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Enabling Grids for E-sciencE

FQAN Matching rules

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- **Applications need to match FQANs from the proxy against FQANs from their configuration.**
  - Best way would be to require only exact match.
    - But sometimes this is not acceptable

- **So, FQAN matching rules: How to match, with wildcards, two FQANs against each other.**

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- **"The groups and role parts of a FQAN are matched separately."**
    - This means that FQANs should be split in two before matching, and the two parts should go through two different matching process.

- **Rationale:**
    - Avoid matching roles by mistake when using wildcards.

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- **"Matching is always case sensitive."**
  - Should be self-explanatory.

- **Rationale:**
  - It is pretty much standard for matching regexps to be case sensitive by default.
  - Also, handling of FQANs in VOMS is case sensitive.

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- **" /Role=NULL' and '/Capability=NULL', if present, MUST be eliminated before pattern matching from both the pattern and the FQAN."**

- **Rationale:**
  - Forward compatibility to VOMS 1.8, where those fields by default will not be present.
    - As agreed inside MWSG.
    - Already supported since 1.5.x (Ask Vincenzo for the x)
  - Special note: Capabilities have been deprecated for almost 2 years now, and they will be removed from the next version.
    - No one uses them
    - Voms-admin does not allow to set them.
      - *This also implies that finding '/Capability=<something>' in a FQAN inside a proxy is impossible.*

- **In the absence of wild cards, pattern matching should be done as exact strings.**

- **Rationale:**
  - Default in all pattern matching algorithms.

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- **"Accepted wildcards are '*' and '?'. The '?' wildcard matches any character, while the '*' wildcard matches any (possibly empty) sequence of characters."**

- **Rationale:**
  - Standard meanings in shell patterns.
  - Group names in FQANs are explicitly modeled against path names. This makes the shell way of doing pattern matching a natural choice.

- **"A wildcard may match any character, including '/'"**

- **Rationale:**

  - It would otherwise be impossible to match 'This group and any of its subgroups' without explicitly knowing the full hierarchy.

    - A fragile solution, since it would change the moment a new subgroup is added

Pattern	FQAN	Matches?
/atlas	/atlas	yes
	/atlas/Role=NULL	yes
	/atlas/prod	no
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	no
	/atlassi	no

Pattern	FQAN	Matches?
/atlas/Role=NULL	/atlas	yes
	/atlas/Role=NULL	yes
	/atlas/prod	no
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	no
	/atlassi	no

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Pattern	FQAN	Matches?
/atlas/Role=*	/atlas	no
	/atlas/Role=NULL	no
	/atlas/prod	no
	/atlas/Role=sgm	yes
	/atlas/prod/Role=sgm	no
	/atlassi	no

Pattern	FQAN	Matches?
/atlas/prod/Role=*	/atlas	no
	/atlas/Role=NULL	no
	/atlas/prod	no
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	yes
	/atlas/prod/Role=NULL	no
	/atlassi	no

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Pattern	FQAN	Matches?
/atlas*	/atlas	yes
	/atlas/Role=NULL	yes
	/atlas/prod	yes
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	no
	/atlassi	yes
	/atlas/prod/Role=NULL	yes

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Pattern	FQAN	Matches?
/atlas/*	/atlas	no
	/atlas/Role=NULL	no
	/atlas/prod	yes
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	no
	/atlassi	no
	/atlas/prod/Role=NULL	yes

Pattern	FQAN	Matches?
/atlas*/Role=sgm	/atlas	no
	/atlas/Role=NULL	no
	/atlas/prod	no
	/atlas/Role=sgm	yes
	/atlas/prod/Role=sgm	yes
	/atlassi	no
	/atlassi/Role=sgm	yes
	/atlas/prod/Role=NULL	no

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Pattern	FQAN	Matches?
/atlas/*/Role=sgm	/atlas	no
	/atlas/Role=NULL	no
	/atlas/prod	no
	/atlas/Role=sgm	no
	/atlas/prod/Role=sgm	yes
	/atlassi	no
	/atlassi/Role=sgm	no
	/atlas/prod/Role=NULL	no

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- **FQAN Matching document:**
    - https://edms.cern.ch/document/858263/1