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# StrataCom Whitepaper

## Tracking structured arrays in activity actions

Since structured arrays are more complex than a character or number field, adding this information to the activity actions requires additional javascript coding. We will use an example of work effort data to demonstrate how to accomplish this.

Here is the work.effort structure from the dbdict.

Name	Type	Level	Index
work.effort	array	1	59
work.effort	structure	2	1
hours	number	3	1
minutes	number	3	2
notes	character	3	3
operator.log	character	3	4
work.full.name	character	3	5

Once we have put all the pieces together, the activity actions will display all the entries from the work effort array before and after the change. First, lets take a look at the javascript code that is used to manipulate the array data. This function can be added to an existing javascript library or you can create a new one to house it. We have put this in a script library called General.



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```
function formatStructArray(oldrecord, newrecord, structure) {
    var oldStructure = eval("oldrecord."+structure); //
    Create a variable to house the name of the structure
    var newStructure = eval("newrecord."+structure);

    var oldDataOutput = "";
    var i = 0;
    for (i in oldStructure) { // Loop through the old
    structure to get each individual array line
        var arrayLine = oldStructure[i];

        var ii = 0;
        for (ii in arrayLine) { // Loop through and
    format each line of the array
            var sepII = ii; sepII++;
            if (sepII == system.functions.lng
    (arrayLine)) {var separator="";} else {var separator=" |
    "};
                var oldDataOutput = oldDataOut-
    put+arrayLine[ii]+separator;
            }
            oldDataOutput = oldDataOutput+"\n"; // Insert a
    line break after each array line.
        }
        var newDataOutput = "";
        var i = 0;
        for (i in newStructure) { // Loop through the new
    structure to get each individual array line
            arrayLine = newStructure[i];

            var ii = 0;
            for (ii in arrayLine) { // Loop through and
    format each line of the array
                var sepII = ii; sepII++;
                if (sepII == system.functions.lng
    (arrayLine)) {var separator="";} else {var separator=" |
    "};
                    var newDataOutput = newDataOut-
    put+arrayLine[ii]+separator;
                }
                newDataOutput = newDataOutput+"\n"; // Insert
    a line break after each array line
            }
            var finalDataOutput = structure+" has changed from
    \n"+oldDataOutput+" to \n"+newDataOutput;
            return finalDataOutput; // Return the entire string
        }
    }
```



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Next we need to call the javascript from the activityactions table that corresponds to where the structured array is located. In our case it is the cm3r table and we are evoking it when the record is updated. This will call our javascript code which returns our formatted information to be placed in the activitycm3r table.

Name:	Update Activities
Table:	cm3r
Mode:	update
Condition:	\$.mode="update"

Name	Condition	Description	Notification
Effort	not same/nulsub(work_effort in \$.file.save, "none"), nulsub(work_effort in \$.file, "none")	{jscall("GeneralFormatStructArray", \$.file.save, \$.file, "work_effort")}	

After adding this code, whenever we make changes to the work.effort structured array, these changes will be logged for future use.

**Activity Log - Change Management**

Change Number: **C10096**

Date of Activity: 09/17/10 12:14:47

Recording Operator: Tony Mottes

Activity Type: Effort

Activity Number: 001A30502

Description of the Activity Performed:

```
work_effort has changed from
2 | 1 | This is a test1 | tmottes | Tony Mottes
3 | 4 | Test2 | tmottes | Tony Mottes
4 | 1 | 10 | asdfasdfas df | tmottes | Tony Mottes
to
2 | 1 | This is a test1 | tmottes | Tony Mottes
3 | 4 | Test2 | tmottes | Tony Mottes
02 | 10 | asdfasdfas df | tmottes | Tony Mottes
```

Our code is fairly straightforward, but it can also be expanded to add additional functionality such as formatting it in a different manner, including the structured array field names, excluding fields from the structured array that aren't needed, etc. You will need to pay attention to the database lengths of any fields used and adjust as necessary, as a structured array has the potential to hold a significant amount of data.

