATTER PKI STATUS

- Engagement of International Trust Partner to bootstrap trust
 - DarkMatter has partnered with QuoVadis to bootstrap trust for a few years while UAE Roots are embedded and deployed in Apps and OSes in parallel, with gradual cut over to UAE Roots
 - 2 Private Roots & 4 Private subCAs created in June 2016 – Now migrated to UAE
 - 3 Public subCAs created in June 2016 – Operational today
 - All above DM CAs operating on DM owned hardware, QV infrastructure under WebTrust
- Transition from Partner infrastructure to DarkMatter
 - Transition completed for Private subCAs and Roots in April 2017
 - WebTrust audit in process, transfer of publicly trusted subCAs to be completed as part of this process
 - De-provisioning of QV services, hardware shipped to DM
 - Public Trust relationship for 5 years
- DarkMatter own Roots created under WebTrust audit in May 2017
 - DM Audit CA created to fulfill WebTrust requirements
 - Further Private Roots and subs operating on prem at DM to support DM enterprise trust



DARKMATTER IGTF STATUS UPDATE

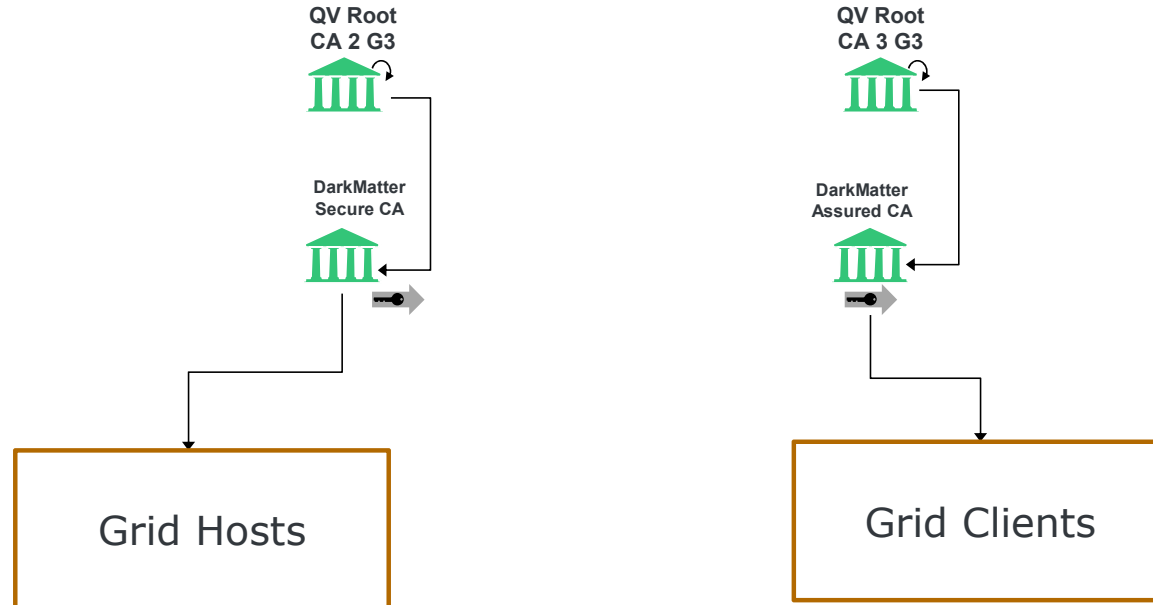
DARKMATTER + IGTF

- Ankabut in the UAE
 - The Ankabut Project is the UAE Advance Network for Research and Education
 - Founded in August 2006 by Khalifa University, Institute of Applied Technology, United Arab Emirates University, Zayed University and Higher Colleges of Technology
 - Currently has 26 Universities as participating members
 - Wish to provide members access to National Grid Initiatives and also EGI participation
- DarkMatter is primarily seeking IGTF Accreditation so it is in a position to provide Ankabut services needed to participate in target initiatives
 - Potentially not required for national grid initiatives but why not kill two birds with one stone?
- DarkMatter is open to providing certificate services to other national grid communities
 - Today, Public Trust grid certs will only be issued within Middle East locations
 - IGTF or Private Trust grid certs can be issued globally if desired by contract of appropriate RA
 - Later this year, Public Trust grid certs can be facilitated for any global location

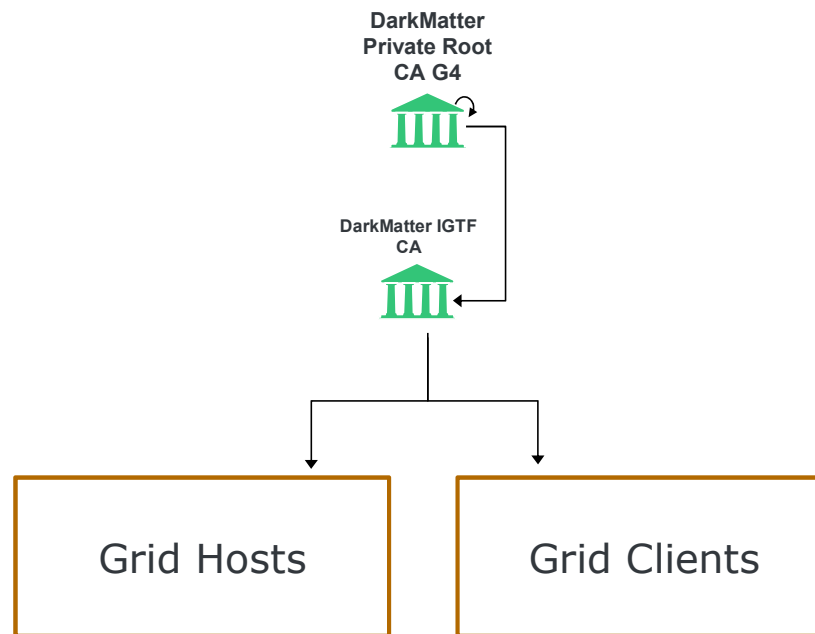
DARKMATTER + IGTF

- DarkMatter currently has IGTF accreditation of 2 Classic CAs
 - Public Trust CP/CPS operated by QV with DM RAs
 - DarkMatter Assured CA (Grid Client)
 - DarkMatter Secure CA (Grid Host)
- DarkMatter is currently seeking IGTF accreditation of a further Classic CA
 - IGTF Trust Only (Private Trust) under UAE CP with DM CPS
 - DarkMatter Private Root CA G4 to be created in offline HSM
 - DarkMatter IGTF CA to be created as part of online production CA infrastructure
 - CAs not yet created, will be initiated as part of current WebTrust audit period

PUBLIC TRUST HIERARCHY



IGTF PRIVATE TRUST HIERARCHY





DarkMatter PKI Services Grid Repository

Welcome to the DarkMatter Grid portal. DarkMatter is seeking to be an accredited IGTF CA via [EUGridPMA](#).

In June 2016, DarkMatter launched its PKI Services when it created a number of Trust Anchors (root and sub CAs) for the provisioning of certificates. DarkMatter anticipates two different hierarchies for the issuance of IGTF accredited grid certificates - one that operates only within the IGTF, and another that also chains to publicly trusted Root CAs. DarkMatter is currently seeking the accreditation of the Public Trust hierarchy.

Certificates may be requested at [Trustlink](#)

Certificates are issued under policies and procedures referenced below.

DarkMatter Grid Public Trust CAs

Host Hierarchy

- **QuoVadis Root CA 2 G3** Off-line publicly trusted Root that signs subordinate CAs. This Root is intended to be Trusted for Host Certificates as part of the IGTF Classic distribution.

CA Certificate: [QuoVadisRootCA2G3.cer](#) | [QuoVadisRootCA2G3.der](#) | [1f58a078.0](#)

Signing Policy: [QuoVadisRootCA2G3.signing_policy](#) | [1f58a078.signing_policy](#)

Namespace: [QuoVadisRootCA2G3.namespaces](#) | [1f58a078.namespaces](#)

Certificate Revocation List: [DER format \(QuoVadisRootCA2G3.crl\)](#)

CA.info Link: [QuoVadisRootCA2G3.info](#) | [69105f4f.info](#)

CA.crl_url Link: [QuoVadisRootCA2G3.crl_url](#)

CA Text Link: [QuoVadisRootCA2G3.txt](#)

- **DarkMatter Secure CA** On-line Subordinate CA to provide long-term user, host and service certificates. This sub-CA is Accredited as part of the IGTF Classic distribution.

CA Certificate: [DarkMatterSecureCA.cer](#) | [DarkMatterSecureCA.der](#) | [a69c3a14.0](#)

Signing Policy: [DarkMatterSecureCA.signing_policy](#) | [a69c3a14.signing_policy](#)

Namespace: [DarkMatterSecureCA.namespaces](#) | [a69c3a14.namespaces](#)

Certificate Revocation List: [DER format \(DarkMatterSecureCA.crl\)](#)

CA.info Link: [DarkMatterSecureCA.info](#) | [a69c3a14.info](#)

CA.crl_url Link: [DarkMatterSecureCA.crl_url](#)

CA Text Link: [DarkMatterSecureCA.txt](#)

Client Hierarchy

- **QuoVadis Root CA 3 G3** Off-line publicly trusted Root that signs subordinate CAs. This Root is intended to be Trusted for Client Certificates as part of the IGTF Classic distribution.

CA Certificate: [QuoVadisRootCA3G3.cer](#) | [QuoVadisRootCA3G3.der](#) | [412c434.0](#)



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Questions?

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THANK YOU



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