

Continuity in the Cloud

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MSR



Problem



- **Continuity of operations (COOP) of enterprise IT infrastructure in the face of hostile action or natural disaster is a key mission assurance (MA) requirement.**
- **Existing methods include:**
 - **Building redundant data centers**
 - **Procuring space and equipment at co-location (COLO) facilities**
 - **Contracting COOP service providers.**
- **All the above are expensive to maintain and keep up to date, requiring large investments in hardware, software, and labor.**
- **Cloud Computing offers an alternative, but comes with its own set of issues to be overcome.**

Background



- **Cloud Computing (CC) offered by another party has some inherent features that make it an appealing option for COOP purposes:**
 - **Inexpensive compared to building and maintaining redundant data centers**
 - **Geographically dispersed resources**
 - **Access from anywhere, at any time.**
- **There are concerns, however, including:**
 - **Co-tenancy with other, potentially hostile, customers**
 - **Viability of service providers**
 - **Data ownership and protection**
 - **Integration with existing infrastructure**
 - **Compatibility with existing applications.**

Objective



- **Determine whether Cloud Computing services provide sufficient value in terms of business continuity to justify making the necessary changes in risk management decisions and business practices to take full advantage of the cloud.**

Activities



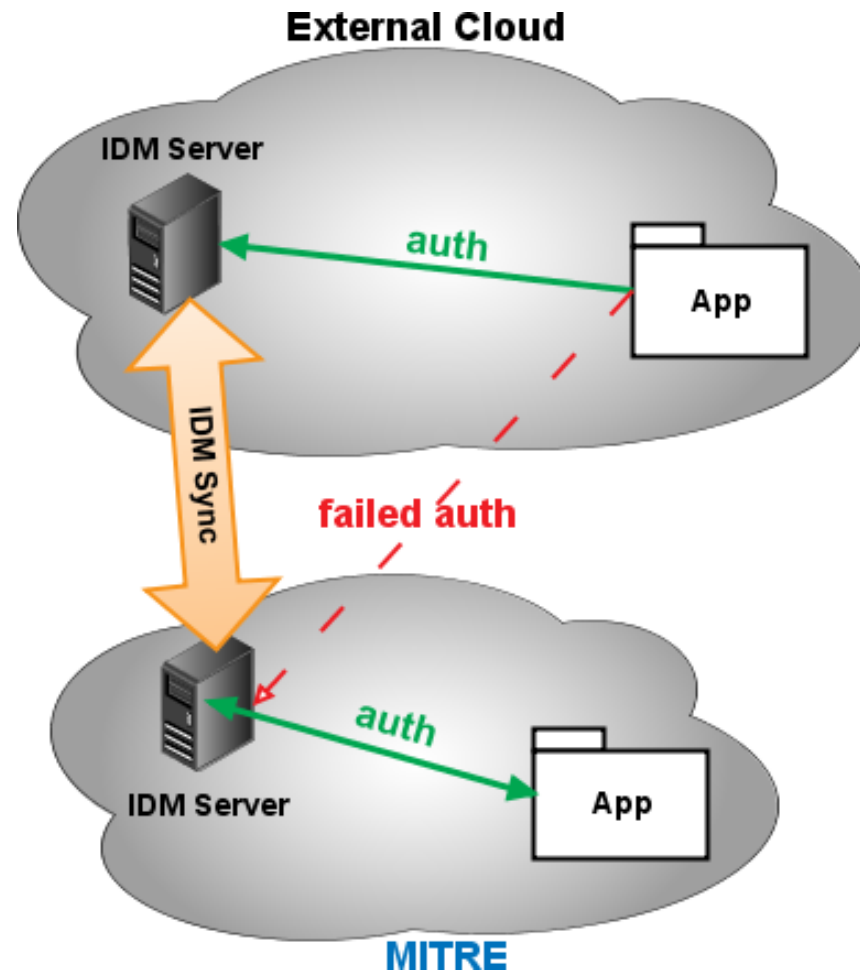
- **Review industry, including security features.**
- **TEMs with some key industry players**
 - **Amazon, Microsoft, Terremark*, Google* (*=pending).**
- **Develop and document a method or methods to continue ID Management (IDM) capability in the cloud.**
- **Investigate and document development of custom applications to run in the cloud and compare with development of custom applications to run in house.**
- **Investigate and document the potential for using third party hosted applications in the cloud context, notably collaboration services.**
- **Investigate the issues associated with data storage in the cloud including DBMS and more general data stores.**

Highlight



Is Cloud Computing a viable option for COOP in the face of disaster or attack?

Highlight



Can we link our Corporate IDM into the Cloud allowing cloud-based applications to continue to operate when the home base goes off line?

Impacts



- **Build MITRE expertise in cloud computing.**
- **Answer key questions such as:**
 - **What risks have to be mitigated or reevaluated?**
 - **What applications are easiest to deploy in the cloud?**
 - **What level of effort is required?**
- **Position MITRE to develop business continuity plans for itself and its sponsors that:**
 - **Take appropriate advantage of cloud service offerings**
 - **Cost less than current COOP practices**
 - **Provide greater resiliency to a wider array of disruptions.**

Future Plans



- **Have additional vendor exchanges.**
- **Complete documentation of experiences and activities.**
- **Use knowledge and expertise gained from this research as a foundation for more focused research proposals.**